

2019-2020 Annual Report



Indian Institute of Technology Madras
Chennai – 600 036





The Visitor

Mr. Ram Nath Kovind
President of India

Board of Governors

Dr. Pawan Goenka - Chairman
Managing Director
Mahindra & Mahindra
Mahindra Towers, Mumbai

Prof. Bhaskar Ramamurthi
Director
Indian Institute of Technology Madras
Chennai - 600 036

Council Nominees

Dr. Rakesh Sarwal (from 23.10.2019)
Additional Secretary (TE)
Ministry of HRD
Shastri Bhawan, New Delhi

Prof. Shireesh B. Kedare
Department of Energy Science and Engineering
Indian Institute of Technology Bombay
Mumbai - 400 076

Shri Sukhbir Singh Sandhu
Additional Secretary (TE)
Ministry of HRD
Shastri Bhawan, New Delhi

Dr. S. Kishore Kumar
DRDO Fellow
Gas Turbine Research Establishment
CV Raman Nagar, Bangalore - 560093

Prof. B. Mahadevan
Professor of Operations Management
Indian Institute of Management Bangalore
Bannerghatta Road, Bangalore - 560 076

Senate Nominees

Prof. N. Ramesh Babu (from 01.01.2020)
Department of Mechanical Engineering
Indian Institute of Technology Madras
Chennai - 600 036

Prof. K. Rajagopal (from 01.01.2020)
Department of Civil Engineering
Indian Institute of Technology Madras
Chennai - 600 036

Prof. T. Sundararajan
Department of Mechanical Engineering
Indian Institute of Technology Madras
Chennai - 600 036

Prof. R. Sundaravdivelu
Department of Ocean Engineering
Indian Institute of Technology Madras
Chennai - 600 036

State Government Nominees

Shri K. Vivekanandan, I.A.S.
Director
Directorate of Technical Education
Government of Tamil Nadu, Chennai - 600 025

Thiru A. Anbarasu I.A.S. (from 31.05.2019)
Development Commissioner-cum-Secretary
to Govt. (Education), Chief Secretariat,
Puducherry - 605 001

Dr. Utpal Sharma
Principal (BRAIT) Cum Special Secretary (IT)
Dr. B.R. Ambedkar Institute Technology Campus
Pahargaon, Port Blair -744 104

Dr. K.P. Indiradevi
Director
Directorate of Technical Education, Government of Kerala,
Padmavilasom, Fort, Thiruvananthapuram - 695 023

Shri Vijendra Singh Rawat, I.A.S.
Collector & Development Commissioner
Administration of the UT of Lakshadweep
Kavaratti - 682 555

Dr. Jane Prasad, IP & TAFS
Registrar
Indian Institute of Technology Madras
Chennai - 600 036

Invitee

Prof. Koshy Varghese
Dean (Administration)
IIT Madras, Chennai - 600 036

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Director's Report

Presented on the 57th Convocation of IIT Madras, held on 25th October 2020

Chief Guest, Prof. David Gross, Chairman, Board of Governors, IIT Madras, Dr. Pawan Goenka; Members of the Board of Governors; Members of the Senate; Graduands; Distinguished Invitees; Colleagues and Students

We celebrated the Diamond Jubilee of our Institute in 2019 with a memorable convocation graced by our Hon'ble Prime Minister Shri Narendra Modi in this very hall (Students Activity Centre) with all the graduands in attendance. Little did we anticipate then that in the coming year, the world will be brought to its knees by a pandemic, forcing us to move our academic activities substantially to the online mode. In tandem, this year's convocation too is therefore being conducted virtually. While we miss the festive atmosphere of the event that all our graduands look forward to eagerly, we hope this virtual convocation will linger in our memories as a symbol of the resilience our students and alumni are well-known for.

Our most distinguished Chief Guest, the Nobel Laureate Prof. David Gross, and our Chairman Dr. Pawan Goenka are not able to join us here today. However, they will be addressing us from their locations in Santa Barbara, USA, and Mumbai respectively, making up substantially for their inability to attend in person. Our graduands are also scattered all over India, and indeed, in different parts of the world, and are joining this event from their locations. We do, however, have a small surprise for you from the winners of the President of India Prize and the Governor's Prize. I would urge you to wait and watch...

At the very outset, I am delighted to report that IIT Madras has not only sustained the Number 1 ranking among Engineering Institutes in the NIRF for the fifth year in a row since the inception of the ranking, but also retained its numero uno position for the second year in a row for overall performance among all universities

in India. IIT Madras also retained its position as the top innovative educational institute in the country in the Atal Ranking of Institutions on Innovation Achievements (ARIIA) 2020, for the second time since the inception of the ranking. I congratulate the students, faculty and staff of our Institute for raising the bar ever higher with each passing year.

We were recognised as an Institute of Eminence towards the end of 2019, and the implementation of our plans to improve our global standing are being kicked off as I speak. Our Strategic Plan 2013-2020, whose targets we have met or exceeded in every aspect, has brought us this far. Our plans as an Institute of Eminence will propel us further and take us to greater heights in the coming years.

1. Degree programmes

The pandemic led to a nation-wide lockdown in March 2020 and educational institutions have remained closed since. Our students dropped everything and left campus for their homes in a hurry. While we were disoriented for a brief while, we did not waste too much time and re-started classes online within a couple of weeks. The country is served for the most part with wireless broadband, and broadband connectivity with a reasonable nationwide footprint has become available only since 2016. The coverage is still patchy and several of our students are not able to join classes live, depending on offline downloaded lectures to keep the scoreboard moving. Nevertheless, due to the heroic efforts of our faculty and students, we completed classes for the January-May semester in time to enable our graduating students to take up their jobs, and our pre-final-year students to take up internships in the summer, many of them in the online mode. Our graduating research scholars and students with projects also wound up their theses from home.

Using a combination of assignments and oral exams conducted online and sometimes on telephone, our faculty went out of their way to ensure that every student who could graduate in the normal course indeed did so, despite the hurdles placed by the pandemic. I am proud to report that today 1,909 students will be awarded their degrees, 413 of whom have earned two degrees. All but 406 of these are post-graduates, and among these are 353 Ph.D awardees, representing the highest number ever in a single year. The Class of 2020 includes eight joint Ph.D awardees with National University of Singapore, Curtin University, and Swinburne University. It also includes, for the first time, 59 Inter-disciplinary Dual-Degree graduands who upgraded from the UG programme to obtain Masters' degrees in Data Science, Computational Engineering, Robotics, Nanotechnology and Energy Systems, and 51 from industry who have earned their Masters' degrees through our web-enabled executive programmes in Engineering specialisations and Business Administration.

I congratulate the graduating students of the Class of 2020 as well as their teachers and supervisors for demonstrating tremendous resilience in completing their degree requirements in these trying circumstances. I am sure that in addition to their professional expertise, the experience they have gained in overcoming the challenges posed by the pandemic will stand them in good stead in their careers.

We launched during the last academic year one more Inter-disciplinary dual-degree upgrade programme in the exciting area of Quantum Science and Technology open to our under-graduate students from all disciplines, taking the total number of such programmes offered at IIT Madras to eight.

On June 30th this year, the country's first online undergraduate degree in Programming and Data Science at IIT Madras was launched by the Hon'ble Union Minister for Education Shri Ramesh Pokhriyal 'Nishank'. This programme will establish a new paradigm through which IITs can contribute to meet the nation's high Gross Enrollment Ratio target under the New Education Policy 2020, by making high-quality education in an emerging field accessible to everyone who is willing and able to meet our exacting standards. We believe this game-changing initiative will set the stage for many similar programmes in disciplines that can be taught online with high quality.

2. Research and distinctions secured by our faculty members and students

Our faculty and scholars continue to excel in research - by asking tougher questions, publishing more, collaborating more widely with peers worldwide, and by securing more funds for research, from both government and industry. While we were running our research activities at full throttle in March, the pandemic and subsequent lockdown brought everything to a screeching halt. Within a few weeks, those who could manage to continue their research online started doing so from home, while those who needed to work in their labs had to mostly mark time.

Beginning August, we were able to enable a limited number of scholars to return to their labs in a safe manner and restart their research activities. The number of such scholars is increasing with every passing week, as we carefully explore ways for them to work in the labs and stay in the hostels in a safe manner. While we are reconciled to some unavoidable delays affecting the ongoing research, we are trying to ensure that the long-term impact on the careers of our scholars is minimal. It is heart-warming to note that the enrollment of new PhD scholars in the new academic year has been even higher than normal. Interviews and admissions were conducted online, and the newly admitted scholars have begun with a few online courses while they wait for the earliest opportunity to come to the campus.

Our faculty continued to earn accolades during the academic year gone by. Notable among the academic honours bestowed on our faculty members are the following:

- Prof. T. Pradeep was awarded the Padma Shri. He was also chosen for the Nikkei Asia 'Science and Technology' Prize for 2020, in recognition of his pioneering work in nanotechnology-based water purification.
- Dr. Shweta Agrawal of the Computer Science and Engineering Department was chosen for the Swarna Jayanti Fellowship 2019-2020.
- Prof. Ashok Jhunjhunwala was elected as Life Fellow of IEEE,
- Profs. Sankararaman and Bhaskaran were elected as Fellows of INSA,
- Profs. Nandita DasGupta, K. Srinivas Reddy and V. Sundar were elected Fellows of the INAE
- Prof. K. Kamaraj was elected as Fellow of the Indian



Institute of Metals,

- Profs. Nitish R. Mahapatra, Suresh Kumar Rayala and G. Sekar were elected as Fellows of NASI

- Profs. Ramesh Gardas, Satyanarayana Gummadi and M. Jeganmohan were elected as Fellows of the RSC (Royal Society of Chemistry)

- Profs. Kamakoti and Sujatha Srinivasan were conferred the Abdul Kalam Technology Innovation National Fellowship by INAE and

- Prof. Gandham Phanikumar was conferred the Metallurgist of the Year award by the Ministry of Steel, GoI.

Six of our young faculty, Drs. Anubhab Roy, Athi Narayanan N., Subhadeep Banerjee, Gitakrishnan Ramadurai, Joe Thomas Karackattu and V. Vijayalakshmi, have won the Young Faculty Recognition Award of the Institute for the year 2020, while Profs. Ramesh Gardas and Manu Santhanam have been awarded the Mid-Career R&D Award, and Dr. Tiju Thomas has been awarded the Early Career R&D Award.

Based on the recommendations of the Peer Review Committee, nine more senior professors have been recognised as Institute Chair Professors this year for their outstanding achievements.

The Institute continues to attract substantial funding for its research and consultancy activities from both Ministries of the Government of India and industry. During the past five years, the former grew at a CAGR of 17%, while the latter grew at a very healthy 26%. In 2019-20, the Institute received sanction for 294 Ministry-sponsored projects for a total value of Rs.333.1 crores, and 649 consultancy and industry-sponsored research projects amounting to Rs.249.3 crores. We filed for 191 patents during the year of which 62 are international filings, and were granted 58.

3. Research park and our deep-tech startup incubation system

IITM Incubation Cell and its sector-specific incubators for Biosciences, Medical Technology, and Rural Technologies continue to incubate companies at the rate of nearly one per week, with a total portfolio of 207 startups. Founded by IITM faculty, staff, students and alumni and not a few external entrepreneurs, the companies span the breadth of deep tech areas in globally critical domains, including manufacturing, robotics, data sciences, IoT, clean-tech, energy, water, healthcare, and agri-tech. Several companies started a few years ago have received Series A and B funding and are now attracting Series B/C funding at significant valuations. Notable among these are Ather Energy with their smart scooters seen on the roads of Chennai and Bangalore, Uniphore Systems in the conversational AI space, now headquartered in California with offices in India and Singapore, Stellapps, which excels in dairy IoT with a subsidiary in France, Planys with their unique underwater smart inspection robots with operations in India, Netherlands, UAE and Singapore, Detect Technologies, which provides IoT driven industrial asset monitoring and

inspection, with operations in India and US, among others. The total valuation of IITM incubated startups is now in excess of Rs.7000 crores, with 88 startups in the market generating revenue of Rs.366 crore in FY19-20 and creating more than 4,000 jobs. It is pertinent to note that all these are deep-technology startups that incorporate sophisticated engineering and high-end manufacturing in their products. IITM startups have received wide recognition through prestigious forums, including the Economic Times Startup Awards which were won in 2020 by Agnikul and Sammunati, as Top Innovator & Social Enterprise, respectively, and the National Startup Awards 2020 conferred by DIPP, GoI won by Planys for Robotics and Fabheads for 3D Printing.

4. International collaborations

IITM continues to partner with several international universities and signed 21 MOUs and renewed 15 to enable student exchanges and faculty collaborations, taking the total number of active MOUs to around 256. Flowing from its exchange programmes, IIT Madras received 181 international students during the academic year and sent 141 of our own students to various universities abroad, before the pandemic brought a temporary lull to the exchange programmes. A total of 51 scholars are enrolled in joint PhD programmes with our partner universities.

5. Human resources

IITM has, since 2014, been honouring staff who have excelled in their performance with the Non-Academic Staff Recognition Awards. The winners of the Awards in 2019-20 are Dr. Mahendra Jadhav for Meritorious Leadership, Messrs. N. Mohan and C. R. Elangovan under the Administrative category, and Messrs. V. Janardhanam and B. Manikandan under the Technical category, for Outstanding Service.

6. Infrastructure development

Infrastructure development has continued apace despite some delays due to the stoppage of a few months during the lockdown. New hostels, academic buildings and married student housing are coming up, most of which will be ready in 2021. The National Technology Centre for Ports, Waterways and Coasts is the first Research Centre, which is nearing completion on the second campus at Thaiyur. Old academic buildings and hostels are undergoing renovation to raise the standard of fitment, and the old utility infrastructure on campus is being renewed.

The campus maintenance and engineering staff, as well as the security staff have worked heroically right through the lockdown and thereafter to keep the campus humming without incident. We are indebted to them for their Herculean efforts.

7. Student co-curricular and extra-curricular activities

The annual cultural festival Saarang and technical festival Shaastra were both conducted with aplomb by our students in January 2020, and had very good participation and

footfall from students all over the country. Shaastra 2020 saw the first-ever Assistive Technology makeathon hosted with the help of the R2D2 lab of our Institute. Both festivals are ruled out in January 2021 with in-person participation, though I am sure our students will come up with interesting online alternatives to keep the flag flying.

Our sports activities were spread over the whole year. In September 2019, the inter-collegiate invitation tournament Agrata 2019 was conducted for city colleges. IITM clinched second position in the athletics and basketball tournaments. In the 35th Inter IIT Aquatics Meet, the IIT Madras' aquatics contingent - The Madras Sharks - clinched the overall swimming championship in both the men's category for the fourth time, and women's category for the fifth time in a row! The contingent received 16 golds, 4 silvers and 2 bronzes, and a bronze in water polo and broke two records. In the 54th Inter IIT Sports Meet, The IITM Women's contingent was adjudged the first, and the overall IITM contingent was adjudged the third in the General championship. Ramesh Naidu, a student of Electrical Engineering was part of the Indian team that clinched the trophy at the Physical Disability World Series organised by ICC in August 2019, in London, UK.

8. Student welfare

Our Office of Hostel Management along with a large number of volunteer faculty members serving in various capacities takes care of our students in the hostels. Even in normal times, this is an onerous task, but the pandemic brought with it hitherto unseen challenges. Almost all students left for home in a hurry leaving their belongings behind. When some hostels had to be cleared and handed over to civic authorities for use as quarantine centres, and later the belongings of the graduating students had to be packed and shipped, the onus fell on the management and faculty volunteers to ensure their secure and safe handling. Later when research scholars started returning, the SOPs for quarantine and safe living in the hostels were also implemented by them. Today, if the rooms of more than 1,900 graduands have been cleared, and several hundreds have returned to the campus to continue their research safely, it is entirely due to the selfless efforts of the hostel staff and volunteer faculty.

9. Placement

A total of 924 students, including 126 with pre-placement offers (PPOs), got placed, of which nearly 36% were in core engineering and R&D companies, 24% in analytics, consulting and finance, and 24% in Information Technology. The placement season also saw a 25% increase in PPOs. I am happy to report that most of the companies have continued to honour the offers made to the students, even if some have deferred the joining date.

Before the lockdown began, 99 companies visited the campus for internships, resulting in 504 students getting internship offers through the Internship Cell.

10. Alumni matters

We honoured Mr. Chandran Ratnaswami, Mr. Paresh Chari, Dr. Mridula Nair, Mr. Mahesh Wagle, Mr. Rajkumar Duraiswamy, Prof. Sivaramakrishnan Balachandar, Prof. Kumaran Viswanathan, Dr. Ramakrishnan Srikant, Prof. Vijay B Shenoy, Mr. Arvind Nithrakashyap and Dr. Girija Vaidyanathan with the Institute's Distinguished Alumnus Awards for their outstanding achievements in the areas of entrepreneurship, leadership and management, academia and research and social and technological innovation. We were unable to bestow the awards on them at our Institute Day function due to its cancellation, but we hope to make amends next year along with the awardees for 2021.

The Board of Governors has constituted the Institute Advisory Board with eminent alumni, academicians and industry leaders as members to advise the Institute on best practices gleaned from academic institutions worldwide, and help the Institute grow and manage its endowment better. We look forward to their wise counsel to take our Institute forward.

In 2019-20, our Development Office and the IITM Foundation raised a record Rs.113.72 crores, exceeding our previous highest tally by nearly Rs.40 crore. The number of donors during the year also crossed 1,000 for the first time. Our alumni and other well-wishers support many important projects on campus - from research labs to re-fitment of the hostels every one of them cherishes, to scholarships for students in need. We are very grateful for their support, and even more importantly, for their mind-share.

11. Acknowledgements

An endeavour on the scale of this Institute and its entire gamut of activities takes place with the whole-hearted participation and support of all stakeholders - our faculty, students and staff; agencies and industries sponsoring R&D and consultancy projects; professionals from other organisations who assist us in various capacities; and our alumni with their generous support to our various activities. In particular, I would like to thank office-bearers such as Heads of Departments, Deans, Chairpersons, Wardens, Advisors, and Professors-in-charge of various Cells and Centres for the selfless work they put in to keep the Institute ticking. The Institute is grateful to the Ministry of Human Resources Development, Government of India, for its continued and sustained encouragement and support. I also wish to thank the Government of Tamil Nadu for all the support it continues to extend in multiple ways.

I wish to thank Dr. Pawan Goenka, our Chairman, Board of Governors, and all Board members for their wise counsel, support and guidance, enabling us to scale new heights. I would like to express my heartfelt gratitude to our Chief Guest, Nobel Laureate Prof. David Gross for gracing this Convocation.

Before I end, I would like to congratulate the prize-winners and wish all our graduands happiness, professional success and fulfilment from a life of service to their profession, family and country. God bless you all.

Jai Hind!



Administration

2.1. General

The Indian Institute of Technology Madras (IIT Madras) is an autonomous statutory organisation functioning within the Institutes of Technologies Act 1961, as amended by the Institute of Technology Amendment Act, 1963. The IITs (at Mumbai, Kanpur, Kharagpur, Delhi, Guwahati, Roorkee, Rupnagar, Bhubaneswar, Gandhinagar, Hyderabad, Patna, Jodhpur, Mandi, Indore, Varanasi (BHU) and Chennai) are administrated centrally by the Councils of IITs, an apex body established by the Government of India (GoI) to coordinate the activities of these institutes. The Minister for Human Resource Development, GoI is the Chairperson of the Council. Each IIT has a Board of Governors responsible for overall administration and control.

The Senate decides the academic policies of IIT Madras. It approves and controls the curricula, courses, examinations and declaration of results. It appoints various committees to look into specific academic matters arising from time to time. The teaching, training and research activities of various departments at the institute are constantly under review to improve facilities and standards. The Director of the institute is the Chairman of the Senate. The members of the Senate are listed in the Appendix. The Finance Committee provides financial advice. The Buildings and Works Committee advises the institute on matters relating to buildings and works activities. The compositions of these committees and boards, together with a list of other officers, are also provided in the Appendix.

2.2. Staff Position

As on 31 March 2020, 598 faculty members and 80 Group A officers were in position.

2.2.1 Number of faculty/employees in position

Faculty Members	Visiting Faculty	Group A Staff	Scientific Officer	Technical Staff	Administrative Staff
598	61	80	-	251	297

Number of faculty and employees appointed during 2019-2020

Professors	Associate Professors	Assistant Professors	Visiting Faculty and others	Administrative and Technical Staff (including Group A)
21	27	11	18	11

2.2.2 Faculty/Employees appointed between 1 April 2019 and 31 March 2020

Employees

S. No.	ID No.	Name	Designation	Department/Section	Date of Joining
1	8948	Srivathsan R.	Junior Engineer (Civil)	Engineering Unit	1 April 2019
2	8950	Ranganayakulu Kurakula	Junior Engineer (Electrical)	Engineering Unit	3 April 2019
3	8951	M. Murugan	Junior Engineer (Civil)	Engineering Unit	4 April 2019

2.2.3. Visiting Faculty and others

Sl. No.	Faculty Name	Designation	Department	Date of Joining
1	Dr. Fabrice Mouhartem	Visiting Faculty	Computer Science and Engineering	1 July 2019
2	Dr. Yuan Hsiac Hui	Visiting Faculty	Humanities and Social Sciences	29 July 2019
3	Dr. Madhav Ranganathan	Visiting Faculty	Chemistry	6 August 2019
4	Dr. Anil Kumar Bajaj	Visiting Faculty	Applied Mechanics	4 September 2019
5	Dr. Carlos Ernesto Hernandez Tamargo	Visiting Faculty (YIF)	Chemistry	17 December 2019
6	Dr. Christoph Woiwode	Visiting Faculty	Humanities and Social Sciences	1 December 2019
7	Daniel Jesus Rosado Alcarria	Visiting Faculty	Civil Engineering	12 February 2020
8	Dr. Chellapandi	INAE Visiting Fellow	Applied Mechanics	6 May 2019
9	Dr. K. S. Kannan	Sant Rajinder Singh Ji Maharaj Chair Professor	Humanities and Social Sciences	15 May 2019
10	Dr. Shayam Mookherjea	VAJRA Visiting Faculty	Electrical Engineering	6 December 2019
11	Dr. Praveen Linga	SPARC Visiting Faculty	Chemical Engineering	14 June 2019
12	Dr. Michael John Tsatsomeros	SPARC Visiting Faculty	Mathematics	16 December 2019
13	Dr. Iftekhar Abubakar	SPARC Visiting Faculty	Chemical Engineering	9 December 2019
14	Dr. Govind P. Agrawal	SPARC Visiting Faculty	Electrical Engineering	14 December 2019
15	Dr. -Ing. Marian Walter	SPARC Visiting Faculty	Electrical Engineering	3 December 2019
16	Dr. Elsa A. Olivetti	SPARC Visiting Faculty	Civil Engineering	7 January 2020
17	Dr. Marcel Mudrich	SPARC Visiting Faculty	Physics	13 January 2020
18	Dr. David Trejo	SPARC Visiting Faculty	Civil Engineering	14 January 2020

2.2.4 Internal faculty/employees appointed in higher grades during 2019-20

Sl. No.	ID. No.	Name	Designation	Department/ Section	Date of Joining
Assistant Professor					
1	8952	Dr. Surender Singh	Assistant Professor Gr.II	Civil Engineering	15 April 2019
2	8953	Dr. K. Ramesh Kannan	Assistant Professor Gr.II	Civil Engineering	15 May 2019
3	8954	Dr. Himanshu Goyal	Assistant Professor Gr.II	Chemical Engineering	16 September 2019
4	8955	Dr. Shantanu Pradhan	Assistant Professor Gr.II	Biotechnology	1 October 2019
5	8956	Dr. Nargis Pervin	Assistant Professor Gr.I	Management Studies	1 October 2019
6	8957	Dr. Chandrasekhar Annavaarapu Srinivas	Assistant Professor Gr.I	Civil Engineering	18 October 2019
7	8958	Tarak Kumar Patra	Assistant Professor Gr.I	Chemical Engineering	25 November 2019
8	8959	Kartik Nagar	Assistant Professor Gr.I	Computer Science and Engineering	1 January 2020
9	8960	Srikanthan Sridharan	Assistant Professor Gr.I	Engineering Design	20 January 2020
10	8961	Chandan Sarangi	Assistant Professor Gr.II	Civil Engineering	11 February 2020
11	8962	Aditya Sriram Kolachana	Assistant Professor Gr.II	Humanities and Social Sciences	28 February 2020

Associate Professor

Sl. No.	ID. No.	Name	Designation	Department/ Section	Date of Joining
1	8656	Dr. Shantanu Shashikant Mulay	Associate Professor	Aerospace Engineering	30 September 2019
2	8585	Dr. Shyam Mohan Keralavarma	Associate Professor	Aerospace Engineering	30 September 2019
3	8522	Dr. Santanu Ghosh	Associate Professor	Aerospace Engineering	30 September 2019
4	8306	Dr. Rinku Mukherjee	Associate Professor	Applied Mechanics	30 September 2019
5	8518	Dr. Athi Narayanan Naganathan	Associate Professor	Biotechnology	30 September 2019
6	8554	Dr. Venu Chandra	Associate Professor	Civil Engineering	30 September 2019
7	8448	Dr. Sivakumar Palaniappan	Associate Professor	Civil Engineering	30 September 2019
8	8801	Dr. Shweta Agrawal	Associate Professor	Computer Science and Engineering	30 September 2019

9	8606	Dr. Rupesh Nasre	Associate Professor	Computer Science and Engineering	30 September 2019
10	8599	Dr. Venkatakrisnan P.	Associate Professor	Chemistry	30 September 2019
11	8329	Dr. S. Krishna	Associate Professor	Electrical Engineering	30 September 2019
12	8430	Dr. Venkatesh Ramaiyan	Associate Professor	Electrical Engineering	30 September 2019
13	8510	Dr. Soumya Dutta	Associate Professor	Electrical Engineering	30 September 2019
14	8561	Dr. Pradeep Kiran Sarvepalli	Associate Professor	Electrical Engineering	30 September 2019
15	8441	Dr. K. Kalpana	Associate Professor	Humanities and Social Sciences	30 September 2019
16	8243	Dr. V. Uma	Associate Professor	Mathematics	30 September 2019
17	8667	Dr. Mayank Mittal	Associate Professor	Mechanical Engineering	30 September 2019
18	8598	Dr. K. Anand	Associate Professor	Mechanical Engineering	30 September 2019
19	8604	Dr. N. Arunachalam	Associate Professor	Mechanical Engineering	30 September 2019
20	8569	Dr. P. Ramkumar	Associate Professor	Mechanical Engineering	30 September 2019
21	8555	Dr. Ajay Kumar Shukla	Associate Professor	Metallurgical and Materials Engineering	30 September 2019
22	8358	Dr. Sabita Sarkar	Associate Professor	Metallurgical and Materials Engineering	30 September 2019
23	8673	Dr. Tiju Thomas	Associate Professor	Metallurgical and Materials Engineering	30 September 2019
24	8658	Dr. Nandan Sudarsanam	Associate Professor	Management Studies	30 September 2019
25	8731	Dr. Vijaya Kumar R.	Associate Professor	Ocean Engineering	30 September 2019
26	8559	Dr. Dawood Kothawala	Associate Professor	Physics	30 September 2019
27	8659	Dr. Sivarama Krishnan	Associate Professor	Physics	30 September 2019

Professor

Sl. No.	ID. No.	Name	Designation	Department/Section	Date of Joining
1	8609	Sarith P. Sathian	Professor	Applied Mechanics	20 March 2020
2	8653	Arun Kumar Thittai	Professor	Applied Mechanics	20 March 2020
3	8276	Ashwin Mahalingam	Professor	Civil Engineering	20 March 2020
4	8335	Thyagaraj T.	Professor	Civil Engineering	20 March 2020
5	8501	Nandivada Venkata Krishna	Professor	Computer Science and Engineering	20 March 2020

6	8271	Arti Dua	Professor	Chemistry	20 March 2020
7	8256	Amrendra Vijay	Professor	Chemistry	20 March 2020
8	8452	Ramesh L. Gardas	Professor	Chemistry	20 March 2020
9	8245	Arun Kumar D. Mahindrakar	Professor	Electrical Engineering	20 March 2020
10	8284	Kalyan Kumar B.	Professor	Electrical Engineering	20 March 2020
11	8428	Deepa Venkitesh	Professor	Electrical Engineering	20 March 2020
12	8217	Jayanthan A. V.	Professor	Mathematics	20 March 2020
13	8354	Shaiju A. J.	Professor	Mathematics	20 March 2020
14	8682	Somnath Bhattacharyya	Professor	Metallurgical and Materials Engineering	20 March 2020
15	8455	Abdus Samad	Professor	Ocean Engineering	20 March 2020
16	8460	Nilanjan Saha	Professor	Ocean Engineering	20 March 2020
17	8270	Rajesh Narayanan	Professor	Physics	20 March 2020
18	8221	Prasanta Kumar Tripathy	Professor	Physics	20 March 2020
19	8308	Nirmala R.	Professor	Physics	20 March 2020
20	8549	Prafulla Kumar Behera	Professor	Physics	20 March 2020
21	8345	Manoj Gopalakrishnan	Professor	Physics	20 March 2020

Group A Officer

Sl. No.	ID No.	Name	Designation	Department/Section	Date of Joining
1	1147	Jayasri Sridhar	Assistant Registrar	Academic	1 May 2019
2	929	T. Raghavaiah	Technical Officer	Metallurgical and Materials Engineering	1 May 2019
3	1240	Booma Sowrirajan	Assistant Registrar	Academic	27 November 2019
4	8047	Dr. P. Arul	Assistant Registrar	Admin. III	27 November 2019
5	1250	Sarvaharna P.	Deputy Registrar	Academic	1 April 2019
6	8949	Raman Kumar	Assistant Registrar	Finance & Accounts	1 April 2019
7	8283	Vineetha N. R.	Executive Engineer (Civil Engineering)	Engineering Unit	16 January 2020
8	58	Rizwan Ali K.	Executive Engineer (Civil Engineering)	Engineering Unit	16 January 2020
9	1	Anand Kumar S.	Technical Officer (SS) Systems	Computer Centre	16 January 2020
10	772	Selvaraju V.	Technical Officer (SS) Systems	Computer Centre	20 January 2020
11	46	Dharmaraj K.	Superintending Engineer	Engineering Unit	21 March 2020

2.2.5. Employees promoted during April 2019 to March 2020

S. No.	ID No	Name	Designation	Department/Section	Date of Joining
1	659	Suresh Babu V.	Senior Security Inspector	Security Section	15 March 2019

2	1047	Swamy Subramaniam	Senior Security Inspector	Security Section	15 March 2019
3	1048	Baskaran R.	Senior Security Inspector	Security Section	15 March 2019
4	1059	Kumaresan T.	Senior Security Inspector	Security Section	15 March 2019
5	1072	Sivasankaran D.	Senior Security Inspector	Security Section	15 March 2019
6	1078	Johnson J.	Senior Security Inspector	Security Section	15 March 2019
7	1079	Karthikeyan N.	Senior Security Inspector	Security Section	15 March 2019
8	1082	Jayachandran P.	Senior Security Inspector	Security Section	15 March 2019
9	1122	Antony R.	Senior Security Inspector	Security Section	15 March 2019
10	1123	Manoharan P.	Senior Security Inspector	Security Section	15 March 2019
11	1184	Edward Chakkaravarthy C.	Senior Security Inspector	Security Section	15 March 2019
12	1185	Anbazhagan V.	Senior Security Inspector	Security Section	15 March 2019
13	1186	Ragavan R.	Senior Security Inspector	Security Section	15 March 2019
14	1187	Baskar K.	Senior Security Inspector	Security Section	15 March 2019
15	1676	Vasu M. A.	Senior Security Inspector	Security Section	15 March 2019
16	1680	John Bright T.	Senior Security Inspector	Security Section	15 March 2019
17	2283	Marimuthu S.	Senior Security Inspector	Security Section	15 March 2019
18	242	D. Manoharan	Chief Driver	Transport Cell	1 May 2019
19	8361	Dr. Muthu M.	Library Superintendent	Library	8 November 2019
20	8531	Thiagarajan K.	Senior Library Technician	Library	8 November 2019
21	607	Ravi K.	Chief Driver	Engineering Unit	9 November 2019
22	1144	Shanmugam M.	Senior Attendant	O/o of Dean (Students)	11 November 2019
23	1714	Palayam C.	Office Assistant	Gymkhana	11 November 2019
24	8017	Murugan D.	Senior Attendant	Administration	11 November 2019
25	8018	Shanthi S.	Attendant (SS)	Hospital	11 November 2019
26	53	Ramadevi N. S.	Superintendent	Finance & Accounts	13 November 2019
27	111	Vasanthi Subramanian	Superintendent	I&AR	13 November 2019
28	574	Vidya N.	Superintendent	Academic (Courses)	13 November 2019
29	644	Gopalan S.	Superintendent	Director Office	13 November 2019
30	661	Indira Raghavan	Superintendent	Finance & Accounts	13 November 2019
31	736	Swaminathan K. B.	Superintendent	O/o of Dean (Students)	13 November 2019

32	947	Lakshmi Narasimhalu P. S.	Senior Assistant	Ocean Engineering	13 November 2019
33	972	Hemalatha Hariharan	Superintendent	GATE	13 November 2019
34	975	Saraswathi M.	Superintendent	JEE Office	13 November 2019
35	1873	M Sathiyarayanan	Superintendent	Stores & Purchase	13 November 2019
36	1189	Malarvizhi Alice J. E.	Superintendent	Finance & Accounts	13 November 2019
37	1193	Hemalatha S.	Superintendent	Administration	13 November 2019
38	1213	Vathsala Devi A	Superintendent	Electrical Engineering	13 November 2019
39	1255	Latha B.	Superintendent	Physics	13 November 2019
40	1277	Ezhilarasi D.	Superintendent	Mechanical Engineering	13 November 2019
41	1278	Luxmy S.	Superintendent	Academic	13 November 2019
42	1310	Mathangi G.	Superintendent	Engineering Unit	13 November 2019
43	3092	Sarasavalli S. T.	Superintendent	Administration	13 November 2019
44	8044	Shashikala K.	Senior Assistant	Chemical Engineering	13 November 2019
45	8077	Manikandan R.	Senior Assistant	Administration	13 November 2019
46	8083	Yashodha B.	Senior Assistant	Communication Office	13 November 2019
47	8530	Kumaresan P.	Senior Assistant	Finance & Accounts	13 November 2019
48	8541	Surya R.	Senior Assistant	Mathematics	13 November 2019
49	8545	Ravi N.	Senior Assistant	Academic	13 November 2019
50	2860	Lilly Prasad M.	Assistant Matron	Hospital	14 November 2019
51	8045	Jaya N.	Assistant Matron	Hospital	14 November 2019
52	8048	Santhi B.	Assistant Matron	Hospital	14 November 2019
53	8387	Gracy M.	Senior Staff Nurse	Hospital	14 November 2019
54	8409	Saraswathi P.	Senior Staff Nurse	Hospital	14 November 2019
55	1160	Saramma Roy	Matron	Institute Hospital	14 November 2019

56	148	Sarala S.	Senior Assistant	Physics	18 November 2019
57	8041	Vivekanandan S.	Senior Assistant	Mathematics	18 November 2019
58	8529	Balakrishnan C.	Senior Assistant	Management Studies	18 November 2019
59	1984	Meenakshi K.	Superintendent	Finance & Accounts	4 December 2019
60	446	Ganesan A.	Superintendent	Engineering Unit	6 December 2019
61	8053	Asaithambi V.	Assistant Engineer	Engineering Unit	13 December 2019
62	246	Kamalrajan G.	Chief Driver	Transport Cell	3 February 2020
63	85	Jeevanantham M.	Senior Technician	Computer Centre	7 February 2020
64	1075	Jayaraman M.	Senior Technician	Biotechnology	7 February 2020
65	8371	Usha M.	Senior Technician	Hospital	7 February 2020
66	8373	Vimal Antony A.	Senior Technician	Mechanical Engineering	7 February 2020
67	8374	Manikandan B.	Senior Technician	Central Workshop	7 February 2020
68	8382	Suresh P.	Senior Technician	Civil Engineering	7 February 2020
69	8383	Prem Anand K.	Senior Technician	Mechanical Engineering	7 February 2020
70	8384	Kavitha P.	Senior Technician	Biotechnology	7 February 2020
71	8389	Biju Kumar B.	Senior Technician	Engineering Design	7 February 2020
72	8390	Venkatesan S.	Senior Technician	Mechanical Engineering	7 February 2020
73	8391	Kannan L.	Senior Technician	Applied Mechanics	7 February 2020
74	8394	Dhanasekaran R.	Senior Technician	Central Workshop	7 February 2020
75	8398	Baskar V.	Senior Technician	Applied Mechanics	7 February 2020
76	8399	Veeraraghavan M.	Senior Technician	Mechanical Engineering	7 February 2020
77	8400	Damodaran R.	Senior Technician	Central Workshop	7 February 2020
78	8401	Pawana Sudheer Kumar K.	Senior Technician	Central Workshop	7 February 2020

79	8402	Suresh T.	Senior Technician	Mechanical Engineering	7 February 2020
80	8403	Sagaya Rajesh A.	Senior Technician	Mechanical Engineering	7 February 2020
81	8404	Selvakumaran D.	Senior Technician	Mechanical Engineering	7 February 2020
82	8407	Kumaravel A.	Senior Technician	Hospital	7 February 2020
83	8411	Socratees S.	Senior Technician	Engineering Design	7 February 2020
84	8413	Govindaraj D.	Senior Technician	Mechanical Engineering	7 February 2020

2.2.6 Financial Upgrade under MACPS

- Number of Group A Officers granted financial upgrade under MACPS: NIL
- Number of employees granted financial upgrade under MACPS: 14

2.2.7 Faculty/Employees who resigned/relieved

Sl. No.	ID	Name	Designation	Department	DOR
1	8681	Aritra Hazra	Assistant Professor Gr. II	Computer Science and Engineering	31 July 2017
2	8709	B. Rajaganapathy	Junior Technician	Mechanical Engineering	22 April 2019
3	8890	K. Vriddhagiri	Staff Nurse	Institute Hospital	21 May 2019
4	8395	A. Satheesh Kumar	Junior Technician (X-Ray/ECG)	Institute Hospital	27 November 2019
5	8790	B. Marichamy	Junior Technician	Engineering Unit	10 December 2019
6	8784	M. Elamaran	Junior Technician	Physics	14 February 2020
7	8904	V. Gopi	Junior Technician	Biotechnology	28 February 2020
8	8838	K. C. Chandrajith	Junior Superintendent	IC&SR	20 March 2020

2.2.8 Faculty/Employees who opted voluntarily retirement

S. No.	ID No.	Name	Designation	Department/Section	Date of Relief
1	2226	S. K. Vahida	Senior Attendant	O/o Dean (Admn.)	2 July 2019
2	744	Kalpana B. V.	Senior Technical Superintendent	Mechanical Engineering	31 July 2019
3	69	Sivakumar W.	Attendant	Electrical Engineering	26 July 2019
4	1104	A. Simon	Senior Security Inspector	Stores & Purchase	31 October 2019
5	1868	A. P. Raghu Uttaman	Junior Superintendent	Chemical Engineering	1 January 2020
6	2085	T. S. Samraj	Junior Attendant	Engineering Unit	31 January 2020

2.2.9 Faculty/Employees who superannuated between 1 April 2019 and 31 March 2020

S.No.	ID No.	Name	Designation	Department/Section	Date of Retirement
1	602	V. Perumal	Assistant Registrar	Finance & Accounts	30 April 2019
2	856	C.N. Vijayaragavan	Deputy System Officer	P.G. Senapathy Center for Computing Resource	31 May 2019
3	939	K.K. Muthuswamy	Technical Officer	Central Electronic Centre	31 May 2019
4	3110	T.A. Gonsalves	Professor	Computer Science and Engineering	30 June 2019
5	2664	P. Sessa Talpa Sai	Professor	Chemical Engineering	30 June 2019
6	273	D. Kanchanamala	Technical Officer	Metallurgical and Materials Engineering	30 June 2019
7	2649	Tapobrata Panda	Professor	Chemical Engineering	31 August 2019
8	3057	U.V. Varadaraju	Professor	Chemistry	30 September 2019
9	2718	V. Sankaranarayanan	Professor	Physics	30 September 2019
10	929	T. Raghavaiah	Technical Officer	Metallurgical and Materials Engineering	30 September 2019
11	1601	A. Subrahmanyam	Professor	Physics	30 November 2019
12	2793	K. Ananthanarayanan	Professor	Civil Engineering	31 December 2019
13	1167	Parthiban G.	Senior Cook	Taramani Guest House	30 April 2019
14	1087	Antony Lawrance G.	Senior Security Inspector	Security Section	30 April 2019
15	1054	Manoharan R.	Driver Gr.I	Transport Cell	30 April 2019
16	174	Anthoni A.	Attendant	Computer Science & Engineering	31 May 2019
17	2852	Kusalakumari P.	Supervisor (Lab)	Biotechnology	31 May 2019
18	1085	Gunasekaran C.	Deputy Security Officer	Security Section	31 May 2019
19	939	Muthuswamy K. K.	Technical Superintendent	Central Electronic Centre	31 May 2019
20	673	Lenin Peusic M.	Senior Assistant	Mechanical Engineering	31 May 2019
21	1717	Thirupathy Reddy P.	Coach	Gymkhana	31 May 2019
22	1689	Vijayakumaran K.	Junior Technician	Mechanical Engineering	31 May 2019
23	619	Pushpavalli M.	Technical Superintendent	Computer Science & Engineering	31 May 2019
24	1518	Santhanakrishnan E.	Assistant Security Officer	Security Section	31 May 2019

25	1282	Madheswaran D.	Junior Superintendent	Central Library	30 June 2019
26	1688	Perumal V.	Senior Security Inspector	Security Section	31 July 2019
27	1523	Sivaji B.	Junior Assistant	Biotechnology	31 July 2019
28	569	Radhai Kumar	Superintendent	Metallurgical and Materials Engineering	31 July 2019
29	1099	Thirugnana Sambandam T. S.	Senior Security Inspector	Security Section	31 August 2019
30	216	Malarvizhi M.	Senior Technical Superintendent	Electrical Engineering	31 August 2019
31	929	Raghavaiah T.	Technical Superintendent	Metallurgical and Materials Engineering	30 September 2019
32	723	Deivasigamani K.	Senior Technician	Physics	31 October 2019
33	1180	Mani G.	Junior Superintendent	GATE Office	30 November 2019
34	1529	Ponnambalam A.	Senior Security Inspector	Security Section	30 November 2019
35	1265	Balakumar R.	Superintendent	O/o. Dean (Students)	30 November 2019
36	2157	Amirtharaj N.	Sanitary Inspector Gr.I	Engineering Unit	31 December 2019
37	242	Manoharan D.	Chief Driver	Engineering Unit	31 January 2020
38	1873	Sathiyarayanan M.	Senior Assistant	Stores & Purchase	31 January 2020
39	3072	Neelamani V.	Senior Technical Superintendent	Central Electronic Centre	31 January 2020
40	1527	Subramanian G.	Senior Technician	Civil Engineering	31 January 2020
41	1080	Thirupal K.	Senior Security Inspector	Security Section	29 February 2020
42	1123	Manoharan P.	Senior Security Inspector	Security Section	29 February 2020
43	1517	Arjunan N.	Senior Assistant	Sophisticated Analytical Instrument Facility	29 February 2020
44	8061	Michael John Bose M.	Senior Technician	Mechanical Engineering	29 February 2020

Faculty/Employees who were on extraordinary leave/deputation/lien

Sl. No.	ID	Name	Designation	Department	From	To	Visits (Name and Venue)
1	8163	Dr. B.S. Murty	Professor	Metallurgical and Materials Engineering	26 August 2019	24 August 2024	Director at IIT Hyderabad

2	8121	Dr. K.P. Sudheer	Professor	Civil Engineering	1 April 2019	31 March 2022	Executive Vice President, Kerala State Council for Science, Technology and Environment (KSCSTE)
3	8320	Prof. Gabbita Durga Janaki Ram	Professor	Metallurgical and Materials Engineering	30 January 2020	29 January 2021	Professor at IIT Hyderabad
4	8761	Revathi E.	Junior Assistant	Administration	6 March 2020	5 August 2020	EOL on personal reasons

Faculty/Employees who are on sabbatical

No.	Name	Designation	Department	Period	Name and Venue
1	Dr. R. Kothandaraman	Associate Professor	Chemistry	1 May-31 December 2019	Visiting Scientist at USA
2	Dr. Sujatha Chandramohan	Professor	Mechanical Engineering	18 July 2019-15 May 2020	Book Writing
3	Dr. Guhan Jayaraman	Professor	Biotechnology	29 July 2019-27 July 2020	BIRAC-funded project for Technology Development and Commercialization of Hyaluronic Acid
4	N. Narayanan	Assistant Professor	Mathematics	1 August 2019-15 April 2020	Visit to China and France
5	Dr. Ethayaraja Mani	Associate Professor	Chemical Engineering	1 September 2019-30 June 2020	Fellowship, University of Michigan, USA
6	Dr. Jyotirmaya Tripathy	Professor	Humanities and Social Sciences	3 September-31 December 2019	Book Writing
7	Dr. Radha R.	Professor	Mathematics	1 October 2019-30 September 2020	Visit to University of Munich, Germany
8	Dr. S. Ponnusamy	Professor	Mathematics	23 December 2019-18 March 2020	University of Turku, Finland and Visiting Professor at University of Huna First Normal University, China
9	Dr. K.C. Sivakumar	Professor	Mathematics	1 January-30 April 2020	To take up as Visiting Professor at the University of California, Santa Barbara, USA
10	Dr. Satya Sundar Sethy	Associate Professor	Humanities and Social Sciences	6 January-6 May 2020	Book Writing

11	Dr. Ranjith Mohan	Assistant Professor Gr. I	Aerospace Engineering	3 January-18 May 2020	Book Writing
12	Dr. Mitesh M. Khapra	Assistant Professor Gr. I	Computer Science and Engineering	3 January-30 June 2020	Book Writing
13	Dr. Uday Kiran Khankhoje	Assistant Professor Gr. I	Electrical Engineering	4 January-23 March 2020	Book Writing
14	Dr. Shweta Agrawal	Associate Professor	Computer Science and Engineering	4 January-23 March 2020	To take up Visiting Position at Simons Institute for the Theory of Computing at the University of California, Berkeley
15	Prof. Nandan Kumar Sinha	Professor	Aerospace Engineering	15 January-30 June 2020	Book Writing
16	Prof. A. Thillai Rajan	Professor	Management Studies	3 January-31 December 2020	To visit YNOS Venture Engine CC Private Limited, IITM Research Park
17	Prof. L. S. Ganesh	Professor	Management Studies	1 February-15 July 2020	Visiting Professor and Mentor-in-Residence at IIM Bangalore
18	Dr. Santanu Sarkar	Associate Professor	Mathematics	15 March 2020-15 January 2021	To visit Ruhr University, Bochum, Germany for research collaboration
19	Lakshman Neelakantan	Associate Professor	Metallurgical and Materials Engineering	25 June 2020-30 June 2021	Research Guest Scientist at Ruhr University, Bochum, Germany

Staff Welfare

2.3.1 Human Resource Development

As part of human resource development (HRD) activities, the institute plans and implements programmes for providing opportunities to technical and administrative employees to update and upgrade their knowledge and skills so that they may perform their duties effectively. The programmes are also aimed at enhancing the pride and satisfaction they feel in their work. The overall feeling of happiness engendered by these programmes overflows to their home lives and contributes to a sense of well-being to the entire family. These activities also form a part of the training requirements under the ISO dispensation.

HRD programmes conducted

HRD activities were initiated at the institute in 1997 under the charge of a professor. In the period of reporting, three internal training programmes and one external training programmes organised by other institutions/organisations were attended by our employees. The impact of the various programmes, as seen from the feedback at the end of each programme, appears to be advantageous to the institute. The employees were able to upgrade their knowledge through these programmes, as these were designed based on needs.

Training calendar for 2019

S.No.	Training Programme	Number of Employees Benefited
In-house Training		
1	Pay fixation under 7th CPC on appointment/promotion/financial upgrade and penalty cases	50

2	Refreshing Training Programme	58
Outstation Training		
3	Calibration of Dimensional Measuring Equipment	1
4	Refresher Training Programme	22
5	PFMS Expenditure, Advance and Transfer (EAT) Module	2
6	National Seminar Cum Workshop on LED Lighting Systems & Intelligent Lighting	1
7	Refresher Training Programme	27
8	Calibration and Uncertainty Measurement as per NABL requirement and ISO/IEC 17025:2017	1
9	Maxim Integrated Industrial Power seminar	1
10	Quality Control and Quality Assurance in Concrete Construction	2
11	Demystifying EMC India	2
12	Gear Manufacturing Processes	4
13	Grid Connected Inverters	1
14	Non-destructive Testing and Evaluation of Concrete Structures	2

2.3.2 Ongoing Activities of Official Language, Hindi

The Hindi Cell at IIT Madras is functioning under the overall administrative control of the Registrar.

a) Hindi Training

In accordance with the directives of the Department of Official Language of the Home Ministry, GoI, Hindi Language Training classes were conducted regularly for both technical and administrative employees by Hindi Teaching Scheme. In 2019-20, 12, 11 and two employees successfully completed the Prabodh, Praveen and Pragya courses, respectively, online. Cash awards were given to 23 employees on passing the Hindi exams with creditable marks, and a one-time increment was given to six employees for having passed exams prescribed for their posts.

b) Hindi Workshops and Seminars

In 2019-20, four Hindi workshops were conducted in which 168 employees were given practical knowledge of day-to-day work in Hindi. They were also apprised of the Official Language Policy and Rules by the Hindi Officers of various Central Government offices and PSU organisations. Many activity tests were also conducted.

c) OLIC Meeting

The Official Language Implementation Committee (OLIC) meetings of IITM were convened regularly during the year under review in which achieving the targets prescribed for various items in the annual

programme of MHA were discussed in detail. Follow-up actions were taken on the decisions made.

d) Translation

In addition to routine translation, translation of advertisements for teaching positions, M.Tech. and Ph.D. admission, institute main website, administrative website, Annual Report and Accounts Report, and Institute Day Invitation were carried out during the year under review.

e) Preparation of Help Literatures

Help Literatures are being prepared on routine and essential basis for the effective and progressive use of Hindi. During the year, Help Literature-3 consisting of technical and administrative terms used in sections, centres and departments was prepared and distributed keeping in view the Hindi competitions conducted during the Hindi fortnight celebrations. To create interest among the employees in conversational Hindi, Help Literature-4 was also prepared.

f) Celebration of Hindi Day

The Hindi Day was celebrated on 25 October 2019 and was presided over by the Registrar and Chairman, OLIC. The Registrar distributed certificates and cash awards to the employees, who successfully passed the Hindi examinations. Prizes were given to the winners of competitions such as Hindi Essay Writing, elocution, noting and drafting, story-based competition, word power, Hindi Music (solo and group), Hindi keyboard and conversation in Hindi

conducted during the Hindi Fortnight. Annual cash incentive awards were given to 22 employees. As part of cultural programme, Hindi songs and dance were rendered by the students.

g) Other Activities for Effective Use of Official Language

Following activities were conducted to maintain congenial atmosphere for Hindi and to create interest in Hindi among the staff:

- "Learn a word in Hindi" is sent through e-mail in three languages (Tamil, Hindi and English)
- World Hindi Day was celebrated on 28 January 2020. A quiz programme about Swami Vivekananda and Saint Thiruvalluvar was conducted for the staff.
- Mother Tongue Day was celebrated on 21 February 2020 wherein various linguistic associations presented cultural programmes.
- A coordination meeting with the officers and staff of the Stores & Purchase Section and Engineering Unit was conducted on 17 March 2020 to increase the use of Hindi in official work.

h) TOLIC Activities

IIT Madras has an active participation in Town

Official Language Implementation Committee (TOLIC) activities. The institute staff won prizes for presenting a poem in the Poets' meet, Debate and Word Power Competitions. They also participated in the book review and Antakshari competitions. The Best Supporting Actress award was won by our staff in the two-day drama competition organised by the TOLIC. IITM has been honoured with a special shield for Best Contribution in TOLIC Activities.

2.3.3 Children Education Assistance

In the financial year 2019-2020, the institute reimbursed a sum of Rs.1,56,93,750 to 423 faculty and staff members towards Children Education Assistance as per Gol norms.

2.3.4 Transport Facilities

Free transport facilities have been provided from 10 February 2008 to all users within the campus.

2.3.5 Advances

During the year under report, no advances were sanctioned.

2.3.6 Insurance

Insurance schemes from 1 February 2019 to 31 January 2020

Group Mediclaim Insurance Scheme

Category/Numbers of Persons Covered	Employee and Dependents	Pensioner and Spouse	Family Pensioner
Basic Coverage only opted	910	635	450
Basic + Additional coverage opted	338	439	83
Total dependents covered	3204	920	0
Total number of persons under coverage	4452	1994	533
<hr/>			
Total premium paid	Rs.5,99,58,583		
Total number of claims made	896		
Total claimed amount	Rs.7,71,79,677		

Group Term Insurance Scheme

Category	Life Insurance - Number of Persons Covered
Basic Coverage opted	1243
Basic + Additional coverage opted	92
Total Premium paid	Rs.1,29,34,275
Total number of claims made	Three
Total claimed amount	Rs.1,20,00,000

Group Fire and Burglary Insurance Scheme

Category	Life Insurance - Number of persons covered
Total Premium paid	Rs. 21,87,875
Total number of claims made	Nil
Total claimed amount	Nil

2.3.7 List of faculty members and officers in the academic and general administration

I. Academic Admin

Academic Admin	
Director	Prof. Bhaskar Ramamurthi
Deans	
Academic Courses	Dr. V. Jagadeesh Kumar
Academic Research	Dr. A. K. Mishra
Administration	Dr. Koshy Varghese
Industrial Consultancy and Sponsored Research	Dr. Ravindra Gettu
Industrial Consultancy and Sponsored Research (Associate Dean)	Dr. V. Kamakoti
Students	Dr. M. S. Sivakumar
Planning	Dr. Ligy Philip
International and Alumni Relation	Dr. Mahesh Panchagnula

II. Head of Department

Aerospace Engineering	Prof. H. S. N. Murthy
Applied Mechanics	Prof. S. Ramakrishnan
Biotechnology	Prof. D. Karunakaran
Chemical Engineering	Prof. R. Nagarajan
Chemistry	Prof. K. Mangala Sunder
Civil Engineering	Prof. Manu Santhanam
Computer Science and Engineering	Prof. C. Chandra Sekhar
Electrical Engineering	Prof. David R. Koilpillai
Engineering Design	Prof. T. Asokan
Humanities and Social Sciences	Prof. Umakant Dash
Management Studies	Prof. G. Arun Kumar
Mathematics	Prof. S. Sundar
Mechanical Engineering	Prof. N. Ramesh Babu
Metallurgical and Materials Engineering	Prof. Udayachandran Chakkingal
Ocean Engineering	Prof. K. Murali
Physics	Prof. K. Sethupathi

III. Head of Research Centre

Sophisticated Analytical and Instrumentation Facility	Dr S. S. Bhattacharyya
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IV. Head of Special Facilities for interaction other Institution

Centre for Industrial Consultancy and Sponsored Research	Dr. Ravindra Gettu
Chairman, Centre for Continuing Education	Dr. Devendra Jalihal
Central Electronics Centre	Dr. V. Jagadeesh Kumar
Chairman, CC	Dr. Harishankar Ramachandran
Chairman	
GATE	Dr. Shaligram Tiwari, Dr. Nilesh J. Vasa
JEE	Dr. Madhu Mutyam, Dr. Jyotirmaya Tripathy

V. Central Admin

Registrar	
	Dr. Jane Prasad
Joint Registrar (Academic)	Shri D. Ravee
Joint Registrar (Internal Audit)	Shri A. V. Sudarsanam
Joint Registrar (Engineering Unit)	Shri A. V. Sudarsanam
Deputy Registrars	
Academic Section	Shri. Sarvaharna P
Administration	Shri P.V. Karunakaran Smt. G. Chitrapavai
Finance and Accounts	Shri P. V. Karunakaran
Stores and Purchase	Smt. G. Chitrapavai
Office of Dean (Students)/T&P	Shri Y.E.L. Sudhakar Rao Pujari
Assistant Registrars	
Academic Section	Smt. Booma Sowrirajan, Smt. D. Jayashree
Administration	Shri Ravi D, Shri P. Arul Smt. Rashmi Uday Kumar
Communications and PR	Smt. Rashmi Uday Kumar
Finance and Accounts	Shri B. Vijay Shankar, Shri Raman Kumar
Recruitment	Shri R. Muralidharan
IC&SR	Smt. K. Vijayalakshmi
Engineering Unit	Smt. Mary Sabitha Rani
Chief Security Officer	Shri N. Elumalai
Central Library	
Librarian	Dr. Mahendra N. Jadhav
Deputy Librarian	Dr. M. Anandamurugan
Assistant Librarian	Dr. K. Saravanan

VI. Head of Central Services, Facilities and Section

Chief Medical Officer	Dr. Rebecca Punithavalli
Chairman Council of Wardens	Dr. Shaligram Tiwari
Central Glass Blowing Section	Dr. Varadarajan U.V.
Professor in-charge CWS	Dr. Seshadi Sekhar A.

Chairman Library Advisory Committee	Dr. K. Ramamurthy
Coordinator, NSS	Dr. K.C. Sivakumar
Advisor, Sports	Dr. P.N. Santhosh, Dr. Benny Raphael
Advisor, Cultural	Dr. Nandita Dasgupta
Advisor (Co-Curricular)	Dr. Shaikh Faruque Ali
Advisor, Foreign Students	Dr. Sudarshan Padmanabhan
Chief Vigilance Officer (Part-time)	Dr. S. Sankararaman
Advisor (Placement and Training)	Dr. Manu Santhanam, Dr. C.S. Shankar Ram (from 19 July 2019)
Advisor, Mentoring for Individual Transformation (MiTr)	Dr. G. Ranga Rao, Dr. Nilesh J. Vasa (from 27 January 2020)
Advisor (Weaker Section)	Dr. G. L. Samuel
Chairperson (Women's Forum)	Dr. Indumathi M. Nambi
Professor in-charge (Workflow)	Dr. Rahul Marathe
Professor in-charge (RuTAG)	Dr. Abhijit Deshpande

VII. Engineering Unit

Chairman, Engineering Unit	Dr. K. Murali, Dr. R. G. Robinson (from 1 November 2019)
Superintending Engineer	Shri K. Viswanath, Shri K. Dharmaraj
Executive Engineers	Shri K. Viswanath, Dr. M. Ramachandran, Ms. N. R. Vineetha, Shri Rizwan Ali
Senior Horticulture Officer	Shri V. Seenivasan
Assistant Executive Engineers	Shri K. Ravichandran, Shri Ajai Krishnan, Shri K. Narayana Perumal, Shri D. Rajavel, Shri V. Manickavasagam, Shri M. Murali Prakash

VIII. IC&SR

Senior Techno Economic Officer	Shri V. Suresh
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Academic Programmes and Award of Degrees

The institute offered Ph.D. programme in all the 16 departments, M.S. programme in 12 departments, M.Tech programme (regular and web based) in 37 streams/specialisations, M.Sc. programme in three branches, B.Tech programme in nine branches, Dual Degree (B.Tech and M.Tech) programme in 23 streams/specialisations, and Dual Degree (B.S. and M.S.) in Biological Sciences and Physics. During the year under report, other programmes introduced were Inter-Disciplinary Dual Degree programmes in seven specialisations, M.B.A., E.M.B.A., M.A, Joint M.B.A. Integrated programme in two streams, and a preparatory course for SC/ST/PwD students.

3.1 Admissions 2019-20

Candidates for admission to B.Tech. and Dual Degree, and M.Tech. programmes were selected through JEE(Advanced) and based on GATE score, respectively. Quite a few candidates were also selected for M.Tech. programme under Sponsored, Q.I.P. and User-Oriented Programmes through interview and/or written test. The selection for Ph.D. and M.S. programmes was done through test/interview. For

M.Sc. branches of Mathematics, Physics and Chemistry, selection was made through a common test JAM conducted jointly by IITs. For M.B.A. programme, selection was made through CAT and interview for M.A. Integrated programme was made through HSEE.

The number of students and scholars admitted to various programmes both in July 2019 and in January 2020 are given in the following table:

Table 1. Fresh Admission

Sl. No.	Department	B.Tech	Dual Degree	M.Tech	PG Diploma - MEM	PG Diploma - Metro Rail	M.Sc	M.B.A	Joint M.B.A.	E.M.B.A.	M.A	M.S	Ph.D.	Total
1	Aerospace Engineering	49	9	14								19	19	110
2	Applied Mechanics			18								30	32	80
3	Biotechnology		61	25								7	28	121
4	Chemical Engineering	95	1	26								10	23	155
5	Chemistry						59						38	97
6	Civil Engineering	111		78		18						19	53	279

7	Computer Science and Engineering	81		93							20	7	201	
8	Electrical Engineering	142		124							64	37	367	
9	Engineering Design		62								9	15	86	
10	Humanities and Social Sciences									43		29	72	
11	Management Studies				39		60	2	44		16	29	190	
12	Mathematics			19			43					14	76	
13	Mechanical Engineering	189	2	81							49	58	379	
14	Metallurgical and Materials Engineering	51		19							11	16	97	
15	Ocean Engineering	57	3	30							20	16	126	
16	Physics	31	12	12			43					44	142	
17	ID												0	
	Total	806	150	539	39	18	145	60	2	44	43	274	458	2578

In addition to the above, students (GE PD: 5, OBC PD: 6, SC PD: 1, ST PD: 10) joined the preparatory course.

Details of OBC/SC/ST and women students under fresh admission (programme-wise and category-wise)

Sl.No	Programme	EWS	OBC	SC	ST	PD	Female
1	B.Tech	42	221	120	65	6	147
2	Dual Degree	7	42	23	11	-	30
3	M.Tech.	7	157	59	30	11	87
4	M.B.A.	-	16	10	2	-	42
5	E.M.B.A.	-	9	8	1	-	11
6	M.Sc.	-	45	21	10	2	28
7	M.A.	-	13	8	2	-	27
8	PG Diploma in MEM	-	2	-	-	-	1
9	PG Diploma in Metro Rail	-	9	5	1	-	4
10	M.S.	15	81	14	1	-	47
11	Ph.D.	15	117	42	13	2	133
	Total	86	712	310	136	21	557

As per Government of India orders, for general category students under economically weaker sections, EWS reservation is followed. For the academic year 2019-20, 4% reservation was given to EWS students under B.Tech, Dual Degree and M.Tech programmes.

The total number of students admitted during the year includes the following:

Foreign Nationals	8	Defence Officers (M.Tech)		38
Economically Weaker Sections (EWS)	86	User-Oriented Programme (M.Tech)		117
OBC	712	Q.I.P.	M.Tech. Ph.D.	-7

Scheduled Castes	310	Sponsored	M.Tech.	15
Scheduled Tribes	136	Project	M.S. Ph.D.	25 19
Physically Handicapped	21	External Registration	M.S. Ph.D.	11 33
Women Students	557			

3.2 Students/Scholars Enrolment

The total numbers of students on roll in various programmes of the institute in the academic year 2019-20 are given below.

Table 2. Students on roll

Sl. No.	Department	B.Tech	Dual Degree	M.Tech	PG Diploma - MEM	PG Diploma - MRTM	M.Sc	M.A	M.B.A.	E.M.B.A.	M.S.	Ph.D.	Total
1	Aerospace Engineering	162	90	42	-	-	-	-	-	-	51	141	486
2	Applied Mechanics	-	-	35	-	-	-	-	-	-	68	189	292
3	Biotechnology	1	293	50	-	-	-	-	-	-	16	202	562
4	Chemical Engineering	292	87	59	-	-	-	-	-	-	27	138	603
5	Chemistry	-	-	-	-	-	108	-	-	-	-	244	352
6	Civil Engineering	288	145	170	-	18	-	-	-	-	43	294	958
7	Computer Science and Engineering	253	53	140	-	-	-	-	-	-	75	84	605
8	Electrical Engineering	355	258	348	-	-	-	-	-	-	173	297	1431
9	Engineering Design	-	288	-	-	-	-	-	-	-	31	87	406
10	Humanities and Social Sciences	-	-	-	-	-	-	215	-	-	-	139	354
11	Management Studies	-	-	-	39	-	-	-	110	128	33	131	441
12	Mathematics	-	-	38	-	-	82	-	-	-	-	106	226
13	Mechanical Engineering	430	338	208	-	-	-	-	-	-	155	383	1514
14	Metallurgical and Materials Engineering	148	52	31	-	-	-	-	-	-	36	159	426
15	Ocean Engineering	157	73	61	-	-	-	-	-	-	41	177	509
16	Physics	120	52	16	-	-	84	-	-	-	-	199	471
	Total	2206	1729	1198	39	18	274	215	110	128	749	2970	9636

The above total includes the following:

Foreign Nationals	10	Q.I.P.	M.Tech Ph.D.	- 50
Economically Weaker Sections (EWS)	86	Sponsored	M.Tech	46
OBC	2663	Project	M.S. Ph.D.	86 112
Scheduled Castes	1077	External Registration	M.S. Ph.D.	38 213
Scheduled Tribes	434	Registration Kept Alive	M.S. Ph.D.	37 229

Physically Handicapped	90	Part-Time Programme	M.S. Ph.D.	8 68
Women students	2085	User-Oriented Programme (M.Tech)		322
Defence Officers (M.Tech)	74			

Details of OBC/SC/ST and women students on roll (programme-wise and category-wise)

Sl.No.	Course	EWS	OBC	SC	ST	PD	Female
1	B.Tech	42	612	342	183	33	332
2	Dual Degree	7	473	270	119	12	270
3	M.Tech	7	306	109	58	22	174
4	M.B.A.	-	30	17	2	-	56
5	E.M.B.A.	-	25	16	1	-	29
6	M.Sc	-	82	42	19	3	62
7	M.A.	-	64	37	15	7	129
8	PG Diploma in MEM	-	2	-	-	-	1
9	PG Diploma in MRTM	-	9	5	1	-	2
10	M.S.	15	193	37	2	-	123
11	Ph.D.	15	867	202	34	13	907
Total		86	2663	1077	434	90	2085

The branch/discipline-wise and year-wise details of students enrolled in B.Tech, Dual Degree and M.Tech programmes are given below.

Table 3. B.Tech students on roll

Sl. No.	Branch	2019	2018	2017	2016	2015 and earlier batch	Total
1	Aerospace Engineering	49	42	32	33	6	162
2	Biotechnology	-	-	-	-	1	1
3	Chemical Engineering	95	67	66	61	3	292
4	Civil Engineering	111	56	51	57	13	288
5	Computer Science and Engineering	81	71	47	45	9	253
6	Electrical Engineering	142	73	73	60	7	355
7	Engineering Physics	31	30	26	28	5	120
8	Mechanical Engineering	189	87	72	74	8	430
9	Metallurgical and Materials Engineering	51	32	32	26	7	148
10	Naval Architecture	57	34	28	33	5	157
Total		806	492	427	417	64	2206

Table 4. Dual Degree (B.Tech and M.Tech) students on roll

Sl. No.	Branch	2019	2018	2017	2016	2015	2014 and earlier	Total
1	Aerospace Engineering	9	14	19	25	19	3	89
	Aerospace Engineering (B.Tech) and Applied Mechanics (M.Tech)						1	1

2	Biotechnology: Biological Engineering Biological Sciences (B.S. and M.S.)	33 28	33 26	30 31	26 24	25 24	6 7	153 140
3	Chemical Engineering	1	15	24	25	21	1	87
4	Civil Engineering		29	34	39	37	6	145
5	Computer Science and Engineering		2	15	16	15	5	53
6	Electrical Engineering		58	57	66	64	11	256
	Electrical Engineering (B.Tech) and Applied Mechanics (M.Tech)						2	2
7	Engineering Design	62	56	55	52	54	9	288
8	Mechanical Engineering	2	81	89	80	81	5	338
9	Metallurgical and Materials Engineering		13	12	14	12	1	52
10	Naval Architecture and Ocean Engineering Naval Architecture (B.Tech) and Applied Mechanics (M.Tech)	3	15	18	17	15	3 2	71 2
11	Physics (B.S. and M.S.)	12	9	10	11	8	2	52
	Total	150	351	394	395	375	64	1729

Table 5. M.Sc. students on roll

Sl. No.	Branch	2019	2018	Total
1	Chemistry	59	49	108
2	Mathematics	43	39	82
3	Physics	43	41	84
Total		145	129	274

Table 6. M.Tech students on roll

Sl. No.	Department\Discipline\Batch	2020	2019	2018	Extended students	Total
1	Aerospace Engineering		14	28		42
2	Applied Mechanics:		5	5		
	Biomedical Engineering Computational and Experimental Mechanics		13	12		10 25
3	Biotechnology:		13	12		
	Clinical Engineering Bioprocess Engineering		12	13		25 25
4	Chemical Engineering		22	26		48
	CA - Catalysis Technology		4	6	1	11
5	Civil Engineering:					
	CE 1 - Building Technology and Construction Management		8	7		15

	CE 2 - Environmental Engineering		7	10		17
	CE 3 - Geotechnical Engineering		6	14	1	21
	CE 4 - Hydraulic and Water Resource Engineering		6	6		12
	CE 5 - Structural Engineering		13	17		30
	CE 6 - Transportation Engineering		8	8		16
	CE 7 - Construction Technology and Management		30	29		59
6	Computer Science and Engineering		93	46	1	140
7	Electrical Engineering:					
	EE 1 - Communication and Signal Processing		55	100	50	205
	EE 2 - Power Systems and Power Electronics		11	7		18
	EE 3 - Micro Electronics and VLSI Design		10	11	2	23
	EE-4 - Control and Instrumentation System		7	10		17
	EE-5 - Micro Electronics and Photonics		7	7		14
	EE 6 - Integrated Circuits and Systems		34	8	29	71
8	Industrial Maths and Scientific Computing		19	19		38
9	Mechanical Engineering:					
	ME 1 - Thermal Engineering		36	22		58
	ME 2 - Mechanical Design		18	19		37
	ME 3 - Manufacturing Engineering		12	14		26
	ME 20 - Automotive Technology		15	21	30	66
	ME 102 - Mechanical Design (Web based)	21				21
10	Metallurgical and Materials Engineering		19	11	1	31
11	Ocean Engineering:		15	17		32
	Ocean Technology		8	7		15
	Petroleum Engineering		7	7		14
12	Physics:					
	Functional Materials and Nanotechnology		12	4		16
Total		21	539	523	115	1198

Table 7. M.B.A. students on roll

Sl. No.	Branch	2019	2018	Total
1	Management Studies	62	48	110

Table 8. M.A. students on roll

Sl. No.	Branch	2019	2018	2017	2016	2015	Total
1	Humanities and Social Sciences	43	44	38	42	48	215

Table 9. E.M.B.A. students on roll

Sl. No.	Branch	2020	2019	2018	Total
1	Management Studies	44	45	39	128

Table 10. PG Diploma in Management for Executives in Manufacturing (PGDVLM) students on roll

Sl. No.	Branch	2019	Total
1	Management Studies	39	39

Table 11. PG Diploma in MRTM students on roll

Sl. No.	Branch	2019	Total
1	Civil Engineering	18	18

Table 12. M.S. scholars on roll

Sl. No.	Branch	Year I	Year II	Year III	Year IV	Year V and others	Total
1	Aerospace Engineering	19	17	7	6	2	51
2	Applied Mechanics	30	12	19	5	2	68
3	Biotechnology	7	4	4	1	-	16
4	Chemical Engineering	10	10	6	1	-	27
5	Civil Engineering	19	10	12	1	1	43
6	Computer Science and Engineering	20	23	18	12	2	75
7	Electrical Engineering	64	57	25	24	3	173
8	Engineering Design	9	7	8	6	1	31
9	Management Studies	16	6	6	3	2	33
10	Mechanical Engineering	49	47	46	8	5	155
11	Metallurgical and Materials Engineering	11	13	12	-	-	36
12	Ocean Engineering	20	9	8	2	2	41
Total		274	215	171	69	20	749

Table 13. Ph.D. scholars on roll

Sl. No.	Branch	Year I	Year II	Year III	Year IV	Year V and others	Total
1	Aerospace Engineering	19	19	21	26	56	141
2	Applied Mechanics	32	33	39	35	50	189
3	Biotechnology	28	22	32	34	86	202
4	Chemical Engineering	23	20	25	18	52	138
5	Chemistry	38	54	34	36	82	244
6	Civil Engineering	53	34	41	41	125	294
7	Computer Science and Engineering	7	18	11	11	37	84
8	Electrical Engineering	37	45	54	47	114	297
9	Engineering Design	15	16	13	13	30	87
10	Humanities and Social Sciences	29	28	21	24	37	139
11	Management Studies	29	18	20	30	34	131
12	Mathematics	14	16	20	24	32	106
13	Mechanical Engineering	58	51	43	54	177	383

5	CY		1	1	35				47			4	4	55	55	3	71		334	
6	CE				30	7	98	15						16	16	1	23		103	
7	CS		3	3	3	17	48							9	9	1	21		119	
8	EE		11	11	21	26	59					1	1	8	8	1	25		109	
9	ED		1	1	3	3	1					43	22	22	323	323	1515	395	1	2319
10	HS				7							43							50	
11	MS		3	3	11	6			64	38									125	
12	MA				8		13		38										59	
13	ME		5	5	25	28	79					4	4	55	55	3	71		334	
14	MM	1	4	4	7	5	26							16	16	1	23		103	
15	OE		7	7	14	8	43							9	9	1	21		119	
16	PH		1	1	20		5		37			1	1	8	8	1	25		109	
Total		2	55	55	231	130	463	15	122	64	38	43	22	22	323	323	1515	395	1	2319

With this Convocation, the total number of degrees awarded so far by the institute is 53,831, the details of which are given below:

S.No.	Programme	Awarded up to Convocation 2018	Convocation 2019	Total
1	Joint Dual Degree	4	2	6
2	Dual Degree M.S. Ph.D.	56 56	47 47	103 103
3	Dual Degree M.Tech Ph.D.	8 8	7 7	15 15
4	Dual Degree M.Sc. Ph.D.	- -	1 1	1 1
5	Ph.D.	4881	231	5112
6	M.S.	3602	130	3732
7	M.Tech	14802	463	15265
8	M.Sc.	3573	122	3695
9	M.B.A.	942	64	1006
10	M.A.	267	43	310
11	Dual Degree (Incl. Honours) B.Tech M.Tech	2632 2632	327 327	2959 2959
12	Dual Degree (Incl. Honours) B.S. M.S.	698 698	18 18	716 716
13	B.Tech	16058	395	16453
14	B.Tech (Honours)	161	15	176
15	B.S.	-	1	1
16	PGDMEM	102	38	140
17	B.Sc.(Tech)	20	-	20
18	DIIT	245	-	245
19	PGDMRT	28	15	43
20	PGDVLM	39	-	39
21	Total	51512	2319 Degrees (1919 students)	53831

3.5 Award of prizes to the students

3.5.1 Convocation prizes

The following are the details of prizes awarded to the students at the 56th Convocation:

S.No	Prize	Student
1	President of India Prize For the highest CGPA in B.Tech and Dual Degree Bharat Ratna M. Visvesvaraya Memorial Prize For the highest CGPA in B.Tech B. Ravichandran Memorial Prize For the highest CGPA in B.Tech Computer Science and Engineering	Kavitha Gopal CS15B057
2	President of India Prize For the highest CGPA in B.Tech and Dual Degree Bharat Ratna M. Visvesvaraya Memorial Prize For the highest CGPA in B.Tech Siemens Prize For the highest CGPA in B.Tech (Electrical Engineering)	Pradyumna Venkatesh Chari EE15B122
3	Shri V. Srinivasan Memorial Prize For the highest CGPA in Dual Degree Philips India Prize For the highest CGPA in Dual Degree (Electrical Engineering)	Harikumar Krishnamurthy EE14B129
4	Governor's Prize For the best all round proficiency in curricular and extra-curricular activities in B.Tech and Dual Degree	Shaswat Mohanty ME14B135
5	Dr Shankar Dayal Sharma Prize For the best all round proficiency in curricular and extra-curricular activities in B.Tech	Advaith Sridhar EE15B004

B.Tech

1	HAL Prize Aerospace Engineering	Aravind Shaj AE15B009
2	Reliance Heat Transfer Pvt. Ltd. Prize Chemical Engineering	Devashish Pratap Gokhale CH15B021
3	C. A. Sastry Endowment Prize Chemical Engineering	None Recommended
4	Larsen & Toubro ECC Endowment Prize Civil Engineering	Roshan Mathew Tom CE15B051
5	B. Ravichandran Memorial Prize Computer Science and Engineering	Kavitha Gopal CS15B057
6	Siemens Prize Electrical Engineering	Pradyumna Venkatesh Chari EE15B122
7	Prof Achim Bopp Endowment Prize Electrical Engineering	Sasank Garikapati EE15B057
8	Hema Balasubramanian Excellence Award Engineering Physics	Pratyush Anand EP15B020
9	Banco Foundation Prize Mechanical Engineering (Joint Winners)	Achraj Sarma ME15B152 Vivek Boddapati Venkata ME15B076
10	Sivasailam Merit Prize Mechanical Engineering	Akshay Shivaji Molawade ME15B044

11	Vaidy Krishnan Memorial Prize Mechanical Engineering	Pai Saeel Shrivallabh ME15B151
12	Dr Dhandapani Memorial Prize Metallurgical and Materials Engineering	Akash Ramdas MM15B020
13	American Bureau of Shipping Prize Ocean Engineering	Joshua David John Rathinaraj NA15B012
14	Subramaniam Rajalakshmi Indira Endowment Prize Chemical Engineering	Ragini Sreenath CH15B058

Dual Degree (B.Tech and M.Tech)

1	Mayan Prize Aerospace Engineering	Purnanand Elango AE14B045
2	Kalpathi AGS Prize (converted from November 2015) Applied Mechanics	Shivam Shrikant Kalkar NA14B051
3	Biocon Prize Biological Engineering	Debayan Chaudhury BE14B035
4	The Divashri Award Biological Sciences	Prathamesh Suresh Jain BS14B018
5	B. Ravichandran Memorial Prize Chemical Engineering	Zach Zajo CH14B072
6	Alumni Association Prize Computer Science and Engineering	Rahul Ramesh CS14B061
7	Prof Achim Bopp Endowment Prize Electrical Engineering	Rajat S. Rao EE14B101
8	Motorola Prize Electrical Engineering	Abhijit S. Gupta EE14B128
9	Prema & Nagaraja Setty prize (converted from June 2014) Engineering Design	Shivani Guptasarma ED14B054
10	Prof. G. V. N. Rayudu (IIT Madras) Prize (renamed from August 2015) Mechanical Engineering	Dommeti Sriram ME14B108
11	S. Anantharamakrishnan Memorial Prize Metallurgical and Materials Engineering	Vishal Subramanian MM14B048
12	Prof J. Sobhanadri Prize Physics	Tanay Milind Kibe PH14B009
13	Dr V. Mohan Raman Prize Aerospace Engineering	Purnanand Elango AE14B045
14	Dr N. R. Dave Prize Civil Engineering	Borkar Rutwik Balasaheb CE14B063
15	Philips India Prize Electrical Engineering	Harikumar Krishnamurthy EE14B129
16	Goodearth Shipbuilding Private Limited Prize Ocean Engineering	Gokulraj K. R. NA14B056

PG Diploma		
1	Smt. Jayalakshmi and Shri R. Narasiman Prize	Panem Haripriya CE18G009
2	NMCC Gold Medal, JICA Gold Medal, IIMC Alumni Association Gold Medal	Saikat Das MS18V027 Soumya Ghosh MS18V032 Saurabh Rana MS18V029
M.A.		
1	Dr Dilip Veeraraghavan Memorial Award Humanities	Anwasha Pathi HS14H008
2	Prof A. V. Krishna Rao Memorial Award Humanities	Divya Vijaya Kumar HS14H014
M.Tech		
1	Air India Prize Aerospace Engineering	Xavier Arunraj J. AE17M028
2	Prof B. V. A. Rao Endowment Prize Applied Mechanics	Allen George AM17M013
3	Sushruta Award Applied Mechanics	Patel Twinkal Ashokbhai AM17M021
4	Dr S. S. Srikanta Prize (converted from August 2015) Biotechnology	Sohham Samanta BT17M007
5	Dr K. Subba Raju Memorial Prize Chemical Engineering	Somnath Patra CH17M019
6	Shri S. V. Balakrishnan Prize Chemical Engineering	Menta V. Poorna Sai Abhishek CA17M007
7	Mico-Bosch Prize Chemical Engineering/Mechanical Engineering	Somnath Patra CH17M019
8	Valli Anantharamakrishnan Merit Prize Civil Engineering	Srinivasan A. CE17M049
9	K. Devarajan Memorial Prize Civil Engineering	Anagha Girijan CE17M090
10	L&T Endowment Prize Civil Engineering	Nandeesh Babanagar CE17M109
11	CMC Prize Computer Science & Engineering	Anupreksha Jain CS17M011
12	Siemens Prize Electrical Engineering	Akhil Nath C. K. EE17M047
13	Prof Helmut Neunzert Endowment Prize Mathematics	Nivedita Sehgal MA17M014
14	Prof B. Sengupto Prize Mechanical Engineering	Venuthurupalli Venkata Naga Sai Pranav - ME17M057
15	Dr S. Vaidyanathan Memorial Prize Mechanical Engineering	Tara Dutt ME17M109
16	Giri Brothers Prize Mechanical Engineering	Surathi Devisuma ME17M110
17	S. Anantharamakrishnan Merit Prize Mechanical Engineering	Venuthurupalli Venkata Naga Sai Pranav - ME17M057

18	Prof Ramamohana Rao Memorial Prize Mechanical Engineering	Vaishnav R. ME17M102
19	Sudharshan Bhatt Memorial Prize Metallurgical and Materials Engineering	Sripooja Mishra MM17M020
20	Buti Foundation Gold Medal Award Metallurgical and Materials Engineering	Sripooja Mishra MM17M020
21	American Bureau of Shipping Prize Ocean Engineering	Kumud Kumar OE17M022
22	Prof K. A. V. Pandalai Prize Ocean Engineering	Barapatre Rohan Prakash OE17M033
23	Prof T. Govindaraj Prize (converted from November 2015) Ocean Engineering	K. Aravind Menon OE17M061
24	Shri RRP Sinha and Vimla Dewi Prize Ocean Engineering	Rohan Goyal PE17M016
25	Shri Krishnamurthy Sundarambal Prize Physics	Ponnaganti Ravi Teja PH17M004

M.Sc.

1	Mira Paul Memorial Prize Mathematics	Shreedhar Bhat MA17C045
2	Prof Chilukury Rama Sastry Memorial Prize Physics (Joint Winners)	Shraddha Gupta PH17C038 Anoma Ganguly PH17C006
3	Ratna Rao Memorial Prize Chemistry	Atanu Ghosh CY17C009
4	Dr S. R. Ramadas 60th Birthday Commemoration Award Chemistry	Pratishtha Khurana CY17C029

M.B.A.

1	Coka Parthasarathy Prize Management Studies	Monisha Dikshit MS17A031
2	K. V. Arunkumar Memorial Prize Management Studies	Vignesh Balakrishnan MS17A063

M.S. and Ph.D.

1	GE Ecomagination Excellence Award Aerospace Engineering/Applied Mechanics/Biotechnology/Civil Engineering/Chemical Engineering/Computer Science/ Electrical Engineering/ Engineering Design/Mathematics/ Mechanical Engineering/Metallurgical and Materials Engineering/Ocean Engineering/Physics	Neghi N. CE15D021
2	Prof. V. Ramamurti Award Applied Mechanics	Shaik Mahabu Subhani AM15D013
3	Sudharshan Bhat Memorial Prize Metallurgical and Materials Engineering	Bhusankar Talluri MM15D305
4	Prof C. N. Pillai Prize Chemistry (Joint Winners)	Arunprasath D. CY14D002 Rajasekar S. CY12D067

5	Prof G. Sundararajan Endowment Prize Chemistry (Joint Winners)	Chinta Bhavani Shankar CY14D005 Chandra Shekar Reddy CY13D006
6	Prof Langmuir Prize Chemistry (Joint Winners)	Papri Chakraborty CY15D054 Rajeshkumar P. CY11D077
7	Prof Werner Prize Chemistry	Dasary Hareesha CY12D014
8	IBM Best Ph.D. Thesis Award Computer Science and Engineering	Ramya C. CS13D025
9	Shree Gaayathree Devi Award Civil Engineering (Joint Winners)	Divya Priya B. CE12D007 Saranya CE14D019
10	Smt. Lakshmikutty Amma and Shri A Krishnankutty Nair Prize Mathematics	Mohan Kumar Mallick MA13D021
11	Prof A. L. Lashkar Prize Physics	Debika Chowdhury PH13D028
12	Bhagyalakshmi and Krishna Ayengar Award	Divanshu Kumar - ME14B161 Pratik Sutar - AE14B044 Eranezhuth Wasan Awin MM12D018 Sreetama Ghosh PH14D302

3.5.2 Institute Day Prizes

For Institute Day 2020, the following students were approved by the Board of Governors for award of prizes.

B.Tech and Dual Degree

1. Selection of a student with best academic record in first-year B.Tech and Dual Degree

Roll No	Name	Degree	Prize	Rank
CS18B066	Sarthak Kapoor	B.Tech	Shri S. Subramanian Prize	First prize
CS18B103	Shreesha G. Bhat	Dual Degree	Shri K. Krishnamurthi Prize	Second prize

2. Selection of a student with best academic record in second-year B.Tech/Dual Degree

Roll No	Student	Prize	Programme
Aerospace Engineering			
AE17B031	Kalyan Ramakrishnan	Prof T. K. Varadan Prize	B.Tech
Biotechnology - Biological Engineering			
BE17B036	Sankalpa Venkatraghavan	Dr Anita Mehta-Damani Prize	Dual Degree
Biotechnology - Biological Science			
BS17B002	Sathvik A.	Jayalakshmi Sambasaviam Prize	Dual Degree
Chemical Engineering			
CH17B071	Sona Sheril Antony	Dr Anita Mehta-Damani Prize	B.Tech
Civil Engineering			
CE17B011	Neduri Leela Venkata Sri Harsha	Computer Age Management Services Pvt. Ltd. Prize	B.Tech
Computer Science and Engineering			
CS17B047	C. Gautam	Shri V. Ramachandran Prize	B.Tech

Electrical Engineering			
EE17B156	Dhruvjyoti Bagadthey	Shri V. Rajagopalan Memorial Prize	Dual Degree
Engineering Design			
ED17B002	Aditya Raj Kuncolienkar	Ms Latha and Sampath Srinath Prize	Dual Degree
Engineering Physics			
EP17B011	Swetha Srinivasan	Ms Latha and Sampath Srinath Prize	B.Tech
Mechanical Engineering			
ME17B157	Obulapuram Sai Pavan Kumar	Mrs. Jayashree Ananth Prize	Dual Degree
Metallurgical and Materials Engineering			
MM17B105	A. Ramprasad	Shri Satish Pai Prize	Dual Degree
Naval Architecture and Ocean Engineering			
NA17B004	Mansi Khandelwal	Ms Latha and Sampath Srinath Prize	B.Tech
Physics (B.S. and M.S.)			
PH17B011	Chaithanya Krishna Moorthy	N. Arunachalam Memorial Prize	Dual Degree

3. Selection of a student with best academic record in third-year B.Tech/Dual Degree

Roll No	Student	Prize	Programme
Aerospace Engineering			
AE16B114	Shruti Tandon	Prof E. G. Tulapurkara Prize	Dual Degree
Biological Engineering			
BE16B036	L. Srinath Muralidharan	Dr Anita Mehta-Damani Prize	Dual Degree
Biological Sciences			
BS16B005	Mohammed Faidh A.	Akash Dube Prize	Dual Degree
Civil Engineering			
CE16B136	Yukti	M.S.K. Chaitanya Varma Memorial Prize	Dual Degree
Chemical Engineering			
CH16B015	Nikhil Jain	Dr. R. K. Viswanath Memorial Prize	B.Tech
Computer Science and Engineering			
CS16B021	R. Raghul	Computer Age Management Services Pvt. Ltd. Prize	B.Tech
Electrical Engineering			
EE16B033	Rajat Vadiraj Dwaraknath	Shri Ramasarma V. Kolluri Memorial Prize	B.Tech
Engineering Design			
ED16B031	T. Sashank	Dr Srikanth Sundararajan Prize	Dual Degree
Engineering Physics			
EP16B013	Chari Rajas Premanand	Mr. K. Krishnamurthy Iyer Prize	B.Tech

Mechanical Engineering			
ME16B047	Surya R.	Dr Vivekanand Kochikar Award	B.Tech
Metallurgical and Materials Engineering			
MM16B014	Anirrudh Ramesh	Ratna Award	B.Tech
Naval Architecture and Ocean Engineering			
NA16B034	Relekar Hrishikesh Ajit	Prof. K. Gopinath and Mrs. Padmini Gopinath Prize	B.Tech
Physics (B.S. and M.S.)			
PH16B007	Rohan Rajgopalan Iyer	Electronics For Your Prize	Dual Degree
PH16B002	Gautham A.P. (Second topper)	Shri Jandhyala Lakshmi Kantam and Srimati Sitamahalakshmi Prize	Dual Degree

Dual Degree

4. Selection of a student with best academic record in fourth-year Dual Degree

Roll No	Student	Prize
Aerospace Engineering		
AE15B036	S. K. Venkatesh	Shri Kakkara Balachandran Menon Prize
Engineering Design		
ED15B010	Deepak Prakash K.	Sarada Bhaskara Reddy Award
Biological Engineering		
BE15B022	Rohini J. S.	Shri Madan Gopal Damani Prize
Biological Science		
BS15B010	Deepak	Institute Merit Prize
Civil Engineering		
CE15B101	Kannan Neha Rajan	Shri Venkatraman Ravi Prize
Chemical Engineering		
CH15B093	S. Sajith Ahamed	Dr Anita Mehta-Damani Prize
Computer Science and Engineering		
CS15B048	Kavya G.	Computer Age Management Services Pvt. Ltd. Prize
Electrical Engineering		
EE15B073	Alfred Festus Davidson	Institute Merit Prize
Mechanical Engineering - Product Design - ME26		
ME15B157	Manjarekar Pranjali M.	Shri Rajesh Achanta Prize
Mechanical Engineering - Intelligent Manufacturing - ME23		
ME15B090	Balaji S.	Shri Sagar Pushpala Prize
Mechanical Engineering - Thermal Engineering		
ME15B158	Sreenidh S. P.	Prof. K. Gopinath and Mrs. Padmini Gopinath Prize
Metallurgical and Materials Engineering		
MM15B041	Jain Ananyashree	Prof. V. Sundaresan Prize

Naval Architecture and Ocean Engineering

NA15B036	Harry Edwin	Poovai T. R. Srinivasan and S. Alamelu Award
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(B.S. and M.S.) Physics

PH15B008	Saran V.	Mr S. Venkitaramanan, I.A.S Retd Prize
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5. Student with best academic performance in the seventh and eighth semesters of Inter-Disciplinary Dual Degree Programme (IDDD)**Advanced Materials and Nanotechnology**

Roll No.	Student	Prize
MM15B040	Hari Ramachandran	Shri Ramanan Ramamurthy Memorial Prize

Computational Engineering

MM15B022	R. Mythreyi	Shri G. S. Bhuvaneshwar Prize
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Data Sciences branch

ME15B166	Kaushik Bhat	Institute Merit Prize (Joint Winners)
ME15B167	Aman Jalan	

Robotics branch

EE15B035	Kevin Abraham Cherian	Ms Pattammal Viswanathan Prize (Joint Winners)
EP15B015	M. Denesh Kumar	

M.Tech**6. Selection of a student with best academic record in M.Tech programme**

Roll No	Student	Prize
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Aerospace Engineering

AE18M023	Panduri Bhavya Naidu	Prof. S. Santhakumar Prize
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Applied Mechanics

AM18M023	Sonu Singh	Shrimathi Parvatham Ramalingam Prize
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Biotechnology - Clinical Engineering

BT18M020	Palika Charitha	P. K. Narayana Iyer Prize
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Biotechnology - Bioprocessing Engineering

BT18M001	Adithi K.	Institute Merit Prize
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Chemical Engineering - Catalysis

CA18M005	Anoop P. Pushkar	Dr. V. Mahadeva Iyer Prize
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Computer Science and Engineering

CS18M015	Bateesh Dhingra	Prakash Arora Prize
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Industrial Mathematics and Scientific Computing

MA18M014	Nitish Dobhal	Dr. N. Seshagiri Prize
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Industrial Mathematics and Scientific Computing

MA18M019	Rishabh Gupta	LVKV Sarma prize
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Metallurgical and Materials Engineering		
MM18M023	Supriya Anand	Dr M. N. Dhandapani Prize
Ocean Technology - OE5		
OE18M006	Amit Kumar Mall	Subrath Kumar Mallik Prize
Civil Engineering - Construction Technology and Management		
CE18M039	Mohamed Althaaf Hussain M.	S. Sambasivan Award
Civil Engineering (Excluding CTM and Hydraulic and Water Resource Engineering Stream)		
CE18M119	Silpa P. J.	Smt. Jayalakshmi Narasimhan Memorial Prize
Chemical Engineering		
CH18M004	Bhuvsmita Bhargava	M/s. Chevron Products Company Prize (Joint Winners)
CH18M007	Faseeh K. K.	Faseeh K. K.
Electrical Engineering		
EE18M058	Priyatham Kattakinda	Priyatham Kattakinda
Mechanical Engineering		
ME18M071	Sarthak Rastogi	Shri Ramanan Ramamurthy Prize
Ocean Engineering (Excluding UOP-Ocean Technology (OE2) and Offshore Technology (OE3))		
OE18M003	Amit Kumar Rathi	Prof Vallam Venkataswami Prize
Petroleum Engineering - Ocean Engineering		
PE18M002	Chekka Sri Durga Vidya Meghana	Prof M. S. Ananth Prize
Physics - Functional Materials and Nanotechnology		
PH18M009	Swarnendu Banerjee	Mrs Lakshmi Ravikumar Memorial Prize
Civil Engineering - Hydraulic and Water Resource Engineering Stream - CE4		
CE18M117	Shivakumar B.	Prof Gerhard Rouve Memorial Prize
Mechanical Engineering - Thermal Engineering Stream		
ME18M076	Sunil Kumar Kumawat	Prof N. Venkatarayulu Memorial Prize

M. Sc.

7. Selection of a student with best academic record in M.Sc. programme

Roll No	Student	Prize
Physics		
PH18C003	Anant Rastogi	Chilukuri Ramasastry Memorial Prize
Chemistry		
CY18C003	Achal Kumar	R. Padmanabhan Memorial Prize
Chemistry		
CY18C017	Deeksha	Mrs Kalaimani Natarajan Prize

Mathematics		
MA18C037	Sourav Sarkar	Geetha Raghupathy Prize
Mathematics		
MA18C037	Sourav Sarkar	LVKV Sarma Prize
Physics		
PH18C043	Varsha	V. Kalyanasundaram Memorial Prize

M.B.A.**8. Selection of a student with best academic record in M.B.A. programme**

Roll No	Student	Prize
MS18A005	Chetan Agarwal	Prof T. N. Govindarajan Prize
		Dr V. Kumar Prize
		T. S. Rajagopalan Memorial Prize

M.A.**9. Selection of a student with best academic record in in M.A. programme**

Roll No	Student	Prize
HS18H043	Vardhini V.	Institute Merit Prize
HS17H007	Varsha Gopal	Institute Merit Prize
HS16H052	Pauline Mathew T.	Institute Merit Prize
HS16H092	Vinjamuri Sruthi Ranjani	Dr. V. Ravikumar Memorial Prize
HS15H006	Ashraya Maria M. P.	Dr. V. Ravikumar Memorial Prize
HS15H007	Aswathy Venugopal	Gonsalvez Foundation Prize

Ph.D.**10. Selection of student with best academic performance in Inorganic Chemistry, Ph.D. programme**

Roll No	Student	Prize
CY18D005	Chandra Shekhar Tiwari	V. R. S. Rao Prize

Other Prizes**11. Selection of girl student with best academic record at the end of pre-final semester in each of the following programmes: (1) B.Tech. (2) Dual Degree (3) M.Tech (4) M.A. (5) M.Sc. and (6) M.B.A.**

Roll No	Student	Prize	Programme
AE16B039	Rudra Sethu Viji	Swati/Jayalakshmi Memorial Award	B. Tech
CS15B048	Kavya G.	Swati/Jayalakshmi Memorial Award	Dual Degree
PE18M002	Chekka Sri Durga Vidya Meghana	Swati/Jayalakshmi Memorial Award	M. Tech
HS15H007	Aswathy Venugopal	Swati/Jayalakshmi Memorial Award	M. A.
CY18C017	Deeksha	Swati/Jayalakshmi Memorial Award	M. Sc.
MS18A045	Smriti Vohra	Swati/Jayalakshmi Memorial Award	M.B.A.

12. Selection of first topper student up to seventh semester of B.Tech/Dual Degree courses taken under HSS category

Roll No	Student	Prize
EE16B033	Rajat Vadiraj Dwaraknath	K. Srinivasan and Indira Srinivasan Prize

13. Selection of second topper student up to seventh semester of B.Tech/Dual Degree courses taken under HSS category

Roll No	Student	Prize
CS16B021	R. Raghul	Dr. Dilip Veeraraghavan Memorial Award

14. Selection of student with best academic record in first four semesters of B.Tech. Mechanical Engineering

Roll No	Student	Prize
ME17B081	Venu Narendra Nathan	Shri Raghavendra Memorial Prize

15. Selection of student with best academic record in first six semesters of B.Tech Mechanical Engineering

Roll No	Student	Prize
ME16B011	Dinesh Bompada	Dr. S. Chandrasekaran Memorial Prize

16. Selection of student with best academic record in first seven semesters of B.Tech. Mechanical Engineering

Roll No	Student	Prize
ME16B011	Dinesh Bompada	Dr Dinesh Balagangadhar Prize

17. Selection of student with best academic record in first nine semesters of Dual Degree in Intelligent Manufacturing in Mechanical Engineering

Roll No	Student	Prize
ME15B090	Balaji S.	Prof. V. Radhakrishnan Endowment Award

18. Bhagyalakshmi & Krishna Ayengar Award (For Faculty) - Cash award of Rs.30,000 to be shared by each project investigator for guiding the project work of Ph.D., M.Tech and Dual Degree students who received the award during the previous convocation in 2019

Eligible Area of Work	Roll No.	Student	Project Title	Project Investigator
Infrastructure Improvements	ME14B161 (Dual Degree)	Divanshu Kumar	Automatic robot for cleaning of septic tanks	Dr. Krishnan Balasubramanian

Pollution Abatement	AE14B044 (Dual Degree)	Pratik Sutar	Development of lean direct injection combustor for reduced pollutant emissions and mitigation of combustion instability	Dr. Muruganandam T. M.
Pollution Abatement	MM12D018	Eranezhuth Wasan Awin	Precursor derived ceramic nanocomposites with stable nanocrystalline phases providing visible light photocatalytic activity and superior adsorption.	Dr. Ravi Kumar N. V.
Pollution Abatement	PH14D032	Sreetama Ghosh	Efficient conversion of CO ₂ to value-added chemicals utilising proton exchange membrane conversion cell	Dr. Ramaprabhu S.

19. Notional Prize - Top 7% of the general category students admitted to B.Tech/DD programme are eligible to be given Notional Prize of Rs.1000 (one time) and a Certificate of Merit on the basis of the rank in JEE(Advanced) and parents' income exceeding Rs.4.5 lakhs.

(418 General category students were admitted to B.Tech/DD in July 2019 and the following 29 students (7% of 418 = 29.26) are eligible for Notional Prize.)

S. No.	Roll No.	Name	CRL Rank
1	CS19B060	Kaustubh Miglani	106
2	CS19B061	Kshitij Raj	115
3	CS19B068	Pranav Sanjay Maral	117
4	CS19B058	Hemank Dahiya	134
5	CS19B016	Chougule Atharva Mahavir	136
6	CS19B071	Sanchit Gupta	144
7	CS19B074	Vedant Ashish Saboo	147
8	CS19B012	Bojja Chetan Reddy	164
9	CS19B029	Madhav Mittal	165
10	CS19B043	Tatineni Bhanu Shashank	166
11	CS19B009	Bachina Yajneesh Gowtham	167
12	CS19B073	Sriram Goutam P.	169
13	CS19B046	Vedaant Alok Arya	180
14	EE19B046	Niranjan J. Nair	182
15	CS19B005	Akshith Sriram Enadula	188
16	EE19B107	R. Sumedhan	248
17	EE19B087	K. R. Hariharan	264
18	EE19B105	Pranav Prasad Phatak	310

The following students coming within the 7% is not eligible for Notional Prize since they are awarded other scholarship. However, a Certificate of Merit will be given to this student.

S. No.	Roll No.	Name	CRL Rank
1	CS19B048	Vishnu Vind	90
2	CS19B026	Kovvuri Sravankumar Reddy	113
3	CS19B050	Gouripeddi Hithendra Kasyap	125
4	CS19B017	Darapaneni Hakesh	132
5	CS19B019	Gudla Sanjay	151
6	CS19B010	Beeravalli Sathvick Reddy	152
7	CS19B047	Vineet Kumar Dhandharia	155
8	CS19B015	Challa Sai Shashank Reddy	157
9	CS19B027	Kshitij Aashish Shah	104
10	CS19B014	Ch. Ajith Reddy	111
11	CS19B030	Malkareddy Sai Aryan Reddy	112

20. Selection of student with all round performance in cultural, co-curricular and organisational abilities in Chemical Engineering, Civil Engineering, Mechanical Engineering, Metallurgical and Materials Engineering and Ocean Engineering departments

Roll No	Student	Prize
MM16B017	Arvind Pujari	Shri K. M. Ramamurthi Prize



Departments

4.1. Department of Aerospace Engineering

4.1.1. Introduction

The Department of Aerospace Engineering was established in 1969 and has been offering B.Tech., M.Tech., M.S. and Ph.D. programmes. The areas of teaching and research of the department are aerodynamics and flight mechanics, propulsion and combustion, and aerospace structures.

4.1.2. Academic Programmes

B.Tech., Dual Degree (B.Tech.+M.Tech.), M.Tech., M.S. and Ph.D.

New courses introduced

Course No.	Course Title
AS 5300	Physical Gas Dynamics
AS 6520	Mathematics for Aerospace Engineers
AS 6350	Electric Aircraft Propulsion
AS 6060	Shockwave Dynamics
AS 5970	Structural Dynamics and Aero-elasticity
AS 5610	Rocket Propulsion
AS 5615	Spacecraft Electric Propulsion
AS 5680	High Temperature Gas Dynamics
AS 5900	Micromechanics
AS 6020	Introduction to Turbulent Flow and Their Predictions
AS 6050	Dynamic Fluid Structure Interaction
AS 6080	Theory of Interior and Intermediate Ballistics
AS 6041	Advanced CFD-EDDY Resolving Methods
ID 5040	Engineering Plasticity

Students on roll as of September 2019 + M.S. and Ph.D. admission in January 2020

Programme	Year I	Year II	Year III	Year IV	Year V and others	Total
B.Tech.	52	43	41	33	-	169
Dual Degree	9	14	18	20	37	98
M.Tech.	15	30	-	-	-	45
M.S.	20	19	9	8	18	74
Ph.D.	14	20	21	25	69	149
Total	110	126	89	86	124	535

Number of post-doctoral fellow: 4 Student/Scholar who attended conferences/workshops/seminar/symposia abroad/ India

Sl. No.	Scholar	Roll No.	Conference/Seminar/Symposium/Workshop	Date and Venue	Financial Assistance from
India					
1	Rahul S.	AE18D200	Workshop on Data Analysis and Machine Learning	24-28 May 2019, Indian Institute of Science Education and Research (IISER), Tirupati, India	Institute
2	C.V.S.R. Krishna and Shantanu S. Mulay	AE16D001	The buckling and deflection studies of micro-electro-mechanical beam-column structure containing fixed charge, 4th Indian Conference on Applied Mechanics (INCAM 2019)	IISc Bangalore, 3-5 July 2019	Institute
3	Manu Hegde and Shantanu S. Mulay	AE16D010	On the evolution of damage in viscoelastic solids, INCAM 2019	IISc Bangalore, 3-5 July 2019	Institute
4	Harini Subramanian and Shantanu S. Mulay	AE17D408	Continuum damage healing model for self-healing materials, INCAM 2019	IISc Bangalore, 3-5 July 2019	Institute
5	Sandeepkumar R. and Mohan R.	AE17S017	Flatness-based model predictive control of six degree of freedom fixed-wing UAV, International Conference on Advances in Robotics (ACM 2019)	2-6 July 2019, IIT Madras	Institute
6	Varun H.S. and S. Sarkar	AE16D413	Basin stability effect of additive noise on a pitch-plunge airfoil, INCAM 2019	Indian Institute of Science Bangalore, India, July 2019	Institute
7	C. L. Shah, D. Majumdar and S. Sarkar	AE17D413	Performance enhancement of an immersed boundary method based FSI solver using OpenMP, 21st Annual CFD Symposium	Bengaluru, India, 8-9 August 2019	Institute

8	Bhavya S., Kavitha Arunachalam, R. Velmurugan	AE19S048	Evaluation of e-glass epoxy composite laminate as an electromagnetically transparent aerospace material, 4th International Conference on Advances in Materials and Manufacturing Applications (IConAMMA)	29-31 August 2019, Bengaluru, India	Institute
9	Anandraj A, S. Sarkar, D. K. Josi and K. M. Rajan		Effect of fin cant angle on coning stability of an unguided artillery rocket, 31st International Symposium on Ballistics	November 2019, Hyderabad, India	Institute
10	Sreelal M. R. and G. Rajesh	AE15D001	Analytical and experimental studies on sabot separation in intermediate ballistic regimes, 31st International Symposium on Ballistics	November 2019, Hyderabad, India	Self
11	Salini S. Nair, Haradev G.S. and Ranjith Mohan	AE13D215	Nonlinear modeling and analysis, ACODS 2020	IIT Madras, India	Institute
12	Rahul S.	AE18D200	ACM Winter School 2019 on High Performance Computing (HPC)	5-11 December 2019, organised by ACM India, C-DAC and IIT Kanpur, India	Institute
13	C. L. Shah	AE17D413	ACM Winter School 2019 on High Performance Computing (HPC)	5-11 December 2019, organised by ACM India, C-DAC and IIT Kanpur, India	Institute
14	A. Mishra and S. Ghosh	AE15D405	An intelligent control of quadcopter for efficient path following, 6th Indian Control Conference	Hyderabad, India, December 2019	Institute
15	D. Majumdar, C. Bose and S. Sarkar	AE15D200	Probing into the efficacy of discrete forcing immersed boundary method in capturing the aperiodic transition in the wake of a flapping airfoil, 7th International Congress on Computational Mechanics and Simulation	IIT Mandi, India, 11-13 December 2019	Institute
16	C. L. Shah, D. Majumdar and S. Sarkar	AE15D200	Investigating the dynamical behavior of dipteran flight inspired flapping motion using immersed boundary method based FSI solver, 7th International Congress on Computational Mechanics and Simulation	IIT Mandi, India, 11-13 December 2019	Institute
17	Rahul S., A. Ghorpade, Jithin Jith, S. Gupta and S. Sarkar	AE18D200	Computational modelling of stochastic buffeting of fin-like structures, 7th International Congress on Computational Mechanics and Simulation (ICCMS 2019)	11-13 December 2019, IIT Mandi under the auspices of Indian Association for Computational Mechanics (IndACM)	Institute

18	Shaik Shabberhussain and Velmurugan R.	AE16D016	Finite element analysis of layered composite cylinders under internal pressure and thermal loading, 7th International Congress on Computational Mechanics and Simulation (ICCMS 2019)	IIT Mandi, 11-13 December 2019	Institute
19	Krishna Manoj	AE15B019	Amplitude Death: A new approach to quench thermoacoustic oscillations in coupled systems, Conference on Nonlinear Systems and Dynamics (CNSD 2019)	IIT-K, 12-15 December 2019	Institute
20	Amitesh Roy	AE16D412	Synchronization and open-loop control of thermoacoustic systems, CNSD 2019	IIT-K, 12-15 December 2019	Institute
21	Kamal Kumar R.	AE15S009	Flow separation control in a channel, 16th Asian Congress of Fluid Mechanics	JNCASR, Bengaluru, 13-17 December 2019	project
22	Dr. P. A. Ramakrishna's students and Dr. H.S.N. Murthy's student, Hamza, Chethana and Dr. S.R. Chakravarthy's students, Navin Kumar and Sharan Sreedeeep	AE17D750	12th International High Energy Conference and Exhibit	16-18 December 2019, IIT Madras	Institute
23	K. Siddhardha	AE14D011	Trajectory, control and automation design of a tilt-rotor quad rotor capable of simulating micro-gravity, Indian Control Conference	Hyderabad, India, 18-20 December 2019	Institute
24	M.S. Aswathy, Varun H. S. and S. Sarkar	AE14D404	Investigating stochastic resonance in vortex induced vibration systems, 12th National Conference on Nonlinear Conference on Nonlinear Systems and Dynamics	IIT Kanpur, India, December 2019	Institute
25	Varun H.S, M.S. Aswathy and S. Sarkar	AE16D413	Effect of additive noise on subcritical aeroelastic system, 12th National Conference on Nonlinear Conference on Nonlinear Systems and Dynamics	IIT Kanpur, India, December 2019	Institute
26	Rohini V., Sushmitha P., Ranjith Mohan and Shamrao		Autorotation based descend system for Venus atmospheric study, Indian Planetary Science Conference 2020	PRL, Ahmedabad	Institute

27	Ajo Joseph Anto, Vellingiri Ramanujam R., Shamrao and Ranjith Mohan	AE19S038	Design of rotorcraft MAV for operation in Mars atmosphere, Indian Planetary Science Conference 2020	PRL, Ahmedabad	Institute
28	S. Modali S. Ghosh and P.B. Sujit	AE16B031	Sliding mode-based guidance for UAV landing on a stationary or moving ground vehicle	Accepted for IFAC Advances in Control and Optimization of Dynamical Systems, Chennai, India, February 2020	Institute
29	Suraj Singh	AE14D411	Ocean Mixing & Monsoon, Workshop & Discussion Meeting	21-28 January 2020, Space Applications Centre, ISRO, Ahmedabad, India	SAC, ISRO
30	Lijin J.	AE16D012	Ocean Mixing & Monsoon, Workshop and Discussion Meeting	21-28 January 2020, Space Applications Centre, ISRO, Ahmedabad, India	SAC, ISRO
31	M. Chinnapandi, Ajay Katiyar, Tandra Nandi, R. Velmurugan		High-speed impact studies of Kevlar fabric with and without STF, International Conference on Recent Development In Mechanical Engineering (ICRAME 2020)	7-9 February 2020, NIT Silchar	Project
32	Bhavya S., Mahesh U., R. Sarathi, R. Velmurugan	AE19S048	Comparative study of Nano and Micro fillers in EPDM/Silicone rubber for outdoor insulator application, International Conference on Recent Developments in Mechanical Engineering (ICRAME 2020)	7-9 February 2020, NIT Silchar, India	Institute
33	Anandu Bhadrans	AE17D750	Prof. P. J. Paul Memorial Combustion Researchers Meet	14-15 February 2020, IIT Bombay	Institute
34	Mahesh Ingole	AE18D011	Prof. P. J. Paul Memorial Combustion Researchers Meet	14-15 February 2020, IIT Bombay	Institute
35	C. L. Shah, D. Majumdar and S. Sarkar	AE17D413	Identifying the route to chaos for a dipteran flight system, 6th International Conference on Complex Dynamical Systems and Applications	Central University of Rajasthan, India, 21-23 February 2020	Institute
36	Sivaprasad G, Arun Kumar R. and G. Rajesh	AE16D700	Investigation of change in bifurcation characteristic during the flow evolution in backward facing step using DMD and LDV, NSSW-2020	IIT Madras, IC&SR, 26-28 February 2020	NSSW-2020
37	Rohtash Goyal, A. Sameen, T. Jayachandran and G. Rajesh	AE18S007	Numerical investigation of regular and Mach reflection of oblique shock waves in unsteady flows, NSSW-2020	IIT Madras, IC&SR, 26-28 February 2020	Institute

38	Diviaharshavardini R.C., Arul Prakash K. and G. Rajesh	AE16D004	Parametric analysis on design of hypersonic Ludwieg tube for Mach 6 flow, NSSW-2020	IIT Madras, IC&SR, 26-28 February 2020	NSSW-2020
39	Vinoth P., Thara Reshma I. V. and G. Rajesh	AE15D018	Numerical simulation of over expanded jets in weak shock reflection domain, NSSW-2020	IIT Madras, IC&SR, 26-28 February 2020	NSSW-2020

Abroad

1	Anandu Bhadran	AE17D750	9th European Combustion Meeting	14-17 April 2019, Lisboa, Portugal	Institute
2	Ankush Mishra	AE17S021	9th European Combustion Meeting	14-17 April 2019, Lisboa, Portugal	Institute
3	R. Siddharth	AE16S026	9th European Combustion Meeting	14-17 April 2019, Lisboa, Portugal	Institute
4	Praveen K.	AE16D200	ERCOFTAC Summer School on Networks in Fluid flows	8-13 April 2019, Montestigliano, Italy	Institute
5	Salini S. Nair	AE13D215	Effects of ground proximity on the regressive lag mode during ground resonance, Vertical Flight Society 75th Annual Forum and Technology Display	13-16 May 2019, Philadelphia, Pennsylvania, USA	Institute
6	Sharma A.P. and Velmurugan R.	AE18IPF01	Uni-axial tensile response of titanium based fiber metal laminates, VI International Conference on Topical Problems of Continuum Mechanics	1-6 October 2019, Dilijan, Armenia	Institute
7	Harini Subramanian and Shantanu S. Mulay	AE17D408	Elasto-plastic damage-healing model applied to self-healing materials, 10th International Conference on Materials for Advanced Technologies (ICMAT 2019)	23-28 June 2019, Singapore	Self
8	V. Zinage and S. Ghosh	AE16B017	An efficient motion planning algorithm for UAVs in obstacle-cluttered environment	Philadelphia PA, pp. 2271-2276, July 2019	Partial Institute support
9	I. V. Thara Reshma, P. Vinoth, G. Rajesh, and G. Ben-Dor	AE16D017	Study on normal shock moving over a smooth downward ramp, 32nd International Symposium on Shockwaves	National University of Singapore, Singapore, 14-19 July 2019	Institute
10	G. Sivaprasad, R. Ramprakash, G. Rajesh and R. Arun Kumar	AE16D700	Starting shock swallowing in a supersonic wind tunnel: a shock transition problem? 32nd International Symposium on Shockwaves	National University of Singapore, Singapore, 14-19 July 2019	Institute
11	R. C. Diviaharshavardini, K. Arul Prakash and G. Rajesh	AE16D004	Improved Transition Model for Hypersonic Boundary Layers, 32nd International Symposium on Shockwaves	National University of Singapore, Singapore, 14-19 July 2019	Institute

12	Sourabh Bharadwaj	AE18S014	32nd International Symposium on Shockwaves	National University of Singapore, Singapore, 14-19 July 2019	Institute
13	Rutika Godbole	AE14D215	14th International Conference on Heat Transfer, Fluid Mechanics and Thermodynamics - HEFAT 2019	22-24 July 2019, Wicklow, Ireland	Institute
14	M.S. Aswathy and S. Sarkar	AE14D404	Unsteady wake behaviour of circular cylinders during vortex induced vibration under stochastic noise, IUTAM Symposium on Fluid Structure Interaction in honour of Michael Paidoussis	Montreal, Canada, August 2019	Institute
15	Shyam Kumar M.	AE13D028	Effect of turbulence-induced inertial clustering on droplet arrival statistics in a polydisperse droplet field, 17th European Turbulence Conference	3-6 September 2019, Torino, Italy	Institute
16	Shyam Kumar	AE13D028	Polydisperse droplet size growth in a turbulent air flow-effect of droplet number density and size, 72nd APS DFD	Seattle, Washington, USA, 23-26 November 2019	CSIR Travel grant and IIT Madras alumni fund
17	Kartikey Shahi and R. Velmurugan	AE17D410	Cold programming of epoxy-based shape memory polymer, 12th International Symposium on Plasticity and Impact Mechanics, IMPLAST-2019	Busan, Republic of Korea, 29 September-3 October 2019	Institute
18	D. Majumdar, C. Bose and S. Sarkar	AE15D200	Noisy inflow advances jet-switching in the wake of a flapping airfoil, 2nd Annual Meeting of the American Physical Society-Division of Fluid Dynamics [Abstract on Bulletin of the American Physical Society 64]	Seattle, WA, USA, 23-26 November 2019	Institute
19	Rahul Dubey	AE16D205	ASME 2019 International Mechanical Engineering Congress and Exposition (IMECE)	Salt Lake City, Utah, USA, 11-14 November 2019	Institute
20	Sandeepkumar R. and Dr. Ranjith Mohan	AE17S017	Flatness-based aircraft trajectory optimization and tracking using pseudospectral method, AIAA SciTech 2020 Forum	Florida, USA, 6-10 January 2020	Institute
21	Prerna Soni	AE17S013	Optimization of the thrust to lift ratio using camber morphing in flapping airfoil, AIAA SciTech 2020 Conference	Florida, USA, 6-10 January 2020	Institute
22	V. Zinage and S. Ghosh	AE16B017	Generalized shape expansion-based motion planning for UAVs in three-dimensional obstacle-cluttered environment, AIAA SciTech Forum (GNC)	Orlando, Florida, USA, January 2020	Institute

23.	Lijin J.	AE16D012	Response of a high-resolution ocean circulation model to winds from different sources in simulating summer monsoon freshening in the North Bay of Bengal, CISM-ECCOMAS International Summer School on Coherent Structures in Unsteady Flows: Mathematical and Computational Methods	3-7 June 2019, Centre for Mechanical Sciences, Udine, Italy	Institute
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Students/Scholars who won outside prizes and awards

Sl. No.	Student/Scholar	Roll No.	Prize	Awarded by
1	Anand Bharadwaj	AE14D212	First Prize	IISER, Pune, India
2	Salini S. Nair	AE13D215	Best Presentation Award	ACODS 2020, IIT Madras, India
3	Niharika J.	AE16B112	Eaton Pratibha Excellence Award	Eaton Corporation
4	Samadhan Ananda Pawar	AE12D211	Young Scientist Award 2020 (given on 27 November 2019)	International Society for Energy, Environment and Sustainability (ISEES)

Scholars/Students who won Convocation/Institute Day Prize

Sl. No.	Student/Scholar	Roll No.	Prize	Awarded by
1	Purnanand Elango	AE14B045	Mayan Prize	IIT Madras
2	Purnanand Elango	AE14B045	Dr. V. Mohan Raman Prize	IIT Madras
3	Purnanand Elango	AE14B045	Prof. Kakkara Balachandran Menon Prize	IIT Madras
4	Pratik Sutar	AE14B044	Bhagyalakshmi and Krishna Iyengar Award	IIT Madras
5	Tarandeep Singh	AE14B049	Sri Chinmay Deodhar Prize	IIT Madras
6	Aravind Shaj	AE15B009	Prof. E. G. Tulapurkara Prize	IIT Madras
7	Aravind Shaj	AE15B009	HAL Prize	IIT Madras
8	S. V. Rudra	AE16B039	Prof. T. K. Varadan Prize	IIT Madras
9	Upasana R.	AE17M027	Air India Prize	IIT Madras
10	Xavier Arunraj	AE17M028	S. Santhakumar Prize	IIT Madras
11	Dr. Ravi Teja	AE14D017	Institute Research Award	IIT Madras

4.1.3 Faculty and their Activities

Faculty

Name and Qualifications	Major Areas of Specialisation
Professors	
Dr. Ramakrishna M., Ph.D. (University of Texas at Arlington)	Fluid mechanics, numerical methods, computer solutions
Dr. Sriram P., Ph.D. (Institute Chair Professor) (Georgia Institute of Technology)	Structural mechanics, fatigue and fracture, parallel computing
Dr. Bhaskar K., Ph.D. (IIT Madras)	Structural mechanics, plates and shells, composite structures
Dr. Sujith R.I., Ph.D. (Institute Chair Professor) (Georgia Institute of Technology)	Thermoacoustic instability, optical flow diagnostics
Dr. Chakravarthy S. R., Ph.D. (Georgia Institute of Technology)	Propulsion, combustion and fluid mechanics
Dr. Velmurugan R., Ph.D. (IIT Delhi)	Composite structures analysis and design, impact mechanics, 3D composites
Dr. Luoyi Tao, Ph.D. (University of Pittsburgh)	Continuum mechanics and its applications (fluids, solids, multiphase flows, etc.)
Dr. Murthy H. S. N., Ph.D. (Purdue University)	Fatigue and fracture, non-destructive evaluation, tribology, advanced materials, elasticity
Dr. Amit Kumar, Ph.D. (Case Western Reserve University)	Combustion, propulsion, fire research, CFD
Dr. Ramakrishna P. A., Ph.D. (Indian Institute of Science)	Combustion, propulsion
Dr. Nandan Kumar Sinha, Ph.D. (IIT Bombay)	Dynamics and control of aerospace vehicles, aerial vehicle autonomy
Dr. Sunetra Sarkar, Ph.D. (Indian Institute of Science)	Insect aerodynamics, fluid structure interaction, uncertainty quantification
Dr. Sameen A., Ph.D. (Indian Institute of Science)	Stability, transition and turbulence, computational fluid dynamics
Dr. Muruganandam T. M., Ph.D. (Georgia Institute of Technology)	Combustion, blowout dynamics, optical diagnostics, spectroscopic methods, vortex breakdown, dynamics of mode shifting, high speed flows, unsteady gas dynamics
Dr. Sivasambu Mahesh, Ph.D. (Cornell University)	Structure-property modeling of aerospace materials
Associate Professors	
Dr. Rajesh G., Ph.D. (Andong National University, S. Korea)	Shock wave dynamics, high speed flows, experimental aerodynamics
Dr. Manikandan Mathur, Ph.D. (MIT, USA)	Instabilities and mixing, stratified and rotating flows, low-speed aerodynamics
Dr. K.V. Nagendra Gopal, Ph.D. (Indian Institute of Science)	Computational mechanics and multi-scale modeling, fracture mechanics, structural dynamics and aeroelasticity

Assistant Professors	
Dr. Ranjith Mohan, Ph.D. (Florida Atlantic University)	Helicopters, rotorcraft MAVs
Dr. Santanu Ghosh, Ph.D. (North Carolina University)	Computational fluid dynamics, turbulent flows, shock/boundary-layer interaction, immersed-boundary methods
Dr. Shankar Ghosh, Ph.D. (University of Minnesota)	Hypersonic flow simulation, non-equilibrium effects, computational fluid dynamics, turbulent flows
Dr. Shyam M. Keralavarma, Ph.D. (Texas A&M University)	Plasticity, ductile fracture, computational materials modeling, multiscale modeling
Dr. Joel George, Ph.D. (IISc)	Navigation, guidance and control of aerospace vehicles, multi-agent systems theory as applied to multiple unmanned aerial vehicle missions
Dr. Shantanu Shashikant Mulay, Ph.D. (Nanyang Technological University)	Continuum mechanics, large deformation of materials, fracture mechanics and plasticity
Dr. M. Senthil Murugan, Ph.D (IISc)	Aeromechanics, dynamics and aeroelasticity, stochastic systems
Dr. Satadal Ghosh, Ph.D (IISc.)	Guidance, navigation and control
Dr. Sriram Rengarajan, Ph.D (IISc)	Experimental fluid dynamics, high speed flows, shockwave boundary layer interactions
Dr. Vadlamani Nagabhushana Rao, University of Cambridge (Robinson College)	Computational fluid dynamics, transition to turbulence, turbo machinery, high order methods, high performance computing
Dr. Bharath M. Govindarajan, Ph.D. (University of Maryland, College Park USA)	Computational aerodynamics of flow past bodies, mathematical and numerical modelling, algorithms and their applications, overall design of aerospace vehicles

Short-term courses/workshops/seminars/symposia/conferences organised by the faculty members

Sl. No.	Coordinator(s)	Title	Period
1	Dr. Santanu Ghosh	Advanced Computational Techniques for Fluid Dynamics: Grid-Free and Immersed-Boundary Methods with Applications (ACTFD-19)	25-30 November 2019, Aerospace Department, IIT Madras
2	Dr. Vadlamani Nagabhushna Rao	GPU Parallelization Using Open ACC	9-11 December 2019, Aerospace Department, IIT Madras
3	Dr. P. A. Ramakrishna	12th International High Energy Conference and Exhibit	16-18 December 2019, IC&SR, IIT Madras
4	Dr. Manikandan Mathur and Anubhab Roy	Instability Mechanisms in Stratified Flows	6-10 January 2020, Department of Aerospace Engineering, IIT Madras
5	Dr. Rajesh G.	6th National Symposium on Shock Waves (NSSW 2020)	26-28 February 2020, IIT Madras, IC&SR
6	Dr. R. Sriram - Co-Chair	6th National Symposium on Shock Waves (NSSW 2020)	26-28 February 2020, IIT Madras, IC&SR

Talk by students

1	M. S. Aswathy and S. Sarkar	Talk on Nonlinear dynamics of circular cylinders undergoing vortex induced vibrations in presence of noise, Indo-Polish joint workshop conducted by Department of Automation, Lublin University of Technology, Poland and Department of Applied Mechanics, Indian Institute of Technology Madras	IC&SR, IIT Madras, India, February 2020
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Short-term courses/workshops/seminars/symposia/conferences/trainings attended by faculty members in academic institutions and public sector undertakings

Sl. No.	Faculty Member	Title	Period and Venue
1	Dr. Nandan Kumar Sinha	Chief Guest and Judge at Space India, SCRAP to SAT Competition	Inter-school Competition at National Public School, Gopalapuram, Chennai, 29 October 2019
2	Dr. P. A. Ramakrishna	Visit as an External Member, Recruitment and Assessment Centre of Defence Research and Development Organization (DRDO) in the Selection Board to recruit new scientists	27-29 November 2019, RAC, Lucknow Road, Timarpur, Delhi 110054
3	Dr. V. Nagabhushana Rao	Chaired several sessions in Gas-Turbine India (GT India 2019) ASME	5-6 December 2019, IIT Madras
4	Dr. Sivasambu Mahesh	Visit to IGCAR; Dislocation structures in plastically deformed grains	IIM theme meeting on Sheet metal forming on 31 December 2019
5	Dr. Manikandan Mathur (Co-organiser and Mentor)	Ocean Mixing & Monsoon; talk: Sea surface currents using satellite observations	21-24 January 2020, Space Applications Centre, ISRO, Ahmedabad, India

Workshops

1	Dr. Satadal Ghosh	Emergency Flood Planning and Management Using Unmanned Aerial Vehicles	IISc Bangalore, India, 18 September 2019
2	Dr. Vadlamani Nagabhushna Rao	GPU Parallelization Using Open ACC	9-11 December 2019, Aerospace Department, IIT Madras
3	Dr. P. A. Ramakrishna	Solid Propulsion Technologies	20-21 February 2020, ASL, Hyderabad

Seminar/Symposia/Conference

1	Dr. Satadal Ghosh	American Control Conference	Philadelphia PA, 10-12 July 2019
2	Dr. Satadal Ghosh	IEEE International Conference on Control & Automation	Edinburgh, Scotland, 16-19 July 2019
3	Dr. Santanu Ghosh	Invited talk: Immersed-boundary method for compressible fluid flows: Development and applications	21st AeSI Conference, NAL Bangalore, 8 August 2019

4	Dr. Satadal Ghosh	6th Indian Control Conference	Hyderabad, India, 18-20 December 2019
5	Dr. Satadal Ghosh	IFAC Advances in Control and Optimization of Dynamical Systems	Chennai, India, 16-19 February 2020
6	Dr. R. Sriram (Co-Chair)	6th National Symposium on Shock Waves (NSSW 2020)	26-28 February 2020, IC&SR, IIT Madras

Meetings

1	Dr. G. Rajesh	Peer Review Committee Meeting for Development of Technologies for Active Protection System	20 September 2019, CVDRE, DRDO, Chennai
2	Dr. G. Rajesh	Panel meeting of Armaments Research Board, DRDO as a member of the ADMB Panel	22 October 2019
3	Dr. Manikandan Mathur	Discussion meeting on Ocean Mixing & Monsoon	27-28 January 2020, Space Applications Centre, ISRO, Ahmedabad, India

Special lectures delivered by the faculty in other institutions

Sl. No.	Faculty Member	Topic of Lecture	Institution	Date
1.	Dr. Sunetra Sarkar	Invited lecture: Input noise and fluid structure interaction, 2nd International Conference on Advances in Aerospace Structures, Systems and Technology	Croydon, London, UK	May 2019
2.	Dr. Sunetra Sarkar	Invited lecture: Aperiodicity and chaos in flapping flight	Aerospace Engineering Department, Swansea University, Swansea, UK	May 2019
3.	Dr. H. S. N. Murthy, Dr. P. A. Ramakrishna and Lt. Gen. (Retd.) P. R. Shankar	Technology ingestion into armed forces – a holistic approach	National Defence College, New Delhi	3 July 2019
4.	Dr. R. I. Sujith	Keynote lecture: Analysis of thermoacoustic systems using recurrence plots	Jiangsu University of Science and Technology, Zhenjiang, China	21-23 August 2019
5.	Dr. R. I. Sujith	Plenary lecture: Complex networks to study thermoacoustic transitions in turbulent combustors, Workshop on Complex Systems and Networks	Humboldt University of Berlin, Germany	23-26 September 2019
6.	Dr. R. I. Sujith	Prognosis of an impending combustion instability	Hokkaido University, Sapporo, Japan	31 October 2019

7.	Dr. Sunetra Sarkar	Invited webinar: Unsteady aerodynamics and fluid structure interactions at Schlumberger	Schlumberger, India	December 2019
8.	Prof. T. M. Muruganandam	Invited lecture: Challenges in scramjet development	IPRC, Mahendragiri	6 January 2020
9.	Dr. R. I. Sujith	Invited talk: Complex systems approach to study thermoacoustic instability, International Conference on Complex Dynamical Systems and Applications 2020 (CDSA 2020)	Central University of Rajasthan, Ajmer, India	21-23 February 2020
10	Dr. R. I. Sujith	Invited talk: Complex systems approach to investigate thermoacoustic instability in turbulent combustors Part 1: Time series analysis Part 2: Spatiotemporal analysis (two lectures) Analytical methods in thermo and aero-acoustics, by SKYPE	Keele University, Keele, UK	11 March 2020

Visits abroad by faculty

S. No.	Faculty Member	Country Visited	Date	Purpose of Visit	Funding From
1	Dr. Vadlamani Nagabhushana Rao	Lausanne, Switzerland	8 April 2019	13th European Conference on Turbo Machinery Fluid Dynamics and Thermodynamics	Institute
2	Dr. Manikandan Mathur	France	24 April-5 June 2019	Invited Professor, Laboratoire de Physique, ENS de Lyon, France; collaborative research under SPARC	ENS de Lyon, France
3	Dr. Satadal Ghosh	USA	2-13 July 2020	Discussion on UAS project collaboration at Naval Postgraduate School (Monterey, California)	CPDA and NFIG support
4	Dr. Satadal Ghosh	USA	2-13 July 2020	American Control Conference (Philadelphia PA)	CPDA and NFIG support
5	Dr. Satadal Ghosh	UK and Scotland	14-20 July 2020	IEEE International Conference on Control and Automation (Edinburgh, Scotland)	CPDA and NFIG support

6	Dr. Santanu Ghosh	North Carolina State University, Raleigh, North Carolina, USA	15-22 July 2020	SPARC meeting	Institute, PCF
7	Dr. P. A. Ramakrishna	Ireland	22-24 July 2019	14th International Conference on Heat Transfer, Fluid Mechanics and Thermodynamics - HEFAT 2019	Institute
8	Dr. R. Velmurugan	Las Vegas, USA	11-12 July 2019	4th International Conference on Biopolymers and Polymer Chemistry	Institute
9	Dr. R. Sriram	Singapore	14-19 July 2019	32nd International Symposium on Shock Waves	Institute
10	Dr. G. Rajesh	Singapore	14-19 July 2019	32nd International Symposium on Shock Waves	Institute
11	Dr. G. Rajesh	Gdansk, Poland	8-11 July 2019	The 14th International Symposium on Experimental and Computational Aerothermodynamics of Internal Flows	Institute/Project
12	Dr. R.I. Sujith	Jiangsu University of Science and Technology, Zhenjiang, China	21-23 August 2019	8th International Symposium on Recurrence Plots	Institute
13	Dr. A. Sameen	Torino, Italy	3-6 September 2019	17th European Turbulence Conference of Euromech	Institute
14	Dr. Bharath M. Govindarajan	Warsaw, Poland	17-20 September 2019	45th European Rotorcraft Forum 2019 (ERF)	Institute
15	Dr. R. Velmurugan	Hangyang University, Seoul, South Korea	21 September-6 October 2019	SPARC Programme	Institute
16	Dr. R.I. Sujith	Humboldt University of Berlin, Germany	23-26 September 2019	Workshop on Complex Systems and Networks	Institute
17	Dr. R. Velmurugan	Bexco, Busan, South Korea	29 September-3 October 2019	12th International Symposium on Plasticity and Impact Mechanics, IMPLAST 2019	Institute

18	Dr. S. R. Chakravarthy	Santa Clara, California, USA	5 October 2019	IIT Madras Technology Summit	Institute
19	Dr. R. Velmurugan	Taipei, Taiwan	20-24 October 2019	22nd International Conference on Advances in Materials and Processing Technology (AMPT 2019)	Institute
20	Dr. R. I. Sujith	Hokkaido University, Sapporo, Japan	30-31 October 2019	Third Steering Committee Meeting of MEXT Project	Institute
21	Dr. K. V. Nagendra Gopal	University of Berlin, Germany	26-27 November 2019	IGCS Workshop on Resilient Energy Systems	Institute
22	Dr. S. R. Chakravarthy	Excel London, London, United Kingdom	11-12 February 2020	Visit to United Kingdom to attend MOVE 2020	Institute

Honours and awards

S.No.	Faculty Member	Name of Award
1	R. I. Sujith	J. C. Bose Fellowship
2	R. I. Sujith	Paper chosen as Editor's pick in <i>Chaos: An Interdisciplinary Journal of Nonlinear Science</i> - P. Kasthuri, I. Pavithran, S. A. Pawar, R. I. Sujith, R. Gejji and W. Anderson, Dynamical systems approach to study thermoacoustic transitions in a liquid rocket combustor

Journal Editorial Boards

Sl. No.	Faculty Member	Position (Editor/Member)	Journal Name
1	R. I. Sujith	Editorial Advisory Board Member	<i>Chaos: An Interdisciplinary Journal of Nonlinear Science</i>
2	Dr. G. Rajesh	Associate Editor	<i>J. Mechanical Science and Technology</i> , Springer Publications
3	Dr. Manikandan Mathur	Guest Co-Editor for issues titled, <i>Atmosphere-Ocean Dynamics of Bay of Bengal</i> - Volumes I & II	<i>Deep Sea Research Part II: Topical Studies in Oceanography</i> , October 2019 and February 2020

4.1.4 Design and Development Activities

Brief and specific details of process/instruments/equipment/software designed and developed

FEST-3D: FEST-3D (Finite-volume Explicit Structured 3-Dimensional) is computational fluid dynamic solver written in Fortran 90 for solving the Navier-Stokes equations on structured grids using state-of-the-art finite-volume methods. It is a modular, multiblock, finite-volume code developed to solve

flow problems in the field of aerodynamics. This is open-source software developed at the CFDLAB under the guidance of Dr. Santanu Ghosh. The code is available on GitHub. The website, <https://fest3d.github.io> has documentation and details of the installation.

New facilities added

Sl. No.	Equipment	Value (Rs. in lakhs)
1	Nd: YAG PIV laser with dual cavities, 50 mJ (x2) at 532 nm at 50 Hz (Make: Litron, UK), along with accessories	35

Patents

Patents Filed

S.No.	Faculty Member	Topic of Patent
1	Mr. Sreelal M. R. and Dr. G Rajesh	A lift separation sabot for kinetic energy projectiles
2	Induja P., Unni V. R. and Sujith R. I.	Patent addition to "System and method of predetermining the onset of impending oscillatory instabilities in practical devices" (Provisional-filed)
3	Induja P., Unni V. R., Alan J. V., Praveen K. and Sujith R. I.	System and method for determining oscillatory instabilities in fluid mechanical devices (Provisional-filed)
4	Manoj K., Pawar S. A., Krishnan A., Midhun P. R., Reeja K. V., Manikandan R. and Sujith R. I.	System and method for optimizing passive control of thermoacoustic instabilities in turbulent combustors (Provisional-filed)
5	Unni V. R., Sujith R. I., Krishnan A., Marwan N. and Kurths J. (joint filing with Potsdam Institute for Climate Impact Research PIK)	System and method for optimizing passive control of oscillatory instabilities in turbulent flows (Provisional-filed)
6	Premchand C. P., Nair V., Sujith R. I., George N. B., Raghunathan M. and Unni V. R. (joint filing with IIT Bombay)	System and method for optimizing passive control strategies of oscillatory instabilities using finite-time Lyapunov exponents (Provisional-filed)
7	Manoj K., Pawar S. A., Krishnan A., Midhun P. R., Reeja K. V., Manikandan R. and Sujith R. I.	System and method for optimizing passive control of thermoacoustic instabilities in turbulent combustors (Provisional-filed)
8	Roy. A., Raghunathan M., Krishnan A. and Sujith R. I.	System and methods for smart active open-loop control of thermoacoustic instability in turbulent flows using fractal based measures
9	R. Velmurugan, R. Jayaganthan, Daniel Paul, Rahul Dubey and G. Balaganesan	Two-stage design based high-speed gas gun

Sponsored research projects (ongoing and new)

S. No.	Title	Period	Funding Agency	Amount (Rs. In lakhs)	Coordinators
1	Experimental and Numerical Study of Loading Path Effects on Ductile Fracture in Nuclear Steels	4 December 2018-3 December 2021	IGCAR, Kalpakkam	39.49	Dr. Shyam Keralavarma

2	Development of Guidance and Control Systems for Sea Going Autonomous Surface Vehicles (ASV)	15 March 2019-14 March 2021	Scheme for Promotion of Academic and Research collaboration - MHRD Funded	40.13	Dr. Ranjith Mohan (CO-PI)
3	Numerical and Experimental Investigation of Flow-Separation Control Using Passive Mechanisms High-Speed Flow	20 May 2019-19 May 2021	MHRD	47.96	Dr. Santanu Ghosh
4	Guidance on Kerosene and Diesel Fired Forced Air Heater	1 August 2019-31 August 2019	M/s. Larsen & Toubro Technology Services Limited	15	Dr. Vadlamani Nagabhushana Rao
5	Dynamics and Aero-Servo- Elasticity of Morphing Aircraft	21 August 2019-20 August 2021	IITM	10	Dr. Senthil Murugan
6	Efficient High-Lift Turbine Blade Designs Exploiting the Surface Roughness Experimental and Numerical Campaign	13 December 2019-31 December 2021	Science and Engineering Research Board	32.4	Dr. Vadlamani Nagabhushna Rao
7	Feasibility Studies and Preliminary Aerodynamic Design of Autorotation-based Venus Descent Systems	1 November 2019-31 October 2020	Scheme for Promotion of Academic and Research collaboration - MHRD Funded	6.3	Dr. Ranjith Mohan
8	Experimental and Numerical Study of Flow-Separation Control in Impinging-Shock/ Boundary-Layer Interaction with Permeable Walls	24 January 2020-23 January 2021	IC&SR Research Fund	8.21	Dr. Santanu Ghosh
9	Development of Extended Range Ammunition Using Ramjet Technology with Precision Guidance in Artillery Shells	18 March 2020-17 September 2022	Ministry of Defence	995	Dr. P. A. Ramakrishna, Dr. Ramakrishna M., Dr. Murthy H.S.N., Dr. Rajesh G., Dr. Shankar P. R.
10	Investigations on the Unsteady Dynamics of 3-Dimensional Shock Induced Separation	18 December 2019-17 December 2021	Science and Engineering Research Board	28.65	Dr. Sriram Rengarajan

11	Internal Wave Generation and Propagation in the Arctic	1 July 2019-30 June 2022	National Centre for Polar and Ocean Research	26.6	Manikandan Mathur (PI) and A. Sameen (co-PI)
12	Resonant Triad Interactions in Stratified Shear Flows	15 March 2019-14 March 2021	Scheme for Promotion of Academic and Research collaboration (MHRD)	41.4	Manikandan Mathur (PI) and Anubhab Roy (co-PI)
13	Fund for Improvement of S&T Infrastructure - Three- Dimensional Stratified Flows Facility-FIST Program-2017	13 March 2018-12 March 2023	Department of Science & Technology	227	Aerospace Engineering, HOD (PI) and Manikandan Mathur (co-PI)
14	Shelf Sea and Shelf Break Processes of the Antarctic Margins and the Production of Dense Shelf Water	5 July 2019-4 July 2021	National Centre for Polar and Ocean Research	24.03	K. Murali (PI) and Manikandan Mathur (co-PI)
15	Two Phase High Speed Flows in Ground and Space Applications	May 2019-May 2022 (three years)	DST-RSF	99.98	Prof. TM Muruganandam; Prof. S. R. Chakravarthy, AE; Prof. Eduard Son, MIPT, Moscow Russia
16	Sensors for Steam Quality, Pulverised Coal Loading, In-belt Coal and Flame Stability	July 2017-December 2020 (three years six months)	BHEL-UAY	316.55	Prof. TM Muruganandam; Prof. S. R. Chakravarthy, AE; Prof. Nilesh J. Vasa, ED; Prof. Satyanarayanan Seshadri, AM
17	Comprehensive Soot Model Development for Next-Generation, Environment-Friendly Gas Turbine Combustor Design	September 2018-September 2021 (three years)	GE-UAY	308.88	Prof. TM Muruganandam; Prof. S. R. Chakravarthy, AE; Prof. Preeti A., ChE

RBIC projects (ongoing and new)

Sl. No.	Faculty Member	Title	Industry	Amount (Rs. in lakhs)
1	Dr. G. Rajesh	CFD Simulations of the Flow Through Muzzle Brakes and Bore Evacuator Projectiles	Ordnance Factory, Kanpur	56.49
2	Dr. G. Rajesh	Theoretical Estimates of Blast Effects on Various Anti-Tank Threats	HEMRL, DRDO, Pune	9.97

Exchange programme with other universities, including institutions/universities under MoU: 3
Faculty members' participation with other universities under MoU: 1

Distinguished visitors to the department

S.No.	Visitor and Designation	Date of Visit	Purpose of Visit
1	Prof. Santosh Hemchandra	22 April 2019	Lecture on The Processing Vortex Core Instability - New Insights on Fundamental Mechanisms
2	Dr. G. Ayyappan	22 April 2019	Lecture on Space Transportation System in ISOR – The Forward
3	Dr. T. P. Mohan	27 June 2019	Recent Research on Composites through the India-South Africa Joint Research Program
4	Dr. Harish Ganesh, Department of Naval Architecture and Marine Engineering University of Michigan, USA	9 July 2019	Effect of Compressibility on Shedding Dynamics of Cavitating Bubbly Flows
5	Dr. Ashok Gopalarathnam, North Carolina State University, USA	8 August 2019	Low-order Modelling of Unsteady Airfoil and Wing Aerodynamics Dominates by Leading-Edge Vortex Shedding
6	Dr. Ravi N. Banavar	16 September 2019	Constrained Optimal Control with Frequency Constraints for Space Applications
7	Dr. Venkateswaran Narayanaswamy, Associate Professor, Mechanical and Aerospace Engineering Department of NCSU	4-22 December 2019	SPARC program visiting faculty
8	Prof. Thierry Dauxois, Laboratoire de Physique, ENS de Lyon, France	3-26 January 2020	Research collaboration under SPARC programme—as visiting faculty
9	Dr. Konstantin Arefiev, Responsible Executor, and Dr. Aleksandr Prokhorov, Director of MIPT Hypersonic and Plasma Technology Laboratory, and Scientists, CIAM, Moscow, Russia	22 July 2019	Collaboration on Multiphase Supersonic Flows

Distinguished visitors (students)

S.No	Students	Date
1	Ngee Ann Polytechnic, Singapore	13 September 2019
2	R. D. Public School, Betul, Madhya Pradesh	19 December 2019

4.1.6. Other Activities

S.No	Faculty Member	Activity
1	Dr. Sunetra Sarkar	Biomimetics and Dynamics Lab featured in HPCE highlights of IIT Madras http://www.cse.iitm.ac.in/~rupesh/service/hpce/highlight/?id=sunetra

International collaboration/achievements by the Department

Faculty Visit

S.No.	Faculty Member	Purpose of Visit	Date and Venue
1	Dr. T. Jayachandran	Visiting Faculty	16 October 2019-31 December 2020, Aerospace Department, IITM
2	Dr. P. Ravi Sankar (Lt. Gen. (Retd.))	Professor of Practice	22-28 February 2020, Aerospace Department, IITM

3	Dr. P. B. Navle	Professor of Practice	2 March 2020-28 February 2021, Aerospace Department, IITM
4	Dr. Lazar T. Chitilappilly	Professor of Practice	19-28 February 2020, Aerospace Department, IITM

Faculty visited from abroad

S.No.	Faculty Member	Purpose of Visit	Place
1	Dr. Ianko Chterevev	Research collaboration	Germany (DLR Stuttgart)
2	Dr. Venkate Narayanaswamy	Visiting Faculty Under - SPARC	Aerospace Department, IITM
3	Dr. Thierry Dauxois	Visiting Faculty Under - SPARC	Aerospace Department, IITM
4	Dr. Dong Ruan	Visiting Faculty Under - SPARC	Aerospace Department, IITM
5	Dr. Guoxing LU	Visiting Faculty Under - SPARC	Aerospace Department, IITM
6	Dr. Philippe Odier	Visiting Faculty Under - SPARC	Aerospace Department, IITM
7	Dr. Jack Edwards	Visiting Faculty Under - SPARC	Aerospace Department, IITM

Student visited from abroad

S.No.	Student	Purpose of Visit	Place
1	Virgile Cado	Course Work	ESTACA, France
2	Anton Kovalov	Course Work	Ukraine, Kyiv
3	Afonso Vieira da Silva Luz	Course Work	Portugal
4	Ricardo Beja Belchior dos Santos	Course Work	Portugal
5	Luis Francisco Gouveia Pereira	Course Work	Portugal
6	Anton Kovalov	Course Work	Warsaw, Poland
7	Pajot Anaelle	Course Work	ESTACA, France
8	Dercier Victor	Course Work	ESTACA, France
9	Patanella Luca	Course Work	ESTACA, France
10	Felix Schreiner	Course Work	Germany

Activities initiated

Major infrastructure development made in the department

1	Developed a 225 x 100 mm shock tube which is 9 meters long and can generate Mach numbers ranging from 1.2 to 3: Rajesh G, Ballistics and High-Speed Laboratory
2	Developed Aero-ballistic range which can generate velocities up to ~ 2500 m/s for nylon projectiles. Rajesh G, Ballistics and High-Speed Laboratory

4.2 Department of Applied Mechanics

4.2.1 Introduction

The Department of Applied Mechanics has been in existence since 1962 and become a full-fledged interdisciplinary graduate research department over the years. The department focuses on academic activities in three broad areas: biomedical engineering, fluid mechanics and solid mechanics. The department also offers minor streams for undergraduate students.

4.2.2 Academic Programmes

Ph.D., Direct Ph.D., M.S. (by research), M.Tech. (Computational and Experimental Mechanics), M.Tech. (Biomedical Engineering), and Inter-Disciplinary Dual Degrees in Biomedical Engineering and Computational Engineering

Students on roll as of September 2019+M.S. and Ph.D admission in January 2020

Programme	Year I	Year II	Year III	Year IV	Total
M.Tech.	18	17	-	-	35
M.S.	30	12	19	-	61
Ph.D.	31	24	28	22	105
Upgradation	-	5	7	6	18
DPHD	1	4	3	7	15
PMRF Ph.D.	-	-	1	-	1
Total	80	62	58	35	235

Student/Scholar who attended conferences/workshops/seminars/symposia abroad/India

Sl. No.	Student/Scholar	Roll No.	Conference/Seminar/Symposia/Workshop	Date and Venue
Abroad				
1	Darish Jeswin Dhas S.	AM16D022	International Soft Matter Conference	3-7 June 2019, University of Edinburgh, Edinburgh
2	Darish Jeswin Dhas S.	AM16D022	IUTAM Symposium on Computational Modelling of Instabilities and Turbulence in Separated Two-Phase Flows	10-12 June 2019, University College of Dublin, Ireland
3	Darish Jeswin Dhas S.	AM16D022	BGUM2019	17-19 June 2019, Sorbonne Université, Paris
4	Niraj Bagh	AM15D017	7th International Conference on Smart Computing and Communication (ICSCC-2019)	28-30 June 2019, Curtin University, Malaysia
5	Pijush Patra	AM17D700	International Conference on Waves, Instabilities and Turbulence in Geophysical and Astrophysical Flows (WITGAF-2019)	8-19 July 2019, Cargèse, France

6	Sowmiya Chandramoorthy	AM13D202	IEEE Engineering in Medicine and Biology Conference	23-27 July 2019, Berlin, Germany
7	Niraj Bagh	AM15D017	IEEE Engineering in Medicine and Biology Conference	23-27 July 2019, Berlin, Germany
8	Navaneethakrishna Makaram	AM16D001	IEEE Engineering in Medicine and Biology Conference	23-27 July 2019, Berlin, Germany
9	Ali Arshad Kothawala	AM14D401	IEEE International Ultrasonics Symposium (IUS) 2019	Glasgow, UK
10	Nagarajan G.	AM15D007	Big Brain conference	1-4 October 2019, Moscow, Russia
11	Satyavratn G.	AM16D037	Diagnostics for future Conference	27-29 December 2019, Konstanz, Germany
12	Rohini P.	AM16D301	Diagnostics-4-Future Conference	27-29 December 2019, Konstanz, Germany
13	Punitha N.	AM15D037	Diagnostics-4-Future Conference	27-29 December 2019, Konstanz, Germany
14	Deepthi	AM16D201	AIAA SciTech Forum and Exposition	6-10 January 2020, Florida, USA
15	Ali Arshad Kothawala	AM14D401	IEEE International Symposium on Biomedical Imaging (ISBI'20) (This was turned into a "virtual" conference.)	4-7 April 2020, Iowa City, USA
16	Anand R.	AM15D026	ISBI'20 (This was turned into a "virtual" conference.)	4-7 April 2020, Iowa City, USA
17	Anudeep V.	AM16D203	ISBI'20 (This was turned into a "virtual" conference.)	4-7 April 2020, Iowa City, USA
18	Aghna Mukherjee	AM16D406	SPIE Smart Structures + Nondestructive Evaluation (online only)	California, United States

India

1	Darish Jeswin Dhas S.	AM16D022	Soft Matter Young Investigators Meeting 2019	12-14 May 2019, Pinewood Hotel, Shillong
2	Anu V. S. Nath	AM18D203	Soft Matter Young Investigators Meeting 2019	12-14 May 2019, Pinewood Hotel, Shillong
3	Prabhash Kumar	AM17D205	Soft Matter Young Investigators Meeting 2019	12-14 May 2019, Pinewood Hotel, Shillong
4	Niraj Bagh	AM15D017	1st Edition of IEEE Bombay Section Signature Conference	26-28 July 2019, IIT Bombay
6	Sowmiya C.	AM13D202	IEEE Region 10 Conference (TENCON 2019)	17-20 October 2019, Kochi, Kerala
7	Rahul Kumar	AM15D404	ASME Gas Turbine India Conference (GTIndia 2019)	5-6 December 2019, Chennai
8	Harshal P. Mahamure	AM17D012	13th International Conference on Complex Fluids and Soft Matter	5-7 December 2019, IISER Bhopal
9	Kalluri Manohar Teja	AM18S005	13th International Conference on Complex Fluids and Soft Matter	5-7 December 2019, IISER Bhopal

10	Rajanya Chatterjee	AM17D200	7th International Congress on Computational Mechanics and Simulation	11-13 December 2019, IIT Mandi
11	Shib Sundar Banerjee	AM16D206	7th International Congress on Computational Mechanics and Simulation	11-13 December 2019, IIT Mandi
12	Lakshmi M. Hari	AM17D024	7th International Congress on Computational Mechanics and Simulation	11-13 December 2019, IIT Mandi
14	Rahul Das	AM17D201	12th Conference on Nonlinear Systems and Dynamics	12-15 December 2019, IIT Kanpur
15	Saranya Biswas	AM16D401	12th Conference on Nonlinear Systems and Dynamics	12-15 December 2019, IIT Kanpur
16	Kalluri Manohar Teja	AM18S005	16th Asian Congress of Fluid Mechanics	13-17 December 2019, JNCASR, Bengaluru
17	Shashi Kumar J.	AM16D031	16th Asian Congress of Fluid Mechanics	13-17 December 2019, JNCASR, Bengaluru
18	Karthikeyan J.	AM17D009	16th Asian Congress of Fluid Mechanics	13-17 December 2019, JNCASR, Bengaluru
19	Prafulla P. Shevkar	AM16D009	16th Asian Congress of Fluid Mechanics	13-17 December 2019, JNCASR, Bengaluru
20	Prafulla P. Shevkar	AM16D009	25th National and 3rd International ISHMT-ASTFE Heat and Mass Transfer Conference	28-31 December 2019, IIT Roorkee

Students/Scholars who won outside prizes and awards

Sl.No.	Student/Scholar	Roll No.	Prize	Prize awarded by
1	Punitha N.	AM15D037	Best Written Paper Award	Rocky Mountain Bioengineering Symposium, Wisconsin, USA
2	Niraj Bagh	AM15D017	Best Paper award for the paper: Second order difference plot to decode multi-class motor imagery activities	ICSCC-2019, Curtin University, Malaysia
3	Aasifa Rounak	AM15D201	Myers Uyehara Outstanding Student Paper Award	The SAEINDIA Foundation for FY'2019-20 (Society for Automotive Engineers India)
4	Shashi Kumar J.	AM16D031	Best Young Researcher Award	SADHANA - Proceedings of Indian Academy of Sciences
5	Harshal P. Mahamure	AM17D012	Best Poster Award from American Chemical Society	13th International Conference on Complex Fluids and Soft Matter

6	Ali Arshad Kothawala	AM14D401	AWSAR award for popular science story, Sound-it Shows-it Cures	
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Student Grant

Sl.No.	Student/Scholar	Roll No.	Prize	Prize awarded by
1	Shashank Kumar Gupta	AM14S028	2,00,000	Nirmaan (IITM pre-incubation cell)

Students/Scholars who won Institute Convocation/Institute Day Prize

Sl.No.	Student/Scholar	Roll No.	Prize	Donor
1	Chandan Bose	AM14D403	Institute Research award	Institute

4.2.3 Faculty and Their Activities

Faculty

Name and Qualifications	Major Areas of Specialisation
Professors	
S. Ramakrishnan, Ph.D. (Head)	Biomedical instrumentation, signal analysis, brain image analysis
M. Ramasubba Reddy, Ph.D.	Bio-signal processing, bio-instrumentation
K. Ramesh, Ph.D.	Digital photomechanics, fracture mechanics, computer applications in experimental mechanics
C. Lakshmana Rao, Ph.D.	Impact mechanics, fracture mechanics, modelling of smart materials, numerical approach
M. S. Sivakumar, Ph.D.	Smart materials and structures, inelasticity/plasticity, fatigue of materials
M. Manivannan, Ph.D.	Haptics, medical simulation, biomechanics, virtual reality, computational geometry and physiology
Dr. Mahesh V. Panchagnula, Ph.D.	Spray combustion and atomization, surface tension phenomena, multiphase flows, active particles and systems
B.S.V. Prasad Patnaik, Ph.D.	Computational fluid dynamics, CFD tools for FSI, micro, bio-fluid flow systems
A. Arockia Rajan, Ph.D.	Smart materials, composites, material modelling, computational mechanics and experimental mechanics
Anuradha Banerjee, Ph.D.	Fracture and fatigue analysis in metals, composites, bio-materials, brittle materials
Arul Prakash K., Ph.D.	CFD and heat transfer, LES and related techniques, thermal hydraulics, cooling technologies, biofluid dynamics
A. Baburaj Puthanveetil, Ph.D.	Coherent structures in turbulent convection, interfacial phenomena and transport across membranes
N. Sujatha, Ph.D.	Biomedical imaging, speckle metrology, non-invasive tissue characterization
Sayan Gupta, Ph.D.	Vibrations, nonlinear dynamics, probabilistic mechanics, structural reliability

S. Vengadesan, Ph.D.	CFD and turbulence modelling—basics, advanced topics and applications to engineering problems, FSI, biofluid flows
Arun Kumar Thittai, Ph.D.	Ultrasound imaging, HIFU application in therapy, acoustic radiation force application in mechanics, photoacoustics
Sarith P. Sathian, Ph.D.	Rarefied gas flows and nanofluidics
Associate Professors	
Vagesh D. Narasimhamurthy, Ph.D.	CFD, DNS, turbulence, transition, bluff body flows, premixed combustion, multiphase flows
Abhijit Chaudhuri, Ph.D.	Modelling hydrothermal systems, water waves, mass transfer in heterogeneous systems
Pijush Ghosh, Ph.D.	Nanomechanics, biomaterials, mechanics of thin films, molecular dynamics simulation
Raghavendra Sai V. V., Ph.D.	Biosensor for healthcare, fibre optic sensor and instrumentation, nanotechnology
Shaikh Faruque Ali, Ph.D.	Vibration and its controls, smart structures and energy harvesting
Saumendra Kumar Bajpai, Ph.D.	Cell mechanics, tissue mechanics, biophysics of tumours, vascular mechanics
Assistant Professors	
Rinku Mukherjee, Ph.D.	Applied aerodynamics—flow modelling, unsteady wake phenomenon, dynamic stall and formation flight, CFD
Satyanarayanan S., Ph.D.	Aerosol mechanics, air quality - sensors, control equipment, renewable thermal energy - WHR/solar
Varadhan S.K.M., Ph.D.	Neural control of human movement, neuro mechanics and biomechanics
Anubhab Roy, Ph.D.	Hydrodynamic stability, microhydrodynamics, geophysical flows, living fluids
Ganesh Tamadapu, Ph.D.	Mechanics of elastomers, encapsulated microbubbles, tensegrity structures

Short-term courses/workshops/seminars/symposia/conferences organised by the faculty members

Sl. No.	Coordinator(s)	Title	Period
Workshops			
1	Dr. S.K.M. Varadhan	Summer workshop on Biomechanics and Neuroscience of Human Movements, IIT Gandhinagar	4-6 June 2019
2	Prof. M. Manivannan	GATE (BM) Awareness Workshop for Biomedical Engineering Faculty, IIT Madras	27 July 2019
3	Prof. S. Ramakrishnan	Hands-on workshop on Deep Learning	February 2020
Short-term course			
1	Dr. Santanu Ghosh, AE; Dr. K. Arul Prakash, AM	Advanced Computational Techniques on Fluid Dynamics: Immersed Boundary Method and Meshless Methods	25-30 November 2019

Short-term courses/workshops/seminars/symposia/conferences/trainings attended by the faculty members in academic institutions and public sector undertakings

Sl. No.	Faculty Member	Title	Institution	Period
Workshops				
1	Prof. S. Vengadesan	Design of next-generation industrial coolants using nanofluids	Novosibirsk State University of Civil and Architecture, Novosibirsk, Russia	6-12 July 2019
2	Dr. Sarith P. Sathian			
3	Prof. Arul Prakash	Participated in ISRO-STC workshop	IITM Research Park, Chennai	16-17 September 2019
Symposia				
1	Dr. Arun K. Thittai	IEEE International Ultrasonics Symposium (IUS) 2019	Glasgow, UK	5-7 October 2019
2	Dr. Arun K. Thittai	Regularized Kurtosis Imaging and its comparison with regularized log spectral difference and regularized Nakagami Imaging for microwave hyperthermia hotspot monitoring	IEEE International Symposium on Biomedical Imaging (ISBI'20), Iowa City, USA	4-7 April 2020
		Compressed sensing for data reduction in synthetic aperture ultrasound imaging: a feasibility study		
		A novel filtered delay weight multiply and sum (F-DwMAS) beamforming for ultrasound imaging: preliminary result		
Conferences				
1	Prof. M. Ramasubba Reddy	Multiview MAX-VAR canonical correlation approach for enhancing SSVEP-based BCIs	IEEE Biomedical Health Informatics & Body Sensor Networking 2019, Chicago	19-22 May 2019
2	Prof. M. Ramasubba Reddy	A novel EOG-based synchronous and asynchronous visual keyboard system	IEEE Biomedical Health Informatics & Body Sensor Networking 2019, Chicago	19-22 May 2019
3	Prof. Arul Prakash		International Conference on Mathematical and Biomedical Engineering Sendai City, Japan	10-12 June 2019
4	Dr. V. V. Raghavendra Sai		Conference on Bio-Sensing Technology Kuala Lumpur, Malaysia	16-19 June 2019

5	Dr. Ganesh Tamadapu		International Conference on Material Modeling Lund, Sweden	26-28 June 2019
6	Dr. Arun K. Thittai		IEEE Engineering in Medicine and Biology Conference, Berlin, Germany	23-27 July 2019
	Prof. S. Ramakrishnan			
7	Dr. Vagesh D. Narasimhamurthy		EUROMECH 17th European Turbulence Conference, Torino, Italy	2-10 September 2019
8	Prof. Arul Prakash		XII International Conference on Heat, Mass and Momentum Transfer, Rome, Italy	3-4 September 2019
9	Prof. S. Ramakrishnan		Big Brain Conference Moscow, Russia	1-5 October 2019
10	Prof. K. Ramesh	Recent Advances in Materials & Manufacturing Technologies	International Conference on Recent Advances in Materials & Manufacturing Technologies BITS Pilani, Dubai Campus, Dubai	20-24 November 2019
11	Dr. Vagesh D. Narasimhamurthy	A new Eulerian-Lagrangian solver for simulation of particle laden flows	13th International Conference on Complex Fluids and Soft Matter IISER, Bhopal, India	5-7 December 2019
12	Dr. Vagesh D. Narasimhamurthy	DNS of an oscillating shear-layer between two parallel Couette flows	16th Asian Congress of Fluid Mechanics JNCASR, Bengaluru, India	13-17 December 2019

Special lectures delivered by the faculty in other institutions

Sl. No.	Faculty Member	Topic of Lecture	Institution	Date
1	Prof. M. Manivannan	Invited Talk	PGIMER, Chandigarh	27 May 2019
2	Prof. K. Arul Prakash	Thermo-Fluid Dynamics for Energy Systems	School of Engineering, IIT Mandi	13 May 2019
3	Dr. S.K.M. Varadhan	Grasping Neuromechanics Part I. Biomechanics	IIT Gandhinagar	4-6 June 2019
		Grasping Neuromechanics Part II. Motor Control	IIT Gandhinagar	
		Application of Mechanics in Understanding CNS (dys)function	INCAM 2019, IISc, Bengaluru	2 July 2019
6	Dr. V. V. Raghavendra Sai	Fiber Optic Chemical and Biosensors: Sensor Design and Device Development	NTU, Singapore	13 June 2019
7		Fiber Optic Sensor Platform as a Potential Tool for Biosensing, Biomaterial Research and Biological Cell Monitoring	Sri Chitra Tirunal Institute for Medical Science and Technology, Trivandrum	22 June 2019

8		Plasmonic Fiberoptic Nanobiosensors for Proteins, Nucleic Acids, Bacteria and Toxins	Sankara Nethralaya, Chennai	26 July 2019
9	Prof. N. Sujatha	Bringing Light to Biomedical Engineering- Pain-free Disease Diagnostics and Treatment Monitoring	Summer school in optics and photonics, IISc, Bangalore	18 June 2019
10	Prof. M. Manivannan	To deliver Prestigious Lecture Series	MS Ramaiah Medical College, Bengaluru	6 July 2019
11	Prof. Arul Prakash	Thermo-Fluid Dynamics for Energy Systems	National Research Center, Juelich, Germany	5 September 2019
12	Prof. M. Manivannan	Role of Virtual Reality and Haptics in Medical Simulation in India	9th Transforming Healthcare with IT (THIT) Hyderabad	13-14 September 2019
13	Prof. Arul Prakash	Computational Fluid Dynamics Analysis of Cardiovascular System	TEQIP III Sponsored Workshop on Computational Biomechanics, PSG College of Technology, Coimbatore	14 September 2019
14	Prof. M. Manivannan	Virtual Reality and Haptics in Medical Simulations in India	AIIMS, Jodhpur	4-5 November 2019
15	Dr. Sayan Gupta	Uncertainty Quantification: Principles and Challenges	Airbus India, Whitefield, Bangalore	25 November 2019
16	Prof. M. Manivannan	Invited Talk in SAPCON 2020	Sri Ramachandra University, Chennai	9 March 2020

Visits abroad by faculty

Sl. No.	Faculty Member	Country Visited	Date	Purpose of Visit
1	Dr. Varadhan S.K.M.	Israel	21-26 May 2019	Visited Technion and Tel Aviv University as part of IIT Madras delegation to Israel universities
2	Dr. V. V. Raghavendra Sai	Nanyang Technological University (NTU), Singapore	13 June 2019	Discussion for research collaboration and seminar
3	Prof. K. Arul Prakash	JAIST, Ishikawa, Japan	13-14 June 2019	Discussions on research collaborations
4	Dr. Ganesh Tamadapu	KTH Royal Institute of Technology, Stockholm, Sweden	24 June-2 July 2019	Discussions regarding existing and new research collaboration
5	Prof. Arul Prakash	Università degli Studi di Napoli "Parthenope", Italy	2 September 2019	Technical discussions regarding existing and new research collaborations

6	Prof. Arul Prakash	Juelich Germany	5 September 2019	Visit to National Research Center
7	Prof. Arul Prakash	RWTH Aachen University, Germany	5-6 September 2019	To monitor and discuss about the ongoing Joint Doctoral Programme
8	Prof. S. Ramakrishnan	Düsseldorf, Germany	19-20 November 2019	MEDICA, International trade fair for medical technology
9	Prof. M. Manivannan	Honzhou, China	10-14 November 2019	Industrial collaboration
10	Dr. Anubhab Roy	Cornell University, USA	15-22 November 2019	Research collaboration
11	Dr. Anubhab Roy	Seattle, USA	23-26 November 2019	Annual Meeting of the Division of Fluid Dynamics, American Physical Society
12	Prof. S. Ramakrishnan	Germany	13-18 January 2020	UGC-DAAD Joint Program

Honours and awards obtained by faculty

Sl. No.	Faculty Member	Award	Awarded by	Awarded for	Date of Award
1	Prof. M. Manivannan	Prestigious lecture series - Simulation in Health Care - The Indian Scenario	Ramaiah University of Applied Sciences	Prestigious lecture series - Simulation in Health Care - The Indian Scenario, Ramaiah University of Applied Sciences	6 July 2019

Fellowships of Academies and Professional Societies

Sl. No.	Student/Faculty	Year of Admission
SERB		
1	Dr. Vagesh D. Narasimhamurthy and Dr. Tanmoy Mondal	April 2019
Others		
1	Dr. Sayan Gupta and Dr. Mahashwata Patra	September 2019

Journal Editorial Boards

Sl. No.	Faculty Member	Position (Editor/Member)	Journal Name
1	Prof. M. Manivannan	Associate Editor	<i>Journal of Medical & Biological Engineering & Computing</i>

4.2.4 Design and Development Activities

Patents

Patents filed

Sl. No.	Faculty Member	Topic of Patent
1	Prof. Manivannan Muniyandi	Method of constructing hybrid tactile display
2	Prof. Mahesh V. Panchagnula	Design of a walk-in lab test to identify lung morphometry features using aerosol deposition

3	Prof. Arun K. Thittai	Method and system for ultrasonic regularized Nakagami parameter imaging for microwave hyperthermia monitoring
4	Prof. Arun K. Thittai	Method and system for automated filtering of fetal ultrasound images containing gender indicative features
5	Prof. Arun K. Thittai	Method and apparatus using weighted nonlinear beamformer for ultrasound imaging
6	Prof. Arun K. Thittai	System and method for automated filtering of salient anatomic features in an ultrasound image
8	Prof. Saumendra K. Bajpai	A rapid, efficient and low-cost method for determining the lipid concentration in a sample
9	Prof. Raghavendra Sai V. V.	A method and an apparatus to fabricate fiber optic sensor probes
10	Prof. Raghavendra Sai V. V.	Systems and methods for detection of Severe Acute Respiratory Syndrome Coronavirus 2
11	Prof. Satyanarayanan Seshadri	Advanced regenerative two-stage organic Rankine cycle architectures for dual/multi-source heat recovery
12	Prof. Sujatha N.	Low-cost laser speckle fiberscope design for immediate detection of extent of cancerous tissues

International Patents

1	Prof. Satyanarayanan Seshadri	Controlling admission volume of inlet gas for fixed RPM operation of rotary or reciprocating expander
2	Prof. Satyanarayanan Seshadri	Online device or instrument and methodology to measure fly ash particulate optically in industrial stack emissions independent of moisture

4.2.5 Research and Consultancy Sponsored research projects (ongoing and new)

Sl. No.	Title	Start Date	Close Date	Funding Agency	Amount (Rs. in lakhs)	Coordinators
1	Compressed sensing-based affordable ultrasound scanner platform	27 March 2019	26 March 2022	Science and Engineering Research Board	30.29	Arun K. Thittai
2	Solvent-triggered changing bio-polymer films: experimental and numerical design	19 March 2019	18 March 2021	Department of Science & Technology	5.9	Pijush Ghosh
3	Transition to turbulence in rough Couette flows	25 March 2019	24 March 2022	Science and Engineering Research Board	26.77	Vagesh D. Narasimhamurthy
4	Shear-layer Instabilities in the turbulent wake from normal flat-plates	23 April 2019	22 April 2021	Science and Engineering Research Board	19.2	Vagesh D. Narasimhamurthy

5	Investigation of nanoscale heat transport at solid-liquid interfaces for engineering-tailored nanostructures in thermal interface systems	31 December 2019	30 December 2022	Ministry of Human Resource and Development	48.44	Sarith P. Sathian
6	Development of assessment protocols for aspiring athletes using surface electromyography signals	3 February 2020	2 February 2023	Science and Engineering Research Board	20.28	Ramakrishnan S.
7	Fabrication of collagen and collagen peptide based floating beads with doxycycline, proton pump inhibitor and antioxidant: a novel synergistic approach to treat peptic ulcer	15 April 2019	14 April 2020	Council of Scientific and Industrial Research	4.52	Arockiarajan A.
8	Developing interface between clay and concrete applying polymers	6 March 2020	5 June 2023	Science and Engineering Research Board	46	Pijush Ghosh
9	Development of a lossy mode resonance based fiber optic biosensor array platform for ochratoxin-A detection in foods	1 May 2019	30 April 2021	Science and Engineering Research Board	19.2	Raghavendra Sai V. V.
10	Aerosol transport in the deep lung to enable personalized pulmonary drug delivery (P2D2)	30 April 2019	29 April 2021	Scheme for Promotion of Academic and Research	97.24	Satyanarayanan Seshadri
11	Estimation of thermal load due to mixing in 10t vertical mixer	1 May 2019	31 October 2020	Indian Space Research Organisation	19.8	Arul Prakash K.
12	An automated digital staining machine for immediate detection of cancerous cells and its extent for usage during perioperative tumour removal	1 April 2019	31 March 2021	Indian Council For Medical Research	11.78	Sujatha N.
13	INAE Distinguished Professor/ Technologist	6 May 2019	31 March 2022	Indian National Academy of Engineering	19.5	P. Chellapandi

14	Speech assistive gloves for post traumatic care of people with compromised ability to vocally communicate	15 July 2019	14 July 2021	Department of Science & Technology	40.58	Varadhan S. K. M.
15	1 Lab - 1 School: Taking STEM to rural schools in India	27 June 2019	26 June 2022	Department of Science & Technology	32.31	Pijush Ghosh
16	Development of non-invasive and affordable liver-stiffness imaging device and clinical evaluation of its utility for metabolic disorders	8 July 2019	8 June 2022	Department of Science & Technology	59.22	Arun Kumar Thittai
17	Non-invasive transdermal collagen and perfusion sensor for cosmetic and diagnostic applications	3 September 2019	2 September 2021	Department of Science and Technology	43.44	Sujatha N.
18	Project smart agricopter: the next generation agricultural drone that offers a completely automated and end-to-end solution to the crop maintenance process	20 September 2019	19 June 2020	Indo-US Science and Technology Forum	11	Satyanarayanan Seshadri
19	Development of WBG-based integrated drive system for electric vehicles (evIDS)			Centre for Development of Advance Computing (CDAC)	63.98	Arul Prakash K.
20	Energy-efficient tyre curing process			Apollo Tyres	35.95	Arul Prakash K.
21	Reduced 1D model for measuring fractional flow reserve and in-vitro validation			GCRF - Swansea University	6.4	Arul Prakash K.

RBIC projects (ongoing and new)

Sl. No.	Faculty Member	Title	Industry	Amount (Rs. in lakhs)
1	Satyanarayanan Seshadri	Development of IoT enabled thermal energy monitoring solutions for heat pump and hot water generation systems	Aspiration Energy Private Limited	12

2	Satyanarayanan Seshadri	Development of cold storage boxes - TAN90	Entrepreneurship Development and Innovation Institute	3.75
3	Arun Kumar Thittai	Design and development of a computer-vision based automatic visual inspection system for moulded rubber products	Scorpion Industrial Polymers Private Limited	7.08
4	Varadhan S. K. M.	Validation of sensors to identify and measure knee varus thrust, an indicator of osteoarthritis development and progression	University of Sydney	2.4
5	Raghavendra Sai V. V.	Plasmonic fiberoptic competitive immunosensor for tetrahydrocannabinol—a proof of concept study	Ricovr Healthcare Inc	10.5

Retainer consultancy (ongoing and new)

Sl.No.	Faculty Member	Title	Industry	Amount (Rs. in lakhs)
1	Manivannan M.	Design and development of surgical robots	RoboSurg Pte Limited	6

Industrial consultancy projects (ongoing and new)

Sl. No.	Type	Faculty Member	Title	Industry	Amount (Rs. in lakhs)
1	Corporate Social Responsibility	Manivannan Muniyandi	Novel technology for training in reduction of infant mortality rate in rural India	India Ideas.com Ltd.	350
2	External Testing	Arockiarajan A.	Mechanical testing of samples	Common Code	5
3	Internal Testing	Arockiarajan A.	Mechanical testing of samples	Common Code	5
4	Corporate Social Responsibility	Satyanarayanan Seshadri	Development of dust monitoring system using light scattering principle for stack monitoring	Engineers India Limited	22
5	Corporate Social Responsibility	Satyanarayanan Seshadri	Desktop water jet system for offshore applications	Engineers India Limited	22

Exchange programme with other universities, including institutions/universities under MoU

Sl.No.	Student	Purpose	Venue and Date
1	Kuzhandai Shamlee James	Short-term student exchange through project	Institute for Surface Technology, Braunschweig, Germany, July-September 2019
2	Sobin Alosiuos	Joint Doctoral Program	Swinburne University of Technology Melbourne, Australia, July 2019
3	Amith K.	Joint Doctoral Program	Swinburne University of Technology, Melbourne, Australia, July 2019

Faculty members' participation with other institutions under MoU

Sl.No.	Student	Course	Venue and Date
1	Rahul Das	Workshop on Nonlinear Oscillations, Waves & Advanced Asymptotic Methods	IIT Gandhinagar, 11-13 November 2019
2	T. Janardhan Reddy	Summer School on Machine Learning	IIIT Hyderabad, 8-13 July 2019
3	Niraj Bagh	One-day tutorial on Machine Learning and Deep Learning	IIT Bombay, 26 July 2019
4	Pradeep Jadhav Ashok	Introduction to High Performance Computing	SERC, Indian Institute of Science (IISc), Bangalore 3-14 September 2019
5	Shashi Kumar J.	High Performance Computing: Architectures, Programming Models and Languages, Algorithms and Applications, Big Data, AI and Deep Learning	SERC, Indian Institute of Science (IISc) Bangalore, India, 27-31 May 2019
6	Prince Victor J. C.	High Performance Computing: Architectures, Programming Models and Languages, Algorithms and Applications, Big Data, AI and Deep Learning	SERC, Indian Institute of Science (IISc) Bangalore, India, 27-31 May 2019

Distinguished visitors to the department

Sl.No.	Name and Designation	Date of Visit	Purpose of Visit
1	Dr. Sivaguru S. Sritharan, Vice- Chancellor, M.S. Ramaiah University of Applied Sciences	16 May 2019	To collaborate with Touchlab
2	Prof. P. Nithiarasu, Swansea University	6 June-5 July 2019	VAJRA Faculty
3	Dr. Venkat Sadanand, Loma Linda, California	28 June-7 July 2019	Collaboration
4	Dr. Mandayam Srinivasan, UCL London	1-31 July 2019	VAJRA Faculty
5	Dr. Prasanna, John Hopkins University, Baltimore	30 July 2019	Collaboration
6	Prof. Yoon-Kyoung Cho, School of Life Sciences, Ulsan National Institute of Science and Technology, Republic of Korea	29 September 2019	Research collaboration
7	Prof. BiswaNath Datta	2-8 January 2020	Honorary Visiting Professor
8	Prof. Arben Merkoci, Institut Català de Nanociència I, Nanotecnologia (ICN2), Barcelona, Spain	3 March 2020	Seminar: Nanobiosensors for diagnostics applications

4.2.6 Other Activities of the Department/Centre Faculty visit

Sl.No	Faculty Member	Purpose of Visit	Institute, Date and Venue
1	Dr. M. Manivannan	Ph.D. Thesis Examiner	IIT Delhi, 17 May 2019
2	Dr. M. Manivannan	Faculty Interview Panel as Expert	IIT Ropar, 28 May 2019
3	Dr. S. Ramakrishnan	Faculty Interview Panel as Expert	IIT Hyderabad, 20 May 2019
4	Prof. M Manivannan	PMRF Selection Panel Member	IIT Bombay, 3-4 June 2019
5	Dr. V. V. Raghavendra Sai	Discussion for research collaboration and seminar	Nanyang Technological University (NTU), Singapore, 13 June 2019

6	Prof. K. Arul Prakash	Discussions on research collaborations	JAIST, Ishikawa, Japan, 13-14 June 2019
7	Prof. M Manivannan	PhD Examiner	IIT Delhi, 18 June 2019
8	Dr. Ganesh Tamadapu	Discussions regarding existing and new research collaboration	KTH Royal Institute of Technology, Stockholm, Sweden, 24 June-2 July 2019
9	Prof. M. Manivannan	Faculty Selection Panel Member	IIT Bombay, 27 June 2019
10	Dr. V. V. Raghavendra Sai	BIRAC invitation as an expert for site visit	KIIT, Bhubaneswar, 28 June 2019
11	Prof. M. Manivannan	To deliver Prestigious Lecture Series	M.S. Ramaiah Medical College, Bengaluru, 6 July 2019
12	Prof. M. Manivannan	Faculty Selection Panel Member	IISc Bangalore, 17 July 2019
13	Prof. Arul Prakash	Technical discussions regarding existing and new research collaborations	Università degli Studi di Napoli "Parthenope", Italy, 2 September 2019
14	Prof. Arul Prakash	To monitor and discuss about the ongoing Joint Doctoral Programme	RWTH Aachen University, Germany, 5-6 September 2019
15	Dr. Anubhab Roy	Research collaboration	Cornell University, USA, 15-22 November 2019
16	Prof. S. Ramakrishnan	UGC-DAAD Joint Program	RWTH Aachen University, Germany, 13-18 January 2020
17	Prof. M. Manivannan	To attend Foundation Day Celebration as Guest of Honour	AIIMS Mangalagiri, 24 January 2020
18	Prof. M. Manivannan	Examiner for PhD Thesis Defence	Guindy Engineering College, Anna University
19	Dr. M. Manivannan	Quality Assessment for Affiliation	Anna University, Chennai, 19 March 2020

Activities initiated

Major infrastructure development made in the department

Sl. No.	Event
1	A seminar hall has been established for research seminars and faculty meetings.
2	Works has been initiated for the establishment of Translation Research Centre (TRC) exclusively for the department.
3	A new Department Computational Facility is being established.

4.3 Department of Biotechnology

4.3.1 Introduction

The Department of Biotechnology at IIT Madras was founded in 2004 with a vision to be recognised as a department of international repute with a strong interdisciplinary research and teaching base in biological sciences and engineering involving an active collaboration with industries and health care institutions. The department is housed in the Bhupat and Jyoti Mehta School of Biosciences. The first batch of B.Tech and dual degree students in Biotechnology graduated in July 2006 and 2007, respectively. The thrust areas of research are bioprocess engineering, computational biology, chemical biology and medical biotechnology related to cancer and cardiovascular aspects. Faculty members of the department hold several patents and are involved in active industrial consultancy. Several collaborative and tech-

nology transfer projects are currently running with many industries and the department has collaborative research projects with hospitals. We have set up a Centre of Excellence in Bioprocess Engineering to develop knowledge and expertise in this domain and DST-funded National Facility to Identify Potential Drug Targets through Cellular Dynamics and FIST facility for infrastructure facilities. DBT funded for a programme support on Cancer Biology earlier and now DST is supporting a National Cancer Tissue Biobank. A Bioinformatics Centre has also been set up with funding from DBT. IITM Bio-incubator initiated by our department (funded by BIRAC) offers lab and office space, including equipment, technical support and centralised utilities for process and product development.

4.3.2 Academic Programmes

Dual Degree B. Tech and M. Tech in Biological Engineering (5 years), Dual Degree B.S. and M.S. in Biological Sciences (5 years), M. S. (by research) and Ph. D. are the academic programmes offered currently by the department. In addition, the department offers M.Tech (Clinical Engineering) and Ph.D. (Major: Biomedical Devices and Technology) programmes, jointly with Sree Chitra Tirunal Institute of Medical Sciences and Technology, Trivandrum and Christian Medical College, Vellore.

New courses introduced

Sl. No.	Course No.	Title
1	BT5450	Data-Driven Modeling and Optimization of Bioprocesses
2	BT5460	Biotechnology for Biofuels

Students on roll as of September 2019+M.S. and Ph.D. admission in January 2020

Programme	Year I	Year II	Year III	Year IV	Year V and Others	Total
Dual Degree	61	59	62	50	54	286
M.Tech.	25	25	-	-	-	50
M.S.	1	4	5	-	-	10
Ph.D.	28	22	34	33	50	167
Total	140	110	101	83	104	513

Student/Scholar who attended conferences/seminars/workshops/symposia abroad/India

Sl. No.	Student/Scholar	Roll No.	Conference/Seminar/Symposia/Workshop	Date and Venue	Financial Assistance from
Abroad					
1	Arthi N.	BT14D300	International conference, TERMIS EU 2019	27-31 May 2019, Greece	IIT Madras

2	Joseph Jose	BT17S005	TERMIS EU 2019	27-31 May 2019, Greece	IIT Madras
3	R. Vishnupriya	BT13D208	22nd International C. elegans Conference	20-24 June 2019, USA	IIT Madras
4	Kulandai Samy Arulsamy	BT15D045	Science for Life Laboratory	23-28 June 2019, Sweden	Stockholm University
5	Rahul Nikam	BT18D011	Science for Life Laboratory	23-28 June 2019, Sweden	Stockholm University
6	Prabhakaran Ramakrishnan	BT14D200	Science for Life Laboratory	23-28 June 2019, Sweden	Stockholm University
7	Medha Pandey	BT17D027	Science for Life Laboratory	23-28 June 2019, Sweden	Stockholm University
8	Sherlyn Jemimah	BT15D008	Science for Life Laboratory	23-28 June 2019, Sweden	Stockholm University
9	Shashi Bhushan	BT13D050	30th International Conference on Arabidopsis Research (ICAR2019)	16-21 June 2019, Wuhan, China	IIT Madras
10	Vishnu Prasad J.	BT14D040	8th International Congress on Sustainability Science and Engineering (ICOSSE 2019)	1-3 July 2019, Kuala Lumpur, Malaysia	IIT Madras
11	Bhadra S. Kumar	BT15D052	Brain and Brain PET 2019, 29th International Symposium on Cerebral Blood Flow, Metabolism and Function	4-7 July 2019, Japan	IIT Madras
12	Rajani Kant Rai	BT15D022	50th General Assembly and 47th IUPAC World Chemistry Congress, Paris	5-12 July 2019, Paris, France	IIT Madras
13	P. Haritha	BT14D003	FASEB Scientific Research Conference	7-12 July 2019, Portugal	IIT Madras
14	Puneet Rawat	BT15D013	27th Intelligent Systems for Molecular Biology (ISMB) and 18th European Conference on Computational Biology (ECCB)	21-25 July 2019, Switzerland	IIT Madras
15	Ambuj Srivastava	BT15D029	27th ISMB and 18th ECCB	21-25 July 2019, Switzerland	IIT Madras
16	Rutambhara Purohit	BT15D003	The International Gap Junction Conference	27-31 July 2019, Canada	IIT Madras
17	Puja Kumari	BT13D201	EFMC International Symposium on Advances in Synthetic and Medicinal Chemistry	1-5 September 2019, Greece	
18	Karthik Mitra	BT17S006	EFMC International Symposium on Advances in Synthetic and Medicinal Chemistry	1-5 September 2019, Greece	

19	J. Prasana Manikanda Karthik	BT16D302	2019 International Conference on Nanospace Materials	"1-4 October 2019, Australia"	
20	Sundari Elango	BT18S006	49th Annual Meeting of Society for Neuroscience	18-23 October 2019, McCormick	
21	Azra Aziz	BT17D025	49th Annual Meeting of Society for Neuroscience	18-23 October 2019, McCormick	
22	R. Vignayanandam Mudappu	BT14D039	SfN 2019 - 29th Annual Neuroscience Meeting	18-23 October 2019, McCormick	
23	Bhargavi Natarajan	BT12D208	International Conference, Targeting Mitochondria 2019	27-29 October 2019, Berlin	
24	Gayathri Prakash, Neha Swaminathan	BS18B004 BE18B008	International Genetically Engineered Machine Conference	31 October-4 November 2019, The Hynes Convention Centre, Boston MA, USA	
25	Md Homaidur Rahman	BT13D013	Molecular Modeling Conference MM 2019	5-8 December 2019, Indonesia	
26	Mohd. Ahsan	BT13D045	Molecular Modeling Conference MM 2019	5-8 December 2019, Indonesia	
27	P. Chinmai	BT15D302	Molecular Modeling Conference MM 2019	5-8 December 2019, Indonesia	

India

1	Malvika Sudhakar	BT15D306	1st TCGA conference and workshop	21-22 September 2019, Pune	
2	Vidya P. Warriar	BT17D006	1st TCGA Conference and Workshop in India - Multi-Omics Studies in Cancer Learnings from The Cancer Genome Atlas (TCGA)	21-22 September 2019, Pune	
3	Siva Chander Chabattula	BT17D024	International Conference on Advances in Polymeric Materials and Human Health Care 2019	15-20 October 2019, Goa	
4	P. Mareeswari	BT15D305	Biological Engineering Society Conference (BESCON) 2019	18-19 October 2019, IIT Madras	
5	Lavanya Raajaram	BT17D401	BESCON 2019	18-19 October 2019, IIT Madras	

6	Lawanya N.	BT19D402	BESCON 2019	18-19 October 2019, IIT Madras	
7	Gayathri S.	BT14D024	BESCON 2019	18-19 October 2019, IIT Madras	
8	K. Hemalatha	BT15D030	BESCON 2019	18-19 October 2019, IIT Madras	
9	Susmit Chakraborty	BT16D301	8th International Groundwater Conference (IGWC) on Sustainable Management of Soil-Water Resources	21-24 October 2019, Roorkee	
10	Avilasha Annanya Sandilya	BT16D304	Department of Atomic Energy - Computational Chemistry Symposium	6-9 November 2019, Mumbai	
11	Khwajah Mohinudeen I.A.H.	BT15D020	International Conference on New Horizons in Biotechnology	20-24 November 2019, Trivandrum	
12	Vasudha Pandit	BT18S004	International Conference on Biomaterial-based Therapeutic Engineering and Regenerative Medicine	26 November-4 December 2019, Kanpur	
13	Shashi Kant Kumar	BT14D010	Indo-US Workshop on Extremophiles in Biotechnology	27-28 November 2019, Krishnankoil, Tamil Nadu	
14	Monika Venkatachalam	BT13D046	Indo-US Workshop on Extremophiles in Biotechnology	27-28 November 2019, Krishnankoil, Tamil Nadu	
15	K. Hemalatha	BT15D030	International Conference on Biomaterial Based Therapeutic Engineering and Regenerative Medicine	26 November-4 December 2019, Kanpur	
16	P. Mareeswari	BT15D305	Bioterm 2019	28 November-3 December 2019, IIT Kanpur	
17	Soundhara Rajan G.	BT14D402	Intrinsically Disordered Proteins: From Molecules to Systems	8-13 December 2019, Bengaluru	
18	Nair Sandeep Sathyanandan	BT18D007	Advanced Computing and Communications Society (ACCS) 2019	10-12 December 2019, Goa	

19	Sundari Elango	BT18S006	Sixth Annual Conference of the Association for Cognitive Science 2019	10-12 December 2019, Goa	
20	Dipayan Biswas	BT16D003	Sixth Annual Conference of the Association for Cognitive Science 2019	10-12 December 2019, Goa	
21	Dipayan Biswas	BT16D003	Brain Modes 2019 - Exploring Unified Principles of Brain Connectivity and Dynamics	12-13 December 2019, Nepal	
22	Shreena P. Joy	BT15D017	7th Bioprocessing India Conference	12-16 December 2019, Mysore	
23	Monika Venkatachalam	BT13D046	7th Bioprocessing India Conference	12-16 December 2019, Mysore	
24	Rutambhara Purohit	BT15D003	XLIII All India Cell Biology Conference	18-22 December 2019, Punjab	
25	R. Dhanya	BT17D001	20th International Symposium on Chromaffin Cell Biology	23-26 January 2020, Chennai	
26	Vikas Arige	BT13D056	20th International Symposium on Chromaffin Cell Biology	23-26 January 2020, Chennai	
27	Anand Kumar Patel	BT18S003	International Conference on Cardiovascular Sciences-2020	21-23 February 2020, New Delhi	IIT Madras
28	V. Janani	BT18D006	Society for Inflammation Research (SIRCON-2019)	12-13 October 2019, Chennai	
29	Sakthi Sree Maghajothi	BT15D015	International Conference on Cardiovascular Sciences-2020	21-23 February 2020, New Delhi	IIT Madras

Students/Scholars who won outside prizes and awards

Sl.No.	Student/Scholar	Roll No.	Prize	Prize awarded by
1	Mohd. Ahsan Chinmai	BT13D045 BT15D302	Gandhian Young Technological Innovation Awards/Appreciations 2019	SRISTI (Society for Research and Initiatives for Sustainable Technologies and Institutions)
2	R. Babu; Guide: Dr. Smita Srivastava		Prestigious Prime Minister's Fellowship for doctoral research with industry partner, The Himalaya Drug Company. This is a unique scholarship of Science and Engineering Research Board, DST, Govt coordinated by Confederation of Indian Industry.	New Delhi, October 2019

3	Gayathri S. and Rubaiya Y.	BT14D024 BT13D048	Institute Research Award 2018-19 in recognition of the exemplary research work done during their Ph.D.	IIT Madras, October 2019
4	Susmit Chakraborty; Guides: Dr. G. Sureshkumar, OE; Dr. N. Satyanarayana Gummadi, BT	BT16D301	Best Poster Presentation Award at 8th International Groundwater Conference on Sustainable Management of Soil-Water Resources organised by the Department of Hydrology, IIT Roorkee	IIT Roorkee, 21-24 October 2019
5	Kulandai Samy; Guide: Dr. M. Michael Gromiha	BT15D045	Initiative for Biological Systems Engineering (IBSE) travel grant	
6	A.A. Sandilya; Guide: Dr. Hamsapriya Mohanasundaram	BT16D304	Best Poster Award for the presentation, A molecular view into the cyclodextrin cavity and water confined within, organised by Chemical Engineering Group, BARC, Mumbai	BARC Mumbai
7	Shanka Banerjee; Guide: Dr. Sanjib Senapati	BT17D014	Physical Chemistry Chemical Physics Poster Prize at the First DAE Computational Chemistry Symposium	
8	N. R. Siva Shanmugam, Guide: Dr. M. Michael Gromiha	BT16D040	Best Poster Award at the 5th IIT Madras-Tokyo Tech Joint Symposium on Current Trends in Bioinformatics	IIT Madras- Tokyo Institute of Technology
9	Vikas Arige; Guide: Prof. Nitish R. Mahapatra	BT13D056	2nd Prize for Poster Presentation at 20th International Symposium on Chromaffin Cell Biology (ISCCB-20), IIT Madras	ISCCB-20
10	Sakthi Sree Maghajothei; Guide: Prof. Nitish R. Mahapatra	BT15D015	Prof. CC Kartha Travel Award at the International Conference on Cardiovascular Science 2020	International Conference on Cardiovascular Science 2020

Students/Scholars who won Institute Convocation/Institute Day Prize

Sl.No.	Student/Scholar	Roll No.	Prize
1	Prathamesh Suresh Jain	BS14B018	Divashri Award for highest CGPA in Dual Degree Biological Sciences, Batch of 2019
2	Balaji Ramachandran	BT12D003	Keshav Ranganath Award 2018-19 (January-May)

4.3.3. Faculty and Their Activities Faculty

Name and Qualifications	Major Areas of Specialisation
Professors	
Dr. D. Karunakaran (Head)	Cancer biology, signal transduction, apoptosis
Dr. Anju Chadha	Biocatalysis, green chemistry, biosensors

Dr. Guhan Jayaraman	Metabolic engineering, synthetic biology, downstream processing
Dr. G.K. Suraishkumar	Understanding and manipulation of biological systems, reactive species and their applications - cancer therapy, nanotoxicology, bio-oil
Dr. S. Mahalingam	Molecular virology and cell biology
Dr. Rama Shanker Verma	Stem cell biology and tissue regeneration, cancer therapeutics
Dr. V. Srinivasa Chakravarthy	Computational neuroscience
Dr. N. Satyanarayana Gummadi	Bioprocess engineering
Dr. K. Subramaniam	Developmental biology
Dr. Amal Kanti Bera	Ion channels and signaling
Dr. Sanjib Senapati	Computational biophysics
Dr. Nitish R. Mahapatra	Cardiovascular genetics, molecular medicine
Dr. A. Gopala Krishna	Signal transduction and protein biochemistry
Dr. M. Michael Gromiha	Bioinformatics, computational biology, biophysics
Dr. K. Chandraraj	Biomass conversion, bio-remediation, functional foods
Dr. Rayala Suresh Kumar	Cancer biology
Dr. V. Kesavan	Chemical biology
Dr. R. Baskar	Developmental genetics
Dr. Madhulika Dixit	Vascular biology
Associate Professors	
Dr. N. Manoj	Structural biology
Dr. Himanshu Sinha	Systems genetics, clinical data analysis
Dr. Karthik Raman	Computational systems biology
Dr. Vignesh Muthuvijayan	Biomaterials and tissue engineering
Dr. Smita Srivastava	Plant biotechnology and bioprocess engineering
Dr. Athi Narayanan	Experimental/computational protein folding
Assistant Professors	
Dr. R. Murugan	Theoretical biology and biophysics
Dr. Hamsapriya Mohanasundaram	Protein solution thermodynamics
Dr. Vani Janakiraman	Infection biology/infectious diseases
Dr. Nirav Pravinbhai Bhatt	Modeling, control, and optimisation of biochemical reaction systems, systems biology, integrated bio-process manufacturing
Dr. Shantanu Pradhan	Biomaterials, tissue engineering, cancer and vascular diseases
Dr. Mukesh Doble	Biomaterials, drug design, biochemical engineering
Dr. Chandra T.S.	Microbiology and genetics
Adjunct Faculty	
Dr. Dhinakar Kompala	Biochemical engineering
Dr. V. Mohan	Diabetes
Dr. Krishnaraj Rajalingam	Cell biology
Dr. Ajit S. Mulasari	Cardiovascular diseases

Dr. Shrikumar Suryanarayanan	
Dr. Rohit Gupta	Medical informatics, computational biology
Dr. Satyajit Mayor	Cell biology
INSA Senior Scientists	
K.K. Balasubramanian	Organic chemistry

Short-term courses/workshops/seminars/symposia/conferences organised by the faculty members

Sl. No.	Coordinator(s)	Title	Period
Conference			
1	Dr. Smita Srivasatava	Institutional Conference on Biological Engineering Society Conference 2019 (BESCON)	18-19 October 2019
Symposia			
1	Dr. M. Michael Gromiha	5th IIT Madras-Tokyo Tech Joint Symposium on Current Trends in Bioinformatics: Big Data Analysis, Machine Learning and Drug Design	6-7 March 2020
2	Dr. Nitish R. Mahapatra	20th International Symposium on Chromaffin Cell Biology (ISCCB-20)	23-26 January, 2020
Workshops			
1	Dr. Karthik Raman	6th IBSE Workshop; Dr. Nirav Bhatt of BT department and many other members of the IBSE delivered invited talks	7 November 2019
2	Dr. Karthik Raman, Dr. Himanshu Sinha	IITM-EBI Workshop (This four-day workshop trained researchers from life sciences and mathematics to communicate and work together to learn to build and analyse computer models using user-friendly open-source software. Participants from both experimental and theoretical backgrounds benefitted from the workshop.)	2-5 December 2019

Short-term courses/workshops/seminars/symposia/conferences/trainings attended by the faculty members in academic institutions and public sector undertakings

Sl. No.	Faculty	Title	Institution	Period
Workshop				
1	Dr. Athi Naganathan	CECAM Workshop titled Network Analysis to Elucidate Natural System Dynamics, Diversity And Performance	Lyon, France	30 April-13 May 2019
Conferences				
1	Dr. V. Kesavan	8th Annual Conference ICBS 2019	Hyderabad	1-4 November 2019
2	Dr. C.K. Balavigneswaran IPDF	To attend conference BIOTERM 2019	Kanpur	28 November-1 December 2019
3	Dr. Nitish R. Mahapatra	45th Annual Meeting of the Indian Society of Human Genetics	Sri Ramachandra Medical Centre, Chennai	13-15 February 2020

4	Dr. Vignesh Muthuvijayan	10th International Conference on Materials for Advanced Technologies (ICMAT) 2019	Materials Research Society, Singapore	23-28 June 2019
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Short-term Course

1	Dr. Karthik Raman	RTG Big Data Research	Allahabad Summer School, Prayagraj	31 March-7 April 2019
2	Dr. Rayala Suresh Kumar	Safety Aspects in the Research Application of Ionizing Radiation RA-51	BARC Bombay	8-16 July 2019

Special lectures delivered by the faculty in other institutions

Sl. No.	Faculty Member	Topic of Lecture	Institution	Date
1	Dr. D. Karunakaran	Invited lecture	Alagappa University, Karaikudi	5-6 April 2019
2	Dr. M. Michael Gromiha	Computational approaches for understanding protein structure and function: applications to drug design	2nd IIT Madras-Stockholm University Symposium on Deep Learning in Life Sciences, Stockholm University, Sweden	27 June 2019
3	Dr. G.K. Suraishkumar	Invited lectures in the short-term training programme on Research Methodology, Innovation and Academic Administration	SVNIT Surat	4 July 2019
4	Dr. M. Michael Gromiha	Integrating computational approaches and experimental data for understanding the binding affinity of protein-protein complexes and structure based drug design	St. Petersburg University, Russia	25 July 2019
5	Dr. M. Michael Gromiha	Integrating computational approaches and experimental data for understanding the binding affinity of protein-protein complexes	National Institute of Immunology, New Delhi	2 August 2019
6	Dr. M. Michael Gromiha	Development of databases and algorithms for predicting aggregating peptides, aggregation prone regions and aggregation rate	Chuo University, Tokyo	3 October 2019
7	Dr. M. Michael Gromiha	Bioinformatics approaches for identifying potential inhibitors to targets involved in infectious diseases: applications to dengue and malaria	International Science Symposium on HIV and Infectious Diseases, Chennai	12 October 2019
8	Dr. D. Karunakaran	Delivered a talk: Biological approaches on microRNAs and their translational significance to tongue cancer therapeutics at the National Conference on Bio-exploration for Human Welfare - An Integrative Approach 2019	Assam	8-9 November 2019

9	Dr. Karthik Raman	To deliver an invited lecture, Adapting community identification methods to identify disease modules in biological networks	Hyderabad	29-30 November 2019
10	Dr. M. Michael Gromiha	Integrating computational approaches and experimental data for understanding the binding affinity of protein-protein complexes	International Conference on Synergy of Sciences, SASTRA, Thanjavur	29 February, 2020
11	Dr. Nitish R. Mahapatra	Delivered a lecture: Association of matrix metalloproteinase 7 genetic variations with hypertension	Department of Clinical Medicine, University of Tsukuba, Japan	7 June 2019
12	Dr. Nitish R. Mahapatra	Delivered a lecture: Mechanism of regulation of HMG-CoA reductase	Department of Medicine, University of Tsukuba, Japan	31 May 2019
13	Dr. Nitish R. Mahapatra	Discovery of functional genetic variations in chromogranin A gene locus: implications for cardiometabolic diseases in Indian populations	IIT Hyderabad	23 December 2019

Visits abroad by faculty

Sl. No.	Faculty	Country Visited	Date	Purpose of visit	Funding from
1	Dr. M. Michael Gromiha	Singapore	29-30 April 2019	Ph.D. viva voce and project discussion	Singapore
2	Dr. Anju Chadha	Michigan State University, Ohio State University and Purdue University	6-14 May 2019	Project discussion	US universities
3	Dr. Himanshu Sinha	Harvard University, Duke University, and Gordon Research Conference	10 May-26 June 2019	Project discussion	Host university
4	Dr. Sanjib Senapati	Sweden	10 May-26 June 2019	To work on his current India-Sweden bilateral project	Host university
5	Dr. Nitish R. Mahapatra	Japan	15 May-14 June 2019	JSPS Invitational Fellowship at the University of Tsukuba, Japan	Host university
6	Dr. Athi Naganathan	Sendai, Japan	17 May-7 June 2019	JSPS Invitational Fellowship for research in Tohoku University, Japan	Host university
7	Dr. Rama Shanker Verma	USA	23 May-5 July 2019	Oral presentation in International Meeting (Advanced Biomedical Engineering and Instrumentation Summit, ABEIS - 2019)	Host university

8	Dr. V. Srinivasa Chakravarthy	Montreal Canada	27-28 May 2019	Private visit to Montreal, Canada	Host university
9	Dr. M. Michael Gromiha	Japan	27-31 May 2019	Visited Chuo University, Japan for project discussion	Host university
10	Dr. Smita Srivasatava	Bulgaria	28 May-2 June 2019	4th ICNPU (International Conference on Natural Products Utilization: From Plants to Pharmacy Shelf)	Host university
11	Dr. Nirav Pravinbhai Bhatt	Guilin, China	30 May-3 June 2019	14th International Conference on Gas-Liquid and Gas-Liquid-Solid Reactor Engineering (GLS-14)	Host university
12	Dr. Vignesh Muthuvijayan	Singapore	23-27 June 2019	10th International Conference on Materials for Advanced Technologies (ICMAT) 2019	Host university
13	Dr. M. Michael Gromiha	Sweden, Stockholm	23-28 June 2019	Project discussion	Host university
14	Dr. M. Michael Gromiha	Russia	23-27 July 2019	Project discussion	
15	Dr. M. Michael Gromiha	Japan	19 August 2019-17 January 2020	Sabbatical leave	Host university
16	Dr. Rama Shanker Verma	Fanconi Anemia Research Fund Scientific Symposium 2019, Illinois, USA	19-22 September 2019	Delivered invited lecture	Host university
17	Dr. Nitish R. Mahapatra	Strasbourg, France	22-29 September 2019	Delivered invited lecture	Host university and IIT Madras
18	Dr. V. Kesavan	Strasbourg, France	22-25 September 2019	Delivered invited lecture	Host university and IIT Madras
19	Dr. N. Manoj	Strasbourg, France	22-25 September 2019	Delivered invited lecture	Host university and IIT Madras
20	Dr. D. Karunakaran	Strasbourg, France	22-25 September 2019	Delivered invited lecture	Host university and IIT Madras
21	Dr. A. Gopalakrishna	Strasbourg, France	22-25 September 2019	Delivered invited lecture	Host university and IIT Madras

22	Dr. Rama Shanker Verma	Texas A&M University College Station, USA Visit to Texas A&M University, College Station, USA, for professional development and future collaboration	29 September-1 October 2019	Professional development and future collaboration	Host university
23	Dr. V. Srinivasa Chakravarthy	Chicago, Illinois	19-23 October 2019	Neuroscience 2019 Conference	Host university
24	Dr. Anju Chadha	Turkey	26-29 October 2019	Delivered a Keynote Address at the Second International Eurasian Biochemical Approaches and Technologies Congress, Antalya	Host university
25	Dr. V. Srinivasa Chakravarthy	Otago, New Zealand	19 November-1 December 2019	To have technical discussion regarding project	

Honours and awards obtained by faculty

Sl. No.	Faculty Member	Award	Awarded by	Awarded for	Date of Award
1	Dr. Amal Kanti Bera	P. A. Kurup Endowment Lecture Award for the year 2019		Contributions in the field of Biomedical Research	September 2019
2	Dr. Nirav Bhatt	Acted as a guide for the best project titled "A priori parameter identifiability in large bio-chemical reaction systems"	Subramanian Rajalakshmi Indira Endowment	Best Project submitted	September 2019
3	Dr. Rayala Suresh Kumar	Elected as the Fellow of the National Academy of Sciences, India			October 2019
4	Dr. Sanjib Senapati	Selected as Pandurangan Faculty Fellow for a period of two years			October 2019

5	Dr. N Satyanarana Gummadi	Recipient of ABAP Senior Scientist Award for the year 2019. The award comprises a gold medal, memento and certificate. It was presented during the 13th Annual Convention of the Association of Biotechnology and Pharmacy (ABAP) held during 20-22 December 2019 at Guntur.			October 2019
6	Dr. N. Satyanarayana Gummadi	Dr. Yelavarthy Nayudamma Memorial Award for Biological Sciences 2019	This award is constituted by Science City of Andhra Pradesh Government	Andhra Pradesh Akademi of Sciences held at B.R. Ambedkar University	November 2019

Fellowships of Academies and Professional Societies

Sl. No.	Faculty Member	Year of Admission
Others: National Academy of Sciences, India		
1	Dr. Nitish R. Mahapatra	2019

Journal Editorial Boards

Sl. No.	Faculty Member	Position (Editor/Member)	Journal Name
1	Dr. N. Satyanarayana Gummadi	Associate Editor	<i>Indian Chemical Engineer</i> , a journal jointly published by Taylor and Francis, UK and Indian Institute of Chemical Engineers
2	Dr. M. Michael Gromiha	Associate Editor	<i>BMC Bioinformatics</i>
3	Dr. M. Michael Gromiha	Section Editor	<i>Current Protein and Peptide Science</i>
4	Dr. M. Michael Gromiha	Editorial Board Member	<i>Scientific Reports</i>
5	Dr. M. Michael Gromiha	Editorial Board Member	<i>Biology Direct</i>
6	Dr. M. Michael Gromiha	Editorial Board Member	<i>Genes</i>
7	Dr. M. Michael Gromiha	Editorial Board Member	<i>Journal of Bioinformatics and Computational Biology</i>
8	Dr. M. Michael Gromiha	Editorial Board Member	<i>Current Computer Aided Drug Design</i>

4.3.4. Research and Consultancy

Sponsored research projects (ongoing and new)

Sl. No.	Title	Period	Funding Agency	Amount (Rs. in lakhs)	Coordinators
1	Prediction of disease-relevant mutations in transmembrane proteins	2016-2019	DST, India and RSF, Russia	71.28	Dr. M. Michael Gromiha, Dr. Dmitrij Frishman

2	Development of three-dimensional structural database for biologically and functionally important glycans and glycan-protein complexes through molecular dynamics simulation	2016-2020	Department of Biotechnology, India	15.29	Prof. K. Veluraja, Dr. M. Michael Gromiha
3	Design of sialic acid analog inhibitors to hemagglutinins and neuraminidases of influenza virus by molecular modelling and molecular dynamics simulation	2016-2020	Department of Biotechnology, India	17.16	Prof. K. Veluraja, Dr. M. Michael Gromiha
4	Entrainment of rhythms for improved cancer therapy	February 2017-January 2020	DST	38.3	G. K. Suraihkumar (PI), D. Karunagaran and Raghunathan Rengasamy, CH (co-PIs)
5	Deep learning in life sciences	2017-2019	DST, India and Swedish (VR) Corporation	29.33	Dr. M. Michael Gromiha, Dr. Arne Elofsson
6	Mutational effects on binding affinity of protein-protein complexes: development of a database, tools and applications to diseases	2017-2020	Department of Science & Technology, India	27.86	Dr. M. Michael Gromiha
7	Structural and molecular approach of targeting Bcl-2 family anti-apoptotic proteins	2017-2020	Department of Biotechnology, India	41.84	Dr. M. Michael Gromiha, Dr. Suresh K. Rayala
8	A computational pipeline for understanding disease-causing mutations in genomes algorithms for context analysis and development of prediction tools: development of computational tools for analysis and prediction of disease-causing mutations	2017-2020	Department of Biotechnology, India	37.84	Dr. Karthick Raman, Dr. M. Michael Gromiha
9	Predictive modeling of nucleic acid recognition dynamics and structured complex formation by disordered proteins	2018-2021	Council of Scientific and Industrial Research, India	17.46	Dr. M. Michael Gromiha
10	Rational designing, synthesis, structural and functional analysis of novel anti-hypertensive peptides	Three years	DBT	85.35	Dr. Nitish R. Mahapatra

11	Validation of the effects of functional genetic variations in chromogranin A locus	Three years	DBT	69.59	Dr. Nitish R. Mahapatra
12	Regulation of mitochondrial transcription factors and mitochondrial biogenesis in essential hypertension	Three years	DST	31.3	Dr. Nitish R. Mahapatra
13	Molecular and genetic bases of cardiovascular diseases: key roles for chromogranin A	Two years	MHRD	65.27	Dr. Nitish R. Mahapatra

Industrial consultancy projects (ongoing and new)

Sl. No.	Faculty Member	Title	Industry	Amount (Rs. in lakhs)
1	Dr. Mahalingam S.	Role of a Ras Effector- Ras Association (RaiGDS/AF-6) domain family member in tumor invasion and migration	Wellcome Trust UK	172.84
2	Dr. Athi Narayanan	Towards designing tunable nanomachines: taking advantage of protein disorder	Wellcome Trust UK	337.54
3	Dr. Guhan Jayaraman	Systems biology approach for investigating the role of two-component regulatory system (covR/covS) of streptococcus in generating polydispersity during hyaluronan polymer synthesis	Department of Biotechnology	55.37
4	Dr. M. Michael Gromiha	Mutational effects on binding affinity of protein-protein complexes: development of database, tools and applications to diseases	Department of Science & Technology	27.86
5	Dr. Guhan Jayaraman	LIGFUEL: Depolymerization of lignin and bioconversion of lignin-derived monomers to biofuels	Department of Biotechnology	96.09
6	Dr. M. Michael Gromiha	Structural and molecular approach of targeting Bcl-2 family anti-apoptotic proteins	Department of Biotechnology	41.85
7	Dr. M. Michael Gromiha	Predictive modeling of nucleic acid recognition dynamics and structured complex formation by disordered proteins	Council of Scientific and Industrial Research	17.46
8	Dr. Guhan Jayaraman	Early Translation Accelerator- Industrial Biotechnology (ETA-IB)	Biotechnology Industry Research Assistance Council	144.8
9	Dr. Amal Kanti	Exploring the possibility of using venom-derived peptides to mitigate stroke-induced brain damage by targeting acid sensing ion channel	Indian Council of Medical Research	21.55
10	Dr. Mahalingam S.	Quantitative tongue tissue proteomics of oral tongue squamous cell carcinoma for novel biomarker discovery - BioCARE Award	Department of Biotechnology	37.93
11	Dr. Karthik Raman	A computational pipeline for identifying the context of key mutations in cancer genomes	Department of Biotechnology	52.8

12	Dr. M. Michael Gromiha	Development of computational tools for analysis and prediction of disease-causing mutations	Department of Biotechnology	37.85
13	Dr. Guhan Jayaraman	Development of a riboregulator-based platform for control of gene expression and metabolic fluxes in bacterial cell factories	Department of Biotechnology	91.35
14	Dr. Suresh Kumar Rayala	Development of a POC device to detect high-risk HPV in cervical cancer patients and co-relation with the protein markers - Women Scientist	Department of Science & Technology	29.83
15	Dr. Nitish R. Mahapatra	Rational designing, synthesis, structural and functional analysis of novel anti-hypertensive peptides	Department of Biotechnology	85.35
16	Dr. Karunagaran D.	Micro RNA profiling and alteration of signaling pathways following curcumin and emodin treatment in cervical cancer cell lines - BioCARE 2016	Department of Biotechnology	58.57
17	Dr. Srinivasa Chakravarthy V.	A computational model of neuron-astrocyte-vessel networks to simulate vascular responses in whisker barrel region of rodent somatosensory cortex	Department of Biotechnology	37.91
18	Dr. Rama Shanker Verma	Synthesis and 3D bioprinting patches of mangostincarnosine peptide with SF/ Collagen biomaterial for cardiac tissue engineering	Department of Science & Technology	20.79
19	Dr. Amal Kanti	Investigating the role of trans fatty acids on neuronal ion channels associated with ischemic stroke	Department of Science & Technology	20.79
20	Dr. Mukesh Doble	Assessment of the antidiabetic potential of glycosaminoglycans from cephalopods - National Post-Doctoral Fellowship	Department of Science & Technology	19.2
21	Dr. Srinivasa Chakravarthy V.	A comprehensive framework for treatment of stroke of upper extremity by combining computational modeling, movement behavior and gaming	Uchhatar Avishkar Yojana - IIT Madras	312
22	Dr. Amal Kanti	A study on the mechanism of pannexin mediated ischemic cell death	Department of Science & Technology	20.79
23	Dr. Mukesh Doble	B-glucan based micro particles as an activator of innate immunity and small peptide carrier	Department of Science & Technology	28.31
24	Dr. Mukesh Doble	Targeting mitochondrial calcium fluxes using CaCO ₃ NPs - si NCLX - resveratrol NPs for cancer therapy - National Post-Doctoral Fellowship	Department of Science & Technology	19.2
25	Dr. Nitish R. Mahapatra	Validation of the effects of functional genetic variations in chormogranin a locus	Department of Biotechnology	69.6
26	Dr. Sanjib Senapati	Role of N-linked glycosylation in prion protein pre-aggregation: a molecular dynamics study	Department of Science & Technology	20.8

27	Dr. Nitish R. Mahapatra	Understanding the regulation of heat shock proteins under hypoxia: in vitro and in vivo studies	Department of Biotechnology	15.58
28	Dr. Sanjib Senapati	A combined experimental and computational study of ionic liquid based biocompatible reverse micelles for micellar enzymology - CSIR RA	Council of Scientific and Industrial Research	11.13
29	Dr. Suresh Kumar Rayala	Exploring CRISPR-Cas9 technology to reprogram cellular metabolic pathways in disease models	Department of Biotechnology	78.92
30	Dr. Chandra T.S.	Detection of cancer markers using metal oxide nanotubes immobilized with conducting polymers by photoelectrochemical biosensing - Women Scientist Scheme -A	Department of Science & Technology	31.28
31	Dr. Sathyanarayana N. Gummadi	Characterization of effect of Sox5 transcription factor on the expression of hPLSCR1, hPLSCR2 and hPLSCR4 human scramblase genes	Department of Science & Technology	28.8
32	Dr. Karunagaran D.	Enhanced therapeutic efficacy of plumbagin loaded liposomal formulations for the treatment of oral cancer	Department of Science & Technology	19.2
33	Dr. Athi Narayanan N.	Understanding the origins of dynamic allostery through a structural perturbation approach	Department of Biotechnology	36.22
34	Dr. Chandra T.S.	Nanomaterials based active and intelligent packaging of selected baked, fermented and fried foods	Department of Biotechnology	27.57
35	Dr. Suresh Kumar Rayala	Synthesis and biological evaluation of dysideanone and its synthetic analogs for the development of potent and selective anti-oral-cancer agents	Department of Biotechnology	29.35
36	Dr. Sathyanarayana N. Gummadi	Molecular cloning, biochemical characterization and exploitation of arabitol dehydrogenase from <i>Debaryomyces nepalensis</i>	Department of Biotechnology	46.17
37	Dr. Athi Narayanan N.	Understanding the design principles of a protein nanosensor to combat multidrug resistant enterobacteriaceae	Biotechnology Industry Research Assistance Council	15
38	Dr. Subramaniam K.	Identification of genes that regulate differentiation of germ cells in <i>Caenorhabditis elegans</i>	Department of Science & Technology	25.85
39	Dr. Amal Kanti	Exploring the role of LRRC8B protein in cellular calcium signaling	Department of Science & Technology	30.2
40	Dr. Nitish R. Mahapatra	Regulation of mitochondrial transcription factors and mitochondrial biogenesis in essential hypertension	Department of Science & Technology	31.3

41	Dr. Vignesh MuthuVijayan	Development of economical bioactive double network hydrogels for combinatorial treatment of diabetic wounds	Department of Science & Technology	22.82
42	Dr. Himanshu Sinha	Determining role of specialised ribosomes in yeast in discriminating translating pools of transcripts in a stress- dependent manner and its effect on phenotypic diversity and adaptation	Department of Science & Technology	31.29
43	Dr. Sathyanarayana N. Gummadi	Production and application of microbial mutanase for prevention and reduction of dental plaques (WOS-A)	Department of Science & Technology	28.33
44	Dr. Suresh Kumar Rayala	National Bioscience Award for Career Development 2017/2018	Department of Biotechnology	15
45	Dr. Guhan Jayaraman	Fine-tuning the expression of genes in lactococcus lactis to improve the production of biopolymer hyaluronic acid	Science and Engineering Research Board	19.2
46	Dr. Suresh Kumar Rayala	Re-purposing of anti-hypertensive drugs (Beta Blockers) and NSAIDS in oral squamous cell carcinoma: newer applications to be explored in preclinical studies	Science and Engineering Research Board	10.05
47	Dr. Nitish R. Mahapatra	Molecular and genetic bases of cardiovascular diseases: key roles for chromogranin A	Scheme for Promotion of Academic and Research collaboration	65.27
48	Dr. Mukesh Doble	Bioprocess development and preclinical evaluation of novel and TB antibiotic, Transitmycin isolated from marine Streptomyces sp. MTCC 5597	Indian Council of Medical Research	20.97
49	Dr. Guhan Jayaraman	Bioprocess development for production of biopesticide spinosyn-A in Streptomyces parvulus	Biotechnology Industry Research Assistance Council	45.5
50	Dr. Guhan Jayaraman	Downstream process development for the bacteriophage cocktail processing lytic activity against vibrios causing vibriosis in shrimp hatcheries	Biotechnology Industry Research Assistance Council	43.31
51	Dr. Subramaniam K.	Regulation of proteasome activity during meiotic entry in Caenorhabditis elegans	Department of Biotechnology	62.9
52	Dr. Mahalingam S.	Identification and characterization of non-enzymatic RAS Effector, RASSF7 as a potential transcription factor	Department of Biotechnology	86.67
53	Dr. Guhan Jayaraman	Development of synthetic biology tools and bioprocess strategies for production of hyaluronic acid with controlled molecular weight	Biotechnology Industry Research Assistance Council	26

54	Dr. Madhulika Dixit	Identification of anti-atherosclerotic constituents present in gentianaceae plants	Science and Engineering Research Board	22.37
55	Dr. Karunakaran D.	Restoration of P53 status in triple negative breast cancer using P53 reactivators loaded EGFR targeting therapeutic nanoparticles	Department of Science and Technology	31.99
56	Dr. Rama Shanker Verma	In vivo osteogenic and angiogenic repair mechanisms influenced by mesenchymal stem cells using cell sheet based tissue engineering	Science and Engineering Research Board	22.37
57	Dr. Nitish R. Mahapatra	Transcriptional and post-transcriptional regulation of mitochondrial antioxidant, peroxiredoxin-3 in diabetic cardiomyopathy	Department of Health Research (ICMR)	46.15
58	Dr. Rajamanickam Murugan	Solution to the fully competitive Michaelis-Menten enzyme kinetic rate equations	Science and Engineering Research Board	6.6
59	Dr. Athi Narayanan N.	Beyond sequence approximations in Ising-like models of protein folding: the block-matrix method	Science and Engineering Research Board	6.6
60	Dr. Madhulika Dixit	Effect of insulin resistance on angiogenic ability of circulating leukocytes	Science and Engineering Research Board	62.84
61	Dr. Guhan Jayaraman	Strain construction and process development for production and purification of recombinant proline rich protein for theranostic usage in dry eye syndrome	Biotechnology Industry Research Assistance Council	48.45
62	Dr. Baskar R.	Altering meiotic recombination rates with phytohormones: a study in Arabidopsis	Department of Biotechnology	89.13
63	Dr. Sathyanarayana N. Gummadi	Bio-mediated biocide photocatalytic nanofibers—an approach to enhance activity of fiber in water treatment	Science and Engineering Research Board	19.2
64	Dr. Madhulika Dixit	Angiogenic reprogramming of circulating mononuclear cells by mechanical shear	Science and Engineering Research Board	22.37
65	Dr. Sathyanarayana N. Gummadi	Bioprocess strategies to enhance xylitol production from lignocellulosic biomass	Science and Engineering Research Board	34.8
66	Dr. Suresh Kumar Rayala	Enabling the targeted delivery of novel P21 activated kinase 1 (Pak1) inhibitors to aggressive glioblastoma cells by conjugating to tumor specific peptides selected from phage peptide library	Department of Science and Technology	82.22

67	Dr. Manoj N.	Enzyme mediated bioremediation of radionuclides and heavy metals from effluents employing engineered alkaline phosphatase(s)	Science and Engineering Research Board	10.05
68	Dr. Himanshu Sinha	The genomic and evolutionary landscape of azole resistance in budding yeast	Indo-French Centre for the Promotion of Advanced Research	69.57
69	Dr. Karunagaran D.	To study the Mir-34 mediated signalling pathways involved in radio-modulation of cervical cancer cells	Indian Council of Medical Research	8.24
70	Dr. Karunagaran D.	Targeting toll-like receptor-4 signaling by disulfiram in colon cancer stem cells	Indian Council of Medical Research	7.19
71	Dr. Suresh Kumar Rayala	Targeting histone H2AX phosphorylation (H2AX) with peptides to circumvent repair after radiation induced DNA damage in breast cancer cells	Board of Research in Nuclear Sciences	37.36
72	Dr. Suresh Kumar Rayala	Exploring CRISPR-Cas9 technology to impede crosstalk between inflammatory tumor microenvironment and p21 activated kinase 1 (Pak1) signaling in tumor xenograft models of aggressive triple negative breast cancers (TNBC): a potential way to alter therapeutic response in triple negative breast cancers	Science and Engineering Research Board	14.9
73	Dr. Baskar R.	Exploiting the circadian status of Arabidopsis thaliana to improve its transformation efficiency	Science and Engineering Research Board	22.8
74	Dr. Rama Shanker Verma	Development and characterization of second-generation chimeric antigen receptor T-Cell tagged with riboflavin photo-activation to specifically target adherent cancers, using patient derived HSCs maintained under microgravity	Defence Research and Development Organisation	25.2
75	Dr. Suresh Kumar Rayala	Lectin-based targeting of a nanostructured nordihydroguaiaretic acid analog to asialoglycoprotein receptor in hepatocytes for therapeutic delivery in liver cancer	Indian Council of Medical Research	9.48
76	Dr. M. Michael Gromiha	Elucidation of mechanism of drug resistance associated with breast cancer and ovarian cancer through network biology approach	Science and Engineering Research Board	10.05
77	Dr. Nitish R. Mahapatra	Regulatory Influence of renin-angiotensin-aldosterone system on renal expression of renalase	Department of Biotechnology	7.49
78	Dr. Athi Narayanan	Dissecting the evolutionary tug-of-war: sequence patterns and interaction networks governing the folding-function continuum	Science and Engineering Research Board	70.07

79	Dr. Rajamanickam Murugan	Unraveling the design principles and the roles of negative auto regulatory and dual feedback motifs in the transcription factor networks	Science and Engineering Research Board	8.15
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RBIC projects (ongoing and new)

Sl. No.	Faculty Member	Title	Industry	Amount (Rs. in lakhs)
1	G.K. Suraishkumar	Generation of energy from photosynthesis	Vayuneer Technologies Private Limited	4.5

Faculty members' participation with other institution under MoU

Sl. No.	Faculty Member	Participation details	University/Institution
1	G.K. Suraishkumar	Guidance for two students in the joint dual PhD programme	Curtin University, Australia

Distinguished visitors to the department

Sl.No.	Visitor and Designation	Date of Visit	Purpose of Visit
1	Dr. John H.T. Luong, National University of Cork, Ireland	7 May 2019	Delivered a talk: Probing antibiotic resistance and inhibitory effects of anticancer by cell-based impedance spectroscopy
2	Dr. T.S. Suryanarayanan, Director, VINSTROM, RKM Vidyapith, Chennai	13 May 2019	Delivered a talk: Fungal endophytes: concerted effort needed for realizing their technological potential
3	Dr. Mahendra Sonawane, Tata Institute of Fundamental Research, Mumbai	28 May 2019	Delivered a talk: Demystifying microridges—the apical projections on squamous epithelial cells
4	Dr. Hema Chandra Kotamarthi, Department of Biology, Massachusetts Institute of Technology, Cambridge, USA	6 August 2019	Delivered a lecture: Protein degradation by a double-ring AAA+ enzyme: in singulo mechanisms of unfolding and translocation
5	Dr. Anjali Krishnan, Assistant Professor, Quantitative Methods, Psychology Department, Brooklyn College City, University of New York	7 August 2019	Delivered a lecture: Multivariate approaches to examine cognitive brain function
6	Dr. Sai Chaitanya, Chiliveri Laboratory of Chemical Physics, NIDDK, National Institutes of Health, Maryland, USA	1 November 2019	Delivered a lecture: Solution structure of the HIV-1 gp41 membrane spanning region
7	S. Parashuraman, Institute of Biochemistry and Cell Biology, National Research Council, Naples, Italy	11 November 2019	Delivered a lecture: Organization of the Golgi apparatus allows it to act as a metabolic flux regulator
8	Dr. Christoph Lenzen, Post-doctoral researcher, RWTH Aachen University Germany	26 November 2019	Delivered a lecture: Metabolic engineering of <i>Pseudomonas taiwanensis</i> VLB120 for sustainable production of 4-hydroxybenzoate

9	Dr. N.S. Rajasekaran, PhD., FAHA, Associate Professor of Medicine, Department of Pathology, University of Alabama at Birmingham, Alabama, USA	3 December 2019	Alzheimer's beyond brain: Personalized approaches for diagnosis and treatment of heart failure
10	Dr. Ajit Muley, Columbia University Medical Centre, New York	11 December 2019	Lymphatic vessel development and related pathologies: from genetics to therapy
11	Dr. P. V. Balaji, Department of Biosciences and Bioengineering, IIT Bombay, Mumbai	13 December 2019	Is there a universal glycan alphabet?
12	Dr. Srinivasaraghavan Kannan, Senior Research Scientist, Bioinformatics Institute (BII) of Agency for Science Technology and Research (A*STAR), Singapore	19 December 2019	Accelerating drug discovery and development: from bench top to bedside via desktop
13	Dr. Sathyamangla V. Naga Prasad, Professor, Department of Molecular Cardiology, Cleveland Clinic, Ohio, USA	23 January-27 February 2020	SPARC Visiting Faculty

4.3.5 Other Activities of the Department/Centre Faculty visit

Sl.No	Faculty Member	Purpose of Visit	Date and Venue
1	Dr. G.K. Suraishkumar	Expert, BIRAC Committee for Evaluation	5 April 2019, Carot Laboratories
2	Dr. G.K. Suraishkumar	Expert, Board of Studies	6 April 2019, College of Engineering, Bhubaneswar
3	Dr. G.K. Suraishkumar	Expert, National Monitoring Committee on Virtual Labs	26 April-22 November 2019, IIT Delhi
4	Dr. G.K. Suraishkumar	Expert, Faculty Recruitment Selection Committee	3 May 2019, IIT Hyderabad
5	Prof. Seeram Ramakrishna, Director of Center for Nanofibers and Nanotechnology, National University of Singapore (NUS)	Human Mind from an Engineer's Perspective	14 October 2019
6	Prof. Krishnananda Chattopadhyaya, Indian Institute of Chemical Biology (IICB), Kolkata	Is the early stage of aggregation important in understanding neurodegenerative diseases?	16 October 2019
7	Dr. Nagraj B., Wellcome DBT Fellow, IISER Pune	Cell-matrix adhesion mediated regulation of organelle function. What does the Golgi tell us!	25 October 2019

8	Dr. G.K. Suraishkumar	Faculty Recruitment Selection Committee member	26 November 2019, IIT Bombay
9	Dr. G.K. Suraishkumar	Expert, Faculty Recruitment Selection Committee	9-10 December 2019, NIT Rourkela
10	Dr. G.K. Suraishkumar	Expert, Faculty Recruitment Selection Committee	31 December 2019, NIT Calicut

Student visit

Sl.No	Students	Purpose of Visit	Date and Venue
1	Shivam Chandel BT12D044	European Molecular Biology Organisation (EMBO) Award and Short-Term Fellowship	24 June-22 September 2019, University of Munster, Germany
2	P. Haritha BT14D003	SERB Overseas Visiting Doctoral Fellowship for the year 2018-19	June 2019-May 2020, Tel Aviv University, Israel
3	Hirdanshu Vij BS16B017	Semester Exchange Programme	February-June 2019, University of Queensland, Australia
4	Chellam Gayathri Subash BT11D002	Delivered a special seminar: Crystallographic snapshots from a tyrosine decarboxylase provides insights on the mechanism of activation and decarboxylation by Group II PLP-dependent decarboxylases	26 June 2019, KarolinskaInstitutet, Sweden
5	V. Sudha BT17D307 Guide: Dr. Rama Shanker Verma	Academic exchange programme—Joint Degree at Swinburne University of Technology, Melbourne, Australia	16 January 2020-17 January 2021

4.4 Department of Chemical Engineering

4.4.1 Introduction

The Department of Chemical Engineering was established in 1959. It has a rich pool of permanent faculty members, who are not only dedicated teachers, but also researchers carrying out cutting-edge research in frontier areas of chemical engineering and inter/multi-disciplinary subjects. The focus of

the research is on reaction and transport processes, energy, materials and environment. The faculty work towards analysing these systems at multiple scales by understanding their behaviour from the molecular to macroscopic levels as well as using a system-based approach.

4.4.2 Academic Programmes

New courses introduced

Sl. No.	Course No.	Title
1	CH 5490	Integer Optimisation - Prof. Sridharkumar Narasimhan
2	CH 5028	Building Towards a Career in Chemical Industry - Prof. R. Nagarajan and Dr. Srinivasan
3	GN 6012	Let's Learn to Play - Prof. Preeti Aghalayam and Dr. Kartic Vaidyanathan

New lab(s) established/renovated

Sl. No.	Lab @ NAC
1	Gas Hydrate Laboratory
2	Computational Catalysis Laboratory
3	Goyal Research Group
4	Molecular System Design and Engineering
5	SERG - Battery Lab
6	Kinetics and Catalysis Lab
7	Energy: Catalysis, Combustion and Control Lab
8	Colloidal Assembly Lab
9	Polymert Engineering and Colloid Sciences Lab
10	Lab on Chip Diagnostics
11	Electrochemical Engineering Lab
12	Energy Systems Lab
13	Intelligent System Lab
14	Computational Catalysis Lab
15	Soft and Active Fluids Lab
16	Fuel Cell Lab: The lab produced a patented tubular fuel cell that is being pursued for commercialisation by Elicius Energy.
17	Microfluidics Lab: The lab resulted in an UAY project for manufacturing API-excipient molecules in core-shell morphology. Industrial sponsor: DRL

Students on roll as of September 2019+M.S. and Ph.D admission in January 2020

Programme	Year I	Year II	Year III	Year IV	Year V and others	Total
B.Tech.	95	67	66	61	1	290

Dual Degree	1	15	24	25	22	87
M.Tech.	26	30	1	1	0	58
M.S.	10	10	5	1	0	26
Ph.D.	23	20	25	18	45	131
Total	155	142	121	106	68	592

Endowment prize instituted

Sl. No.	Endowment Prize
1	YBG Varma Award for Teaching Excellence in Chemical Engineering Department
2	Three new "Outstanding TA" awards established with Rs. 2 lakh endowments through alumni contributions

Student/Scholar who attended conferences/workshops/seminars/symposia abroad/India

Sl. No.	Student/Scholar	Roll No.	Conference/Seminar/Symposia/Workshop	Date and Venue	Financial Assistance from IITM
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Abroad

1	Sanjeet Kumar Singh	CH16D012	Sixth International Symposium Frontiers in Polymer Science Molecular Simulation of Glassy and Melt Phases of Poly(butylene terephthalate)	5-8 May 2019, Hungary	IIT Madras
2	Chandragiri Santhan	CH15D413	International Soft Matter Conference; poster title: Active nematics in channels	3-7 June 2019, Scotland	IIT Madras
3	Bharathi Raja R.	CH16D301	International Symposium on Plasma Chemistry; poster title: Development of novel swirl flow induced rotating arc discharge reactor for CO ₂ conversion	9-14 June 2019, Italy	IIT Madras
4	"Philip Prince Pokkatt, Dr. Rajagopalan Srinivasan	M.Tech	29th European Symposium on Computer Aided Process Engineering (ESCAPE-2019); paper: Effect of ambient conditions on boil off gas generation in LNG regasification terminals, In Computer Aided Chemical Engineering, Vol. 46, Ed. A. Kiss, E. Zondervan, R. Lakerveld, L. and Ozkan, pp. 445-450	16-19 June 2019, Eindhoven, The Netherlands	IIT Madras
5	Ravi Thej Pilla	CH14D024	9th International Colloids Conference; poster: Understanding the dynamic behavior of self-propelling 2D disks using Brownian dynamics simulations	16-19 June 2019, Spain	IIT Madras

6	Kinhal Krishna Vadirajacharya	CH14D214	International Colloids Conference 2019; poster: Controlling morphology of NP by altering precursor sequence in a microwave-assisted synthesis	16-19 June 2019, Spain	IIT Madras
7	Pandurangan K.	CH15D402	9th International Colloids Conference; poster: Self-assembly of amphiphilic patchy colloids in an oil-water system	16-19 June 2019, Spain	IIT Madras
8	Remya Ann Mathews K.	CH14D216	9th International Colloids Conference; poster: Self-assembly of amphiphilic patchy colloids in an oil-water system	16-19 June 2019, Spain	IIT Madras
9	Shumaila Shahid	CH14D409	International Colloids Conference; poster: Temperature stability of surfactant and particle stabilized emulsions	16-19 June 2019, Spain	IIT Madras
10	Ranjit Mondal	CH15D017	9th International Colloids Conference; poster: Particulate deposits via controlled drying of drops - sessile versus sphere-on-plate configuration	16-19 June 2019, Spain	IIT Madras
11	Manokaran V.	CH16D00	Scandinavian Symposium on Chemometrics (SSC 16); poster: Rapid identification of reaction systems using spectroscopic measurements and micro-reactors	17-20 June 2019, Oslo, Norway	IIT Madras
12	Kinhal Krishna Vadirajacharya	CH14D214	33rd Conference of the European Colloid and Interface Society (ECIS); poster: Simultaneous synthesis and separation of nanoparticles via interfacial trapping using ATPS	8-13 September 2019, Belgium	IIT Madras
13	Neha Kulkarni	CH17S010	33rd Conference of the European Colloid and Interface Society (ECIS); poster: Water-in-water pickering emulsions stabilized by oppositely charged particles	8-13 September 2019, Belgium	IIT Madras
14	L. Sruthi	CH15D014	33rd Conference of the European Colloid and Interface Society (ECIS); paper: Rheological behavior of drying casein dispersions	8-13 September 2019, Belgium	IIT Madras
15	Kanchan Aggarwal	CH15D204	SICE Annual Conference 2019; oral presentation: Detection of P-wave onset in seismic signals using wavelet packet transform	10-13 September 2019; Hiroshima, Japan	IIT Madras

16	Palla Sridhar	CH15D405	Advance Energy Materials 2018; oral presentation: Hydrogen interaction and storage in ZIF-67: A DFT Study	11-13 September 2019, University of Surrey, Guildford	IIT Madras
17	Twinkle Paul	CH14D411	236th ECS Meeting; oral presentation: Reaction mechanism analysis of Zn electrodeposition in acidic sulphate bath	13-17 October 2019, Atlanta, USA	IIT Madras
18	Logesh Kumar P.	CH14D020	The Society of Rheology - 91st Annual Meeting; oral presentation: Drying colloidal dispersion drops at different orientations	20-24 October 2019, North Carolina, USA	IIT Madras
19	Namrata Gaikwad	CH16D017	AIChE Annual Meeting 2019; oral presentation: Hydrate based gas separation of CH ₄ -CO ₂ gas mixture in fixed bed reactor	10-15 November 2019, Orlando, USA	IIT Madras
20	Arun Sankar E. M.	CH15D208	2019 AIChE Annual Meeting; poster: Spacing design for active sorting of drops in millifluidic network	10-15 November 2019, Orlando, USA	IIT Madras
21	Aswathy K. Raghu	CH15D400	2019 AIChE Annual Meeting; poster: Cooling and dilution effects in a thermally integrated microreactor for Sabatier reaction	10-15 November 2019, Orlando, USA	IIT Madras
22	S. V. Ramanan	CH17S009	2019 AIChE Annual Meeting; poster: Quantifying the effects of disruptions in LNG supply chains through agent-based dynamic simulation	10-15 November 2019, Orlando, USA	IIT Madras
23	Mohd. Shahrukh	CH17S008	2019 AIChE Annual Meeting; poster: Procurement of LNG under supply and demand uncertainties: portfolio optimisation studies	10-15 November 2019, Orlando, USA	IIT Madras
24	Krishnaveni Thota	CH15D200	2019 AIChE Annual Meeting; oral presentation: Particle migration in a liquid-liquid stratified flow in a microchannel	10-15 November 2019, Orlando, USA	IIT Madras
25	Akash Choudhary	CH15D206	2019 AIChE Annual Meeting; oral presentation: Lateral migration of an electrophoretic particle in a viscoelastic Poiseuille flow	10-15 November 2019, Orlando, USA	IIT Madras

26	S. Manikandan	CH14D404	2019 AIChE Annual Meeting; poster: Hierarchical multi-class segmentation for identification of MIMO systems from historical data	10-15 November 2019, Orlando, USA	IIT Madras
27	Mohd. Faiz Khan	CH17D404	72nd Annual Meeting of American Physical Society's Division of Fluid Dynamics; oral presentation: Application specific microfluidic networks	23-26 November 2019, Seattle, USA	IIT Madras
28	Mohammad Shahab	CH17D406	American Physical Society - Division of Fluid Dynamics; oral presentation: A simple photo-resistor sensor for detection and characterization of droplets	23-26 November 2019, Seattle, USA	IIT Madras
29	D. Madhurima Reddy	CH16D018	Challenges in multiphase flows; poster: Spreading dynamics of a droplet on a fluid-fluid interface	9-12 December 2019, Monash University, Italy	IIT Madras
30	B. Rashmi	CH18D400	Yokohama Environment and Information Sciences International Forum 2019; poster: Pt-based bimetallic catalysts electrodeposited on titanium support for methanol oxidation in direct methanol fuel cells	16 December 2019, Yokohama, Japan	Sponsored by Yokohama National University, Japan
India					
31	Ravi Thej Pilla	CH14D024	Soft Matter - Young Investigator Meet (SMYIM-2019); poster: Kinetic model to describe the cluster phase formed by 2D self-propelled disks using the theory of rapid coagulation	12-14 May 2019, Shillong	No
32	Ranjit Mondal	CH15D017	SMYIM 2019; poster: Contrasting deposit patterns dictated by configuration of the drying particle laden drops	12-14 May 2019, Shillong	IIT Madras
33	Shumaila Shahid	CH14D409	SMYIM 2019; poster: Adsorption of particle-polyelectrolyte complexes at interface	12-14 May 2019, Shillong	IIT Madras
34	J. Prem	CH16D303	Mathematical and Statistical Explorations in Disease Modelling and Public Health; paper: Challenges in identification of quantitative system pharmacology (QSP) models	1-11 July 2019, ICTS, Bengaluru	No

35	R. Saibi	CH18D003	National Symposium on Electrochemical Science & Technology (NSEST 2019)	19-20 July 2019, IISc Bangalore	IIT Madras
36	P.M. Ranjith	CH15D007	NSEST 2019; paper: Corrosion studies of Niobium and Tantalum in acidic fluoride media	19-20 July 2019, IISc Bangalore	IIT Madras
37	Twinkle Paul	CH14D411	NSEST 2019; paper: Reaction mechanism analysis of Zn electrodeposition process by using potentiodynamic polarization technique	19-20 July 2019, IISc Bangalore	IIT Madras
38	Ankitha Theres George	CH14D215	NSEST 2019; paper: Electrochemical impedance spectroscopy as a tool for label free detection of chikungunya NsP3	19-20 July 2019, IISc Bangalore	IIT Madras
39	Rajesh Pachimatla	CH15D004	NSEST 2019; paper: Interfacial reaction mechanism analysis using ELS with large amplitude perturbation: Cu deposition	19-20 July 2019, IISc Bangalore	IIT Madras
40	E. M. Arun Sankar	CH15D208	Indian Process Systems Engineering	18-19 September 2019, IITM	IIT Madras
41	Mohd. Faheem Ullah	CH14D405	Indian Process Systems Engineering; poster: Use of cross-correlation weighted lag for root cause identification in interactive control loops	18-19 September 2019, IITM	No
42	Harija Harikumar	CH16D302	Indian Process Systems Engineering; poster: Development of a low-cost cantilever-based flow sensor	18-19 September 2019, IITM	No
43	Ravendra Gundlapalli	CH15D016	35th National Convention of Electrical Engineers and National Conference on Storing Energy for a Sustainable Future - Future Energy in any Isolated World	7-9 November 2019	IIT Madras Project
44	Ahana P.	CH15D019	CompFlu 2019; poster: Particle displacement by micro-swimmers in a channel	5-7 December 2019, IISER Bhopal	IIT Madras
45	C. Santhan	CH15D413	CompFlu 2019; poster: Active nematics in 3D channels	5-7 December 2019, IISER Bhopal	IIT Madras
46	M. Prajitha	CH17D018	CompFlu 2019; poster: Dynamics of microswimmers at liquid-liquid interface mediated by self-induced Marangoni flow	5-7 December 2019, IISER Bhopal	No

47	Kanala Venkata Sravana Chaithanya	CH17D200	CompFlu 2019; poster: Dynamics of an active particle in a circular confinement	5-7 December 2019, IISER Bhopal	IIT Madras
48	Shambhu A.	CH18D201	International Conference on Complex Fluids and Soft Matter; poster: Microstreaming induced by an enclosed oscillating microbubble	5-7 December 2019, IISER Bhopal	IIT Madras
49	Akash Choudhary	CH15D206	CompFlu 2019; oral paper: Non-Newtonian effects on the slip and mobility of a self- propelling active particles	5-7 December 2019, IISER Bhopal	IIT Madras
50	Sharayu Shrinivas Jorapur	CH18S004	International Conference on Natural Polymers, Bio- Polymers, Bio-Materials, their Composites, Nanocomposites, Blends, IPNs, Polyelectrolytes and Gels: Macro to Nano Scales (ICNP-2019); oral paper: Study of change in structural and hydration properties of Polyacrylamide (PAAm) by concentration effects in aqueous solution by molecular dynamics simulation	6-8 December 2019, MG University, Kerala	IIT Madras
51	Ravendra Gundlapalli	CH15D016	International Conference on Advances in Energy Research, IIT Bombay; oral paper: Performance characteristics of indigenously developed kW class vanadium redox flow battery stacks	9-12 December 2019, IIT Bombay	IIT Madras Project
52	Bharathi Raja R.	CH16D301	7th International Conference on Advances in Energy Research 2019: oral paper: Double dielectric barrier discharge-assisted conversion of biogas to synthesis gas	10-12 December 2019, IIT Bombay	IIT Madras
53	Vuppanapalli Chaitanya	CH18D700	National Conference on Cryogenics for Space (NCCS- 2019); oral paper: Effect of assumption of common stream temperature in the simulation of multistream heat exchangers on the overall process efficiency	12-14 December 2019, LPSC, Thiruvanan- thapuram	IIT Madras
54	Poonam Sikarwar	CH17D412	DAE SSPS 2019 Symposium	18-22 December 2019, IIT Jodhpur	IIT Madras

55	Puneet Siwach	CH17D013	DAE SSPS 2019 Symposium	18-22 December 2019, IIT Jodhpur	IIT Madras
56	R. Arvind	CH15D401	Indian Control Conference (ICC 2019); oral paper: Integrated multi-objective predictive control for multi-unit system	18-20 December 2019, IIT Hyderabad	IIT Madras
57	Rajesh Pachimatla	CH15D004	National Conference on Advanced Lithium Batteries: Science and Technology, (NALiBST-2019); oral paper: Estimation of state-of-charge/ state-of-health in Li-ion batteries using nonlinear electrochemical impedance spectroscopy	27-28 December 2019, IISc Bangalore	IIT Madras
58	Saurabh Nagapati Hegde	CH17S007	25th National and 3rd ISHMT-ASTFE Heat and Mass Transfer Conference (IHMTTC-2019); oral paper: Implementation of inter-phase slip algorithm in bubble column reactors	28-31 December 2019, IIT Roorkee	IIT Madras
59	Diksha Khakal	CH18S006	CompFlu 2019; poster: Factors affecting the hetero-aggregation of oppositely charged particles	5-7 December 2019, IISER Bhopal	
60	Sivasankar J.	CH18S010	CompFlu 2019; poster: Instrumental art effects in thin gap rheology	5-7 December 2019, IISER Bhopal	
61	Harija Harikumar	CH16D302	Advances in Control & Optimization of Dynamical Systems - 6th ACODS 2020; oral paper: Design and development of a low-cost cantilever-based flow sensor	16-19 February 2020, IIT Madras	
62	Kanchan Aggarwal	CH14D204	6th ACODS 2020; oral paper: Investigation of Mars seismic noise using modeling techniques developed on Earth	16-19 February 2020, IIT Madras	
63	J. V. Jayarama Krishna	CH15D015	MetWaste 2020; oral paper: Unravelling the pyrolysis kinetics and product formation from electronic waste	22-23 February 2020, IIT BHU, Varanasi	
64	Bhavikkumar Bhupendrakumar Mahant	CH19D201	Research Opportunities in Petroleum, Energy and Natural Gas (ReOPEN 2020), Institute of Petroleum and Energy; poster: Materials for carbon dioxide sequestration and methane production from gas hydrates	24-27 February 2020, Vizag	

65	Chandragiri Santhan	CH15D413	Chemplus 2020, IIT Madras; oral paper: Active fluids in 3D channels	28 February-1 March 2020	IIT Madras
66	Saibi R.	CH18D003	Chemplus 2020, IIT Madras; oral paper: Mechanistic analysis of hydrogen evolution reactions using inverted rotating disc electrode	28 February-1 March 2020	IIT Madras
67	Poonam Sikarwar	CH17D412	Chemplus 2020, IIT Madras; oral paper: $\text{Cs}_2\text{AgMCl}_6$ ($M = \text{In}^{3+}, \text{Bi}^{3+}$ or Sb^{3+}) halide perovskites for solar water splitting	28 February-1 March 2020	IIT Madras
68	Puneet Siwach	CH17D013	Chemplus 2020, IIT Madras; oral paper: Effect of metal (Pt) doping in hematite for photoelectrochemical water splitting	28 February-1 March 2020	IIT Madras
69	Kavimonica V.	CH14D210	Chemplus 2020; poster: Effect of pressure and temperature on the production of hydrocarbons from hydrolysis of biomass	28 February-1 March 2020	IIT Madras
70	Ram Prasad Y.V.S.S	CH17D405	Chemplus 2020; poster: Electrodeposited Tin(Sn) on copper foam for enhanced electrochemical reduction of CO_2 to formic acid	28 February-1 March 2020	IIT Madras
71	Prathmesh Makarand Vinze	CH19S004	Chemplus 2020, IIT Madras; oral paper: Inertial migration of a spherical drop at large Reynolds number	28 February-1 March 2020	IIT Madras
72	Ahana P.	CH15D019	Chemplus 2020; oral paper: Particle displacement by micro-swimmers in a channel	28 February-1 March 2020	IIT Madras

Workshops attended

73	C. D. Balaji	CH18D016	Rare Events: Applications, Computations and Theory	7-13 March 2019, IISc Bangalore	No
74	Priyan Bhattacharya	CH16D202	Learning and Control	22-26 July 2019, IIT Mandi	No
75	Manikandan. S	CH14D404	Learning and Control	22-26 July 2019, IIT Mandi	No
76	Konkathi Bala Rajesh	CH18D410	Learning and Control	22-26 July 2019, IIT Mandi	No
77	Kanala Venkata Sravana Chaithanya	CH17D200	Short course on Introduction to High-Performance Computing	13-14 September 2019, IISc Bangalore	IIT Madras

78	B. Rashmi	CH18D400	Hydrogen and Fuel Cell for Sustainable Future, conducted by ARCI	18 October 2019, IITM Research Park, Chennai	No
79	B. Rashmi	CH18D400	Theory and Applications of ICP-OES, conducted by SAIF, IITM and Perkin Elmer India Limited	8 November 2019, SAIF, IITM	No
80	B. Rashmi	CH18D400	Advances in EBSD-EDS-TKD	11-12 November 2019, MME, IITM	No

Students/Scholars who won outside prizes and awards

Sl.No.	Student/Scholar	Roll No.	Prize	Prize awarded by
1	Shumaila Shahid	CH14D409	Soft Matter Best Poster Prize	Royal Society of Chemistry
2	Ranajit Mondal	CH15D017	Soft Matter Best Poster Prize	Royal Society of Chemistry
3	Dr. A. Seenivasan	Former doctoral scholar	Best paper published in the Indian Journal of Pharmaceutical Sciences (IJPS) in the field of Pharmaceutical Biotechnology/Microbiology and Tissue Culture	Prof. M. L. Khorana Memorial Prize 2018
4	Akash Choudhary	CH15D206	Best Poster Award	CompFlu 2019, IISER Bhopal, 5-7 December 2019
5	B. Rashmi (co-authored with a former Ph.D. scholar)	CH18D400	Best Poster Award at Yokohama Environment and Information Sciences (YEIS) International Forum 2019	Yokohama National University, Japan, 16 December 2019
6	B. Rashmi (co-authored with a former Ph.D. scholar)	CH18D400	Best Poster Award	VIT Chennai Campus, Chennai, 30-31 January 2020
7	Rajesh Pachimatla	CH15D004	Best Oral Presentation Award	National Conference on Advanced Lithium Batteries: Science and Technology (NALiBST-2019), 27-28 December 2019, IISc Bangalore
8	G. Vamsi Vikram	CH16D201	Best Poster Award	4th Indo-German Workshop on Advances in Materials, Reaction & Separation Processes, 23-26 February 2020

9	Poonam Sikarwar	CH17D412	Best Oral Presentation Award	Chemplus 2020, IIT Madras, 28 February-1 March 2020
10	Sarin John, Siddharth Singh	CH17B069 CH17B070	Team Anveshak: A competition team from the Centre for Innovation (CFI), on its rover Caesar being placed in the 12th position overall in the University Rover Challenge-2019 conducted by The Mars Society at Mars Desert Research Station (MDRS), Utah, 30 May-1 June 2019	
11	Sai Kumar, Shashank M. Patil, Devansh Jain, Sajay V.	CH17B101 CH18B022 CH17B050 CH16B061	Team Abhiyaan contested for the Lescoe trophy and secured second position for its bot, Virat, in the 27th Intelligent Ground Vehicle Competition (IGVC), held at Oakland University, Michigan, USA from 7-10 June 2019, organised by the Oakland University	
12	Adil Manzoor Shaikh	CH16B063	Team Raftar participated in the Formula Student Germany 2019 held at the renowned Formula One Circuit Hockenheimring from 5-11 August 2019	
13	Sphurti Agarwal	CH16B066	35th Inter-IIT Aquatics Meet, Women (Individual) a) Gold: 50 m Backstroke, and b) Silver: 50 m Freestyle and 100 m Freestyle	
14	Sahithi	CH16B118	54th Inter-IIT Sports Meet: Women (Badminton) - Gold	
15	Siddartha Gowtham, Vamshi P.	CH15B076 CH17B013	54th Inter-IIT Sports Meet: Men (Badminton) - Silver	
16	Aditya Nanda	CH15B003	Participated in the IITM team; secured third position at the Wharton People Analytics Case Competition 2019 held at Philadelphia, USA	

Students/Scholars who won Institute Convocation/Institute Day Prize

Sl. No.	Student/Scholar	Roll No.	Prizes	Donor
Convocation				
1	Devashish Pratap Gokhale	CH15B021	Highest CGPA in B.Tech Chemical Engineering	Reliance Heat Transfer Private Limited
2	Ragini Sreenath	CH15B058	Best interdisciplinary B.Tech project	Subramanyam Rajalakshmi Indira Prize
3	Zach Zajo	CH14B072	Highest CGPA in Dual Degree Chemical Engineering	B. Ravichandran Memorial Prize

4	Somnath Patra	CH17M019	Highest CGPA in M.Tech Chemical Engineering	Dr K. Subba Raju Memorial Prize
5	Somnath Patra	CH17M019	Best project in Environmental Pollution Control & Energy Conservation in M.Tech Chemical Engineering	Micro Bosch Prize
6	Menta V. Poorna Sai Abhishek	CA17M007	Highest CGPA in M.Tech Catalysis Technology in Chemical Engineering	Shri S. V. Balakrishnan Prize

Institute Day/Alumni Nite

7	Busigari Rajasekhar Reddy	CH14D400	Institute Research Award 2018-19 (July-November)	Institute Day
8	Dinesh Bhagavatula	CH12D025	Institute Research Award 2018-19 (July-November)	Institute Day
9	Avinash Sahu	CH11D039	Institute Research Award 2018-19 (January-May)	Institute Day
10	R. Sundari	CH13D010	Institute Research Award 2018-19 (January-May)	Institute Day
11	Ribhu Gautam	CH14D209	Keshav Ranganath Award 2018-19 (July-November)	Alumni Nite (29 September 2019)
12	Busigari Rajasekhar Reddy	CH14D400	Keshav-Rangnath Excellence in Research Award	Alumni Nite
13	Akhil Gopinath	CH17S001	Smt. D. L. Saraswati Memorial Prize	Alumni Nite
14	Suseendiran S. R.	CH15D201	Shri J. C. Bose Patent Award (2019)	Alumni Nite

4.4.3 Faculty and Their Activities

Faculty

Name and Qualifications	Major Areas of Specialisation
Professors	
Dr. Nagarajan R. (Head)	Ultrasonic and megasonic fields, cleanroom and contamination control, nano-particle synthesis and nano-composite formulation
Dr. Abhijit P. Deshpande	Rheology of complex fluids, polymers and polymeric composites, processing flow visualization
Dr. Arun K. Tangirala	Process systems engineering, control, identification and monitoring, applied signal processing
Dr. Kannan A.	Mathematical modeling, simulation and optimization of chemical processes
Dr. Niket S. Kaisare	Catalytic combustion, micro-reactors, advanced process control, energy and fuel processing
Dr. Panda T.	Bioprocess optimization, enzyme design, bionanotechnology
Dr. Preeti Aghalayam	Underground coal gasification, reduction of automotive NO _x , reduction of large reaction mechanisms, reactor modeling

Dr. Pushpavanam S.	Modeling and simulation, non-linear dynamics, flow visualization
Dr. Raghunathan Rengasamy	Process systems engineering, fuel cells, computational discrete microfluidics
Dr. Raghuram Chetty	Electrocatalysis, fuel cells, wastewater treatment, CO ₂ reduction
Dr. Rajagopalan Srinivasan	Safety, sustainability and resilience of complex systems, cognitive engineering, supply chain management and enterprise optimization
Dr. Ramanathan S.	Electrochemistry, chemical mechanical planarization for semiconductor processing
Dr. Ravi R.	Applied statistical mechanics, foundations of thermodynamics and mechanics, process dynamics and control
Dr. Ravikrishna R.	Contaminated sediment remediation, contaminant fate and transport, air pollution process and control
Dr. Shankar Narasimhan	Process design, data mining, fault diagnosis
Dr. Sreenivas Jayanti	Fuel cells, combustion, energy systems
Dr. Sridharakumar Narasimhan	Process system engineering, optimization, process control, fault diagnosis
Dr. Susy Varughese	Physics and mechanics of polymeric materials, polymeric nano composites
Dr. Tanmay Basak	Microware application, mathematical modeling and simulation
Dr. Upendra Natarajan	Polymer science and engineering, molecular simulation, statistical thermodynamics of complex fluids, nanostructured hybrid composite materials

Associate Professors

Dr. Basavaraja M. Gurappa	Directed assembly of colloids, microstructure and rheology of colloids, surfactants, polymer and their mixtures, interfacial rheology, ionic liquids, particulate gels
Dr. Ethayaraja Mani	Molecular simulations, self-assembly, mathematical modeling
Dr. Rajnish Kumar	Gas hydrates (formation, inhibition and recovery), carbon dioxide capture, storage and utilisation methane and hydrogen storage hydrothermal liquefaction at sub-critical and supercritical conditions
Dr. Renganathan T.	Multiphase systems, gasification, capture of CO ₂
Dr. Vinu R.	Thermo-catalytic conversion of biomass to useful intermediates, photocatalysis for environmental decontamination, microkinetic modeling of complex reactions

Assistant Professors

Dr. Aravind Kumar Chandiran	Solar cells, solar water splitting, carbon dioxide reduction, photoconductivity, oxide semiconductors and solar energy research
Dr. Himanshu Goyal	Clean energy (biofuels and carbon dioxide capture), process intensification, multiphase reactors, multiscale modeling, computational fluid dynamics (CFD), uncertainty quantification (UQ), high performance computing (HPC)
Dr. Jithin John Varghese	Atomistic and computational modelling of catalytic reactions: catalytic conversion of light alkanes, biomass derivatives and carbon dioxide to fuels and chemicals
Dr. Ramnarayanan R.	Applying physical chemistry concepts to biology, light and state of matter interaction, solid state materials
Dr. Sumesh P. Thampi	Hydrodynamics of complex fluids, interfacial flows, active matter

Dr. Tarak Patra	High throughput materials design, soft and nano materials, molecular simulations and machine learning, high-performance computing and AI
Professor Emeritus	
Dr. M. S. Ananth	Molecular thermodynamics and mathematical modeling
INSPIRE Fellow	
Dr. Swagatika Sahoo	System biology, constraint-based metabolic modeling, human metabolism, metabolic disorders, inherited metabolic disorders

Short-term courses/workshops/seminars/symposia/conferences organised by the faculty members

Sl. No.	Coordinator(s)	Title	Period
Conferences			
1	Dr. Raghunathan Rengasamy	1st Indian Process Systems Engineering Conference, IPSE 2019	18-19 August 2019
2	Dr. Arun K. Tangirala and Dr. Engell Sebastian, TU Dortmund	6th International Conference on Advances in Control & Optimization of Dynamical Systems	16-19 February 2020
Symposia			
3	Dr. Rajagopalan Srinivasan and Dr. Rajnish Kumar	International Symposium on Natural Gas Value Chain	9-11 December 2019
4	Dr. R. Vinu and Dr. S. Karthikeyan	First International Symposium on Analytical and Applied Pyrolysis in the Asian Region	11-13 December 2019
Workshop			
5	Dr. Rajagopalan Srinivasan and Dr. Rajnish Kumar	Workshop on Fundamentals of Natural Gas	9-11 December 2019
Short-term Courses			
6	Dr. Abhijit P. Deshpande	AICTE/QIP short-term course on Rheology of Complex Materials	11-15 November 2019
7	Dr. Sridharakumar Narasimhan and Dr. Nirav P. Bhatt (BT)	AICTE sponsored a short-term course on Data Analysis for Modelling of Chemical and Biochemical Reaction Systems: Theory to Practice	2-7 December 2019

Short-term courses/workshops/seminars/symposia/conferences/trainings attended by faculty members in academic institutions and public sector undertakings

Sl. No.	Faculty Member	Institution	Period
Workshop			
1	Dr. Rajnish Kumar	QS National Workshop, Bengaluru	19-20 January 2020

Symposia			
2	Dr. S. Ramanathan	NSEST (National Symposium on Electrochemical Science and Technology) 2019, Bengaluru	19-20 July 2019
3	Dr. Tarak Kumar Patra	Symposium on Molecular Simulations of Complex Fluids and Interfaces, Kanpur	22-23 February 2020
Conferences			
4	Dr. Tanmay Basak	International Conference on Advanced Materials -ICAM2019, Kannur	13-14 June 2019
5	Dr. Sumesh P. Thampi	2nd ACS-CRSI Meeting, Kannur	18 July 2019
6	Dr. Sumesh P. Thampi	DSFD 2019 - 28th International Conference on Discrete Simulation of Fluid Dynamics, Bengaluru	22-26 July 2019
7	Dr. Tanmay Basak	XVI Control Instrumentation System Conference (CISCON-2019), MIT, Manipal, Karnataka	8-9 November 2019
8	Dr. Abhijit P. Deshapande	CompFlu 2019, Bhopal	4-11 December 2019
9	Dr. Sumesh P. Thampi	CompFlu 2019, Bhopal	4-8 December 2019
10	Dr. S. Pushpavanam	CompFlu 2019, Bhopal	5-7 December 2019
11	Dr. Himanshu Goyal	CompFlu 2019, Bhopal	5-8 December 2019
12	Dr. Tanmay Basak	National Conference on Mathematical Analysis and Applications (NCMAA19), Tiruchirappali	19-20 December 2019
13	Dr. S. Ramanathan	International Conference Electrochemistry in Industry Health and Environment (EIHE-2020), Mumbai	23-24 January 2020
14	Dr. Tanmay Basak	International Congress on Membranes and Membrane Assisted Processes (ICMMAP - 2020), Kottayam	13-15 March 2020
15	Dr. Tanmay Basak	International Conference on Computational Sciences- Modelling, Computing and Soft Computing (CSMCS-2020), Calicut	27-28 March 2020

Meetings attended by the faculty in other institutions

Sl. No.	Faculty Member	Purpose	Institution	Date
1	Dr. Rajnish Kumar	Defending AISRF proposal - DST	Delhi	5 March 2020
2	Dr. R. Nagarajan	Board of Directors Meeting	Coromandel Fertilizers, Hyderabad	23 April 2019
3	Dr. R. Nagarajan	Board of Directors Meeting	Indian Additives Limited, Chennai	26 April 2019
4	Dr. R. Nagarajan	Board of Directors Meeting	Coromandel Fertilizers, Hyderabad	3-4 June 2019
5	Dr. R. Nagarajan	Board of Directors Meeting	Indian Additives Limited, Chennai	22 July 2019
6	Dr. R. Nagarajan	Inauguration of Alumni Association	IIT Palghat	25-26 July 2019

7	Dr. R. Nagarajan	Board of Directors Meeting and AGM	Indian Additives Limited, Chennai	13 September 2019
8	Dr. R. Nagarajan	Made a presentation regarding IITM's Institution of Eminence plans and status at a meeting of the Empowered Expert Committee (EEC)	AICTE, New Delhi	26 September 2019
9	Dr. R. Nagarajan	Board of Directors Meeting	Indian Additives Limited, Chennai	11 October 2019
10	Dr. R. Nagarajan	Board of Directors Meeting	Coromandel International Limited, Hyderabad	22-23 October 2019
11	Dr. R. Nagarajan	MoU signing meeting of Institution of Eminence	MHRD, New Delhi	15 November 2019
12	Dr. S. Pusphavanam	Invited as Chief Guest to inaugurate the Faculty Development Programme on Global Challenges of Desalination with Membranes	St. Joseph's College of Engineering, OMR Jeppiaar Nagar, Chennai	25 November 2019
13	Dr. R. Nagarajan	Board of Directors Meeting	Coromandel International Limited, Hyderabad	31 January 2020

Special lectures delivered by the faculty in other institutions

Sl. No.	Faculty Member	Topic of Lecture	Institution	Date
1	Dr. Sreenivas Jayanti	Hydrogen and fuel cell for sustainable future	IIT Madras Research Park	18 October 2019
2	Dr. Sumesh P. Thampi	Dynamics of particles on or near a fluid-fluid interface	Jawaharlal Nehru Centre For Advanced Scientific Research (JNCASR), Bengaluru	31 October 2019
3	Dr. Sreenivas Jayanti	Scale-up of vanadium redox flow battery stacks	TCO Symposium organised by Honeywell in Gurugram	12 November 2019
4	Dr. Tanmay Basak	Analysis of heat flow visualization and thermodynamic efficiency during thermal convection in cavities with distributed solar heaters	Third International Conference on Advanced Materials (ICAM 2019), Kottayam	10-11 August 2019
5	Dr. Tanmay Basak	Analysis of heatlines and entropy generation for thermal convection with distributed heaters: applications for solar heating	International Conference on Multifunctional and Hybrid Composite Materials for Energy, Environment, Tiruchirappalli	10-11 September 2019
6	Dr. Sreenivas Jayanti	Vanadium redox flow batteries and their role in energy storage	35th National Convention of Electrical Engineers organised by Institution of Engineers, Chennai	8 November 2019

7	Dr. Rajagopalan Srinivasan	Improving process safety by enhancing human performance and preventing human error (Keynote)	National Conference on Safety and Fire Engineering SAFE'19, Kochi	12-13 December 2019
8	Dr. R. Vinu, Associate Professor	Development of hydrothermal liquefaction technology for effective MSW management in the Indian context	International Conference on Sustainable Future: Resource Recovery and Concentrate Management organised by Wiley, Anna University, Chennai	6 January 2020
9	Dr. Rajagopalan Srinivasan	Cognitive engineering for process safety: towards a science of human performance and human error (Plenary)	International Conference on Advances in Chemical Engineering-2020, Dehradun	4-6 February 2020

Visits abroad by faculty

Sl. No.	Faculty Member	Country Visited	Date	Purpose of Visit	Funding from
1	Dr. R. Nagarajan	Las Vegas, Nevada, USA	29 April-2 May 2019	<ul style="list-style-type: none"> Presented a paper, Ultrasonic and megasonic cleaning: state-of-the-art systems and processes, ESTECH 2019, 65th Annual Technical Meeting of Institute of Environmental Sciences & Technology Universities visited: Purdue, UIUC, CMU, Penn State, Johns Hopkins, Princeton, Delaware, Yale, Columbia <p>Agenda:</p> <ol style="list-style-type: none"> Faculty recruitment - Indian and foreign citizens Research collaborations Postdoc opportunities: University and IITM Branding, visibility Response: Highly enthusiastic 	Partial funding from CPDA
2	Dr. P.S.T. Sai	Tokyo, Japan	11-15 May 2019	4th Edition of International Conference on Catalysis and Green Chemistry (ICG 2019) - Study of Performance for Various Catalysts for the Oxidation of Carbon Monoxide Reaction	CPDA
3	Dr. S. Pushpavanam	Guilin, China	29 May-4 June 2019	14th International Conference on Gas-Liquid and Gas-Liquid-Solid Reactor Engineering (GLS-14)	Partial funding from CPDA
4	Dr. T. Renganathan	Guilin, China	29 May-3 June 2019	14th International Conference on Gas-Liquid and Gas-Liquid-Solid Reactor Engineering (GLS-14)	CPDA

5	Dr. Rajnish Kumar	Tel Aviv, Israel	21-25 May 2019	Two separate workshops in Technion and Tel Aviv University - Multi-department interdisciplinary delegation to Technion and Tel Aviv universities to strengthen collaborations leading potentially towards co-supervised Ph.D. students	No
6	Dr. Ramanathan S.	France	3-7 June 2019	11th International Symposia on Electrochemical Impedance Spectroscopy	CPDA
7	Dr. Preeti Aghalayam	Italy	9-14 June 2019	7th Annual International Sotacarbo Summer School on Carbon Capture, Sequestration and Utilisation	Without financial assistance
8	Dr. Sreenivas Jayanti	France	8-12 July 2019	The International Flow Battery Forum 2019	Partial CPDA funding
9	Dr. Renganathan T.	England	9-10 July 2019	Indo-UK Water Quality Project Review Meeting	Partial CPDA funding
10	Dr. Pushpavanam S.	Malaysia	15-19 July 2019	Energy Security and Chemical Engineering Congress (ESChE 2019)	Partial CPDA funding
11	Dr. Rajagopalan Srinivasan	USA	21-30 July 2019	<ul style="list-style-type: none"> • Project discussion in ExxonMobil Research & Engineering, New Jersey • To attend 10th International Conference on Applied Human Factors and Ergonomics 	Partial CPDA funding
12	Dr. Rajnish Kumar	Singapore	26 July-4 August 2019	Scheme for Promotion of Academic and Research Collaboration (SPARC) project meeting at NUS	Partial CPDA funding
13	Dr. Upendra Natarajan	San Diego, USA	25 August-29 September 2019	<p>American Chemical Society Fall 2019 National Meeting and Exposition -</p> <p>1) Effect of polymer charge and interface concentration on structure of isotactic poly(acrylic acid) PAA and isotactic poly(methacrylic acid) PMA at oil-water interface</p> <p>(2) Dynamics and mechanism of polyelectrolyte-neutral block copolymer micellization in aqueous solution by atomistic MD simulations</p> <p>(3) Conformational analysis, RIS models, and chain dimensions of chemically substituted polycarbonates and polyesters using Rotational Isomeric State theory</p>	Partial funding from CPDA

14	Dr. Arun K. Tangirala	Hiroshima, Japan	10-13 September 2019	SICE Annual Conference 2019 — Integrated Set-Point Learning for Iterative Learning Control	Institute funding from Project
15	Dr. R. Vinu	Singapore	26-27 September 2019	Advanced Materials Research Conference (AMRC 2019) — Analytical Pyrolysis in Renewable Energy and Reaction Kinetics Applications	Partial funding from CPDA
16	Dr. Rajnish Kumar	Perth, Australia	26-27 September 2019	Hydrogen liquefaction and storage symposium: hydrogen hydrates for storage and release of molecular hydrogen	Partial funding from CPDA
17	Dr. Rajagopalan Srinivasan	Sapporo, Japan	22-28 September 2019	18th Asian Pacific Confederation of Chemical Engineering Congress (APCCChE 2019) 1. Keynote: Human behavioral informatics and cognitive engineering: Potential for enhancing process operations and safety 2. LNG procurement: evaluation of the real benefits of long term and spot contracts	Institute financial assistance from Project
18	Dr. S. Shankar Narasimhan	Hangzhou, China	24-28 September 2019	Zhejiang International Co-Operation Meeting	Without Institute financial assistance
19	Dr. Shankar Narasimhan	Santa Clara, California	5 October 2019	IIT Madras Technology Summit	Project
20	Dr. R. Vinu	California, Chicago, USA	3-11 October 2019	1. IITM Summit in Santa Clara, California (5 October) 2. TCBIOMASS and Conference in Chicago (7-9 October)	1. Without financial assistance 2. Partial Institute financial assistance from CPDA
21	Dr. Rajagopalan Srinivasan	Singapore	19-27 October 2019	Visit to National University of Singapore for research collaboration - SPARC project	Partial assistance from the project
22	Dr. Niket S. Kaisare	Orlando, USA	8-19 November 2019	AIChE Annual Meeting - (i) Hosting reception on behalf of CH department; (ii) Modeling of NO _x reduction by urea-SCR; (iii) Thermally-integrated microreactors for Sabatier reaction	Project
23	Dr. Jithin John Varghese	Orlando, USA	9-17 November 2019	2019 American Institute of Chemical Engineers Annual Meeting	Partial funding from CPDA

24	Dr. Shankar Narasimhan	Santa Clara, California	5 October 2019	IIT Madras Technology Summit	Project
25	Dr. Rajnish Kumar	Dalian, China	15-19 November 2019	2nd International Symposium on Measurement Technology in Thermal Science and Engineering	Partial funding from CPDA
26	Dr. Sumesh P. Thampi	Hanau, Germany	24-29 November 2019	WE-Heraeus Seminar	Partial funding from CPDA
27	Dr. R. Vinu	Berlin, Germany	26-27 November 2019	IGCS workshop on Resilient Energy Systems at Technical University of Berlin	Project
28	Dr. Raghuram Chetty	Yokohama, Japan	15-21 December 2019	Attended and delivered a lecture at India-Japan Cooperative Science Programme 2019 on the Development of Sustainable Environment/Energy Technologies in South India at Yokohama National University	No
29	Dr. R. Vinu	Berlin, Germany	26-27 November 2019	IGCS workshop on Resilient Energy Systems at Technical University of Berlin	Project
30	Dr. R. Vinu	Aston University, Birmingham	1-5 December 2019	Visited and delivered a talk on 4 December: Co-pyrolysis of biomass with plastics to produce high-quality biofuels - from fundamentals to applications	Project
31	Dr. R. Nagarajan	USA	18 December 2019-5 January 2020	Universities visited (Department of Chemical Engineering): – Vanderbilt – Georgia Tech – Tulane – LSU – UT-Austin – UT-San Antonio – Louisville Agenda: – Faculty recruitment (Indian and foreign) – Research collaborations – Postdoctoral opportunities (@ IITM, and abroad)	
32	Dr. Preeti Aghalayam	Berlin, Germany	21-27 February 2020	4th Indo-German Workshop on Advances in Materials, Reactions and Separation Processes	Project

Honours and awards obtained by faculty

Sl. No.	Faculty Member	Award	Awarded by	Awarded for	Date of Award
i. Honours					
1	Prof. Y.B.G. Varma, Retired Faculty, Department of Chemical Engineering, IIT Madras	Honoured with Dr. B. P. Godrej Lifetime Achievement Award 2019	Indian Institute of Chemical Engineers (IICe) at its annual session held at IIT Delhi	Significant contributions to Chemical Engineering	16 December 2019

ii. Awards

1	Dr. S. Ramanathan	S. K. Seshadri Memorial Mascot National Award 2019	Electrochemical Society of India	Outstanding contribution in the area of corrosion and electrochemistry	19 July 2019
2	Dr. R. Vinu	IEI Young Engineers Award 2019 in Chemical Engineering	35th National Convention of Chemical Engineers	Young Engineers Award 2019 in Chemical Engineering	6-7 September 2019
3	Dr. R. Vinu and Mr. Ribhu Gautam (CH14D209)	Keshav Ranganath Award 2018-19 (July-November)	IITM		Alumni Nite (29 September 2019)
4	Dr. Niket S. Kaisare	Prof. Y.B.G. Varma Award	IIT Madras	Teaching Excellence for the academic year 2018-2019	Alumni Nite
5	Prof. Raghunathan Rengaswamy, CH Co-inventor	Shri J.C. Bose Patent Award (2019)	IIT Madras		Alumni Nite
6	Dr. R. Vinu	ICT Alkyl Amines Young Scientist Award	Institute of Chemical Technology (ICT), Mumbai	Young Scientist Award	10 October 2019

Fellowships of academies and professional societies

Sl. No.	Faculty Member	Year of Admission
INAE		
1	Dr. Raghunathan Rengasamy	2018
Others		
1	Dr. Arun K. Tangirala has been selected for TUM (TU Munich) Global Visiting Professorship under the Excellence Strategy	December 2019

Journal Editorial Boards

Sl. No.	Faculty Member	Position (Editor/Member)	Journal Name
1	Dr. Upendra Natarajan	Editorial Advisory Board Member	<i>Polymer Engineering & Science</i> , published by Wiley; inducted in February 2020
2	Dr. Rajagopalan Srinivasan	Editor	<i>Process Safety and Environmental Protection</i> journal, Elsevier
3	Dr. Rajagopalan Srinivasan	Editor	<i>South African Journal of Chemical Engineering</i> , Elsevier
4	Dr. Rajagopalan Srinivasan	Academic Editor	Editorial Advisory Board, <i>Methods in Chemical Process Safety</i> , Elsevier

5	Dr. Rajagopalan Srinivasan	Member	<i>Frontiers in Energy Research</i>
6	Dr. Rajagopalan Srinivasan	Member	<i>Frontiers in Chemical Engineering</i>
7	Dr. Rajagopalan Srinivasan	Member	<i>Journal of Chemical Engineering & Industrial Biotechnology</i>
8	Dr. Rajagopalan Srinivasan	Member	<i>International Journal of Information Systems and Supply Chain Management</i>
9	Dr. Rajagopalan Srinivasan	Member	<i>International Journal of Data Analysis Techniques and Strategies</i>
10	Dr. Raghunathan Rengasamy	Editor	<i>Processes journal</i>
11	Dr. Raghunathan Rengasamy	Advisor to CII	AI for manufacturing initiative
12	Dr. Niket S. Kaisare	Advisory Board	<i>Reaction Chemistry & Engineering</i>
13	Dr. Niket S. Kaisare	Associate Editor	<i>International Journal of Control Automation and Systems</i>

4.4.4 Design and Development Activities

Brief and specific details of process/instruments/equipment/software designed and developed

Sl. No.	Faculty Member	Details
1	Dr. Rajnish Kumar	1. Process developed for methane recovery from marine hydrate reserves 2. Process developed for CO ₂ sequestration as solid hydrate in geological sites
2	Dr. Raghunathan Rengasamy	Developed a novel chirp technique for rapid impedance identification for electrochemical systems. Patent pending.

New facilities added or major equipment procured

Sl. No.	Equipment/New Facilities	Value (Rs. in lakhs)
Equipment		
1	PE loop tracer - Ferroelectric test station - aixACCT	38.8 (47,000 Euros)
2	(a) Scanning Electrochemical Microscope integrated with Inverted Optical Microscope - Metrohm/Sensolytics, (b) Basic Scanning Electrochemical Microscope- Metrohm/Sensolytics (order is placed)	91.8 (111,113 Euros)
3	ATR-FTIR full vacuum spectrometer - Jasco	35.49 (5,000,000 Japanese Yen)
4	8 Ch. High current battery cycler - Arbin	11.44 (15,000 USD)
5	Electrochemical Workstation (2 Nos.) - Ametek	11.4 (14,948.64 USD)
6	Liquid Chromatograph/Mass Spectrometer (LCMS) (Single Quadrupole with ESI and APCI) - Shimadzu, Japan	60.375
Facilities		
7	Facility to measure gas storage capacity of a material from gram scale to kilo scale. Operating pressure 5-100 bar	

8	Facility to measure rate of absorption/adsorption useful in gas separation and gas storage studies	
9	Facility to study gas separation efficiency of solids/powders in temperature range from -20 to 100 degree C and pressure range from 5-100 bar	
10	Facility to synthesise aerogel at lab scale and study its efficiency for contaminant removal from industrial waste water	

Patents

2019-2020 FY	Indian	International	Total
Number of patents filed	10	4	14
Number of patents granted (awarded)	1	0	1

Patents filed

Sl. No.	Faculty Member	Topic of Patent
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Patents filed - India

1	Dr. Basavaraja Madivala Gurappa	Method for preparation of porous mullite ceramic from pickering emulsion
2	Dr. Sridharakumar Narasimhan	Wireless monitoring and control of distributed cyber physical systems
3	Dr. Sreenivas Jayanti	Pillar-supported electrode felt for headers of electrolyte/reactant distribution channels
4	Dr. Abhijit P. Deshpande	Cellulosic particles as reactive fillers and moisture reservoirs for enhancing the curing rate of moisture curable one-component polyurethane adhesives
5	Dr. Aravind Kumar Chandiran	White light emission from single semiconductor material based on trivalent mixed halide double perovskites
6	Dr. Kannan A.	Acid modified and microwave irradiated enhanced adsorbent optimized for removal of multicomponent organic compounds from aqueous streams using mixture design
7	Dr. Sridharakumar Narasimhan	Development of continuous flow process for manufacture of dl-2-amino-1-butanol
8	Dr. Raghuram Chetty	Passive air-breathing direct methanol fuel cells with facile clamping design
9	Dr. Sreenivas Jayanti	Flip-flop serpentine flow field for electrolyte distribution in electrochemical cells
10	Dr. Pushpavanam S.	A method for simultaneous synthesis and separation of nanoparticles in an aqueous two-phase system

Patents filed - International

1	Dr. Raghunathan Rengaswamy	Tubular PEM fuel cell and cell stack thereof
2	Dr. Pushpavanam S.	Sequential extraction of metals from printed circuit boards by hydrometallurgical route using the same acid
3	Dr. Pushpavanam S.	Method for fabricating microfluidic devices on porous substrates
4	Dr. Raghunathan Rengaswamy	Method for impedance measurement using multiple phase shifted chirp signals

Patents awarded

Sl. No.	Faculty Member	Topic of Patent
1	Dr. Raghuram Chetty	A universal approach to the synthesis of palladium dendrites on carbon based substrates

4.4.5 Research and Consultancy Sponsored research projects (ongoing and new)

Sl. No.	Title	Period	Funding Agency	Amount (Rs. in lakhs)	Coordinators
1	Systems biology for enumeration of clinical heterogeneity of metabolic disorders- INSPIRE	4 January 2016-3 January 2021	Department of Science & Technology	86.27	Dr. Swagatika Sahoo
2	Continuous manufacturing of dl-2-amino-l-butanol	27 October 2016-26 April 2020	Uchhatar Avishkar Yojana - IIT Madras	130	Dr. Sridharakumar Narasimhan; Dr. Shankar Narasimhan; Dr. Shankar Balachandran, CS; Dr. Nirav Bhatt, BT; Dr. Balasubramaniam K.K., CY
3	Waste heat recovery boiler using municipal solid waste: analysis, model testing and pilot plant design commissioning and testing	13 July 2017-12 July 2020	Uchhatar Avishkar Yojana - IIT Madras	557	Dr. R. Vinu; Dr. Chakravarthy S.R., AE, Dr. Prasad B.V.S.S.S., ME, Dr. Sundararajan T., ME
4	Analysis of the fate and transport of non-aqueous phase liquids (NAPLs) in porous media under drying and rewetting conditions using magnetic resonance imaging (MRI)	20 August 2016-19 August 2020	Department of Science & Technology	50.34	Dr. Ravi Krishna R., Dr. Abhijit P. Deshpande, Dr. Chandrakumar N., CY
5	Materials and processing for enhanced solar cell performance-FIST 2016	31 March 2017-30 March 2022	Department of Science & Technology	385	Prof. R. Nagarajan (Head), Dr. Ramanathan S., Dr. Basavaraja M.G., Dr. Vinu R., Dr. Raghuram Chetty
6	National Carbonaceous Aerosols Programme (NCAP) Working Group-III project	30 March 2017-29 June 2022	Ministry of Environment and Forests	399.47	Dr. Ravikrishna R.; Dr. Shiva Nagendra S.M., CE; Dr. Sachin S. Gunthe, CE

7	Effective cracking of endothermic fuels using different initiators- experimental and mechanistic study	10 May 2017-9 May 2020	Department of Science & Technology	45.97	Dr. Vinu R.
8	Development of tubular PEM fuel cells	28 July 2017-27 July 2020	Naval Research Board	32.48	Dr. Raghunathan Rengaswamy
9	Metal-organic frameworks for solar rechargeable battery DST EMR	7 August 2017-6 August 2020	Department of Science & Technology	65.88	Dr. Aravind Kumar Chandiran
10	AMR and pollutants: interactive studies and novel sensor technologies	17 February 2018-16 February 2021	Department of Science & Technology	322.46	Dr. Renganathan T; Dr. Pushpavanam S.; Dr. Ravikrishna R., Dr. Indumathi M. Nambi, CE; Dr. Raghavendra Sai V. V., AM
11	New strategies for optimal operation of water supply schemes by use of scheduling and decentralized infrastructure	15 March 2018-14 March 2021	Department of Science & Technology	134.87	Dr. Sridharakumar Narasimhan; Dr. Shankar Narasimhan; Dr. Sreenivasa Murthy B.
12	Enabling technologies for enhancing access of medicines in India through point-of-demand production of oral dosage forms	17 May 2018-6 May 2020	Uchhatar Avishkar Yojana - IIT Madras	200	Dr. Raghunathan Rengaswamy; Dr. Basavaraja Madivala Gurappa
13	Fabrication of a microfluidic device for intraocular pressure monitoring in the management of glaucoma	24 April 2018-23 April 2020	Department of Science & Technology	20.89	Dr. Pushpavanam S.
14	Coordination frameworks for solar energy conversion	2 May 2018-1 May 2021	Council of Scientific and Industrial Research	19.32	Dr. Aravind Kumar Chandiran
15	Studies on the development of devices using MXenes/2D materials for energy harvesting applications	28 May 2018-27 May 2021	Board of Research in Nuclear Sciences	34.98	Dr. Aravind Kumar Chandiran
16	A low-cost option for the catalytic reduction of automotive NO _x in lean burning engines	1 November 2018-31 October 2020	Uchhatar Avishkar Yojana - IIT Madras	130	Dr. Preeti Aghalayam; Dr. Selvam P., CY; Dr. Niket S. Kaisare

17	Bench scale studies for gas hydrate based continuous gas separation process: separation of industrially relevant binary and ternary gas mixture like CO ₂ /H ₂ , CO ₂ /CH ₄ /H ₂ S and CH ₄ /N ₂ /H ₂	2 November 2018-1 November 2021	Department of Science & Technology	45.75	Dr. Rajnish Kumar; Dr. Jitendra S. Sangwai, OE
18	Ferroelectric photo electrochemical water splitting	26 November 2018-25 November 2021	Department of Science & Technology	70.28	Dr. Aravind Kumar Chandiran
19	Detection and diagnosis of model-plant-mismatch in model predictive control schemes	15 November 2018-14 November 2021	Science and Engineering Research Board	10.05	Dr. Arun K. Tangirala
20	Next-generation multifunctional aerogels for treating soluble microplastics, pesticides and drugs in water and recovery	15 March 2019-14 March 2021	Scheme for Promotion of Academic and Research	78.48	Dr. Rajnish Kumar; Dr. Mohan S, CE
21	Evaluation of pyrolysis behavior, pyrolysis kinetics and product analysis of thermal protection system (TPS) materials	1 November 2018-30 April 2020	Indian Space Research Organisation	19.08	Dr. Vinu R.
22	Guiding hydrodynamically interacting micro-swimmers	27 March 2019-26 March 2022	Science and Engineering Research Board	40.07	Dr. Sumesh P. Thampi; Dr. Basavaraja Madivala Gurappa
23	Design and development of bimetallic nanostructured photocatalyst for selective conversion of carbon dioxide to fuels	25 March 2019-24 March 2022	Science and Engineering Research Board	60.98	Dr. Raghuram Chetty; Dr. Aravind Kumar Chandiran
24	Fundamental studies on water-in-diesel emulsions as alternative fuels	11 February 2020-10 February 2023	Science and Engineering Research Board	67.14	Dr. Niket S. Kaisare; Dr. Basavaraja M. G.; Dr. Anand K., ME
25	Natural gas value chain management	28 March 2019-27 March 2021	Scheme For Promotion of Academic and Research	94.68	Dr. Rajagopalan Srinivasan; Dr. Jitendra Sangwai, OE; Dr. Rajnish Kumar
26	A framework for quantifying the resilience of complex networks: applications to water distribution networks and power grids	30 April 2019-29 April 2021	Scheme for Promotion of Academic and Research	74.98	Dr. Sridharakumar Narasimhan
27	Chemical composition of atmospheric fine particles (pm _{2.5}) over a South Indian city, Nellore	28 February 2019-27 February 2022	Science and Engineering Research Board	10.05	Dr. Ravikrishna R.

28	Advanced optimization strategies for efficient water and energy utilization in batch processes: case studies in pharmaceutical and textile industries	22 March 2019-21 March 2021	Scheme for Promotion of Academic and Research collaboration	42.65	Dr. Rajagopalan Srinivasan
29	Genetic engineering of microbes and regulation of charge transfer dynamics for high performance biophotovoltaics	21 June 2019-20 June 2023	Department of Biotechnology	183.37	Dr. Aravind Kumar Chandiran; Dr. Raghunathan Rengasamy; Dr. Swagatika Sahoo
30	Waste to engine low temperature combustion of sustainable green fuels - DST - UKIERI	19 June 2019-18 June 2021	Department of Science & Technology	4.9	Dr. Vinu R.; Dr. Anand K.
31	Earth abundant and scalable two-dimensional catalysts for selective photo-electrochemical solar conversion of carbon dioxide to methane/methanol	17 September 2019-16 September 2022	Department of Science and Technology	99.46	Dr. Aravind Kumar Chandiran; Dr. Raghuram Chetty; Dr. Somnath Chanda Roy, PH; Dr. Tiju Thomas, AM
32	Extreme learning machine based pitch angle prediction for uniform power generation and load mitigation using HIL simulator of digital hydraulic pitch system in wind turbine	25 October 2019-24 October 2022	Science and Engineering Research Board	10.05	Dr. Raghunathan Rengasamy
33	Development of a prototype metal air battery driven electrical drive for a city bus duty	16 December 2019-15 December 2022	Impacting Research Innovation and Technology - IMPRINT	149.16	Dr. Aravind Kumar Chandiran, Kamalesh Hatua
34	Decellularized extracellular matrix for treating cardiac injury	2 January 2020-1 January 2021	Department of Biotechnology	7.49	Dr. Nagarajan R.
35	Aqueous-phase mild oxidation of methane to methanol on atomically dispersed catalysts: mechanistic insights and solvent effects from first principles	17 December 2019-16 December 2021	Science and Engineering Research Board	32.89	Dr. Jithin John Varghese
36	Electrochemical biosensor for detections of cardiac biomarker (Troponin-cTnI & cTnT) using chitosan modified mesoporous hollow CNT @ NiMn-LDH nanocomposite	27 January 2020-26 January 2022	Science and Engineering Research Board	22.37	Dr. Ramanathan S.

37	Green technology for leather processing: tanning approach based on polymer nanocomposites	16 December 2019-15 December 2020	Department of Science & Technology	10.93	Dr. Nagarajan R.
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Industrial consultancy projects (ongoing and new)

Sl. No.	Faculty Member	Title	Industry	Period	Amount (Rs. in lakhs)
1	Dr. Nagarajan R.	Promotion of social entrepreneurship among schools, higher institutions and social enterprises	Fullerton India Credit Company Limited	1 April 2019-15 August 2022	80.5
2	Dr. Abhijit Deshpande P.	Integrated pottery development in Tiruvallur	Indian Oil Corporation Limited	16 May 2019-15 August 2020	64.58
3	Dr. Raghuram Chetty	HR - SEM Analysis CH	Common Code	16 April 2019-15 August 2020	5
4	Dr. Abhijit P. Deshpande (PI), Dr. Sumesh P. Thampi, Dr. Susy Varughese, Dr. Basavaraja M. G., Dr. Ethayaraja Mani	Testing for equipment in Polymer Engineering and Colloid Science Group	Common Code	27 October 2018-26 October 2023	5
5	Dr. Ramanathan S.	Impedance analysis	Common Code	13 December 2017-12 December 2020	0
6	Dr. Sridharakumar Narasimhan, Dr. Shankar Narasimhan	Analysis of Udaipura multi-village scheme	Common Code	1 September 2018-31 August 2021	0
7	Dr. Ethayaraja Mani	Improving flow properties of potassium chlorate	Common Code	1 May 2018-30 April 2021	1.5
8	Dr. Sreenivas Jayanti	Expert consultancy services for development of 3D CFD gasifier	Engineers India Limited	10 February 2020-31 March 2022	33.04
9	Dr. Abhijit P. Deshpande (PI), Dr. Susy Varughese	Novel natural polymer based blends for adhesive applications	ABB Limited	13 May 2016-12 May 2020	29.35
10	Dr. Tarak Kumar Patra	Machine learning and data-enabled design and discovery of soft materials	New Faculty Initiation Grant (IC&SR)	9 December 2019-8 December 2021	5

RBIC projects (ongoing and new)

Sl. No.	Faculty Member	Title	Industry	Period	Amount (Rs. in lakhs)
1	Dr. Raghunathan Rengasamy; Dr. Shankar Narasimhan Dr. Ravindran B., CS	Data analytics for aluminum smelters	GE India Technology Centre Private Limited	1 June 2016-1 July 2020	48

2	Dr. Rajnish Kumar; Dr. Pradeep T, CY; Dr. Jitendra Sangwai, OE	Methane production from marine hydrate deposits: bench scale studies for methane recovery by carbon dioxide replacement	Gas Authority of India Limited	1 January 2018-21 December 2020	185.26
3	Dr. Basavaraja M. G., Dr. Abhijit P. Deshpande	Investigation of wax deposition and wax-pipe wall interaction	CHV Energy Tech Co	1 April 2018- 31 August 2020	30
4	Dr. Vinu R.	Testing of catalysts for ethanol combustion	Renault Nissan Technology & Business Centre India Private Limited	15 May 2018-14 May 2020	39.93
5	Dr. Vinu R (PI), Dr. Chakravarthy S. R.	Development of a 100 L batch hydrothermal liquefaction facility for converting seaweeds to chemicals/fuels	Tamil Nadu Generation and Distribution Corporation Limited	1 December 2018-31 May 2020	25
6	Dr. Raghunathan Rengasamy; Dr. Mahesh Panchagnula, AM	Development of ML tools for cricket data analysis	ESPN Digital Media (India) Private Limited	1 December 2018-30 June 2020	47.2
7	Dr. Pushpavanam S.; Dr. Renganathan T.	Establishment of a bench scale demonstration plant to process typical e-waste and recover valuable metals through a green hydrometallurgical route	Bharat Heavy Electricals Limited	15 January 2019-15 October 2020	37.16
8	Dr. Arun K. Tangirala	Estimating fault propagation times from faulty data	Ericsson India Private Limited	1 January 2019-31 December 2020	20
9	Dr. Vinu R. (PI), Dr. Chakravarthy S. R.	Development of a 100 L batch hydrothermal liquefaction facility for converting seaweeds to chemicals/fuels	Tamil Nadu Generation and Distribution Corporation Limited	1 December 2018-31 May 2020	10
10	Dr. Vinu R.	Improving the selectivity of ethylbenzene hydroperoxide during the oxidation of ethylbenzene in the SMPO process - Phase 3	Shell India Markets Private Limited	1 April 2019- 30 June 2020	12.53
11	Dr. Abhijit P. Deshpande	Rheology of composite propellant suspension under high shear and extension	High Energy Materials Research Laboratory	15 May 2019-15 November 2020	9.94

12	Dr. Vinu R.	A holistic approach for biomass conversion to sugars and chemicals via hydrogenolysis using H-donor solvents and heterogeneous catalysts	ExxonMobil Research and Engineering Company	5 January 2019-30 April 2022	204.72
13	Dr. Raghunathan Rengaswamy	Towards accelerated product design with domain knowledge augmented machine learning models	Ford Motor Company	6 January 2019-31 May 2020	34.7
14	Dr. Rajagopalan Srinivasan (PI); Dr. Raghunathan Rengasamy	Assessing the supply chain necessary for India's evolution to a gas-based economy	ExxonMobil Research and Engineering Company	1 July 2019-30 June 2020	35
15	Dr. Pushpavanam S.	Market survey for setting up an ewaste recycling unit	EW2WE Ecotechnologies Private Limited	1 August 2019-31 July 2020	2.6
16	Dr. Kannan A.	Pelletization and impregnation of activated carbon development project for Ecogreen Cleantech Private Limited, Tuticorin	Ecogreen Cleantech Private Limited	14 August 2019-2 December 2019	8.11
17	Dr. Sridharakumar Narasimhan (PI), Dr. Shankar Narasimhan S.	Smart water network monitoring, management and control for BHEL Trichy	Bharat Heavy Electricals Limited	1 October 2019-15 September 2020	24.85
18	Dr. Sridharakumar Narasimhan (PI); Dr. Shankar Narasimhan S. (CoI)	IoT enabled monitoring systems for rural drinking water supply systems	Heterogeneous Communication Technologies Private Limited	19 December 2019-18 December 2022	36.89
19	Dr. Ramanathan S.; Dr. Srirama Srinivas, EE	Quantification of AC induced corrosion rate in buried pipelines - measurement and physical process model	GAIL India Limited	9 March 2020-5 March 2022	111.74
20	Dr. Vinu R.	Kinetics of hydrolysis and hydrodeoxygenation of biomass, biomass model compounds, plastics and mixtures	Shell India Markets Private Limited	1 March 2020-30 January 2021	34.55

Retainer consultancy (ongoing and new)

Sl. No.	Faculty Member	Title	Industry	Period	Amount (Rs. in lakhs)
1	Dr. Shankar Narasimhan	Technical advice for data analytics projects	Gyan Data Private Limited	7 December 2016-31 March 2022	9

Exchange programme with other universities, including institutions/universities under MoU

Sl. No.	University/Institution
1	NUS, Singapore
2	Tel Aviv, Israel

Faculty members' participation with other institutions under MoU

Sl. No.	Faculty	University/Institution
1	Prof. Praveen Linga	National University of Singapore
2	Prof. Karimi, NUS	National University of Singapore
3	Prof. Hadas, Mamane, Tel Aviv	Tel Aviv, Israel
4	Prof. Dror Avisar, Tel Aviv	Tel Aviv, Israel

Distinguished visitors to the department

Sl. No.	Visitor and Designation	Date of Visit	Purpose of visit
1	Dr. Praveen Linga, Associate Professor, Department of Chemical and Biomolecular Engineering, National University of Singapore	20 June 2019	Delivered a seminar talk: Clathrate hydrate: a technology enabler to strengthen energy-water nexus
2	Prof. Janaka Ruwanpura and Prof. Gopal Achari, University of Calgary, Canada	23 July 2019	Initiated collaboration in IIT Madras
3	Dr. Omkar Deshmukh	19 August 2019	Delivered a seminar talk: Understanding the behaviour of colloids across different domains: from pickering emulsions to food physics
4	Dr. Binoy Saikia, AcSIR	19 September 2019	Delivered a seminar talk: Beneficiation and process development for large-scale production of high-value C-products from Indian coals
5	Dr. Vijay Swarup, VP R&D, ExxonMobil, Clinton, NJ, USA	11 October 2019	Delivered an institute talk: Perspective on the future of energy, the role of R&D and ExxonMobil's commitment to R&D
6	Dr Srinath Garg Govindarajan, Department of Chemical Engineering and Applied Chemistry, University of Toronto, Canada	1 November 2019	Delivered a seminar talk: Design of a novel bioprocess for value recovery from mine tailings
7	Dr. Norman J. Wagner, Unidel Robert L. Pigford Chair, University of Delaware	2 December 2019	Delivered a seminar talk: The micromechanics of shear thickening fluids and their application as protective materials for medical professionals, first responders, athletes, and astronauts

8	Dr. Prabhakar Ranganathan, Senior Lecturer, Department of Mechanical & Aerospace Engineering, Monash University	16 December 2019	Delivered a seminar talk: The rheology of a flagellum
9	Dr. Anitha Ethirajan, Institute for Materials Research, Hasselt University	20 December 2019	Delivered a seminar talk: Design of functional nanomaterials for optoelectronics and biomedical applications
10	Prof. I. A. Karimi, Department of Chemical and Biomolecular Engineering, National University of Singapore	December 2019-January 2020	Visited the department under SPARC project
11	Dr. Srinivas Rangarajan, Lehigh University	7 January 2020	Delivered a seminar talk: Elucidating catalytic mechanisms using DFT, informatics, and data science
12	Dr. Mahesh Ganesan, Assistant Research Scientist, Department of Chemical Engineering, University of Michigan, Ann Arbor, USA	3 March 2020	Delivered a seminar talk: On the structural, rheological and optical properties of soft matter systems

4.4.6. Other Activities of the Department/Centre

Results obtained in research work (from M.S. and Ph.D thesis) of the scholar/faculty Ph.D.

Sl. No	Name	Roll No.	Guide	Title
Dual Degree (M.S. and Ph.D.)				
1	Dhivakar G.	CH10D018	Dr. Ravikrishna R.	Enhanced mobility of non-aqueous phase liquid (NAPL) during drying of wet sand
2	Avinash Sahu	CH11D039	Prof. S. Pushpavanam	Intensification of separation processes in liquid-liquid and gas-liquid systems
3	Bala Shyamala B.	CH13D020	Prof. Sridharakumar Narasimhan	Formulations and algorithms for optimal sensor placement with applications to chemical reactors, power systems and water networks
4	Pinnamaraju Vivek Shankar	CH13D026	Prof. Arun K. Tangirala	Discrete-time identification of LTI systems with multiple time-scales
5	Indu Chanchal	CH14D011	Prof. Susy Varughese; Prof. C. Lakshmana Rao, AM	Piezo-resistive behaviour of conducting polymers/composites and micro-structural contributions
6	Babita Kumari Verma	CH14D207	Prof. S. Pushpavanam	Insights from rate based models in biological and sociological systems to hybrid models in chemical systems
7	Ribhu Gautam	CH14D209	Dr. R. Vinu	Pyrolysis of marine biomass for the production of valuable chemicals and its kinetic analysis
8	Busigari Rajasekhar Reddy	CH14D400	Dr. R. Vinu	Microwave-assisted pyrolysis of coals and biomass for high-value chemicals and carbon nanomaterials

9	Piyali Dhar	CH14D407	Dr. R. Vinu	Chemical fractionation of lignin and biomass to valuable chemicals via non-conventional techniques
Dual Degree (M.Tech and Ph.D.)				
10	Deepa Elizabeth Eapen	CH13D201	Prof. Raghunathan Rengasamy	Modeling, simulation and performance enhancement of all-vanadium redox flow battery
11	Lineesh P.	CH13D203	Prof. Tanmay Basak	Microwave processing of materials with susceptors
12	Saraswathi G.	CH08D009	Prof. Tanmay Basak; Prof. T. Panda (Co-Guide)	Studies on kinetics of cholesterol and PHB synthesis in microbial systems
13	Rahul Trivedi	CH10D016	Dr. T. Renganathan	Hydrodynamics, liquid phase mixing and ozonation studies in countercurrent bubble column and inverse fluidised bed
14	Anjali T. G.	CH11D018	Dr. Basavaraja M. Gurappa	Shape anisotropic colloids at fluid-fluid interfaces
15	Rajalakshmi C.	CH11D029	Prof. Upendra Natarajan	Molecular structure, aggregation, dynamics and thermodynamics of charged and uncharged homopolymer and block copolymers in aqueous solution studied by atomistic molecular dynamics simulations
16	Neethu Thomas	CH12D020	Dr. Ethayaraja Mani	Synthesis, modelling and self-assembly of anisotropic noble metal nanostructures
17	Purnima	CH13D005	Prof. Sreenivas Jayanti	Analysis of on-board hydrogen generation through ethanol reforming for hybrid power-train applications
18	Abhishek Kumar Gupta	CH13D016	Prof. Upendra Natarajan	Molecular dynamics simulations study of structure and dynamics of polyelectrolytes in aqueous solutions and poor solvents
19	Bincy George Abraham	CH13D021	Prof. Raghuram Chetty	Development of air-breathing fuel cells with platinum-based catalysts electrodeposited on titanium and titania nanotubes
20	Tirumala Rao M.	CH13D028	Prof. S. Ramanathan	Studies on niobium anodic dissolution in acidic fluoride media using electrochemical techniques
21	Chinta Sivadurgaprasad	CH15D008	Prof. Raghunathan Rengasamy; Prof. Sridharakumar Narasimhan (Co-Guide)	Integration of machine learning and domain knowledge for engineering applications
22	Attada Yerrayya	CH15D010	Dr. R. Vinu	Theoretical and experimental investigation of fast pyrolysis of lignin model compounds and thermochemical conversion of lignin and biomass
23	Binu T. V.	CH15D013	Prof. Sreenivas Jayanti	Effect of internal circulation on heat and mass transfer to a translating fluid sphere

Master of Science by Research - M.S.

1	Darsha Kumar D. M.	CH13S017	Dr. Shankar Narasimhan, Dr. Nirav Pravinbhai Bhatt (Co-Guide)	Incremental fault detection and re-identification for model-plant mismatch in reaction system
2	Nishithan Balaji J.C.	CH15S012	Dr. Niket S. Kaisare, Dr. Preeti Aghalaym (Co-Guide)	Modelling and analysis of vehicular after-treatment systems: LNT and DOC
3	Garima	CH15S017	Dr. S. Pushpavanam	Extraction of dyes in batch and micro channel system
4	Devi Raghav V.	CH16S001	Dr. Niket S. Kaisare	Reduction of microkinetic reaction mechanisms using on simulation error-based algorithm
5	Srivathsan P. S.	CH16S302	Dr. Preeti Aghalayam, Dr. S. R. Chakravarthy, AE (Co-Guide)	Kinetic modelling of soot formation in rich, premixed ethylene/methane flames
6	Akhil Gopinath	CH17S001	Dr. A. Kannan	Improved parameter estimation and prediction of multicomponent adsorption process kinetics

Interdisciplinary group achievements of the departments

Sl. No.	Faculty Member	Details
1	Dr. Rajnish Kumar	<ul style="list-style-type: none"> Two joint Ph.D. students with OE (Prof. Jitendra Sangwai), one through IDR route One industrial project as lead PI, co-PIs from OE and CY
2	Dr. Raghunathan Rengasamy	Core member of Robert Bosch Center for Data Science and AI

• The different interdisciplinary groups, including faculty from the Chemical Engineering Department, have been successful in getting projects in their collaborative areas as detailed in sections, Sponsored research and RBIC projects.

Socially relevant activities carried out by the department

Sl. No.	Faculty Member	Details
1	Prof. Abhijit Deshpande	Faculty-in-charge of RuTAG (Rural Technology Action Group), an initiative of the Office of the Principal Scientific Adviser to the Government of India
2	Dr. Rajnish Kumar	<ul style="list-style-type: none"> Working on projects on utilising municipal and solid waste management Working on the project on contaminated and industrial waste water management
3	Prof. Raghunathan Rengasamy	Working with Translational Health Science and Technology Institute (THSTI) on understanding the impact of pollution on pre-term birth

International collaboration achievements by the department

Sl.No	Faculty Member	University	Purpose/Achievements
	Dr. Jithin John Varghese; Dr. Preeti Aghalayam and Dr. Niket S. Kaisare	Joint research project (not funded yet) with Sotacarbo SPA, Italy Sotacarbo is a publicly owned limited company based in Sardinia, Italy and has an MoU with IITM on development of clean energy technologies.	Catalytic conversion of CO ₂ to methanol

2	Dr. Rajnish Kumar	Started collaboration with NUS, Singapore; Tel Aviv, Israel and UWA, Australia	Joint publications have appeared in top 10 percentile journals from NUS; joint publications from Tel Aviv and UWA are in the pipeline.
3	Dr. Rajnish Kumar	Defended an Indo-Australian joint project, AISRF, by DST India (Covid-19 situation has kept everything on hold)	
4	Dr. R. Vinu	Collaboration with Aston University, Birmingham, UK (through an ongoing DST-funded UKIERI project on the conversion of plastic wastes to fuel and their utilisation in engines)	Project on the conversion of plastic wastes to fuel and their utilisation in engines
5	Prof. Raghunathan Rengasamy	Ford Motor Company, USA	University Research Project

Student visit

Sl.No	Student	Purpose of Visit	Date and Venue
1	Namrata Gaikwad, CH16D017	Research visit to the National University of Singapore under SPARC	13 January-6 December 2020, Singapore
2	Masoda Khairzada, Afghanistan student	Ph.D at IIT Madras	29 January 2020

Activities initiated

Department Board Advisory Meeting

1	<p>DAB – 2nd meeting held on 4 April 2019</p> <p>• Members:</p> <ul style="list-style-type: none"> – Prof. M. S. Ananth – Shri M. M. Murugappan, Executive Chairman, Murugappa Group – Dr. Yashwanth Narendar, VP, Saint-Gobain Research India – Dr. Laxmi Narasimhan, General Manager, Centre of Novel Catalytic Materials, Shell R&D, Bengaluru – Shri T. Shivaraman, MD and CEO, Shriram EPC – Shri M. S. Srinivasan, IRO <p>• Special Invitees:</p> <ul style="list-style-type: none"> – Prof. Mani, ME – Shri Kumaravel, EE – Agenda Item: Solar Desalination - Opportunities for industry/academia <p>• Some key feedback:</p> <ul style="list-style-type: none"> – Form a focused team of faculty and industry reps to drive follow-up activities – Plan a desalination system on campus that will integrate the concepts presented: renewable and non-renewable energy sources, desalination (membrane-based and thermal), controls and optimisation, etc.– Collaborate on DST desalination proposal
2	<p>DAB - 3rd meeting - 30 October 2019</p> <p>• Members:</p> <ul style="list-style-type: none"> – Prof. M. S. Ananth – Shri M. M. Murugappan, Executive Chairman, Murugappa Group – Dr. Laxmi Narasimhan, General Manager, Centre of Novel Catalytic Materials, Shell R&D, Bengaluru – Shri T. Shivaraman, MD & CEO, Shriram EPC – Shri M. S. Srinivasan, IRO <p>• Agenda items:</p> <ul style="list-style-type: none"> – Review the status of action items from the previous peer review of the department in 2013 – Made a presentation with current status of responses to various observations, and also outline future directions

Major infrastructure development made in the department

1	NAC - 1 office
2	Research Scholars' Space
3	Conference room at NAC - 15 persons
4	Newly developed Departmental Computer Facility at NAC (10 systems newly purchased in addition)

Department news

Faculty achievements/matters	
1	Prof. Raghunathan Rengaswamy has been appointed as the Dean (Global Engagement) with effect from 27 February 2020 (FN).
2	Prof. Raghunathan Rengasamy has joined as an Advisor, CII for their AI initiatives in manufacturing at Confederation of Indian Industry, Gurgaon from December 2019.
3	Prof. Raghunathan Rengasamy is the core member of Robert Bosch Center for Data Science and AI.
4	Dr. Himanshu Goyal joined the department as Assistant Professor on 16 September 2019.
5	Prof. T. Panda superannuated on 30 August 2019; reemployed w.ef. 1 September 2019.
6	A book entitled Chemical Engineering Thermodynamics: Theory and Applications by Prof. R. Ravi has been published by Ane Books Private Limited.
7	Dr. Tarak Patra has joined the department as Assistant Professor on 25 November 2019.
8	Prof. Sanat Kumar was appointed as Chevron Chair in Chemical Engineering w.e.f. December 2019 to January 2020.
9	Prof. I. A. Karimi, Department of Chemical and Biomolecular Engineering, National University of Singapore, visited from December 2019-January 2020 for the SPARC project.
10	Carbon Zero Challenge 2019: Three teams from our department participated in the Carbon Zero Challenge 2019, namely Kaatru, Paper Labs and Elicius Energy. Team Paper Labs were mentored by Prof. S. Pushpavanam and the teams Kaatru and Elicius Energy were mentored by Prof. Raghunathan Rengaswamy. Elicius Energy was chosen among the best of the finale.
11	Dr. R. Vinu inducted as the coordinator of the Waste Management Area of Indo-German Centre for Sustainability (IGCS) (February 2020)
12	Dr. R. Vinu was chosen as the coordinator to collaborate with ExxonMobil for research in energy and biofuels.
13	Dr. Aravind Kumar Chandiran's work: Corona-free: Pandemic-proof packaging of the future: Advanced anti-viral coatings, especially for personal protective equipment of frontline health workers as they risk infection while de-robing from PPEs, highlighted in the following links: <ul style="list-style-type: none"> • Natureindia: https://www.natureasia.com/en/nindia/article/10.1038/nindia.2020.76 • NITI Aayog's effort on Come Home Initiative: https://evreporter.com/come-home-initiative-post-covid-19/
14	Dr. Niket S. Kaisare is a member of Technical Committee T6.1 on Chemical Process Control, for International Federation of Automatic Control (IFAC).
15	Dr. Niket S. Kaisare is an expert reviewer on Belgian Research Foundation (FWO).
16	Dr. Niket S. Kaisare is a Review Panel Member at European Science Foundation.
17	Dr. Niket S. Kaisare is an NPTEL Coordinator, in charge of the online portal, teaching-learning feature development and overall coordination, and involved in the learning features for the online degree programme, since there is a significant overlap due to the shared features.

Students Matters

1	Chemplus 2020: In association with ChE and AIChE, the Department of Chemical Engineering conducted 12th annual edition of the technical festival, Chemplus from 28 February-1 March 2020. Previously, being a separate event for undergrads (ChemClave) and postgrads (ChemSymp), Chemplus has transformed into an event that incorporates both the fun part in engineering as well as the research element of a symposium. The prime events organised during Chemplus 2020 were Aquarocket, Chem-e Car, Chem-e Debate, Chemical Engineering Entrepreneurship, Chemical X, Main Quiz, paper and poster presentation, workshops, Aspen Plus, R, LaTeX and Matlab.
2	Blue Star sponsors international conference travel for two M.Tech. students in Chemical Engineering <ul style="list-style-type: none"> • 2019-20 Sponsorship amount: Rs. 1.5 lakh • Area: Heat and Mass Transfer • Recipients: Bhuvsmi Bhargava, Faseeh, KK • 2020-21 and Beyond: Rs. 6 lakh p.a.

Post-Doctoral Fellow @ChE

S.No.	Roll No.	PDF	Mentor	DOJ
1	CH18IPF02	R. Sai Harish	Dr. Sridharakumar Narasimhan	20 April 2018
2	CH18IPF03	Lakshmiprasad Gurralla	Dr. R. Vinu	4 October 2018
3	CH18IPF04	M. Joyce Nirmala	Dr. R. Nagarajan	28 November 2018
4	CH18IPF05	T.G. Vignesh	Dr. S. Pushpavanam	26 December 2018
5	CH19IPF02	Sheen Mers S. V.	Dr. S. Ramanathan	4 April 2019
6	CH19IPF03	Santhana Krishnan P.	Dr. Preeti Agalayam	6 May 2019
7	CH19IPF04	Prabodh Ranjan	Dr. Jithin John Varghese	15 May 2019
8	CH19IPF05	Sudarshan Konidena	Dr. Sumesh P. Thampi	6 June 2019
9	CH19IPF06	Ranjeet Kumar Mishra	Dr. R. Vinu	17 June 2019
10	CH19IPF07	A. Tamilselvan	Dr. Aravind Kumar Chandiran	15 July 2019
11	CH19IPF08	S. Pavan Kumar	Dr. Sumesh P Thampi	13 August 2019
12	CH/19-20/937/ DSTX/008158	K. Ram Kumar (DST Fellowship)	Dr. R. Nagarajan	9 September 2019
13	CH19IPF10	S. Gopinath	Dr. S. Pushpavanam	29 November 2019
14	CH19IPF11	Gurram Venkata Ramesh Babu	Dr. Jithin John Varghese	9 December 2019
15	CH19WPF01	Ramya Ramkumar	Dr. Raghunathan Rengasamy	6 December 2019
16	CH/19-20/837/ DBTX/008 158	Shiny P. J. (DBT Fellowship)	Dr. R. Nagarajan	2 January 2020
17	CH20IPF01	Priyanka Biswas	Dr. Basvaraj M Gurappa	17 February 2020

Department Activities

The department-wise 56th Convocation 2019 was held on 30 September 2019. The Chief Guest was Shri M. M. Murugappan, Chairman, Murugappa Group.



Summer Fellowship Training 2019



New Academic Complex

Name board at NAC



Research Scholars' Room



Department Computer Facility



Conference Room at NAC



4.5 Department of Chemistry

4.5.1. Introduction

The Department of Chemistry was a part of the Department of Chemical Engineering from 1959-1961 and became an independent department in 1961 with Prof. V. Srinivasan as the Head-in-Charge. Prof. M.V.C. Sastri assumed charge as the first Head of the Department in November 1961. He was instrumental in building the department as well as the Applied Chemistry Building (completed in 1973). Prof. Sastri was also responsible for the Special Instruments Laboratory (established in 1970; later known as RSIC and presently known as SAIF), and the MSRC (established in 1974 with Prof. Sastri as the Head and Prof. V. Srin-

ivasan as the Associate Head).

The department offers M.Sc. and Ph.D. programmes in chemistry. As on date, 1,020 students have graduated with the M.Sc. degree and 773 students with the Ph.D. degree. Various aspects of chemistry are also taught at the preparatory level (for weaker section students) and in the B.Tech. programme (core as well as minor stream courses in chemistry). The department is well equipped with modern instrumentation facilities and actively engaged in performing quality teaching and research in frontier areas.

4.5.2 Academic Programmes

Students on roll as of September 2019+M.S. and Ph.D. admission in January 2020

Programme	Year I	Year II	Year III	Year IV	Year V and Others	Total
M.Sc.	59	49				108
Ph.D.	32	57	34	34	99	256
Total	91	106	34	34	99	364

Endowment prize instituted

The Institute Research Award was given to the following research scholars in recognition of the quality and quantity of research work done by them. The institute research award consists of a merit certificate and a cash award of Rs.20,000.

Sl. No.	Student/Scholar	Roll No.
1	Dasary Hareesha	CY12D014
2	Isai Ramakrishna	CY14D057
3	Ayan Bhattacharyya	CY14D041

Student/Scholar who attended conferences/workshops/seminars/symposia abroad/India

Sl. No.	Student/Scholar	Roll No.	Conference/Seminar/Symposia/Workshop	Date and Venue
1	Yashwant Pratap Kharwar	CY15D112	235th ECS Meeting	26-30 May 2019, Dallas, Texas, USA
2	Abhijit Nag	CY13D202	ISMSC 2019	2-6 June 2019, Lecce, Italy
3	Biswajit Mondal	CY13D203		
4	Suganya A.	CY14D300	67th ASMS Conference on Mass Spectrometry and Allied Topics	2-6 June 2019, Atlanta, GA, USA
5	Madhuri Jash	CY14D068		
6	Pawan Kumar	CY15D049	15th International Conference on Calixarenes	10-14 June 2019, Cassis, France

7	Sandeep Bose	CY14D078	Clusters and Nanostructures, Gordon Research Conference	15-21 June 2019, Les Diablerets, Switzerland
8	Tripti Ahuja	CY14D204		
9	Mohammad Zafar	CY15D023	8th European Conference on Boron Chemistry	24-27 June 2019, Montpellier, France
10	Ranjit Bag	CY15D079		
11	Suman Gomosta	CY15D110		
12	Anuja Singh	CY15D036	50th General Assembly and 47th IUPAC World Chemistry Congress	5-12 July 2019 Paris, France
13	Naziya Parveen	CY15D050	21st European Symposium on Organic Chemistry ESOC2019	14-18 July 2019, Vienna, Austria
14	Sundaravelu N.	CY15D011		
15	Soniya Gandhi	CY15D020	26th International Symposium: Synthesis in Organic Chemistry	15-18 July 2019, Churchill College, UK
16	Avinash Kumar	CY15D074	25th CRSI - National Symposium in Chemistry	19-21 July 2019, IIT Kanpur
17	Vivek Kumar Singh	CY15D076		
18	Vipin Kumar Pandey	CY17D006		
19	Koushik Mondal	CY16D081		
20	Moumita Sarkar	CY18D064	SC-XRD SAIF-Short-term course	25 July-7 August 2019, IIT Madras
21	Manaswini Ray	CY17D002		
22	Pragyansmriti Sunani	CY18D069		
23	Chandra Shekar Tiwari	CY18D005	Workshop on Software and Applications on Single Crystal X-Ray Diffraction	29-31 August 2019, Mehsana, Gujarat
24	Rajeev Chand Nishad	CY16D007		
25	Nitisha	CY15D103	International Symposium on Dyes and Pigments	8-11 September 2019, Seville, Spain
26	Abhinav Kumar	CY14D033	5th International Fall School on Organic Electronic (IFSOE) 2019	15-20 September 2019, Moscow, Russia
27	Sruthi Guru	CY15D099	5th International Conference on Advanced Energy Materials	11-13 September 2019, University of Guildford, England
28	Ramachandran K.	CY15D007	The International Conference Catalysis and Organic Synthesis (ICCOS-2019)	15-20 September 2019, Moscow, Russia
29	Vellaiyadevan S.	CY13D072	International Symposium on Confinement-Controlled Chemistry	16-18 September 2019, Zemos, Ruhr-University Bochum, Germany
30	Sumana Brahma	CY15D038	5th International Conference on Ionic Liquid-Based Materials	4-8 November 2019, Jussieu, Paris
31	Randhir Rai	CY14D076	Green Chemistry New Zealand 2019 Conference	2-5 December 2019, University of Auckland, New Zealand
32	Prabhakaran T.	CY14D072	15th DAE-BRNS Biennial Trombay Symposium on Radiation & Photochemistry (TSRP-2020)	5-9 January 2020, BARC, Mumbai
33	Alphy Sebastian P.	CY16D012		
34	Arya J. S.	CY17D039		

35	Pinki Sinha	CY17D026	International Conference on Emerging Trends in Catalysis (ETC-2020)	6-8 January 2020, VIT, Vellore
36	Vipin Kumar Pandey	CY17D006		
37	Donthireddy Siva Nagendra Reddy	CY17D019		
38	Shruti Sharma	CY17D003	Introduction to Gaussian: Theory and Practice	20-24 January 2020, Hyderabad
39	Manaswini Ray	CY17D0021		
40	Moumita Sarkar	CY18D064		
41	Pragyansmriti Sunani	CY18D069		
42	Shashi Kumar	CY18D061		
43	Soumi Roy	CY18D033		
44	Sweta Thangriyal	CY17D045		
45	Anand Kumar Sahu	CY16D063		
46	Swayam Prakash	CY16D063		
47	Sundaravelu N.	CY15D011	26th CRSI National Symposium in Chemistry (NSC-26)	6-9 February 2020, VIT, Vellore
48	Anuradha Nandy	CY16D021		
49	Esmā Khatun	CY14D201	Gordon Research Conferences on Atomically Precise Nanochemistry	9-14 February 2020, Galveston, TX, US
50	Anand Kumar Sahu	CY16D063	International Conference on Smart Material for Sustainable Technology	22-25 February 2020, Goa
51	Kumaramani Jena	CY18D034		
52	Saroj Kumar Kushvaha	CY17D056		
53	Swayam Prakash	CY16D063		

Students/Scholars who won outside prizes and awards

Sl.No.	Student/Scholar	Roll No.	Prize	Prize awarded by
1	Sanjeev Gupta	CY13D028	Best Poster Award (First Prize)	17th National Workshop on Catalysis for Clean Energy and Sustainable Future, IIT Delhi
2	Pawan Kumar	CY15D049	Best Poster Award	25th CRSI-National Symposium in Chemistry, IIT Kanpur
3	Vipin Kumar Pandey	CY17D006		
4	Abhinav Kumar	CY14D033	Best Poster Award	5th International Fall School on Organic Electronics (IFSOE 2019), Russia
5	Sumitava Mallik	CY15D026	Best Poster Award	XV J-NOST 2019, University of Delhi, Delhi
6	Prabakaran T.	CY14D072	New Generation Ideation Contest-2019	New Generation Ideation Contest 2019, Hindustan Petroleum Green R&D Centre, Bengaluru
7	Manmath Panigrahy	CY17D053	Best Poster Award	Recent Advances in Nanomaterials Chemistry for Sustainable Development (RANCS), Madras Christian College, Chennai
8	Janraj Naik Ramavath	CY16D083	Best Paper Award	Twenty-first National Convention of Electrochemists (NCE-21)

9	Kingshuk Debsharma	CY16D041	Best Poster Award	15th Trombay Symposium on Radiation & Photochemistry (TSRP-2020)
10	Koushik Mondal	CY16D081	Best Poster Presentation Award	
11	Vipin Kumar Pandey	CY17D006	Best Poster Presentation Award	International Conference on Emerging Trends in Catalysis (ETC-2020)

Students/Scholars who won Institute Convocation/Institute Day Prize

Sl. No.	Student/Scholar	Roll No.	Prize	Donor
1	Atanu Ghosh	CY17C009	Ratna Rao Memorial Prize	IIT Madras
2	Pratishtha Khurana	CY17C029	Dr. S. R. Ramadas 60th Birthday Commemoration Award	IIT Madras
3	Rajeseekar S.	CY12D067	Prof. C. N. Pillai Prize	IIT Madras
4	Papri Chakraborty	CY15D054	Prof. Langmuir Prize	IIT Madras
5	Chandra Shekar Reddy	CY13D006	Prof. G. Sundararajan Endowment Prize	IIT Madras
6	Dasary Hareesha	CY12D014	Prof. Werner Prize	IIT Madras

4.5.3. Faculty and Their Activities

Faculty

Name and Qualifications	Major Areas of Specialisation
Professors	
Sankararaman S., Ph.D. (Victoria, Canada)	Synthetic and mechanistic organic chemistry
Dhamodharan R., Ph.D. (U. Mass, USA)	Chemistry of macromolecules
Mishra A. K., Ph.D. (IIT Kanpur)	Physical photochemistry, fluorescence spectroscopy
Pradeep T., Ph.D. (IISc, Bangalore)	Solid state chemistry, materials science
Sangaranarayanan M. V., Ph.D. (IISc, Bangalore)	Electrochemistry
Varadaraju U. V., Ph.D. (IISc, Bangalore)	Solid state chemistry, materials science
Selvam P., Ph.D. (IIT Madras)	Catalysis, solid state chemistry
Archita Patnaik, Ph.D. (BHU)	Physical chemistry, colloid and interface science, nanoscience and nanotechnology
Baskaran S., Ph.D. (IIT Kanpur)	Organic synthesis and asymmetric synthesis
Indrapal Singh Aidhen, Ph.D. (University of Pune)	Synthetic organic chemistry, synthetic carbohydrate chemistry and synthesis of biologically and medicinally important targets
Mangala Sunder K., Ph.D. (Head) (McGill, Canada)	Theoretical spectroscopy, magnetic resonance and molecular spectra; quantum chemistry and quantum information processing, online digital content development and online teaching; technology enhanced learning
Vidyasagar K., Ph.D. (IISc, Bangalore)	Solid state chemistry
Bhyrappa P., Ph.D. (IISc, Bangalore)	Bioinorganic, supramolecular and materials chemistry of porphyrinoids
Ranga Rao G., Ph.D. (IISc, Bangalore)	Materials chemistry, solid state electrochemistry, surface chemistry and heterogeneous catalysis

Sanjay Kumar, Ph.D. (IIT Kanpur)	Theoretical chemistry, quantum chemistry
Narasimha Murthy N., Ph.D. (IISc, Bangalore)	Bio-inorganic chemistry, inorganic chemistry, spectroscopy
Dillip Kumar Chand, Ph.D. (IIT Kanpur)	Supramolecular chemistry, inorganic chemistry
Sekar G., Ph.D. (IIT Kanpur)	Enantioselective organic synthesis
Sundaragopal Ghosh, Ph.D. (IIT Bombay)	Organometallic and metalloborane chemistry
Rajakumar B., Ph.D. (IISc. Bangalore)	Atmospheric chemistry, gas-phase kinetic and high-resolution cavity ring down spectroscopy, computational chemistry
Muraleedharan K. M., Ph.D. (RRL, Trivandrum)	Bioorganic chemistry, medicinal chemistry
Prasad Edamana, Ph.D. (RRL, Trivandrum)	Divalent lanthanide and dendrimer chemistry
Arti Dua, Ph.D. (IISc. Bangalore)	Statistical mechanics, polymer theory, stochastic processes
Amrendra Vijay, Ph.D. (IISc. Bangalore)	Theoretical physical chemistry
Ramesh Gardas, Ph.D. (South Gujarat University)	Solution thermodynamics, ionic liquids

Associate Professors

Debashis Chakraborty, Ph.D. (University of Gottingen, Germany)	Organometallic chemistry
Pazhamalai Anbarasan, Ph.D. (IISc. Bangalore)	Design and development of new synthetic methodologies based on carbenes trifluoromethylation and trifluoromethylthiolation synthesis of therapeutically important natural products
Kothandaraman R., Ph.D. (IISc. Bangalore)	Electrochemical systems and electrocatalysis
Jeganmohan M., Ph.D. (NTHU, Taiwan)	Metalcatalyzed organic reactions, total synthesis and asymmetric synthesis
Beeraiah Baire, Ph.D. (IISc. Bangalore)	Organic synthesis
Md Mahinddin Baidya, Ph.D. (LMU, Munich, Germany)	Designer catalysis for organic synthesis asymmetric synthesis, photoredox catalysis, C-H bond activation, synthesis of natural products
Venkatakrisnan P., Ph.D. (IIT Kanpur)	Organic functional materials

Assistant Professors

Kartik Chandra Mondal, Ph.D. (Karlsruhe Institute of Technology, Germany)	Inorganic chemistry
Arnab Rit, Ph.D. (University of Muenster, Germany)	Organometallic chemistry and catalysis, main-group chemistry

Short-term courses/workshops/seminars/symposia/conferences organised by faculty members

Sl. No.	Coordinator(s)	Title	Period
Conferences			
1	Dr. Beeraiah Baire (Convenor)	Medicinal Chemistry Conference (MEDCHEM) 2019	1-2 November 2019
2	Dr. Venkatakrisnan P. (Co-convenor)		
3	Dr. Kartik Chandra Mondal (Treasurer)		

Symposium

1	Dr. Mangala Sunder K.	One-Day Symposium on Industry-Academia Interactions in Chemical Sciences	22 November 2019
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Workshops

1	Dr. Mangala Sunder K.	MHRD Swayam partner workshop organised by Pataliputra University, gave a lecture, and interacted with 200 faculty members. The workshop was inaugurated by the Governor of Bihar.	11-12 April 2019
2	Dr. Dillip Kumar Chand	QToF Technical Forum 2019	24-25 June 2019
3	Dr. Sundargopal Ghosh	Workshop on Emerging Trends in Main Group Chemistry	26 August 2019
4		Interaction session for young faculties and postdoctoral students with Prof. Dr. Holger Braunschweig and DFG personnel	
5	Dr. Debashis Chakraborty/Dr. B. Rajakumar	Spartan 18 Workshop	11 November 2019

Short-term courses/workshops/seminars/symposia/conferences/trainings attended by the faculty members in academic institutions and public sector undertakings

Sl. No.	Faculty Member	Title	Institution	Period
Workshops				
1	Dr. Debashis Chakraborty	Workshop for mutual collaboration between IITM and other institutions in Israel	Haifa, Tel Aviv, Israel	22-24 May 2019
2	Dr. Edamana Prasad	Workshop	Kannur	27-28 May 2019
3	Dr. Mangala Sunder K.	One-day workshop on MOULS for faculty	VIT Vellore	14 June 2019
4		SWAYAM Prabha workshop	Patliputra University, Patna	10 August 2019
5		NPTEL SPOC workshop	IIT Madras	25 January 2020
6	Dr. Pradeep T.	Science Academies Lecture workshop	Ramaiah Institute of Technology, Bengaluru	29 August 2019
7	Dr. Ramesh Gardas	Workshop on QS Ranking (Institute Representative)	IISc, Bangalore	20 January 2020
8		Knowledge Exchange Workshop on Ranking (Institute Representative) IIT, Delhi and University of Auckland	IIT, Delhi	14 February 2020

9		Indo-German Workshop 2019	University of Duisburg -Essen, Germany	25-27 September 2019
10	Dr. Sekar G.	International Workshop on Advanced Functional Materials and Devices	SRM Institute of Science and Technology, Chennai	13 December 2019
11	Dr. Selvam P.	17th National Workshop on Catalysis for Clean Energy and Sustainable Future	New Delhi	31 May-1 June 2019
12	Dr. Sundargopal Ghosh	IIT Bombay-FU Berlin two-day workshop	IIT Bombay	29-30 August 2019

Seminars

1	Dr. Sekar G.	International Seminar on Current Trend in Chemistry & Chemical Education	St. Albert's College (Autonomous), Ernakulam, Kerala	6 January 2020
2	Dr. Pradeep T.	International Seminar on Sustainability Issues in Water and Energy to Nanotechnology Solutions	PSG College, Coimbatore	9 January 2020

Symposia

1	Dr. Kothandaraman Ramanujam	Alumni Symposium	SSCU, IISc Bangalore	13-14 December 2019
2		Frontiers of Translational Materials Science	Hanyang University Seoul, Korea	17-18 May 2019
3	Dr. Pradeep T.	26th International Symposium on Metastable, Amorphous and Nanostructured Materials (ISMANAM 2019)	IIT Madras	8-12 July 2019
4		2nd ACS CRSI Meeting with CRSI and in conjunction with the 25th CRSI - National Symposium in Chemistry	IIT Kanpur	18 July 2019
5	Dr. Rajakumar B.	32nd International Symposium on Shock Waves (ISSW32)	Singapore	13 -21 July 2019
6		"Organic Chemistry Symposium (OCS 2019) - Organiser of the Symposium, coorganised by IIT Kanpur and IISER Bhopal"	IISER Bhopal, Lucknow	12-15 September 2019
7	Dr. Sekar G.	Second NTU-India Joint Chemistry Symposium for International Collaboration	Singapore	11-12 November 2019
8		89th Annual Session & Symposium on Science and Technology Based Entrepreneurship Development	NAARM, Hyderabad	21-23 December 2019
9		26th CRSI National Symposium in Chemistry (CRSI NSC-26)	VIT Vellore	6-9 February 2020

10	Dr. Selvam P.	IIT-Bombay's 5th Indian Faculty-Alumni Network Symposium New and Advanced Materials and Sustainable Sciences	Goa	6 April 2019
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Conferences

1	Dr. Archita Patnaik	8th Asian Conference on Colloid and Interface Science	Kathmandu, Nepal	24-27 September 2019
2	Dr. Arti Dua	The Ninth Conference of the Asia-Pacific Association of Theoretical and Computational Chemists (APATCC 2019)	Sydney, Australia	28 September-4 October 2019
3	Dr. Beeraiah Baire	NOST Organic & Biomolecular Chemistry Conference	Melbourne, Australia	6-8 November 2019
4	Dr. Bhyrappa P.	Recent Trends in Chemistry and Bio Sciences (ICRTCB 2019)	Madurai Kamaraj University, Madurai	16-17 May 2019
5	Dr. Kartik Chandra Mondal	IDCM 2019, Göttingen, Germany	Georg-August University, Göttingen, Germany	21-26 July 2019
6	Dr. Kothandaraman Ramanujam	FiMPART-2019 Conference	Ahmedabad	16-17 December 2019
7	Dr. Mangala Sunder K.	Conference on NIRF organised by the Institute for Academic Excellence, Hyderabad in collaboration with several universities and AICTE	Hyderabad	18 October 2019
8		Future of Learning Conference	IIM, Bangalore	3-4 January 2020
9	Dr. Md Mahiuddin Baidya	20th NOST Organic Chemistry Conference (XX NOST-OCC)	Udaipur	3-7 December 2019
10	Dr. Mishra A. K.	14th Asia-Oceania Top University League on Engineering (AOTULE) 2019	Institute of Technology, Tokyo, Japan	23 November-4 December 2019
11	Dr. Muraleedharan K. M.	NOST Organic and Biomolecular Chemistry Conference	Melbourne, Australia	6-8 November 2019
12	Dr. Murthy N. N.	International Conference on Bio-Inorganic Chemistry (ICBIC 2019)	Interlaken Zurich, Switzerland	10-20 August 2019
13	Dr. Pradeep T.	3rd Overseas Academicians Qingdao Tour & Qingdao International Academicians Conference	Qingdao, China	28-31 May 2019
14		China NANO 2019	Beijing, China	17-19 August 2019
15		Chemical Frontiers Goa 2019 (CFG 2019)	Goa	22-25 August 2019
16		Advances in Chemistry with Specific Reference to Catalysis, Sensors and Energy Materials (ICACSEM-2020)	University of Madras, Chennai	10 January 2020

17		A.P. Science Congress 2019	Dr. B.R. Ambedkar University, Srikakulam, AP	27-30 November 2019
18	Dr. Ranga Rao G.	DAE-BRNS, Conference on Electrochemistry for Industry, Health and Environment (EIHE 2020)	DAE Convention Centre, Mumbai	21-25 January 2020
19	Dr. Sanjay Kumar	Spectroscopy and Dynamics of Molecules and Clusters (SDMC) 2020	Kumbhalgarh, Rajasthan	20-22 February 2020
20	Dr. Sankararaman S.	20th NOST Organic Chemistry Conference (XX NOST-OCC)	Udaipur	3-7 December 2019
21	Dr. Sekar G.	Chemical Frontiers Goa 2019 (CFG 2019)	Goa	22-25 August 2019
22		NOST Organic & Biomolecular Chemistry Conference	Melbourne, Australia	6-8 November 2019
23		20th NOST Organic Chemistry Conference (XX NOST-OCC) NOST Council member	Udaipur	3-7 December 2019
24		Plenary lecture (PL) in a International Conference (ICC HD-2020)	University of Calcutta	8-9 January 2020
25	Dr. Selvam P.	19th International Conference on Zeolite	Perth, Australia	7-12 July 2019
26		5th International Conference on Catalysis for Renewable Sources	Crete, Greece	2-6 September 2019
27	Dr. Sundargopal Ghosh	Conference on Modern Trends In Inorganic Chemistry-XVIII	IIT Guwahati	12-17 December 2019

Visits

1	Dr. Kartik Chandra Mondal	Collaborative research work: synthesis and characterization of antimony aryl compounds	Gottingen, Germany	20 May-31 July 2019
2	Dr. Kothandaraman Ramanujam	Visiting Scientist	St. Louis, USA	26 April-30 July 2019
3	Dr. Mishra A. K.	Collaborative activities at Nagaoka University of Technology, Nagaoka and Gunma University, Kiryu	Nagaoka and Kiryu	23 November-4 December 2019
4		Visiting universities—Asian Ph.D. programme opportunities in IIT Madras	Kuala Lumpur, Malaysia	13-15 October 2019
5	Dr. Ranga Rao G.	SUVEN Life Sciences - Project discussion	Hyderabad	18-20 January 2020

Meetings

1	Dr. Archita Patnaik	DST-SERB Meeting	New Delhi	5-6 September 2019
2		Ph. D. viva voce	Ravenshaw University, Cuttack	3-4 October 2019

3	Dr. Arnab Rit	Project Discussion	Visakhapatnam	21-23 October 2019
4	Dr. Baskaran S.	INSA-85th Anniversary General Meeting of the Academy	CSIR-NIO, Goa	15-19 December 2019
5	Dr. Bhyrappa P.	Selection for SRF/RA in the division of Chemistry	CSIR, New Delhi	6-7 January 2020
6	Dr. Dhamodharan R.	Research Advisory Council Meeting	GAIL India Limited, New Delhi	23 October 2019
7	Dr. Dillip Kumar Chand	Ph. D. viva voce	IIT Kanpur	8-9 April 2019
8	Dr. Indrapal Singh Aidhen	Faculty Recruitment	NIT Calicut	9 January 2020
9		Faculty Recruitment	NIT Jalandhar	31 January 2020
10	Dr. Jeganmohan M.	Ph. D. viva voce	IIT Delhi	10 October 2019
11		Board of Studies Meeting	Alagappa University, Karaikudi	8 November 2019
12		Board of Studies Meeting	Department of Chemistry, Saveetha Engineering College	7 January 2020
13	Dr. Kartik Chandra Mondal	ECR-DST Project Evaluation	IIT Bombay, Mumbai	7-9 May 2019
14	Dr. Kothandaraman Ramanujam	DST Meeting	IISc, Bangalore	22-24 August 2019
15		Ph. D. viva voce	IIT Kanpur	5-6 November 2019
16		Research discussion	VIT Vellore	5 December 2019
17	Dr. Mangala Sunder K.	Governing Council Meeting - NASSCOM IT-ITeS Sector Skill Council as eminent academician member	New Delhi	9 May 2019
18		Meeting of the Subcommittee	"Ministry of IT, New Delhi"	19-21 June 2019
19		eUstad meeting as Expert for online learning by Buerau of Police Research and Development	Home Ministry, New Delhi	19-21 June 2019
20		NASSCOM Function on Skill Building	New Delhi	2 July 2019
21		Design courses for skills meeting	IIT Bombay	5-6 July 2019
22		Discussion on DTH SP and Swayam	Reliance IT Park, Mumbai	5-6 July 2019
23		MEITY ICT Academy review committee - Chaired	New Delhi	12-13 July 2019
24		Staff selection interview in the Ministry of Earth Sciences	New Delhi	17 July 2019
25		Staff selection process - MOOC's Program	VIT, Vellore	24 July 2019

26		Enviro 2019 for School Children - Industrial Waste Management Association	IIT Madras	27 July 2019
27		Chief Guest - 56th Annual Day	Vana Vani Matriculation Higher Secondary School, IIT Campus	8 August 2019
28		Launch of Educational Studio— Guest of Honour, presentation and interaction with faculty, CMC Vellore for MOOCS program	Vellore - CMC	16 August 2019
29		SWAYAM Board meeting in MHRD	New Delhi	9 September 2019
30		ASES 2019 - Panel Discussion	Bengaluru	24 September 2019
31		Faculty selection	IIT Bhilai	27 September 2019
32		Launch of the e-ITEC program	Ministry of External Affairs, New Delhi	7 October 2019
33		Meeting with the TEQIP coordinator and Director of the Central Project Implementation Unit of MHRD—Prof. Prakash M. Khodke	MHRD, New Delhi	7 October 2019
34		a) NASSCOM IT-ITeS Sector Skill Council in Noida b) Meeting with Deputy Secretary (TEL), MHRD	Noida, UP	15 October 2019
35		Chair a meeting of the MEITY project review board	New Delhi	24 October 2019
36		Faculty training on Future Skill Technologies	NPIU New Delhi	4 November 2019
37		NASSCOM Product Conclave 2019 - Academia-Industry Collaboration Roundtable Session	Bengaluru	5 November 2019
38		NASSCOM Governing Council Meeting	New Delhi	6 December 2019
39		Interaction with teachers and academic administrators	Vijayawada, AP	11 December 2019
40		Faculty recruitment	IIT, Palakkad	22 January 2020
41		IWMA Inauguration	IIT Madras	2 February 2020
42		College inauguration	DG Vaishnav College, Chennai	6 February 2020
43		National DTH Swayam Prabha Coordinator's Annual Meeting	IIT Delhi	21 February 2020
44	Dr. Pradeep T.	Chief Guest for CSIR-SERC/CMC National Technology Day function	CSIR, Taramani, Chennai	10 May 2019
45		Discuss on the proposal	Qingdao, China	25-28 June 2019

46		Interactive session on rainwater harvesting	ICCW, Chennai	15 July 2019
47		Selection Committee	IIT Indore	25-26 July 2019
48		IPC PAC Meeting - PAC - Inorganic and Physical Chemistry	University of Hyderabad	30-31 July 2019
49		Faculty Recruitment	NITK Surathkal	1 August 2019
50		19th Meeting of Project Evaluation and Review Committee (PERC) of Standing Scientific Advisory Group (SSAG)	Nagpur	5-6 August 2019
51		Advisory committee meeting of Shanti Swarup Bhatnagar Prize for Science and Technology 2019 in Chemical Sciences	CSIR - HRDG, New Delhi	23 August 2019
52		Chief Guest - TechFest 2019	SRM University Amravati, AP	27 September 2019
53		IPC-PAC Meeting	Delhi	14-16 October 2019
54		Third Advisory Committee meeting for UPE	Anna University	18 October 2019
55		ICCW AGM meeting	IITM Research Park, Chennai	17 January 2020
56		18th Meeting of Project Evaluation and Review Committee (PERC) of Standing Scientific Advisory Group (SSAG)	Nagpur	21 January 2020
57	Dr. Rajakumar B.	Ph.D. viva voce	KL University, Vijayawada	11 February 2020
58	Dr. Ramesh Gardas	Ph.D. viva voce	JNTU Kakinada	16 November 2019
59		Ph.D. viva voce	NIT, Surathkal	3 January 2020
60		Ph.D. viva voce	IIT Jodhpur	29 January 2020
61	Dr. Ranga Rao G.	Ph.D. viva voce	NCL Pune	10 June 2019
62		Faculty Selection (Chemistry)	Indian Institute of Petroleum and Energy Visakhapatnam	15 June 2019
63		TechEx - UAY 348 Project	IIT Delhi	3-4 August 2019
64		External Member - Doctoral Committee meeting	NIT Trichy	30 August 2019
65		Ph.D. viva voce	IIT Guwahati	18-19 October 2019
66		Faculty selection	Goa University	29 October 2019
67		SRM University, Amaravati, AP and Sujay Biotech - Vijayawada, AP	SRM University	30-31 October 2019
a)		UPSC	New Delhi	15-17 January 2020

b)		Interview Panel member for selecting fixed-term Research Associates and fixed-term Project Associates	DGM-HR, HPGRDC, HPCL-Corporate R&D Centre, Bengaluru	28-30 January 2020
c)	Dr. Sangaranarayanan M. V.	Ph.D. viva voce	IIST Trivandrum	24 April 2019
d)		Expert committee meeting on indigenous lithium-ion batteries by CSIR-New Delhi	Chennai	19 September 2019
e)		Ph.D. viva voce	CECRI, Karaikudi	4 October 2019
f)		Project discussion meeting	Madura College, Madurai	18-20 October 2019
g)		Editorial Board Meeting of <i>Bulletin of Materials Science</i>	Manipal	22-23 November 2019
h)		Research discussion meeting	Jawaharlal Nehru Centre for Advanced Scientific Research, Bangalore	12 December 2019
i)		Selection Committee Meeting	CECRI, Karaikudi	20 February 2020
j)		Ph.D. viva voce	PES University, Bengaluru	18-19 July 2019
k)	Dr. Sanjay Kumar	Ph.D. viva voce	IISER, Kolkata	9-10 January 2020
l)	Dr. Sankararaman S.	Meeting of the SERB DST OC PAC	Hyderabad	23 May 2019
m)		Senate Meeting	IISER Tirupati	10 July 2019
n)		Selection Committee	IIT Jammu	2-4 August 2019
o)		Selection Committee	IIT Kharagpur	6-7 August 2019
p)		INSA-85th Anniversary General Meeting of the Academy	CSIR-NIO, Goa	15-19 December 2019
q)		Dr. Sekar G., Dr. Beeraiah Baire and Dr. Arun K. Tangirala, CH	For recognition of M/s. CHEMPURE, Mumbai for the purpose of external registration of their employees for admission to M.S. and Ph.D. programme	M/s. CHEMPURE, Mumbai
r)	Dr. Sekar G.	Ph.D. viva voce	VIT Vellore	24 January 2020
s)		CRSI Council meeting	VIT Vellore	6-9 February 2020
t)	Dr. Selvam P.	Discussion - international visiting faculty and student exchange programme	Erlangen, Germany	9 September 2019
u)		Discussion meeting for International Young Faculty	Leipzig, Germany	12-13 September 2019
v)	Dr. Sundargopal Ghosh	Research collaboration discussion with T.K. Paire, IACS	Kolkata	16-17 January 2020
w)	Dr. Varadaraju U. V.	Ph.D. viva voce	Imphal, India	22-25 April 2019
x)		Ph.D. viva voce	University of Mumbai	18 July 2019

Special lectures delivered by the faculty in other institutions

Sl. No.	Faculty Member	Topic of Lecture	Institution	Date
1	Dr. Archita Patnaik	Hydrogen bond directed functional materials at modulated interfaces	National Symposium on Contemporary Trends and Future Prospects of Functional Materials (CTFM-2019), Varanasi	29-30 November 2019
2	Dr. Arnab Rit	Ru(II)-Catalyzed organic transformations: stereoelectronic impact of ancillary ligand	Modern Trend in Inorganic Chemistry (MTIC XVIII), IIT Guwahati	8-14 December 2019
3	Dr. Arti Dua	Transients generate memory and break hyperbolicity in single-enzyme kinetics	APATCC 2019 Australia/Sydney	28 September-4 October 2019
4	Dr. Baskaran S	Reversal of polarity by SET oxidation: Domino synthesis of heterocyclic ring systems	Green Approaches Towards Chemical Synthesis (GACS-2019), Kottarakkara-Kerala	7-8 November 2019
5		Introduction of new fellows, INSA	INSA-85th Anniversary General Meeting of the Academy, CSIR-National Institute of Oceanography (CSIR-NIO) Goa	16-18 December 2019
6		Chemo-, regio- and stereoselective reactions in organic synthesis	National Seminar on Frontiers in Chemistry and its Application, Vivekananda College for Women, Salem	7 February 2020
7	Dr. Bhyrappa P.	Bio-inorganic chemistry of metropol protein	Madras Christian College, Chennai	27 January 2020
8	Dr. Dhamodharan R.	Ionotropic crosslinking of chitosan towards the preparation of scaffolds for tissue engineering	Symposium on Polymer Science Society for Polymer Science, Kolkata	4-10 July 2019
9		Ionotropic crosslinking of chitosan using negatively-charged particles towards the synthesis of cytocompatible hydrogels	National Conference on Recent Trends in Materials Science and Technology (NCMST-2019), Institute of Space Science and Technology, Thiruvananthapuram	19-20 December 2019
10	Dr. Indrapal Singh Aidhen	Synthesis of C-glycosides of biologically important lead molecules	International Carbohydrate Conference (CARBO XXXIV), Lucknow	4-9 December 2019
11	Dr. Jeganmohan M.	Metal(II)-Catalyzed C-H bond functionalization of organic molecules	Anna University, Villupuram	6 May 2019
12		Ruthenium(II)-catalyzed redox-neutral C-H bond functionalization of organic molecules	Karunya University, Coimbatore	10 May 2019

13		Synthesis of hetrocyclic molecules via ruthenium(II)-catalyzed C-H bond functionalization reactions	VIT, Vellore, Tamil Nadu	25 June 2019
14		Synthesis of hetrocyclic molecules via ruthenium(II)-catalyzed C-H bond functionalization reactions	Saranathan College of Engineering, Tiruchirapalli	12 July 2019
15		Ruthenium catalyzed C-H fictionalization of organic molecules	VIT, Vellore	3-4 October 2019
16		Metal-catalyzed C-H bond functionalization of organic molecules	2nd International Conference on Advanced Materials, SCICON 2019, Amrita University, Coimbatore	15 December 2019
17		Ruthenium-catalyzed C-H bond functionalization of aromatics and heteroaromatics	Pondicherry University	19 February 2020
18		Ruthenium-catalyzed redox-neutral C-H alkenylation of aromatics and alkenes	Karunya University, Coimbatore	5 March 2020
19		Rhodium(III)-catalyzed cyclization of subsituted aromatic ketoximes with azabenzonorbornadine	Holyday Inn, Goa	7-9 March 2020
20		Metal-catalyzed C-H bond functionalization of organic molecules	The American College, Madurai	12 March 2020
21	Dr. Kartik Chandra Mondal	An insight of electron mediated reduction of carbene-siliconhalides: Theoretical approach and experimental support	University of Goettingen, Germany	20 May-31 July 2019
22		Electron transfer reductions of N-heterocyclic and cyclic alkyl amino carbene stabilized silicon halides and their intermediates	IDCM 2019, Göttingen, Germany	25 July 2019
23		Origin of elements in periodic table	Anna University, Chennai	14 February 2020
24	Dr. Kothandaraman Ramanujam	Fuel cells	Sri Vasavi College, Erode	13-14 August 2019

25		Tuning overpotential and electrolyte structure to realize high energy efficient redox flow battery	NCRTC 2019, Bannari Amman Institute of Technology Sathyamangalam, Erode	12 October 2019
26		Tuning overpotential and electrolyte structure to realize high energy efficient redox flow battery	Recent Advances in Materials Science for Sustainable Development-2019 (RAMSSD-2019), Vignana University, Guntur	31 August-1 September 2019
27		Beyond vanadium redox flow battery: India-specific solutions for energy storage	IIT Kanpur	5-6 November 2019
28		Low-field 1H NMR investigations of solvent filled MWCNTs for sensor and battery applications	BARC Mumbai	23 January 2020
29	Dr. Mangala Sunder K.	Lecture on DTH SWAYAM Prabha and Channels	Tamil Nadu Open University, Chennai Lecture	29 July 2019
30		Invited presentation: Everything digital: matters for education and skilling	ISACA (Information Systems Audit and Control Association) Chennai Conference	12-14 September 2019
31		Seminar presentation on MOOCs and SWAYAM portal	Chettinad University, Kelambakkam, Chennai	13 September 2019
32		Seminar: E-Resources on teaching and research	National Seminar on Research Innovation and Creativity, Ethiraj College, Chennai	21 September 2019
33		DST INSPIRE Lecture	Sri Vidya Mandir Arts and Science College, Krishnagiri DST INSPIRE Workshop	18-22 October 2019
34		Feasibility of industry participation in creating learning resources for academia	IISF 2019 - Industry-Academia Conclave, Kolkata	6 November 2019
35		AI in digital library: Enabling Education 4.0 (NDLI)	New Delhi	7 November 2019
36		Inaugural address, Yes Programme Industrial Waste Management Association school children projects	IIT Madras	10 November 2019

37		(a) Digital learning and course work online: new and emerging opportunities through SWAYAM and SWAYAM Prabha (b) Content creation using Massive Open Online Course format and Submission to SWAYAM portal	Mahatma Gandhi University, Kottayam	15 November 2019
38		One-day workshop on SWAYAM and SWAYAM Prabha - MOOCS Training Lectures	VIT Vellore	20 November 2019
39		TEL and MOOCS	Tamil Nadu Open University, Chennai	23 November 2019
40		Online presentation on MOOCS and SWAYAM Programmes	St. Xavier's College, Central University of Kerala, Alwaye, Kerala	5 December 2019
41		Computational thermochemistry	2nd International Conference on Advanced Materials, SCICON 2019, Amrita University, Coimbatore	15-17 December 2019
42		Catalysis	International Conference, University of Madras	9 January 2020
43	Dr. Muraleedharan K. M.	Design of organic scaffolds for biomedical applications	NOST Organic & Biomolecular Chemistry Conference Melbourne, Australia	6-8 November 2019
44	Dr. Murthy N. N.	Facile oxidative O-demethylation reaction by Iron(II) complexes of o-Anisole-appended Bis(picoyl) amine ligand	International Conference on Bio-Inorganic Chemistry Switzerland/Interlaken Zurich	10-17 August 2019
45	Dr. Pradeep T.	Water purification technologies and breaking the myth on the need of RO water purification	CSIR HQ, New Delhi	7 August 2019
46		Water purification technologies and breaking the myth on the need of RO water purification	CSIR HQ, New Delhi	16 August 2019
47		Isotopic exchange in nanoparticles, advances in mass spectrometry	IISER Tirupati	19 November 2019
48		Nanoparticles are molecules	ISMAS 2019 BARC, Mumbai	27-30 November 2019
49		From materials to clean water: making affordable sensors for clean water	ICCW	10 December 2019

50		Nanoparticles are molecules	International Conference on Recent Advances in Nanoscience and Nanotechnology (ICRAN'19), Stella Maris College-Chennai	11-12 December 2019
51		Clathrate hydrates in interstellar environment, Emerging Frontiers in Chemical Sciences (EFCS) -2019	Farook College, Kozhikode, Kerala	13-15 December 2019
52		Nanoparticles are molecules	National Symposium on Convergence of Chemistry & Materials (CCM-2019), BITS-Pilani, Hyderabad	17-18 December 2019
53		Nanoparticles are molecules	National Conference on Recent Trends in Materials Science and Technology (NCMST-2019), Institute of Space Science and Technology, Thiruvananthapuram	18-20 December 2019
54		Nanoparticles with Atomic Precision	National Conference on Nanomaterials for Energy, Environment and Health Care, National Institute of Technology Calicut	27-28 December 2019
55		Nanoparticles with atomic precision	International Conference on Nanoscience and Photonics for Medical Applications (MAHE), Manipal Academy of Higher Education, Manipal, Karnataka	28-30 December 2019
56	Dr. Rajakumar B.	Thermal decomposition of methyl-2-methylbutanoate behind reflected shock waves	32nd International Symposium on Shock Waves (ISSW32), Singapore	13-21 July 2019
57		IM Talk	VIT Vellore	6-8 February 2020
58	Dr. Ramesh Gardas	Periodic table of elements, #IYPT2019	47th Jawaharlal Nehru National Science, Mathematics and Environment Exhibition for Children 2019, Kendriya Vidyalaya, IIT Chennai	13 September 2019
59		Career with science and technology	FOMRA QUEST 2K19, SMK Fomra Institute of Technology, Chennai	25 September 2019
60		Recent trends, challenges and opportunities in ionic liquids as green solvents for chemical and technological applications	International Forum on Recent Trends in Physics, Chemistry & Allied Sciences for Sustainable Development (IFPCA2019), Ch. S. D. St. Theresa's College, Eluru	28 September 2019

61		Aqueous biphasic systems composed of ionic liquids and zwitterions for the extraction of various biomolecules	Bioprocessing India (BPI) Conference, CSIR-CFTRI, Mysuru	14-15 December 2019
62		Exploring the chemistry frontier in ionic liquids as green solvents for chemical and technological applications	New Frontiers in Chemistry from Fundamentals to Applications - III (NFCFA 2019), Goa	22 December 2019
63		Ionic liquids as promising solvents for sustainable developments in chemical and technological applications	38th Annual Conference of Indian Council of Chemists, Jaipur	26-27 December 2019
64		Lecture on Chemical thermodynamics	One-day Lecture Workshop on Physical Chemistry, Chevalier T. Thomas Elizabeth (CTTE) College for Women, Chennai	27 July 2019
65	Dr. Ranga Rao G.	Nanoscale materials for energy storage	26th International Symposium on Metastable, Amorphous and Nanostructured Materials (ISMANAM-2019), Chennai	8-12 July 2019
66		Polyoxometalate based ionic liquids and hybrid materials	A.P. Science Congress 2019 Dr. B.R. Ambedkar University, Srikakulam, AP	27-30 November 2019
67		Hydrogen generation by thermocatalytic method using rare-earth materials	2nd International Conference on Advanced Materials, SCICON 2019, Amrita University, Coimbatore	14-15 December 2019
68		Design strategies of nanoscale materials for energy storage	13th National Conference on Solid State Ionics IIT Roorkee	16-18 December 2019
69		Designing nanoscale materials for energy storage	International Conference on Nanomaterials for Energy, Environment and Sustainability (ICNEES-2019), Bhubaneswar	19-22 December 2019
70		Thermocatalytic hydrogen production using indigenous ceria-based materials	International Conference on Emerging Trends in Catalysis - ETC 2020, VIT Vellore	6-8 January 2020
71		Thermocatalytic hydrogen production using indigenous ceria-based materials	National Conference - Frontiers of Catalysis Science & Technology and Its Applications (FOCSTA-2020), Bengaluru	10-11 January 2020
72		Electrochemical applications of activated porous ZrC	Conference on Electrochemistry for Industry, Health and Environment (EIHE 2020), Mumbai	21-25 January 2020

73	Dr. Sangaranarayanan M. V.	Inaugural lecture, Synthesis of nanomaterials using liquid/liquid interfaces, at the certificate course on Nanoscience and Technology	Stella Maris College, Chennai	17 July 2019
74		Analysis of electrochemical systems using lattice models and phenomenological approaches	Chemistry in-house, Symposium IIT Madras	22 August 2019
75		Chemically modified electrodes theoretical and experimental studies	CECRI, Karaikudi	30 October 2019
76		Conducting polymers and electrochemical supercapacitors	Workshop on Atoms, Molecules & Materials, Manipal Academy of Higher Education, Manipal (Mangalore)	22-23 November 2019
77		Speed electrochemistry at liquid interfaces	Central Electro Chemical Research Institute, Karaikudi	29 July 2019
78	Dr. Sanjay Kumar	Quantal characterization of bound and quasibound (resonant) molecular states: a time-dependent quantum mechanical approach	Rajasthan	10-12 November 2019
79		Computational Methods in Chemistry and Physics of Materials 2019	B. S. Abdul Rahman Crescent Institute of Science and Technology, Vandalur, Chennai	28 November 2019
80		Chemical process beyond the Born-Oppenheimer Approximation: a quantum mechanical study	IISER Kolkata	9-10 January 2020
81	Dr. Sankararaman S.	Organic redox flow batteries	Organic Chemistry Conference, IIT Kanpur	13-15 September 2019
82		Synthesis using catalytic carbonylation reactions	ICCHD Conference, Kolkata	9-10 January 2020
83	Dr. Sekar G.	Halogen-bonding catalysis: An efficient tool for functional group activation	School of Chemistry, Hyderabad	24 April 2019
84		Halogen-bonding catalysis: An efficient tool for functional group activation	BITS Pilani, Rajasthan	26 April 2019
85		Halogen-bonding catalysis: An efficient tool for functional group activation	International Conference on Emerging Trends in Chemistry, IIT Indore	12-15 July 2019

86	Halogen bonding catalysis: An efficient tool for functional group activation	Madurai Kamaraj University	19 July 2019
87	Halogen-bonding catalysis: An efficient tool for functional group activation	IIT Hyderabad	25 July 2019
88	Conversion of petroleum waste toluene to benzoic acid using Pd-nano-catalyst	STIWMB-2019, SRM University	17 August 2019
89	Halogen-bonding catalysis: an efficient tool for functional group activation	Chemical Frontiers Goa 2019 (CFG 2019), Goa	22-25 August 2019
90	Halogen-bonding catalysis: an efficient tool for functional group activation	IICT, Hyderabad	5 September 2019
91	Halogen-bonding catalysis: an efficient tool for functional group activation	Indo-German Workshop 2019, University of Duisburg-Essen, Germany	25-27 September 2019
92	Halogen-bonding catalysis: an efficient tool for functional group activation	IIT Bombay	30 September 2019
93	Halogen-bonding catalysis: an efficient tool for functional group activation	NISER, Bhubaneswar	18 October 2019
94	Metal-carbon covalent bonds stabilized transition metal nanoparticles: an efficient and reusable nanocatalyst	NOST Organic & Biomolecular Chemistry Conference Melbourne, Australia	6-8 November 2019
95	Halogen-bonding catalysis: an efficient tool for functional group activation	NTU, Singapore	11-12 November 2019
96	Conversion of petroleum waste toluene to benzoic acid using Pt-nanocatalyst	International Workshop on Advanced Functional Materials and Devices, SRM Institute of Science and Technology, Chennai	13 December 2019
97	Halogen-bonding catalysis	International Seminar on Current Trend in Chemistry & Chemical Education, Department of Chemistry, St. Albert's College (Autonomous), Ernakulam, Kerala	6 January 2020

98		Halogen-bonding catalysis	International Conference on Chemistry for Human Development (ICCHD-2020), University of Calcutta & Heritage Institute of Technology, Calcutta	9-11 January 2020
99		Conversion of petroleum waste toluene to benzoic acid using Pt-nanocatalyst	4th International Conference on Recent Advances in Material Chemistry (ICRAMC-2020), SRM University	21 February 2020
100		Metal-carbon covalent bond stabilized transition metal nanocatalysts	Golden Jubilee Alumni Endowment Lecture, Department of Organic Chemistry, University of Madras (Guindy Campus)	25 February 2020
101		Halogen-bonding catalysis	International Conference on Frontier Areas of Chemistry (ICFAC), School of Physical Sciences, Mahatma Gandhi Central University, Bihar	28-29 February 2020
102		Metal-carbon covalent bond stabilized transition metal nanocatalysts	Department of Chemistry, Indira Gandhi National Tribal University, Amarkantak, MP	6 March 2020
103	Dr. Selvam P.	The art of inducing hierarchical porosity in zeolitic materials: controlled crystallization-supported self-assembly	19th International Conference on Zeolite, Perth, Australia	7-12 July 2019
104		Chemistry and spectroscopy at structured interfaces of functional amphiphiles	5th International Conference on Catalysis for Renewable Sources, Crete, Greece	2-6 September 2019
105	Dr. Sundargopal Ghosh	Recent advances in transition metal diborane chemistry	ISER Thiruvananthapuram	21 September 2019
106		Recent advances in transition metal diborane chemistry	ISER Kolkata	27 September 2019
107		Recent advances in metal diborane chemistry	Endowment Award Lecture 2019, Raipur	14 November 2019
108		Recent advances in transition metal diborane chemistry	NIT Calicut	29 November 2019
109		Activation of E-H bonds (E=B, C or Si) using Ru-borate complexes	3rd National Conference in Chemistry (NCONC2020), IIT Gandhinagar	9-10 January 2020
110	Dr. Varadaraju U. V.	Thermoelectric materials	BARC, Mumbai	9 July 2019

Visits abroad by faculty

Sl. No.	Faculty Member	Country Visited	Date	Purpose of visit	Funding from
1	Dr. Archita Patnaik	Kathmandu, Nepal	24-27 September 2019	8th Asian Conference on Colloid and Interface Science	CPDA
2	Dr. Arti Dua	Sydney, Australia	28 September-4 October 2019	The Ninth Conference of the Asia-Pacific Association of Theoretical and Computational Chemists (APATCC 2019)	CPDA
3	Dr. Baskaran S.	Hangzhou, China	26-28 October 2019	Zhejiang Provincial High Level Talents Cooperation program	Project
4	Dr. Beeraiah Baire	Melbourne, Australia	5-9 November 2019	NOST-RACI-Organic Chemistry and Biomolecular Chemistry Conference	CPDA
5	Dr. Debashis Chakraborty	Haifa, Tel Aviv, Israel	22-24 May 2019	Workshop for mutual collaboration between IITM and other institutions in Israel	Others
6	Dr. Kartik Chandra Mondal	Goettingen, Germany	6 June-15 August 2019	Collaborative research work	CPDA and others
7	Dr. Kothandaraman Ramanujam	St. Louis, USA	26 April-30 July 2019	Visiting Scientist	Project
8	Dr. Mishra A. K.	Tokyo, Nagaoka, Kiryu, Japan	23 November-4 December 2019	14th Asia-Oceania Top University League on Engineering (AOTULE) 2019 at Tokyo Institute of Technology, Tokyo; visit to Nagaoka University of Technology, Nagaoka as well as Gunma University, Kiryu	Others
9	Dr. Muraleedharan K. M.	Melbourne, Australia	5-9 November 2019	NOST-RACI-Organic Chemistry and Biomolecular Chemistry Conference	CPDA
10	Dr. Murthy N. N.	Baltimore, USA	10 June-16 July 2019	Personal visit	Others
11		Interlaken Zurich, Switzerland	10-20 August 2019	International Conference on Bio-Inorganic Chemistry (ICBIC 2019)	CPDA

12	Dr. Pradeep T.	Seoul, Korea	17-18 May 2019	Frontiers of Translational Materials Science 2019, Hanyang University, Seoul	Project
13		Qingdao, China	28-31 May 2019	The 3rd Overseas Academicians Qingdao Tour & Qingdao International Academicians Conference	Project
14		Qingdao, China	25-28 June 2019	Visit to QIAP to discuss on the proposal	Project
15		Beijing, China	17-19 August 2019	ChinaNANO 2019	Project
16		Texas, USA	9-14 February 2020	Gordon Research Conferences	Project
17		West Lafayette, USA	17-19 February 2020	Visit at Purdue University and lecture at department	Project
18	Dr. Rajakumar B.	Singapore	13-21 July 2019	32nd International Symposium on Shock Waves (ISSW32)	CPDA
19	Dr. Ranga Rao G.	Kuala Lumpur, Malaysia	13-15 October 2019	Asean-India PhD Fellowships Programme in IIT Madras for ASEAN countries	Others
20	Dr. Sangaranarayanan M. V.	Dubai, UAE	29 March-1 April 2020	World Congress on Chemistry	CPDA
21	Dr. Sekar G.	Essen, Germany	24-29 September 2019	Indo-German Meeting 2019 (Conference)	CPDA
22		Melbourne, Australia	3-13 November 2019	NOST-RACI-Organic Chemistry and Biomolecular Chemistry Conference	Project
23		Singapore	14-18 November 2019	NTU India Joint Symposium for International Collaboration	Others
24	Dr. Selvam P.	Perth, Australia	7-12 July 2019	19th International Zeolite Conference	Project
25		Crete, Greece	2-6 September 2019	5th International Conference on Catalysis for Renewable Sources	Project

26		Erlangen, Germany	9 September 2019	Discussion International visiting faculty and student exchange programme	Project
27		Leipzig, Germany	12-13 September 2019	Discussion meeting for International Young Faculty	Others
28		Cardiff, UK	28 October 2019 - 1 November 2019	EPSRC Global Challenges Research Fund	Project
29		Kumamoto, Japan	7-15 March 2020	International Joint Project Proposal Discussion	Project

Honours and awards obtained by faculty

Sl. No.	Faculty Member	Name of Award	Awarded by	Awarded for	Date of Award
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i. Honours

1	Dr. Mangala Sunder K.	Chairman, Subcommittee Scheme of Financial Assistance for setting up of Electronics and ICT Academies	Ministry of Electronics and Information Technology (MEITY), New Delhi		
2		Chairman, Review Committee, Digital India Manpower Development Scheme	Ministry of Electronics and Information Technology (MEITY), New Delhi		
3	Dr. Selvam P.	Member, Higher Secondary Textbook (Chemistry - 2nd year) Writing Committee	State Council of Educational Research and Training, Chennai		
4		Vice President	Catalysis Society of India		2018-2020
5	Dr. Sangaranarayanan M. V.	Member, Research Council, CSIR	Central Electrochemical Research Institute Karaikudi		

ii. Awards

1	Dr. Sanjay Kumar	INSA Teacher Award (2019)	Indian National Science Academy (INSA), New Delhi		
2	Dr. Raja Kumar	CRSI Bronze Medal	Chemical Research Society of India, IISc. Bangalore		
3	Dr. Ramesh Gardas	Top Peer Review Award 2019: Top 1% of Reviewers in Chemistry and Top 1% of Reviewers in Cross-field on Publons Global Reviewer Database	Web of Science Group, Publons, New Zealand		

4		JCED's High Impact Author (one among 40 authors from 16 countries)	<i>Journal of Chemical & Engineering Data</i> , ACS Publication		
5	Dr. Sekar G.	Golden Jubilee Alumni Endowment Lecturer	Department of Organic Chemistry, University of Madras (Guindy Campus)		March 2020

Fellowships of Academies and Professional Societies

Sl. No.	Faculty Member	Year of Admission
INSA		
1	Dr. Sankararaman S.	2019
2	Dr. Baskaran S.	2019
Others		
1	Dr. M. Jeganmohan	Royal Society of Chemistry
2	Dr. Ramesh Gardas	Fellow of the Royal Society of Chemistry, UK
3		Fellow of the Telangana Academy of Sciences (FTAS)
4	Dr. Sekar G.	Fellow of the National Academy of Sciences, India
5		Executive Council Members, Academy of Sciences, Chennai
6		Regional Coordinator (Chennai), KVPY

Journal Editorial Boards

Sl. No.	Faculty Member	Position (Editor/Member)	Journal Name
1	Dr. Ramesh Gardas	Editorial Board Member	<i>Journal of Molecular Liquids</i>
2	Dr. Sundargopal Ghosh	Honorary Editor of the Inorganic and Analytical Chemistry Section of the <i>Journal of the Indian Chemical Society</i>	<i>Indian Chemical Society</i>
3	Dr. Sangaranarayanan M. V.	Associate Editor	<i>Bulletin of Materials Science</i> (Indian Academy of Sciences)
4	Dr. Selvam P.	Review Editor	<i>Frontiers in Chemical Engineering</i> , Lausanne
5		Editorial Board Member	<i>Materials Today Sustainability</i> , Elsevier
6		Editorial Board Member	<i>Catalysis in Green Chemistry and Engineering</i> , Begell

4.5.4. Design and Development Activities

Patents

Patents filed

Sl.No.	Faculty Member	Topic of the Patent
Indian Filed		
1	Dr. Dillip Kumar Chand	Green approach for oxidation of activated alcohols in water using a molybdenum based metallomicellar catalyst

2		Oxidation of an arylalkyl or its derivative to its corresponding carbonyl or carboxylic acid
3	Dr. Govindasamy Sekar	A one-step synthesis of 2-substituted benzo[b]thiophenes
4	Dr. Selvam P.	Method for synthesizing hexagonal and cubic ordered mesoporous gamma-alumina
5		Process for preparing a defect induced coloured titania
6	Dr. Pradeep T.	Tribochemical method for degradation of polymers in water
7		Method for generating different phases of copper sulphide nanostructures using electrospray deposition (ESD) under ambient conditions
8		A compact, modular and scalable continuous-flow greywater sink for potable and non-potable uses
9		Composition for sustained release of carbonate and a water purification device based on the same with enhanced biocidal activity
10		A green method for preparing robust and sustainable cellulose-polyaniline based nanocomposite for effective removal of fluoride from water and a purifier thereof

International Filed

1	Dr. Pradeep T.	ZA2019/04590; Cellulose microstructures-templated nanocomposites with enhanced arsenic removal capacity and a purifier thereof
2		PCT/IN2019/050555; An enhanced CO ₂ sorbent material and a device thereof
3	Dr. Selvam P.	PCT/IN2019/050532; Nitrogen-containing/nitrogen-doped carbon and carbon nitrides as heterogeneous catalysts for borrowing hydrogen and dehydrogenation reaction
4	Dr. Ramesh Gardas (filed along with Dr. Jitendra S. Sangwai, Ocean Engineering)	US 16/414,201; A novel method for investigation of solubility of tank bottom sludge with solvents

Patents awarded

Sl. No.	Faculty Member	Topic of Patent
Indian Grant		
1	Dr. Debashis Chakraborty	Group 4 metal aryloxy compounds as bulk polymerization catalysts for lactide polymerization
2		Metal free catalysts for the ring-opening polymerization of cyclic esters and lactide
3		Metal-free catalysts for the ring-opening polymerization of cyclic esters and lactide
4	Dr. Kothandaraman Ramanujam	Effect of semi-labile multidentate ligands on oxygen reduction reaction performance of non-precious metal catalysts
5	Dr. Indrapal Singh Aidhen	Synthesis of Amorfrutin and Cajaninstilbene and their analogues from a common building block
6	Dr. Viswanathan B.	Layered oxide catalyst composites for photo-catalytic reduction of carbon dioxide

7	Dr. Pradeep T.	A composition for biocidal property and a water purification device based on the same
8		Composition for sustained release of carbonate and a water purification device based on the same with enhanced biocidal activity
9		Method to make nanometer thin sheets of metals in air
10		Removal of fluoride, alkalinity, heavy metals and suspended solids simultaneously—adsorbent synthesis, adsorbent composition and a device for affordable drinking water
11		A granulation composition for powder ingredients
12	Dr. Ramesh Gardas (filed along with Dr. Jitendra S. Sangwai, Ocean Engineering)	Composition and process for enhanced oil recovery

International Grant

1	Dr. Pradeep T.	EP3089811B1- Mass spectrometry probes and systems for ionizing a sample
2		US10395913B2- Mass spectrometry probes and systems for ionizing a sample transport
3		JP6577950B2- Mass spectrometry probes and systems for ionizing a sample
4		CN106102873B-Mass spectrometry probes and systems for ionizing a sample

4.5.5. Research and Consultancy Sponsored research projects (ongoing and new)

Sl. No.	Title	Period		Funding Agency	Amount (Rs. in lakhs)	Coordinators
1	JC Bose Fellowship	1 July 2015	30 June 2020	Department of Science & Technology	95	Pradeep T.
2	FIST - 2015	8 September 2016	7 September 2021	Department of Science & Technology	220	Indrapal Singh Aidhen, Dillip Kumar Chand, Edamana Prasad, Anbarasan P.
3	Well-defined heterometallic complexes-catalysts in tandem reactions	14 October 2016	13 October 2021	Department of Science & Technology	35	Arnab Rit
4	Arsenic-free South 24 Parganas district using Indian technologies and design of an appropriate solution by large implementation in the field	31 October 2016	30 April 2020	Department of Science & Technology	374.88	Pradeep T.

5	Cluster composite nanofibre membranes for rapid ultra-face detection of waterborne contaminants (CANDECT)	19 October 2016	31 December 2020	Indo-German Science & Technology Centre	88	Pradeep T.
6	Investigation of stereoselective transition metal catalyzed carbenylation cross coupling: Synthesis of potential building blocks and carbo(Hetero) cycles having quaternary carbons	20 December 2016	12 June 2020	Department of Science & Technology	71.79	Anbarasan P.
7	Oxidative cyclization of carbanion: Novel synthesis of carbo- and heterocyclic ring systems	5 January 2017	21 September 2020	Department of Science & Technology	75.2	Baskaran S.
8	Development and demonstration of 250W, 1kWh vanadium redox flow battery systems rechargeable by renewable energy such as solar and wind energy	17 May 2017	16 May 2020	Department of Science & Technology	81.37	Kothandaraman Ramanujam
9	Peptide-based mutual pro-drugs for dual inhibition of key protein components in cancer cell signaling	20 July 2017	19 July 2020	Department of Science & Technology	49.9	Muraleedharan K. M.
10	Developing theoretical methods to understand anomalous diffusion (Levy Flights)	10 August 2017	9 August 2022	Department of Science & Technology	86.27	Deepika Janakiraman
11	Solubility of gases in ionic liquid or binary mixture of ionic liquid + ionic liquid	23 August 2017	22 August 2020	Department of Science & Technology	7.75	Ramesh Gardas
12	Thematic projects in frontiers of nano S&T (TPF-Nano) on water purification using nanotechnology	1 September 2017	31 August 2020	Department of Science & Technology	541.02	Pradeep T., Edamana Prasad
13	Synthesis of novel superbase ionic and analysis of their interactions with CO ₂ - A thermodynamic approach towards rational design of efficient absorbent for CO ₂ capture and regeneration	12 March 2018	11 March 2021	Department of Science & Technology	50.56	Ramesh Gardas

14	Development of novel self-assembling dendritic systems for biomedical applications: characterization and kinetic analysis	20 March 2018	19 March 2021	Department of Science & Technology	42.43	Edamana Prasad
15	VAJRA Visiting Faculty - Dr. Pulickel M. Ajayan	29 March 2018	28 March 2021	Department of Science & Technology	16.4	Pradeep T.
16	Boron-controlled CO ₂ reduction	1 May 2018	30 April 2021	Indo-French Centre for the Promotion of Advanced Research	67.1	Sundargopal Ghosh
17	The thermal rearrangement of phenyl allyl ethers, propargyl ethers and benzyl ethers behind reflected shock waves	1 May 2018	30 April 2021	Council of Scientific and Industrial Research	6	Rajakumar B.
18	Selective catalytic dehydroxylation of biomass derived glycerol into 1,3 - propanediol	1 May 2018	30 April 2020	Council of Scientific and Industrial Research	4.52	Selvam P.
19	Synthesis of metallaboranes and borides containing rare earth elements and their applications	1 May 2018	30 April 2021	Council of Scientific and Industrial Research	18	Sundargopal Ghosh
20	Thermodynamic and spectroscopic evaluation of bimolecular interactions between cholinium based amino acid ionic liquids and proteins CSIR RA	11 May 2018	31 May 2020	Council of Scientific and Industrial Research	10.36	Ramesh Gardas
21	Chemical transformations of clathrate hydrates under ultra-high vacuum	13 May 2018	12 May 2022	Science and Engineering Research Board	76.54	Pradeep T.
22	Analysis of critical phenomena in discrete lattice models using graph theoretical approaches and Padé approximants - MATRICS	29 May 2018	28 May 2021	Department of Science & Technology	6.6	Sanganarayanan M. V.
23	New catalysts for sustainable polymers and copolymers	9 July 2018	8 July 2021	University Grants Commission	150	Debashis Chakraborty
24	Multi-compartmental coordination cages	18 August 2018	17 August 2021	Department of Science & Technology	33.4	Dillip Kumar Chand

25	Supramolecular chirogenesis in the novel electron deficient bisporphyrins and their applications in absolute configuration determination of chiral organic compounds	23 August 2018	22 August 2021	Council of Scientific and Industrial Research	7.5	Bhyrappa P.
26	Development of PEM fuel-cell stacks for utilization of hydrogen from renewable sources	27 August 2018	26 August 2021	Department of Science & Technology	40.62	Selvam P.
27	Investigation of stable organic and organometallic radical ions and ions as electro-active species in organic redox flow batteries (RFBs) in non-aqueous media	6 September 2018	5 September 2021	Department of Science & Technology	75.59	Sankararaman S., Kothandaraman Ramanujam
28	Oxo-metallic complexes anchored mesoporous silica: potential UV-visible light harvesting materials for photocatalytic reactions as well as for bio-inspired catalytic hydrogenation	22 October 2018	21 October 2021	Department of Science & Technology	31.72	Selvam P.
29	Light-induced process of hierarchical electron cascade system, materials and devices for solar energy conversion	14 November 2018	13 November 2021	Science and Engineering Research Board	10.05	Kothandaraman Ramanujam
30	Total synthesis of Benzo[c]phenanthridinones and Benzo[c]phenanthridine alkaloids via a metal-catalyzed cyclization of aromatic esters or amides with azabenzonorbornadienes through C-H bond activation	15 November 2018	14 November 2021	Science and Engineering Research Board	10.05	Jeganmohan M
31	Metal-free ionic liquid mediated one pot synthesis of 3-hydroxy-3H- Spiro[Benzo[b]thiophene-2,1'-cyclopentan]-2'- one. Medicinally important Benzo[b]thiophene Moiety using inexpensive starting materials	28 November 2018	27 November 2021	Department of Science & Technology	31.76	Ramesh Gardas

32	Design and synthesis of CBr ₄ -analogues halogen bonding catalysts for functional group activation: an extension to asymmetric synthesis	12 December 2018	11 December 2021	Department of Science & Technology	59.3	Sekar G.
33	Rolling water purifier - Roll Pure	2 January 2019	1 January 2021	Biotechnology Industry Research Assistance Council	15	Pradeep T.
34	Experimental and computational investigations on the photo-oxidation of selective esters and fluorinated ethers initiate by OH radicals and Cl atoms and their impact on the Earth's atmosphere	9 March 2019	8 March 2022	Science and Engineering Research Board	55.33	Rajakumar B.
35	Understanding surface properties of atomically engineered cluster-assembled solids	15 March 2019	14 March 2021	Scheme for Promotion of Academic and Research collaboration	66.33	Pradeep T.
36	Kinetic investigations of reactions of Criegee intermediates with C1-C3 carbonyl compounds and carboxylic acids in the Earth's atmosphere	29 March 2019	28 March 2022	Ministry of Earth Sciences, New Delhi	100.22	Rajakumar B., Mangala Sunder K.
37	Development of weakly coordinating group-aided catalytic C-H bond activation strategy for organic synthesis	1 April 2019	31 March 2022	Council of Scientific and Industrial Research	20.32	Md. Mahiuddin Baidya
38	Synthesis of heterocycles: Ruthenium(II)-catalyzed redox-free cyclization of substituted aromatics or alkenes with carbon-carbon components via C-H bond activation	1 April 2019	31 March 2022	Council of Scientific and Industrial Research	19.54	Jeganmohan M.
39	Photophysics of acetylene bridged push-pull system: torsional effects on local, intramolecular charge transfer and aggregate emissions	10 May 2019	9 May 2022	Science and Engineering Research Board	45.74	Mishra A. K.

40	Ruthenium-catalyzed TT-bond assisted C-H bond functionalization of hydrocarbons	20 May 2019	19 May 2022	Science and Engineering Research Board	53.9	Jeganmohan M.
41	DST-IISc Energy Storage Platform on Supercapacitors	6 November 2019	5 November 2024	Department of Science & Technology	95.63	Kothandaraman Ramanujam
42	Identification and investigation of efficacy of potential biochemical molecules for extraction of gold and other noble metals from tailings and waste sources	10 December 2019	9 December 2021	Ministry of Mines	34.64	Pradeep T.
43	On the reduction of iR-losses, flow optimization and identifying alternative membranes to nafion for 1kW-4kWh vanadium redox flow battery suitable for residential use	31 December 2019	30 December 2022	Ministry of Human Resource and Development	99.89	Kothandaraman Ramanujam
44	Structure and interaction in membrane mimetic lipid mono/bilayers with DNA/DNA Origami structures	3 January 2020	2 January 2022	Science and Engineering Research Board	22.37	Archita Patnaik
45	Exploratory studies on the divergent reactivity of propargyl ethers: an avenue for new reaction development for natural products and drugs	3 January 2020	2 January 2023	Science and Engineering Research Board	46.42	Beeraiha Baire
46	Asymmetric electrophilic arylthiolation/trifluoromethylthiolation using novel Se-based chiral Lewis base catalyst	17 January 2020	16 January 2022	Science and Engineering Research Board	22.37	Anbarasan P.
47	Common functional groups assisted and visible-light driven electronically controlled catalytic C-H bond functionalizations and applications towards natural product scaffolds	28 January 2020	27 January 2023	Science and Engineering Research Board	28.38	Md Mahiuddin Baidya
48	Synthesis and applications of diborane(4), diborane(6) and diborene(2) species at the coordination sphere of early transition metals	11 February 2020	10 February 2023	Science and Engineering Research Board	50.31	Sundargopal Ghosh

Industrial consultancy projects (ongoing and new)

Sl. No.	Faculty Member	Title	Industry	Amount (Rs. in lakhs)
1	Baskaran S.	Solvents for stain removal in foam sheets	Common Code	0.6
2	Pradeep T.	Affordable clean water in arsenic affected areas	Federation of Indian Chambers of Commerce and Industry (FICCI)	50
3	Pradeep T.	Field implementation of arsenic technologies	Watsan Envirotech Private Limited	10
4	Mangala Sunder K.	Text transcription of technical video lectures and creation of searchable video index, metadata and online quizzes	Common Code	0
5	Chandrakumar N.	NMR Measurements	Foxconn Technology (India) Private Limited	0
6	Mangala Sunder K. (Principal Co-ordinator)	PSD TGA etc.	Common Code	5
7	Mangala Sunder K. (Principal Co-ordinator)	PSD TGA etc.	Common Code	5
8	Pradeep T.	Analytical services using advanced instrumental facilities	Common Code	5
9	Pradeep T.	Analytical services using advanced instrumental facilities	Common Code	5
10	Mangala Sunder K.	DTH Swayam Prabha	Chief Coordinator, Ministry of Human Resource Development	175.00 crore for three years, continued from 2018
11	Mangala Sunder K.	E-Learning modules and online services for Institute of Secretarial Training and Management	Department of Personnel Training, Home Ministry	10.44
12	Mangala Sunder K.	Online digital learning from IIT Madras for professional/career development	Ministry of External Affairs, E-ITEC Courses group	30
13	Mangala Sunder K. (Principal Co-ordinator)	Ministry of External Affairs E-ITEC programme on Data Analytics and Higher Performance Course programme registration	March 2019	30

RBIC projects (ongoing and new)

Sl. No.	Faculty Member	Title	Industry	Amount (Rs. in lakhs)
1	Baskaran S.	Synthetic route for APIs	Apex Laboratories Private Limited	4.07

2	Pradeep T.	Village water supply unit with iron and arsenic treatment plant	Public Health Engineering Directorate	52.54
3	Archita Patnaik	Interfacial engineering and molecular modelling of polymer-silica nanocomposites	MRF Limited	33.26
4	Pradeep T.	Heavy Metals, Arsenic and Fluoride Mitigation using Nanostructured Adsorbents	Hydromaterials Private Limited	23.6
5	Pradeep T.	Steel-rubber adhesion improvement Phase 2	MRF Limited	57.6
6	Kothandaraman Ramanujam	Design, development and demonstration of 10 kWh/1kW rechargeable energy storage system in combination with solar PV charging: vanadium redox flow batteries	ONGC Energy Centre Limited	388.76
7	Kothandaraman Ramanujam	Research Supporters India	Fuel cell reactor for H ₂ O ₂ production	1.77
8	Dhamodharan R.	Synthesis of azide-functionalized solid propellant from HTPB	Indian Space Research Organisation	4.69

Retainer consultancy (ongoing and new)

Sl. No.	Faculty Member	Title	Industry	Amount (Rs. in lakhs)
1	Ranga Rao G.	Technical opinion on the preparation of ferric carboxy maltose	Suven Life Sciences Limited	5.9
2	Pradeep T.	Steel-rubber adhesion improvement Phase 2	MRF Limited	63

Faculty members' participation with other institution under MoU

Sl. No.	Faculty Member	Participation Details	University/Institution
1	Dr. Mishra A. K.	Prof. Susana Catita	The Portuguese Foundation for Science and Technology
2	Dr. Pradeep T.	Prof. Vicki Stone	University of Edinburgh
3		Profsun Bhattacharya	Kungl Tekniska Hogskolan (KTH)-Royal Institute of Technology
4		Prof. Samuel Chigome	Botswana Institute for Technology Research and Innovation
5		Prof. Robin Ras	Aalto University
6		Prof. Dr. Andrea Iris SchÄ¶fer	University of Edinburgh
7		Martin R. S. McCoustra	University of Edinburgh
8		Dr. Sankararaman S.	Prof. H. Hopf
9	Dr. Dillip Kumar Chand	Prof. Garry Hanan	Universite de Montreal

10	Dr. Selvam P.	Dr. Anne Morrissey	Dublin City University
11		Dr. GQM Lu, Prof. Paul Webley, Dr. Jorge Beltramini	The University of Queensland
12		Prof. Dr. Notker RÄsch, Prof. Kohler, Prof. A Miyamoto	Technical University of Munich
13		Prof. A. Miyamoto	Tohoku University
14		Dr. George, Dr. Milev, Dr. Kannangara	The University of Western Sydney (Western Sydney University)
15		Dr. Arumugam Manthiram	University of Texas, Austin
16		Dr. James Winterburn	University of Manchester -Institute of Science & Technology
17		Prof. Michel Wong Chi Man	Ecole Nationale Supérieure de Chimie de Montpellier*
18		Prof. K. Seshan	University of Twente
19		Prof. Roduner	University of Stuttgart*
20		Prof. Richard Catlow	University College London*

*with these universities IITM does not have an MoU.

Distinguished visitors to the department

Sl.No.	Name and Designation	Date of Visit	Purpose of Visit
1	Prof. Sathyamurthy N., Institute Chair Professor (Retd.), IIT Kanpur, Founder Director, (IISER), Mohali	2 April 2019	Guest Lecture
2	Dr. Murali Krishna Cherukuri, Head, Biophysics Department, National Cancer Institute and Principal Investigator, National Institute of Health, Bethesda, MD USA (DAA 2019, IIT Madras, Physics)	22 April 2019	Guest Lecture
3	Dr. Shridhar R. Gadre, Interdisciplinary School of Scientific Computing Savitribai Phule Pune University, Pune (Eminent Chemist Lecture Series, Department of Chemistry, IIT Madras)	24 April 2019	Guest Lecture
4	Dr. Shridhar R. Gadre, Interdisciplinary School of Scientific Computing Savitribai Phule Pune University, Pune (Eminent Chemist Lecture Series, Department of Chemistry, IIT Madras)	26 April 2019	Guest Lecture
5	Dr. Ramana C. V., Scientist, Division of Organic Chemistry, CSIR-National Chemical Laboratory (NCL), Pune	30 April 2019	Guest Lecture
6	Prof. K. C. Kumara Swamy, School of Chemistry, University of Hyderabad, Hyderabad	9 May 2019	Guest Lecture
7	Prof. R. Balamurugan, School of Chemistry, University of Hyderabad, Hyderabad	10 May 2019	Guest Lecture
8	Prof. Dhevalapally B. Ramachary, School of Chemistry, University of Hyderabad, Hyderabad	11 May 2019	Guest Lecture
9	Dr. Santanu Mukherjee, Department of Organic Chemistry, Indian Institute of Science, Bangalore	14 May 2019	Guest Lecture

10	Prof. Ganapathy S., Scientist-G Retd. (CSIR-NCL, Pune), Honorary Visiting Scientist, CAS in Crystallography & Biophysics, University of Madras	20 May 2019	Guest Lecture
11	Prof. Pradeep Kumar Tripathi, INSA Senior Scientist, Division of Organic Chemistry, NCL, Pune	21 May 2019	Guest Lecture
12	Dr. Sripada S. V. Rama Sastry, Department of Chemical Sciences, IISER Mohali, Punjab	3 July 2019	Guest Lecture
13	Dr. Goutam K. Lahiri, Department of Chemistry, IIT Bombay	4 July 2019	Guest Lecture
14	Dr. C. S. Gopinath, Chief Scientist, Catalysis Division and Centre of Excellence on Surface Science, CSIR-NCL, Pune	5 July 2019	Guest Lecture
15	Dr. Pradeepkumar P. I., Department of Chemistry, IIT Bombay	8 July 2019	Guest Lecture
16	Editorial and Advisory Board Members of American Chemical Society	15 July 2019	Interaction with Students
17	Dr. Anjan Bedi, Institute of Chemistry, The Hebrew University of Jerusalem, Jerusalem, Israel	16 July 2019	Guest Lecture
18	Dr. Supriya Dey, Department of Chemistry and Chemical Biology, Harvard University, Cambridge, USA	22 August 2019	Guest Lecture
19	Prof. Dr. Holger Braunschweig, Institute for Sustainable Chemistry & Catalysis with Boron, Julius-Maximilians-Universität Würzburg, Germany	26 August 2019	Guest Lecture
20	Prof. Ajit Varki, Distinguished Professor, IIT Madras	27 August 2019	Interaction with students
21	Prof. Roderick Bates, Nanyang Technological University, Singapore – Interaction with faculty and students	3 September 2019	Interaction with students
22	Dr. Jayanta Halder, New Chemistry Unit, Jawaharlal Nehru Centre for Advance Scientific Research (JNCASR), Jakkur, Bangalore	4 September 2019	Guest Lecture
23	Dr. Rakesh Kumar Sharma, Department of Chemistry, IIT Jodhpur	20 September 2019	Guest Lecture
24	Dr. A. M. Kannan, Arizona State University	26 September 2019	Guest Lecture
25	Dr. Sabu Thomas, International and Inter-University Centre for Nanoscience and Nanotechnology, School of Chemical Sciences, Mahatma Gandhi University, Kerala	29 September 2019	Guest Lecture
26	Dr. Michito Yoshizawa, Chemical Resources Laboratory, Tokyo Institute of Technology, Yokohama	6 December 2019	Guest Lecture
27	Dr. Vandana Bhalla, Guru Nanak Dev University, Grand Trunk Road, Amritsar, Punjab	9 December 2019	Guest Lecture
28	Dr. Thomas Thundat, Distinguished Professor of IIT Madras	9 December 2019	Guest Lecture
29	Dr. R. Graham Cooks, Distinguished Professor of IIT Madras	9 December 2019	Guest Lecture
30	Prof. T. K. Chandrashekar, School of Chemical Sciences, NISER Bhubaneswar	26 December 2019	Guest Lecture
31	Dr. Harinath Chakrapani, Department of Chemistry, IISER Pune	27 December 2019	Guest Lecture
32	Prof. Robert H. Grubbs, Victor and Elizabeth Atkins Professor of Chemistry, California Institute of Technology, Pasadena, USA	7 January 2020	Guest Lecture

33	Prof. Virinder Parmar, Faculty in the Department of Chemistry and Environmental Science, Medgar Evers College, The City University of New York	8 January 2020	Guest Lecture
34	Dr. Eric Manoury, LCC-CNRS, France	27 January 2020	Guest Lecture
35	Prof. Sylviane Sabo-Etienne, CNRS, LCC (Laboratoire de Chimie de Coordination), Université de Toulouse, France	27 January 2020	Guest Lecture
36	Prof. Nicholas R. Walkar, Degree Programme Director (Undergraduate programmes in Chemistry), School of Natural and Environment Sciences, Newcastle University, UK	27 February 2020	Guest Lecture
37	Prof. Yujiro Hayashi, Department of Chemistry, Graduate School of Science, Tohoku University	29 February 2020	Guest Lecture
38	Dr. Mandar Bodas, Solution Consultant with Research-Solution, Life Sciences (Elsevier)	9 March 2020	Endowment Lecture
39	A. K. Tyagi, Chemistry Division, Bhabha Atomic Research Centre, Mumbai	13 March 2020	Guest Lecture

4.5.6. Other Activities of the Department/Centre Faculty visit

Sl.No	Faculty Member	Purpose of Visit	Date and Venue
1	Prof. Martin Schroder, The University of Manchester Senior Delegation-Vice-President visited IIT Madras	Eminent visitor	22 November 2019
2	Prof. Robert H. Grubbs (Noble Prize, Chemistry, 2005), Victor and Elizabeth Atkins Professor of Chemistry, California Institute of Technology, Pasadena, USA	Eminent visitor	7 January 2020

Student visit

Sl.No	Students	Purpose of Visit	Date and Venue
1	Sunbeam School teachers and 50 students (visit organised by the Office of International & Alumni Relations)	Students' visit	10 June 2019
2	Sangford School (Chennai) teachers and 33 students	Students' visit	19 June 2019
3	Auxilium College (Vellore) teachers and 70 students	Students' visit	13 December 2019
4	Krishnaswami College of Science, Arts and Management for Women (Cuddalore) teachers and 45 students	Students' visit	29 January 2020

4.6 Department of Civil Engineering

4.6.1 Introduction

The Department of Civil Engineering has been in existence since the inception of IIT Madras in 1959. Since then, it is contributing to the nation's infrastructure development and human resource development. The academic programmes of the department in B. Tech., Dual Degree, M. Tech., M.S. and Ph.D. are some of the best in the country, and perhaps, in the world. The faculty members have received advanced degrees and/or training from reputed institutions in India, Germany, the UK, the USA, Japan, Singapore, Canada, Netherlands, the former USSR, and other countries. The faculty members, along with research scholars in the department, carry out innovative and

challenging high-end research and industrial projects.

The departmental activities focus on teaching, research, consultancy and training. The activities are carried out under different disciplines, administratively organised into five divisions, namely Building Technology and Construction Management (BTCM), Environmental and Water Resources Engineering (EWRE), Geotechnical Engineering (GT), Structural Engineering (ST) and Transportation Engineering (TR). There are 14 well-equipped laboratories attached to different divisions. The EWRE and ST laboratories have received substantial initial funding from the Federal Republic of Germany.

4.6.2 Academic Programmes

The department has postgraduate programmes leading to Dual Degree, M.Tech., M.S., and Ph.D. degrees in various disciplines of civil engineering in addition to the undergraduate B.Tech. programme in civil engineering

New courses introduced

Sl. No.	Course No.	Title
1	CE5025	Lattice Structures
2	CE5105	Environmental Toxicology and Risk Assessment
3	CE5115	Admixtures and Special Concrete
4	CE5120	Maintenance and Rehabilitation of Constructed Facilities
5	CE6040	Cement Chemistry
6	CE3015	Highway Engineering
7	CE3025	Traffic Engineering
8	CE5334	Global Construction Engineering and Management

New labs established

- Geosynthetic Lab - Dr. K. Rajagopal
- Environmental Lab - Dr. Dalli Naidu Arnepalli
- New Hydraulics Lab - Dr. Venu Chandra

Students on roll as of September 2019 +M.S. and Ph.D. admission in January 2020

Programme	Year I	Year II	Year III	Year IV	Year V and others	Total
B.Tech.	111	56	51	58	9	285
Dual Degree	-	29	34	37	42	142
M.Tech.	78	92	-	-	-	170
M.S.	19	10	11	-	-	40
Ph.D.	53	34	43	40	123	293

Student/Scholar who attended workshops/conferences/seminars/symposia in India

S.No.	Name	Roll No	Title of the Paper	Conference	Place and Date
Conferences					
1	Jikil Joseph	CE14D013	Moment Rotation Behavior of Cold Formed Steel Box	International Conference on Advances in Materials and Structures - ACMS 2018	IIT Roorkee, 6-11 March 2019
2	Sevagan Rajkumar	CE14D028	Numerical Study on Effect Warping in Cold Formed Steel Beam Columns		
3	M. Prabha	CE13D046	Effect of Compressive Strength of Concrete on the Transmission Length of PTC System	ACI Convention and Exposition 2018	24-29 March 2019

Student/Scholar who attended workshops/conferences/seminars/symposia abroad

S.No.	Name	Roll No	Title of the Paper	Conference	Place and Date
1	Yuvaraj D.	CE14D207	Characterisation of microstructure in limestone calcined clay cementitious systems	Sustainable Materials, Systems and Structures	Rovinj, Croatia, 17-23 March 2019
2	Jani Fathima Jamal	CE14D011	Iteratively coupled 1D-quasi 2d for flood routing in channel with floodplain	General Assembly 2019, EGU	Vienna, Austria, 7-12 April 2019
3	Surabhi Jain	CE14D062	Suitability of microbes for bio-modification of geomaterial during MICP process	International Conference on Geotechnical Research and Engineering (ICGRE'19)	Rome, Italy 7-12 April 2019
4	Lakshmi G.	CE14D046	Calibration of hydrological models by accounting dynamic variation of antecedent moisture conditions of watershed	2019 EWRI World Environmental & Water Resources Congress	Pittsburg, Pennsylvania, USA, 19-23 May 2019
5	Namita Nayak	CE17S011	Fire loads in educational and office buildings	Applications of Structural Fire Engineering	Nanyang Executive Centre, Nanyang Technological University, Singapore, 13-14 June 2019
6	Deviprasad B. S.	CE15D033	Modelling the behaviour of shallow foundation using Beam on Nonlinear Winkler Foundation	7th International Conference on Earthquake Geotechnical Engineering	Angelicum Congress, Rome, Italy, 15 June-2 July 2019
7	Nithya Subramaniam	CE14D051	Influence of classroom acoustics on student presentations	Inter-Noise 2019	Madrid, Spain, 16-19 June 2019

8	Madhusudhan B. R.	CE14D201	1g Model tests on buildings founded on sand-rubber tire shreds mixture	7th International Conference on Earthquake Geotechnical Engineering	Rome, Italy, 17-20 June 2019
9	Swathy Manohar	CE15D036	Characterization and durability analysis of coral stones in a marine environment	Historical Mortar Conference 2019	Pamplona, Spain, 17-21 June 2019
10	Peri Adinag Abhishek	CE16D016	Cyclic over loads on life of bond anchorages in reinforced concrete	Fracture Mechanics of Concrete and Concrete Structures (FraMCoS-X)	Bayonne, France, 23-26 June 2019
11	Abinayaa Devi S.	CE15D047	Damage assessment of reinforced concrete structural walls using fracture based fractal analysis	FraMCoS-X	Bayonne, France, 24-26 June 2019
12	Akash Sinha	CE16D040	Flood inundation studies to protect the National Highways	European Water Resources Association 2019	Madrid, Spain, 25-29 June 2019
13	Abhijith G. R.	CE15D083	Modelling the effects of IWS on quality deterioration in terms of disinfection by-products formation	11th World Congress of EWRA	
14	Nitha Ayinippully Nalarajan	CE15D007	Analyzing the groundwater age and flow fractions in subsurface hydrologic systems	11th World Congress of EWRA	
15	Neenu K.	CE15D015	Modeling discontinuous aquifers using modified response matrix approach	11th World Congress of EWRA	
16	Savitha Ulavi	CE16D034	Regression modelling for predicting visibility in a tropical urban environment	27th International Conference on Modelling Monitoring and Management of Air Pollution	Aveiro, Portugal, 26-28 June 2019
17	Nikhil John K.	CE14D015	Influence of acid and alkali treatment on physical and surface charge properties of clayey soils	International Conference on Clay Science and Technology, EUROCLAY-2019	Paris, France, 1-5 July 2019

18	Biju M.S.	CE16D004	Gas permeation characteristics of biopolymer-modified fine-grained geomaterial	International Conference on Clay Science And Technology, Euroclay 2019	
19	Sachin Paul	CE16D001	The effect of accelerated aging on polymer impregnated AR and e-glass textile reinforced concrete	EMI International Conference	Lyon, France, 3-5 July 2019
20	Sushovan Dutta	CE16S016	Seismic design of a steel truss rail-cum-road bridge using conventional braces and BRBs	9th International Conference on Steel and Aluminium Structures	Bradford, UK, 3-5 July 2019
21	A. Jayashree	CE13D037	Thermal comfort evaluation of tropically acclimatized subjects	International Conference on Energy and Cities 2019	University of Southampton, Southampton, United Kingdom, 10-12 July 2019
22	Donia Savio	CE15D044	Influence of truck acceleration on dynamic load transfer to pavement	International Airfield and Highway Pavements Conference 2019	Chicago, Illinois, USA, 21-24 July 2019
23	Kavinmathi K.	CE14D042	Viscoelastic response of asphalt pavements subjected to dynamic loading	International Airfield and Highway Pavements Conference	Chicago, Illinois, USA, 21-24 July 2019
24	Krishnanunni C. G.	CE17S009	Timoshenko beam-vehicle coupled dynamic model for pavement roughness identification	US National Congress on Computational Mechanics	Austin, Texas, USA, 21-28 August 2019
25	Kirthiga S. M.	CE15D300	Possibility of capturing the irrigation dynamics at field scale in a rice dominated basin	3rd World Irrigation Forum	Bali, Indonesia, 1-7 September 2019
26	Shehna Basheer	CE13D053	Modeling perceived accuracy of traveler information systems under heterogeneous traffic conditions	The 4th International Conference on Intelligent Transportation Engineering	Singapore, 5-7 September 2019
27	Mote Harshada Ramesh	CE17S013	Use of artificial neural network for initial design of steel structures	4th International Conference on Innovative Material, Structures and Technologies (IMST-2019)	Riga Technical University, Riga, Latvia, 25-27 September 2019

28	Ranjith K.	CE17S014	Configuration based on meshes derived from crystallographic concepts and study of system stability	60th Anniversary IASS Symposium 2019	Barcelona, Spain, 7-10 October 2019
29	Ramya Srinivasan	CE13D211	A multi-pronged strategy for treatment of conventional wastewater	Southeastern Regional Meeting of the American Chemical Society 2019	Marriot Riverfront, Savannah, GA, USA, 20-23 October 2019
30	P. Balakrishnan	CE15D075	Application of ozone pre-treatment for removal of antibiotic ciprofloxacin	11th Micropol & Ecohazard Conference 2019 (Micropol 2019)	Seoul National University, Seoul, Korea, 20-24 October 2019
31	Anna Mary Philip	CE15D002	Analytical model for queue length estimation at signalized intersections from travel time	IEEE ITSC 2019	Auckland, New Zealand, 27-30 October 2019
32	Anu Rachel Thomas	CE14D004	Transfer of PPCPs during in-vessel co-composting of septage and mixed organic wastes	CESE 2019	Kaohsiung, Taiwan, 3-7 November 2019
33	Nippatlapalli Narasamma	CE16D031	Degradation of anionic and cationic dyes using high pulsed power plasma discharge	12th International Conference on the Challenges in Environmental Science and Engineering, CESE 2019	Grand Hi-Lai Hotel Kaohsiung, Taiwan, 3-7 November 2019
34	Jerin Jose	CE15D016	An insight into the degradation pattern of chloroform and MIBK in pulsed discharge plasma system	12th International Conference on the Challenges in Environmental Science and Engineering (CESE-2019)	
35	Sreejaya K. P.	CE17D401	A 3D finite element model for ground motion simulations in peninsular India	VETOMAC 2019	Curitiba, Brazil, 1-15 November 2019
36	Powar Omkar Sukumar	CE14D052	Localized effects due to aerodynamic modifications in buildings: a state-of-art review	GeoMEast-2019 International Congress and Exhibition	Cairo Marriott Hotel, Cairo, Egypt, 10-14 November 2019
37	Kami Reddy Venkata Siva Krishnareddy	CE17D023	Effect of pier shape on the local scour	11th Symposium on River, Coastal and Estuarine Morphodynamics, RCEM 2019	Auckland University of Technology, Auckland, New Zealand, 16-21 November 2019

38	Sruthi T. K.	CE15D037	Control of bed erosion at river confluence using piles and a horizontal cylindrical setup	RCEM 2019	
39	Sudeeptha G.	CE15D049	Metronidazole removal using alginate immobilized biomass systems	Green Technologies for Sustainable Waters 2019 (GTSW 2019)	Ho Chi Minh City, Vietnam, 1-5 December 2019
40	Manjunath S. V.	CE15D054	Simultaneous removal of antibiotic and nutrients via prosopis juliflora activated carbon column	GTSW 2019	Rex Hotel, Ho Chi Minh City, Vietnam, 1-5 December 2019
41	Manju Manohar Manjalavil	CE15D018	Temporal analysis of a bus transit network	The 8th International Conference on Complex Networks and Their Applications	Lisbon, Portugal, 10-12 December 2019
42	Sagadevan R.	CE13D051	Experimental study on the flexural and shear behaviour of precast prestressed hollow core slab	10th International Conference on Structural Engineering and Construction Management	Kandy, Sri Lanka
43	Ganesh Ambi Ramakrishnan	CE15D071	Joint model of app-based ride-hailing adoption, intensity of use and IPT consideration among workers	2020 Transportation Research Board (TRB) Annual Meeting	Washington DC, USA, 12-14 December 2019
44	Sharmili Banik	CE17D408	Mapping of bus travel time to stream travel time using econometric modeling	TRB 99th Annual Meeting	Walter E. Washington Convention Centre, Washington DC, 12-16 January 2020
45	Aathira K. Das	CE16D017	Link cost function and link capacity for mixed traffic network	2020 TRB Annual Meeting	Walter E. Washington Convention Centre, Washington DC, USA, 12-16 January 2020
46	Anusha S. B.	CE16D023	Indexing concrete proportions for sustainability	GRC & GRS - Advanced Materials for Sustainable Infrastructure Development	Ventura/ California/ USA, 22-28 February 2020
47	Kumar K. S. R.	CE14D045	Stabilization of expansive soil using LP and LPT techniques – a comparative study	GEO-Congress 2020	Hyatt Regency Minneapolis, 25-28 February 2020

48	Sabari Ramesh	CE15D046	Effect of sand content on cyclic swell-shrink behavior of compacted expansive soil	GEO-Congress 2020	Minneapolis, Minnesota, USA, 25-28 February 2020
49	Manjari T.	CE15D026	Admixtures for enhancing pelletization and strength of aggregate manufactured using overburden soil	The Thirty-Fourth International Conference on Solid Waste Technology and Management	The Westin Annapolis Hotel, 22-25 March 2020

Students/Scholars who won outside prizes and awards/Institute/Convocation Prizes

Third and fourth semesters of the B.Tech./Dual degree programme

Institute Day Prizes

1	Jagarlamudi Pruthvi Chowdhury	CE16B034	Computer Age Management Services Private Limited
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Fifth and sixth semesters of B.Tech./Dual Degree programme

2	Roshan Mathew Tom	CE15B051	MSK Chaitanya Varma Memorial Prize
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Seventh and eighth semesters of Dual Degree programme

3	Borkar Rutwik Balasaheb	CE14B063	Sri Venkataraman Ravi Prize
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First and second semesters of the M.Tech. programme

1	Gaurav Sayak	CE17M070	Smt. Jayalakshmi Memorial Prize
2	Rachuri Krishna Chaitanya	CE17M036	Prof. Gerhard Rouve Memorial Prize
3	Nandeesh Bana Nagar	CE17M109	S. Sambasivan Award

First six semesters' academic performance and all round performance in cultural, co-curricular and organisational abilities among CH, CE, ME, MT and NA departments of B.Tech. programme final-year students

1	Sanjana Viraj Paraz	CE15B053	Shri K. M. Ramamurti Prize
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Alumni Day Prizes

1	Gaurav Syal	CE17M070	Rajnikant Gandhi Memorial Award
2	Kashik Kumar	CE17M079	Prof. C. V. Krishnamoorthy Endowment Prize
3	Adsam Gideon D. S.	CE15S009	Shri K. Sreeharsha Memorial Prize

Other Awards

1	P. Revathi	CE17M043	Dronnadula Nagarathnam Reddy Award
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Convocation Day Prizes 2019

1	Roshan Mathew Tom	CE15B051	Larsen & Toubro ECC Endowment Prize
2	Srinivasan	CE17M049	Valli Anantharamakrishnan Merit Prize
3	Anagha Girijan	CE17M090	K. Devarajan Memorial Prize
4	Nandeesh Babanagar	CE17M109	L&T Endowment Prize
5	Divya Priya B.	CE12D007	Shree Gayathree Devi Award
6	Saranya	CE14D019	

4.6.3 Faculty and Their Activities**Faculty**

Name and Qualifications	Major Areas of Specialisation
Professors	
Dr. Ashwin Mahalingam, Ph. D. (Stanford University)	Building technology and construction management
Dr. P. Alagusundaramoorthy, Ph.D. (IIT Madras)	Composite technology
Dr. K. Ananthanarayanan, Ph.D. (IIT Madras)	Building technology and construction management
Dr. A. Boominathan, Ph.D. (Moscow)	Geotechnical engineering
Dr. Balaji Narasimhan, Ph.D. (Texas A & M University)	Water resources engineering
Dr. Devdas Menon, Ph.D. (IIT Madras)	Structural engineering
Dr. S.R. Gandhi, Ph.D. (IIT Madras)	Geotechnical engineering
Dr. Koshy Varghese, Ph.D. (Texas, Austin)	Building technology and construction management
Dr. Ligy Philip (Ms.), Ph.D. (IIT Kanpur)	Environmental engineering
Dr. Manu Santhanam, Ph.D. (Purdue University)	Building technology and construction management
Dr. A. Meher Prasad, Ph.D. (RICE)	Structural engineering
Dr. S. Mohan, Ph.D. (IISc., Bangalore)	Water resources engineering
Dr. B.S. Murty, Ph.D. (Washington)	Water resources engineering
Dr. B. Nageswara Rao, Ph.D (Iowa University)	Structural engineering
Dr. C. V. R. Murty, Ph.D. (California Institute of Technology)	Structural engineering
Dr. J. Murali Krishnan, Ph.D (IIT Madras)	Transportation engineering
Dr. K. Rajagopal, Ph.D. (Florida)	Geotechnical engineering
Dr. K. Ramamurthy, Ph.D. (IIT Madras)	Building technology and construction management
Dr. Ravindra Gettu, Ph.D. (Northwestern)	Building technology and construction management
Dr. R. G. Robinson, Ph.D. (IISc., Bangalore)	Geotechnical engineering
Dr. S. R. Satish Kumar, D. Engg. (Nagoya University)	Structural engineering
Dr. K. N. Satyanarayana, Ph.D. (Clemson)	Building technology and construction management
Dr. R. Sivanandan, Ph.D. (Virginia Tech.)	Transportation engineering
Dr. K. Srinivasan, Ph.D. (IIT Madras)	Water resources engineering

Dr. K. P. Sudheer, Ph.D. (IIT Delhi)	Water resources engineering
Dr. A. Veeraragavan, Ph.D. (Bangalore University)	Transportation engineering
Dr. Amlan Kumar Sengupta, Ph.D. (University of Missouri)	Structural engineering
Dr. G. Appa Rao, Ph.D. (IISc. Bangalore)	Structural engineering
Dr. G. R. Dodagoudar, Ph.D. (IIT Bombay)	Geotechnical engineering
Dr. Karthik K. Srinivasan, Ph.D. (Texas, Austin)	Transportation engineering
Dr. Arul Jayachandran, Ph.D. (IIT Madras)	Structural engineering
Dr. Indumathi M. Nambi, Ph.D. (Clarkson University)	Environmental engineering
Dr. Benny Raphael, Ph. D. (University of Strathclyde, UK)	Building technology and construction management
Dr. Lelitha Devi, Ph.D. (Texas A&M)	Transportation engineering
Dr. S.T.G. Raghukanth, Ph.D. (IISc Bangalore)	Structural engineering
Dr. U. Saravanan, Ph.D. (Texas A&M)	Structural engineering
Dr. S.M. Shiva Nagendra, Ph.D. (IIT Delhi)	Environmental engineering
Dr. T. Thyagaraj, Ph.D. (IISc Bangalore)	Geotechnical engineering
Associate Professors	
Dr. Dali Naidu Arnepalli, Ph.D. (IIT Bombay)	Geotechnical engineering
Dr. Sachin S. Gunthe, Ph.D. (IITM Pune)	Atmospheric chemistry and physics
Dr. Subhadeep Banerjee, Ph.D. (NUS, Singapore)	Geotechnical engineering
Dr. Vidya Bhushan Maji, Ph.D. (IISc Bangalore)	Geotechnical engineering
Dr. Mathava Kumar, Ph.D. (IIT Madras)	Environmental engineering
Dr. Gitakrishnan Ramadurai, Ph.D. (Rensselaer Polytechnic Institute)	Transportation engineering
Dr. Arun Menon, Ph.D. (University of Pavia, Italy)	Structural engineering
Dr. Radhakrishna G. Pillai, Ph.D. (Texas A&M University)	Building technology and construction management
Dr. Rupen Goswami, Ph.D. (IIT Kanpur)	Structural engineering
Dr. Sivakumar Palaniappan, Ph.D. (Arizona State University)	Building technology and construction management
Dr. Venu Chandra, Ph.D. (IIT Kanpur)	Hydraulics and water resources engineering
Assistant Professors	
Dr. P. Alagappan, Ph.D. (Texas A&M University, USA)	Structural engineering
Dr. Chandan Sarangi, Ph.D. (IIT Kanpur)	Environmental engineering
Dr. Soumendra Nath Kuiry, Ph.D. (IIT Kharagpur)	Hydraulics and water resources engineering
Dr. Atul Narayanan, Ph.D. (Texas A&M)	Transportation engineering
Dr. Bhargava Rama Chilikuri, Ph.D. (Georgia Institute of Technology, Atlanta, Georgia, USA)	Transportation engineering
Dr. Lakshmi Priya, Ph. D. (Georgia Institute of Technology)	Structural engineering
Dr. Piyush Chaunsali, Ph.D. (University of Illinois at Urbana-Champaign, USA)	Building technology and construction management

Dr. Phanaisri Pradeep Pratapa, Ph.D. (Georgia Institute of Technology, Atlanta, USA)	Structural engineering
Dr. Ramesh Kannan, Ph.D. (IISc Bangalore)	Geotechnical engineering
Dr. Surender Singh, Ph.D. (IIT Roorkee)	Transport engineering
Dr. Tarun Naskar, Ph.D. (Indian Institute of Science, Bangalore)	Geotechnical engineering
Professor of Practice	
Prof. N. Raghavan, Ph.D.	Building technology and construction management
Prof. Anupam Vibhuti	Building technology and construction management
Adjunct Faculty	
Dr. Sanjay Nimbalkar	Building technology and construction management
Visiting Faculty	
Dr. Hadas Mamane	Environmental engineering
SPARC Visiting Faculty	
Prof. Mark Gavin Alexander	
Prof. David Trejo	
Prof. Elsa A. Olivetti	

Short-term courses/workshops/seminars/symposia/conferences/trainings attended by the faculty members in academic institutions and public sector undertakings

Sl. No.	Coordinator(s)	Title	Institution	Period
Meetings				
1	Dr. Veeraraghavan	Meeting at National Rural Infrastructure Development Agency, MoRD on project proposal finalization	Delhi	9 April 2019
2	Dr. Shiva Nagendra	Project Meeting	Hyundai Motors, Chennai	5 July 2019
3	Dr. Manu Santhanam	Faculty selection at NITK Surathkal	NITK Surathkal	18-20 August 2019
4	Dr. Shiva Nagendra	Indian Clean Air Summit (ICAS)-2019	Bangalore	22 August 2019
5		Project Meeting	NGT Hyderabad	15 September 2019
6	Dr. Benny Raphael	Demonstration: Masonry Automation for Column-Beam Structures	Kochi	31 August-1 September 2019
7	Dr. Koshy Varghese	Meeting at Palakkad	Palakkad	7 November 2019
Conferences				
1	Dr. Indumathi M. Nambi	International Conference on Industrial Water, Environment and Energy	Coimbatore	25-26 January 2019

2	Dr. Gitakrishnan Ramadurai	World Conference on Transport Research	Mumbai	27-30 May 2019
3	Dr. Manu Santhanam	3rd International Conference on Calcined Clays for Sustainable Concrete	Delhi	14-20 October 2019
4	Dr. Koshy Varghese	International Conference on Lean Construction	Pune	14-16 November 2019
5	Dr. Soumendra Nath Kuiry	National Conference on Flood Early Warning for Disaster Risk Reduction	NRSC-CWC	30-31 May 2019

Symposia

1	Dr. K. Rajagopal	IACMAG Symposium 2019	Ahmedabad	6-7 March 2019
		Symposium on Recent Advances in Sustainable Geotechnics	Kanpur	7-9 October 2019
2	Dr. Piyush Chaunsali	5th Concrete Research in India	CE, IIT Madras	14 September 2019

Seminars

1	Dr. Soumendra Nath Kuiry	Probabilistic Storm Surge Analysis Along Tamil Nadu Coast - A Case Study on Kalpakkam	NRSC, Hyderabad	30-31 May 2019
2	Dr. B. S. Murty	Lecture of the Short-Term Course	VNIT Nagpur	3-4 July 2019
3	Dr. Sachin S. Gunthe	Deliver colloquium lecture	Physical Research Lab, Ahmedabad	25 July 2019
4	Dr. Shiva Nagendra	Deliver lecture in FDP programme	SJCE, Mysore	26 July 2019
5	Dr. Subhadeep Banerjee	Technical seminar	Jadavpur University	31 August-1 September 2019
5	Dr. B.S. Murty	Deliver a couple of lectures	Govt. Engg. College, Trichur	3 October 2019
6	Dr. Balaji Narasimhan	Application of Hydrologic/Water Balance Models for Effective Planning and Design of Water Harvesting Structures from Watershed Scale to River Basin Scale	Dindigul	15-17 November 2019
7	Dr. Surender Singh	ICI Chennai Centre Evening Seminar on Use of Alternative Aggregates for Sustainable Concrete Construction	ICI Chennai	26 November 2019
8	Dr. Manu Santhanam	16th NCB International Seminar	Delhi	6 December 2019
9	Dr. Shiva Nagendra	Plenary Session on Public Health Challenges and Solutions of JAPSMCON2020 Conference	Madras Medical College	30 January 2020

Workshops

1	Shiva Nagendra S. M.	International Workshop on Assessment of Environmental, Occupational Health and Safety	Nagpur	28 January 2019
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2		International Conference on Atmospheric Chemistry and Physics in Highly Polluted Environments	Delhi	22-24 March 2019
3	Dr. Soumendhra Nath Kuiry	Disaster Mitigation and Management Authority	Tamil Nadu State Disaster Mitigation and Management Authority	25 September 2019
4	Dr. Benny Raphael	State of Art Sunshade Protection for Residences and Public Spaces	IITM	4 November 2019
5		Workshop on Lean and Automation	NICMAR, Pune	14 November 2019
6	Dr. Surender Singh	Sustainable Concrete pavements Practices Challenges and Directions	Indian Concrete Institute (ICI)	23 November 2019

Short-Term Course

1	Dr. Surender Singh	Advanced Concrete Technology (Invited Speaker)	CE, IITM	18-23 November 2019
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Training

1	Dr. A. Veeraraghavan	Five-days' Training Programme on Design and Construction of Long-Lasting Flexible Pavements	Varanasi	7-19 July 2019
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Short-term courses/workshops/seminars/symposia/conferences/trainings organised by the faculty members

Sl. No.	Coordinator(s)	Title	Institution	Period
Workshops				
1	Dr. Ravindra Gettu, Dr. Manu Santhanam, Dr. Radhakrishnan G. Pillai, Dr. Piyush Chaunsali, Dr. Surender Singh	SPARC Workshop on Sustainability and Durability of Concrete Structures with By-products and Recycled Materials	CE, IIT Madras	17-12 January 2020
2	Dr. Benny Raphael	Automation and Robotics in Construction	L&T	3 December 2019
Trainings				
1	Prof. J. Murali Krishnan	Bituminous Material Characterization and Pavement Construction	Hindustan Colas Private Limited, Mumbai	20-21 September 2019
2	Dr. Radhakrishna G. Pillai	5th CRI Symposium	RILEM Chennai	14 September 2019
3	Prof. Ashwin Mahalingam	Mentoring and Augmenting Planning Skills 10.1	L&T	3 September 2019-31 January 2020
4	Dr. Piyush Chaunsali	Advanced Concrete Technology (RILEM-ICI Doctoral Course)	RILEM-ICI	18-23 November 2019
5	Prof. Benny Raphael	Automation Robotics in Construction	L&T	3 December 2019

6	Prof. Koshy Varghese	Development of Online Course on Lean Project Delivery	ILCE Mumbai	1-29 February 2020
7	Prof. Murali Krishnan	Laboratory Training Course for Advanced Testing of Bituminous Binders and Mixture	Infinite Civil Solutions Private Limited	10 February-6 March 2020

GIAN

1	Dr. S.M. Shiva Nagendra	Urban Air Pollution, Human Exposure Assessment and Public Policy	CE, IIT Madras	7-17 October 2019
2	Dr. T. Thyagaraj	Mechanics of Unsaturated Soils	CE, IIT Madras	10-20 December 2019
3	Prof. A. Veeraraghvan	Design and Construction of Sustainable Concrete Pavements	CE, IIT Madras	9-13 December 2019

Seminar

1	Dr. Radhakrishnan G. Pillai and Dr. Surender Singh	ICI Chennai Centre Evening Seminar on Use of Alternative Aggregates for Sustainable Concrete Construction	CE, IIT Madras	16 November 2019
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Symposia

1	Radhakrishna G. Pillai Piysh Chaunsali Manu Santhanam	5th IITH CRI Symposium Concrete Research in India	CE, IIT Madras	14 September 2019
2	Arun Menon G.S.V. Suryanaraya Murty Jigna Desai	ICOMOS Annual General Body Meeting and Scientific Symposium	CE, IIT Madras	21-23 May 2020

Short-Term Courses

1	Dr. Piyush Chaunsali	Advanced Concrete Technology	CE, IIT Madras	18-23 November 2019
2	Dr. Bhargava Rama Chilukuri Dr. Lelitha Devi Vanajakshi	Modeling and Control of Traffic under Mixed Conditions	CE, IIT Madras	2-7 December 2019
3	Dr. Abhijit Chaudhuri Dr. Dali Naidu Arnepalli	Porous Medium Theory and Applications	CE, IIT Madras	6-11 January 2020
4	Dr. S. M. Shiva Nagendra Prof. M. P. Maiya Dr. Shaligram Tiwari	Air Delivery Systems and Indoor Environmental Quality (ADS & IEQ)	ICSR, IIT Madras	2-7 March 2020

Conferences

1	Shiva Nagendra S. M. Virendra Sethi	4TH Indian International Conference on Air Quality Management (IICAQM 2019)	CE, IIT Madras	8-10 June 2019
2	Gitakrishnan Ramadurai Sreenivas Gollapudi	Smart Mobility-Data Driven Models and Algorithms	CE, IIT Madras	2-4 December 2019

3	Balaji Narasimhan	4th Conference on India Radar Meteorology (IRAD 2020)	CE, IIT Madras	2-7 May 2020
	B. V. Mudgal			
	Sachin S. Gunthe			
	Piysh Chaunsali			
	Manu Santhanam			
4	Balaji Narsimkhan	Upscaling Catchment Processes for Sustainable Water Management in Peninsular India (UPSCAPE) Final Stakeholders Workshop	CE, IIT Madras	25 October 2019
	B. S. Murty			
5	Manu Santhanam	SPARC Workshop on Sustainability and Durability of Concrete Structures with By-Products and Recycled Materials	CE, IIT Madras	1 July 2020
6	A. Boominathan, K. S. Ramakrishna, R. G. Robinson	10th Anniversary Conference on Deep Foundation Technologies for Infrastructure Development in India - DFI-India 2020	CE, IIT Madras	
7	S. Mohan	Recent Advances in Air Pollution Assessment Modelling and Control	CE, IIT Madras	
8	Shiva Nagendra S. M., Sotiris V.	Indian International Conference on Air Quality Management (IICAQM 2020)	CE, IIT Madras	
9	Dr. R. G. Robinson	5th International Conference on Modeling and Simulation in Civil Engineering	Kollam	12-16 December 2019
10	Dr. A. Veeraraghavan	80th Annual Session of the Indian Road Congress	Patna	19-21 December 2019
11	Dr. Lelitha Devi	CTRG Conference	Bhopal	20 December 2-10
12	Dr. Gitakrishnan Ramadurai	NSEF Conference	Ahmedabad	9-10 December 2019

Special lectures delivered by the faculty in other institutions

S.No.	Faculty Member	Topic of Lecture	Institution	Date
1	Dr. A. Boominathan	Seismic protection of low-rise buildings using geo-base isolation systems	NIT Trichy (IGS National Workshop)	8 July 2019
2	Dr. Piyush Chaunsali	Sustainable masonry from biomass ash: opportunities and challenges	BITS Pilani, Hyderabad	16 November 2019
3	Dr. Surender Singh	Sustainable concrete pavements	Mar Athanasius College of Engineering, Cochin, Kerala	22 November 2019

4	Dr. Shiva Nagendra	Plenary Session on Public Health Challenges & Solutions of JAPSMCON2020 Conference	Madras Medical College	30 January 2020
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Visits abroad by faculty

Sl. No.	Faculty Member	Country Visited	Date		Funding
1	Alagusundaramoorthy P.	USA/ Washington DC	9-17 January 2019	Transportation Research Board (TRB) 98th Annual Meeting	Project
2	Robinson R. G.	India/Palakkad	9 January 2019	Syllabus committee meeting	Others
3	Boominathan A.	Russia/St. Petersburg	3-9 February 2019	International Conference on Geotechnics Fundamentals and Applications in Construction (GFAC 2019)	Project
4	Ravindra Gettu	Japan/Tokyo, Nagaoka	20-28 February 2019	Visit to Nagaoka University to discuss collaboration and student exchange (23-26 February); visit to Tokyo for meeting with Japan Concrete Institute (22 February)	Others, Project
5	Manu Santhanam	Bhutan/Paro	8-11 March 2019	Field testing of concrete mixes developed for cavity filling in PHEP II project	Project
6	Ravindra Gettu	France, Italy, Croatia/Paris, Venice, Rovinj	14-24 March 2019	RILEM International Conference on Sustainable Materials, Systems and Structures, Rovinj, Croatia, 18-22 March 2019 http://grad.hr/rilem.smss/ ; visit to BASF, Treviso, 25 March 2019	CPDA, Project
7	Radhakrishna G. Pillai	Croatia/Rovinj	14-25 March 2019	SMSS & RILEM Week 2019	Project
8	Arun Menon	Croatia/Rovinj	16-20 March 2019	Annual RILEM Spring Convention, 18-22 March 2019, Rovinj, Croatia	Project
9	Manu Santhanam	(1) Croatia, (2) Canada/ (1) Rovinj, (2) Quebec City	19-28 March 2019	(1) SMSS Conference, Rovinj, Croatia (2) ACI Convention, Quebec City, Canada	Project
10	Piyush Chaunsali	Croatia/Rovinj	19-22 March 2019	RILEM Spring Convention and Sustainable Materials, Systems and Structures Conference	CPDA

11	Arun Menon	Myanmar/ Yangon and Bagan	25-31 March 2019	Developing a Seismic Retrofitting Research Project for Bagan Archaeological Zone - Getty Conservation Institute	Others
12	Ligy Philip	USA/ Washington DC and State College, Pennsylvania	27 March-4 April 2019	The Thirty Fourth International Conference on Solid Waste Technology and Management	CPDA, Others
13	Arul Jayachandran S.	USA/St. Louis, MO	29 March-7 April 2019	SSRC 2019 Annual Stability Conference in St. Louis, Missouri and the American Steel Conference	Project
14	Shiva Nagendra S. M.	UK/Surrey and Newcastle	9-14 April 2019	CARÉ-Cities (Clean Air Engineering for Cities) workshop	Project
15	Veeraragavan A.	India/ Bhubaneswar	12 April 2019	To conduct Ph.D. viva voce examination	Others
16	Koshy Varghese	UK/London	13-29 April 2019	Follow-up meetings on Digital Metro and Urban Construction with Imperial College and Cambridge University; university visit to Northumbria and Heriot-Watt on building information models	Project
18	Sachin S. Gunthe	Thailand/ Bangkok	18-20 April 2019	Deputed by the Dean I&AR to promote the summer internship programme initiated for the students from Asian countries	Others
19	Balaji Narasimhan	Singapore/ Singapore	21-26 April 2019	Water as Leverage Workshop	Others
20	Sachin S. Gunthe	Germany/ Berlin	27 April-2 May 2019	TU9 Universities meeting on behalf of Dean I&AR office	Others
21	Boominathan A.	USA/Seattle	30 April-14 May 2019	Deep Foundations Institute™ (DFI™) SuperPile™ 19 Conference	Project
22	Balaji Narasimhan	USA/College Station	6 May-26 July 2019	Short-term research visit to Texas A&M University	Project
23	Shiva Nagendra S. M.	Germany/ Leipzig	14 May-12 June 2019	DST-DAAD project – Air quality management system to study the vulnerability and health risk due to air pollution and climate change in urban areas	Project

24	Benny Raphael	Canada/Banff	16-26 May 2019	ISARC 2019	CPDA, Project
25	Koshy Varghese	Canada/Calgary/Banff	17 May-2 June 2019	International Symposium on Automation and Robotics in Construction	CPDA, Project
27	Sachin S. Gunthe	Israel/Haifa and Tel Aviv	20-26 May 2019	To be a part of delegation visiting Tel Aviv University and Technion for a workshop	Others
28	Ravindra Gettu	Israel/Tel Aviv, Haifa	20-26 May 2019	Meetings with Tel Aviv University and Technion	Others, Project
29	Gitakrishnan Ramadurai	Israel/Tel Aviv	21-25 May 2019	Visit to Tel Aviv University and Technion Institute of Technology	Others
30	Veeraragavan A.	USA/Philadelphia	24 May-1 July 2019	Meetings	Others
31	Sachin S. Gunthe	Hong Kong/Hong Kong	28-30 May 2019	Asian Aerosol Conference	CPDA
32	Soumendra Nath Kuiry	India/Hyderabad	29-31 May 2019	National Conference on Flood Early Warning for Disaster Risk Reduction	Project
33	Saravanan U.	India/Hyderabad	30-31 May 2019	Research proposal development and presentation	Project
34	Radhakrishna G. Pillai	Switzerland/Lausanne	3-13 June 2019	Annual Progress Meeting	Project
35	Murty B. S.	United Kingdom/Cambridge	9-13 June 2019	Validation Workshop for the RESoURce@Brandia Project	CPDA
36	Radhakrishna G. Pillai	United Kingdom/Scotland	10-13 June 2019	EuroCoalAsh 2019 Conference	Project
37	Piyush Chaunsali	United Kingdom/Edinburgh	10-14 June 2019	Academic visit to the School of Engineering, University of Edinburgh	Others
38	Ashwin Mahalingam	Canada/Montreal	11-15 June 2019	7th International Mega Projects Workshop: Theory Meets Practice	CPDA
39	Shiva Nagendra S. M.	Nepal/Kathmandu	12-15 June 2019	Regional Workshop on Air Pollution and Health	Others
40	Lakshmi Priya P. S.	Singapore/Singapore	12-19 June 2019	6th International Conference on Applications of Structural Fire Engineering (ASFE 2019)	CPDA
41	Mohan S.	USA/RCEM 2019, Peoria	14 June-2 July 2019	Second International Conference on Environmental Geo-Technology, Recycled Waste Materials and Sustainable Engineering	CPDA

42	Murty B. S.	Germany/ Dresden	15-19 June 2019	IGCS Steering Committee Meeting and IGCS Summer School	Project
43	Ravindra Gettu	France, Switzerland/ Paris, Lausanne	15-20 June 2019	RILEM Meeting in Paris; Ph.D. exam in EPFL, Lausanne	Project
44	Ligy Philip	Germany/ Dresden	16-19 June 2019	IGCS Steering Committee Meeting and delivering lectures for the winter school	Project
45	Subhadeep Banerjee	Italy/Rome	16-21 June 2019	VII International Conference on Earthquake Geotechnical Engineering	CPDA, Project
46	Sachin S. Gunthe	USA/ Cambridge	16 June-16 July 2019	For collaborative research work at Harvard University	Project
47	Boominathan A.	Italy/Rome	17-20 June 2019	7th International Conference on Earthquake Geotechnical Engineering (7ICEGE)	CPDA, Project
48	Radhakrishna G. Pillai	Germany/ Aachen	20-27 June 2019	Research Team Mission to RWTH Aachen University	Others
49	Radhakrishna G. Pillai	Italy/Milan	20-22 June 2019	Seminar at Politecnico di Milano	Project
50	Apparao G.	France/ Bayonne	22-28 June 2019	Tenth International Conference on Fracture Mechanics of Concrete and Concrete Structures (FraMCOS X)	CPDA
51	Ashwin Mahalingam	USA/Denver	24-28 June 2019	Engineering Project Organizations Conference	CPDA
52	Shiva Nagendra S. M.	China/Xi'an	27 June-8 July 2019	Joint Research Programme	Project
53	Ashwin Mahalingam	UK/London and Edinburgh	28 June-6 July 2019	Visit to Imperial College and paper presentation at the EGOS Conference	CPDA
54	Koshy Varghese	Ireland/Dublin	2-8 July 2019	Conference of International Group on Lean Construction http://iglc2019.com/	Others
55	Ligy Philip	UK/London	7-12 July 2019	Indo-UK Joint Review meeting of ongoing project	Project
56	Benny Raphael	India/Kochi	10-12 July 2019	AICTE-sponsored FDP on Computational Methods in Fluid and Structural Mechanics	Project
57	Indumathi Manivannan Nambi	United States/ Chicago	11-28 July 2019	SPARC project meeting	Project
58	Rajagopal K.	Ghana/Kumasi	15-26 July 2019	Teach a course at KNUST, Kumasi, Ghana as part of Adjunct faculty	Others

59	Alagusundaramoorthy P.	USA/Lexington	26 July-3 August 2019	Visit to University of Kentucky	Project
60	Nageswara Rao B.	USA/Austin, Texas and Charlotte, North Carolina	26 July-10 August 2019	15th U.S. National Congress on Computational Mechanics (USNCCM15), Austin, Texas, 28 July-1 August 2019 (http://15.usnccm.org) and SMiRT 25, 4-9 August 2019	CPDA/Project
61	Soumendra Nath Kuiry	Singapore/Singapore	27 July-3 August 2019	16th Annual Meeting Asia Oceania Geosciences Society	CPDA
62	Sivakumar Palaniappan	Japan/Tokyo	4-8 August 2019	Sustainable Built Environment Conference 2019 Tokyo https://sbe19tokyo.org/	CPDA, Project
63	Ravindra Gettu	China/Nanjing, Beijing	17-31 August 2019	International Conference on Innovative Materials for Sustainable Civil Engineering	CPDA, Project
64	Ligy Philip	USA/San Diego	22-28 August 2019	ACS Fall 2019 National Meeting & Expo	CPDA, Project
65	Arun Menon	China/Nanjing	24-24 August 2019	73rd RILEM Week Meeting of the Technical Activities Committee	Project
66	Subhadeep Banerjee	Sri Lanka/Colombo	27-28 August 2019	Discussion on FE analysis of deep excavation for Colombo waste-water treatment project organised by L&T and University of Moratuwa, Sri Lanka	Project
67	Meher Prasad A.	UAE/Dubai	1-3 September 2019	Meeting Dubai Municipality and Dubai Civil Defence for use of GFRG construction	Project
68	Boominathan A.	Iceland/Reykjavik	1-7 September 2019	XVII European Conference on Soil Mechanics and Geotechnical Engineering in Reykjavik, Iceland	Project
69	Manu Santhanam	India/Vellore	17 September 2019	Pre-Conference Workshop on Characterisation and Micro-Structure Analysis of Concrete	Project
70	Raghukanth S. T. G.	Taiwan and Malaysia/Taipei and Kuala Lumpur	18-28 September 2019	5th International Working Group on Rotational Seismology Conference	CPDA, Project
71	Benny Raphael	UK/Northumbria	18-20 September 2019	CIB W78	CPDA, Project

72	Murty B. S.	Germany/ Kaiserslautern	21-27 September 2019	Project meeting of all partners	Project
73	Sivakumar Palaniappan	Slovenia/ Ljubljana	23-28 September 2019	IEA EBC Annex 72: Assessing Life Cycle Related Environmental Impacts Caused by Buildings	CPDA, Project
74	Ramesh Kannan K.	United Kingdom/ Cambridge	30 September-11 October 2019	Meeting and discussions with collaborators on the research outcomes and future collaborations	Others
75	Meher Prasad A.	USA/San Francisco	1-7 October 2019	IITM Technology Summit	Project
76	Ravindra Gettu	France/Paris	1-3 October 2019	RILEM Presidency meeting	Project
77	Gitakrishnan Ramadurai	Saudi Arabia/ Riyadh	1 October 2019	KAPSARC Energy Workshop Series on Transportation: Freight Energy in Transition –Disruptors and Enablers	Others
78	Mohan S.	Portugal/ Lisbon	2-6 October 2019	General Assembly of International Water Association	Project
79	Ravindra Gettu	USA/San Francisco	3-6 October 2019	IITM Summit	Others, Project
80	Arul Jayachandran S.	Spain and UK/ Barcelona and London	5 October 2019	IASS International Conference Form and Force 2019	Project
81	Ravindra Gettu	Mexico/Tuxtla	6-14 October 2019	15th Latin-American Congress on Pathology of Construction and the 17th Congress on Quality Control in Construction	CPDA/ Project
82	Sachin S. Gunthe	Brunei/Brunei	10-13 October 2019	To promote the IIT Madras PhD program under ASEAN program	Others
83	Boominathan A.	Republic of China (Taiwan)/ Taipei	13-21 October 2019	16th Asian Regional Conference (16 ARC) on Soil Mechanics and Geotechnical Engineering	Project
84	Gitakrishnan Ramadurai	France/Lyon	16-18 October 2019	Indo-French Knowledge Summit	Project
85	Surender Singh	United Kingdom/ London	17-27 October 2019	DST-UKIERI Bilateral Project (Project No. CE1920355DSTX008190)	Project
86	Sachin S. Gunthe	Australia/ Melbourne	20-26 October 2019	JDP partner meetings	Others

87	Arun Menon	Philippines/ Manila	22-26 October 2019	Engineering our Heritage Structures (EnHeRiT 2019) organised by Department of Civil Engineering, Gokongwei College of Engineering, De La Salle University, Manila, Philippines and San Sebastian Basilica Conservation and Development Foundation, Inc. (SSBCDFI)	Project
88	Gitakrishnan Ramadurai	New Zealand/ Auckland	24 October -1 November 2019	IEEE ITS Conference 2019	CPDA
89	Meher Prasad A.	Japan/Sapporo	28 October-1 November 2019	International Research Skills Program for Developing Sustainable Transportation System and Infrastructure (STSI Program)	Project
90	Arun Menon	Myanmar/ Bagan	4-9 November 2019	Seismic Retrofit Project for Monuments at Bagan Archaeological Zone, Myanmar	Project
91	Raghukanth S. T. G.	Brazil/Curitiba	8-17 November 2019	15th International Conference on Vibration Engineering and Technology of Machinery	CPDA, Project
92	Manu Santhanam	South Africa/ Cape Town	16-20 November 2019	Workshop on Limestone Calcined Clay Cements	Project
93	Mohan S.	Sri Lanka/ Colombo	1-5 December 2019	International Water Association Water and Development Congress & Exhibition 2019	Project
94	Sachin S. Gunthe	Australia/ Melbourne	7-14 December 2019	Melbourne-India Postgraduate Program/ Academy conference	Others
95	Arul Jayachandran S.	USA/ Mishawaka	20 May-19 July 2019	Meetings	Others
96	Chandra Annavarapu	India/Mumbai	9-10 December 2019	Fourth National Finite Element Developers (NAFED)/FEAST Users Meet 2019	Project
97	Meher Prasad A.	USA/San Francisco	10-20 December 2019	Prototype testing of Base isolators by EPS	Project

98	Nageswara Rao B.	Sri Lanka/ Kandy	10-17 December 2019	International Conference on Structural Engineering and Construction Management, 12-14 December 2019, Earl's Regent Hotel, Kandy, Sri Lanka and visit to University of Peradeniya	Project
99	Arun Menon	Laos/Pakse	15-18 December 2019	Expert Advisory Group meeting for Vat Phou World Heritage Site	Project
100	Mohan S.	USA/Texas- Austin	19 December-10 January 2020	To discuss about possible collaboration with Prof. Krishna, University of Texas for a possible research work	Project
101	Alagusundaramoorthy P.	USA/ Washington DC	9-16 January 2020	Transportation Research Board (TRB) 99th Annual Meeting	Project
102	Ligy Philip	UK/London	21-25 February 2020	RSC Editors™ Symposium February 2020	Project

Honours, awards and new assignment obtained by faculty

Sl. No.	Faculty Member	Award	Awarded by	Awarded for	Date
1	Dr. Surender Singh	INAE Innovative Student Award	Indian National Academy of Engineering	Best Thesis in Doctoral Category	13 December 2019
2	Dr. Indumathi Nambi	JC Bose Patent Award			2019

New Assignment

1	Prof. Ravindra Gettu, Department of Civil Engineering, on being elected as Foreign Member of the Russian Academy of Engineering				
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Honours, awards and new assignment obtained by faculty

Sl. No.	Faculty Member	Position (Editor/ Member)	Journal Name
1	Prof. A. Veeraragavan	Member of the Editorial Board	<i>Infrastructure Asset Management</i> , a journal published by the Institution of Civil Engineers, UK

4.6.4 Design and Development Activities

New facilities added or major equipment procured (2019-20)

Sl. No.	Department Purchase	Amount (in Rs.)
1	Network switches	21240
2	ESSL biometric machine	30280
3	KS 42-1 Controller with PT 100 & S/W	66675
4	Freezer - 189 ltrs	193967

5	Monitor - Dell	14700
6	Network managed switches	51450
7	Automatic compactor and consistometer	160650
8	Window A/C 1.5 ton	32500
9	Sheer wave transducer set	178500
10	1.5 Ton A/C Hitachi - 2 Nos.	96178
11	1.5 Ton A/C Hitachi - 2 Nos.	96178
12	Mini portable dust collector	136500
13	1.5 Ton split air conditioner	48089
14	Ahuja make power amplifier	12440
15	Laptop HP model no. HP440	54999
16	Workstation - Dell model no. Precision 7820	453180
17	Biometric/Finger print device	26250
19	Voltas water dispenser	8800
20	Students' computer table	224200
21	Bond Strength/Digital Pull of Tester	304500
22	Furniture	90890
23	5 KVA UPS - 1 No.	83370
24	5 KVA UPS - 2 Nos.	166740
25	Refrigerated Centrifuge	195000
26	Chairs - H - two-seater with cushion	93456
27	1.5 ton split air conditioner	48089
28	Network switches and network items	138472
29	Chemical storage cabinet with exhaust blower	30000
30	Office table	125080
31	Hitachi window air conditioner 1.5 TR	32500
32	HP laptop - 3 Nos.	222138
33	All in One Computer	69510
34	Camera and accessories	32066
35	Mild steel tank	80745
36	10 KVA UPS	105275
37	Network accessories	60810
38	Network facility for New Faculty Room	26432
39	Workstation chairs	46610
40	Network switch	29400
41	Computer table	59000
42	Network switches	51975
43	Revolving chair	15877
44	24" Ultra Sharp - Dell Monitor	14700
45	24" HP LED Monitor - 2 Nos.	29030
46	Loft box and shutter, bookshelf	133446

47	Network switches	88200
48	Incubator	233168
49	African teakwood 2.4 long	34631
50	Planetary mixer	46200
51	Pressure sensor and MGC Card	1366365
52	HP Printers - 2 Nos.	52805
53	All in One PC - 3 Nos.	173880
54	LCGC weighing balance	26250
55	Frame and Sand Hooper	31500
56	BenQ MW550 - Projector	33031
57	Epson EB-2043 Projector	72660
58	Loft box and shutter, bookshelf	138556
59	Apple All In One	235955
60	REMI magnetic stirrer	42541
61	Loft box and shutter, bookshelf	146160
62	Desktop - 4 Nos.	244860
63	Samsung LED monitor	56851
64	5 KVA Online UPS	94945
65	Dell laptop	110880
66	Logitech video conferencing	102900
67	Loft box and shutter, bookshelf	119475
68	Godrej Storewell, table and storage unit	74643
69	Magnetic stirrer with hotplate	26250
70	3 KVA UPS	46830
71	3D Printer	44492
72	Balance - Sartorius	89250
73	HE-SPL Digital CBR test apparatus	249900
74	Samsung TV 65" QV65R	102400
75	Samsung monitor - 3 Nos.	42638
76	Table, chair, high back chair	84752
77	Samsung LED monitor	14213

Sl. No.	Project Purchase	Amount in Rs.
1	Quaternary UHPLC Systems	203593
2	Additional items for automat saturation	616040
3	Air quality monitoring system	5449045
4	License Manager Server	1428532
5	Indigenous accessories for Ambion AQMS	1545731
6	Lifting machine	1350000
7	LVDT and Force transducer	1349446
8	High voltage pulser	3558719

9	Optical sensor array	418140
10	MOUDI II Impactor	2062550
11	Potentiostat/Galvanostat	849000
12	Dust sampler	1147500
13	Dust sampler	1204875
14	GS VITEC Multi-LED QT Light kit	87037
15	SI-LVDT Force transducers	1349446
16	Tower server	311500
17	On board Unit	897600
18	Microwave pyrolysis reactor	787500
19	Lifting machine	1155000
20	Mark 0.5 Quadrotore	330750
21	Rack Server	317100
	Data acquisition system	1314400
22	DSRC Moduler	686052
23	Maruti Eeco 5 Star A/C car	381691
24	Laser cutting machine	993300
25	Milling machine	498750
26	MD7LC M-Rester	970200
27	6 Axis Articulated Robotic Arm	1614900
28	Concrete test armer	262050
29	Wedges	52655
30	Calmetrix	2251795
31	Sparker	482578
32	On board unit	902700
33	Computer server item	652800
34	Computer server item	295000
35	Power supply board	278825
36	Corrosion testing equipment	553358
37	MGC Plus modular amplifier	774800
38	Powder bed lying system	846300

Faculty members' participation with other institution under MoU

Sl. No.	Faculty Member	Participation Details	University/Institution
1	Benny Raphael	Supervision of Masters' thesis	Czech Technical University, Prague

Distinguished visitors to the department

S. No.	Name and Designation	Title of the Talk	Date
1	Dr. Rupert Myers, University of Edinburgh, UK		16 April 2019
2	Dr. Soora Naresh Kumar, Professor and Principal Scientist Climate Change, and Crop and Environment Simulation Modelling, Centre for Environment Science and Climate Resilient Agriculture, ICAR-Indian Agricultural Research Institute, PUSA New Delhi	Research discussion	2 May 2019
3	Prof. Luigi Barazzetti, Polytechnic of Milan, Italy	A practical approach to photogrammetric methods of digital mapping	23 July 2019
4	Dr. Oriol Prizeman, Reader at the Welsh School of Architecture, Cardiff, University of Wales, UK		
5	Dr. Srinagesh, Chief Scientist, National Geophysical Institute, Hyderabad	Earthquake Hazard Studies by NGRI	9 September 2019
6	Dr. Gediminas Kastiukas, Research Fellow, Brunel University, London	DST-UKIERI Project	25 November 2019
7	Prof. Elsa Olivetti, Associate Professor, MIT USA	SPARC Visiting Faculty	6-8 January 2020
8	Dr. Uwe Schlink, Helmholtz-Centre for Environmental Research UFZ Leipzig, Department of Urban and Environmental Sociology, Leipzig, Germany	Deliver a talk: Wearable sensor for multi-factorial personal exposure assessment	13 December 2019
9	Dr. Gabriela Garces Sanchez, University of Stuttgart	Deliver a talk: Sustainable waste and water management for healthy ecosystems	12 December 2019
10	Prof. David Trejo, Oregon State University, USA	SPARC Visiting Faculty	14-30 January 2020
11	Prof. Mark Alexander, Emeritus, University of Cape Town (South Africa)	SPARC Visiting Faculty	18 January-14 February 2020

4.6.5 Other Activities of the Department

International collaboration achievements by the department

IIT Madras-Purdue University collaborations in Intelligent Transportation Systems by Dr. Lelitha Devi

Major infrastructure development made in the department

S No.	Project Number	Principal Investigator	Agency Name	Title	Date	Sanction Value (in lakhs)
1	CE19201054 SERB008237	Saravanan U.	Science and Engineering Research Board	Numerical technique to solve boundary value problems in solid mechanics	25 February 2020-24 February 2023	15.75

2	CE19201055 SERB008190	Ravindra Gettu; Co-PI: Radhakrishna G. Pillai-008459, CE	Science and Engineering Research Board	Study of the deterioration mechanisms in glass textile reinforced concrete and improvement of its durability	26 February 2020-25 February 2023	54.82
3	CE19201089 IGST008190	Ravindra Gettu; Co-PI: Ligy Philip-005036, CE	Indo-German Science & Technology Centre	Modular lightweight wastewater treatment units made with TRC for rural and periurban dwellings (clean water)	9 March 2020-8 March 2023	84.77
4	CE19201122 DSTX005036	Ligy Philip	Department of Science & Technology	Identifying best available technologies for decentralized wastewater treatment and resource recovery for India	11 March 2020-10 March 2024	164.53
5	CE1920155 ISRO008502	Sachin S Gunthe; Co-PI: Rama Shanker Verma-008174, BT	Indian Space Research Organisation	Relation between pathogenic bio-aerosol and biotic stress of crop - a case study for yellow rust fungus of wheat	5 January 2019-30 April 2021	45
6	CE1920158 SPAR008204	Indumathi M Nambi; Co-PI: Tiju Thomas-008673, MM	Scheme for Promotion of Academic and Research	Circular economy in sanitation projects - NPK fertiliser, carbon recovery and water reuse	28 March 2019-27 March 2021	83.05
7	CE1920161 SPAR008671	Mathava Kumar S., Co-PI: Raghuram Chetty-008351, CH	Scheme For Promotion of Academic and Research	Biomass to energy from low-strength municipal wastewater using a new microalgal-anaerobic-membrane-bioreactor(s)	30 April 2019-29 April 2021	49.51
8	CE1920204 SPAR008100	Manu Sathnam; Co-PI: Ravindra Gettu-008190, CE	Scheme for Promotion of Academic and Research	Towards durability specifications with recycled aggregate concrete	15 May 2019-14 May 2021	67.79
9	CE1920246 MIMP008134	Karthik K. Srinivasan; Co-PI: Lelitha Devi-008253, CE; Gitakrishnan Ramadurai-008432, CE	Impacting Research Innovation and Technology - Imprint	A connected intermediate public transport mobility-as-a-service (IPTMAAS) solution for the last mile connectivity and multi-model integration problems of public transit	26 March 2019-25 March 2022	54.53
10	CE1920291 SPAR002786	Mohan S.	Scheme for Promotion of Academic and Research collaboration	Bioremediation of urban sites contaminated due to municipal wastewater disposal	25 June 2019-24 June 2021	21.06

11	CE1920292 MEIT000167	Sivanandan R; Co-PI: Karthik K. Srinivasan-008134, CE	Ministry of Electronics & Information Technology	Promoting road safety through deployment of driver assistance and warning systems	28 June 2019- 27 June 2021	58.06
12	CE1920331 MEIT008253	Lelitha Devi; Co-PI: Bhargava Rama Chilukuri-008834, CE	Ministry of Electronics & Information Technology	Development of a bus priority system at sig- nalized intersections using V2I communi- cation	28 June 2019- 27 June 2021	65.73
13	CE1920332 SPAR008459	Radhakrishna G Pillai; Co-PI: Manu Santhan- am-008100, CE	Scheme for Promotion of Academic and Research collaboration	Enhancing the durabil- ity and sustainability of concrete structures in emerging econom- ics	11 July 2019- 10 July 2021	71.28
14	CE1920355 DSTX008190	Ravindra Get- tu; Co-PI: Piyush Chaunsa- li-008926, CE; Surender Sin- gh-008952, CE	Department of Science & Technology	A new framework of high value added zero-waste recycling of concrete from con- struction and demoli- tion waste	26 July 2019- 25 July 2021	33.86
15	CE1920369 MEIT008834	Bhargava Rama Chilukuri; Co-PI: Lelitha Devi- 008253, CE	Ministry of Electronics & Information Technology	Departure time plan- ner using V2V and V2I communication	28 June 2019- 27 June 2021	81.1
16	CE1920374 MEIT008134	Karthik K. Srinivasan; Co-PI: Sivanan- dan R-000167, CE; Gitakr- ishnan Rama- durai-008432, CE	Ministry of Electronics & Information Technology	Data-driven models and decision support tools for improved transit reliability in Indian cities	28 June 2019-27 Decem- ber 2021	83.49
17	CE1920389 NDMA008318	Murty C. V. R.	National Disaster Management Authority	Illustrated home own- ers guide for earth- quake and cyclone safety	25 June 2019-30 October 2019	3.67
18	CE1920425 SPAR008121	Sudheer K. P.	Scheme for Promotion of Academic and Research collaboration	Enhancing the water use efficiency in ag- riculture practices in Himalayan region	8 August 2019-7 August 2021	43.84
19	CE1920577 NDMA008321	Rupen Goswami	National Disaster Management Authority	Draft of Indian stand- ard code of practice for seismic design and detailing of steel structures	3 Sep- tember 2019-2 Septem- ber 2020	6.54
20	CE1920579 NRRD008165	Veeraragavan A.	National Rural Road Development Agency	Lifecycle and perfor- mance assessment of waste plastic roads	16 Sep- tember 2019-15 March 2021	9.6

21	CE1920580 NRRD008165	Veeraragavan A.	National Rural Road Development Agency	Lifecycle and performance assessment of cold mix roads	16 September 2019-15 March 2021	9.6
22	CE1920621 SERB008876	Lakshmi Subramanian	Science and Engineering Research Board	Moment-shear interaction of unstiffened steel sections subject to lateral torsional buckling	1 October 2019-17 March 2022	47.02
23	CE19206331- USS008204	Indumathi Manivannan Nambi	Indo-US Science & Technology Forum	An integrated-modular-onsite urine treatment unit for the recovery of green fertilizers and water	20 September 2019-19 September 2020	11
24	CE1920751 SERB008893	Alagappan Ponnalagu	Science and Engineering Research Board	A study of blast wave impact on helmet-head assembly to mitigate traumatic brain injury	26 November 2019-25 November 2021	29.44
25	CE1920785 SERB008121	Sudheer K. P.	Science and Engineering Research Board	Faculty travel under first edition of SERB Purdue University Overseas Visiting Doctoral Fellowship	1-7 December 2019	3.91
26	CE1920817 SERB008941	Phanisri Pradeep Pratapa	Science and Engineering Research Board	Designing Origami-based metamaterials with low frequency elastic bandgaps	14 December 2019-13 December 2021	32.54
27	CE1920870U KRI008251	Shiva Nagendra S. M.	UK Research and Innovation	GCRF Clean Environment and Planetary Health in Asia (CEPHA) Network	20 September 2019-19 September 2021	141.12
28	CE1920935 MOES008204	Indumathi Manivannan Nambi	Ministry of Earth Sciences, New Delhi	Marine litter and microplastics	23 January 2020-22 January 2021	26.1
29	CE1920987 MIMP008204	Indumathi Manivannan Nambi; Co-PI: Tiju Thomas-008673, MM	Impacting Research Innovation and Technology - IMPRINT	Sanitation in the circular economy – an integrative-modular-onsite toilet treatment for NPK fertilizer, carbon and water	22 January 2020-21 January 2022	69.07

Details of the consultancy projects

S. No.	Project Number	Principal Investigator	Agency Name	Title	Date	Sanction Value (in lakhs)
1	IC1920CE043 BHEL008335	Thyagaraj T; Co-PI: Subhadeep Banerjee-008478, CE	Bharat Heavy Electricals Limited	Vetting of rectification measures for TG Foundation of Unit #1 for Ennore SEZ 2 X 660mw	4 January-31 October 2019	3.54
2	IC1920CE045 SKIL005034	Alagusundaramoorthy P.	Skilled Construction Company Limited	Review of structural design and drawing of 45 M composite girder for Konkan Railway	4 January-30 June 2019	5.31
3	IC1920CE046 UTRA005034	Alagusundaramoorthy P.	Utracon Structural Systems Private Limited	Review of the design of post-tensioned beams in the Lecture Hall and Seminar Hall at IIT Indore campus	4 January-30 June 2019	6.49
4	IC1920CE047 AABS005034	Alagusundaramoorthy P.	Adyar Ananda Bhavan Sweets India Private Limited	Review of the analysis and design of the foundation and super structure of the proposed food plaza at Central Railway Station, Chennai	4 January-30 June 2019	2.66
5	RB1920CE117 WEBD008588	Benny Raphael	Webdatacast LLC	State-of-art-of sunshade protection for residences and public spaces	5 January 2019-31 December 2020	7.8
6	RB1920CE017 OOZE008310	Balaji Narasimhan; Co-PI: Indumathi Manivannan Nambi-008204, CE	Ooze Architects	Water as Leverage (Chennai) - City of 1,000 tanks	4 May 2019-31 December 2020	7.5
7	IC1920CE031 AXLE002776	Meher Prasad A.	Axles India Limited	Testing of Commercial Axle Housing	4 May-31 October 2019	7.08
8	IC1920CE035 AAAA005002	Satish Kumar S. R.	Common Code	Proof checking of structural design	4 May 2019-4 April 2022	0

9	IC1920CE037 LNTL005003	Devdas Menon	Larsen & Toubro Limited	Proof checking and approval of design and drawings of substructure and superstructure for rail flyovers (RFOS) and road over bridges (ROBS) for the project Western Dedicated Freight Corridor Package-3R (Iqbalgarh-Vadodara Section)	4 September 2019-30 April 2020	55.22
10	IC1920CE038 LNTL005003	Devdas Menon	L&T Infrastructure Engineering Limited	Proof checking of the designs and drawings of substructure and foundation for railway grade separator, Katni Project	4 September 2019-30 April 2020	47.79
11	IC1920CE114 TSCB002777	Boominathan A.	Tamil Nadu Slum Clearance Board	Geotechnical investigation for reconstruction of slum tenements at Vyasarpadi Old Block, Corp. Divn: 46	4 October 2019-31 March 2020	17.7
12	IC1920CE113 DLLX005003	Devdas Menon	Directorate of Lighthouses & Lightships	Establishment of new lighthouse at Dhanushkodi – architectural and structural design of RCC lighthouse tower of 45m height	4 December 2019-31 October 2020	8.85
13	IC1920CE030 LRHC008111	Appa Rao G.	Lakshmi Royal Home Constructions	Proof checking of post-tensioned beams in an apartment at Vanagaram	15 March-13 June 2019	2.36
14	IC1920CE036 SSIC008459	Radhakrishna G. Pillai	S. S. Infrastructure Development Consultants Limited	Condition assessment of reinforced concrete systems in port facilities	15 April-15 October 2019	3.54
15	IC1920CE115 TNGD008335	Thyagaraj T; Co-PI: Robinson R. G.-008160, CE; Sub-hadeep Banerjee-008478, CE	Tamil Nadu Generation and Distribution Corporation Limited	Consultancy services for the rehabilitation and raising of ash dyke at Ennore SEZ STPP	15 April 2019-4 September 2020	25.96

16	IC1920CE116 AMCS005036	Ligy Philip; Co-PI: Murty B. S.-005017, CE	AM Corporate Social Responsibility Foun- dation	Identification of reliable source for drinking water supply and design- ing of conveyance systems in Vilan- gadupakkam	22 April 2019-30 April 2020	11.46
17	IC1920CE105 EKKI005003	Devdas Menon	EKK Infrastructure Limited	Proof checking of four-laning of Thalassery-Mahe Bypass section of NH-17 (new Nh-66) from km 170.600 (design Ch km 170.600) to km 188.000 (design Ch km 189.200) under NHDP Phase - On EPC Mode III in the state of Kerala	23 April-30 Septem- ber 2019	3.78
18	IC1920CE048 URCC005034	Alagusundara- moorthy P.	URC Construction Private Limited	Analyzing and testing of materials for the construction of major bridges, RCC box bridges and pre-cast RCC box segments in Madurai Division of Southern Railway	24 April 2019-23 April 2020	10.92
19	IC1920CE011 SNSI008169	Nageswara Rao B.	SNS Infracon Private Limited	Proof checking and vetting of structural design of upcoming boys' hostel (15280 sqm) at Bhubaneswar, Odisha	25 March 2019-24 March 2020	5.41
20	IC1920CE103 AFCO008169	Nageswara Rao B.	Afcons Infrastructure Limited	Design qualification test for railway concrete sleeper - construction of sin- gle standard gauge railway line from Tema to Akosombo on Engineering Procurement and Construction (EPC) Basis, Ghana	26 April 2019-25 April 2020	9.44
21	IC1920CE015 VGTM002776	Meher Prasad A.	VGTM Urban Devel- opment Authority	Proof checking for the structural de- signs and drawings of Amaravati Happy Nest Project	29 March-31 December 2019	31.54

22	IC1920CE102 HYUD008251	Shiva Nagendra S. M.	Hyundai Motor India Limited	Conducting envi- ronmental compli- ance audit	30 March-30 August 2019	8.33
23	IC1920CE014 ULCL005003	Devdas Menon	Ultratech Cement Limited	Dynamic load test for Ultratech Power Grout	30 March-30 Septem- ber 2019	5.31
24	IC1920CE012 PCPR008347	Dali Naidu Arnepalli	P&C Projects	Design and proof checking of RE wall for ROB between Ambattur and Avadi Railway Stations near Annanur Rail- way Station	31 March 2019-31 March 2020	4.72
25	IC1920CE123 LNTL008204	Indumathi M. Nambi	Larsen & Toubro Limited	Proof checking of storm water drain at Patna Smart City	5 January 2019-30 April 2020	2.36
26	IC1920CE112 LNTN002776	Meher Prasad A.	L&T Infrastructure Engineering Limited	Proof checking of seven bridges in APCRDA Zone 4	5 Janu- ary-31 October 2019	7.55
27	IC1920CE096 BRID005002	Satish Kumar S. R.	Bridge & Roof Co., (India) Limited	Proof checking structural design of MUC and PGH at Sishu Bhawan, Cuttack	5 Janu- ary-31 December 2019	10
28	IC1920CE134 TNHB005034	Alagusundara- moorthy P.	Tamil Nadu Housing Board	Review of analysis and design and vetting of drawings for construction TNGRHS flats at Saidapet for Tamil Nadu Housing Board	5 January 2019-30 April 2020	13.04
29	RB1920CE148 TSCB005034	Alagusundara- moorthy P.	Tamil Nadu Slum Clearance Board	Soil Investigation and analysis and design of multi-sto- reyed buildings for TNSCB at Chennai	5 January 2019-31 May 2021	43.06
30	IC1920CE146 TURI008111	Appa Rao G.	Turbo Industries Private Limited	Testing of scaf- olding towers for capacity require- ment	5 Janu- ary-31 July 2019	14.88
31	IC1920CE140 KELL008160	Co-PI: Sub- hadeep Baner- jee-008478, CE	Keller Ground Engi- neering India Private Limited	Proof checking the geotechnical design for ground improvement works using stone at IOCL Refinery, Paradip, Odisha	6 January 2019-31 March 2020	2.36

32	IC1920CE111 LTCW008554	Venu Chandra	L&T Construction, Water & Effluent Treatment IC	Vetting and ap- proval of rural piped water supply projects pertaining to mining affected villages of Mayur- bhanj district, Odisha	5 February 2019-31 December 2020	6.49
33	IC1920CE110 LTCW008554	Venu Chandra	L&T Construction, Water & Effluent Treatment IC	Vetting and ap- proval of rural piped water supply projects pertaining to mining affected villages of Keonjhar district, Odisha	5 February 2019-31 December 2020	7.67
34	IC1920CE118 LNTL002776	Meher Prasad A.	Larsen & Toubro Limited	Proof checking of major bridges, drains and struc- tural units of STP with intermediate pumping stations for Amaravati Capi- tal City-Zone 6	5 March-30 November 2019	11.66
35	IC1920CE121 RAIL005003	Devdas Menon	Rail Vikas Nigam Limited	Proof checking of foundation and sub-structural design calculations for abutments and piers-15 nos	5 Septem- ber-31 December 2019	28.67
36	IC1920CE120 KNRC005003	Devdas Menon	KNR Construction Limited	Proof checking of construction of six-laning of NH-140 from Chittoor (design km.0.000/existing km.158.000 of NH- 4) to Mallavaram (design km.61.128/ existing km.41.800 of NH-140) in the state of AP under Bharatmala Pari- yojana on hybrid annuity mode	5 Septem- ber-30 November 2019	9.44

37	IC1920CE124 RDSP008169	Nageswara Rao B.	RDS Project Limited	Checking and vet- ting of structural design and draw- ings including foun- dation of proposed construction of new 4-lane with ele- vated highway, in- cluding approaches and service roads connecting Kazha- kuttom Junction and Technopark Junction of NH- 47 in the state of Kerala	5 Septem- ber 2019- 5 August 2020	7.08
38	IC1920CE119 SBSA008111	Appa Rao G.	SBS Associates	Design and verifica- tion of underpass in National Highway between Tuticorin and Tirunelveli	4-30 October 2019	3.54
39	IC1920CE133 URCC005002	Satish Kumar S. R.	URC Construction Private Limited	NBCC-SAIL Project at Rourkela	17 May-31 December 2019	14.75
40	IC1920CE142 TNHB002776	Meher Prasad A.	Tamil Nadu Housing Board	Proof checking of structural designs of 114 Super HIG Flats (stilt+19 floors) under self-finance scheme at SAF Games Vil- lage, Koyambedu, Chennai	18 May 2019-18 May 2020	9.92
41	IC1920CE143 LNTN002776	Meher Prasad A.	L&T Construction, Buildings & Factories	Proof checking vet- ting of structural design and draw- ings for proposed construction of physical and social infra facilities for EWS housing for selected UIB's in Krishna and Prakasam for West Godavari district, Andhra Pradesh	22 May-30 November 2019	2.53
42	IC1920CE144 FLSL005002	Satish Kumar S. R.	FLSmith Private Limited	Proof checking of railway crossing gallery at Joda East	22 May-31 December 2019	2.95

43	IC1920CE145 PENN005002	Satish Kumar S. R.	Pennar Engineering Building Systems Limited	Proof checking design of PEBS	22 May-31 December 2019	15.8
44	IC1920CE099 LNTL008204	Indumathi M. Nambi	Larsen & Toubro Limited	Vetting of water treatment plant in Mayurbhanj, Odisha	24 April 2019-23 March 2020	2.36
45	IC1920CE098 LNTL008204	Indumathi M. Nambi	Larsen & Toubro Limited	Vetting of water treatment plant in Boudh, Odisha	24 April 2019-23 March 2020	2.36
46	IC1920CE100 KCPE005003	Devdas Menon	KCP Engineers Pri- vate Limited	Construction of multi-level car parking project at DB Road, Coim- batore	26 April 2019-28 February 2021	4.01
47	IC1920CE095L- NTL005003	Devdas Menon	Larsen & Toubro Limited	Testing of modu- lar scaffold tower system	30 April-31 October 2019	4.72
48	IC1920CE227 LNTL002804	Rajagopal K.	Larsen & Toubro Limited	Geotechnical consultancy ser- vices for western dedicate freight corridor	6 January 2019-31 May 2020	5.9
49	RB1920CE199 PATR008100	Manu Santhan- am	Patil Rail Infrastruc- ture Private Limited	Evaluation of de- layed ettringite for- mation in concrete sleepers	6 January 2019-31 May 2020	11.8
50	IC1920CE225 PSGP008111	Appa Rao G.	PS Group Realty Private Limited	Design and verifica- tion of drawings of G+8 office building in Kolkata (typical floor only)	6 March-31 August 2019	3.54
51	IC1920CE229 VIVO008111	Appa Rao G.	Vivo Mobile India Private Limited	Vetting of designs and drawing, de- tails and analysis of industrial building at Yeida, Greater Noida	6 March 2019-30 June 2020	37.17
52	IC1920CE197 NLCI008169	Nageswara Rao B.	NIC India Limited	Checking and vetting of struc- tural design and drawings of New Arch Gate for NLCIL Entrance at Neyveli	6 April 2019-4 March 2020	1.77
53	IC1920CE196 ECOX008169	Nageswara Rao B.	Eco Chimneys Private Limited	Checking and vetting structural design and draw- ings of proposed construction of 61m chimney for MRF Tyres, Dahej	6 May 2019-6 April 2020	1.77

54	IC1920CE257 CMKP005034	Alagusundaramoorthy P.	CMK Projects Private Limited	Review of the analysis and design of Tamil Nadu Slum Clearance Board Type A building at Moolakothalam in Chennai	6 June 2019-6 May 2020	5.47
55	IC1920CE180 EKKI005003	Devdas Menon	EKK Infrastructure Limited	Proof checking of four-laning of Thalassery-Mahe Bypass Section of Nh-17 (new Nh-66) from km 170.600 (design Ch Km 170.600) to km 188.000 (design Ch Km 189.200) under NHDP Phase-on EPC Mode III in the state of Kerala	6 June-31 December 2019	3.78
56	IC1920CE183 GETD005034	Alagusundaramoorthy P.	GE T&D India Limited	Review of the analysis and vetting of the design calculations of support structure and platform for circuit breakers	6 June 2019-6 May 2020	3.54
57	IC1920CE184 URCC002776	Meher Prasad A.	URC Construction Private Limited	Proof checking of the structural of new BMC Corporation Building including the Intelligent City Operations and Management Centre (ICOMC) at Unit IX, Bhubaneswar, Odisha	6 June 2019-29 May 2020	9.52
58	IC1920CE194 TSCB002777	Boominathan A.	Tamil Nadu Slum Clearance Board	Geotechnical studies for construction of 3024 tenements of various scheme storied RCC framed structures at Melapedu, Pakkam A and B project schemes in Tiruvalur district (Tamil Nadu)	5 October 2019-31 March 2020	67.26
59	RB1920CE259 APPC008251	Shiva Nagendra S. M.	Andhra Pradesh Pollution Control Board	Carrying capacity assessment of stone quarrying mines at Perecherla, Guntur	6-31 October 2019	17.23

60	IC1920CE176 LTCN008436	Arul Jayachandran S; Co-PI: Alagappan Ponnalagu-008893, CE	L&T Construction	Full scale load test of the sky bridge at L&T fabrication shop at Kanchipuram	7 August 2020-6 October 2019	7.08
61	IC1920CE219 TTPO005034	Alagusundaramoorthy P.	Tamil Nadu Trade Promotion Organisation	Review of the structural design and vet the drawings for construction towards the expansion of existing Chennai Trade Centre Campus at Chennai	6 October 2019-6 November 2020	26.57
62	IC1920CE221 FDCM008169	Nageswara Rao B.	Freyssinet Dynamic Consortium	Fatigue test on dynamic prestress anchorage system for epoxy coated strands	6 October 2019-6 September 2020	53.1
63	RB1920CE217 SGIP008100	Manu Santhanam	Saint-Gobain India Private Limited	Comfort studies on lime plaster	17 June-31 December 2019	3.54
64	IC1920CE220 SSIC008169	Nageswara Rao B.	S. S. Infrastructure Development Consultants Limited	Vetting of the report of "Study of condition assessment of strength of reinforced concrete jetty deck beams/slabs supporting ell cranes" of MYU Department at ND(V)	18 June 2019-6 September 2020	2.36
65	IC1920CE237 AAAA005036	Ligy Philip	Common Code	Water, wastewater and soil sample analysis	20 June 2019-19 June 2022	0
66	IC1920CE235 TPLT005036	Ligy Philip	Tata Projects Limited	Study on pollution abatement process of Buddha Nullah, Ludhiana	20 June-19 December 2019	5.31
67	IC1920CE280 KELLO08478	Subhadeep Banerjee; Co-PI: Robinson R G-008160, CE	Keller Ground Engineering India Private Limited	Vetting of pile foundation design at HPCL refinery, Vizag	28 June-1 October 2019	2.36
68	IC1920CE265 DDFC005036	Ligy Philip	DDF Consultants Private Limited	Proof checking of plant design of STP & WTP in IIT Palakkad	16 June-15 December 2019	3.54
69	IC1920CE317 TPLT005002	Sathish Kumar S. R.	Tata Projects Limited	Proof checking of hospital building at Keonjhar	17 July 2019-17 March 2020	10

70	IC1920CE335 LTHL008478	Subhadeep Banerjee; Co-PI: Boominathan A-002777, CE	L&T Hydrocarbon Engineering Limited	Recommendation for the tank foundation - HRRL, Rajasthan	23 July-30 November 2019	2.36
71	IC1920CE327 LTCW008111	Apparao G.	L&T Construction Water & Effluent Treatment IC	Proof checking and approval of structural and civil design and drawing for Patna Smart City Project	1 July 2019-31 May 2020	11.8
72	IC1920CE328 STEW008190	Ravindra Gettu	Stewols India Private Limited	Testing of Shaktiman fibres for use in concrete tunnel linings	21 July-30 September 2019	3.19
73	IC1920CE318 TPLT005002	Sathish Kumar S. R.	TATA Projects Limited	Proof checking of Bhawanipatna Medical College buildings	18 July 2019-18 March 2020	20
76	IC1920CE299 LNTG002777	Boominathan A; Co-PI: Subhadeep Banerjee-008478, CE	L&T Geostructure LLP	Proof checking of stone column design for tank foundations at BPCL Krishnapatnam Project Site	12 July-12 December 2019	9.44
77	IC1920CE287 LNTL005003	Devdas Menon	Larsen & Toubro Limited	Proof checking of construction of ROB between L-xing no.29 & 30 at Railway km 37/3-4 on Delhi-Rewari Section near Basai Dhankot Station	2 July 2019-31 January 2020	8.5
78	IC1920CE288 KMCH005003	Devdas Menon; Co-PI: Meher Prasad A-002776, CE	Kovai Medical Center and Hospital Limited	Proof checking of structural designs and drawings for Medical College Hospital Building (Block A&B) Hostel Block and Residential Quarters	5 July 2019-30 June 2020	42.31
79	IC1920CE289 BIAL005003	Devdas Menon	Bangalore International Airport Limited	Proof checking of 2 railway ROB's proposed with the Trumpet expansion works which is a major upgradation work of Main Access Road leading to KIA, Bangalore	5 July 2019-31 January 2020	5.55
80	IC1920CE340 ARIP005036	Ligy Philip	Aurobindo Realty & Infrastructure Private Limited	Vetting the design for pipe reactor system of Galaxy Towers	17 July 2019-16 January 2020	2.36

81	IC1920CE344 RKCP008169	Nageswara Rao B.	R. Karunanidhe Constructions Private Limited	Checking and vetting of struc- tural design and drawings including Foundation of 3 PEB buildings at KR Pet, Karnataka, with 1,00,000, 50,000 and 20,000 sqft construction area	25 July 2019-24 July 2020	8.02
82	IC1920CE358 GCET005036	Ligy Philip	Gangapuram Com- mon Effluent Treat- ment Plant Private Limited	Detailed project report for ZLD for Gangapuram Common Effluent Treatment Plant Private Limited	26 July 2019-31 January 2020	7.08
83	IC1920CE359 NNEL008321	Rupen Goswa- mi	NNE Limited	Displacement based seismic safety assessment of RC Building Blocks	25 July 2019-31 July 2020	5.96
84	IC1920CE361 SRSA008169	Nageswara Rao B.	Sri Ram Samaj	Stability analysis of the reinforced con- crete structures of the Sitaram Vidya- laya Matriculation Higher Secondary School Buildings of M/s Sri Ram Samaj, Chennai	24 July 2019-23 July 2020	8.85
85	IC1920CE366 SKIP008436	Arul Jayachan- dran S.	Skipper Limited	Design checking of steel transmission line monopoles	30 July-9 August 2019	4.9
86	IC1920CE367 LTCW008554	Venu Chandra	L&T Construction Water & Effluent Treatment Ic	Vetting and ap- proval of mechan- ical drawings and documents pertain- ing to execution of rural water supply projects to Boudh district, Odisha	29 July 2019-31 December 2020	7.55
87	IC1920CE277 PERW008436	Arul Jayachan- dran S.	PERI Werk (India) Private Limited	Experimental test- ing of aluminium panels for PERI, Pune	27 June-4 July 2019	4.48
88	IC1920CE274 SHPS005002	Sathish Kumar S. R.	Seven Hills PEB Sys- tems Private Limited	Proof checking of PEB design for Alstom at Sri City	28 June-31 December 2019	3.2
89	IC1920CE275 VGSP005002	Sathish Kumar S. R.	Volta Green Struc- tures Private Limited	Proof checking of PEB design for GE Diesel Loco	27 June-31 December 2019	3.5

90	IC1920CE261 RDSP008169	Nageswara Rao B.	RDS Project Limited	Checking and vetting of struc- tural design and drawings including foundation - pro- posed construction of two lane with paved shoulders Alappuzha Bypass from km 408+100 to km 414+900 on NH-47 in the state of Kerala	24 June 2019-23 July 2020	7.08
91	RB1920CE264 SAIO005036	Ligy Philip	Saint-Gobain Re- search India Limited	Water filtration performance of Saint-Gobain ce- ramic filters	25 June 2019-30 June 2020	7.08
92	IC1920CE268 MIMS002777	Boominathan A; Co-PI: Sub- hadeep Baner- jee-008478, CE	McDermott Interna- tional Management S. DE.RL	Site specific seismic study for the KG- DWN-SPS+SURF Project, Eastern Offshore, India	24 June-23 December 2019	23.6
93	IC1920CE283 LTCH008554	Venu Chandra; Co-PI: Murty B S-005017, CE	L&T Construction Heavy Civil Infra- structure	Proof checking of hydrology report prepared for the construction of 6-lanes iconic bridge between Pavithra Sangamam and N10 Road, Amaravati, Andhra Pradesh	6 July 2019-31 December 2020	4.72
94	IC1920CE279 NCCIO05034	Alagusundara- moorthy P	NCC Limited	Analyzing and testing elastomeric bearing pads for bridge applications	27 June-31 December 2019	2.51
95	RB1920CE270 NLCI008251	Shiva Nagendra S. M.; Co-PI: Srirama Srini- vas-008331,EE	NLC India Limited	Development of mobile EV based - real time air quality monitoring and modelling for NLCIL	26 June 2019-25 June 2022	368.82
96	IC1920CE407 KRIE008111	Apparao G.	M/s Krishi Infratech	Vetting of struc- tural designs and drawings of two- lane ROB	1 Au- gust-31 October 2019	5.49
97	IC1920CE404 GEOR008111	Apparao G.	M/s. Geostructural Private Limited	Proof checking of designs and draw- ings of multi-sto- reyed building, Arya Bhangy Rhine- stone Apartment Project	1 Au- gust-30 November 2019	5.02

98	IC1920CE412 RCCP002777	Boominathan A.	Ramalingam Construction Company (P) Limited	Construction of three high-rise (S+19 floors) buildings for TNHB at Todhunter Nagar site (Chennai) - geotechnical investigation	14 August 2019-31 March 2020	9.44
99	IC1920CE377 VASA008321	Rupen Goswami; Co-PI: Amalan K. Sengupta-008101, CE	Vastunidhi	Proof checking of buildings in residential zone of permanent campus of IIT Palakkad	26 July 2019-31 July 2020	16.12
100	IC1920CE392 EPMC005002	Sathish Kumar S. R.	Engineering Project Management Consultancy and Research Private Limited	Proof checking of RCC wall design and drawings for TNCSC Godowns at Kovilpathu, Nagapattinam	2 August 2019-2 March 2020	11.8
101	IC1920CE391 LTCW008478	Subhadeep Banerjee; Co-PI: Boominathan A-002777, CE	Larsen & Toubro Limited Construction Water and Effluent Treatment IC	Analysis of deep excavation for Greater Colombo Waste Water Project	2 August 2019-31 August 2020	5.9
102	IC1920CE402 URCC002776	Meher Prasad A.	URC Construction Private Limited	Proof checking for design and construction of four-lane grade separator of an approximate length 1 km and 2 nos. road over bridges (ROB) over the existing railway line, Vehicular Under Pass (VUP) and road bridge across NH 44	1 August 2019-29 January 2020	16.28
103	IC1920CE410 CETP005036	Ligy Philip	Green Kalingarayan Common Effluent Treatment Plant private Limited	Detailed project report for ZLD for Green Kalingarayan Common Effluent Treatment Plant Private Limited	5 August 2019-4 February 2020	5.9
104	IC1920CE413 TIBP008671	Mathava Kumar S.	Ticel Bio Park Limited	Evaluation of the performance of STP and ETP in TICEL Bio Park Limited, Chennai	7 August 2019-7 February 2020	2.48

105	IC1920CE416 MPEZ008169	Nageswara Rao B.	Madras Export Processing Zone	Assessment of the structural strength of the building for the proposed construction of additional floor, viz 3rd floor in the Administrative Building of M/s Madras Export Processing Zone (MPEZ) at Tambaram, Chennai	2 August 2019-31 July 2020	4.5
106	IC1920CE42 OUTRA005003	Devdas Menon	Utracon Structural Systems Private Limited	Proof checking of post-tensioned design and details for bio gas plant at Chandigarh	13 August 2019-31 July 2020	11.8
107	IC1920CE419 AHPL008169	Nageswara Rao B.	Anjali Hotels Private Limited	Proof checking and vetting of design and drawing of food plaza at Chennai Railway Station (MMC)	1 August 2019-31 July 2020	3.54
108	IC1920CE429 KRFB008169	Nageswara Rao B.	Kerala Road Fund Board	Inspection of the project and verification of the structural design and carrying out if any additional tests required for ensuring the structural stability of Six Lane Flyover at Vyttila (Km 348/380 of NH47)	13 August 2019-12 August 2020	12.98
109	IC1920CE432 AACL008111	Apparao G	AECOM Asia Company Limited	Verification of safety of elastomeric bearings, testing, site visit and recommendations	1 August-31 December 2019	5.9
110	IC1920CE433 SCET005036	Ligy Philip	Suriyampalayam Common Effluent Treatment Plant Private Limited	Detailed project report for ZLD for Suriyampalayam CETP	9 August 2019-8 February 2020	5.9
111	IC1920CE434 VILL005036	Ligy Philip	Villarasampatti Common Effluent Treatment Plant	Detailed project report for ZLD for Villarasampatti CETP	8 August 2019-7 February 2020	5.9
112	IC1920CE439 MICL002786	Mohan S.	Micro Labs Limited	Environmental audit	1 August 2019-30 April 2020	9.44

113	IC1920CE447 SIEY005002	Sathish Kumar S. R.	Sieyuan Electric (India) Private Limited	Proof checking of PEB for GIS factory at Sri City	21 August 2019-31 March 2020	2.36
114	IC1920CE448 ROAS008169	Nageswara Rao B.	Roads and Bridges Development Corporation of Kerala Limited	Inspection of the project and verification of the structural design and carrying out if any additional tests required for ensuring the structural stability of Kundan-noor Flyover	13 August 2019-12 August 2020	10.62
115	IC1920CE449 SSIP005002	Sathish Kumar S. R.	Smith Structures India Private Limited	Proof checking of PEB for Hamilton Housewares at Sri City	20 August 2019-31 March 2020	6
116	IC1920CE453 LLPX002776	Meher Prasad A.	Lansum Properties LLP	Proof checking of Lansum Square MVP Colony, Vizag	19 August 2019-18 August 2020	17.47
117	RB1920CE428 RRIC008347	Dali Naidu Arnepalli	RR Infra Construction	Design and proof checking of RE walls for construction of flyover at Kandanampatti Junction, Tiruchengode Ariyanur Road, Eddapady Road	13 August 2019-13 August 2020	4.72
118	RB1920CE456 SOUT008588	Benny Raphael; Co-PI: Rupen Goswami-008321, CE Arun Menon-008405, CE; Radhakrishna G. Pillai-008459, CE	Southern Railways	Condition assessment of railway bridges	26 August 2019-25 August 2021	69.33
119	RB1920CE455 GTFL008347	Dali Naidu Arnepalli	Garware Technical Fibres Limited	Design of phosphogypsum stack at Greenstar Limited (SPIC)-Tuticorin	1 August 2019-24 May 2020	2.36
120	RB-1920CE465ND- MA008344	Raghukanth S. T. G.	National Disaster Management Authority	Probabilistic seismic hazard map of India	16 August 2019-16 August 2020	12.3

121	IC1920CE472 LTCW008554	Venu Chandra; Co-PI: Indumathi Manivannan Nambi-008204, CE	Proof checking and approval of network design and drawing for Ranchi Smart City, Jharkhand	Larsen & Toubro Limited Construction Water and Effluent Treatment IC	1 September 2019-31 December 2020	5.9
122	IC1920CE539 BHEL008478	Subhadeep Banerjee; Co-PI: Boominathan A-002777, CE	Design and assessment of ground improvement in the coal stock pile area for 2x660mw TANGEDCO, Ennore STPP	Bharat Heavy Electricals Limited - Industrial Systems Group	25 September 2019-1 October 2020	9.44
123	IC1920CE534 SIOT008111	Apparao G.	Structural stability certification for wagon loading system for modification of rail siding at SIOTL Site, Kamarajar Port	Sical Iron Ore Terminals Limited	7 September 2019-31 December 2019	4.13
124	IC1920CE540 BRIG005003	Devdas Menon	Preparation feasibility report and detailed project report (DPR) for widening of bridge across Cooum at Arunachalam Road	Bridges Department	25 September 2019-31 March 2020	3.3
125	RB1920CE535 PCPR008347	Dali Naidu Arnepalli	Design and proof checking of RE walls for construction of grade separator at the intersection of Mount -Medavakkam Road and Pallavararam-Thuraipakkam Road near Kilkattalai	P&C Projects Private Limited	19 September 2019-18 September 2020	4.72
126	IC1920CE536 APCP005002	Sathish Kumar S. R.	Proof checking of shed for TPI Composites at Aarush Logistic Park Chennai	Arch Project Consultants Private limited	24 September 2019-24 March 2020	20
127	IC1920CE537 SSIC002776	Meher Prasad A.	Proof checking of structural designs for BEL factory at Machilipatnam	SS Infrastructure Development Consultants Limited	25 September 2019-20 September 2020	5.9
128	IC1920CE538 EPMC008321	Rupen Goswami	Peer review of structural design of depot and station buildings of MLRT	Engineering Project Management Consultancy and Research Private Limited	10 September 2019-30 April 2020	5.9

129	IC1920CE511 KETP005036	Ligy Philip	Detailed project report for ZLD for proposed textile Common Reject Management Systems Private Limited (CRMS)	Kadayampatti Common Effluent Treatment Plant (Bhavani) Private Limited	13 September 2019-12 March 2020	4.72
130	IC1920CE512 KETP005036	Ligy Philip	Detailed project report for ZLD for proposed Kadayampatti CETP	Kadayampatti Common Effluent Treatment Plant (Bhavani) Private Limited	13 September 2019-12 March 2020	4.72
131	IC1920CE522 VOYA005002	Sathish Kumar S. R.	Proof checking of structural design and drawing of wall and construction sequence for Central Square Building	Voyants Solutions Private Limited	18 September 2019-18 March 2020	14.16
132	IC1920CE481 PSTE005034	Alagusundaramoorthy P.	Review of the analysis and design of B2 and C types multi-storeyed buildings for Tamil Nadu Housing Board	PST Engineering Construction	2 September 2019-31 August 2020	11.17
133	IC1920CE504 TWML002786	Mohan S.	Environmental Audit for Biomedical Waste Facility	Tamil Nadu Waste Management Limited	10 September 2019-30 August 2020	5.9
134	IC1920CE575 KRIE008111	Apparao G.	Proof checking of design of four-lane RoB at railway chainage Km. 44/679 between Putalapattu and RVS Nagar station in AP	M/s Krishi Infratech	1 October 2019-31 March 2020	6.49
135	IC1920CE599 ZAMI005002	Sathish Kumar S. R.	Proof checking of structural design of PEBs	Zamil Steel Buildings India Private Limited	17 October 2019-17 April 2020	14
136	IC1920CE595 CPWD008169	Nageswara Rao B.	Third part quality assurance of construction of additional office building in the existing GPOA and GPRA campus at Shastri Bhavan, Chennai	CPWD Madras Central Division I	1 October 2019-30 September 2021	18.18
137	IC1920CE554 LTCW008554	Venu Chandra	Vetting and approval of mechanical drawings and documents pertaining to Jharsuguda RWSS, Odisha	L&T Construction Water and Effluent Treatment IC	1 October 2019-31 December 2020	4.13

138	IC1920CE568 TPIN002776	Meher Prasad A.	Proof checking of residential buildings for Coimbatore and Trichy Airport	Teemage Builders Private Limited	1 October 2019-31 March 2020	8.33
139	IC1920CE570 RVNL005003	Devdas Menon	Proof checking of bridge No.357 Sub-structure 1 No, FOB Substructure 1 No, RCC Box Structure 2 Nos	Rail Vikas Nigam Limited	4 October 2019-31 March 2020	4.01
140	IC1920CE573 SKAC005034	Alagusundaramoorthy P.	Review of the analysis and design of multi-storeyed residential flats at Chennai for Tamil Nadu Housing Board	S. Kadirvel and Company	1 October 2019-30 September 2020	6.66
141	IC1920CE581 BCDB005003	Devdas Menon	Proof checking of structural design and drawings for the construction of 100-bedded hospital, 32 nos quarters, canteen and mortuary for ESIC at Raigarh	Bilaspur Central Division	3 October 2019-31 December 2020	6.89
142	IC1920CE597 MERX002786	Mohan S.	Adequacy check of effluent treatment plant at Ernakulam Dairy industry	Milma Ernakulam Regional Co-operative Milk Producers Union Limited	17 October 2019-31 March 2020	2.95
143	IC1920CE604 AHLX005002	Sathish Kumar S. R.	Design validation of main building structures	Ashiana Housing Limited	22 October 2019-22 April 2020	4.5
144	IC1920CE566 BRIG008436	Arul Jayachandran S.; Co-PI: Devdas Menon-005003, CE	Proof checking of design and drawings for the construction bridge over the Virugambakkam Canal from Natesan Nagar Kaliyammann Koil Street	Bridges Department	3 October-1 November 2019	17.61
145	IC1920CE567 BRIG008436	Arul Jayachandran S.	Design of a skywalk from Mambalam Station to T. Nagar Bus Stand for Chennai Corporation	Bridges Department	3-16 October 2019	5.02
146	RB1920CE552 KTDF005034	Alagusundaramoorthy P.	Condition assessment and repair and rehabilitation of KSRTC Bus Terminal Complex at Kozhikode	Kerala Transport Development Finance Corporation Limited	1 October 2019-30 September 2020	39.88

147	RB1920CE565 SOUT008237	Saravanan U; Co-PI: Arul Jayachandran S-008436,CE	Continuous health monitoring of the Scherzer span of the Pamban Bridge	Southern Railways	4 October 2019-31 March 2022	215
148	RB1920CE606 VRTC008175	Murali Krishnan J.	selection of optimal aggregate gradation for Indian highways	V. R. Techniche Consultants Private Limited	1 Novem- ber 2019- 30 June 2020	7.08
149	RC1920CE558 AAIX008432	Gitakrishnan Ramadurai	Traffic circulation plan for Chennai Airport	Airports Authority of India	1-31 October 2019	0.77
150	IC1920CE627 HLLL008169	Nageswara Rao B.	Proof checking of the proposed Construc- tion of Government Medical College, Kottayam, Kerala	HLL Infra Tech Ser- vices Limited	1 No- vember 2019-30 Septem- ber 2020	16.08
151	IC1920CE625 CALX008436	Arul Jayachan- dran S.	Evaluation of up- rights as per EN 15512	Craftsman Automa- tion Limited	29 Oc- tober-8 November 2019	2.83
152	IC1920CE689 MRFL008190	Ravindra Gettu	Fibre reinforced floor design	MRF Limited	1 De- cember 2019-29 February 2020	3.54
153	IC1920CE670 CEWC008111	Apparao G.	Design of godowns at Central Warehouse, Port Blair	Central Warehous- ing Corporation	1 Novem- ber 2019- 30 April 2020	7.08
154	IC1920CE694 GARR008310	Balaji Narasim- han	Vetting of storm wa- ter drainage design of Kochi Naval Base	Garrison Engineer (P) NW	1 De- cember 2019-30 November 2020	4
155	RB1920CE695 APPC008930	Venkatraman Srinivasan; Co-PI: Murty B. S.-005017, CE; Ligy Phil- ip-005036, CE	Study to conclusively establish the source of groundwater contamination in the wells surrounding the tailing pond of Uranium Corporation of India Limited, Tummalapalle, YSR (Kadapa) district, Andhra Pradesh	Andhra Pradesh Pollution Control Board	16 No- vember 2019-15 November 2020	61.4
156	IC1920CE690 TPIN002776	Meher Prasad A.	Proof checking for extension part of NIEPMD, Chennai project	Teemage Builders Private Limited	22 No- vember 2019-31 May 2020	2.62

157	IC1920CE682 IMBP005002	Sathish Kumar S. R.	Proof checking of PEB for M/s Steel Shoppe India Private Limited	Intertouch Metal Buildings Private Limited	21 No- vember 2019-20 May 2020	3
158	IC1920CE683 STRTO02804	Rajagopal K.	Recommendations for the design and construction of geo- synthetic reinforced soil retaining walls	Strata Geosys- tems India Private Limited	1 No- vember 2019-30 Septem- ber 2020	7.67
159	RC1920CE643 GIMI005036	Ligy Philip	Consulting Services Agreement with M/s: Greenenvironment In- novation & Marketing India (P) Limited	Greenenvironment Innovation and Marketing India Private Limited	1 October 2019-30 Septem- ber 2022	21.24
160	IC1920CE645 OCPX008169	Nageswara Rao B.	Vetting of structural design of Cyberspace IT Park project at Alathur Road, Guindy	Olympia Cyber- space Private Limit- ed	1 No- vember 2019-13 October 2020	35.4
161	IC1920CE628 LNTX005003	Devdas Menon	Proof checking for major bridge DMTC 40 and 217	L&T Limited	1 No- vember 2019-31 December 2020	2.36
162	IC1920CE623 ACET008204	Indumathi Manivannan Nambi	Modification towards achieving zero liquid discharge	Andipalayam Common Effluent Treatment Plant Private Limited	15 Octo- ber-14 November 2019	5.9
163	IC1920CE650 SPSC008111	Apparao G.	Fatigue testing of 15.2mm diameter HT Strands	S. P. Singla Con- structions Private Limited	4 Novem- ber 2019- 31 March 2020	7.43
164	IC1920CE651 AADIO05002	Sathish Kumar S. R.	Proof checking of building designs for NITK Surathkal	Arkie Atelier Design India (P) Limited	1 Novem- ber 2019- 1 May 2020	7.08
165	IC1920CE657 KSNT008436	Arul Jayachan- dran S.	Design vetting of three sheds designed by M/s KSN ventures for Reliance, Mukut- ban	KSN Tech Ventures Private Limited	15-29 November 2019	8.44
166	IC1920CE649 KRIE002804	Rajagopal K.	Consultancy services for construction of geosynthetic rein- forced soil walls for RoB approach roads	Krishi Infratech	1 No- vember 2019-29 October 2020	17.7
167	IC1920CE666 IBPP008436	Arul Jayachan- dran S.	Design vetting of PEBs designed by M/s Interarch Building Products (P) Limited for M/s ONGC	Interarch Building Products Private Limited	11 No- vember-6 December 2019	10.92

168	IC1920CE667 KIRB008436	Arul Jayachandran S.	Vetting the design of buildings HY-05656A1 and HW-05140A1 for M/s. Instakart Services Private Limited by Ms Kirby Building Systems	Kirby Building Systems and Structures India Private Limited	11-30 November 2019	17.55
169	IC1920CE792 TSCB002777	Boominathan A.	Geotechnical investigation at Vembuliamman Koil Street and M.S. Nagar (Egmore) for reconstruction of slum tenements	Tamil Nadu Slum Clearance Board	7 December 2019-31 December 2020	26.55
170	IC1920CE771 HQPS002776	Meher Prasad A.; Co-PI: Prakash Maiya M-002570, ME; Krishna Vasudevan-005016, EE; Subhadeep Banerjee-008478, CE	Third-party review and design vetting of Project Seabird Phase IIA DC-NAD Package	HQ Project Seabird	10 December 2019-31 December 2020	29.94
171	IC1920CE763 GARR008169	Nageswara Rao B.	Structural integrity/soundness of the various buildings of the residential quarters at NAD, Sunabeda	Garrison Engineer [P] (N) Military Engineer Services	1-31 December 2019	9.44
172	IC1920CE764 TCAS008169	Nageswara Rao B.	Condition assessment of the reinforced concrete (RC) structural elements of the terrace (Wing Beam) and Gallery (Seating Area) at the pavilion end of M. A. Chidambaram Stadium	Tamil Nadu Cricket Association	5 December 2019-4 December 2020	4.13
173	IC1920CE713 DLFD008436	Arul Jayachandran S.	Structural vetting provision of stability certificate of block - 12 DLF - IT/ITES, SEZ Manapakkam, Chennai	DLF Limited	10-31 December 2019	8.4
174	IC1920CE761 LNTL002776	Meher Prasad A.	Proof checking of structural design/drawings for Nextra Data datacenter Chennai, Siruseri	Larsen & Toubro Limited	6 December 2019-30 November 2020	11.16
175	IC1920CE776 INKL008436	Arul Jayachandran S.	Proof Checking - Bridge Design in Trivandrum Medical College Project	INKEL Limited	12-31 December 2019	5.5

176	IC1920CE807 DCPL008169	Nageswara Rao B.	Proof checking and vetting of structural design calculations and drawings of sheds having PEB roofs, including foundation for IOCL LPG Bottling Plants at Korba, Sitarganj, Khurda and Kharagpur	Development Consultants Private Limited	1 December 2019-30 November 2020	12.98
177	IC1920CE819 JCEP005034	Alagusundaramoorthy P.	Review of Civil/ Structural Design and Drawings for the proposed Axle Shop for COFMOW in RWF Bangalore	JTP Consulting Engineers Private Limited	1 December 2019-31 October 2020	5.31
178	IC1920CE775 MACA002804	Rajagopal K.	Recommendation of Interface Properties between paralink and different types of soils and gabions	Maccaferri Environmental Solutions Private Limited	1 December 2019-2 October 2020	5.9
179	IC1920CE765 CMKP005034	Alagusundaramoorthy P.	Review of the analysis and design and vet the drawings of flats at Todhunter Nagar for TNHB	CMK Projects Private Limited	1 December 2019-31 December 2020	13.73
180	IC1920CE766 SKIL005034	Alagusundaramoorthy P.	Review of the structural design and drawing of composite girders of 40m span and 30m span	Skilled Construction Company Limited	1 December 2019-31 December 2020	8.26
181	IC1920CE767 KVJS005034	Alagusundaramoorthy P.	Condition assessment and repairing of microconcrete flooring on existing Ernakulam wharf	K.V. Joseph and Sons Private Limited	1 December 2019-31 December 2020	5.27
182	IC1920CE758 EPEP005034	Alagusundaramoorthy P.	Review of the structural design calculations and vet the drawings of 36MLD and 20MLD capacity STPs and 196 MLD capacity WTP for Tiruppur Municipal Corporation Tamil Nadu	Eco Protection Engineers Private limited	1 December 2019-31 December 2020	15.93
183	IC1920CE702 KELLO08160	Robinson R G; Co-PI: Subhadeep Banerjee-008478, CE	Proof checking of ground improvement works for IOCL projects at Paradip	Keller Ground Engineering India Private Limited	9 December 2019-31 December 2020	3.54

184	IC1920CE809 BPCL005034	Alagusundaramoorthy P.	Modification of Overhead Railway Bridge No. 6 of Cryogenic Pipeline at BPCL in Uran at Mumbai	Bharat Petroleum Corporation Limited	1 December 2019-31 October 2020	8.97
185	IC1920CE813 MARA002777	Boominathan A; Co-PI: Subhadeep Banerjee-008478, CE	Monitoring of ground vibrations during demolition of high rise buildings - Maradu, Ernakulam, Kerala	Maradu Municipality	27 December 2019-27 May 2020	16.52
186	IC1920CE793 CERA008111	Apparao G.	Characterisation of high strength CERA Grout 40G	Cera Chem Private Limited	1 December 2019-30 June 2020	4.84
187	IC1920CE927 RAIL008169	Nageswara Rao B.	Rail Vikas Nigam Limited	Proof checking and vetting of structural design of RCC box of minor bridge, design of foundation of FoB and design of RCC/Face/Return wall	23 January 2020-22 January 2021	3.54
188	IC1920CE868 SCRX008169	Nageswara Rao B.	South Central Railway	Checking and vetting of design and drawings of foundations and substructure of important bridge across Vasishta river (19×76.20 m Open Web Girder)	12 December 2019-11 December 2020	4.48
189	IC1920CE873 PWX008436	Arul Jayachandran S.	Public Works Department	On-site stability checking of Anai-karai bridge	8-31 January 2020	6.1
190	IC1920CE854 HIGD008169	Nageswara Rao B.	Highways Department	Condition Assessment of the Mayor Muthu Bridge (km 443/8 - 444/2) on NH-7 of the Madurai (Highways) C & M Division, Madurai	2 January 2020-1 January 2021	11.8
191	RB1920CE826 HPCL008175	Murali Krishnan J.	Hindustan Petroleum Corporation Limited	Laboratory evaluation of rutting and fatigue response of sulfur modified bituminous mixtures	6 January 2020-4 January 2021	15.34

192	IC1920CE858T AMU005003	Devdas Menon	Tamil Nadu Road Development Company Limited	TNRDC - Development of comprehensive integrated traffic infrastructure at TIDEL Park Junction including U-shaped flyovers at TIDEL Park Junction and Indira Nagar Junction in Rajiv Gandhi Salai -proof checking of structural design	10 January-31 July 2020	9.91
193	IC1920CE849 MRDL008169	Nageswara Rao B.	Mahindra Residential Developers Limited	Structural stability of C7, C8 and C9 Tower Blocks (Stilt+8 floors) of Aqualily Project at Mahindra World City	1 January-31 December 2020	14.75
194	IC1920CE850 LTCW005034	Alagusundaramoorthy P.	Larsen & Toubro Limited Construction Water and Effluent Treatment IC	Byarma multi-village rural water supply scheme, Damoh district, Madhya Pradesh	1 January-31 December 2020	6.79
195	IC1920CE851 LTCW005034	Alagusundaramoorthy P.	Larsen & Toubro Limited Construction Water and Effluent Treatment IC	Review of the analysis vetting and approval of civil engineering design and drawings for Buxwaha multi-villages rural water supply scheme, Madhya Pradesh	1 January-31 December 2020	7.97
196	IC1920CE852 LTCW005034	Alagusundaramoorthy P.	Larsen & Toubro Limited Construction Water and Effluent Treatment IC	Review of the analysis vetting and approval of designs and drawings of Mohanpura Multi Village Rural Water Supply Scheme	1 January-31 December 2020	5.33
197	RB1920CE844 TATC002776	Meher Prasad A.; Co-PI: Nageswara Rao B-008169, CE; Subhadeep Banerjee-008478, CE	Tata Consultancy Service Limited	Centre for Finite Element Analysis and Design (CFEAD)	1 January-31 December 2020	17.7
198	IC1920CE835 PEIL005002	Sathish Kumar S. R.	Pennar Industries Limited	Proof checking of PEB Designs for Wipro, DLM and Chettinad	1 January-5 May 2020	12.42

199	IC1920CE922 LTCW008554	Venu Chandra	L&T Construction, Water and Effluent Treatment IC	Augmentation and Strengthening of Dhanbad Urban Wa- ter Supply Scheme Phase-II under Dhanbad Munic- ipal Corporation, Jharkhand	20 Janu- ary 2020- 31 May 2021	4.13
200	IC1920CE865 NACO008169	Nageswara Rao B.	Nagesh Consultants	Design vetting of flyover (at Chain- age 2+200) as part of Tuticorin to Tirunelveli section from km 0/0 to km 47/250 of NH-138 (Erstwhile NH-7A) in the state of Tamil Nadu under Tutic- orin PIU	1 Janu- ary-31 December 2020	3.54
201	IC1920CE939 LNTL008344	Raghukanth S. T. G.	Larsen & Toubro Limited	Site-specific spectra for Dhu- bri-Phulbari site in Assam	28 January 2020-28 January 2021	5.9
202	IC1920CE930 AECPO05034	Alagusundara- moorthy P.	Aadriks Engineering and Consultants Private Limited	Review of the anal- ysis and design of Multipurpose Hall at Kudankulam	20 Janu- ary-31 December 2020	2.66
203	IC1920CE863 KPRC008111	Apparao G.	K.P.R. Construction	Proof checking of structural designs and detailing of 4 lane ROB at km 84/04-05 between Akiveedu and Palle- vada stations in AP	9 Janu- ary-31 March 2020	8.26
204	IC1920CE864 ECET005036	Ligy Philip	Erode Common Efflu- ent Treatment Plant Private Limited	Detailed project report for ZLD for proposed CETP for RO reject in Erode	10 Janu- ary-9 July 2020	5.9
205	IC1920CE876 ESCP008436	Arul Jayachan- dran S.	Eversendai Construc- tion Private Limited	Field testing of pro- filed deck sheet	6-25 January 2020	4.72
206	RB1920CE838 ARPL008105	Dodagoudar G. R.	Amara Raja Infra Private Limited	Seismic site char- acterization and development of site spectra for new CATF building site at ISITE Campus Maratha Halli for ISRO Bangalore	23 De- cember 2019-22 December 2023	11.8

207	IC1920CE848 ARPL002776	Meher Prasad A.	Amara Raja Infra Private Limited	Combined raft foundation system and RCC pedestals for supporting reflectors, DUT positioner and feed positioner inside the new CATF facility	10 January 2020-10 January 2021	8.85
208	IC1920CE859 EGCL008436	Arul Jayachan- dran S.	Expo Gas Containers Limited	Proof checking the design of tanks fire walls at IOCL Ah- medabad Terminal	8-31 January 2020	4.37
209	RB1920CE860 KREA008566	Soumendra Nath Kuiry; Co-PI: Balaji Narasim- han-008310, CE	Krea University	Hydrological study to analyse the vul- nerability of flood- ing at the proposed Krea University site, AP	15 Jan- uary-14 April 2020	10
210	IC1920CE862 MWCD005002	Sathish Kumar S. R.	Megawide Construc- tion DMCC	Structural design certification for Mopa Airport Goa	14 Jan- uary-31 December 2020	13.22
211	IC1920CE1031 INDR002777	Boominathan A.	Indian Railways	Suitability of soil for railway earth- work and blanket	11 Feb- ruary-11 April 2020	9.62
212	IC1920CE1010 TSCB002777	Boominathan A.	Tamil Nadu Slum Clearance Board	Construction of multi-storeyed slum tenements at Perumbakkam and Semmanchery schemes - soil investigation	1 February 2020-2 February 2021	65.2
213	IC1920CE963 TSCB002777	Boominathan A.	Tamil Nadu Slum Clearance Board	Reconstruction of slum tenements in Gandhi Nagar in Corporation Dn. No.96: Soil investi- gation	27 Janu- ary 2020- 31 March 2021	21.24
214	IC1920CE966 CCED002776	Meher Prasad A.	Chief Construction Engineer (R&D) Delhi	Third-party approval of struc- tural designs and drawings for the Nau Sena Bhawan in New Delhi near Rajaji Marg	30 Jan- uary-31 December 2020	16.82

215	IC1920CE999 LTCW005034	Alagusundaramoorthy P.	L&T Construction, Water and Effluent Treatment IC	Review of the analysis and design of structures of individual rural piped water supply project pertaining to Kendrapeda, Jharsuguda and Angul districts in Odisha state	1 February 2020-31 January 2021	10.62
216	IC1920CE1000 LTCW005034	Alagusundaramoorthy P.	L&T Construction, Water and Effluent Treatment IC	Review of the analysis and design of structures for individual rural piped water supply project pertaining to Cuttack and Jagatsinghpur districts in Odisha state	1 February 2020-4 January 2021	11.06
217	IC1920CE1001 LTCW005034	Alagusundaramoorthy P.	L&T Construction, Water and Effluent Treatment IC	Review of the analysis and design of structures for rural piped water supply project pertaining to Nuapada district in Odisha state	1 February 2020-3 February 2021	12.98
218	IC1920CE1018 LTCW005034	Alagusundaramoorthy P.	L&T Construction, Water and Effluent Treatment IC	Review of the design of RCC delivery chambers DC01A and DC01B for Kundalia Irrigation Project Left Bank	1 January 2020-31 January 2021	5.31
219	IC1920CE1019 LTCW005034	Alagusundaramoorthy P.	L&T Construction, Water and Effluent Treatment IC	Review of the analysis and design of irrigation structures for ISP Kalisindh Phase I micro lift irrigation project	1 January 2020-31 January 2021	14.75
220	IC1920CE1020 LTCW005034	Alagusundaramoorthy P.	L&T Construction, Water and Effluent Treatment IC	Review of the analysis and design and vet the drawings of RCC delivery chambers DC02 A and 02 B for Kundalia Irrigation Project - Right Bank	2 February 2020-3 February 2021	16.82

221	IC1920CE1021 LTCW005034	Alagusundaramoorthy P.	L&T Construction, Water and Effluent Treatment IC	Review of the analysis and design of structures for the Payli Multi Village Rural Water Supply Scheme in district Jabalpur, Narsinghpur and Seoni	6 February 2020-28 February 2021	12.39
222	IC1920CE1022 LTCW005034	Alagusundaramoorthy P.	L&T Construction, Water and Effluent Treatment IC	Review of the analysis and design of structures for two numbers of individual rural piped water supply projects pertaining to Mayurbhanj district, Odisha	10 February 2020-28 February 2021	11.95
223	IC1920CE984 LTCW005034	Alagusundaramoorthy P.	L&T Construction, Water and Effluent Treatment IC	Review of the analysis and design of structures of Kundaliya Multi Village Water Supply Scheme in Rajgarh district, Madhya Pradesh	1 January 2020-31 January 2021	7.2
224	IC1920CE985 LTCW005034	Alagusundaramoorthy P.	L&T Construction, Water and Effluent Treatment IC	Review of the analysis and design of structures for Satna-Bansagar Multi Village Rural Water Supply Scheme in Madhya Pradesh	1 January 2020-31 January 2021	17.68
225	IC1920CE986 LTCW005034	Alagusundaramoorthy P.	L&T Construction, Water and Effluent Treatment IC	Review of the analysis and design of structures for the rural water supply projects pertaining to Keonjhar District in Odisha	10 February 2020-09 February 2021	10.77
226	IC1920CE1025 AIRP008335	Thyagaraj T; Co-PI: Subhadeep Banerjee-008478, CE	Airports Authority Of India	Ground improvement for the new apron with link taxiways at VSI Airport, Port Blair	3 February-31 August 2020	2.95
227	IC1920CE981 LNTL005003	Devdas Menon	Larsen & Toubro Limited	Design qualification tests for PSC track sleepers (RD-SO/T-7008)	4 February-31 August 2020	12.3
228	IC1920CE1035 TIRS005036	Ligy Philip	Tirunelveli Smart City Limited	Tirunelveli City Municipal Corporation, Construction of Sewage Treatment Plant	24 January-23 July 2020	3.47

229	IC1920CE1036 CIAS005036	Ligy Philip	Chemical Industries Association	Characterization of the surface water sludge and feeders to the water bodies in and around Ranipet Industrial Area	20 February 2020-19 February 2021	14.44
230	IC1920CE948 BGRE008169	Nageswara Rao B.	BGR Energy Systems Limited	Condition assessment of TG columns, NDCT raker columns and RC piers of the cooling water PH	10 January 2020-9 January 2021	11.8
231	IC1920CE950 TRED008169	Nageswara Rao B.	Trif Real Estate and Development Limited	Building vibration analysis of Trilium Mall, Nagpur	27 January 2020-26 January 2021	2.95
232	IC1920CE951 KITC005003	Devdas Menon	M/s Kitco Limited	Proof checking of construction of G V Raja Centre of Excellence, Menamkulam, Trivandrum	29 January-31 July 2020	5.9
233	IC1920CE949 VNCP002776	Meher Prasad A.	Vijay Nirman Company Private Limited	Proof checking of construction of a composite-Level Grade separators with architectural fixings aesthetics, service roads etc. at Naval Armament Depot (NAD) Junction in Visakhapatnam	29 January-31 July 2020	4.48
234	RB1920CE1050 VIKI008459	Radhakrishna G. Pillai; Co-PI: Lakshman Neelakantan-008516, MM; Venugopal S-V148, MM	Viki Industries Private Limited	Corrosion and mechanical characteristics of galvanized and plasma-coated steel reinforcement	10 February-31 December 2020	10.62
235	IC1920CE1030 TMSP008169	Nageswara Rao B.	Technomedia Solutions Private Limited	Condition assessment of the existing columns and associated structure of Maalaimalar building at Egmore, Chennai to accommodate proposed mezzanine floor and issuance of safety certificate	17 February 2020-16 February 2021	3.25

236	IC1920CE982 KECP008554	Venu Chandra	Kevadiya Construc- tion Private Limited	Begusarai sewerage network and STP project	10 February 2020-31 December 2021	5.9
237	IC1920CE960 WSIP002786	Mohan S.	Water Systems India Private Limited	Adequacy check for the proposed 450 KLD sewage treatment plant	31 Jan- uary-31 October 2020	0.89
238	IC1920CE961 WSIP002786	Mohan S.	Water Systems India Private Limited	Adequacy check for proposed 60 KLD effluent treatment plant	1 Febru- ary-30 Septem- ber 2020	0.89
239	IC1920CE962 TEPL008169	Nageswara Rao B.	Triveni Engicons Private Limited	Proof checking services for major bridge at Ch 0+389 from Kanko Chowk to Binod Bihari Chowk via Shakthi Chowk Road in Dhanbad NCB01 for State High- way Authority of Jharkhand (SHAJ)	29 January 2020-28 January 2021	2.95
240	IC1920CE971 RGPP008941	Phanis- ri Pradeep Pratapa; Co-PI: Radhakrishna G Pillai-008459, CE	Ratnagiri Gas and Power Private Lim- ited	Structural/condi- tion assessment of cooling tower at RGPP	15 Jan- uary-15 June 2020	2.36
241	IC1920CE972 LNTL002776	Meher Prasad A.	Larsen & Toubro Limited	Proof checking of structural design and drawings for development of transit storage yard and materi- al receiving and Dispatch Centre at ONGC, Kakinada, Andhra Pradesh	3 Febru- ary-31 December 2020	16.43
242	IC1920CE973 VGSP005002	Sathish Kumar S. R.	Volta Green Struc- tures Private Limited	Proof checking of PEB design for Mahindra at Pune and Kharagpur	5 Feb- ruary-5 August 2020	15.6

243	IC1920CE979 BAAS008169	Nageswara Rao B.	Baashyaam Constructions Private Limited	Proof checking and vetting of structural design of proposed multi-storied building, The Plutus Residence, Old No 148/New No 32, LB Road, Adyar, Chennai, 600041-18 floors, parking-three basements + stilt	3 February 2020-2 February 2021	9.44
244	IC1920CE980 LNTL008893	Alagappan Ponnalagu	Larsen & Toubro Limited	Underwater shock wave experimental testing	3 February-3 April 2020	7.67
245	IC1920CE994 MEPL008436	Arul Jayachandran S.	Metafold Engineering Private Limited	Development of design data for cold formed steel pallet rack components as per EN15512 EN validation of rack products of M/s Metafold Engineering Private Limited, Pune	10 February-16 March 2020	26.48
246	IC1920CE1058 ACXX008204	Indumathi Manivannan Nambi	Ankita Construction	Performance evaluation study of 15.55MLD, STP at Narasaraopet	1 March-10 July 2020	5.9
247	IC1920CE1103 TSCB005034	Alagusundaramoorthy P; Co-PI: Sathish Kumar S R-005002, CE	Tamil Nadu Slum Clearance Board	Analysis and design and issue of drawings for the construction of super structures and foundation for the project at Reddiarpatti in Palayamkottai taluk, Tamil Nadu	29 January 2020-28 January 2021	53.16
248	IC1920CE1104 TSCB005034	Alagusundaramoorthy P; Co-PI: Sathish Kumar S R-005002, CE	Tamil Nadu Slum Clearance Board	Analysis and design and issue of drawings for the construction of super structures and foundation for the project at for the project at Valam Vadakku Sethi Village in Tanjore district	29 January 2020-28 January 2021	27.91

249	IC1920CE1119 TBSS005002	Sathish Kumar S. R.	Tata Bluescope Steel Private Limited	Proof checking of structural design of PEB for IUP Jindal Metal Alloys at Haryana	14 March-14 Septem- ber 2020	2.95
250	IC1920CE1116 KELL008160	Robinson R G; Co-PI: Sub- hadeep Baner- jee-008478, CE	Keller Ground Engi- neering India Private Limited	Ground Improve- ment Work using vibro stone col- umns for mounts, fire water tanks and other buildings at Cochin LPG Import Terminal	1 April 2020-31 March 2021	14.16
251	CR1920CE1131 SBSP008502	Sachin S. Gunthe	Sharp Business Systems India Private Limited	High altitude air pollution moni- toring - Munnar, Kerala	1 April 2020-30 March 2021	12
252	IC1920CE1115 LNTL002786	Mohan S.	Larsen & Toubro Limited	Surface and sub-surface perme- ability and ground- water recharge assessment study	1 March 2020-28 February 2021	94.4
253	IC1920CE1118 TAMU005003	Devdas Menon	Tamil Nadu Road De- velopment Company Limited	Construction of ele- vated corridor over at CORR Phase-II	13 March-30 Septem- ber 2020	4.44
254	IC1920CE1074 TRIC005003	Devdas Menon	Tamil Nadu Road In- frastructure Develop- ment Corporation	Construction of interchange at KM 47/4 of GST Road	3 March-28 August 2020	19
255	IC1920CE1075 LTCW005034	Alagusundara- moorthy P.	L&T Construction, Water and Effluent Treatment IC	Review of the de- sign of RCC delivery chambers DC02 DC03 for Kundalia Irrigation Project Left Bank	1 March 2020-2 February 2021	3.84
256	IC1920CE1064 LTCW008554	Venu Chandra	L&T Construction Water and Effluent Treatment IC	Vetting and approv- al of mechanical drawings and doc- uments pertaining to Keonjhar RWSS - 03, Odisha	1 March 2020-31 May 2022	9.2
257	IC1920CE1066 LTCW008111	Apparao G.	L&T Construction, Water and Effluent Treatment IC	Proof checking of structural design calculations and drawings for con- struction of sewage pumping station at Saidpur Project in Patna	1 March-31 July 2020	3.95

258	IC1920CE1059 HIGD008347	Dali Naidu Arnepalli	Highways Department	Evaluation of geogrids for construction of RE Wall at ROB, Bypass Road to Thirutani	25 February-25 August 2020	3.54
259	IC1920CE1105 RUBB005034	Alagusundaramoorthy P.	Rubber Board	Condition assessment of Silver Jubilee Memorial Building at Rubber Board Kottayam	11 March-1 December 2020	6.67
260	IC1920CE1111 KANN008111	Apparao G.	Kannur University	Vetting of detailed drawings and design of administrative building at Kannur University	1 March-30 June 2020	3.54
261	IC1920CE1099 KHRI008459	Radhakrishna G Pillai; Co-PI: Manu Santhanam-008100, CE; Ravindra Gettu-008190, CE; Piyush Chansali-008926, CE	Kerala Highway Research Institute	Good practices for construction, maintenance and repair of concrete bridges	10 March-1 October 2020	11.8
262	IC1920CE1072 CRNA002776	Meher Prasad A.	C. R. Narayana Rao Consultants Private Limited	Proof checking of National Payments Corporation of India-construction of Tier IV Captive Data Center (CDC) in Chennai and Hyderabad	18 February 2020-18 February 2021	11.18
263	IC1920CE1073 LNTL002776	Meher Prasad A.	Larsen & Toubro Limited	Third-party proof check of structural design/drawings for the construction of Assam Cancer Care Hospitals at 18 locations in Assam	26 February-31 August 2020	14.16
264	IC1920CE1063 KRIE008111	Apparao G.	M/s Krishi Infratech	Vetting of structural designs and drawings of four lane RoB LC No. 75 between Mulvad and Jumnal Stations on Bijapur-Hubli NH218	3 March-30 June 2020	4.6
265	IC1920CE1076 TPLT008344	Raghukanth S. T. G.	Tata Projects Limited	PSHA analysis of bridge over Brahmaputra river between Dhubri and Phulbari	2 March 2020-2 March 2021	9.44

266	IC1920CE1079 BAAS008169	Nageswara Rao B.	Baashyaam Construc- tions Private Limited	Proof checking and vetting of structural design drawings and doc- uments (including foundations) of proposed residen- tial development at Koyambedu, Chennai	3 March 2020-2 March 2021	79.65
267	IC1920CE1087 LEIP008111	Apparao G.	Lekcon Infrastructure Private Limited	Vetting of designs and drawings of RoB @ Ch. 93+736 along NH-544DD in Kalyandurg-Mo- lakalmuru Section	2 March-30 June 2020	7.08
268	RB1920CE1062 UOEA008276	Ashwin Ma- halingam	University of East Anglia	Urban and peri-ur- ban agriculture as green infrastruc- ture	18 No- vember 2019-17 November 2021	31.19
269	IC1920CE1065 STLC008175	Murali Krishnan J.	Sripath Technologies LLC	Investigations on the use of PGX- pand with bitumen processed in Indian refineries	2 March-31 December 2020	3.59

4.7 Department of Computer Science and Engineering

4.7.1. Introduction

Started as the Computer Centre in 1973, the Department of Computer Science and Engineering was established as a full-fledged department in 1983. The department has 620 students and more than 30 faculty members. About 60 per cent of students are post-graduates, mostly supported by Government of India

scholarships and research projects. The department also offers several attractive industry-sponsored fellowships to outstanding Ph.D. scholars. The vision of the department is global excellence and local relevance in research, teaching and technology development in computer science and engineering.

4.7.2. Academic Programmes

B.Tech., Dual Degree (B.Tech. and M.Tech.), M.Tech., M.S., Ph.D., Dual M.S./Ph.D., Dual M.Tech./Ph.D; Inter-disciplinary Dual Degree in Data Science (B.Tech./M.Tech.)

New courses introduced

Sl. No.	Course No.	Title
1	CS6666	Blockchain and Distributed Ledger Technologies
2	CS8852	Topics in Semantic Web
3	CS7370	Causal Inference
4	CS7020	Advances in Theory of Deep Learning
5	CS6630	Secure Processor Microarchitecture
6	CS6225	Programs and Proofs
7	CS6215	System Modeling and Simulation
8	CS6745	Mining Massive Data Sets
9	CS6748	Elements of Computing Systems
10	CS6890	Database Engineering
11	CS6895	Software Architectures
12	CS6898	Embedded Systems Security
13	CS2130	Probability for Computer Science

Students on roll as of September 2019 +M.S. and Ph.D. admission in January 2020

Programme	Year I	Year II	Year III	Year IV	Year V and Others	Total
B.Tech.	81	71	47	46	8	253
Dual Degree	-	2	15	16	20	53
M.Tech.	93	46	1	1	-	141
M.S.	5	17	22	24	11	79
Ph.D.	8	10	9	11	18+15+14+8+1	94
Total	187	146	94	98	95	620

Student/Scholar who attended conferences/workshops/seminars/symposia abroad/India

Sl. No.	Student/Scholar	Roll No.	Conference/Seminar/Symposia/Workshop	Date and Venue
1	Arkadeep Sen	CS13D207	IFIP/IEEE International Symposium on Integrated Network Management (IM 2019)	8-12 April 2019, Washington DC, USA
2	Madanagopal Ramachandran	CS14D009	IFIP/IEEE International Symposium on Integrated Network Management (IM 2019)	8-12 April 2019, Washington DC, USA
3	Sandeep Kiran Pingala	CS16S001	IEEE 5th World Forum on Internet of Things, Workshop on IoT/CPS	15-18 April 2019, Limerick, Ireland
4	Patanjali SLPSK	CS12D024	DAC 2019	2-6 June 2019, Las Vegas, USA
5	Nauman Dawalatabad	CS14D210	ICASSP 2019	12-17 May 2019, Brighton, UK
6	Manas Thakur	CS13D023	ECOOP 2019	15-19 July 2019, London, UK
7	Arkadeep Sen	CS13D207	IFIP International Conference on Wired & Wireless Internet Communications (IFIP WWIC 2019)	17-19 June 2019, Bologna, Italy
8	Rupam Ojha	CS15S025	IJCNN 2019	14-19 July, 2019, Budapest, Hungary
9	Deepak Maurya	CS17S300	Twenty Fifth ACM SIGKDD Conference on Knowledge Discovery and Data Mining	4-8 August, 2019, Anchorage, Alaska, USA
10	Monosij Maitra	CS15D010	CRYPTO 2019	18-22 August Santa Barbara, USA
11	Gargi Mitra	CS15D303	SIGCOMM 2019	19-24 August 2019, Beijing
12	Sareena K. P.	CS15DD400	The ACM Asia Conference on Computer and Communications Security	7-12 July, Auckland, New Zealand
13	Karthik Pandia	CS14D001	INTERSPEECH 2019	15-19 September 2019, Graz, Austria
14	Anusha Prakash		INTERSPEECH 2019, SSW 10	15-19 September 2019, Graz, Austria, 20-22 September, Vienna, Austria
15	Himanshu Kushwaha	CS17S010	29th Annual IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC)	8-11 September 2019, Istanbul, Turkey
16	Abin Mathew	CS16S038	IEEE PIMRC 2019	8-11 September 2019, Istanbul, Turkey
17	Anix Anbiah	CS15D001	Annual IEEE Conference on Local Computer Networks (LCN)	14-17 October 2019, Osnabruck, Germany

18	Swamy Saranam	CS14D403	ACM Student Research Competition, MICRO	12-16 October 2019, Columbus, Ohio, USA
19	Puneet Saraf	CS16S008	International Symposium on Memory Systems (MemSys)	30 September-3 October 2019, Washington DC, USA
20	Jyothi Vedurada	CS13D201	ASE	12-15 November 2019, San Diego, USA
21	Milind Srivastava and Prasanna Karthik	CS14D010	ICCAD 2019	4-7 November 2019, Colorado, USA
22	Mari Ganesh Kumar	CS15D405	ASRU 2019	14-18 December 2019, Singapore
23	Saptakatha Adak, Sandeep Narayan Parameswaran and Sayanti Bardhan	CS16S015 CS16S037 CS16S036	26th International Conference on Neural Information Processing (ICONIP)	12-15 December 2019, Sydney, Australia,
24	Tarun Kumar	CS15D017	The 8th International Conference on Complex Networks and Their Applications	10-12 December 2019, Lisbon, Portugal
25	Aman Nougrihiya	CS12D023	CC 2020, CGO 2020, PPOPP 2020	21-26 February 2020, San Diego, USA
26	Ujjal Kr. Dutta	CS14D407	AAAI 2020	7-12 February 2020, New York, USA
27	R. Janani	CS17S009	WACV '20	1-5 March 2020, Snowmass Village, USA
28	Hemalatha M.	CS14D007	WACV '20	2-5 March 2020, Snowmass Village, Colorado, USA
29	Nitesh Methani	CS17S008	WACV '20	1-5 March 2020, Snowmass Village, USA
30	Pritha Ganguly	CS17S013	WACV '20	1-5 March Snowmass Village, USA
31	Sareena K.P., Gokulan Ravi, Nihilesh Kumar Singh	CS15D400 CS15B033 CS17D203	Cyber Security Awareness Week	6-7 November 2019, Kanpur
32	Gnanambikai Krishnakumar	CS15D200	SPACE 2019	3-7 December 2019, Gandhinagar
33	Sidharth Aggarwal	CS17S012	NCC 2020	21-23 February 2020, IIT Kharagpur

Students/Scholars who won outside prizes and awards

Sl.No.	Student/Scholar	Roll No.	Prize	Prize Awarded by
1	Teja Vardhan Reddy	CS15B014	41st in ICPC World Finals	Porto
2	Pranav Gavvaji	CS15B015		
3	V. Jyothi Vedurada	CS13D201	Distinguished Reviewer Award for OOPSLA AEC 2019	AEC
4	Sareena K.P., Gokulan Ravi, Nikhilesh Kumar Singh, Milind Srivastava	CS15D400 CS15B033 CS17D203 CS15B052	First Prize Embedded Security Challenge	Cyber Security Week 2019
5	Keerthi K.	CS17D013	Third Prize Applied Research Contest	Cyber Security Week 2019
6	Milind Srivastava	CS15B052	First Prize in Undergraduate category at the ACM Student Research Competition	(SRC) @ICCAD 2019
7	Saptakatha Adak	CS16S015	Best Student Paper Award	International Conference on Neural Information Processing (ICONIP), Sydney, Australia, 12-15 December 2019
8	Janani Ramaswamy	CS17S009	Best Student Paper Award (as first author)	
9	R. Janani and Sukhendu Das	CS17S009	Best Student Paper Award for the paper, See the Sound, Hear the Pixels, Janani Ramaswamy and Sukhendu Das in Winter Conference on Applications of Computer Vision (WACV)	Snowmass Village, Colorado, USA, 2-5 March 2020

Students/Scholars who won Institute Convocation/Institute Day Prize

Sl.No.	Student/Scholar	Roll No.	Prizes
1	Gargi Mitra, Prasanna Karthik Vairam	CS15D303 CS14D010	First place in contest Gandhi-Hazare Award, Reducing Corruption Through Technology, held by the Centre for Social Innovation and Entrepreneurship (CSIE), IITM
2	Saurabh Kalikar	CS14D211	Institute Research Award
3	Manas Thakur	CS13D023	Institute Research Award
4	G. Kavitha	CS15B057	President of India Prize
5	G. Kavitha	CS15B057	Bharat Ratna M. Vishveswarayya Memorial prize for highest CGPA in B.Tech.
6	G. Kavitha	CS15B057	B. Ravichandran memorial prize for highest CGPA in B.Tech. Computer Science and Engineering
7	G. Kavitha	CS15B057	Prof. C. Siva Ram Murthy Best B.Tech. Project Award
8	Vignesh Manoharan	CS14B055	B. Lakshmi Ravi Best Dual Degree Project Award
9	Meghana Sistla	CS14B052	B. Lakshmi Ravi Best Dual Degree Project Award
10	Shubham Patel	CS17M051	Prof. H. N. Mahabala Best M.Tech. Project Award

11	Jaya Ingle	CS17M060	Prof. H. N. Mahabala Best M.Tech. Project Award
12	C. Ramya	CS13D025	IBM Best Ph.D. Thesis Award

4.7.3. Faculty and Their Activities

Faculty

Name and Qualifications	Major Areas of Specialisation
Professors	
Chandra Sekhar C., Ph.D. (IIT Madras) (Head of the Department)	Speech recognition, machine learning, kernel methods, deep learning
Deepak Khemani, Ph.D. (IIT Bombay)	Artificial intelligence, knowledge-based systems, natural language
Gonsalves T.A., Ph.D. (Stanford) (Superannuated in 2019)	Computer networks, distributed systems, NMS, operating systems, performance evaluation, telecom software
Hema A. Murthy, Ph.D. (IIT Madras)	Speech technology, music analysis, pattern recognition, signal processing and machine learning, computational brain research
Janakiram D., Ph.D. (IIT Delhi)	Object-oriented systems, software engineering, parallel and distributed systems, database systems, mobile computing, computing education, computing for developing regions, mobile telemedicine
Kamakoti V., Ph.D. (IIT Madras)	Software for VLSI design, computational geometry, high performance computing
Krishna Moorthy Sivalingam, Ph.D. (SUNY Buffalo)	Wireless networks, optical networks, computer networks
Pandu Rangan C., Ph.D. (IISc, Bengaluru)	Algorithms, parallel and VLSI algorithms, graph theory, computational geometry, randomized algorithms, computational learning theory, crypto-analysis
Siva Ram Murthy C., Ph.D. (IISc, Bengaluru)	Parallel and distributed computing, real-time systems, wireless networks
Sreenivasa Kumar P., Ph.D. (IISc, Bengaluru)	Graph theory, algorithms, parallel computations, data mining and databases
Sukhendu Das, Ph.D. (IIT Kharagpur)	Visual perception, image intelligence, graphics and visualization
Madhu Mutyam, Ph.D. (IIT Madras)	Computer architecture
Narayanaswamy N.S., Ph.D. (IISc, Bengaluru)	Algorithms, complexity theory, artificial intelligence
Anurag Mittal, Ph.D. (University of Maryland)	Computer vision, pattern recognition and image understanding
Ravindran B., Ph.D. (University of Massachusetts, Amherst)	Machine learning, reinforcement learning, network analytics, deep learning
V. Krishna Nandivada, Ph.D. (University of California,	Compilers, program analysis, programming languages, multi-core systems
Associate Professors	
Sutanu Chakraborti, Ph.D. (The Robert Gordon University,	Information retrieval, memory-based reasoning, machine learning

Jayalal Sarma M.N., Ph.D. (Institute of Mathematical Sciences, Chennai)	Computational complexity theory, circuit complexity, algebra and computation
John Augustine, Ph.D.	Distributed algorithms, randomized algorithms
Manikandan Narayanan, Ph.D.	Bioinformatics, computational network biology, systems biology/genomics in health and disease, data science
Rupesh Nasre, Ph.D.	Compilers, parallelization, program analysis
Shweta Agrawal, Ph.D.	Cryptography, information theory
Assistant Professors	
Raghavendra Rao B.V., Ph.D. (Institute of Mathematical Sciences, Chennai)	Computational complexity theory, algebraic complexity, combinatorial commutative algebra, descriptive complexity theory
Meghana Nasre, Ph.D. (IISc, Bengaluru)	Algorithms, graph theory, matching algorithms
Chester Rebeiro, Ph.D. (IIT Kharagpur)	Hardware and system security, side-channel analysis, cryptography, computer architecture, operating systems, VLSI
Mitesh Khapra, Ph.D. (IIT Bombay)	Deep learning, natural language processing, question answering, multimodal multilingual conversation systems
L. A. Prashanth, Ph.D. (IISc Bengaluru)	Reinforcement learning, stochastic optimization, multi-armed bandits
Yadu Vasudev, Ph.D. (Institute of Mathematical Sciences, Chennai)	Algorithms, especially sub-linear algorithms and computational complexity theory
Harish Guruprasad, Ph.D. (IISc Bengaluru)	Machine learning, learning theory and optimisation
Pratyush Kumar, Ph.D. (ETH, Zurich)	Cyber-physical systems, machine learning
K.C. Sivarama Krishnan (Purdue University)	Programming languages, distributed systems, parallel compilers and runtime systems
Arun Rajkumar (IISc Bengaluru)	Machine learning, rank aggregation, statistical learning
Kartik Nagar (IISc Bengaluru)	Automated program verification, program analysis, programming languages

Short-term courses/workshops/seminars/symposia/conferences organised by the faculty members

Sl. No.	Coordinator(s)	Title	Institution	Period
Conferences				
1	B. Ravindran	Introduction to Reinforcement Learning, Keynote Talk, First Indian Process Systems Engineering Conference (IPSE)	IIT Madras	19 August 2019
2	Deepak Khemani	The 2nd Summer School on Representation in Artificial Intelligence	IIT Mandi	6-13 June 2019
Workshops				
1	K. C. Sivaramakrishnan	Introduction to Functional Programming with OCaml	IIT Madras	21 April 2019
2	B. Ravindran, Harish Guruprasad, Mitesh Khapra and Pratyush Kumar	IIT Madras AI Colloquium	IIT Madras	22 April 2019

3	Chester Rebeiro	ACM Summer School on Cyber Security and Data Analytics 2019 with Profs. P. Kumaruguru and A. K. Buduru	IIIT Delhi	8-18 July 2019
4	B. Ravindran, Co-PC Chair	Conference on Advances in Robotics 2019 (with Prof. Asokan, ED)	IIT Madras	2-6 July 2019
5	B. Ravindran	3rd Workshop on Lifelong Learning: A RL Approach, at the 4th RLDM (with six others)	McGill University, Montreal, Canada	10 July 2019
6	B. Ravindran	KDD in India, ACM SIGKDD Conference on Knowledge Discovery and Data Mining (with Manish Gupta, Videoken, Shourya Roy, AmEx)	Anchorage, Alaska, USA	7 August 2019
7	B. Ravindran	Facebook Data for Good (with Facebook)	IIT Madras	24 July 2019
8	B. Ravindran	2nd AI/ML Industrial Conclave	IIT Madras	29 August 2019
9	B. Ravindran	"Why Reinforcement Learning? Keynote Talk, IITMAA-Sangam Hackathon"	IIT Madras	24 August 2019
10	Anurag Mittal	Area Chair for IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2020	IIIT Delhi	8-18 July 2019
11	V. Kamakoti and Chester Rebeiro	Shakti Awareness Week (SAW 2019) and Micro-Architectural Security Workshop (MAST 2019)	IIT Madras	9-11 October 2019
18	B. Ravindran	LatentView RBCDSAI Colloquium	IIT Madras	19 December 2019
19	B. Ravindran	Workshop on Reinforcement Learning for DRDO	DRDO RIC, Chennai	11-16 November 2019
20	B. Ravindran	Naval Officers' training on data science and AI	IIT Madras	18-29 November 2019
21	Shweta Agrawal	Lattices: New Cryptographic Capabilities	Simons Institute, UC Berkeley	23-27 March 2020

Short-term courses/workshops/seminars/symposia/conferences/trainings attended by the faculty members in academic institutions and public sector undertakings

Sl. No.	Faculty Member	Title	Institution	Period
Workshops				
1	Arun Rajkumar	Ranking from Pairwise Comparisons	Tale of the Preference Matrix Data Science in India event as part of KDD 2019, Anchorage, Alaska	7 August 2019
2	Meghana Nasre	Five lectures of 75 minutes each on topics in Matchings, Algorithms, and Strategic Issues	ACM Summer School on Algorithmic Game Theory, NIT Calicut	2-14 July 2019
3	Hema A. Murthy	Variable Top-C and Feature Switching for Speaker Recognition and Replay Attack Detection	DA-IICT, Gandhinagar, S4P Summer Workshop	8 July 2019

4	Hema A. Murthy	Speaker Diarization	DA-IICT, Gandhinagar, S4P Summer Workshop	8 July 2019
5	Chester Rebeiro	Applied Cryptography, National Instructional Workshop on Cryptology 2019	Manipal Institute of Technology, Manipal	8-10 July 2019
6	Prashanth L. A.	Reinforcement Learning, MHRD workshop on AI in Education	IIT Delhi	4 July 2020
7	B. Ravindran	Beyond Rewards, Keynote Talk	Workshop on Scaling-Up Reinforcement Learning (SURL), IJCAI, Macao, China	12 August 2019
Seminar				
1	B. Ravindran	Why the Recent Excitement in AI?	Second Bangalore on IT Seminar, IIIT Bangalore	21 August 2019
Symposium				
1	Hema A. Murthy	Signal Processing and Machine Learning for EEG Signals	NeuroAI Symposium, Bengaluru	4 August 2019
Conferences				
1	Deepak Khemani	Judea Pearl and his Quest for Causality	LNMIIT Jaipur	15 May 2019
2	John Augustine	Distributed Computation in Node-Capacitated Networks	University of Twente	5 June 2019
3	V. Krishna Nandivada	PYE: A Framework for Precise-Yet-Efficient Just-In-Time Analyses for Java Programs	UT Austin	17 May 2019
4	Hema A. Murthy	Signal Processing Guided Machine Learning in Various Domains	Amazon Pittsburgh	22 May 2019
5	Hema A. Murthy	Signal Processing and Machine Learning for EEG Speech Signals	CMU Pittsburgh	23 May 2019
6	C. Chandra Sekhar	Support Vector Machines and Deep Learning Models	National Engineering College, Kovilpatti	1 June 2019
7	Prashanth L. A.	Introduction to Reinforcement Learning	ACM India Summer School on Algorithmic and Theoretical Aspects of Machine Learning, IIIT-B, Bangalore	19-20 June 2019
8	Manikandan Narayanan	Introduction to Bayesian Networks and Causality	The Second Summer School on Representation in Artificial Intelligence, IIT Mandi	6-13 June 2019
9	N.S. Narayanaswamy	Introduction to Graph Theory and Graph Algorithms	ACM India Summer School on Graph Theory and Graph Algorithms, Lectures at NIT Calicut	17 June-7 July 2019

10	B. Ravindran	Beyond Rewards	Department Colloquium, Department of Computer Science, University of Texas, Dallas, via Webex	3 May 2019
11	B. Ravindran	Beyond Rewards	Invited Talk, Institute for Infocomm Research, A-star Institute, Singapore	9 May 2019
12	B. Ravindran	A tutorial on (Deep) Reinforcement Learning	IITM-Purdue Seminar Series, Purdue University, West Lafayette, USA	13 May 2019
13	B. Ravindran	Beyond Rewards	Invited Talk, Department of Computer Science, Northeastern University, Boston, USA	17 May 2019
14	B. Ravindran	Why the Recent Excitement in AI?	Invited Talk, Jackson Laboratories, Bar Harbour, Maine, USA	20 May 2019
15	Sutanu Chakraborti	Memory and Cognition	The Second Summer School on Representation in Artificial Intelligence, IIT Mandi	13 June 2019
16	Shweta Agrawal	Indistinguishability Obfuscation	Eurocrypt, Darmstadt, Germany	19 May 2019
17	Shweta Agrawal	Attribute Based Encryption	Weizmann Institute, Israel	20 June 2019
18	Shweta Agrawal	Attribute Based Encryption	Technion, Israel	23 June 2019
19	Krishna M. Sivalingham	5G Networks	Aarupadai Veedu Institute of Technology (Vinayaka Missions Research Foundation), Chennai	19 August 2019
20	B. Ravindran	Reinforcement Learning at Work	Invited Talk, Google Brain/DeepMind, Montreal, Canada	11 July 2019
21	B. Ravindran	Reinforcement Learning at Work	Invited Talk, Montreal Institute of Learning Algorithms (Mila), Montreal, Canada	12 July 2019
22	B. Ravindran	Why RL?	Keynote Talk, KDD Cup Day, ACM SIGKDD Conference, Anchorage, Alaska	6 August 2019
23	B. Ravindran	AI and Data Science Landscape in India	Invited Talk, KDD in India event, ACM SIGKDD Conference, Anchorage, Alaska	7 August 2019
24	K. C. Sivaramakrishnan	Mergeable Types	Shonan Meeting, Kanagawa, Japan	2 July 2019
25	K. C. Sivaramakrishnan	Deep Dive into Multicore OCaml Garbage Collector	IISc. Bangalore	20 July 2019
26	Chester Reberio	Hardening Microprocessors for Security	NTU Singapore	6 September 2019
27	Madhu Mutyam	VSCC: Variable Sized Cache Block Compaction	PACT Conference, Seattle, USA	23 September 2019
28	Madhu Mutyam	Data Compaction Techniques for Multi-Core Systems	Department of Computer Science, SUNY Binghamton	27 September 2019

29	Krishna M. Sivalingam	5G/Mobile Edge Computing and Relevance to Internet of Things	ATAL Workshop on Internet of Things, Anna University, Chennai	29 October 2019
30	John Augustine	Distributed Computation in Node-Capacitated Networks	UC Irvine, Irvine, CA, USA	1 November 2019
31	V. Krishna Nandivada	Automated Software Engineering (ASE) 2019	San Diego, USA	12-15 November 2019
32	Chester Rebeiro, V. Kamakoti	Karna: A Gate-Sizing Based Security Aware EDA Flow for Improved Power Side-Channel Attack Protection	ICCAD 2019	December 2019
33	Krishna M. Sivalingam	Mitigation of Security Attacks in the SDN Data Plane Using P4-Enabled Switches	IEEE International Conference on Advanced Networks and Tele-communication Systems (ANTS), (Goa, India)	December 2019
34	Shweta Agrawal, Monosij	Attribute Based Encryption for Deterministic Finite Automata from DLIN	Theory of Cryptography Conference (TCC), 2019	December 2019
35	Sukhendu Das	Motion-Based Occlusion-Aware Pixel Graph Network for Video Object Segmentation	26th International Conference on Neural Information Processing (ICONIP), Sydney, Australia	12-15 December 2019
36	Sukhendu Das	Visual Saliency Detection via Convolutional Gated Recurrent Units	26th International Conference on Neural Information Processing (ICONIP), Sydney, Australia	12-15 December 2019
37	Sukhendu Das	SACIC: A Semantics-Aware Convolutional Image Captioner Using Multi-Level Pervasive Attention	26th International Conference on Neural Information Processing (ICONIP), Sydney, Australia	12-15 December 2019
38	Prashanth L. A.	Concentration of Risk Measures: A Wasserstein Distance Approach	Thirty-Third Conference on Neural Information Processing Systems (NeurIPS) [poster]	December 2019
39	Prashanth L. A.	CVaR-Sensitive Bandits: The Light-Tailed Case	Sixth Indian Control Conference (ICC)	December 2019
40	Ravindran B.	A New Measure of Modularity in Hypergraphs: Theoretical Insights and Implications for Effective Clustering	The 8th International Conference on Complex Networks and Their Applications, Lisbon, Portugal	10-12 December 2019
41	Sutanu Chakraborti	Integrating Lexical Knowledge in Word Embeddings Using Sprinkling and Retrofitting	International Conference on Natural Language Processing (ICON) 2019	December 2019
42	Krishna M. Sivalingam	IoT Security: Blockchain and Applications	SRM IST, Chennai	21 February 2020
43	Shweta Agrawal	Lattice Trapdoors	Simons institute, UC Berkeley	24 January 2020

44	Shweta Agrawal	How to Use Lattice Trapped: ABE, IBE and More	Simons institute, UC Berkeley	24 January 2020
45	V. Krishna Nandivada	Mix Your Contexts Well: Opportunities Unleashed by Recent Advances in Scaling Context-Sensitivity	CC 2020, San Diego	22 February 2020
46	V. Krishna Nandivada	On the Fly MHP Analysis	PPoPP 2020, San Diego	25 February 2020
47	Chester Rebeiro	Towards Secure Microprocessors	Invited Talk, VLSID 2020, Bengaluru	6 January 2020
48	Chester Rebeiro	Side Channel Security Aware EDA Tools	Tutorial, VLSID 2020, Bengaluru	5 January 2020
49	N.S. Narayanaswamy	A Survey of Conflict Free Colouring	Recent Trends in Algorithms, IIT Gandhinagar	17 February 2020
50	John Augustine	Byzantine Agreement and Leader Election: From Classical to the Modern	Tutorial, 21st International Conference on Distributed Computing and Networking	4-7 January 2020

Special lectures delivered by the faculty in other institutions

Sl. No.	Faculty Member	Topic of Lecture	Institution	Date
1	Hema A. Murthy	Career and Women	Tiger Analytics, Chennai	8 March 2019
2	Chester Rebeiro	Side Channel Analysis: The Case of Fault Injection Attacks	IIT Madras	7 March 2019
3	Chester Rebeiro	Security, the 4-th Paradigm in Computer System Design	CDAC Conclave 2019, Pune	5 April 2019
4	Krishna Nandivada	Optimizing Task Parallel Programs for Speed and Energy	Georgia Institute of Technology	13 March 2019
5	Krishna Nandivada	Optimizing Task Parallel Programs for Speed and Energy	UC Riverside	8 April 2019
6	Shweta Agrawal	Hardness Assumptions Underlying Code Obfuscation	Paris and Aussois, France respectively	18 and 21 March 2019
7	Arun Rajkumar	Big Data Analytics & Machine Learning	TEQIP-3 project of MHRD at DBRAIT, Port Blair, A&N Islands	25 April 2019
8	S. Das	Domain Adaptation Methods for Visual Object Categorization	National Workshop on Intelligent Multimodal Interfaces (NWIMI 2019), IIT Jodhpur	8 March 2019
9	C. Chandra Sekhar	Deep Learning Models for Speech and Image Processing Task	Osmania University, Hyderabad	10 March 2019
10	C. Chandra Sekhar	Support Vector Machines and Introduction to Deep Learning	IIT Dharwad	29-30 March 2019

11	C. Chandra Sekhar	Deep Learning Models – Autoencoders, CNNs and RNNs	IIT Dharwad	12-13 April 2019
12	B. Ravindran	Why the Recent Excitement in AI?	Invited Talk, Naval Training Academy, Ezhimala, Kerala	26 March 2019
13	B. Ravindran	TedX Talk on Untag AI	TedX Lavelle Road, Bengaluru	7 April 2019
14	B. Ravindran	Keynote Talk on AI in Transportation	Sweden-India Innovation Partnership Conference on AI for All, New Delhi	11 April 2019
15	B. Ravindran	Fireside Chat with Kris Gopalakrishnan	IITM AI Colloquium, IIT Madras	22 April 2019
16	Sutanu Chakraborti	From Counting to Cognition	International Conference on Innovations in Information and Communication Technology ICICT 2019, St. Peter's College of Engineering and Technology, Chennai	25 April 2019
17	Arun Rajkumar	Ranking from Pairwise Comparisons: Tale of the Preference Matrix	Data Science in India event as part of KDD 2019 at Anchorage, Alaska	7 August 2019
18	Meghana Nasre	Five lectures of 75 minutes each on topics in Matchings, Algorithms, and Strategic Issues	ACM Summer School on Algorithmic Game Theory, IIT Gandhinagar	2-14 July 2019
19	Hema A. Murthy	Signal Processing and Machine Learning for EEG Signals	NeuroAI Symposium, Bengaluru	4 August 2019
20	Hema A. Murthy	Variable Top-C and Feature Switching for Speaker Recognition and Replay Attack Detection	DA-IICT, Gandhinagar, S4P Summer Workshop	8 July 2019
21	Hema A. Murthy	Speaker Diarization	DA-IICT, Gandhinagar, S4P Summer Workshop	8 July 2019
22	Krishna M. Sivalingam	5G Networks	Aarupadai Veedu Institute of Technology (Vinayaka Missions Research Foundation), Chennai	August 2019
23	Chester Rebeiro	Applied Cryptography	National Instructional Workshop on Cryptology 2019, Manipal Institute of Technology, Manipal	8-10 July 2019
24	Prashanth L. A.	Reinforcement Learning	MHRD workshop on AI in Education, IIT Delhi	4 July
25	B. Ravindran	Reinforcement Learning at Work	Invited Talk, Google Brain/DeepMind, Montreal, Canada	11 July 2019
26	B. Ravindran	Reinforcement Learning at Work	Invited Talk, Montreal Institute of Learning Algorithms (Mila), Montreal, Canada	12 July 2019

27	B. Ravindran	Why RL?	Keynote Talk, KDD Cup Day, ACM SIGKDD Conference, Anchorage, Alaska	6 August 2019
28	B. Ravindran	AI and Data Science Landscape in India	Invited Talk, KDD in India event, ACM SIGKDD Conference, Anchorage, Alaska	7 August 2019
29	B. Ravindran	Beyond Rewards	Keynote Talk, Workshop on Scaling up RL (SURL), IJCAI, Macao, China	12 August 2019
30	B. Ravindran	Introduction to Reinforcement Learning	Keynote Talk, First Indian Process Systems Engineering Conference (IPSE), IIT Madras	19 August 2019
31	B. Ravindran	Why the Recent Excitement in AI?	Second Bangalore on IT Seminar, IIIT Bangalore	21 August 2019
32	B. Ravindran	Why Reinforcement Learning?	Keynote Talk, IITMAA-Sangam Hackathon, IIT Madras	24 August 2019
33	K. C. Sivaramakrishnan	Invited Talk: Mergeable Types	Shonan Meeting, Kanagawa, Japan	2 July 2019
34	K. C. Sivaramakrishnan	Invited Talk: Deep Dive into Multicore OCaml Garbage Collector	IISc. Bangalore	20 July 2019
35	Chester Rebeiro	Hardening Microprocessors for Security	Singapore	6 September 2019 (NTU)
36	Madhu Mutyam	VSCC: Variable Sized Cache Block Compaction	PACT Conference, Seattle, USA	23 September 2019
37	Madhu Mutyam	Data Compaction Techniques for Multi-Core Systems	Department of CS, SUNY Binghamton	27 September 2019
38	Krishna M. Sivalingam	5G/Mobile Edge Computing and Relevance to Internet of Things @ ATAL Workshop on Internet of Things	Department of ECE, College of Engineering, Anna University, Chennai	29 October 2019
39	John Augustine	Distributed Computation in Node-Capacitated Networks	UC Irvine, Irvine, CA, USA	1 November 2019
40	B. Ravindran	Looking Under the Hood of Deep Networks	Intel Day, IIT Madras	14 September 2019
41	B. Ravindran	What is this thing called AI?	Invited Talk, CAHOTTECH Conference, IIT Madras	28 September 2019
42	B. Ravindran	Panel Discussion on Ethics and AI	Knowledge Forum Meeting, IIT Madras	13 October 2019
43	B. Ravindran	Panel discussions on AI for All, and Empowering AI	India Economic Forum, New Delhi	4 October 2019
44	B. Ravindran	Network Representation Learning	Intel Research Day, Bangalore	22 October 2019

45	B. Ravindran	Putting Reinforcement Learning to Work	Invited Talk, VIT Chennai	19 October 2019
46	Sutanu Chakraborti	Building Computational Models for Processing Natural Language: Challenges, Perspectives and Outlook	AICTE Workshop on Appreciating Linguistics, IIT Madras	10 October 2019
47	Fabrice Mouhartem	Lattice-Based Group Signatures in the Standard Model	LJK-CAS ₃ C ₃ Seminar, Grenoble University (France)	14 October 2019
48	Rupesh Nasre	Parallel Graph Algorithms	Winter School on HPC, IIT Kanpur (via skype)	11 December 2019
49	V. Krishna Nandivada	Parallel Programming - Essential or Evil?	Keynote at ICoAC, Anna University, MIT campus	18 December 2019
50	Hema A. Murthy	Analysis of Carnatic Music	SPARC Workshop	6 December 2019
51	Hema A. Murthy	Analysis of Carnatic Music	SPARC Workshop	9 December 2019
52	C. Chandra Sekhar	Support Vector Machines and Deep Learning Models	FDP at University of Mysore	18 November 2019
53	C. Chandra Sekhar	Artificial Neural Networks for Prediction	RBI Staff College, Chennai	20 November 2019
54	C. Chandra Sekhar	Deep Learning Models for Speech and Image Processing	SSN College of Engineering, Chennai	23 November 2019
55	C. Chandra Sekhar	Deep Learning Models Based Approaches to Image and Video Captioning	MIKE 2019 Conference, NIT Goa	19 December 2019
56	Prashanth L.A.	Stochastic Non-Convex Optimization: The Zeroth-Order Case	TCS Innovation Labs, Hyderabad	18 December 2019
57	B. Ravindran	What Do We Need from Our AI policy?	Consultative Meeting on Vision for AI and Data Science in India, Vigyan Bhavan, New Delhi	4 November 2019
58	B. Ravindran	Introduction to the Reinforcement Learning Problem and Temporal Difference Learning	Workshop on RL for DRDO, DRDO RIC, Chennai	13, 15-16 November 2019
59	B. Ravindran	Introduction to AI	Naval Officers Training, IIT Madras	18 November 2019
60	B. Ravindran	Putting RL to Work	AmEx Machine Learning Summit, Bangalore (via Skype)	22 November 2019
61	B. Ravindran	Beyond Rewards	AI Seminar Series, IIT Hyderabad	29 November 2019
62	B. Ravindran	On the Hardness of Interdisciplinary Research	ML4Science Workshop, IIIT Hyderabad	30 November 2019
63	B. Ravindran	AI for Social Good	IITM-RWTH Student Entrepreneurship Summit, IIT Madras	6 December 2019

64	B. Ravindran	Challenges with Data (Science) for Vehicle Detection in Indian Traffic	Smart Mobility Workshop, IIT Madras	15 December 2019
65	B. Ravindran	Putting RL to Work	Plenary Talk, International Conference on Computational Intelligence, Cyber Security and Computational Models, PSG Tech, Coimbatore	21 December 2019
66	Deepak Khemani	NLP	LNMIIT Jaipur	16 November 2019
67	Krishna M. Sivalingam	IoT Security: Blockchain and Applications	SRM IST, Chennai	21 February 2020
68	Shweta Agrawal	Lattice Trapdoors	Simons Institute, UC Berkeley	24 January 2020
69	Shweta Agrawal	How to Use Lattice Trapdoors: ABE, IBE and More	Simons Institute, UC Berkeley	24 January 2020
70	V. Krishna Nandivada	Mix Your Contexts Well: Opportunities Unleashed by Recent Advances in Scaling Context-Sensitivity	San Diego	22 February 2020
71	V. Krishna Nandivada	On the Fly MHP Analysis	PPoPP 2020, San Diego	25 February 2020
72	Chester Rebeiro	Towards Secure Microprocessors	Invited Talk, VLSID 2020, Bangalore	6 January 2020
73	Chester Rebeiro	Side Channel Security Aware EDA Tools	Tutorial, VLSID 2020, Bangalore	5 January 2020
74	N.S. Narayanaswamy	A Survey of Conflict Free Colouring	Recent Trends in Algorithms, IIT Gandhinagar	17 February 2020
75	John Augustine	Byzantine Agreement and Leader Election: From Classical to the Modern	Tutorial, 21st International Conference on Distributed Computing and Networking	4-7 January 2020
76	Shweta Agrawal	"1. Lattice Trapdoors 2. How to use Lattice Trapdoors"	UC Berkeley	24 January 2020
77	C. Chandra Sekhar	Statistical Models for Pattern Recognition	FDP at Government Engineering College, Calicut	20 January 2020
78	Madhu Mutyam	Data Compression Techniques for Memory Hierarchy	Department of CSE, IIT Hyderabad	6 February 2020
79	Shweta Agrawal	Obfuscation	UC Berkeley	24 March 2020
80	B. Ravindran	Panel on Development of Start-up Ecosystem for Social Transformation Using AI	Bootcamp on Global AI Summit 2020, Chennai	4 March 2020
81	B. Ravindran	How Human is AI?	Keynote talk at the National Workshop on Deep Learning for Cyber Security, SETS, Chennai	6 March 2020

Visits abroad by faculty

Sl. No.	Faculty Member	Country Visited	Date	Purpose of Visit
1	Shweta Agrawal	France	18 and 21 March, respectively	Invited talks: Paris Crypto Day and Mathematics of Public Key Cryptography
2	John Augustine	Paderborn University, Germany	18 May-9 June 2019	DST-DAAD joint project
3	Chester Rebeiro	Tel Aviv University, Technion	21-25 May 2019	Collaboration in Cyber Security
4	Hema Murthy	Brighton, UK	12-17 May 2019	ICASSP 2019
5	Hema Murthy	CMU Pittsburgh, USA	21-24 May 2019	Collaboration in EEG
6	Hema Murthy	Simon Center for Social Brain	28 May-10 June 2019	CCBR work
7	Krishna Sivalingam	TU Braunschweig, Germany	14 June 2019	PhD viva voce
8	P. Sreenivasa Kumar	Oslo, Norway	17-21 June 2019	32nd International Workshop on Description Logics
9	B. Ravindran	A-star Institute of Infocomm Research, Singapore	8-9 May 2019	Signing of MoU and research collaborations
10	B. Ravindran	Purdue University, West Lafayette, USA	12-15 May 2019	Research collaborations
11	B. Ravindran	University of Massachusetts Amherst, USA	16 May 2019	Research collaborations
12	B. Ravindran	Northeastern University, Boston, USA	17 May 2019	Research collaborations
13	B. Ravindran	Jackson Laboratories, Bar Harbour, USA	20-21 May 2019	Research collaborations
14	Shweta Agrawal	Darmstadt, Germany	18-23 May 2019	Eurocrypt conference
15	Shweta Agrawal	Aarhus University, Denmark	26-30 May 2019	Blockchain Workshop
16	Shweta Agrawal	Weizmann, IDC and Technion university	15 June-3 July 2019	Research collaboration
17	Sukhendu Das	Budapest, Hungary	14-19 July 2019	8th International Joint Conference on Neural Networks (IJCNN)
18	B. Ravindran	Anchorage, Alaska, USA	4-8 August 2019	Twenty Fifth ACM SIGKDD Conference on Knowledge Discovery and Data Mining
19	B. Ravindran	Macao, China	10-16 August 2019	Twenty Eighth International Joint Conference on Artificial Intelligence (IJCAI 2019)
20	B. Ravindran	Montreal, Canada	6-13 July 2019	Fourth Reinforcement Learning and Decision Making Conference, and visit to Google Brain and Montreal Institute of Learning Algorithms

21	K.C. Sivaramakrishnan	Shonan Village, Kanagawa, Japan	1-5 July 2019	Organised the Shonan Meeting on Programming Language Support for Data Intensive Systems
22	K.C. Sivaramakrishnan	Berlin, Germany	22-23 August 2019	Chaired the ML Workshop at the International Conference on Functional Programming
23	V. Krishna Nandivada	Germany	27-31 August 2019	EuroPar 2019
24	V. Krishna Nandivada	Athens, Greece	23-25 October 2019	OOPSLA 2019
25	Chester Rebeiro	Singapore	4-7 September 2019	IEEE SoCC 2019
26	Raghavendra Rao B.V.	Germany	1-10 September, Leibniz, University of Hannover	Research visit
27	Madhu Mutyam	USA	22 September-4 October 2019	PACT, MemSys, and visited SUNY Binghamton
28	Hema A. Murthy	Austria	15-19 September 2019, Graz	INTERSPEECH 2019
29	Hema A. Murthy	France	2-3 October 2019, Paris	Panel of international experts for Language, Speech and Audio, INRIA France
30	Shweta Agrawal	France	14-18 October 2019, Lyon	Ph. D. student defense
31	John Augustine	USA	21 October-1 November 2019	Large-Scale Consensus and Blockchains and research visit to UC Irvine
32	Fabrice Mouhartem	France	14-18 October 2019, Grenoble/ Lyon	Invited talk and research visit
33	Deepak Khemani	Paris	30 September- 6 October 2019	Visited AI company for discussions
34	V. Krishna Nandivada	San Diego, USA	11-15 November 2019	ASE 2020
35	Arun Rajkumar	Vancouver, Canada	8-14 December 2019	NeurIPS 2019
36	Prashanth L.A.	USA	1-8 December 2019	University of Maryland College Park to discuss research collaboration with Prof. Michael Fu and Prof. Steve Marcus
37	Manikandan Narayanan	Colorado, USA	5-7 December 2019	Rocky Bioinformatics Conference; presented a poster
38	Manikandan Narayanan	Cold Spring Harbor, New York, USA	9-12 December 2019	CSHL (Cold Spring Harbor Laboratory) "Development and 3D modeling of the human brain" meeting to present a poster

39	Manikandan Narayanan	Bethesda, Maryland, USA	25 November-3 December, 13-20 December 2019	Visited the lab of Dr. John Tsang of National Institutes of Health (NIH) to work on research collaborations
40	John Augustine	Rehovot, Israel	10-22 December 2019	Visited Prof. David Peleg at the Weizmann Institute of Science
41	Shweta Agrawal	Sabbatical	8 January-18 May 2020	
42	V. Krishna Nandivada	San Diego, USA	21-28 February 2020	PPoPP 2020
43	S. Das	Colorado, USA	1-5 March 2020	Conference Paper - WACV '20, USA
44	Shweta Agrawal	Sabbatical	8 January-19 March 2020	University of California, Berkeley

Honours and awards obtained by faculty

Sl. No.	Faculty Member	Award	Awarded by	Date of Award
Honours				
1	Shweta Agrawal	Best Program Committee member	Asiacrypt 2019	2019
2	B. Ravindran	Elected as AAAI Senior Member, one among 12 internationally	AAAI	2019
Awards				
1	Shweta Agrawal	Swarnajayanti Award	DST, Government of India	2018-2019
2	Shweta Agrawal (jointly with Dr. Shota Yamada)	Best Paper Award, Eurocrypt 2020		2020
3	Harish G. Ramaswamy (First author: Ex-project associate Saurabh Desai)	Best Paper Award, WACV 2020		2020

Fellowships of academies and professional societies

Sl. No.	Faculty Member	Year of Admission
INAE		
1	C. Pandu Rangan	
2	C. Siva Ram Murthy	
3	Hema A. Murthy	2017
4	Krishna Moorthy Sivalingam	2015
INSA		
1	C. Siva Ram Murthy	
CSI		
1	D. Janaki Ram	

IEEE		
1	C. Siva Ram Murthy	
2	Krishna Moorthy Sivalingam	2014

Journal Editorial Boards

Sl. No.	Faculty Member	Position (Editor/Member)	Journal Name
1	B. Ravindran	Associate Editor	<i>Journal of Artificial Intelligence Research (JAIR)</i>
2	B. Ravindran	Associate Editor	<i>Plos ONE</i>
3	Krishna Moorthy Sivalingam	Member of Editorial Board	<i>IEEE Networking Letters</i>

4.7.4 Design and Development Activities

Patents

Patents filed

Sl. No.	Faculty Member	Topic of Patent	Patent Filed on
1	N.S. Vipin, Manikantan Srinivasan, T. Prabhu, C. Siva Ram Murthy	Group anonymous dynamic slice enabled 5G systems with privacy preserving service access	Indian Complete Patent, 18 October 2019
2	Anamitra Roy Choudhury, Sampath Dechu, Pratyush Kumar	System and method for condition monitoring of redox flow batteries using data analytics	US patent granted on 27 October 2019
3	Sampath Dechu, Ramachandra Kota, Pratyush Kumar	Proof-of-work for smart contracts on a blockchain	US patent granted on 30 September 2019
4	D. Janakiram	CloudMOOL	Trademark filed for Private Cloud created using Minimalistic Object Oriented Linux (MOOL)
5	Rajat Rao and Chester Rebeiro	Method and system securing intellectual property associated with field programmable gate array	18 December 2019
6	C. S. Ganesh and Krishna Sivalingam	Systems and methods for reducing power consumption in passive optical networks	26 December 2019

Patents awarded

Sl. No.	Faculty Member	Topic of Patent
1	Bixin Li, Fei Liu, Rupesh Nasre	A pointer analysis method based on offline constraint graph ZL 2015 1 1019307.7 (Zone: China)

4.7.5 Research and Consultancy

Sponsored research projects (ongoing and new)

Sl. No.	Title	Period	Funding Agency	Amount (Rs. in lakhs)	Coordinators
1	Security and Edge Intelligence Hardware Extension for SHAKTI Based Compute Environment	21 February 2020-20 August 2022	Ministry of Electronics & Information Technology	990	Kamakoti V; Co-PI: Chester Rebeiro, Pratyush Kumar
2	Programming Model/ Language and Compiler for Emerging HPC Systems	30 September 2019-29 September 2022	Ministry of Electronics & Information Technology	255.62	Krishna Nandivada V.
3	Multicore Support for Tezos Blockchain	1 June 2019-31 May 2021	Tezos Foundation	169.8	Sivaramakrishnan K. C.
4	HPC Application Frameworks	30 September 2019-29 September 2022	Ministry of Electronics & Information Technology	130.2	Rupesh Nasre
5	Design and Development of Blockchain Based Technologies	1 June 2019-31 May 2022	National Security Council	100	Shweta Agrawal
6	Post Quantum Cryptography Challenges, Opportunities and Beyond	4 March 2020-3 March 2025	Science and Engineering Research Board	84.73	Shweta Agrawal
7	Abdul Kalam Technology Innovation National Fellowship	1 February 2020-31 January 2023	Indian National Academy of Engineering	57	Kamakoti V.
8	Research Roadmap for Cyber Arangam	21 June 2019-20 June 2022	Department of Police, Government of Tamil Nadu	42	Kamakoti V.
9	Post Quantum Cryptography Challenges, Opportunities and Beyond	12 February 2020-11 February 2025	Department of Science & Technology	40	Shweta Agrawal
10	Rigorous Verification and Validation of Memory Systems in Heterogeneous Computing Systems Using Statistical Model Checking	15 March 2019-14 March 2021	Scheme for Promotion of Academic and Research collaboration	32.53	Madhu Mutyam
11	Optimizing HPC Applications	29 May 2019-28 May 2020	Science and Engineering Research Board	29.4	Nandivada Venkata Krishna
12	Text to Speech Generation with Chosen Accent and Noise Profiles for Aerospace and Industrial Domains	23 August 2019-22 August 2021	Honeywell Technology Solutions Lab Private Limited	22	Hema A. Murthy
13	Indigenous Semi-Conductor Hardware Development and Cyber Security - Impact on Financial, Social and Strategic Security	17 June 2019-16 June 2021	National Security Council	19.2	Kamakoti V.
14	Spare: Safe Portable Partial-Analysis Results For Java Programs	1 April 2019-31 March 2022	IBM Corporation	15.44	Nandivada Venkata Krishna

15	Matchings Under Preferences - Theory and Practice	19 February 2020-18 February 2023	Science and Engineering Research Board	15.07	Meghana Nasre
16	Applications of Word Problems in Computer Science	8 January 2019-31 July 2021	Department of Atomic Energy	10.24	Jayalal Sarma M. N.
17	Google India PhD Fellowship for Doctoral Research of Mr. Arul Kumar S (CS15D202)	1 February 2019-31 January 2020	Science and Engineering Research Board	3.9	Anurag Mittal
18	Teacher Associateship for Research Experience: Development of Anti-Spoofing Method for Automatic Speaker Verification System	Three years	Science and Engineering Research Board	3.35 per year	Hema A. Murthy
19	AI and Thermal Imaging Based Breast Cancer Detection	One year	BNY Mellon Technology Private Limited	25	Kamakoti V.
20	Kore Mool Technologies	Five years	Kore Mool Limited	2.36	Janakiram D.
21	Post Quantum Cryptography	One time award	Microsoft Research	4	Shweta Agrawal
22	Paradigms, Interpretable Models and Algorithms for AI-based Human in the Loop Learning	One year	RBCDSAI	12	Arun Rajkumar, Harish Guruprasad, Chandrashekar Lakshminarayanan (IITKPD)
23	Kidney Exchange Models and Algorithms	One year	SRP	2.7	Meghana Nasre
24	Automated Verification Under Weak Consistency	25 February 2020-24 February 2022	New Faculty Initiation Grant	5	Kartik Nagar
25	Indigenous 5G Test Bed: Building End to End 5G Test Bed in India	21 March 2018-21 March 2021	Department of Telecommunications	approx. 6000.0 (for IITM)	Krishna Sivalingam (Co-PI); IITM PI: Dr. Radhakrishna Ganti (EE); Overall Project Lead: Prof. Bhaskar Ramamurthi (Director, IIT Madras)

Industrial consultancy projects (ongoing and new)

Sl. No.	Faculty Member	Title	Industry
1	Ravindran B.	Deep Learning Methods For Medical Language Processing	Buddi Health
2	Ravindran B.	Consultation on Education Initiatives of GITAA Private Limited	GITAA Private Limited
3	Kamakoti V.	Design and Realisation of SHAKTI Based Controller for IISU Application	ISRO Inertial Systems Unit
4	Sivaramakrishnan K. C.	Sandmark Analyze: A Tool for Analyzing OCaml Benchmarking CI Runs	OCaml Labs Consultancy Limited
5	Ravindran B.	A Generalized Model for Lead Scoring	Freshworks Inc.
6	Mitesh Khapra	Google India Ph.D. Fellowship in Natural Language Processing for Ananya Sai	Google Ireland Limited
7	Kamakoti V.	Tata Elxsi - IIT Madras CSR Project on Open Source Based Translation Research in ICT	Tata Elxsi Limited

Distinguished visitors to the department

Sl.No.	Visitor and Designation	Date of Visit	Purpose of Visit
1	Dr. Chaya Ganesh	3-9 March 2020	Research visit and faculty candidate talk
2	Dr. Abir De	29 April 2019	Research visit and faculty candidate talk
3	Prof. Lothar Thiele, Swiss Federal Institute of Technology, Zurich	13 June-9 July 2019	Visiting Faculty
4	Dr. Abhilash Jindal	20 June 2019	Faculty candidate seminar talk
5	Dr. Jaya Prakash Varma Champati	10 June 2019	Faculty candidate seminar talk
6	Prof. Uday Khedker	19 August 2019	Thesis examiner
7	Dr. Stephen Thorpe	26 August 2019	New Zealand Guest Lecture Series
8	Prof. David Peleg	28 July-1 September 2019	Venky Harinarayan and Anand Rajaraman Visiting Chair Professor
9	Mr. Avi Cohen	28 July-1 September 2019	Ph.D. student of Prof. David Peleg
10	Dr. Keerti Choudhary	28 July-1 September 2019	Postdoc hosted by Prof. David Peleg
11	Mr. Suman Sourav	30 July-30 August 2019	Ph.D. student from NUS
12	Dr. Michael Clear	30 September-11 October 2019	Research collaboration (Host: Shweta)
13	Prof. Richard M. Karp	15-16 October	Richard Karp Chair launch and meet with the Department faculty, and Theory/ Bioinformatics groups (Host: Jayalal Sarma and Manikandan Narayanan, with help from Department/IAR)
14	Mr. Roshan Dathathri, Ph.D. student from UT Austin	25 November 2019	Meeting with faculty and students
15	Mr. Anselm Haak, Ph.D. student at Leibniz University Hannover	3-10 December 2019	Project discussions
16	Mr. Fabian Mueller, Ph.D. student at Leibniz University Hannover	3-10 December 2019	Project discussions
17	Dr. Vyas Sekar, Venky Harinarayan-Anand Rajaraman Visiting Faculty and Associate Professor, CMU, USA	9-12 March 2020	Interaction with students and scholars

4.8. Department of Electrical Engineering

4.8.1. Introduction

The Department of Electrical Engineering comprises several laboratories, grouped into six major areas: EE1 - Communications and Signal Processing; EE2 - Power Systems, Power Electronics and High Voltage; EE3 - Microelectronics and VLSI Design; EE4 - Control and Instrumentation; EE5 - RF and Photonics; EE6 - Integrated Circuits and Systems. All faculty members in the department have earned Ph.D. degrees from reputed universities.

EE1 - Communications and Signal Processing

Facilities: Vector network analyzer, USRP and various RF bands, FPGA facilities, digital communication trainer, 5G testbed

EE2 - Power Systems, Power Electronics and High Voltage

Facilities: Machines and Drives Laboratory: Motor generator sets, Regulating Transformer, Cradle Type DC Dynamometer, Torque Transducer, Data Acquisition Systems, Vector Visualizer, Special Purpose AC Supply Generators, Multilevel Inverters, Measurement Storage Oscilloscopes, Microprocessor Based Drive Systems, Simulation Software for Power Electronic Systems, PSIU, Magnet 2D, 3D, FEM Software, Motor Control DSP Kits, FPGA Kits - Altera, Xilinx
High Voltage and Power System Laboratory: HV Testing Transformer (800 kV, 400 kVA), Lightning Impulse Generator, High Frequency Voltage Generator, Digital Bandwidth Storage Oscilloscopes, Capacitance Measurement Unit, PD Detector Unit, Power System Simulator, Power System Analysis and Application Software, Power Quality, Monitoring and Analysis Unit, FACTS and Custom Power Devices Experimental Units, DSP Based Power Controllers

EE3 - microelectronics and VLSI Design

Facilities: Microelectronics and MEMS Lab: Class 100/Class 1000 Clean Rooms, Laser writer for Mask Making, E-Beam writer, E-Beam Metallization Unit, Sputtering units, Furnaces for Oxidation and Diffusion, Rapid thermal processing, Double Sided

Mask Aligner and Exposure Systems, PECVD Systems and LPCVD system, Reactive Ion Etching Systems and DRIE, Substrate Bonder and Wire bonder, Dicing machine and Glove box for organic electronics
Characterization: Spectroscopic Ellipsometer, Interferometric 3-D Surface Profiler, Four Point Probe and Confocal Microscope, Tabletop SEM and Wafer Probe Stations, Semiconductor Parametric Analyzer and Multifrequency LCR Meters, Cantisens and Doppler Vibrometer, Solar Simulator, Device and MEMS Simulation tools

EE4 - Control and Instrumentation

Facilities: Control Laboratory: Micro selection C development systems for VLSI based control, simulation packages : MATLAB, PSPICE, MAXPLUS II, motor control systems and speed control systems (analog and digital), benchmark vision system and high precision measuring instruments, Cobra RS-23-5 axis robot and Eshed ERIII, Eshed E&V: 5 Axes robots, position control systems (AC and DC)
Measurements and Instrumentation Laboratory: Precision indicating instruments and standard R, L and C components, virtual instrumentation laboratory with ELVIS, meter calibrator and pressure calibrator, energy meter testing desk and instrument transformer calibrator, high current AC and DC supply units, biomedical instrumentation (ultrasonic and optical)

EE5 - RF and Photonics

Facilities: Fibre Optic Educational Kit/Laboratory, Experimental Optics Laboratory, Integrated Optoelectronics Laboratory, Class 100,000 room for development of space applications ground stations – satellite communications and control, high speed optical communications, quantum communications and computing, Fiber Bragg Grating Fabrication facility, High Power Fiber Lasers (HPFL) laboratory

EE6 - Integrated Circuits and Systems

Facilities: Analog and Digital Circuits and VLSI Design Lab: Workstations and EDA tools for complete IC design flow, EPLD/FPGA design software and workstations, DSP kits and workstations, IC test facilities

4.8.2. Academic Programmes

New discipline/branch introduced

Interdisciplinary Dual Degree in Quantum Science and Technology

New courses introduced

Sl. No.	Course No.	Title
1	EE5003	Electrical Networks and Systems
2	EE5143	Information Theory
3	EE5180	Introduction to Machine Learning
4	EE5501	Photonics Laboratory
5	EE5507	RF Systems Laboratory
6	EE6180	Advanced Topics in Artificial Intelligence
7	EE6181	Advanced Topics in Artificial Intelligence
8	EE6203	Power Electronic System Design
9	EE6331	Embedded Memory Design
10	EE6345	Advanced Memory Technology
11	EE6347	Devices and Technologies for AI and Neuromorphic Computing
12	EE6431	Non-Smooth Analysis in Control and Optimization
13	EE6432	Stochastic Control

New lab(s) established

- 5G Testbed Lab
- Analog/RF/Millimeter Wave Testing Lab

Students on roll as of September 2019+M.S. and Ph.D admission in January 2020

Programme	Year I	Year II	Year III	Year IV	Year V and Others	Total
B.Tech.	142	73	73	73	7	368
Dual Degree		58	57	66	15	196
M.Tech.	124	143	-	-	-	267
M.S.	60	79	25		52	216
Ph.D.	37	45	54	47	110	293
Total	363	398	209	186	184	1340

Student/Scholar who attended conferences/seminars/symposia abroad/India

Sl. No.	Student/Scholar	Roll No.	Conference/Seminar/Symposia /Workshop	Date and Venue	Financial Assistance from
Abroad					
1	Seshadri G.	EE16D005	2019 IEEE 13th International Conference on Compatibility, Power Electronics and Power Engineering	23-25 April 2019, Denmark	Institute
2	Salunke Jayashree Anil	EE16D008	2019 IEEE 13th International Conference on Compatibility, Power Electronics and Power Engineering	23-25 April 2019, Denmark	Institute

3	Jose Titus	EE14D022	2019 IEEE 13th International Conference on Compatibility, Power Electronics and Power Engineering	23-25 April 2019, Denmark	Institute
4	Pallab Sarkar	EE16S077	2019 IEEE Transportation Electrification Conference & Expo Asia-Pacific	8-10 May 2019, South Korea	Institute
5	A. Rini	EE15D210	2019 IEEE International Conference on Acoustics, Speech and Signal Processing	12-17 May 2019, UK	Institute
6	Renju	EE15S046	2019 14th IEEE International Conference on Automatic Face and Gesture Recognition	14-18 May 2019, France	Institute
7	Satya Jayadev Pappu	EE15D202	SIAM Network Science Workshop	22-23 May 2019, USA	Institute
8	Saravana Kumar M.	EE14D033	13th IEEE International Symposium on Circuits and Systems (ISCAS)	26-29 May 2019, Japan	Institute
9	Chithra	EE13D209	13th IEEE International Symposium on Circuits and Systems (ISCAS)	26-29 May 2019, Japan	Institute
10	Koneru Basava Naga Girish	EE16D400	IEEE International Symposium on Circuits Systems (ISCAS) 2019	26-29 May 2019, Japan	Institute
11	Mithun C. A.	EE15D309	IUMRs-ICAM International Conference on Advanced Materials	26-31 May 2019, France	Institute
12	Theertham Raviteja	EE15D215	Symposium on VLSI Circuit	9-14 June 2019, Japan	Institute
13	Siddhant Gautam	EE17S005	Photonics & Electromagnetics Research Symposium	17-20 June 2019, Italy	Institute
14	Adusumilli Bala Surendra	EE15D200	13th IEEE PES PowerTech Conference (International)	23-27 June 2019, Italy	Institute
15	Akshit	EE14D207	European Control Conference 2019	25-28 June 2019, Italy	Institute
16	Subhajit Mondal	EE16S073	European Control Conference 2019	25-28 June 2019, Italy	Institute
17	Lalitha Pratyusha	EE16S005	2019 IEEE International Symposium on Medical Measurements and Applications	26-28 June 2019, Turkey	Institute
18	Ragini Chaluvadi	EE14D404	2019 IEEE International Symposium on Information Theory	7-12 July 2019, France	Institute
19	Boyapatti Prafulla Chandra	EE16D402	2019 IEEE International Symposium on Information Theory	7-12 July 2019, France	Institute
20	Nafih Muhammad I	EE14D026	13th IEEE International Conference on Power Electronics and Drive Systems (PEDS 2019)	9-12 July 2019, France	Institute

21	Kiran Rokade	EE17S011	American Control Conference 2019	10-12 July 2019, USA	Institute
22	Sharad Kumar Singh	EE15D201	American Control Conference 2019	10-12 July 2019, USA	Institute
23	Arathy R.	EE14D017	41st Annual International Conference of the IEEE Engineering in Medicine and Biology Society	23-27 July 2019, Germany	Institute
24	Kompella Subha Gayatri	EE16S070	41st Annual International Conference of the IEEE Engineering in Medicine and Biology Society	23-27 July 2019, Germany	Institute
25	Shashank Kumar Ranu	EE16D303	QCrypt 2019	26-30 August 2019, Canada	Institute
26	Neema	EE14D212	19th EPIA Conference on Artificial Intelligence	3-6 September 2019, Portugal	Institute
27	Ankit Arora	EE16D025	Nanophotonics and Micro/ Nano Optics International Conference 2019	4-6 September 2019, Germany	Institute
28	V. Raj Kiran	EE15D020	International Conference on Computing in Cardiology 2019	8-11 September 2019, Singapore	Institute
29	Devika Jay	EE17D046	6th International Conference on Modern Electric Power Systems 2019	9-12 September 2019, Poland	Institute
30	Gautam Kumar Shaw	EE15D047	FIO+LS 2019	15-19 September 2019, USA	Institute
31	Anusha Prakash	EE17D039	10th ISCA Speech Synthesis Workshop	20-22 September 2019, Austria	Institute
32	Ashwin Kumar R. S.	EE13D058	European Solid-State Circuits Conference (ESSCIRC) 2019	23-26 September 2019, Poland	Institute
33	Vidyamani T.	EE16D015	IEEE PES Innovative Smart Grid Technologies (IGST) Europe	29 September-2 October 2019, Romania	Institute
34	Neelamani	EE17D204	2nd International Conference on High Voltage Engineering and Power Systems (ICHVEPS) 2019	1-4 October 2019, Indonesia	Institute
35	Bijay J.	EE16D414	IEEE International Ultrasonic Symposium 2019	6-9 October 2019, UK	Institute
36	Manuel Prasanna K.	EE13D034	IEEE International Conference on Space Optical Systems and Applications (ICSOS)	14-16 October 2019, USA	Institute
37	Kantamani Krishna Tejaswini	EE14D021	45th Annual Conference of the IEEE Industrial Electronics Society (IECON) 2019	14-17 October 2019, Portugal	Institute

38	Sujith Kumar B.	EE13D208	Asian Solid-State Circuits Conference	3-6 November 2019, China	Institute
39	Muralikrishnan S.	EE14D206	53rd Asilomar Conference on Signals, Systems, and Computers	3-6 November 2019, USA	Institute
40	Saikat Kumar Jana	EE14D208	2nd International Conference on Smart Grid and Renewable Energy	19-21 November 2019, Qatar	Institute
41	Kalyan Ram T.	EE15D400	11th IEEE PES Asia-Pacific Power and Energy Engineering Conference	1-4 December 2019, China	Institute
42	Aswathylakshmi P.	EE16D404	IEEE Globecom 2019 Workshop on High Capacity Point-to-Point Wireless Communications	9-13 December 2019, USA	Institute
43	Aditya Wadaskar	EE15b120	2019 International Conference on 3D Immersion	11-12 December 2019, Brussels, Belgium	Institute
44	Pramod S.	EE18S013	10th iCatse International Conference on Information Science and Applications 2019	16-18 December 2019, South Korea	Institute

India

1	Raghu Dharmavarapu	EE14D211	International Conference on Optics & Electro-Optic (ICOL - 2019)	19-22 October 2019, Dehradun	
2	Arnab Goswami	EE17D011	International Conference on Optics & Electro-Optic (ICOL - 2019)	19-22 October 2019, Dehradun	
3	Dhruvajyoti	EE17D035	Factory Acceptance Test of Vacuum Thermal Evaporation System	1-3 December 2019, India	Institute
4	Niyas K. Haneefa	EE16D029	ComNet2019	12-13 December 2019, Trivandrum	Institute
5	Amal Das	EE15D305	XXth International Workshop on Physics of Semiconductor Devices: IWPSD 2019	17-20 December 2019, Kolkata	
6	A Sudheer Kumar	EE15D049	8th International Conference on Power Systems (ICPS) 2019	20-22 December 2019, Jaipur, India	Institute
7	Hareesh S. V.	EE17D002	8th International Conference on Power Systems (ICPS)	21-22 December 2019, Jaipur	
8	A. Sudheer Kumar	EE15D049	International Conference on Electrical and Electronics Engineering	14-15 February 2020, Gorakhpur, India	Institute

9	C.M. Lokesh	EE18D301	International OSA Network of Students (IONS) 2020	27 February-3 March 2020, India	Institute
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Students/scholars who won outside prizes and awards

Sl.No.	Student/Scholar	Roll No.	Prize	Prize awarded by
1	Raghu Dharmavarapu	EE14D211	Best Paper Award	International Conference on Optics & Electro-Optic (ICOL - 2019)
2	Arnab Goswami	EE17D011	Best Oral Presentation Award	International Conference on Optics & Electro-Optic (ICOL - 2019)
3	Nithin Xavier	EE15D018	Second prize in poster presentation	IPSE 2019
4	Kalyan Ram T.	EE15D400	Best Paper Award	2019 IEEE PES Asia-Pacific Power and Energy Engineering Conference (APPEEC)
5	Amal Das	EE15D305	Best Paper Award	XXth International Workshop on Physics of Semiconductor Devices: IWPSD 2019
6	Hareesh S. V.	EE17D002	Best Paper Award	8th International Conference on Power Systems (ICPS)
7	Priyanka Sharma	EE18S044	Cash Prize and Excellence Award	Eaton Pratibha Excellence Award 2019-2020
8	Lokesh C.M.	EE18D301	Best Poster Award	International OSA Network of Students (IONS) - 2020
9	Lakshmi Areekath	EE17D014	Best Paper Award, in the category of Electric and Magnetic sensors	IEEE 13th International Conference on Sensing Technology, Sydney, Australia, 2019
10	Alok Baluni	EE15D043	Outstanding Student Paper Award	IEEE Custom Integrated Circuits Conference, Boston, March 2020

Students/Scholars who won Institute Convocation/Institute Day Prize

Sl.No.	Student/Scholar	Roll No.	Prize
1	Padyumna Venkatesh Chari	EE15B122	President of India Prize
2	Padyumna Venkatesh Chari	EE15B122	Bharat Ratna M. Visvesvaraya Memorial Prize
3	Harikumar Krishnamurthy	EE14B129	Sri V. Srinivasan Memorial Prize
4	Advait Sridhar	EE15B004	Dr. Shankar Dayal Sharma Prize
5	Pradyumna Venkatesh Chari	EE15B122	Siemens Prize
6	Abhijit S. Gupta	EE14B128	Motorola Prize
7	Akhil Nath C. K.	EE17M047	Siemens Prize
8	Harikumar Krishnamurthy	EE14B129	Philips India Prize
9	Sasank Garikapati	EE15B047	Prof. Achim Bopp Endowment Prize
10	Rajat S. Rao	EE14B101	Prof. Achim Bopp Endowment Prize
11	Abhishek Bhat	EE13D215	Institute Research Award

4.8.3. Faculty and Their Activities

Faculty

Name and Qualifications	Major Areas of Specialisation
Head	
Dr. David Koilpillai R.	Signal processing, communication
Professor	
Dr. Amitava DasGupta	Semiconductor devices and MEMS
Dr. Andrew Thangaraj	Signal processing, communication
Dr. Anil Prabhakar	Photonics, magnonics, assistive technologies
Dr. Anjan Chakravorty	Semiconductor devices
Dr. Aravind R.	Signal processing, communication
Dr. Arun D. Mahindrakar	Digital control and systems theory
Dr. Balaji Srinivasan	Fiber laser and sensors
Dr. Bhaskar Ramamurthi	Signal processing, communication
Dr. Bijoy Krishna Das	Silicon photonics
Dr. Bobby George	Instrumentation and measurements
Dr. Christopher S.	Radar signal processing
Dr. David Koilpillai	Signal processing, communication
Dr. Deepa Venkitesh	Photonics
Dr. Devendra Jalihal	Signal processing, communication
Dr. Enakshi Bhattacharya	Semiconductor devices
Dr. Giridhar K.	Signal processing, communication
Dr. Harishankar R.	Plasma, RF electromagnetics
Dr. Jagadeesh Kumar V.	Instrumentation and measurements
Dr. Kalyan Kumar	Power systems
Dr. Karmalkar S.	Semiconductor devices
Dr. Krishna Vasudevan	Power electronics
Dr. Mahesh Kumar	Power systems
Dr. Nagendra Krishnapura	Analog circuits
Dr. Nandita DasGupta	Semiconductor devices
Dr. Rajagopalan A. N.	Image processing
Dr. Sarathi R.	High voltage
Dr. Shanthi Pavan Y.	Analog circuits
Dr. Shanti Bhattacharya	Optics
Dr. Shanti Swarup	Power systems
Dr. Sridharan K.	Control systems and digital architecture
Dr. Srikrishna	Signal processing, communication
Dr. Srirama Srinivas	Power electronics
Dr. Umesh S.	Speech processing
Dr. Vinita Vasudevan	Digital systems and VLSI
Associate Professor	
Dr. Ananth Krishnan	Computational electromagnetics

Dr. Anbarasu M.	Nanoelectronics, NVRAM, phase change memory
Dr. Aniruddhan S.	Analog and RF circuits
Dr. Arun Pachai Kannu	Signal processing, communication
Dr. Bharath Bikkaji	Control theory
Dr. Deleep R. Nair	Semiconductor devices and MEMS
Dr. Gaurav Raina	Communication networks, control systems
Dr. Krishna Jagannathan	Optical networks
Dr. Krishna S.	Power systems
Dr. Lakshminarasamma N.	Power electronics
Dr. Mohansankar S.	Biomedical devices
Dr. Nitin C.	Digital systems and architectures
Dr. Pradeep Sarvepalli	Classical and quantum coding theory
Dr. Radhakrishna Ganti	Communications systems
Dr. Ramalingam C. S.	Speech processing
Dr. Ramkrishna Pasumarthy	Control theory
Dr. Sheetal Kalyani	Machine learning for communications
Dr. Soumya Dutta	Semiconductor devices and organic electronic devices
Dr. Venkatesh Ramaiyan	Wireless networks
Dr. Venkatesh T. G.	Communication networks
Assistant Professor	
Dr. Abhishek Sinha	Theoretical machine learning, networks
Dr. Arun Karuppaswamy	Power electronics
Dr. Avhishek Chatterjee	Communication networks
Dr. Bhaswar Chakrabarti	Micro and nanoelectronics, neuromorphic computation
Dr. Debductta Ray	Semiconductor devices and organic LEDs
Dr. Janakiraman Viraraghavan	Digital systems and architectures
Dr. Kamalesh Hatua	Power electronics
Dr. Kaushik Mitra	Image processing
Dr. Manivasakan R.	Communication systems
Dr. Mathiazhagan C.	Analog circuits
Dr. Puduru Viswanatha Reddy	Control, theory and game theory
Dr. Quadeer Ahmad Khan	Digital system, low power design
Dr. Rachael Kalpana	Control theory
Dr. Saurabh Saxena	Analog and mixed signal circuits, clock generators, SERDES
Dr. Uday Khankhoje	Inverse problems, computational electromagnetics
INSPIRE Faculty	
Dr. Mansi Sharma	Computer vision, machine learning, Computational imaging and 3D displays
Ramalingaswami Fellow	
Dr. Ramya Balachandran	Image-guided surgery, medical image processing
Scientific Officers/Engineers	
Jeyasutha Avudai Thangam	

Short-term courses/workshops/seminars/symposia/conferences organised by the faculty members

Sl. No.	Coordinator(s)	Title	Period
Conferences			
1	Enakshi Bhattacharya	IEEE Sensors 2019, Montreal; Track Co-chair, Optical Sensors	27-30 October 2019
2	R. Sarathi	4th International Conference on Condition Assessment Techniques in Electrical Systems (CATCON 2019)	18-21 November 2019
Symposium			
1	Devendra Jalihal, Venkatesh Ramaiyan	Smart City Symposium 2019	30-31 October 2019
Workshops			
1	Srikrishna Bhashyam, Avhishek Chatterjee, Krishna Jagannathan, Pradeep Sarvepalli and Andrew Thangaraj	JTG/IEEE Information Theory Summer School	25-28 June 2019
2	Anil Prabhakar, Prabha Mandyam	Indo-German Workshop on Quantum Science and Technology	8-10 February 2020
3	Krishna Jagannathan	Mini-workshop on Modern Optimization	17-19 February 2020
Short-term courses			
1	Saurabh Saxena, Nagendra Krishnapura	High speed serial links at ST Microelectronics Private Limited	20-23 May 2019
2	R. Sarathi	Recent Trends in Condition Monitoring of Power Apparatus - Adaptability to Smart Grid	18-19 November 2019
3	R. Sarathi	Recent Trends in Condition Monitoring of Power Apparatus - Adaptability to Smart Grid	18-23 November 2019
4	Amitava DasGupta	MEMS for BEL	21-23 November 2019

Short-term courses/workshops/seminars/symposia/conferences/training attended by the faculty members in academic institutions and public sector undertakings

Sl. No.	Faculty Member	Title	Institution	Period
Workshops				
1	Dr. Shanti Pavan	Continuous-Time ADCs with FIR Feedback, Advanced Analog Circuit Design Workshop (AACD) 2019	Italy	1-3 April 2019
2	Dr. Srikrishna Bhashyam	IEEE Data Science Workshop (DSW2019)	Minneapolis, USA	2-5 June 2019
3	Dr. Abhishek Sinha	The 14th Workshop on Resource Allocation, Cooperation and Competition in Wireless Networks (RAWNET)	France	3-7 June 2019
4	Dr. Puduru Viswanadha Reddy	Workshop on Learning and Control	IIT Mandi	22-29 July 2019

5	Dr. Krishna Jagannathan	20th IEEE International Workshop on Signal Processing Advances in Wireless Communications (SPAWC)	France	2-5 July 2019
6	Dr. Ramya Balachandran	Workshop on Sports Biomechanics and Evaluation Techniques	PSG College of Technology, Coimbatore	27 September 2019
7	Dr. Krishna Jagannathan	Workshop on Mathematics Tools in Wireless Communication and Networks	Ropar	13-17 September 2019
8	Dr. Krishna Vasudevan	Towards Resilient Energy Systems - Flexibility and Demand Side Management	Germany	26-27 November 2019
9	Dr. Nandita DasGupta	XXth International Workshop on Physics of Semiconductor Devices (IWPSD-2019)	Kolkata	17-20 December 2019
10	Dr. Amitava DasGupta	XXth International Workshop on Physics of Semiconductor Devices (IWPSD-2019)	Kolkata	17-20 December 2019
11	Dr. Enakshi Bhattacharya	XXth International Workshop on Physics of Semiconductor Devices (IWPSD-2019)	Kolkata	17-20 December 2019
12	Dr. Deleep R. Nair	XXth International Workshop on Physics of Semiconductor Devices (IWPSD-2019)	Kolkata	17-20 December 2019
13	Dr. Karmalkar S.	XXth International Workshop on Physics of Semiconductor Devices (IWPSD-2019)	Kolkata	17-20 December 2019
14	Dr. Anjan Chakravorty	XXth International Workshop on Physics of Semiconductor Devices (IWPSD-2019)	Kolkata	17-20 December 2019
15	Dr. Soumya Dutta	XXth International Workshop on Physics of Semiconductor Devices (IWPSD-2019)	Kolkata	17-20 December 2019
16	Dr. Bhaswar Chakrabarti	XXth International Workshop on Physics of Semiconductor Devices (IWPSD-2019)	Kolkata	17-20 December 2019
17	Dr. Nandita DasGupta	Annual Convention of Indian National Academy of Engineering	Jaipur	12-14 December 2019
18	Dr. Amitava DasGupta	Indo-US Workshop on Frontiers of Excellence in Wide and Ultrawide Bandgap Semiconductors and Electronic Systems	Mumbai	14-15 December 2019
19	Dr. Saurabh Saxena	SERB-FIRE: Industry-Academia Leaders' Workshop	New Delhi	19-20 February 2020

Seminars

1	Dr. Amitava DasGupta	International Seminar cum Research Colloquium on MEMS-based Sensors and Smart Nanostructured Devices (MSSND 2019)	Kolkata	27 December 2019
2	Dr. Nandita DasGupta	MSSND 2019	Kolkata	27 December 2019
3	Dr. Andrew Thangaraj	Bombay Information Theory Seminar 2020	Mumbai	6-9 January 2020
4	Dr. Avhishek Chatterjee	Bombay Information Theory Seminar	Mumbai	6-9 January 2020

Symposia

1	Dr. Uday Khankhoje	Progress in Electromagnetics Research (PIERS) 2019	Italy	17-20 June 2019
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2	Dr. Srirama Srinivas	IEEE International Symposium on Industrial Electronics	Canada	12-14 June 2019
3	Dr. Uday Khankhoje	7th Advanced Electromagnetics Symposium	Portugal	24-26 July 2019
4	Dr. Nagendra Krishnapura	IEEE International Symposium on Integrated Circuits and Systems	Italy	29-30 August 2019
5	Dr. Shanti Pavan	IEEE International Symposium on Integrated Circuits and Systems	Italy	29-30 August 2019
6	Dr. David Koilpillai R.	The 2019 Annual IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (IEEE PIMRC 2019)	Turkey	8-11 September 2019
7	Dr. Deleep R. Nair	IEEE International Ultrasonics Symposium 2019	Scotland	6-9 October 2019
8	Dr. Bijoy Krishna Das	Emerging Trends of Electronics in Industry (TEQIP-III)	Dibrugarh	11-15 November 2019
9	Dr. Anil Prabhakar	International Symposium on Quantum Information Technology	Pune	2-5 December 2019
10	Dr. Bhaswar Chakrabarti	Workshop on Computational Brain Research	Chennai	2-10 January 2020

Conferences

1	Dr. R. Manivasakan	2019 National Conference on Communications (NCC)	Bangalore	20-23 February 2019
2	Dr. Krishna Vasudevan	13th International Conference on Compatibility, Power Electronics and Power Engineering	Denmark	23-25 April 2019
3	Dr. Nagendra Krishnapura	2019 IEEE Custom Integrated Circuits Conference	USA	14-17 April 2019
4	Dr. Ramya Balachandran	10th Conclave of the DBT Ramalingaswami Fellows	Gurgaon	28 April-1 May 2019
5	Dr. Debductta Ray	EMRS Spring Meeting 2019	France	27-31 May 2019
6	Dr. Abhishek Sinha	17th International Symposium on Modeling and Optimization in Mobile, Ad Hoc and Wireless Networks (WiOpt 2019)	France	3-7 June 2019
7	Dr. Enakshi Bhattacharya	Transducers Eurosensors 2019	Germany	23-27 June 2019
8	Dr. Srirama Srinivas	IEEE ISIE-2019	Canada	12-14 June 2019
9	Dr. Srikrishna Bhashyam	IEEE ISIT 2019	France	7-12 July 2019
10	Dr. Andrew Thangaraj	IEEE ISIT 2019	France	7-12 July 2019
11	Dr. Devendra Jalihal	IEEE ISIT 2019	France	7-12 July 2019
12	Dr. David Koilpillai R.	IEEE ISIT 2019	France	7-12 July 2019
13	Dr. Christoper S.	IEEE ISIT 2019	France	7-12 July 2019
14	Dr. Ananth Krishnan	Nanophotonics and Micro/Nano Optics International Conference	Germany	4-6 September 2019

15	Dr. Ramya Balachandran	STEREOCON 2019 - Annual Conference of Indian Society of Stereotactic and Functional Neurosurgery	Kochi	19-21 September 2019
16	Dr. Balaji Srinivasan	Advanced Solid State Lasers (ASSL) Conference	Austria	29 September-3 October 2019
17	Dr. Shanti Bhattacharya	OSA Laser Congress	Austria	29 September-3 October 2019
18	Dr. Ramya Balachandran	SKULLBASECON 2019 - 21st Annual Conference of Skull Base Surgery Society of India	Coimbatore	10-12 October 2019
19	Dr. Krishna Vasudevan	ECON 2019 - IEEE 45th Annual Conference of the Industrial Electronics Society	Portugal	14-17 October 2019
20	Dr. Enakshi Bhattacharya	Institute of Smart Structures and Systems (ISSS) National Conference	Mangalore	21-23 October 2019
21	Dr. Shanthi Pavan	Asian Solid State Circuits Conference	China	4-6 November 2019
22	Dr. Bhaswar Chakrabarti	Materials Research Society (MRS) Fall Meeting 2019	Boston, USA (joined remotely)	1-6 December 2019
23	Dr. Bobby George	13th International Conference on Sensing Technology - ICST 2019	Australia	2-4 December 2019
24	Dr. Krishna Jagannathan	33rd Neural Information Processing Systems Annual Conference (NeurIPS 2019)	Canada	8-14 December 2019
25	Dr. Ramkrishna Pasumarthy	IEEE Conference on Decision and Control	France	11-13 December 2019
26	Dr. Anjan Chakravorty	7th International Conference on Computers and Devices for Communication (CODEC 2019)	Kolkata	19-20 December 2019
27	Dr. K. Shanti Swarup	8th International Conference on Power Systems (ICPS) 2019	Jaipur	20-22 December 2019
28	Dr. A. N. Rajagopalan	National Conference on Computer Vision Patter Recognition Image Processing and Graphics (NCVPRIG)	Hubli	22-24 December 2019
29	Dr. Krishna S.	11th IEEE PES Asia-Pacific Power and Energy Engineering Conference (APPEEC 2019)	China	1-4 December 2019
30	Dr. Qadeer Khan	The 33rd International Conference on VLSI Design and The 19th International Conference on Embedded Systems	Bengaluru	4-8 January 2020
31	Dr. Shanti Bhattacharya	Regional Conference on Radio Science	Varanasi	12-14 February 2020
32	Dr. Nagendra Krishnapura	IEEE International Solid-State Circuits Conference	USA	16-20 February 2020
33	Dr. Anil Prabhakar	International Conference on Complex Quantum Systems	Mumbai	4-7 March 2020

Special lectures delivered by the faculty in other institutions

Sl. No.	Faculty Member	Topic of Lecture	Institution	Date
1	Dr. Uday Khankhoje	Microwave inverse imaging meets deep learning	IIT Bombay	3 April 2019
2	Dr. Balaji Srinivasan	Coherent beam combining of high power narrow linewidth fiber amplifiers, National Symposium on Recent Advances in Physics	Berhampur	5 April 2019
3	Dr. Balaji Srinivasan	Challenges in coherent beam combining of high power narrow linewidth fiber amplifiers using a diffractive element	Bhubaneswar	5 April 2019
4	Dr. Saurabh Saxena	Phase locked loops	NIT Warangal	25 May 2019
5	Dr. Puduru Viswanadha Reddy	Game theory and learning	IIT Mandi	22-26 July 2019
6	Dr. Debdutta Ray	Organic and flexible electronics: the way forward	SRM University - OSA Student Chapter (Chennai)	21 August 2019
7	Dr. Amitava DasGupta	RF MEMS resonators for 1 GHz and beyond	Jadavpur University, Kolkata	27 December 2019
8	Dr. Nandita DasGupta	GaN-based HEMT and MIS-HEMT devices	Jadavpur University, Kolkata	27 December 2019
9	Dr. Shanti Swarup	Asset management in smart power grids using machine learning, E-simulate, workshop on Application of Machine/Deep Learning in Electrical Engineering	SRM University	25 January 2020
10	Dr. Shanti Bhattacharya	Techniques for compact beam manipulation on 2020 URSI Regional Conference on Radio Science (URSI-RCRS 2020)	IIT Varanasi	12 February 2020
11	Dr. Uday Khankhoje	Microwave inverse imaging meets deep learning	University of Southern California	10 March 2020

Visits abroad by faculty

Sl. No.	Faculty Member	Country Visited	Date	Purpose of visit	Funding from
1	Dr. Ramkrishna Pasumarthy	USA	2 March-15 May 2019	Stanford University, School of Medicine (Sabbatical)	IITM (PCF) + Stanford
2	Dr. Krishna Vasudevan	Denmark	20-28 April 2019	IEEE CPE-POWERENG 2019	IIT Madras
3	Dr. Nagendra Krishnapura	USA	20-28 April 2019	2019 IEEE Custom Integrated Circuits Conference (CICC)	IIT Madras
4	Dr. Debdutta Ray	France	25 May-3 June 2019	E-MRS Spring 2019	IIT Madras/CPDA

5	Dr. Abhishek Sinha	France	30 May-2 June 2019	Visit to the Mathematical and Algorithmic Sciences Lab Huawei, Paris	IIT Madras/CPDA
6	Dr. Krishna Vasudevan	Germany	16-21 June 2019	IGCS Steering Committee Meeting	IGCS
7	Dr. Uday Khankhoje	Italy	21-26 June 2019	Prof. Raffaele Solimene for collaboration on electromagnetic scattering problems at Università degli Studi della Campania	IIT Madras
8	Dr. Arun Karuppaswamy B.	Taiwan	25-28 June 2019	National Chiao University (NCTU), Hsinchu, Taiwan for the purpose of bilateral research discussion	IIT Madras
9	Dr. Srirama Srinivas	Taiwan	25-28 June 2019	NCTU, Hsinchu, Taiwan for bilateral research discussion	NCTU
10	Dr. Ramkrishna Pasumarthy	Israel	1-7 July 2019	Mediterranean Control Conference	CPDA
11	Dr. Radhakrishna Ganti	Brazil	July 2019	ITU-R WP5D Project Meeting	IIT Madras
12	Dr. Deepa Venkitesh	Australia	14-31 August 2019	KTP Fellowship	IIT Madras
13	Dr. Anil Prabhakar	Singapore	15-17 September 2019	Follo-up visit for IITM - A*STAR MoU, and IITM-NUS JDP	IIT Madras
14	Dr. Shanti Pavan	USA	26-30 September 2019	IEEE CAS Society Distinguished Lecture in the Silicon Valley Chapter and San Diego Chapter, Visionary Lecture at Apple Inc, Talk at Google	IIT Madras
15	Dr. Balaji Srinivasan	Austria	29 September-3 October 2019	Advanced Solid State Lasers (ASSL) Conference	
16	Dr. Shanti Bhattacharya	Austria	29 September-3 October 2019	Advanced Solid State Lasers (ASSL) Conference	IIT Madras
17	Dr. S. Mohanasankar	USA	2-10 October 2019	Meeting with Zasti and discussions with other industries for new projects	IIT Madras
18	Dr. Deleep R. Nair	UK	3-20 October 2019	IEEE International Ultrasonics Symposium 2019	IIT Madras/CPDA
19	Dr. Shanti Bhattacharya	Scotland	6-11 October 2019	SPARC Project visit	IITM/ University of St. Andrews
20	Dr. Nagendra Krishnapura	USA	12-14 October 2019	Technical program committee meeting for the 2020 International Solid-State Circuits Conference	IIT Madras
21	Dr. V. Jagadeesh Kumar	Germany	28 October-30 November 2019	Collaborative work with MedIT, RWTH Aachen University	IIT Madras

22	Dr. Anil Prabhakar	Germany	10-17 November 2019	Strategic Partnership between IITM and RWTH Aachen	IIT Madras
23	Dr. S. Mohanasankar	Netherlands	17-20 November 2019	Project Meeting	IIT Madras
24	Dr. Ramkrishna Pasumarthy	France	6-13 December 2019	IEEE Conference on Decision and Control	PCF
25	Dr. Anbarasu Manivannan	Germany	1-13 January 2020	UGC-DAAD Joint Indo-German Partnership in Higher Education between IIT Madras and RWTH Aachen University	IIT Madras
26	Dr. Bobby George	Germany	5-10 January 2020	Ph.D. viva	Aachen Germany
27	Dr. Uday Khankhoje	USA	8 January-19 March 2020	Sabbatical	IIT Madras
28	Dr. Nagendra Krishnapura	USA	9-11 January 2020	Technical program committee meeting for the 2020 Custom Integrated Circuits Conference	IIT Madras
29	Dr. Nitin Chandrachoodan	USA	4-7 February 2020	DAC 2020 Technical Program Committee meeting	IIT Madras
30	Dr. V. Jagadeesh Kumar	Dubai	5-9 February 2020	GATE 2020 exam	IIT Madras
31	Dr. S. Mohanasankar	USA	14-18 February 2020	Industry meeting for new projects	IIT Madras
32	Dr. Nagendra Krishnapura	USA	16-20 February 2020	2020 International Solid-State Circuits Conference	IIT Madras
33	Dr. David Koilpillai R.	Switzerland	19-26 February 2020	International Telecommunications Union (ITU-R) Working Party 5D Meeting	IIT Madras
34	Dr. Radhakrishna Ganti	Switzerland	19-26 February 2020	International Telecommunications Union (ITU-R) Working Party 5D Meeting	IIT Madras

Honours and awards obtained by faculty

Sl. No.	Faculty Member	Award	Awarded by	Awarded for	Date of Award
i. Honours					
1	Dr. Ashok Jhunjunwala	Life Fellow	IEEE		November 2019
2	Dr. Enakshi Bhattacharya	ISSS Distinguished Service Award	Institute of Smart Structures and Systems (ISSS)		21 October 2019

ii. Awards

1	Dr. Sheetal Kalyani	IRDA - Early Career-level award for the year 2018-2019	IIT Madras	Excellence in research	22 April 2019
2	Dr. Ananth Krishnan	Young Faculty Recognition Award 2019	IIT Madras	Young Faculty Recognition	5 September 2019
3	Dr. Janakiraman Viraraghavan	Young Faculty Recognition Award 2019	IIT Madras	Young Faculty Recognition	5 September 2019
4	Dr. Radha Krishna Ganti	TSDSI Fellow - Technical Excellence	TSDSI	Contribution to TSDSI standards	14 October 2019

Fellowships of academies and professional societies

Sl. No.	Faculty Member	Year of Admission
INAE		
1	Dr. Nandita DasGupta	2019

Journal Editorial Boards

Sl. No.	Faculty Member	Position (Editor/Member)	Journal Name
1	Andrew Thangaraj	Associate Editor	<i>IEEE Transactions on Information Theory</i>
2	Srikrishna Bhashyam	Editor	<i>IEEE Transactions on Communications</i>
3	Nagendra Krishnapura	Associate Editor	<i>IEEE Transactions on Circuits and Systems I: Regular Papers</i>
4	S. Umesh	Associate Editor	<i>Circuits, Systems and Signal Processing</i>
5	Boby George	Associate Editor	<i>IEEE Transactions on Industrial Electronics</i>
6	Boby George	Associate Editor	<i>IEEE Transactions on Instrumentation and Measurement</i>
7	Boby George	Associate Editor	<i>IEEE Sensors Journal</i>
8	Boby George	Associate Editor	<i>IET Science Measurement & Technology</i>
9	Krishna Jagannathan	Associate Editor	<i>IEEE/ACM Transactions on Networking</i>
10	Krishna Jagannathan	Editor	<i>Performance Evaluation</i>
11	Shanthi Pavan	Associate Editor	<i>IEEE Journal of Solid-State Circuits</i>
12	Shanthi Pavan	Associate Editor	<i>IEEE Solid-State Circuits: Letters</i>
13	Balaji Srinivasan	Associate Editor	<i>Optics Express</i>
14	Shanti Bhattacharya	Associate Editor	<i>Optical Engineering</i>
15	Shreepad Karmalkar	Associate Editor	<i>IEEE Transactions on Education</i>
16	Amitava DasGupta	Associate Editor	<i>IETE Technical Review</i>
17	Amitava DasGupta	Associate Editor	<i>ISSS Journal of Micro and Smart Systems</i>
18	Jagadeesh Kumar V.	Associate Editor	<i>IEEE Transaction on Instrumentation and Measurement</i>
19	Anil Prabhakar	Member - Editorial Board	<i>Scientific Reports, Nature</i>
20	Anil Prabhakar	Member - Editorial Board	<i>IEEE Transaction on Magnetics</i>

21	Deepa Venkitesh	Member- Editorial Board	<i>Advances in Optics and Photonics</i>
22	Deepa Venkitesh	Member- Editorial Board	<i>Photonic Network Communications</i>

Scientific Management Boards/Advisory Board

Sl. No.	Faculty Member	Scientific Management Board/Advisory Board	Position
1	Anil Prabhakar	INO Scientific Management Board	Member
2	Anil Prabhakar	LIGO India Scientific Management Board	Member
3	Shreepad Karmalkar	AICTE's All India Board of PG Education and Research in Engineering and Technology	Chairman
4	Shreepad Karmalkar	IIT Council	Member
5	Jagadeesh Kumar V.	BoG, NIT Nagaland	Member
6	Jagadeesh Kumar V.	Senate, NIT Puducherry	Member
7	Jagadeesh Kumar V.	BWC, NIT Trichy	Member
8	Jagadeesh Kumar V.	Management Council, VelTech University	Member
9	Jagadeesh Kumar V.	Academic Council, Crescent University	Member
10	Jagadeesh Kumar V.	SERC, DST PRB	
11	Gaurav Raina	Academic Council, Krea University	Member
12	Krishna Vasudevan	Advisory Board of International <i>Journal of Power Electronics</i>	Member

4.8.4 Design and Development Activities

New facilities added or major equipment procured

Sl. No.	Equipment	Value (Rs. in lakhs)
1	Programmable AC Power Source	39.89

Patents

Patents filed

Sl. No.	Faculty Member	Topic of Patent
1	Balaji Srinivasan	Method of searching through ternary content addressable memory (TCAM) and system thereof, Application #PCT/IN2019/050490 (2019)
2	Debdutta Ray, Soumya Dutta	A method for patterning of graphene on a substrate, Indian Patent Application No.: 201931018426 (2019)
3	Debdutta Ray, P. Swaminathan	A conducting electrochromic composite of metallic nanowires and multi-coloured thermochromic material, Indian Pat. App. No. 202041025228 (2020)
4	Debdutta Ray, P. Swaminathan	A printable transparent wi-fi antenna, Indian Patent App. No. 201941012467 (2019)
5	Qadeer Ahmad Khan, Saurabh Saxena	Multi-phase low dropout voltage regulator
6	Boby George, Subhas Mukhopadhyay	Non-contact angle sensor based on eddy current technique, 201941013427, 3 April 2019
7	Boby George, Jagadeesh Kumar V.	A non-intrusive magnetically coupled sensor for measuring liquid level, 202041018368, 29 April 2020
8	Boby George, Ferran Reverter	Simple direct microcontroller interface for capacitively-coupled resistive sensors, 202041021691, 22 May 2020

9	Krishna Vasudevan, Deepthi Sivas	An active method of islanding detection- PCT/EP2019/071174
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Patents awarded

Sl. No.	Faculty Member	Topic of Patent
1	Soumya Dutta	A method for high throughput lithographic patterning of reduced graphene oxide thin films, Patent No.328723
2	Soumya Dutta	Bi-layer resist approach of photolithographic patterning over PMMA based polymer dielectrics. International Publication Number: WO2019008602A1
3	Anil Prabhakar	Mode locked laser for generation a wavelength stabilized depletion pulse
4	Boby George, Lelitha D.	Inductive loop sensor device, Indian Patent Number 341092
5	Bhaswar Chakrabarti	Resistive switching memory device
6	Gaurav Agrawal, S. Aniruddhan and Radha Krishna Ganti	Compact RF phase-shifters based on frequency translation, granted by Indian Patent Office on 9 December 2019. Indian Patent #326954

4.8.5 Research and Consultancy

Sponsored research projects (ongoing and new)

Sl. No.	Title	Period	Funding Agency	Amount (Rs. in lakhs)	Coordinators
1	In-situ Monitoring of Fire in Tunnels and Underground Transportation Systems Using Distributed Anti-Stokes Raman Thermometry (DART)	2020-2023	IMPRINT	115.27	Balaji Srinivasan, Deepa Venkitesh
2	Computational and Experimental Platform for High Resolution Terapixel Imaging of Ex-Vivo Human Brains	2020-2023	Office of the Principal Scientific Adviser	3157.45	Mohanasankar S.
3	Impulse Control Strategies in Differential Games with Applications in Cyber Security	2020-2023	SERB - MATRICS	6.6	Puduru Viswanadha Reddy
4	Detection and Diagnosis of Intentional Electromagnetic Interference Attack on Critical Network	2020-2023	SERB	21.93	Saurabh Saxena
5	A Low Power 8-16Gb/s/pin Full-Duplex Transceiver	2020-2023	Ministry of Electronics & Information Technology	78.523	Saurabh Saxena, Nagendra Krishnapura, Qadeer Ahmad Khan

6	Investigations on the Origin of Threshold Switching Mechanism in Chalcogenide-based Phase Change Materials and its Impact on Enabling the Speed Limits of Ovonic Threshold Switch (OTS) Selectors and Phase Change Memory (PCM) Devices	2020-2022	SERB	62.79	Anbarasu Manivannan, Amitava DasGupta, Ramachandra Rao M. S., Sethupathi K.
7	Phase Sensitive Amplifiers with Novel Dispersion - Tailored Fibers	2020-2022	DST	30.65	Deepa Venkitesh
8	Support for Testing and Validation of e-auto at IIT Mandi	2020-2021	IIT Mandi	7	Ashok Jhunjhunwala
9	Compact Model Development of GaN High-Electron Mobility Transistors and Validation Through Characterization of Fabricated Test Structures	2019-2022	SERB	52.4	Amitava DasGupta, Anjan Chakravorthy
10	Design Enablement of Self-Aligned Double Poly-Silicon Emitter Bipolar Transistors for RF Applications	2019-2022	DST	37.13	Amitava DasGupta, Nandita DasGupta, Anjan Chakravorty, Deleep R. Nair
11	Design and Development of Multi-bit Phase Change Memory for High Density, High Speed Non-volatile Random Access Memory (NVRAM) Applications	2019-2022	MHRD	99	Anbarasu Manivannan, Amitava DasGupta, Ramachandra Rao M.S., Sethupathi K.
12	Multiplexed Fluorophore Detection on a Miniaturized Optofluidic Platform for Affordable Healthcare and Other Applications	2019-2022	MHRD	84.6	Anil Prabhakar
13	Quantum Information Technologies With Photonic Devices - Integrated Quantum Optical Circuit For Entangled Photon Pair Generation and Manipulation in Silicon Photonics Platform	2019-2022	DST	214.02	Bijoy Krishna Das, Anil Prabhakar
14	Design and Development of Next Generation Photonic Analog to Digital Converters (NG-PADC)	2019-2022	IMPRINT	123.64	Deepa Venkitesh, Balaji Srinivasan, Saurabh Saxena

15	In Memory Computing Circuits For Deep Neural Network Hardware	2019-2022	SERB	42.75	Janakiraman Viraraghavan
16	Islanded Operation of Solar PV	2019-2022	Uchhatar Avishkar Yojana - IIT Madras	309.6	Krishna Vasudevan, Swarup K S, Kamalesh Hatua
17	SPINEROBOT: Towards High-Precision Affordable Spine Surgery	2019-2022	Department of Biotechnology	213.7	Mohanasankar S
18	Underwater Image Processing and Computer Vision	2019-2022	DST	60.46	Rajagopalan A. N., Kaushik Mitra
19	Automated Wire Explosion Process for Nanoparticles Production or its Use as Rocket Propellant and for Transformer Insultant	2019-2022	DST	96.17	Sarathi R.
20	Development of Circuit Building Blocks Using Unique Combination of Solution Based Organic Semiconductor Technology and Microelectronic Technology	2019-2022	SERB	50.92	Soumya Dutta, Aniruddhan S.
21	Microwave Inverse Scattering for Breast Cancer Detection	2019-2022	SERB	19.57	Uday K. Khankhoje
22	3D Electromagnetic Scattering Tools for Lunar Subsurface Studies	2019-2022	Space Application Centre	23.4	Uday K. Khankhoje
23	POWER: Platform for Open WLAN Experimentation and Research	2019-2022	IMPRINT	13.1	Venkatesh R.
24	Rare Earth Iron Garnet Epitaxial Films for Magneto Optical Switching of a Laser Beam	2019-2021	DST	12.93	Anil Prabhakar
25	Embedded System for Alternative and Augmentative Communication (AAC)	2019-2021	DST	20.11	Anil Prabhakar, Nitin Chandrachoodan
26	Combining Information and Queuing Theory for Emerging Applications	2019-2021	SERB	20.16	Avhishek Chatterjee
27	Mitigation of Stimulated Brillouin Scattering (SBS) for Power Scaling of Narrow Linewidth Fiber Amplifiers	2019-2021	Scheme for Promotion of Academic and Research collaboration	72.48	Balaji Srinivasan, Deepa Venkitesh

28	Multi-channel Fiber Bragg Grating-based Sensors and interrogator Development for Elastic Wave Sensing in Composite Structures for SHM Applications	2019-2021	DRDO	49.94	Balaji Srinivasan, Krishnan Balasubramanian, Prabhu Rajagopal
29	Advanced Photonic Signal Processing for Future Optical and Wireless Communication Systems	2019-2021	Scheme for Promotion of Academic and Research collaboration	72.28	Deepa Venkitesh, David Koilpillai, Bijoy Krishna Das, Christopher S.
30	Development of High Efficiency Motors and Controllers for Electric Vehicles (EVs) such as 2-Wheeler (2W), 3-Wheeler (3W) and small 4-Wheeler (4W) Cargo Vehicles used in India	2019-2021	Ministry of Electronics and Information Technology	240	Devendra Jalihal, Kannan Lakshminarayan
31	Demodulation of Complex Waveforms	2019-2021	DRDO	91.08	Ganti Radhakrishna, Bhaskar Ramamurthi, David Koilpillai
32	Development of WBG Based Integrated Drive System for Electric Vehicles (evIDS)	2019-2021	Centre for Development of Advance Computing	63.98	Kamalesh Hatua, Arul Prakash K.
33	Contactless Physiological Monitoring of Newborns in Hospital Settings	2019-2021	Scheme for Promotion of Academic and Research	64.56	Mohanasankar Sivaprakasam
34	Miniaturized Wideband Analog Phase Modulator Using Phase Locked Loop	2019-2021	ISRO	21.35	Saurab Saxena, Nagendra Krishnapura
35	Shaped Light for Novel Studies in Imaging and Measurement	2019-2021	Scheme for Promotion of Academic and Research collaboration	39.5	Shanti Bhattacharya, Balaji Srinivasan
36	A Foot-Drop Rehabilitation Device Offering Customized Treatment and Monitoring	2019-2020	Biotechnology Industry Research Assistance Council	10.4	Ramkrishna Pasumarthy
37	Rural Electrification Project in Meghalaya (NEEPCO)	2018-2023	North Eastern Electric Power Corporation Ltd	111.59	Ashok Jhunjunwala

38	Village electrification programme in J&K, Using Solar DC Inverterless System	2018-2023	Jammu and Kashmir State Power Development Corporation Limited	560	Ashok Jhunjunwala
39	Rural Electrification Project in Manipur (MSPDCL)	2018-2023	Manipur State Power Distribution Company Limited	1414.34	Ashok Jhunjunwala
40	Tools and Processes for Multi-View 3D Display Technologies	2018-2023	Department of Science & Technology	106.54	Mansi Sharma
41	Design and Development of Novel, Highly Scalable, Ultrafast Phase Change Memory for Universal Memory Applications	2018-2021	SERB	24.56	Anbarasu Manivannan
42	Coherent One Way Quantum Key Distribution	2018-2021	Uchhatar Avishkar Yojana - IIT Madras	180	Anil Prabhakar, Prabha Mandyam, Andrew Thangaraj, Shweta Agrawal
43	Developing Lo-Cost Bipolar Transistors for Analog and RF Applications in 0.18 μ m CMOS Technology	2018-2021	DST	33.37	Anjan Chakravorthy
44	VAJRA Visiting Faculty - Dr. Liam Paul Barry	2018-2021	DST	10	Deepa Venkitesh
45	Ligo R&D for India	2018-2021	Inter-University Centre for Astronomy and Astrophysics	245.31	Deepa Venkitesh, Shanti Bhattacharya, Rachael Kalamani, Prabhu Rajagopal, Anil Prabhakar
46	Design and Development of SPDT RF MEMS Switches for Ku Band Applications	2018-2021	ISRO	29.88	Deleep R. Nair, Amitava DasGupta
47	Nanoelectronics NETWORK for Research and Applications (NNetRA)	2018-2021	DST	1064	Enakshi Bhattacharya, Nandita DasGupta, and 25 others
48	Nanoelectronics Network for Research and Application (NNetRA)	2018-2021	Ministry of Electronics & Information Technology	1584.65	Enakshi Bhattacharya, Nandita DasGupta, and 25 others

49	Building End to End 5G Test Bed in India	2018-2021	Department of Tele-communications	5975.8	Ganti Radhakrishna, Giridhar K., Bhaskar Ramamurthi, Shanthi Pavan, Nitin Chandrachoodan, Krishna M., Sivalingam Aniruddhan S., Krishna Jagannathan, Saurab Saxena, Uday K. Khankhoje
50	Realization of Series Connection of Silicon Carbide (SiC) Devices in Converters with High Frequency Link Bidirectional DC-DC Converter for Grid Interfaces	2018-2021	Ministry of Electronics & Information Technology	53.7	Kamalesh Hatua
51	Super Resolution Microscopy for Point-of-Care Cancer Diagnosis	2018-2021	IMPRINT	56.76	Kaushik Mitra, Shanti Bhattacharya
52	New Class of Intelligent Robotic Imaging System for Keyhole Surgeries	2018-2021	Department of Biotechnology	217.29	Mohanasankar S.
53	Expansion of Healthcare Technology Innovation Centre (HTIC) - Phase II	2018-2021	Department of Biotechnology	1175	Mohanasankar S.
54	Investigations in Topological Codes, Quantum Fractal Codes and Non-Abelian Color Codes with a View to Fault Tolerant Quantum Computing	2018-2021	Department of Science & Technology	21.84	Pradeep Sarvepalli
55	Dynamic Game Theoretical Methods in the Control of Multi-Agent Systems with Inequality Constraints	2018-2021	SERB - Core Research Grant	21.94	Puduru Viswanadha Reddy
56	Development of Techniques to Improve the Targeting Accuracy of Surgical Navigation Systems	2018-2021	SERB	46.54	Ramya Balachandran
57	Identification, Classification and Localization of Incipient Discharges in Transformers Adopting Multi-Sensor Fusion Technique	2018-2021	Uchhatar Avishkar Yojana - IIT Madras	312	Sarathi R.
58	Energy Efficient Software - Defined Wide Range Wireline Transceiver	2018-2021	SERB	50.17	Saurabh Saxena

59	Energy - Efficient & Wide - Range 15Mb/s-1.5Gb/s SERDES	2018-2021	ISRO	41.6	Saurabh Saxena, Shanthi Pavan, Nagendra Krishnapura, Aniruddhan S.
60	Optical Communication with Spatial Modes of Light-BRICS	2018-2021	DST	26.42	Shanti Bhattacharya, Deepa Venkitesh, Pramitha V.
61	Design of Optimal Signal Constellation and Detection Algorithm for Energy Efficient Millimeter Wave Radio Units	2018-2021	SERB	10.05	Srikrishna B.
62	Synchronous Reluctance Motor Drive for Indian EV	2018-2021	Department of Heavy Industry	279.15	Srirama Srinivas, Krishna Vasudevan
63	A Localized Microgrid to Power an Off-Grid Locality	2018-2020	DST	358.27	Ashok Jhunjhunwala
64	Next-Generation AMOLED Displays, OLED Lighting and OPV Products Development of Disruptive Technologies to Enable Cost-Effective Electronic Component Manufacturing in India	2018-2020	Velankani Group	15	Debdutta Ray, Soumya Dutta, G. Venkatesh, G. Rajeswaran
65	Next-Generation AMOLED Displays, OLED Lighting and OPV Products Development of Disruptive Technologies to Enable Cost Effective Electronic Component Manufacturing in India	2018-2020	Tata Sons Limited	340	Debdutta Ray, Soumya Dutta, G. Venkatesh, G. Rajeswaran
66	Next-Generation AMOLED Displays, OLED Lighting and OPV Products Development of Disruptive Technologies to Enable Cost Effective Electronic Component Manufacturing in India	2018-2020	DRDO	340	Debdutta Ray, Soumya Dutta, G. Venkatesh, G. Rajeswaran
67	Next-Generation AMOLED Displays, OLED Lighting and OPV Products Development of Disruptive Technologies to Enable Cost Effective Electronic Component Manufacturing in India	2018-2020	Grantwood Technologies Private Limited	560	Debdutta Ray, Soumya Dutta, G. Venkatesh, G. Rajeswaran
68	Next-Generation AMOLED Displays, OLED Lighting and OPV Products Development of Disruptive Technologies to Enable Cost Effective Electronic Component Manufacturing in India	2018-2020	Ministry of Electronics & Information Technology	2518	Debdutta Ray, Soumya Dutta, G. Venkatesh, G. Rajeswaran

69	Demonstration of Mode Division Multiplexed Communication System Few Mode Fibers	2018-2020	Ministry of Electronics & Information Technology	173.83	Deepa Venkitesh, Srikrishna B., Balaji Srinivasan, Ganti Radha Krishnan
70	SONIO Suite: Ultrasound Image Guided Robotic Interventional Oncology Integrated Treatment System	2018-2020	IMPRINT	101.16	Mohanasankar S.
71	Designing Energy Efficient Software- Defined SERDES - Young Faculty Research Fellowship - Visvesvaraya Ph.D. Scheme	2018-2020	Ministry Of Electronics & Information Technology	14.8	Saurabh Saxena
72	Rural Electrification works in 94 villages in Manipur	2017-2022	Manipur Renewable Energy Development Agency	1680.94	Ashok Jhunjhunwala, Devendra Jalihal
73	Center for Battery Engineering (CBE) at TCOE	2017-2022	Department of Heavy Industry	1720	Ashok Jhunjhunwala, Devendra Jalihal, Krishna Vasudevan, N. Lakshminarasamma
74	Harnessing Human-Centric Networks	2017-2022	DST	35	Avhishek Chatterjee
75	UI-ASSIST:US-India Collaborative for Smart Distribution System with Storage	2017-2022	DST	184.5	Mahesh Kumar, Srirama Srinivas
76	Optimization and Control of Complex Dynamical Systems	2017-2022	Department of Science & Technology	35	Rachel
77	Soil Moistures Retrieval from Airborne SAR	2017-2022	Space Application Centre	23.22	Uday K. Khankhoje, Harishankar Ramachandran
78	UK-India Clean Energy Research Institute (UKICERI)	2017-2021	DST	37.72	Kalyan Kumar B.
79	Development of Silicon BiCMOS Technology for RF Applications	2017-2020	ISRO	49.54	Anjan Chakravorty
80	Power Scalable Kilowatt Class Laser Sources for Directed Energy Applications Through Coherent Beam Combining of Narrow Linewidth Fiber Lasers	2017-2020	IMPRINT	399.59	Balaji Srinivasan, Anil Prabhakar, Deepa Venkitesh

81	Development of a Highly Versatile Secure Very Wide-Band Wireless Communication Platform (VERSA - COMM) for Defence and Strategic Applications	2017-2020	DRDO	696.49	Bhaskar Ramamurthi, Giridhar K., Shanthi Pavan, Nagendra Krishnapura, Krishna M. Sivalaingam, Aniruddhan S.
82	Development of a Non-contact Type Conductivity Measurement System for Oceanographic Applications	2017-2020	National Institute of Ocean Technology	18.84	Boby George, Jagadeesh Kumar V.
83	Reliability of SiGe Channel pMOSFETs	2017-2020	Department of Science & Technology	68.89	Deleep R. Nair, Amitava DasGupta, Anjan Chakravorty
84	Standalone System Electrification of 306 Villages in Assam with IIT Madras- Innovative Solar-DC Inverterless System	2016-2021	Assam Power Distribution Company Limited	12418.59	Ashok Jhunjhunwala
85	Development of Accurate and Affordable Surgical Navigation System	2016-2021	Department of Biotechnology	100.22	Ramya Balachandran
86	Integrated Efficient Electric Power Train for Electric Vehicles	2016-2020	Uchhatar Avishkar Yojana - IIT Madras	800	Ashok Jhunjhunwala, Bhaskar Ramamurthi, Krishna Vasudevan, N. Lakshminarasamma
87	Development of Graphene/ Reduced Graphene Oxide-Based Transparent Conductive Substrate for Optoelectronic Devices	2016-2020	Uchhatar Avishkar Yojana - IIT Madras	195	Debdutta Ray, Soumya Dutta
88	Interconnected Multi-village Micro-grids	2016-2020	Uchhatar Avishkar Yojana - IIT Madras	300	Krishna Vasudevan, Ashok Jhunjhunwala, Devendra Jalihal, Bhaskar Ramamurthi, N. Lakshminarasamma
89	Robust Frequency Converters in Polluted Grids	2016-2020	Uchhatar Avishkar Yojana - IIT Madras	255.06	Krishna Vasudevan, Kamalesh Hatua
90	Robotic System for Image Guided, Minimally Invasive Spine Surgery	2016-2020	Uchhatar Avishkar Yojana - IIT Madras	900	Mohanasankar S., Jagadeesh Kumar V.
91	iQuant: Platform for affordable automated immunodiagnosics Proposal for Technology R&D and Product Development	2016-2020	Uchhatar Avishkar Yojana - IIT Madras	1400	Mohanasankar S., Jagadeesh Kumar V.

92	Visvesvaraya PhD Scheme for Electronics and IT - a scheme from DEITY	2015-2021	Media Lab Asia	248.76	Bijoy Krishna Das, Harishankar Ramachandran, Manivasakan R., Anil Prabhakar, Balaji Srinivasan, Shanti Bhattacharya, Deepa Venkitesh, Ananth Krishnan
93	Special Manpower Development Program for CHIPS to System Designs	2015-2020	Department of Electronics & Information Technology	147.51	Nagendra Krishnapura, Nitin Chandrachoodan, Janakiraman Viraraghavan
94	Direct Patterning of Vortex Generating Diffractive Optical Elements on Fibre Tip Using a Focused Ion Beam	2015-2020	Indo-German Science & Technology Centre	3	Pramitha V.
95	Centre of Excellence for Decentralized Power Systems	2013-2021	MHRD	2000	Ashok Jhunjhunwala
96	Investigations into Underwater Imaging	2012-2020	Board of Research in Nuclear Sciences	99.25	Rajagopalan A. N., Bhaskar Ramamurthi, Krishna Vasudevan, Kamalesh Hatua, N.Lakshminarasamma
97	JC Bose Fellowship	2010-2020	DST	158.05	Ashok Jhunjhunwala

Industrial consultancy projects (ongoing and new)

Sl. No.	Faculty Member	Title	Industry	Amount (Rs. in lakhs)
1	Anil Prabhakar	Centre for Rehabilitation Engineering and Assistive	L&T Technology Services Limited	324
2	Arun Karuppaswamy, Krishna Vasudevan, Kamalesh Hatua	Study and Analysis on Failure of Banbury MV Drives	MRF limited	5.9
3	Deleep R. Nair, Amitava DasGupta	Fabrication and Characterization of Thin Films and Devices	Common Code	35
4	Deleep R. Nair, Amitava DasGupta	Fabrication and Characterization of Thin Films and Devices - IT	Common Code	60
5	Jhunjhunwala Ashok	Inverterless based CSR Project for Verizon	M/s. Verizon Data Services India Private Limited	75
6	Jhunjhunwala Ashok, Devendra Jalihal	Center for Battery Engineering and Electric Vehicles (CBEEV)	Common Code	5
7	Jhunjhunwala Ashok, Devendra Jalihal	Center for Electric Vehicles (CoEV)	Common Code	8.26

8	Jhunjunwala Ashok, Krishna Vasudevan, Lakshminarasamma N.	Center for Battery Engineering (ABB)	ABB India Limited	200
9	Jhunjunwala Ashok, Krishna Vasudevan, Lakshminarasamma N.	Centre for Battery Engineering (Mahindra & Mahindra Ltd.)	Mahindra & Mahindra Ltd.	150
10	Jhunjunwala Ashok, Krishna Vasudevan, Lakshminarasamma N.	Village Micro Grid (VMG)	ABB India Ltd.	99
11	Krishna Vasudevan, Ramesh Babu N., Kamalesh Hatua	Design Reviews for DMDE	Defence Machinery Design Establishment	9.07
12	Mohanasankar S.	Endoscopy Technology Platform	BGR Energy Systems Limited	53
13	Mohanasankar S.	iQuant Analyser Design Optimization for Manufacturing Scaleup	J Mitra and Company Private Limited	100
14	Ramkrishna Pasumarthy	Advanced Process Control System Lab	Mormugao Port Trust	14.22
15	Sarathi R., Krishna Vasudevan	Electrical Design Verification for the Water Supply and Distribution Project-Bansujara Multi Villages Water Supply Scheme	Common Code	10
16	Srirama Srinivas	Testing Protocol of Railway Transformers	RITES Limited	5.69

RBIC projects (ongoing and new)

Sl. No.	Faculty Member	Title	Industry	Amount (Rs. in lakhs)
1	Abhishek Sinha	Advanced Scheduling Algorithms for 5G	Qualcomm Technologies, Inc.	24.1
2	Anil Prabhakar	Pulsed Laser for Brain Imaging	Alumni Association	7
3	Arun Karuppaswamy	MOSFET Based Synchronous Rectifier Circuit Design and Development for Automotive Battery Charging Application	Lucas T.V.S. Limited	19.47
4	Ashok Jhunjunwala	Centre for Battery Engineering and Electric Vehicle (GAIL)	GAIL India Limited	47.2
5	Ashok Jhunjunwala	Center of Electric Vehicle (ADI)	Analog Devices	176.35
6	Ashok Jhunjunwala	Development of Lithium Ion Battery Pack for Hybrid Bus	TATA Motors Limited	64.94
7	Ashok Jhunjunwala, Devendra Jalihal	Centre for Battery Engineering (AL)	Ashok Leyland Limited	177
8	Ashok Jhunjunwala, Devendra Jalihal	Centre for Battery Engineering (IOCL)	Indian Oil Corporation Limited	150
9	Ashok Jhunjunwala, Devendra Jalihal	Centre of Battery Engineering (ESSEL)	Essel Green Mobility Limited	177

10	Ashok Jhunjunwala, Devendra Jalihal	Centre of Electric Vehicle (ESSEL)	Essel Green Mobility Limited	90
11	Ashok Jhunjunwala, Devendra Jalihal	Centre of Electric Vehicle (Power Grid)	Power Grid Corporation of India Limited	29.5
12	Ashok Jhunjunwala, Devendra Jalihal	Development and Testing of Battery Pack for Electric Vehicle - Bus and Auto	Exicom Tele-Systems Limited	120.36
13	Ashok Jhunjunwala, Devendra Jalihal	Development and Testing of Battery Pack for Electric Vehicles - Bus and Auto	Exide Industries Limited	160
14	Ashok Jhunjunwala, Devendra Jalihal	Development and Testing of Battery Pack for Electric Vehicles - Bus and Auto	Amara Raja Batteries Limited	160
15	Ashok Jhunjunwala, Devendra Jalihal	Technical Validation Trials for Battery Swapping in EVs	Bharat Petroleum Corporation Limited	35.4
16	Ashok Jhunjunwala, Venkatesh T.	Consumer Behaviour Measurement	TTK Prestige Limited	225
17	Bharath Bhikkaji	Self-Interference Cancellation	Bharat Electronics Limited	64.9
18	Christopher S., Aniruddhan S.	Development of Multichannel Low Power Transmit/Receiver RF ICs Components for Airborne Applications	Defence Research and Development Organisation	24.39
19	Christopher S., Harishankar Ramachandran	Development of Smart Antenna Panel for 4x4 TR Module SoC for Airborne Applications	Centre for Air Borne System	24.57
20	Devendra Jalihal, David Koilpillai, Ganti Radhakrishna	Wireless Network of RPW Based Radios - Network Protocols and Synchronization	Hitachi India Private Limited	10
21	Devendra Jalihal, David Koilpillai, Venakatesh R., Ganti Radhakrishna	Wireless Network of RPW Based Radios - Network Protocols and Synchronization - Extension to Phase 7	Hitachi India Private Limited	2
22	Ganti Radhakrishna	Intel India Faculty Excellence Program	Intel Technology India Private Limited	30
23	Giridhar K.	Design and Development of LPI/LPD Waveforms on COTS Testbed	Defence Electronics Applications Lab	59.61
24	Giridhar K.	Signal Recovery in MANET	Bharat Electronics Limited	19.12
25	Harishankar Ramachandran	Modeling and Simulation of Plasma and Rocket Plume Effects on Communication Links	Integrated Test Range, DRDO	7.5
26	Kamalesh Hatua	Development of 10 kV Solid State Circuit Barker and Consultancy Support for Solid State Transformer	Centre for Development of Advanced Computing	20

27	Kamalesh Hatua	Development of Low Wattage Fan Motor	Tribi System Private Limited	7.08
28	Kamalesh Hatua	Wide Band Gap Device Based Automotive Power Supply	Semtronics limited	11.52
29	Karmalkar S.	Simulation and Design of SiC Power Diodes and MOSFETs	Defence Research and Development Organisation	23.52
30	Kaushik Mitra	Thermal Imaging Based Condition Monitoring	Caterpillar India Private Limited	7.61
31	Krishna Vasudevan	IGCS Research Programme on Sustainable Power Engineering - Phase II	Maschinenfabrik Reinhausen	204.21
32	Krishna Vasudevan	Study and Development of Inverter for High Speed Motor	Turbo Energy Private Limited	13.57
33	Mohanasankar S.	To Identification, Assessment/ Analysis and validation in areas of Artificial Intelligence, Machine Learning and Deep Technology to GE	GE India Industrial Private Limited	236
34	Nandita DasGupta, Enakshi Bhattacharya, Amitava DasGupta	Technology Development for SiC MEMS Pressure Sensor	Indira Gandhi Centre for Atomic Research	45.55
35	Nitin Chandrachoodan, Janakiraman Viraraghavan	Investigation of Artificial Neuron Architectures Suitable for FPGAs	Public Health Engineering Directorate	33.19
36	Rajagopalan A. N.	Google AI/ML Research Award	Google Ireland Limited	14.6
37	Rajagopalan A. N.	Instance Super-Resolution of SEM Images	KLA Tencor Corporation	17.75
38	Rajagopalan A. N.	Robust PCA for Outlier Detection	KLA-Tencor Corporation	16.25
39	Rajagopalan A. N.	Visual Enhancement of SEM Images	KLA-Tencor Corporation	17.5
40	Ramkrishna Pasumarthy	Smart Building PLC Testbed Leveraging Advanced Sensing Technologies	System Level Solutions India Private Limited	5.45
41	Ramkrishna Pasumarthy	Smart Environment Monitoring Using GDML	Cognizant Technology Solutions India Private Limited	26
42	Sarathi R.	Evaluation and Improvement of Dielectric and Insulation Properties of Epoxy Casting Resin Obtained in India	Toshiba Corporation	10
43	Shanthi Pavan, Nagendra Krishnapura	Centre for Advanced Analog Mixed-Signal VLSI Design - Phase II	Texas Instruments India Private Limited	1136.2
44	Swarup K. S.	Active Power Flow Control in Indian Transmission Networks	Maschinenfabrik Reinhausen	15.83

45	Venkatesh R.	Verification of NetSim Simulation Results	TETCOS	7.08
46	Venkatesh R.	WiFi Deployment Strategies	Qualcomm Technologies, Inc.	44.68

Retainer consultancy (ongoing and new)

Sl.No.	Faculty Member	Title	Industry	Amount (Rs. in lakhs)
1	Mohanasankar S.	Advanced Diagnostic Technologies	J. Mitra and Company Private Limited	36
2	Aniruddhan S.	Design of 28GHz Transceiver	Cadence Design Systems (India) Private Limited	23.6
3	Christopher S.	New Defence Manufacturing Industry Establishment	Sundaram Industries Private Limited	28.32
4	Gaurav Raina	Visiting Professor at Krea University	KREA University	21.24
5	Anil Prabhakar	Quantum Key Distribution	National Company of Telecommunication and Information Services	2.88
6	Gaurav Raina	IT Advisor	United India Insurance Company	11.5

Faculty members' participation with other institution under MoU

Sl. No.	Faculty Member	Participation Details	University/Institution
1	V. Jagadeesh Kumar	Video based M.Tech (UoPM.Tech) in Communications & Signal Processing	BHEL
2	Bhaswar Chakrabarti	Collaborative research on resistive memory technology	Argonne National Laboratory

Distinguished visitors to the department

Sl.No.	Name and Designation	Date of Visit	Purpose of Visit
1	Dr. Sayak Bhattacharya, Department of Physics, University of Toronto	22 April 2019	Gave an Optics Seminar on Trapping the Light Fantastic
2	Dr. Shaunak Bopardikar, Michigan State University, Lansing	8 July 2019	Exploring possibility of collaboration
3	Prof. Eddie Smigiel, INSA Strasbourg	19-26 August 2019	Exploring possibility of collaboration; gave a talk titled "Didactics on mathematical physics: a balanced mix of fundamental and applied science for engineering the future"
4	Prof. Andrew Forbes, WITS, Johannesburg, South Africa	21-24 October 2019	BRICS project visit; also gave tutorial on Manipulating light, an introduction to laser beam shaping tools and techniques, and a seminar on Quantum Systems
5	Prof. Georges Zaccour and Prof. Michele Breton, University of Montreal, Montreal, Canada	15 November-15 December 2019	Collaboration and writing book; gave seminars in the EE and DoMS departments

6	Prof Govind Agrawal, University of Rochester	10 December 2019-21 March 2020	SPARC visitor
7	Prof Arti Agarwal, UTS Sydney	18-19 December 2019	For collaborations
8	Dr. Ashwin Ashok, Georgia State University	23 January 2020	Gave a talk on Next Generation Networking Through Visible Light Communication
9	Prof. Ayalvadi Ganesh from Bristol	20 January 2020	Gave a seminar talk on Reliable Broadcast and AllCast over Erasure Channels
10	Prof. Balu Santhanam, University of New Mexico	23 January 2020	Gave a seminar talk on Discrete Fractional Fourier Transform (DFRFT) to Retrieve Vibration Signatures Using Synthetic Aperture Radar (SAR) Data
11	Prof. Johan Nilsson, University of Southampton	16 February-3 March 2020	Research collaborations under SPARC project; Gave a talk: Highly-controlled, high-power, highly-nonlinear fiber laser sources
12	Dr. Praneeth Netrapalli, MSR India	17 February 2020	Gave a seminar talk in the workshop on modern optimization
13	Dr. Aditya Gopalan, Department of ECE, IISc. Bangalore	18 February 2020	Gave a seminar talk in the workshop on modern optimization
14	Prof. Steffen Leonhardt, RWTH Aachen University	20 February 2020	Gave a talk on Nonobtrusive methods for physiological driver and passenger state estimation

4.8.6 Other Activities of the Department/Centre

Results obtained in research work (from M.S. and Ph.D. thesis) of the scholar/faculty

- Quantum key distribution demonstrated at 105 km using differential phase shift keying with a sifted key rate of 10 kbps
- Quantum key distribution demonstrated at 150 km using a coherent one-way protocol with a sifted key rate of 10 kbps

Inter-disciplinary group achievements of the departments

- Centre for Quantum Information, Communication and Computing established by a seed grant on Team Research

Socially relevant activities carried out by the department

- Centre for Rehabilitation Engineering and Assistive Technology releases KAVI+ for online teaching of children with motor and learning disabilities

International collaboration achievements by the department

Student visit

Sl.No.	Students	Purpose of Visit	Date and Venue
1	Lakshminarayanan Venkatasubramni	Exchange student from IITM to DCU, Ireland	July-September 2019
2	Aneesh S.	Exchange student from IITM to AIST Japan	August-October 2019
3	Amira Ahsan	Exchange student from University of Rochester, USA to IITM	December 2019-February 2020
4	Durga Pavan Mahidhar	Exchange programme with KTH Sweden	15 January-15 March 2020

Activities initiated

Major infrastructure development made in the department

A. The ESB lobby: One lobby of the Department of Electrical Engineering was transformed into a sitting place for students. Tables and chairs, good wi-fi and power points were made available. The lobby has seen tremendous use from its inception.

OC. High Power Fiber Laser laboratory: The High Power Fiber Laser Laboratory has been established to support the power scaling of narrow linewidth fiber amplifiers and building a coherent beam combined laser system based on multiple fiber amplifiers. We have been successful in demonstrating coherent combination of two optical beams of 100 W each in a DRDO-funded project, and are presently pursuing research on combining four beams of 500 W each in an IMPRINT-funded project.

D. 5G Lab with latest VSA, VSG, Protocol testers: 5G Testbed Lab is a state-of-the-art lab aimed for developing 5G base stations. There are about 60 people working on the development of 5G gNB. It is equipped with Keysight signal analysers, generators, multi-port VNA's, protocol testers (e-CPRI and L2/L3) along with other equipment. Most of these equipment work till mmWave frequencies. A 64 TX RX base station has been built in this lab and is currently being tested.

E. Analog/RF/Millimeter Wave Testing Lab: The Analog/RF/Millimeter Wave Testing Lab (ESB 122)

was inaugurated by MeitY Secretary Shri Ajay Prakash Sawhney on 8 May 2019 in the presence of Director Prof. Bhaskar Ramamurthi and EE HOD Prof. Devendra Jalihal.

F. AMOLED Display Lab: The Active Matrix Organic Light Emitting Devices (AMOLED) Display project aims to kick-start the display industry in India by innovating a new fabrication process, which will enable the creation of AMOLED "microfactories". The "microfactories" concept should enable medium industries to enter the display manufacturing business. The theme of the project is "economy of speed," where a fast fabrication process with low takt times of manufacturing is explored. The project is supported by MeitY, DRDO and TATA Sons Limited. This laboratory, which is going to be the first of its kind in India, will house a complete display fabrication facility with state-of-the-art equipment. The project will deliver next-generation display prototypes for mobile phones and small display applications, which will be taken forward into a pilot line phase for future commercialisation by industry partners. The facility (cleanroom) is under construction and will be ready within few months.

G. Construction of a new ESB Annex: A new Electrical Sciences Block (ESB) is under construction. The building will have G+6 floors with 51,000 sq. ft. of built area, and is designed to have 28 labs and 17 offices. The ground-breaking ceremony for the new block was held on 18 October 2019. The construction is estimated to be completed by end of March 2021.

AMOLED display lab



Construction of ESB annex



Renovated ESB lobby



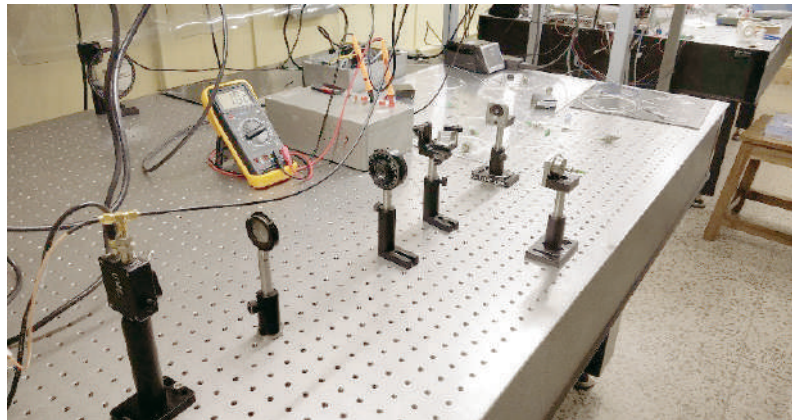
Inauguration of the Analog/RF/Millimeter wave testing lab



Renovated ESB 242 classroom



High power fiber laser laboratory



5G Testbed lab



4.9. Department of Engineering Design

4.9.1. Introduction

Set up in 2006, the Department of Engineering Design is the 16th department to come up at the Indian Institute of Technology Madras. Engineering design is a series of steps that engineers follow to come up with a solution to a problem. Many times, the solution involves designing a product that meets certain criteria and/or accomplishes a certain task. It is a decision-making process, often iterative, in which the basic sciences and the engineering sciences are applied to the optimal conversion of resources to meet

a stated objective. Students are first introduced to the design process along with fundamental mathematics, science and engineering, graphic art, design and aesthetics. They are trained not only in the mechanical aspects of design, but also in electronics, control and embedded systems for all-round skill development. Courses in geometric modelling, finite elements, materials engineering, automotive engineering, mechatronics, robotics, biomedical imaging and diagnostic techniques are also offered.

4.9.2. Academic Programmes

A first of its kind in India, the department provides the much-needed leadership in engineering design with two novel dual-degree programmes. Both the programmes offer a B.Tech. in Engineering Design, and the first that began in 2006 offers an M.Tech. in Automotive Engineering. The second programme,

launched in 2008, offers an M.Tech. in Biomedical Design. From 2007, the department also offers M.S. and Ph.D. programmes. Recently, an interdisciplinary dual degree programme in Robotics was started with ED as the coordinating department.

New courses introduced

Sl. No.	Course No.	Title
1	ID6100	Robotics Laboratory for IDDD Program
2	ID6015	Machine Learning Solutions for Engineering Problems
3	ED5335	Data Structures, Algorithms and Advanced Visualization

New laboratory established: EMI/EMC laboratory

Students on roll as of September 2019+M.S. and Ph.D. admission in January 2020

Programme	Year I	Year II	Year III	Year IV	Year V and others	Total
Dual Degree	62	56	55	52	65	290
M.S.	9	7	8	7	2+2	35
Ph.D.	16	16	12	13	9+31	97
Total	87	79	75	72	109	422

Student/Scholar who attended conference/seminar and symposia abroad/India

Sl. No.	Student/Scholar	Roll No.	Conference/Seminar/Symposia/Workshop	Date and Venue	Financial Assistance from
Abroad					
1	Gurudatta M. Anche, Sashidhar P.	ED16S002 ED16S005	6th International Conference on Control, Decision and Information Technologies (CODIT-2019)	23-26 April 2019	Institute

2	Sidhant Pravinkumar Thole, Sivakumar A.	ED17S004 ED16S007	World Congress of Structural and Multidisciplinary Optimization-13	19-24 May 2019	Institute
3	Srinivasa Rakesh C.	ED16D403	10th International Conference on Materials for Advanced Technologies (ICMAT-2019)	23-28 June 2019, Singapore	Institute
4	Ambuj Shahi	ED16S004	15th IFToMM World Congress 2019	30 June-4 July 2019, Poland	Institute
5	Minerva R., Swathy P.	"ED14D019 ED14D023"	10th International Conference on Applied Human Factors and Ergonomics	24-28 July 2019, USA	Institute
6	Venkatesh A.	ED14D503	8th International Conference on Discrete Element Methods (DEMB)	20-26 July 2019, Netherland	Institute
7	Sooraj S.	ED14D200	15th International Conference on Laser Ablation (COLA 2019)	8-13 September 2019, Hawaii, USA	Institute
8	Mahendra Khened	ED15D404	Medical Image Computing and Computer Assisted Intervention Society	13-17 October 2019, China	Institute
9	Vaibhav Vilas Randive	ED17S001	IEEE Vehicle Power and Propulsion Conference 2019	14-17 October 2019, Vietnam	Institute
10	Vimal Kumar A. R.	ED16D500	IEEE Intelligent Transportation Systems Conference	27-30 October 2019, New Zealand	Institute
11	Dimple A. Shajahan	ED16D009	32nd Conference on Graphics, Patterns and Images SIBGRAPI 2019	28-31 October 2019, Brazil	Institute
12	Pediredla Vijay Kumar	ED17D403	The 6th IFToMM International Symposium on Robotics and Mechatronics (ISRM 2019)	28-30 October 2019, Taipei Tech, Taiwan	Institute
13	Venkata Ramani, Shreya Y.	ED15D500	The 8th IEEE International Conference on Connected Vehicles and Expo (ICCVE)	4-8 November 2019, Austria	Institute

14	Akhil Challa	ED17D404	ASME IMECE 2019	8-14 November 2019, Salt Lake City, Utah	Institute
India					
1	Sai Srikar, Poongavanam P., Dr. Bibekananda Patra, Teja Krishna, Mamidi Vijaykumar, Dharbaneshwar S. J.	ED15D201 ED18D010 ED17D004 ED15D402 ED17D403 ED15D500	4th International Conference on Advances in Robotics 2019	2-6 July 2019, IITM	Institute
2	Srinivasa Rakesh Cheethirala, Mythreyi O. V.	ED16D403, ED18D003	National Metallurgical Day - Annual Technical Meeting 2019	13-18 November 2019, Kerala	Institute
3	Yugandhara Rao Y., K. P. Jayaraman, Krishna C. Ghanakota	ED16D001, ED17IPF01, ED18D012	NDE 2019 Conference	5-7 December 2019, Bengaluru	Institute
4	Teja Krishna Mamidi, Aditya Mahesh Kolte, Bibekananda Patra	ED15D402 ED19D400 ED17D004	4th International and 19th National Conference on Machines and Mechanisms (iNaCoMM 2019)	5-7 December 2019, IIT Mandi	Institute
5	Divya Baskaran, Shabeeb Ahamed K. P.	ED16D002 BT15D030	2019 IEEE MTT-S International Microwave and RF Conference (IMaRC 2019)	13-15 December 2019, Mumbai	Institute
6	Muthu Rattina, Subash R., Divya Baskaran, Jeslin P. Issac	ED19D700 ED16D002 ED18D601	National Biopharma Mission supported hands-on training programme on Medical Device Prototyping	13-17 January 2020, IIT Kanpur	Institute
7	Gaurav Singh, Mythreyi O. V.	ED17D008 ED18D003	7th International Conference on Advancements and Futuristic Trends in Mechanical and Materials Engineering (AFTMME 2019)	5-7 December 2019, IIT Ropar	Institute

Students/Scholars who won outside prizes and awards

Sl.No.	Student/Scholar	Roll No.	Name of Prize	Prize awarded by
1	Geetha Chakravarthi, Krishnaprasath L.	ED11D007	Best Paper Award	TEQIP-III sponsored International Conference on Microwave Integrated Circuits, Photonics and Wireless Networks (IMICPW-2019), Trichy
2	Swathi Lakshmi B.	ED14D011	Life Sciences Category 1st prize - Oral Presentation	2nd National Biomedical Research Competition, organised by Postgraduate Institute of Medical Education & Research, Chandigarh
3	Mohan L. (Institute PDF)	ED17IPF02	1000 USD travel grant	μ-TAS-2019, CBMS, USA
4	Mohan L. (Institute PDF)	ED17IPF02	Best Poster Award	International Conference on Microfluidics and Lab on a Chip, 12-13 September 2019
5	Sooraj S.	ED14D200	Best Oral Presentation Award	11th International Conference on Precision, Meso, Micro and Nano Engineering 2019 (COPEN 11), Indore, 12-14 December 2019
6	Karthik Ramakrushnan	ED18S002	Best Paper in ITS Workshop	12th International Conference on COMMunication Systems & NETworks, Bengaluru, 7-11 January 2020
7	Jayaram Kizhekke Pakkathillam		Young Indian Radio Scientists Award	URSI Asia Pacific Radio Science (APRAS) Conference
8	Divya Baskaran, Shabeeb Ahamed K. P.		Student Travel Grant	2019 IEEE MTT-S International Microwave & RF Conference (IMaRC-2019), 13-15 December 2019
9	Kavitha Illath	ED18D600	Japan Student Services Organisation Fellowship	Toyohashi University of Technology, 5 October-31 December 2019

Students/Scholars who won Institute Convocation/Institute Day Prize

Sl.No.	Student/Scholar	Roll No.	Prize
1	Shivani Gupta Sarma	ED14B054	Prema & Nagaraja Setty Prize

4.9.3. Faculty and Their Activities

Faculty

Name and Qualifications	Major Areas of Specialisation
Professor	
Asokan T. (Head)	Robotics, mechatronics, control, electro-hydraulic servo systems
Jayaganthan	Materials engineering, nanomaterials and design, biomaterials, additive manufacturing, energy storage devices
Krishna Kumar R.	Nonlinear finite elements, vehicle dynamics and tyre mechanics
Nilesh J. Vasa	Opto-mechatronics, laser-based sensing and micro-manufacturing

Ramanathan M.	Geometric and solid modelling, CAD, computer vision, computational geometry, computer graphics, computational biology, shape search
Saravana Kumar G.	CAD, design optimisation, design for additive manufacturing, orthopedic bio-mechanics and biomedical image processing
Shankar Ram C. S.	Vehicle dynamics and control, transportation systems
Srikanth Vedantam	Design with novel materials, mechanical behavior of materials, wetting, microstructure evolution
Venkatesh Balasubramanian	Design thinking, innovation management, human factors and ergonomics, biomedical devices and implants, public policy

Associate Professors

Balkrishna C. Rao	Sustainable manufacturing, sustainable design, nano-manufacturing, manufacturing for biomedical applications, simulation of manufacturing processes
Ganapathy Krishnamurthi	Medical image analysis, pre-clinical imaging systems-X-ray micro-CT, fluorescence imaging
Kavitha Arunachalam	Biomedical instrumentation, radio frequency and microwave antenna design, hyperthermia physics, non-destructive material evaluation
Palaniappan Ramu	Optimization, application of statistical and probabilistic techniques for engineering design under uncertainties, risk/reliability based engineering design, surrogate-based modeling and analysis
Sandipan Bandyopadhyay	Robotics, dynamics of multibody systems, design

Assistant Professors

Tuhin Subhra Santra	Bio-nano/micro electro mechanical systems (bio-NEMS/MEMS), biomedical micro/nano devices, bio-micro/nano fabrication, single cell technology, nanomedicine, biosensors and bioelectronics, bionanomaterials
Srikanthan Sridharan	Electrified vehicle systems, modeling and control of power electronic converters and electric machine drives

Short-term courses/workshops/seminars/symposia/conferences organised by faculty members

Sl. No.	Coordinator(s)	Title	Period
Conference			
1	Asokan T.	4th International Conference on Advances in Robotics	2-6 July 2019
Workshops			
1	Venkatesh Balasubramanian	Tamil Nadu Model of Integrated Data-Driven Road Safety Initiatives	18 June 2019
2	Nilesh J. Vasa, Asokan T., Shankar Ram	Motivating ITI Graduands for Incubation and Entrepreneurship in Industrial Automation/Automotive Engineering	2-6 December 2019
Short-term Courses			
1	Shankar Ram C. S.	CEP on Component Sizing of Electrified Power Trains, Caterpillar	23 August 2019
2	Jayaganthan R.	CEP on Corrosion Mechanics and Prevention Techniques	7 September 2019
3	Ganapathy Krishnamurthi	CEP on Machine Learning and Artificial Intelligence	20-22 September 2019
4	Tuhin Subhra Santra	Two-dimensional Materials and Applications	21-26 September 2019

5	Venkatesh Balasubramanian	Design Thinking for Organizational Excellence; M/s Mando India Private Limited	August and September 2019
6	Venkatesh Balasubramanian	Anand Manufacturing Excellence - Mechatronics; M/s Anand Automotive Limited	August and September 2019
7	Venkatesh Balasubramanian	Operational Excellence through Lean Principles Using SMS: Indian Railways	August and September 2019
8	Shankar Ram C. S.	Control Systems	November and December 2019
9	Venkatesh Balasubramanian	Design Thinking and Lean Ergonomics for Manufacturing Excellence	2-21 December 2019
10	Palaniappan Ramu	Interdisciplinary CEP for Southern Railways	7-9 January 2020

Short-term courses/workshops/seminars/symposia/conferences/training attended by the faculty members in academic institutions and public sector undertakings

Sl. No.	Faculty Member	Title	Institution	Period
Workshops				
1	Krishna Kumar R.	Brain Connectomics	Italy	23-27 September 2019
2	Venkatesh Balasubramanian	Transportation Safety Framework and its impact in Tamil Nadu	Uttar Pradesh Government involving Transport Police, Health and Highways Departments	19 September 2019
Symposium				
1	Ganapathy Krishnamurthi	IEEE International Symposium on Biomedical Imaging	Venice, Italy	8-11 April 2019
Conferences				
1	Palaniappan Ramu	World Congress on Structural and Multidisciplinary Optimization	Beijing, China	19-25 May 2019
2	Tuhin Subhra Santra	International Conference on Biotechnology and Health Care Summit	Bengaluru	28-29 August 2019
3	Nilesh J. Vasa	15th International Conference on Laser Ablation (COLA 2019)	United States of America	8-13 September 2019
4	Tuhin Subhra Santra	Nano-Focused Electric Field for Nano-Localized Single Cell Electroporation Using ITO Nano-Electrode Chip; 23rd International Conference on Miniaturized Systems for Chemistry and Life Sciences (μ -TAS-2019)	Basel, Switzerland	27-31 October 2019

Special lectures delivered by the faculty in other institutions

Sl. No.	Faculty Member	Topic of Lecture	Institution	Date
1	Venkatesh Balasubramanian	Optimization of Driver Hand Posture for Delayed Fatigue of Hand Muscles	3rd International Conference on Clinical Orthopedics and Spinal Biomechanics, New Delhi	28 April 2019
2	Venkatesh Balasubramanian	Digital Initiatives for Manufacturing 4.0 - Long March from Hype to Necessity	Keynote at Digital Transformation Day, Daimler India Commercial Vehicles Private Limited	17 May 2019
3	Venkatesh Balasubramanian	Roads Safety Initiatives and Interventions - A Systems Approach	United Nations ESCAP, New Delhi	23 April 2019
4	Venkatesh Balasubramanian	Keeping Roads Safe in the Era of Impaired Drivers	United Nations ESCAP, New Delhi	23 April 2019
5	Venkatesh Balasubramanian	Systems Approach to Road Safety - Learnings from Tamil Nadu	International Conference on Safer Mobility'19, IIT Delhi	30 May 2019
6	Tuhin Subhra Santra	Bio Micro/Nano Fabrications and Application	Mechanics, Materials and Design, University of Cambridge, UK	18 June-22 July 2019
7	Shankar Ram C. S.	Understanding Electric and Hybrid Electric Vehicles - Components and Configurations	Easwari Engineering College	13 June 2019
8	Shankar Ram C. S.	Advanced Active Safety Systems for Road Vehicles	Government Engineering College, Barton Hill, Trivandrum	12 July 2019
9	Asokan T.	Design and Control of Surgical Robots	IISc, Bangalore	15 July 2019
10	Shankar Ram C. S.	Braking of Road Vehicles	IIT PALS	12 September 2019
11	Asokan T.	Keynote Address, RANE, International Conference	Hindustan Institute of Science and Technology, Chennai	29 September 2019
12	Asokan T.	Systems and Technologies for Advanced Robotics- Futuristic Perspective	DRDO, Pune	30-31 August 2019
13	Tuhin Subhra Santra	Biofabrications and Therapeutic Applications	Haldia	27-30 December 2019
14	Saravana Kumar G.	Automated Calibration of Cervical Spine Motion Segment Finite Element Model for Physiological Kinematics	IIT Mandi	5-8 December 2019
15	Saravana Kumar G.	Introduction to 3D Printing and Medical Applications	MES College of Engineering, Kuttippuram, Kerala	2-6 December 2019
16	Saravana Kumar G.	FE Simulation of Cervical Spine Biomechanics	Workshop on Basics of Biomechanics Using FEA, SRM IST Chennai	21-23 August 2019

17	Saravana Kumar G.	DfAM Considerations for Generative Design: A Case Study with FDM Parts	STTP on Design for Additive Manufacturing, IIITDM Kancheepuram	6-10 May 2019
18	Saravana Kumar G.	Influence of Cervical Spine Curvature on Range of Motion Under Physiological Loading	3rd International Conference on Clinical Orthopaedics and Spine Biomechanics, Indian Spinal Injuries Centre, New Delhi	26-28 April 2019
19	Asokan T.	Indian Med Tech Summit-Alumni Meet	New Delhi	7 December 2019
20	Asokan T.	STTP on Robotics and Automation	College of Engineering and Management, Kolaghat	17 December 2019
21	Venkatesh Balasubramanian	Data Driven Initiatives in Road Safety	New Delhi	20-22 January 2020
22	Shankar Ram C. S.	Active Vehicle Control Systems for Road Vehicle Safety	Hindustan Institute of Technology and Science, Chennai	5 November 2019
23	Shankar Ram C. S.	Heavy Vehicle Technology Trends in India: Safety and Mobility	Cambridge University, UK	6 December 2019
24	Tuhin Subhra Santra	Bio-Micro/Nano Fabrication and Applications	IIT Madras	16-17 March 2020
25	Tuhin Subhra Santra	Bio-Micro/Nano Fabrication and Therapeutic Applications	Indian Institute of Engineering Science and Technology, Shibpur	4 February 2020
26	Tuhin Subhra Santra	Biomedical Micro/Nano Fabrications and Therapeutic Applications	IIT Madras	21-26 September 2019
27	Tuhin Subhra Santra	Single Cell Micro/Nano Electroporation to Laser Induced Protoporation	IISc Bangalore	28-29 August 2019

Visits abroad by faculty

Sl. No.	Faculty	Country Visited	Date	Purpose of Visit	Funding from
1	Palaniappan Ramu	Michigan State University, East Lansing, Michigan, USA	6-8 May 2019	Project	Without institute's financial assistance
2	Palaniappan Ramu	Ohio State University, Columbus, USA	9-10 May 2019	Project	Without institute's financial assistance
3	Palaniappan Ramu	Purdue University, West Lafayette, Indiana, USA	13-14 May 2019	Project	Without institute's financial assistance
4	Ramanathan M.	Technion and Tal Aviv University, Israel	22-23 May 2019		

5	Krishna Kumar R.	Netherland	24-27 June 2019	Ph.D. Examiner in Utrecht University	
6	Tuhin Subhra Santra	"University of Cambridge, United Kingdom"	12 July 2019	Advanced technique for cell therapy and diagnostics	Wellcome Trust/ DBT India Alliance
7	Venkatesh Balasubramanian	Washington	24-28 July 2019	Conference	
8	Krishna Kumar R.	Verona, Italy	22-27 September 2019	Workshop on Brain Connectomics	
9	Nilesh J. Vasa	USA	7-16 September 2019	15th International Conference on Laser Ablation	CPDA
10	Srikanth Vedantam	Doha, Qatar	20-22 September 2019	Discussion and talk in Texas A&M University Qatar Campus	
11	Nilesh J. Vasa	Thailand	2-4 October 2019	Private	
12	Tuhin Subhra Santra	Switzerland	28 October-1 November 2019	23rd International Conference on Miniaturized Systems for Chemistry and Life Sciences (Micro TAS 2019)	
13	Asokan T.	Malaysia	25-29 November 2019	Brief Visit	University of Malaya
14	Shankar Ram C. S.	Cambridge, United Kingdom	3-6 December 2019	Keynote talk	

Honours and awards obtained by faculty

Sl. No.	Faculty Member	Award	Awarded by	Awarded for	Date of Award
i. Honours					
1	Dr. C. S. Shankar Ram	V. Ramamurthi Faculty Fellow	IIT Madras	Research and teaching	Two years w.e.f. 1 October 2019
2	Tuhin Subhra Santra	Visiting Professor	University of Cambridge, UK	Research and teaching	June-July 2019
3	Tuhin Subhra Santra	Guest Editor	Cells, MDPI	Switzerland	2019-20
4	Tuhin Subhra Santra	Guest Editor	Micromachines	Switzerland	2019-20
ii. Awards					

1	Dr. Anusha (lead author); Dr. Lelitha Devi, CE; Dr. Shankar Ram C. S., ED; Dr. Rilett as co-authors	Arthur M. Wellington Award	American Society of Civil Engineers		
2	Mr. Venu Srinivasan, PoP, ED	Deming Distinguished Service Award	-	Dissemination and Promotion from the Deming Prize Committee	
3	Tuhin Subhra Santra	Guest of Honour on dais	International Conference on Nanotechnology 2019, Haldia		28-29 December 2019

Journal Editorial Boards

Sl. No.	Faculty Member	Position (Editor/Member)	Journal Name
1	Tuhin Subhra Santra	Guest Editor	<i>Micromachines</i>
2	Tuhin Subhra Santra	Guest Editor	<i>Cells</i> , MDPI

4.9.4 Design and Development Activities

New facilities added or major equipment procured

Sl. No.	Name of Equipment	Value (Rs. in lakhs)
1	Mask Aligner Control System	11,500 USD
2	Electrochemical workstation	Euro 12300
3	WS11-1 Dell Workstation	Rs.5,24,500
4	WS 7/Workstation, Boston	6,700 USD
5	Fluke - Ti480 PRO 60HZ Thermal Imager	Rs.5,96,400

Patents filed

Sl. No.	Faculty Member	Topic of Patent
1	Asokan T.	A multimodal 3-degrees of freedom haptic device
2	Asokan T.	Device for adjusting joint stiffness
3	Asokan T.	A compact modular active hand rehabilitation device
4	Tuhin Subhra Santra	Nano-second pulse laser-activated Intracellular delivery using titanium micro-dish
5	Tuhin Subhra Santra	2D substrate protein micropatterning process for cell alignment

Patents awarded

Sl. No.	Faculty Member	Topic of Patent
1	Sathish Kumar, Nilesh J. Vasa, Sarathi R.	A device and methods for determining the elemental identity and analysis on moving target from a variable stand-off distance
2	Srivatsan R. A., Gawali B., Rampal H., Mehta K., Bandyopadhyay S., Saravana Kumar G.	A hands-free device for enabling the differently abled to turn the pages of a book while reading, Indian Patent No. 326619

4.9.5 Research and Consultancy

Sponsored research projects (ongoing and new)

Sl. No.	Title	Period	Funding Agency	Amount (Rs. in lakhs)	Coordinators
1	Stakeholder-driven decision support cyber infrastructure for empowering rural communities to plan for water-agro-energy-climate resiliency	15 March 2019-14 March 2021	Scheme for Promotion of Academic and Research collaboration	45.81	Palaniappan Ramu
2	Understanding current practices on road safety in selected states and sharing integrated approach of Tamil Nadu	6 September 2019-5 September 2021	Ministry of Road Transport and Highways	25	Venkatesh Balasubramanian
3	High-fidelity surface reconstruction from noisy point sets with topological guarantee	13 August 2019-12 August 2021	Department of Science & Technology	15.84	Ramanathan M.
4	Endocavitary microwave applicator for integrated hyperthermia and radiotherapy treatment of locally advanced cervical cancer	11 December 2019-10 December 2022	Department of Science & Technology	103.52	Kavitha Arunachalam
5	Design of antenna for 5G communication	7 November 2019-6 November 2022	Science and Engineering Research Board	10.05	Kavitha Arunachalam
6	Development of phased array microwave hyperthermia system	27 December 2019-26 December 2021	Impacting Research Innovation and Technology - IMPRINT	70.86	Kavitha Arunachalam, Ramanathan M., Krishnamurthy C. V.
7	Fabrication of laser-assisted SiC thin film energy storage and conversion devices	13 January 2020-12 January 2022	Science and Engineering Research Board	22.37	Nilesh Jayantilal Vasa

Industrial consultancy projects (ongoing and new)

Sl. No.	Faculty Member	Title	Industry	Amount (Rs. in lakhs)
1	Shankar Ram C. S.	Technical assessment of personnel	Common Code	1.5
2	Palaniappan Ramu	FEA technical support for CFRP	Bharat Electronics Limited	14.73
3	Kavitha Arunachalam	RF simulation process study	HCL Technologies Limited	2.3
4	Saravana Kumar G., Palaniappan Ramu	Optimizing brake shoe	Sundaram Brake Linings Limited	7.08

RBIC projects (ongoing and new)

Sl. No.	Faculty Member	Title	Industry/Sponsor	Amount (Rs. in lakhs)
1	Palaniappan Ramu	Design space exploration using self-organizing maps	Siemens Technology Services Private Limited	16.82
2	Ramanathan M.	Modeling and visualization of fovea from retinal images using augmented reality	Defence Research and Development Organisation	9.65
3	Shankar Ram C. S.	Implementation of antilock brake system for heavy commercial road vehicles	Madras Engineering Industries Private Limited	72.19
4	Asokan Thondiyath	V.M. Thomas Robotics Research and Technology Laboratory	V. M. Thomas, MD, M/s Johnson Lifts Private Limited	100
5	Palaniappan Ramu, Ganapathy Krishnamurthi	Machine learning based soil testing	Shri AMM Murugappa Chettiar Research Centre	11.48
6	Venkatesh Balasubramanian	Consultancy services for Development and Implementation of Integrated Road Accident Database (IRAD)	Ministry of Road Transport and Highways	4248

Retainer consultancy (ongoing and new)

Sl.No.	Faculty Member	Title	Industry	Amount (Rs. in lakhs)
1	Palaniappan Ramu	Statistics consultant	M/s Measured Inc	4.2
2	Venkatesh Balasubramanian	Development of purchase specification for medical devices	Pharmedices Technical Services Private Limited	9
3	Venkatesh Balasubramanian	Strategic advisory to IOX	Indian Ocean Xchange India Private Limited	23.6
4	Venkatesh Balasubramanian	Root cause analysis of generator failure	RattanIndia Power Limited	10.62

Exchange programmes with other universities, including institutions/universities under MoU

Sl.No.	Student	Purpose of Visit	Date	Venue
1	Ashish Kumar, National Tsing Hua University, Taiwan	Exchange Visiting PhD Student	1 April-31 May 2019	Bio-u-Nano Lab

Faculty members' participation with other institution under MoU

Sl. No.	Faculty Member	Participation Details	University/Institution
1	Asokan T.	MoU for joint research	FIIT, Italy
2	Asokan T.	Setting up of laboratory	Mr V M Thomas, MD, M/s Johnson Lift Private Limited, Chennai

3	G. Saravana Kumar	MoU for joint research	Dr Rela Hospital, Chennai
4	G. Saravana Kumar	MoU for joint research	Indian Spinal Injuries Centre
5	Asokan T.	MoU for joint research/ student exchange	Kings College, London

Distinguished visitors to the department

Sl.No.	Visitor and Designation	Date of Visit	Purpose of Visit
1	Prof. David Cebon and Dr. Anil K. M., University of Cambridge	16-17 September 2019	To discuss potential collaboration on establishing a centre for Sustainable Freight Transport and also given a seminar, Towards Sustainable Road Freight
2	Prof. Konrad Polthier, Head of the Mathematical Geometry Processing Group, Institute of Mathematics, FU Berlin	25-26 November 2019	As part of DAAD-DST project on 3D reconstruction, he gave a seminar on recent developments in the area of mathematical geometry processing, discrete differential geometry, and mathematical visualization
3	Dr. Chandan Karmakar, Deakin University, Australia	3-18 October 2019	Australian Academy of Science 2019 Australia-India Early- and Mid-Career Fellowship
4	Prof. Satchi Venkataraman, Professor of Aerospace Engineering, San Diego State University (SDSU)	10 January 2020	Seminar: Optimization of Electrode Selection for Delamination Detection in Laminated Composites Using Electrical Resistance Tomography
5	Prof. Narayan Yoganandan, Department of Neurosurgery, Medical College of Wisconsin, Milwaukee, USA	28 June 2019	Seminar: Human Tolerance to Injury and Response to Disease: Biomechanical Experiments and Finite Element Modeling

4.9.6. Other Activities of the Department

NPTEL-SWAYAM courses offered by faculty

Course Name	SME Name	Course Run	Duration	Enrolment
Control Systems	Prof. C. S. Shankar Ram	July-October 2019	12 weeks	3819
Fundamentals of Automotive Systems	Prof. C. S. Shankar Ram	January-April 2020	12 weeks	5276
Design for Quality, Manufacturing and Assembly	Prof. Palaniappan Ramu	July-October 2019	8 weeks	4019
Machine Learning for Engineering and Science Applications	Prof. Ganapathy Krishnamurthi, Prof. Balaji Srinivasan (EE)	July-October 2019	12 weeks	10361

- Setting up of V.M. Thomas Laboratory for Robotics Teaching and Research with an investment of Rs 1 crore.
- ED Open House held on 21 September 2019 (Saturday)
 - Research highlights were presented in four exhibition stalls. All the teaching and research labs were opened for public.
 - More than 500 visitors and a large number of school students visited.
 - Four industry lectures were arranged for the benefit of visitors.
 - Five deep-tech start-ups from ED had their booths:
 - Ghost Vision Private Limited, Chennai
 - Ather Energy Private Limited, Bengaluru
 - Shira MedTech Private Limited, Ahmedabad
 - Predible Health, Bengaluru
 - Terero Mobility Private Limited, Chennai
 - To improve the interaction with students and have better communication, Batch Advisors have been nominated for all the batches of ED students (in addition to the FA). The Batch Advisors will meet the students at least twice a year.
- **100th DCC and 1st Department Advisory Panel**

(DeAP) Meeting 2019

- The first meeting of the DeAP was held on 9 November 2019. The theme of the meeting was Engineering Design@2030. Its salient features were:
 - Future of Engineering Design–Industry Perspective
 - Academic programmes, curriculum, relevance and changes needed
 - Engagement with industry–internships, placement, consultancy projects
 - Graduate research and its impact
 - Alumni and international engagements and collaborations
 - Faculty Search Committee has been formed.
- **Department Degree Distribution Programme (D3P)**
 - Degree distribution programme was held on 30 September 2019 at 04.30 pm in CS 15.
 - Mr. Anshuman Singhania, Deputy Managing Director, JK Tyres was the Chief Guest.
 - Ph.D.-06, MS-07 and DD-39 were awarded in person.
 - A get-together and interaction of the Chief Guest with the faculty, and graduands and their family members were organised.

4.10 Department of Humanities and Social Sciences

4.10.1 Introduction

Founded in 1959, the Department of Humanities and Social Sciences is one of the oldest departments of Indian Institute of Technology Madras. The department's essentially inter-disciplinary nature is its distinguishing factor, which allows students to develop an appreciation for a diverse set of fields such as development studies, economics, English studies, environmental studies, history, international relations, philosophy, political science and sociology.

The department offers both Master's and Doctoral programmes, as well as electives for B. Tech and M. Tech students.

Coupled with its multi-disciplinary background, the department boasts of a highly diverse and experienced faculty. It has an excellent student-teacher ratio, providing opportunities for academically intense learning. Equipped with state-of-the-art facilities in a serene campus, the department offers an enriching academic environment.

4.10.2 Academic programmes: Integrated M.A. (five-year programme)

New courses introduced

Sl. No.	Course No.	Title
1	HS3100	Economic Network Analysis
2	HS4580	Sanskrit for Yoga
3	HS4790	Gothic Sensation and Newgate Novels
4	HS4820	Fashion in Literature and Cinema
5	HS5017	Foundations of Language Science
6	HS5025	Linguistic Typology
7	HS5028	Language in Social Context
8	HS5029	Universal Grammar and Natural Language
9	HS5105	Perspectives on Labour
10	HS5130	Ecofiction
11	HS5230	Introduction to Chinese Language-A
12	HS5850	History of Medicine in Colonial India
13	HS5855	Memory, History and Literature
14	HS6024	Advanced Studies in Indian Cinema
15	HS5125	Global Health and Policy
16	HS5115	Introduction to International Organisations
17	HS3090	Short Story Classics (Modified)
18	HS7200	Regional Indian Literatures in Translation

New lab(s) established

A new Research Scholars Lab (RSL) has been established with a total seating capacity of 40.

Students on roll as of September 2019+M.S. and Ph.D. admission in January 2020

Programme	Year I	Year II	Year III	Year IV	Year V and others	Total
M.A.	43	44	38	42	48	215
Ph.D.	28	28	21	24	39	140
Total	71	72	59	66	87	355

Student/Scholar who attended conferences/workshops/seminars/symposia abroad/ India

Sl. No	Student/ Scholar	Roll No.	Conference/Seminar/ Symposia/Workshop	Date and Venue	Financial Assistance
Abroad					
1	Swikriti	HS16D013	SDS at OSU Multiple Perspectives on Access, Inclusion and Disability Conference	6-9 April 2019, Ohio State University, Columbus, Ohio, US	Institute Funding
2	Jyoti Mishra	HS16D009	British Association of American Studies Conference 2019	25-27 April 2019, University of Sussex, Brighton, UK	Self
3	Sanjeev Vasudevan	HS15D032	29th Annual Conference of the International Trade and Finance Association	29 May-1 June 2019, The University of Pisa, Livorno, Italy	
4	Ipsita Rakshit	HS15D030	10th RMUTP International Conference, The Indian Econometric Society Conference 2019 (TIES)	4-5 June 2019, Asia Pacific Applied Economics Association, Bangkok, Thailand	Self
5	Anviksha Drall	HS16D021			
6	Mohammad Shahid Zaman	HS15D028	16th EWEPA Conference	10-13 June 2019, Senate House, Malet Street, London, UK	Institute Funding
7	Nidheesh S.	HS15D006	MARE People and the Sea Conference X: Learning from the Past, Imagining the Future	24-28 June 2019, Amsterdam	Institute Funding
8	Tulasi Malini Maharatha	HS16D014	5th Annual International Conference on Public Health	24-27 June 2019, Athens, Greece	Institute Funding
9	Lakshmi Chithra Dilipkumar	HS16D012	Paradise on Fire 2019 ASLE Conference	26-30 June 2019, University of California, Davis, USA	Institute Funding
10	Jithin P.	HS15D029	XX Conference on International Economics	27-30 June 2019, Hotel Abades Nevada Palace, Sultana Street, 3 (Calle de la Sultana, 3) Granada, Spain	Institute Funding
11	Mohammad Shahid Zaman	HS15D028	DEAIC 2019 Conference	28-30 June 2019, Kent Business School, University of Kent, UK	Institute Funding
12	Jayakrishnan N.	HS15D017	International Association for Media and Communication Research (IAMCR-2019)	7-11 July 2019, University of Madrid, Spain	

13	Rashi Shrivastava	HS18D028	Frames of Mind - International Conference on Neo-Victorian Studies	8-10 July 2019, London Centre for Interdisciplinary Research, UK	
14	Tulasi Malini Maharatha	HS16D014	International Doctoral Courses on Health Economics and Policy 2019-2020	8-12 July 2019, University of Lausanne, Switzerland	Self
15	Tulasi Malini Maharatha	HS16D014	2019 iHEA World Congress	13-17 July 2019, University of Basel, Switzerland	Partially funded by iHEA
16	Veenapani Rajeev Verma	HS14D023			
17	Sumirtha	HS14D021			
18	Kanagarathinam D. V.	HS19IPF02	Medicine, Religion and Alchemy in South India: Resources and Permutations of Siddha Traditions and Siddha Medicine	25-27 July 2019, Eberhard Karls Universitat Tuebingen, Germany	Institute Funding
19	Hemachandra Padhan	HS18D008	13th BMEB International Conference	29-30 August 2019, Beach Resort Hotel, Bali, Indonesia	Bank of Indonesia
20	Shiji Mariam Varghese	HS18D011	3rd Memory, Forgetting and Creating International Interdisciplinary Conference	19-20 September 2019, Gdansk, Poland	Institute Funding
21	Gargi Roy	HS15D005	South Asian Languages Analysis Roundtable (SALA-35)	29-31 October 2019, INALCO-Paris	Self
22	Praveen Singh	HS16D007			Institute Funding
23	Viju V. V.	HS16D030	International Conference on Millennial Masculinities: Queers, Pimp Daddies and Lumbersexuals	10-11 December 2019, Massey University, Wellington, New Zealand	Institute Funding
24	Jyoti Mishra	HS16D009			
25	Ketan Reddy	HS17D008	Workshop on Trade, Global Value Chains, and Small and Medium-Sized Enterprises	6-7 February 2020, Asian Development Bank Institute, Tokyo	Institute Funding
26	Pallavi Sanyal	HS17D006	Time, Space and Culture International Conference	15-16 February 2020, St Anne's College, University of Oxford, UK	Institute Funding
27	Amar Jyoti	HS16D002	2020 Eastern Economic Association (EEA) Meetings	27 February-1 March 2020, Boston, USA	Institute Funding
28	P. Ketan Kumar Reddy	HS17D008	15th Australasian Trade Workshop (ATW)	21-22 March 2020, Research School of Economics in the College of Business and Economics, ANU, Canberra, Australia	Institute Funding

29	Athira	HS17D012	China India: Comparisons, Connections, Convergence (22nd Annual Comparative Literature Conference)	26-28 March 2020, University of South Carolina	Institute Funding
30	Suresh M.	HS16D006	The Asian Conference on Ethics, Religion and Philosophy	26-29 March 2020, Tokyo, Japan	Institute Funding
India					
1	Sandeep Kumar	HS18D005	Theatre appreciation workshop	27 May-4 June 2019, National School of Drama, Delhi	Institute Funding
2	Elizabeth Neduparambil	HS16D010	Advanced Panel Data Econometrics and Related Issues	17-21 June 2019, RBI Office, Mumbai	RBI
3	Madhu Narayanan	HS18D030	Social History of Mathematical Practices in India	11-12 July 2019, French Institute of Pondicherry	French Institute of Pondicherry
4	Thamarai Selvan K.	HS17D018			
5	Srisha P.	HS17D010	Multilevel Modeling in Health Research Using STATA	24-27 July 2019, ICMR-NIMS	Institute Funding
6	Kongkona Dutta	HS15D014	National Seminar on Conflict Resolution & Peace Building in 21st Century: Lessons from Gandhi	8-9 August 2019, GITAM School of Gandhian Studies	Self
7	Swathi Sudhakaran	HS15D016	5th Congress on Humanities and Social Sciences	4-10 September 2019, Jadavpur University, Kolkata	
8	Alfiya K. Jose	HS18D003	In and Beyond the City: Emerging Ontologies, Persistent Challenges and Hopeful Futures	18-21 September 2019, India Habitat Centre, New Delhi	Self
9	M. Subthiga	HS17D011	GIAN Course on Photographic Theories and Practices	28 October-8 November 2019, JNU, Delhi, India	Self
10	Mohammad Shahid Zaman	HS15D028	Workshop on Efficiency and Productivity Analysis Using R	1-2 November 2019, South Asian University, New Delhi	Institute Funding
11	P. Ketan Kumar Reddy	HS17D008	IGIDR Ph.D. Colloquium Core 2019	5-10 November 2019, IGIDR, Mumbai	IGIDR
12	Elizabeth Nedumparambil	HS16D010	Conference on Economics and Finance 2019	7-10 November 2019, Rajagiri Business School, Kochi	Self
13	Justin Joseph	HS15D018	All India Conference on China Studies 2019	8-10 November 2019, O. P. Jindal University, Haryana	Self
14	Ramnath Reghunadhan	HS18D022			

15	Prantik Bagchi	HS18D007	Workshop on Non-Market Valuation of Environmental Goods and Services	8-10 November 2019, CESS, Hyderabad	Institute Funding
16	Scherezade Dastur	HS18D029	International Conference on Linguistic Society of India	11-17 November 2019, Amarkantak, MP	Self
17	Swathi M. P.	HS19D003	Winter School on Developments in Climate Change and Sustainable Development	11-23 November 2019, TISS, Mumbai	
18	Pratiti Palit	HS17D002	International Conference of Linguistic Society of India (ICOLSI 41) and CIIL Mysore and LSI	12-16 November 2019, IGNTU, Amarkantak	
19	Mohammad Shahid Zaman	HS15D028	Conference on 50 years of Bank Nationalization - Indian Banking at Crossroads	15-17 November 2019, Ahmedabad University	Institute Funding
20	Madhu Narayanan	HS18D030	One-day lecture on Cultural Anthropology	17 November 2019, NIFT Kannur	NIFT
21	Elizabeth Nedumparambil	HS16D010	First Annual Capital Markets Conference 2019	21-22 November 2019, NISM Patalganga Campus, Navi Mumbai	Institute Funding
22	P. Ketan Kumar Reddy	HS17D008			
23	Neethu S. Biju	HS17D026	Coir Kerala 2019	4-8 December 2019, Department of Coir Development, Government of Kerala, Alappuzha, Kerala	Self
24	Sancharini Mitra	HS17D004	International Conference on Gender Faultlines and New Feminisms	10-11 December 2019, Guruvayurappan College, Calicut	Institute Funding
25	Hemachandra Padhan	HS18D008	Research Symposium on Finance and Economics, 2019	12-13 December 2019, IFMR, Krea University	IFMR Krea Institute
26	Neethu S. Biju	HS17D026	National Workshop on The Labour of Women: Perspectives and Debates on Development	13-20 December 2019, WSDC, University of Delhi	Institute Funding
27	Jyoti Mishra	HS16D009	Symposium on Women and Leadership	6-9 January 2020, Christ University, Bangalore	Self
28	Sayanty Chatterjee	HS15D026			
29	Carol D'Souza	HS18D017	Research Workshop on Indian Conceptions of Multiculturalism	8-9 January 2020, IIT Tirupati	
30	Mohammad Shahid Zaman	HS15D028	56th Annual Conference of the Indian Econometric Society	8-10 January 2020, Madurai Kamaraj University	Institute Funding

31	P. Ketan Kumar Reddy	HS17D008			
32	Renjith R.	HS15D031			
33	Madhu Narayanan	HS18D030	Festival of Letters	1-5 February 2020, Kanakakunnu Palace, Trivandrum	Self
34	K. Thamarai Selvan	HS17D018	Winter School in Public History–The Public Lives of Objects	10-21 February 2020, NCBS, Srishti School of Art & Design, Bangalore	NCSB Bangalore
35	Madhu Narayanan	HS18D030			
36	Albert Varghese	HS19D033			
37	Viju V. V.	HS16D030	Renegotiating the Spectacle: Gender, Body and Discourse in Films	13-16 February 2020, Sacred Heart College, Kochi	Self
38	Irshad C. V.	HS17D016	Large Scale Sample Surveys Data Users Training Workshop	17-21 February 2020, IIPS, Mumbai	Self
39	Simi K. Salim	HS18D013	IIT Delhi Winter School	17-21 February 2020, IIT Delhi	
40	Srisha P.	HS17D010	Large Scale Sample Surveys Data Users Training Workshop	17-21 February 2020, IIPS, Mumbai	Self
41	Praveen Parasar	HS18D026	Deleuze and Guattari World Camp and Congress	17-22 February 2020, JMI India	Institute Funding
42	Catherin Shilpa	HS19D007	An International Conference on Visual Cultures in Context: Affect, Subversion and Resistance	19-20 February 2020, Christ University, Bangalore	Institute Funding
43	Gokul K. S.	HS19D018			
44	Soham Chakraborty	HS18D024	Theorizing Mulvey: An International Conference on Visual Cultures in Contexts: Affect, Subversion and Resistance	19-20 February 2020, Christ University, Bangalore, India	Self
45	Tanima Bagchi	HS16D001	Affect, Embodiment and Ecology Multi-Disciplinary Perspectives	2-4 March 2020, IIT Gandhinagar	Self
46	Mohit Sharma	HS17D024			
47	Swathi M. P.	HS19D003	International Conference on Politics, Media and Environment: India and European Experience	4-6 March 2020, Pondicherry University	
48	Praveen Parasar	HS18D026	Indian Philosophy Congress 2020	7-11 March 2020, NEHU Shillong	Institute Funding
Seminars at IIT Madras					
1	Nishtha Pandey	HS19D001	First International Memory Studies Conference: One Hundred Years of Jallianwala Bagh Massacre	2-4 October 2019	Institute Funding

2	A. Harisankar	HS17D020	A Seminar on Sundara Ramaswamy's Oru Puliymarathin Kathai	21 January 2020, IIT Madras	Institute Funding
3	Scherezade Dastur	HS18D029	2nd International Conference on Indigenous Languages: Towards Sustainable Multilingualism (ICOIL-2)	13-15 February 2020	Institute Funding
4	Pratiti Palit	HS17D002			
5	Vishnu Suresh	HS17H031			
6	Soham Chakraborty	HS18D024	First International Memory Studies Conference: One Hundred Years of Jallianwala Bagh Massacre	2-4 October 2019	Institute Funding

Students/Scholars who won outside prizes and awards

Sl. No.	Student/ Scholar	Roll No.	Prize	Prize Awarded By
1	Supriya S.	HS13D023	Institute Research Award in recognition of the Exemplary Research	IIT Madras
2	Tejas S.	HS17H003	Wodehouse-Asimov-Christie Award for Fiction Writing (Title- Cogito Ergo Sum)	IIT Madras
3	Varsha Gopal	HS17D007	Shri M.N. Ramachandran and Smt. Gowri Appadorai Ramachandran Prize	IIT Madras
4	Kamala Devi	HS15H016	Best Swimmer under the Women's Category at the 35th Inter-IIT Aquatics Meet	IIT Kharagpur
5	K. Jeena Anne	HS16D016	Fulbright Scholarship	United States India Educational Foundation
6	Arya Rachel Thomas	HS19D006	First Prize for Western Solo Singing Competition (Inter-IIT Cultural Meet)	IIT Bombay
7	Parvathy Sreejith	HS16H078	First Prize for Online Modelling Contest (Inter-IIT Cultural Meet)	IIT Bombay
8	Aditya Paramesswaran	HS17H001	First Prize for MELA Quiz (Inter-IIT Cultural Meet)	IIT Bombay
9	Aishani Chowdhury	HS17H004		
10	Tejas S.	HS17H003		
11	Mahima S.	HS17H010	Second Prize for Stage Play (Inter-IIT Cultural Meet)	IIT Bombay
12	Ajmal Hussain	HS17H007	Second Prize for Group Dance (Inter-IIT Cultural Meet)	IIT Bombay
13	Baladitya B.	HS17H035		
14	Kavya K. N.	HS17H022		
15	Janani Balaji	HS17H060		
16	Aleena Santhosh	HS19H007		

17	Naomi Karyamsetty	HS15H023	Third Prize for Band Competition (Inter-IIT Cultural Meet)	IIT Bombay
18	Mohammad Shahid Zaman	HS15D028	Best Paper Award under the Ph.D. Scholar category for his paper, Financial Deregulation and Convergence in Bank Performance: Evidence from Indian Commercial Banks	Annual Economics Conference
19	Ramnath Reghunadhan	HS18D022	Mira Sinha-Bhattacharjea Award 2019	Institute of Chinese Studies (ICS), New Delhi

Students/scholars who won Institute Convocation/Institute Day Prize

Sl. No.	Student/Scholar	Roll No.	Prize
1	Anwasha Pathi	HS14H008	Dr. Dilip Veeraraghavan Memorial Award (for the highest CGPA in five-year Integrated MA Programme - Development Studies)
2	Divya Vijaya Kumar	HS14H014	Prof. A.V. Krishna Rao Memorial Award (for the highest CGPA in five-year Integrated MA Programme - English Studies)
3	Anwasha Pathi	HS14H008	Dr. Dilip Veeraraghavan Memorial Award
4	Divya Vijaya Kumar	HS14H014	Prof. A.V. Krishna Rao Memorial Award

4.10.3 Faculty and Their Activities

Faculty

Sl. No.	Name and Qualifications	Major Areas of Specialisation
Professor		
1	Umakant Dash. Ph.D. (Head) (IIT Kanpur)	Financial economics, health policy analysis, economic evaluation of healthcare programmes and inter-industry analysis
2	Malathy Duraisamy, Ph.D. (Madras University)	Labour economics/econometrics, economics of education, industrial economics
3	Muraleedharan V.R., Ph.D. (IIT Madras)	Healthcare policy, environmental health, technology and development, history of healthcare in South India
4	Sudhir Chella Rajan, Ph.D. (University of California)	Automobility, sustainability and political theory, social studies of corruption
5	Srilata K., Ph.D. (University of Hyderabad)	Creative writing studies, women's writing, Indian writing in English and translation
6	Aysha Iqbal Viswamohan, Ph.D. (Vikram University)	American literature, film studies and popular culture
7	Sreekumar N., Ph.D. (University of Hyderabad)	Philosophical and phenomenological hermeneutics, philosophies of Wittgenstein and Gadamer, bioethics
8	Dhanavel S. P., Ph.D. (Tripura University)	Literary studies, English language teaching, communication and soft skills
9	Jyotirmaya Tripathy, Ph.D. (IIT Kharagpur)	Culture and development, contemporary India

10	Swarnalatha R., Ph.D. (Madras University)	Ecocriticism, American literature
11	Suresh Babu M., Ph.D. (JNU, New Delhi)	Applied macroeconomics, industrial economics and trade and development
12	Rajesh Kumar, Ph.D. (University of Illinois)	Language in education, sociolinguistics, linguistic theory
13	Satya Sundar Sethy, Ph.D. (University of Hyderabad)	Philosophy of language, analytical philosophy and Indian philosophy
14	Sonika Gupta, Ph.D. (JNU, New Delhi)	Chinese domestic politics, foreign policy, international relations theory, Tibetan Exile Community in India

Associate Professor

15	Subash S., Ph.D. (IIT Bombay)	Applied industrial economics, foreign direct investment, economics of innovation and technological change, small firms and industrial development
16	Roland Wittje, Ph.D. (NTNU Trondheim)	History of science and technology
17	John Bosco Lourdusamy, D.Phil. (Oxford University)	Plantation studies, history of S&T and medicine in Modern India
18	Milind Brahme, Ph.D. (JNU, New Delhi)	German language and literature, comparative literature and literary theory, education
19	Prema Rajagopalan, Ph.D. (IIT Kanpur)	Sociology of science and technology, sociology of development
20	Solomon J. Benjamin, Ph.D. (Massachusetts Institute of Technology)	Urban studies, world development
21	Sudarsan Padmanabhan, Ph.D. (University of South Florida and Pondicherry University)	Social and political thought, Indian philosophy and culture, philosophy of law
22	Anup Kumar Bhandari, Ph.D. (Indian Statistical Institute)	Industrial economics, applied econometrics, Indian banking and financial economics
23	Binitha V. Thampi, Ph.D. (ISEC, Bengaluru)	Gender and development, decentralisation and governance reforms, welfare state, poverty reduction policies and programmes

Assistant Professor

24	Joe Thomas Karackattu, Ph.D. (JNU, New Delhi)	Economic interdependence and conflict, international relations
25	Kalpana K., Ph. D. (MIDS)	Gender and development, women's studies and microfinance
26	Mathangi Krishnamurthy, Ph.D. (University of Texas at Austin)	Anthropology of work, medical anthropology, gender studies
27	Merin Simi Raj, Ph.D. (IIT Bombay)	Postcolonial studies, Indian fiction in English and literary historiography studies
28	Sabuj Kumar Mandal, Ph.D. (ISEC, University of Mysore)	Energy and environmental economics, applied econometrics, industrial economics
29	Santhosh Abraham, Ph.D. (University of Hyderabad)	Colonial psychiatry and institutions, colonial veterinary practices, law and society
30	Santhosh R., Ph.D. (ISEC, University of Mysore)	Sociology, globalisation and change

31	Tabraz S. S., Ph.D. (JNU, New Delhi)	International relations theory, conflict resolution, international mediation and politics of west and South Asian regions
32	Hemachanan, Ph.D. (Cambridge University)	Literary criticism and rhetoric, disability studies and comparative musicology
33	Santhosh Kumar Sahu, Ph.D. (IIT Bombay)	Industrial economics, energy economics, economics of global climate change
34	Anindita Sahoo, Ph.D. (IIT Delhi, New Delhi)	Linguistic typology, syntax, pragmatics
35	Divya A., Ph.D. (NTU, Singapore)	19th Century English fiction and visual culture, early modern English drama and Shakespeare, 19th Century colonial writings on India, colonial picturesque and company paintings, gender studies, children's literature
36	Avishek Parui, Ph.D. (Durham University)	Modernism, masculinity studies, memory studies, posthumanism
37	Vipin Pudiyaadath Veetil, Ph.D. (George Mason University)	Monetary economics, production networks, macroeconomics, agent-based modelling
38	Aditya Sri Ram Kolachana, Ph.D. (IIT Bombay)	History of mathematics, astronomy of India

DAAD Faculty

39	Johannes Wenzel	Philosophy, social sciences, German language
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Visiting Faculty

40	Yuan Hsiao-Hui	Mass media, Chinese language
41	Christoph Woiwode, Ph.D. (University of London)	Sustainable urban development, social transformation to sustainability, climate change, disaster risks, governance

Short-term courses/workshops/seminars/symposia/conferences organised by the faculty members

Sl. No.	Coordinator(s)	Title	Period
Conferences			
1	Sudhir Chella Rajan	The Energy Finance Conference India	16-17 August 2019
2	Avishek Parui and Merin Simi Raj	Memory Studies Annual Conference	2-3 October 2019
3	D. Malathy, Anup Kumar Bhandari, Subash S. and Santosh Kumar Sahu	14th Annual International Conference of Knowledge Forum, Department of Humanities and Social Sciences, IIT Madras	11-13 October 2019
4	John Bosco Lourdusamy, Santhosh Abraham and Roland Wittje	Republic of Plants	10-14 December 2019
5	DoHSS	9th Annual DoHSS Academic Conference- Rethinking Violence	23-25 January 2020
Seminars			
1	John Bosco Lourdusamy	Colonizing Light? Electricity in British India	8 April 2019

2	Avishek Parui	Alain Badiou and the Nature of Knowledge	5 July 2019
3	Divya A.	World Short Stories	1 March 2019
4	Avishek Parui	How to Think Cities and Urbanisation in Today's India	7 August 2019
5	Merin Simi Raj and Avishek Parui	The Anglo-Indians in New Zealand: Migration and Identity	19 August 2019
6	Merin Simi Raj and Avishek Parui	Education New Zealand's Guest Lecture Series	19 August 2019
7	Divya A.	Sundara Ramaswamy's Oru Puliamarathin Kathai (Tale of a Tamarind Tree)	21 January 2020

Workshops

1	Sudhir Chella Rajan	Workshop on PERI-CENE: Scope, Scale and Adaptive Pathways (IGCS-IITM)	3-6 June 2019
2	Roland Wittje	Organiser of the Workshop on Recent Heritage of Science: Recent Archives and Archival Material at the Universeum Conference, University of Brno, Czech Republic	20 June 2019
3	Roland Wittje	Co-organiser of the session History of Science Education as History of Science: Objectives, Objects, Practices at the Annual Meeting of the History of Science Society (HSS), Utrecht, the Netherlands	26 July 2019
4	Umakant Dash	A workshop on Cost Effectiveness Analysis at University of Public Health, Yangon, Myanmar	7-14 September 2019
5	Roland Wittje	Co-organiser of the session on Technological Practice between Arts, Crafts and Engineering at the Annual Meeting of the Society for the History of Technology (SHOT) in Milan, Italy	26 October 2019
6	Joe Thomas Karackattu	Writing of History: Dilemma and Predicaments of Chinese Nationalism and the Agenda for Modernity	5 November 2019
7	Sudarshan P.	Kenyon-IIT Madras Writing Workshop	16-20 December 2019
8	Avishek Parui and Merin Simi Raj	Apollo's Legacy and the Meaning of Moon Landing after 50 Years	21 January 2020
9	Christoph Woiwode and Sudhir Chella Rajan	Organised and conducted IGCS Winter School 2020: Sustainability in the Peri-cene: Human Settlements, Food, Ecology, and Governance	15-29 February 2020
10	Avishek Parui and Merin Simi Raj	Writerly Rituals: A Workshop by Keith Butler	22 February 2019
11	K.S. Kannan	Ancient Indian Mathematics and Astronomy	11-12 March 2020

Short-term courses

1	Anindita Sahoo	AICTE-sponsored short-term course on Appreciating Linguistics: An Interdisciplinary Approach, ICSR, IIT Madras	7-12 October 2019
2	V.R. Muraleedharan	Urban Air Pollution, Human Exposure Assessment and Public Policy	7-17 October 2019

Short-term courses/workshops/seminars/symposia/conferences/trainings attended by the faculty members in academic institutions and public sector undertakings

Sl. No.	Faculty Member	Title	Institution	Period
Workshops				
International				
1	Roland Wittje	Research stay at the Max Planck Institute for the History of Science and several conference presentations	Berlin/Karlsruhe/Brno/Copenhagen/Utrecht/Germany/Czech Rep/Denmark/Netherlands	10 May-27 July 2019
2	Joe Thomas Karackattu	Produire la carte. Représentations transfrontalières et interculturelles de l'Antiquité à nos jours » (« Making the Map: Cross-Border and Intercultural Representations from Ancient history to Today ») at Université de Haute-Alsace, Mulhouse, France	Université de Haute-Alsace, Mulhouse, France	20-23 May 2019
3	Subash S.	Lee Kuan Yew School of Public Policy, NUS Financial Inclusion Workshop	Singapore	29 May-1 June 2019
4	Subash S.	Understanding the Economic Consequences of Financial Inclusion workshop, 30-31 May 2019, Lee Kuan Yew School of Public Policy, NUS	Singapore	30 May-1 June 2019
5	Sabuj Kumar Mandal	Discussion and conference	Bangkok, Thailand	30 May-6 June 2019
6	Jyotirmaya Tripathy	Received Erasmus Plus grant to spend two weeks at Aarhus University and spend time with faculty and students	Aarhus, Denmark	8-20 June 2019
7	Sabuj Kumar Mandal	Validation Workshop	Anglia Ruskin University, Cambridge, UK	10-12 June 2019
8	Roland Wittje	Recent Archives and Archival Material, Workshop on Recent Heritage of Science at the Universeum Conference	University of Brno, Czech Republic	20 June 2019
9	Malathy Duraisamy	Stanford Institute for Theoretical Economics (SITE) Summer Workshop 2019	California, USA	5-23 July 2019
10	Roland Wittje	Writing Global History of Technology from a Local Perspective: Stories from the South	Technische Universität Darmstadt, Germany	7-10 July 2019

11	Malathy Duraisamy	Summer Workshop 2019	Stanford Institute for Theoretical Economics, California, USA	8-12 July 2019
12	Sudhir Chella Rajan	Microsoft Faculty Summit	Seattle, USA	16 July-5 August 2019
13	Sudhir Chella Rajan	Faculty Summit 2019 - The Future of Work	USA	17-18 September 2019
14	Sudhir Chella Rajan	'More World' Berliners Gazette's 20th Anniversary Conference	Berlin, Germany	10-12 October 2019
15	Sudhir Chella Rajan	European Commission Foresight Workshop	Brussels, Belgium	19-22 November 2019
16	Santosh Kumar Sahu	89th Annual Meeting of the Southern Economic Association	Fort Lauderdale, USA	23-25 November 2019
17	Subash S.	Workshop Cities, Urban Amenities and Global Production Value Chain	ERIA, Jakarta, Indonesia	31 October-1 November 2019
18	Santosh Kumar Sahu	Development of the Alliance for the Future Society	Tokyo, Japan	8-13 March 2020

National

1	Jyotirmaya Tripathy	Discussion with a group of development academics and practitioners	Ravenshaw University, Cuttack	26-30 April 2019
2	Milind Brahme	FP Summer Workshop on Critical Theory (for Ph.D. scholars)	IIM Kolkata	13-15 May 2019
3	Anup Kumar Bhandari	Workshop on Selected topics on the Advanced Time Series and Panel Data Econometrics	Reserve Bank of India, Central Office, Mumbai	17-21 June 2019
4	Sudhir Chella Rajan	Chaired the session on Making the World a Better Place - Restitution and Restoration in Development	MIDS, Chennai	3 October 2019
5	R. Swarnalatha	Writing as Methodology, Academic Writing Workshop	IIT Tirupati	7 January 2020
6	Anup Kumar Bhandari	Data Envelopment Analysis for Performance Analysis and Benchmarking	Delhi	11-14 January 2020
7	Subash S.	Two-day workshop on Identification of Teaching Learning Resources for Economics Teachers	New Delhi	13-14 January 2020

8	Avishek Parui	Workshop on Consciousness Cognition and Memory: Innovations in Literary-Cultural Studies	University of Hyderabad	19 February 2020
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Symposium

1	Santhosh Kumar Sahu	Technologies for Sustainable Development, Symposium on Society 5.0	University of Tokyo, Japan	1 July 2019
2	Rajesh Kumar	International Symposium on Nominalization	Osaka, Japan	13-18 September 2019
3	Roland Wittje	Instruments at Crossroads, XXXVIII Scientific Instrument Symposium, Havana, Cuba	Havana, Cuba	23-30 September 2019

Conferences**International**

1	Hemachandran Karah	SDS conference at OSU	Columbus, United States of America	4-12 April 2019
2	Roland Wittje	Technik and Politik, Annual Conference of the German Society for the History of Technology (GTG)	Technical University of Karlsruhe, Germany	20-31 May 2019
3	Rajesh Kumar	International Conference on Hindi as a Second/Foreign Language	Lisbon, Portugal	3-9 June 2019
4	Sabuj Kumar Mandal	10th RMUTP International Conference on Science, Tech and Innovation for Sustainable Development	Bangkok, Thailand	4-5 June 2019
5	Anindita Sahoo	IPRA 2019 at PolyU, Hong Kong Research meet with Prof. Foong Ha Yap at CUHK, Shenzhen, China	Shenzhen and Hong Kong, China	7 June-1 July 2019
6	Anindita Sahoo	16th International Pragmatics Conference	Hong Kong, China	9-14 June 2019
7	Roland Wittje	Universeum Conference	University of Brno, Czech Republic	17-21 June 2019
8	Binitha V. Thampi	International Association for Feminist Economics Annual Conference	Glasgow, UK	25 June-5 July 2019
9	Sudarsan P.	17th Annual Conference of the European Association for Study of Religions (EASR)	University of Tartu, Estonia, Denmark	25-29 June 2019
10	Binitha V. Thampi	28th Annual Conference of the International Association for Feminist Economics	Glasgow Caledonian University, UK	26-29 June 2019
11	Sonika Gupta	LaTrobe Asia Conference on The Thousand Tongues in the Heart of Asia: Indigenous Languages in the Himalayas	University of Sydney, Australia	27 June 2019
12	Mathangi Krishnamurthy	AAS-in-ASIA 2019 Annual Conference	Bangkok, Thailand	1-4 July 2019
13	Sonika Gupta	16th Biennial Conference of the Chinese Studies Association of Australia	La Trobe University, Australia	1-3 July 2019

14	Roland Wittje	Diplomats in Science Diplomacy: Promoting Scientific and Technological Collaboration in International Relations	Niels Bohr Institute, University of Copenhagen, Denmark	19-20 July 2019
15	Roland Wittje	Annual Meeting of the History of Science Society	University of Utrecht, The Netherlands	23-27 July 2019
16	Binitha V. Thampi	Asia Pacific Consultation meeting OHCHR of United Nations	Sydney, Australia	8-14 September 2019
17	Avishek Parui	Multiple Temporalities, Modernist Studies in Asia Conference, Aoyama Gakuin University	Tokyo, Japan	12-14 September 2019
18	Roland Wittje	Annual Meeting of the Society for the History of Technology (SHOT)	Milan, Italy	24-27 October 2019
19	Santhosh R.	Multiculturalism, Nationalism, Religion and Secularism	Bristol, United Kingdom	7-12 November 2019
20	Santosh Kumar Sahu	The 89th Annual Meeting of the Southern Economic Association	Fort Lauderdale, FL and Syracuse, USA	21-30 November 2019
21	Tabraz S. S.	Delivering a module on Political Systems of the World	Bremen, Germany	25 November-6 December 2019
22	Divya A.	Tracing Time-Space Trajectories in Toru Dutt's Our Casuarina Tree (1881). An international symposium titled Beyond the Clock: An interdisciplinary Symposium on Time, 16 March 2019	Nanyang Technological University, Singapore	17-26 March 2020

National

1	Hemachandran Karah	Workshop on Literary Disability Studies	New Delhi	5 May 2019
2	Santhosh Kumar Sahu	International Day for MSMEs 2019	Entrepreneurship Development and Innovation Institute, Chennai	1 July 2019
3	Santhosh Kumar Sahu	Energy Consumption and Productivity: An Analysis of Manufacturing Sector of India at the 23rd Biennial Conference 2019 of the Association of Indian Economic and Financial Studies	Bhubaneswar	28-31 July 2019
4	Rajesh Kumar	14th International and 50th Annual Conference - its Golden Jubilee Conference of the English Language Teachers Association of India	New Delhi	9-12 October 2019
5	Rajesh Kumar	International Language Fest on Indigenous and Endangered Languages (ILFIEL 2019)	NEHU, Shillong	24-28 October 2019
6	Subash S.	CIP India Summit, hosted jointly by CIP and IDF	Magnolia, India Habitat Centre, New Delhi	21 November 2019

Special lectures delivered by the faculty in other institutions

Sl. No.	Faculty Member	Topic of Lecture	Institution	Date
1	Roland Wittje	Teknisk høyskole eller teknisk lærestanstalt? Indisk-tysk samarbeid ved IIT Madras 1956-1974 (Technical University or Engineering College: Indo-German Collaboration at IIT Madras 1956-1974)	Festseminar for Håkon With Andersen, NTNU Trondheim, Norway	24 May 2019
2	Roland Wittje	Forschungstechnologien im Kalten Krieg: Deutsch-indische Labore und Ingenieursausbildung am IIT Madras (Research Technologies During the Cold War: Indo-German Laboratories and Training Engineers at IIT Madras)	Technical University of Berlin, Germany	3 June 2019
3	Anindita Sahoo	Analysis of Cartoons in Indian Public Discourse	Hong Kong Polytechnic University	9-14 June 2019
4	Jyotirmaya Tripathy	Visited as an Erasmus and scholar and organised a Workshop on Indian Elections	Aarhus University, Denmark	14-16 June 2019
5	Sudarsan P.			
6	Anindita Sahoo	Discourse and Typological Approaches to the Analysis of Attitudinal Copulas	Hong Kong Baptist University, Hong Kong, China	15 June 2019
7	Roland Wittje	Von Max Müller zu Max Planck: Das IIT Madras als deutsch-indische Kooperation wissenschaftliche Kooperation im Kalten Krieg (From Max Müller to Max Planck: IIT Madras as an Indo-German Collaboration During the Cold War)	University of Frankfurt, Germany	9 July 2019
National				
1	Umakant Dash	Achieving UHC Through Social Health Insurance: Experience from Tamil Nadu	AMCCON2019; Sree Chitra Tirunal Institute for Medical Sciences & Technology, Trivandrum	3 March 2019
2	Umakant Dash	Strategic Purchasing for Universal Health Coverage: Examining the Purchaser-Provider Relationship within a Social Health Insurance Scheme in Tamil Nadu, India	School of Economics, University of Hyderabad	9 April 2019
3	Srilata K.	Writing as Resistance: Some Thoughts on Gender and Creative Work	Seshadripuram College, Bengaluru	25 April 2019
4	Anup Kumar Bhandari	Selected topics on the Advanced Time Series and Panel Data Econometrics	Reserve Bank of India, Central Office, Mumbai	17-21 June 2019
5	Subash S.	Seven-Day National-Level Workshop on Econometric Tools for Business Research	School of Management, Pondicherry University	25 June-1 July 2019
6	Sreekumar N.	Critical Thinking and Methods in Philosophy	National Institute of Advanced Studies, Bengaluru	25 July 2019

7	K.S. Kannan	Founder's Day Lecture: Life and Works of B. P. Wadia	Indian Institute of World Culture	20 August 2019
8	Divya	National Seminar on The New Dimensions in Indian Writings in English, talk on Narrative Fractures of Power and Gender in Rabindranath Tagore's The Hunger for Stones	Sri Ramakrishna College of Arts and Science for Women, Coimbatore	28 August 2019
9	Satya Sundar Sathy	Responsible conduct of Research and Publication Ethics in Higher Education Settings	Central University of Kerala	1 September 2019
10	Divya A.	Delivered a talk: Feminine Folktales and Patriarchal Structures in Girish Karnad's Naga-Mandala	University of Madras, Chennai	7 September 2019
11	K.S. Kannan	Delivered a talk: Kali-Vidambana Kavyam	IIT Madras	16 September 2019
12	K.S. Kannan	Delivered a talk: Kathopanishad	VSC, IIT Madras	22 September 2019
13	Satya Sundar Sathy	Invited Talk: Assessment Practices: Teacher's Role in Students Inclusive Learning	Central University of Kerala	1 October 2019
14	Umakant Dash	Delivered a lecture at the Second Tamil Nadu Economic Policy Dialogue 2019 (TNEPD)	IIT Madras, Chennai	4-5 October 2019
15	Santosh Kumar Sahu			
16	Vipin Veetil			
17	Avishek Parui	Delivered a talk on Memory and Identities: Reading Urvashi Bhutalia's The Other Side of Silence	Stella Maris College, Chennai	17 October 2019
18	Avishek Parui and Merin Simi Raj	Delivered a talk on Memory Studies: Interdisciplinary Research Possibilities	University of Madras, Chennai	25 October 2019
19	K.S. Kannan	Lecture on the poetry of Kalidasa (Kumara Sambhavam) in English	IIT Madras, Chennai	26 October 2019
20	Sudarsan P.	First Seminar on Higher Education Summit on Internationalisation for Improving Access, Equity and Sustainability in Higher Education - Nordic India Centre, New Delhi, NEUPA	New Delhi Centre for Policy Research in Higher Education, New Delhi	31 October 2019
21	Solomon Benjamin	Invited Talk at the 11th All India Conference of China Studies' Science, Technology, and Innovation in China	Christ University, Bengaluru	15-17 November 2019
22	Christoph Woiwode	We Are All Humming Birds: The Inner Dimensions of Sustainability Transformations	Krea University, Sri City, Andhra Pradesh	25 November 2019
23	Divya A.	Why Read Literature in a Technological Classroom?	SSN College of Engineering, Chennai	14 December 2019

24	Avishek Parui	Martyrdom, Jihadism, Suicide: Considerations, Contestations, Contexts	University of Burdwan	17 December 2019
25	Avishek Parui	Memory and Remembering in Indian Writing in English	Sahitya Academy and Rathinam College of Arts and Sciences, Coimbatore	7 January 2020
26	Anup Kumar Bhandari	Dynamics of Total Factor Growth in the Indian Banking Industry: A DEA Double Bootstrap Approach	South Asian University, New Delhi	12-14 January 2020
27	Subash S.	Workshop on Economics Resources for Teachers in Higher Education	NIEPA, New Delhi	13-14 January 2020
28	Merin Simi Raj and Avishek Parui	Memory Studies	Mar Ivanios College, Trivandrum	14 January 2020
29	K.S. Kannan	The Indian View of Life	Veda Vijnana Shodha Samsthan, Bengaluru	19 January 2020
30	Sonika Gupta	State of Chinese Studies in India	India International Centre, New Delhi	23 January 2020
31	Subash S.	Faculty Development Program on Applied Econometrics for Management Research	School of Management, Pondicherry University	23-25 January 2020
32	Avishek Parui	Delivered a talk in the symposium, Homo Ludens: Language, Play and Culture	VIT Chennai	13 February 2019
33	K. S. Kannan	Art and Aesthetics: An Exploration of Dr. Ananda Coomaraswamy's Views	Indian Institute of World Culture	2 February 2020
34	K. S. Kannan	Kumarasambhava - Lecture 2 of the series	IIT Madras	7 February 2020
35	Roland Wittje	Hindustan Machine Tools: Metalworking in post-independence India	Srishti Institute of Art, Design and Technology and NCBS, Bangalore	13-14 February 2020
36	K.S. Kannan	Subhashita-rasavadah (talk in Sanskrit)	IIT Madras	14 February 2020
37	K.S. Kannan	Kumarasambhava - Lecture 3 of the series	IIT Madras	23 February 2020
38	Avishek Parui	Delivered a talk in a symposium entitled Law and Literature: Dialogue Amidst Difference	VIT Chennai	6 March 2020
39	K.S. Kannan	Upanishads: Some Motifs and Metaphors	IIT Madras	5 March 2020
40	K.S. Kannan	The Beauty of Chandas: Blend of Mathematics and Music	IIT Madras	11 March 2020

Visits abroad/India by faculty

Sl. No.	Faculty Member	Country Visited	Date	Purpose of Visit
1	Dhanavel S. P.	India (Hyderabad)	1 April 2019	To conduct Ph.D. viva voce
2	Dhanavel S. P.	India (Trichy)	5 April 2019	BoS Meeting

3	Umakant Dash	India (Hyderabad)	9 April 2019	To conduct Ph.D. viva voce
4	Muraleedharan V. R.	India (Mumbai)	24 April 2019	To conduct Ph.D. viva voce
5	Umakant Dash	India (Mumbai)	25 April 2019	To conduct Ph.D. viva voce
6	Dhanavel S. P.	India (Coimbatore)	30 April 2019	To conduct Ph.D. viva voce
7	Dhanavel S. P.	India (Trichy)	7 May 2019	To conduct Ph.D. viva voce
8	Dhanavel S. P.	India (Chennai)	27 May 2019	To conduct Ph.D. viva voce
9	Subash S.	Singapore	30-31 May 2019	Paper presentation, LKW School of Public Policy, NUS Singapore
10	Roland Wittje	Germany (Berlin)	1 June-29 July 2019	Guest researcher at the Max Planck and Institute for the History of Science, Berlin
11	Avishek Parui	India	13 June 2020	Invited as Subject expert for (through Microsoft Teams) for faculty recruitment panel at VIT Amaravati
12	Anindita Sahoo	China (Hong Kong)	16 June 2019	Chinese University of Hong Kong
13	Joe Thomas Karackattu	China (Hong Kong)	18-30 June 2019	Academic Visit
14	John Bosco Lourdusamy	Germany (Berlin)	23 June-6 July 2019	Max Plank Institute for the History of Science
15	John Bosco Lourdusamy	Germany (Darmstadt)	7-13 July 2019	Darmstadt University of Technology,
16	Joe Thomas Karackattu	Malaysia (Penang Institute)	8-12 July 2019	Field work
17	Umakant Dash	Myanmar (Yangon)	8-12 July 2019	University of Public Health
18	Sudhir Chella Rajan	Germany (Berlin)	9-12 October 2019	Participant in More World Conference organised by Berliner Gazette
19	Avishek Parui	India (Chennai)	18 October 2019	Invited as Subject expert for faculty recruitment panel at VIT Chennai
20	Roland Wittje	Italy (Milan)	24-27 October 2019	Society for the History of Technology (SHOT) Annual Conference
21	Subash S.	Indonesia	31 October-1 November 2019	Presentation at the ERIA, Jakarta
22	Santhosh R.	UK	8-11 November 2019	Twentieth Anniversary of the University of Bristol Ethnicity Centre Conference
23	Sabuj Kumar Mandal	Austria	11-13 November 2019	Joint IIASA-RITE International Workshop & Institute for Applied Systems Analysis (IIASA)
24	Sudhir Chella Rajan	Belgium (Brussels)	20 November 2019	Participant in Global Foresight Meeting, European Commission
25	Santosh Kumar Sahu	USA (Florida)	23-24 November 2019	89th Annual Meeting of the Southern Economic Association

26	Santosh Kumar Sahu	USA (Syracuse)	25 November 2019	Visit to Le Moyne College
27	Merin Simi Raj	India (Chennai)	17 December 2019	Syllabus revision
28	Merin Simi Raj	India (Chennai)	24 January 2020	UG English-Board of Studies meeting
29	Sreekumar N.	India (Visakhapatnam)	25 January 2020	Board of Studies Meeting for Social Science Programme
32	Sreekumar N.	India (Thiruvananthapuram)	14-15 February 2020	Member of the selection committee for selection of teachers in the Department of Philosophy, University of Kerala, Palayam, Thiruvananthapuram
33	Avishek Parui	Hyderabad, India	17 February 2020	Resource person for workshop, Consciousness, Cognition, and Memory: Innovations in Literary-Cultural Studies, organised as part of Innovation and the Humanities Series-II, the Department of English, University of Hyderabad, along with the Technology Industrial Liaison and Entrepreneurship Unit (TIE-U) and the Research and Development Office, University of Hyderabad (UoH)
34	Milind Brahme	India (Chennai)	20 March 2020	Chaired a Board of Studies meeting to review the German syllabus, Madras Christian College, Chennai

Honours and awards obtained by faculty

Sl. No.	Faculty Member	Award	Awarded by	Awarded for
1	Avishek Parui	Meenakshi Mukherjee Prize 2019	The Indian Association for Commonwealth Literature and Language Studies (IACLALS)	Paper: "What's the Use of Stories that Aren't Even True?": Agency, Fabulation and the Epistemology of the Storytelling Self in Salman Rushdie's Haroun and the Sea of Stories

Fellowships of academies and professional societies

Sl. No.	Faculty Member	Year of Admission
Others		
1	Sabuj Kumar Mandal	Fulbright-Nehru Academic and Professional Excellence Fellowship for the year 2020-2021

Journal Editorial Boards

Sl. No.	Faculty Member	Position (Editor/Member)	Journal Name
1	Subash S.	Associate Editor	<i>The Indian Economic Journal</i> , Sage
2	Subash S.	Associate Editor	<i>IIM Kozhikode Society & Management Review</i> , Sage

3	Subash S.	Editorial Board Member	<i>Springer Nature (SN) Business & Economics</i> , Springer
4	Avishek Parui	Editorial Board Member	<i>Gender and Culture in the Romantic Era</i> , Anthem Press

4.10.4 Research and Consultancy

Sponsored research projects (ongoing and new)

Sl. No.	Title	Period	Funding Agency	Amount (Rs. in lakhs)	Coordinators
1	Land-based Urban Commons for Housing	9 September-31 December 2019	Centre National de la Recherche Scientifique	6.72	Solomon J. Benjamin
2	PERI-CENE (Peri-Urbanization and Climate-Environment Change)	23 September 2019-22 September 2021	Department of Biotechnology	107.97	Sudhir Chella Rajan and Balaji Narasimhan
3	Historical Archive of IIT Madras	12 March 2019-11 March 2022	IIT Madras	40	Roland Wittje

Industrial consultancy projects (ongoing and new)

Sl. No.	Title	Period	Funding Agency	Amount (Rs. in lakh)	Coordinators
1	Gender Ideology, Father Involvement, and Gender Discrimination	6 January 2019-31 May 2021	Penn State University	6.94	Binitha V. Thampi
2	Handwash and Dental Hygiene Habits: A Behaviour Change Study in Tamil Nadu Schools	1 August 2019-31 July 2020	University of California Berkeley, USA	4.64	Malathy D.
3	Aviation English Language Proficiency (ELP) Training	10 September 2019-31 May 2020	Airports Authority of India	165.94	Rajesh Kumar, Sundar V., Murali K.
4	Primary Healthcare Innovations	1 September 2019-30 September 2020	ACCESS Health International	52.5	Umakant Dash, Muraleedharan V. R.
5	3rd Indo-German Dialogue	1 December 2019-28 February 2020	Consulate General of the Federal Republic of Germany	4.88	Sudhir Chella Rajan
6	Liminal Spaces of Citizenship: A Case Study of Tibetan Exile Community	29 January 2017-31 December 2020	Chiang Ching Kuo Foundation	17.2	Sonika Gupta
7	Hygiene and Hand Wash (Training Programme in Government and Aided Schools in Chennai and Kanchipuram)	30 November 2017-29 November 2020	Common Code	0	Malathy D.
8	Creating Proficiency in English	1 April 2019-30 March 2022	Fullerton India Credit Company Limited	54.38	Rajesh Kumar

9	Cities, Amenities and Global Production Chain in East Asia: India Case Study	1 April 2019-31 March 2021	Economic Research Institute for ASEAN and East Asia (ERIA) Jakarta, Indonesia	5.6	Subash S.
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Faculty members' participation with other institution under MoU

Sl. No.	Faculty Member	Participation details	University/Institution
1	Avishek Parui	Executive Member (for a period of three years from January 2020)	Modernist Studies in Asia Network (MSIA)
2	Binitha V. Thampi	Chair of the Working Group on Discrimination Against Women and Girls (WGDAG), (Res.41/6 of Human Rights Council, United Nations)	University of Sydney, Australia
3	Jyotirmaya Tripathy	Advisory Board Member	International Quarterly for Asian Studies
4	Muraleedharan V. R.	Member of a subcommittee, Human Resources and Infrastructure for Health Sector in India; report submitted to the PM's Economic Advisory Council	Government of India
5	Sudarshan P.	Treasurer	Association of European Studies in India (AESI)
6	Sudarshan P.	Panellist for Nordic India Higher Education Summit	National Institute of Education and Planning (NIEPA), New Delhi
7	Avishek Parui	Subject Expert of Research Steering Committee (RSC)	University of Hyderabad, India
8	K.S. Kannan	Member of Academic Council	Veda Vijnana Shodha Samsthana, Channenahalli, Bangalore
9	K.S. Kannan	Member of Board of Studies	University of Hyderabad, India
10	K. S. Kannan	Member of Board of Studies	Chinmaya Vishva Vidyalaya, Veliyanad, Kerala

Distinguished visitors to the department

Sl. No.	Visitor and Designation	Date of Visit	Purpose of Visit
1	Mr. Poochi Venkat, Chennai	3 April 2019	Delivered a talk: From the expansive landscapes of Late Mr. C. Gowrishankar to the micro insect universes of Poochi Venkat: an illustrated journey
2	Dr. Ute Hasenohrl, University of Innsbruck, Austria	8 April 2019	Delivered a talk: Colonizing light? Electricity in British India
3	Mr. Ashok Kantha, Director, Institute of Chinese Studies, New Delhi and Former Indian Ambassador to China	11 April 2019	Delivered a talk: China's Belt and Road Initiative: drivers, implementation and assessment
4	Mr. Shravana Kumar, Hochschule Bremen - City University of Applied Sciences	24 April 2019	Delivered a talk: The impacts of ownership, competition and regulation on the performance of the Central Ports of India

5	Professor Suresh Canagarajah, Edwin Erle Sparks Professor of Applied Linguistics, English, and Asian Studies, and Director, Migration Studies Project, Department of English, Pennsylvania State University, USA	15 May 2019	Delivered a talk: Recent shifts in understanding language and literacy in applied linguistics
6	Mr. Sree Ganesh Thottempudi, University of Heidelberg, Germany	31 May 2019	Delivered a talk: New trends in humanities and social science research with digital humanities and data science
7	Dr. Ashok Mohapatra, Professor, Sambalpur University, Odisha	5 July 2019	Delivered a talk: Alain Badiou and the nature of knowledge
8	Prof Sujatha Patel, National Fellow, IAS, Shimla (Former Professor of Sociology, Hyderabad Central University)	7 August 2019	Delivered a talk: How to think cities and urbanisation in today's India
9	Dr. Sujata Patel, National Fellow at the Indian Institute of Advanced Studies, Shimla		
10	Dr. Robyn Andrews, Massey University, New Zealand	19 August 2019	Delivered a talk: Anglo-Indians in New Zealand: migration and identity
11	Dr. Deepak Paramashivan, Climate Scientist, Ethnomusicologist, Canada	22 August 2019	Delivered a talk: Music of India and Arabia - interactions and influences: a study based on Pandarika Vihala's Rāgamālā, Rāgamañjarī and Sadrāgacandrodayah from the 16th Century
12	Dr. M.G. Prasad, Professor Emeritus, Department of Mechanical Engineering, Stevens Institute of Technology, New Jersey	16 September 2019	Delivered a talk: Principles and applications of acoustics in Hinduism
13	Dr. B. Hariharan, Professor, Institute of English, University of Kerala, Trivandrum	19 September 2019	Delivered a talk: Stories that learn to tell stories: Girish Karnad's Theatre
14	Prof. S. Anandhi, MIDS, Chennai	24 September 2019	Delivered a talk: Gender and development course on men and masculinity studies
15	Prof. Gopalakrishna Gandhi, Distinguished Professor of IITM and Retd. IAS Officer	25-27 September 2019	Delivered a talk: Gandhi and Books, Gandhi's Spectacles and Gandhi and Gold
16	Dr. Usha Nair-Reichert, School of Economics, Georgia Tech., USA	15 October 2019	Delivered a talk: Network dynamics and export performance in Ecuador
17	Ms. Krupa Maria Varghese, Program Director, AuxoHub	22 October 2019	Delivered a talk: Alumni Talk - Sharing her experience
18	Prof. Kamal Sheel, Visiting Faculty, IIT-BHU	4 November 2019	Delivered a talk: 70 Years of the Chinese Communist and revolution in retrospect
19	Mr. Shrikanth Rao, Fellow of ICAI	08 November 2019	Delivered a talk: The Basel Norms of banking regulation: an introduction
20	Amy Slaton, Drexel University, Philadelphia	10 December 2020	Delivered Keynote Address at the conference, Republic of Plants
21	Shiv Visvanathan, O. P. Jindal Global University	10 December 2020	Delivered a talk: World of J.C. Bose: colonialism, botany and agriculture
22	Dominic Glover, IDS, University of Sussex	10 December 2020	Delivered a talk: Putting crops in their places

23	Krishna Ravi Srinivas, RISDC, New Delhi	10 December 2020	Delivered a talk: Contestation in crops and commons: genetically modified crops, plant genetic resources commons and open source seeds
24	Fredric Landy, Director, French Institute of Pondicherry	10 December 2020	Delivered a talk: Challenging the Cropscares: Whose agro-ecological landscapes
25	Klaus Staubermann, International Council of Museums, Germany	10 December 2020	Delivered a talk: Between science and arts-crafts in public museums
26	C. S. Chandrika, Principal Scientist, CAB Centre, MSSRF, Wayanad	10 December 2020	Delivered a talk: Tribal conservation practices as living museum
27	Jahnvi Phalkey, Director, Science Gallery, Bengaluru	10 December 2020	Delivered talk: Science and the public at Science Gallery Bengaluru
28	Anish Gawande, Director, Dara Shikoh Fellowship, Mumbai	10 December 2020	Delivered talk: Deodars without borders: rethinking trans-Himalayan engagement
29	Jesse Smith, RCSHI, Philadelphia, USA	10 December 2020	Delivered talk: Curating science and technology
30	Sharan Apparao, Apparao Galleries, Chennai	10 December 2020	Chaired the session, The Museum and the Gallery: Dialogues Between Science and Art
31	Dr. Rajabrata Banerjee, University of South Australian Business School	11 December 2019	Delivered talk: Does the corrupt practice increase the implied cost of equity
32	Eric Gurevitch, University of Chicago, USA	12 December 2020	Chaired a session of the conference, Republic of Plants, and delivered a talk
33	Barbara Hahn, Texas Tech University, USA	13 December 2020	Chaired a session of the conference, Republic of Plants, and delivered a talk
34	David Lynn, Kenyon College, Ohio	16-20 December 2019	Writing workshop on Fiction
35	Geeta Kothari, Kenyon College, Ohio	16-20 December 2019	Writing workshop on Non-fiction
36	Chris Gillen, Kenyon College, Ohio	16-20 December 2019	Writing workshop on Science Writing
37	Dr. Uther Chartlon Stevens, Professor at the Institute of Economy and Finance, Volgograd State University	14 January 2019	Delivered talk: The Colonial Census and the Demography of 'Mixed Race' in India and Burma
38	Prof. M.G. Prasad, Emeritus Professor, Stevens Institute of Technology, NJ, USA	16 September 2019	Delivered talk: Principles and applications of acoustics in Hinduism
39	Dr. Roger Launius, Former Chief Historian, NASA	21 January 2020	Delivered a talk on Apollo's Legacy
40	N. Sukumaran	21 January 2020	Delivered a talk: Oru Puliamarathin Kathai (Tale of a Tamarind Tree) in a seminar on Sundara Ramaswamy's Oru Puliamarathin Kathai (Tale of a Tamarind Tree)
41	Dr. M.G. Prasad, Professor Emeritus in the Department of Mechanical Engineering at Stevens Institute of Technology, Hoboken, New Jersey	16 September 2019	Delivered talk: Principles and Applications of Acoustics in Hinduism
42	Dr. M. Mayilvaganan, National Institute of Advanced Studies	23 January 2020	Delivered talk: The geopolitical matrix of violence

43	Praba Ram	23 January 2020	Delivered talk: Children's books as change agents: a tool for building empathy
44	Sulthana Nasrim	24 January 2020	Delivered talk: Reflections on death as an ability
45	Mahuya Bandyopadhyay, IIT Delhi	24 January 2020	Delivered talk: Everyday violence and 'ethical loneliness': narratives from prison
46	M. Devasitham, Strategic Development at International Justice Mission	24 January 2020	Delivered talk: Role of youth in ending violence against women and children
47	P.M. Nair, UN-recognised expert on human trafficking from IJM		
48	Jigme Wangdi, JNU	25 January 2020	Delivered talk: Colonial/historical violence
49	Madhavi Shukla, JNU		
50	Heeral Chhabra, University of Delhi		
51	K. Chokkalingam, Rajiv Gandhi National Institute of Youth Development	25 January 2020	Delivered talk: Insights on violence from the perspectives of criminology and victimology
52	Tenzin Tsundue	11 February 2020	Delivered talk: Exile, memory and poetry
53	Dr. Niels Brimnes, Aarhus University, Denmark	12 February 2020	Delivered talk: Halfdan Mahler, Director-General of the World Health Organization 1973-1988: How to contextualize his life and work
54	Prof. Amba Kulkarni, Department of Sanskrit Studies, University of Hyderabad	29 February 2020	Delivered talk, Recursion and combinatorial mathematics in Chandas Sastra

4.10.5. Other Activities of the Department

Student visit

Foreign university students who visited the department

Sl.No	Students	Nationality	Purpose of Visit	Period of Visit	University
1	Luise Hante	German	Project Work	January-September 2019	FU Berlin
2	Jules Lemmens	Belgian	Project/Course Work	January-September 2019	Ghent University
3	Lucia Guaita	Italian	Research Work	March-June 2019	Wageningen University & Research
4	Libiba Faiaz Bari	Bangladesh	Grieshma Internship	June-July 2019	University of Dhaka
5	Claire Yu Pei Halloants	Belgian	Course work	July-December 2019	
6	Lisa Schneider	German	Project/Course Work	November 2019-January 2020	University Freiburg
7	Edward Garret Postaler	USA	Project/Course Work	January-November 2020	UC Berkeley

Department students who visited foreign universities

Sl.No	Students	Roll Number	Purpose of Visit	Period of Visit	Date and Venue
1	Rasika Joshi	HS17H011	Semester Exchange Programme	March-June 2020	Hochschule Bremen
2	Taneesha Shekhawat	HS17H034	Semester Exchange Programme	March-June 2020	Hochschule Bremen
3	Manjith Nair	HS17H044	Semester Exchange Programme	March-June 2020	Hochschule Bremen
4	Yogesh Kumaran	HS16H094	Semester Exchange Programme	January-May 2020	Sciences Po
5	Pauline Mathew	HS16H052	Semester Exchange Programme	September 2019- January 2020	Ghent University
6	Sanjana Acharya	HS16H066	Semester Exchange Programme	September 2019- January 2020	University of Bologna
7	Avantika Singh	HS16H020	Semester Exchange Programme	January-May 2020	Sciences Po
8	Samantha Maria Kokkat	HS16H063	Semester Exchange Programme	July-November 2019	University of Groningen
9	Cherene Aniyan Puthethu	HS18H016	Summer School/ Short-term Course	July 2019	Iowa Creative Writing Program
10	Namrata Nirmal	HS17H008	Summer School/ Short-term Course	June-July 2019	University of Exeter
11	Sakshi Malpath	HS17H029	Summer School/ Short-term Course	June-July 2019	University of Exeter
12	Tejas S.	HS17H003	Summer School/ Short-term Course	July 2019	Iowa Creative Writing Program
13	Rohitha Naraharisetty	HS15H030	Summer School/ Short-term Course	July-August 2019	University of Oxford
14	Sarath S.M.	HS17H051	International internship	May-July 2019	University of British Columbia
15	Avantika Singh	HS16H020	International internship	May-July 2019	Graduate Institute
				June-July 2020	Middlesex University
16	Meenakshi V.	HS16H044	International internship	May-August 2020	Graduate Institute

4.11 Department of Management Studies

4.11.1. Introduction

The Department of Management Studies (DoMS) was set up in April 2004. The department offers a two-year full-time M.B.A. programme (started in July 2001), a two-year Executive MBA for working professionals, and research programmes leading to M.S. and Ph.D. degrees. In addition, the department offers M.S. (Entrepreneurship), Visionary Leadership in Manufacturing (VLM), and Postgraduate Diploma for Executives (PGPEX-VLM) jointly with IIM Calcutta

and IIT Kanpur.

Over the years of its existence, the department has thoroughly revised its MBA programme curriculum, expanded its research activities, re-launched the M.S. (Entrepreneurship) programme with a new structure, and worked towards establishing long-term relationships with globally reputed institutions and organisations. The following sections present an outline of the department's work.

Major research areas at the department

- Applied statistics
- Combinatorial optimisation
- Finance
- Human resource management
- Information systems
- Knowledge management
- Marketing
- Models in supply chain management
- Production and operations management
- Project management
- Quality management
- Strategy and business policy
- Services management
- Technology management

4.11.2. Academic Programmes

Students on roll as of September 2019+M.S. and Ph.D admission in January 2020

Programme	Year I	Year II	Year III	Year IV	Year V and others	Total
M.B.A.	60	48	-	-	-	108
E.M.B.A.	42	43	-	-	-	85
V.L.M.	37	-	-	-	-	37
M.S.	15	6	9	4	11	45
Ph.D.	20	18	18	31	42	129
Total	174	115	27	35	53	404

Student/Scholar who attended conferences/seminars/workshops/symposia abroad/India

Sl. No.	Student/Scholar	Roll No.	Conference/ Seminar/ Symposia/Workshop	Date and Venue	Financial Assistance
Abroad					
1	M. Sri Vidhya Bhavani	MS16D012	POMS 30th Annual Conference	2-6 May 2019, Washington D.C., USA	Institute
2	Ramesh Krishnan	MS16D005	POMS 30th Annual Conference	2-6 May 2019, Washington D.C., USA	Institute

3	M. Vijaya Sunder	MS15D016	POMS 30th Annual Conference	2-6 May 2019, Washington D.C., USA	Institute
4	Rajan Ranjith Kumar	MS15D200	POMS 30th Annual Conference	2-6 May 2019, Washington D.C., USA	Institute
5	Niroopa Rani	MS16D001	POMS 30th Annual Conference	2-6 May 2019, Washington D.C., USA	Institute
6	Satya Narayan Panda	MS16S002	Econ World 2019	18-20 June 2019, Budapest, Hungary	Institute
7	Sri Vidhya Bhavani	MS16D012	Portland International Conference on Management of Engineering and Technology (PICMET'19)	25-29 August 2019, Hilton Portland Oregon, USA	Institute
8	K. Gopinath	MS17D007	Portland International Conference on Management of Engineering and Technology (PICMET'19)	25-29 August 2019, Hilton Portland Oregon, USA	Institute
9	Nibu John Thomas	MS16D017	Academy of Management Conference (AoM)	August 2019, Boston, USA	Institute
10	Pratyush Yadav	MS18S004	IEEE Big Data Conference	9-12 December 2019, Los Angeles, USA	Institute
11	T. S. Hariharan	MS16D007	Monash University Conference	12-14 December 2019, Monash, Australia	Institute
12	Krutheeka Baskaran	MS17S003	Workshop on Information Security and Privacy (WISP), ICIS 2019	15-18 December 2019, Germany	Institute

India

1	Prateek Nanda	MS18D011	Summer School in Econometrics, Gokhale Institute of Politics and Economics	22 June-5 July 2019, Pune	Institute
2	Nitika Gaba	MS18D010	International Professional Development Workshop	23-24 September 2019, Guru Gobind Singh Indraprastha University, New Delhi	Institute
3	Sharon	MS15D200	CORE 2019	5-8 November 2019, Mumbai	Institute
4	Ramesh Krishnan	MS16D005	Winter School on Circular Economy to focus on food supply chain sustainability	18-20 November 2019, Chennai	Institute
5	Arti Omar	MS17D005	PAN-IIM Conference 2019	11-14 December 2019, IIM, Rohtak	Institute
6	Ramesh Krishnan	MS16D007	SOM 2019 Annual International Conference	19-21 December 2019, IIT Kanpur	Institute
7	Anuja Sethiya	MS15D010	7th World Management PAN-IIM Conference	12-14 December 2019, IIM, Rohtak	Institute

8	Srivatsa Srinivas	MS15D400	13th Annual ISDI Conference	27-30 December 2019, Bhubaneswar	Institute
9	Nibu John Thomas	MS16D017	Indian Academy of Management (INDAM) 2020	1-4 January 2020, Trichy	Institute
10	Nitika Gaba	MS18D010	17th AIMS International Conference on Management	2-4 January 2020, IIM Kozhikode	Institute
11	Nabila Khan	MS17D021	Indian Academy of Management (INDAM) 2020	2-4 January 2020, IIM, Trichy	Institute
12	Shilpi Saxena	MS15D027	8th AIM_AMA Sheth Foundation Doctoral Consortium	3-6 January 2020, Greater Noida	Institute
13	Shilpi Saxena	MS15D027	<i>Journal of Marketing</i> workshop	11-12 January 2020, Hyderabad	Institute
14	Kalpana Chandrasekar	MS18D002	6th Management Doctoral Colloquium 2020	5-6 February 2020, IIT Kharagpur	Institute
15	Rintu Anthony	MS15D028	Ph.D. Consortium 2020 of SJM, SOM	21-22 February 2020, IIT Bombay	Institute

Students/Scholars who won outside prizes and awards

Sl.No.	Student/Scholar	Roll No.	Prize	Prize awarded by
1	A. Devika	MS16D023	Fulbright-Nehru Doctoral Program	Emory University's Goizueta Business School for a period of nine months
2	Anik Mukherjee	MS13D213	Fulbright-Nehru Doctoral Program	University of South Florida for a period of nine months
3	Abraham Cyril Issac	MS16D027	Joint Degree programme	Swinburne University of Technology, Melbourne, Australia

Awards

1	Dr. S. Yamini		2018 Emerald/ EFMD Outstanding Doctoral Research Award in the area of Operations and Production Management, August 2019	
2	C. Balaganesh	MS18D007	SPARC (Scheme for Promotion of Academic and Research Collaboration) Project titled Readiness Assessment of Cloud based Manufacturing System	Nottingham University, Business School, UK, 12 October 2019-12 January 2020
3	Arti Omar	MS17D005	Best Paper Award at the 19th COSMAR'19; Does "Market-To-Book Value" Matter in the Estimation of Default Risk? Evidence From India	IISc, Bengaluru, 28 November 2019

4	S. Srivatsa Srinivas	MS15D400	Best Paper Award (92nd Prize) at 23rd International Society of Operations Management (SOM) Conference; "On a Non-Customer Intensive Services Queue with Impatient and Patient Customers"	IIT Kanpur, 19-21 December 2019
5	Mohit Kumar	MS17D202	Best Paper Award "Financial Stress Spill over Across Asian Markets," Annual Capital Market Conference	National Institute of Capital Markets (NISM) Mumbai; 21-22 November 2019

4.11.3 Faculty and Their Activities

Faculty

Name and Qualifications	Major Areas of Specialisation
Professors	
G. Arun Kumar (Head of the Department)	Mergers and acquisitions, corporate valuation and governance, development finance
Arshinder Kaur	Operations research, supply chain management, total quality management, services operations management
L.S. Ganesh	Systems thinking and applications, project management, technology management, data and decision analysis, forecasting
T.J. Kamalanabhan	Organisational behaviour, human resource management and training and development
P. Krishna Prasanna	Corporate governance, fixed income securities, financial risk management and market micro structure
R. Madhumathi	Financial management and accounting, forex research, bank management, capital market studies
L. Prakash Sai	Strategic management, IT outsourcing and IT strategic planning business models, technology management, entrepreneurship
Rahul Ratnakar Marathe	Simulation, industrial engineering, TQM, operations research, operations management
C. Rajendran	Operations management, production and materials management, supply chain management, scheduling
Saji Mathew	Management information systems, IT strategy, data mining and business intelligence, IT services and outsourcing, information systems development
G. Srinivasan	Advanced operations research, operations management, supply chain management, manufacturing systems management, O. R. applications, services operations management
R. P. Sundarraj	Information systems, supply chain management, e-Business, computational optimization, decision support system
M. Thenmozhi	Financial management, strategic management, computational finance
A. Thillai Rajan	Venture capital and private, equity project and infrastructure finance, public-private participation, corporate finance
Usha Mohan	Quantitative models in operations management, probability and statistics, combinatorial optimisation

Associate Professors

R.K. Amit	Game theory, operations research, decision theory, natural resources management
Lata Dyaram	Leadership development, cognition in organisations, organisational development, industrial and organisation psychology
Nandan Sudarsanam	Experimentation, data mining, applied statistics, algorithmic and heuristic approaches to problem solving
Richa Agrawal	Customer relationship marketing, consumer behaviour and insight advantage
Rupashree Baral	Strategic human resources management, work-life balance, employee engagement, diversity and inclusiveness, career exit and re-entry of women

Assistant Professors

Nargis Pervin	Social network mining, recommender systems, mobile app analytics
Vaibhav Chawla	Mindfulness and sales call reluctance, spirituality in sales organisations, salesperson performance
Varisha Rehman	Marketing management and research, advertising and publicity, experiential marketing
V. Vijayalakshmi	Happiness and performance, mindfulness, humor in the workplace, workplace emotions, creativity and innovative capability of firms, Indian wisdom and management, innovative teaching and learning practices, integral holistic education, women empowerment through entrepreneurship
Ajit Singhvi Chair Professor	
C. Bhaktavatsala Rao	Business leadership and corporate governance, corporate strategy, business development and global alliances, manufacturing, R&D and marketing operations, mentoring and coaching

Professor of Practice

R. Sridhar	Manufacturing systems, strategic supply chain management
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Short-term courses/workshops/seminars/symposia/conferences organised by the faculty members

Sl. No.	Coordinator(s)	Title	Period
Symposium			
1	Dr. Saji K. Mathew	Research symposium on "Grow together, inspire together"	1-2 November 2019
Workshops			
1	Dr. T. J. Kamalanabhan, Dr. Rupashree Baral	L & T Dealership Training Program	3-8 April 2019
2	Dr. V.Vijayalakshmi, Dr. T. J. Kamalanabhan	Management Development Program: "Nurturing the Inner You: For Individual, Group, Organizational Fulfillment"	5-6 April 2019
3	Dr. Saji K. Mathew, Dr. G. Arun Kumar	India Immersion Program - Victoria University Wellington, New Zealand	19-20 April 2019
4	Dr. T. J. Kamalanabhan	EPBA - Executive Programme in Business Administration	20-28 April 2019
5	Dr. T. J. Kamalanabhan	EPBA - Executive Programme in Business Administration	4-12 May 2019

6	Dr. T. J. Kamalanabhan, Dr. Rupashree Baral	L & T Dealership Training Program	10-20 May 2019
7	Dr. L. Prakash Sai	Management Development Program for First Time Managers, CVRDE, DRDO	23-24 July 2019
8	Dr. Arshinder Kaur	Business Analytics Program, Ivory Education (P) Limited, New Delhi	August- December 2019
9	Dr. Usha Mohan	Optimization, Flipkart Internet Private Limited	2-3 August 2019
10	Dr. T. J. Kamalanabhan	Dealership Training Program, L&T	5-10 August 2019
11	Dr. C. Rajendran	"Collaborative Doctoral Colloquium (University of Passau)"	30 August 2019
12	Dr. T. J. Kamalanabhan	EPBA - Executive Programme in Business Administration	17-25 August 2019
13	Dr. T.J. Kamalanabhan, Dr. M. Thenmozhi	Workshop on Fundamentals of Research in Management and Engineering for Professionals of M/s F L Smidth, Chennai	14-22 September 2019
14	Dr. Nandan Sudarsanam	Training on Reinforcement Learning	11-21 November 2019
15	Dr. Nandan Sudarsanam	Training on Critical Thinking and Leadership	14 November-23 December 2019
16	Dr. Rupashree Baral, Dr. T. J. Kamalanahan	Training on NAV DISHA-Development Training program for INDANE Distributors, Indian Oil Corporation Limited	15-16 November 2019
17	Dr. V. Vijayalakshmi	Training on Coaching with Depth	17 November 2019
18	Dr. Usha Mohan	Training on Analytics for Intelligent Manufacturing	22-24 November 2019
19	Dr. T. J. Kamalanabhan, Dr. M. Thenmozhi	Teaching and Training on Project Leadership and Management Development Program (PLMDP)	25 November-4 December 2019
20	Dr. T. J. Kamalanabhan, Dr. Rupashree Baral	Talent Management and Career Progression for CPCL Officers	6-10 January 2020
21	Dr. R. K. Amit	Workshop on Emerging Trends in Advanced Manufacturing	7-8 January 2020
22	Dr. T. J. Kamalanabhan, Dr. M. Thenmozhi	Strategic Leadership	20-21 January 2020
23	Dr. T. J. Kamalanabhan, Dr. M. Thenmozhi	Strategic Leadership	23-24 January 2020
24	Dr. Prakash Sai, Dr. Lata Dyaram	Management Training Program	27-29 January 2020
25	Dr. T. J. Kamalanabhan, Dr. Rupashree Baral	Talent Management and Career Progression for CPCL Officers	27-31 January 2020

Short-term courses/workshops/seminars/symposia/conferences/trainings attended by the faculty members in academic institutions and public sector undertakings

Sl. No.	Faculty Member	Title	Institution	Period
Workshops				
1	Dr. L. S. Ganesh	Educational & Carrier Guidance Programme, SEEB, Oman	SEEB, Oman	8-10 November 2019
2	Dr. G. Arun Kumar	Workshop on Financial Modelling for Power Transmission Company, Pathumthani, Thailand	AIT, Thailand	11-14 November 2019
Seminar				
1	Dr. Lata Dyaram	Seminar session at Planet Ride, Paris	France	9-26 November 2019
Symposium				
1	Dr. M. Thenmozhi	Symposium of the <i>Journal of International Financial Markets, Institutions and Money (JIFMIM)</i>	Taiyuan, China	9-15 October 2019
Conferences				
1	Dr. M. Thenmozhi	Does Concentrated Ownership Impact CSR?: Evidence from India and China	Taiyuan, China	11-13 October 2019
2	Dr. M. Thenmozhi	Does Concentrated Ownership Impact CSR?: Evidence from Emerging Economies	Taiyuan, China	11-13 October 2019
3	Dr. M. Thenmozhi	Family Firms and CSR Spending: Evidence from Emerging Economies, International Family Enterprise and Research Academy Conference	Bergamo, Italy	27-30 July 2019

Special lectures delivered by the faculty in other institutions

Sl. No.	Faculty Member	Topic of Lecture	Institution
1	Dr. G. Arun Kumar	Keynote talk: Paradigm shift in education	ICT Academy Leadership Summit 2020

Visits abroad by faculty

Sl. No.	Faculty Member	Country Visited	Date	Purpose of Visit	Funding from
1	Dr. A. Thillai Rajan	Singapore	17-23 March 2019	Academic Leadership Development Programme at Nanyang Technological University	Without institute financial assistance
2	Dr. R. P. Sundarraj	USA	4-6 June 2019	14th International Conference on Design Science Research in Information Systems and Technology (DESRIST 2019)	With institute financial assistance from project

3	Dr. Saji K. Mathew	Sweden	8-14 June 2019	"27th European Conference on Information Systems (ECIS 2019)"	Without institute financial assistance
4	Dr. R. P. Sundarraj	UK	11-15 June 2019	19th International Conference on Group Decision and Negotiation (GDN 2019)	With partial institute financial assistance from CPDA and project
5	Dr. T. J. Kamalanabhan	Portugal	25-28 June 2019	19th Annual Conference of the European Academy of Management (EURAM 2019)	With partial institute financial assistance
6	Dr. Usha Mohan	Singapore	30 June-2 July 2019	2019 Manufacturing and Service Operations Management (MSOM)	Without institute financial assistance
7	Dr. Rahul R. Marathe	Singapore	30 June-2 July 2019	2019 Manufacturing and Service Operations Management (MSOM)	"With partial institute financial assistance"
8	Dr. A. Thillai Rajan	China	1-9 May 2019	Private visit	Without institute financial assistance
9	Dr. Arshinder Kaur	Germany	19-25 May 2019	Visiting Faculty, Hof University of Applied Sciences	Without institute financial assistance
10	Dr. Saji K. Mathew	Germany	23 May-15 June 2019	Visiting Professor, Faculty of Business Administration and Economics, University of Passau	Without institute financial assistance
11	Dr. T. J. Kamalanabhan	Germany	3-7 June 2019	Invited guest at International Week 2019, University of Applied Sciences	Without institute financial assistance
12	Dr. R. Madhumathi	Germany	8 June-14 July 2019	"Visiting Faculty, University of Passau, Germany"	Without institute financial assistance
13	Dr. C. Rajendran	Germany	12-16 May 2019	Research collaboration, University of Passau	Without institute financial assistance
14	Dr. V. Vijayalakshmi	Germany	11 June-6 July 2019	Visiting Faculty, University of Passau	Without institute financial assistance
15	Dr. Richa Agrawal	USA	27 May-5 July 2019	Research discussions, Lehigh University and Columbia University	With partial institute financial assistance from project
16	Dr. Rahul R. Marathe	Japan	1-9 August 2019	Technical Cooperation Project of Champions for Societal Manufacturing	Without institute financial assistance

17	Dr. G. Arun Kumar	Vietnam	22-26 August 2019	International Conference on Business and Finance 2019 at the University of Economics	With institute financial assistance
18	Dr. V. Vijayalakshmi	USA	5-18 August 2019	79th Annual Meeting of the Academy of Management	With partial institute financial assistance from CPDA
19	Dr. A. Thillai Rajan	USA	16-26 July 2019	Mossavar-Rahmani Center for Business & Government, Harvard Kennedy School, Harvard University, USA	With Institute financial assistance from project
20	Dr. G. Arun Kumar	Thailand	26 August 2019	Asian Institute of Technology	Without institute financial assistance
21	Dr. R. P. Sundarraaj	Nepal	11-15 September 2019	Private visit	Without Institute financial assistance
22	Dr. Richa Agrawal	USA	16 September-11 October 2019	Visit to Lehigh University, meeting and research collaboration discussion	With institute financial assistance from project
23	Dr. Lata Dyaram	Germany	4 November-3 December 2019	Visiting Professor, School of Business, University of Passau	With institute financial assistance
24	Dr. G. Arun Kumar	Thailand	11-14 November 2019	Visit to Asian Institute of Technology as part of Adjunct Faculty	Without institute financial assistance
25	Dr. Arshinder Kaur	Germany	20 November-21 December 2019	Visiting Professor, School of Business, University of Passau	Without institute financial assistance
26	Dr. Richa Agarwal	Germany	20 November-21 December 2019	Visiting Professor, School of Business, University of Passau	Without institute financial assistance
27	Dr. Rupashree Baral	Germany	24 November-6 December 2019	Visit to University of Passau and Koblenz University of Applied Sciences	Without institute financial assistance
28	Dr. G. Arun Kumar	Dubai	4-5 December 2019	Private visit to Dubai, United Arab Emirates	Without institute financial assistance
29	Dr. C. Rajendran	USA	10 December-5 January 2020	Private visit	Without institute financial assistance
30	Dr. Saji K. Mathew	Germany	11-18 December 2019	Visit of University of Passau for project collaboration and joint research (DAAD) program	Without institute financial assistance

31	R. Meenakshi, Technical Officer	Japan	21-25 December 2019	Private visit	Without institute financial assistance
32	Dr. G. Arun Kumar	Dubai	11-12 January 2020	To attend the advisory meeting with the stakeholders to IMT - Under brief visit	Without institute financial assistance
33	Dr. Richa Agrawal	USA	2-20 March 2020	Brief visit on project	Project funds

Honours and awards obtained by faculty

Sl. No.	Faculty Member	Award	Awarded by	Awarded for	Date of Award
Awards					
1	Dr. G. Srinivasan	SAS Best Paper Award (1st prize)	IIT Kanpur	PRV Problem and its Variants	19-21 December 2019
2	Dr. Vaibhav Chawla	Best Paper Award	IMR DC, IIM Bangalore	Service Recovery on Social Media - Containing the Customer Outpour of Emotions in Double Deviation Cases	
3	Dr. Rahul R. Marathe	Best Paper award	The XXIII Society of Operations Management Conference, Kanpur, 2019	On a Non-Customer- Intensive Service Queue with Impatient and Patient Customers	
4	Dr. Varisha Rehman and Chaudhary A.	Best Paper award	International Conference of Evidence-Based Management at BITS Pilani	What Works Better for BoP and ToP Consumers? Findings of Bruzzone and Frame-by-Frame Test on Advertisement Retention	March 2020

Journal Editorial Boards

S.No.	Faculty Member	Position (Editor/member)	Journal
1	Dr. Vaibhav Chawla	Associate Editor, <i>IIMK Society and Management Review</i>	<i>IIMK Society and Management Review</i> , 2019
2	Prof. Saji K. Mathew	Guest Editor, <i>Special Issue of Information Systems Frontiers</i>	Theme: Being More Human in the Digitized World, 2019
3	Prof. Usha Mohan	Guest Editor, <i>Special Volume, Annals of Operations Research</i>	

4.11.4 Design and Development Activities

Brief and specific details of process/instruments/equipment/software designed and developed

Prof. A. Thillai Rajan took the initiative and helped in conceptualising and setting up of the innovation, Venturing and Entrepreneurship in India (IVEIN) Network comprising IIT Madras, IIT Bombay, IIM Bangalore, IIM Calcutta and IIM Kozhikode.

4.11.5 Research and Consultancy

Sponsored research projects (ongoing and new)

Sl. No.	Title	Period	Funding Agency	Amount (Rs. in lakhs)	Coordinators
1	Solution Concepts for Inventory Games Under-Asymmetric Information	Three years	Science and Engineering Board (SERB)	6	Dr. R. K. Amit

Exchange programme with other universities, including institutions/universities under MoU

1	Shri Madhavan Vishnu Nampothri	1 October 2019-31 March 2020, Germany	Under Student Exchange Programme in University of Passau
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Faculty members' participation with other institution under MoU

Sl. No.	Faculty Member	Participation Details	University/Institution
1	Dr. G. Arun Kumar	Term extended as Visiting Faculty at School of Management, Asian Institute of Technology (AIT), Thailand	July-June 2020 (one year)
2	Dr. L. S. Ganesh	Visiting Professor and Mentor-in-Residence at IIM Bangalore	February-May 2020 (four months)
3	Dr. A. Thillai Rajan	Reappointment as Associate, Mossavar-Rahmani Center for Business & Government, Harvard Kennedy School, Harvard University, USA	February 2020-January 2021 (one year)

Distinguished visitors to the department

Sl.No.	Visitor and Designation	Date of Visit	Purpose of Visit
1	Shri Rajamanohar Somasundaran, Co-Founder, Aquaconnect	4 April 2019	Talk: Managing digital transformations-challenges and learning
2	Dr. A.K. Pradeep, CEO, Machine Vantage, Co-Author, AI for Marketing and Product Innovation (Dr. A.K. Pradeep is a serial entrepreneur known for ventures like Smilables, Neuro Focus and Broad Vantage)	23 April 2019	Sharing of Experience on Entrepreneurship, Marketing and Consumer Neuroscience
3	Shri Subramaniam Iyer, President and CEO, Tanun Inc	25 April 2019	Talk: My experiences with diversified investment decisions
4	Shri Ramesh Balasubramaniam, General Manager, Wipro BPS	2 May 2019	Talk: Institutional financial services
5	Ms. Thaysa Portela de Carvalho, University of Turku, Finland	15-19 July 2019	Interactive session with scholars for future collaborative research
6	Shri Sreedhar Bevara, Senior General Manager, Panasonic	8 August 2019	Talk: Celebrate the leader within
7	Shri Ravi Raman	19 August 2019	Talk: Asset allocation decision and institutional investment
8	Shri Madan Shanmugasundaram, Director- SAP Analytics, Infosys	29 August 2019	Talk: Analytics and its impact on the consulting industry
9	Shri Agus Sudjianto, Executive Vice President and Head of Corporate Model Risk, Wells Fargo, USA	5 September 2019	Talk: Machine learning in financial modelling
10	Shri Pradeep Cholayil, Chairman and Managing Director, Cholayil Private Limited	5 September 2019	Talk: Challenge the leader

11	Dr. Amandeep Dhir, Fellow-Turku School of Economics, University of Helsinki, Finland	18 October 2019	Talk: Publishing in ABDC Journals
12	Prof. Debjit Roy, Indian Institute of Management Ahmedabad	18 September 2019	Talk: Integrated order picking systems for e-commerce fulfillment: technology, performance models, and design insights
13	Shri Anand Chakravarthy, President, Redington India Limited	19 September 2019	Talk: Change is the only constant in the digital world
14	Shri Venkatesh Natarajan, Chief Digital Officer and SVP-IT Ashok Leyland	10 October 2019	Talk: Leveraging digital for business transformation - an automotive industry perspective
15	Shri P. Jagannathan and Shri Ragavendra Subramanian, Deputy Vice President and Senior Leader, HDFC AMC	1 November 2019	Talk: Mutual fund expert
16	Mr. N. Srinivasan, Vice Chairman and Managing Director, The India Cement Limited, Chennai	7 November 2019	Talk: Leadership in turbulent times, part of EFSI lecture
17	Ms. Deepa Krishnakumar, Vice President, Barclays Investment Bank	14 November 2019	Talk: Women in the workplace
18	Shri Mithun Sundar, CEO, Lendingkart Finance Limited	14 November 2019	Leadership Talk Series
19	Shri R. Velusamy, Senior Vice President, MRV, Mahindra Rise	16 November 2020	Leadership Talk Series
20	Prof. Oliver Entrop, University of Passau, Germany	19 November 2019	Research Seminar: Foreign exchange rate exposure of companies under dynamic regret
21	Prof. Georges Zaccour, HEC Montreal	12 December 2019	Invited talk: Brand imitation: a dynamic-game approach
22	Shri Satyakam Arya, Managing Director & CEO, Daimler India Commercial Vehicles Private Limited	14 December 2019	Keynote talk at the inauguration of third batch of EMBA
23	Prof. Murali Jagannathan, Professor, Binghamton University, New York	9 January 2020	Invited talk: International characteristic-based asset pricing
24	Prof. Kulwant S. Pawar, Professor, University of Nottingham, UK	9 January 2020	Invited talk: Supply chain configuration conundrum: insights from the European and Asian pharma
25	Prof. Kesavan Saravanan, Associate Professor of Operations and Innovation Management, UNC Kenan-Flagler, Business School	21 January 2020	Invited talk: Field experiment on the value of merchants' discretionary power to override data-driven decision-making tools
26	Shri S. Rajaram, Co-Founder and CEO, Aahaa Technologies	23 January 2020	Invited talk: Funding your startup—from birth to IPO
27	Ms. Sandhiya Thiruvengadam, Lead-HR Consultant, Sai University	30 January 2020	Invited talk: Designing the Future Workplace
28	Shri Ganesh, Vice President, Sift Technologies Limited	6 February 2020	Invited talk: Future Transition in the finance industry and the skills required to cope with them
29	Shri Aishwarya Pratap Singh Head of Marketing and Product Development, ITC Limited	11 February 2020	Invited talk: Strong brand narratives—power of marketing—an FMCG perspective
30	Shri Abhijeet Singh, Founder, Innovation Consulting, CEO at NineTen Dental	20 February 2020	Invited talk: How FB groups are shaping the industries with innovative thinking

4.12 Department of Mathematics

4.12.1 Introduction

The Department of Mathematics was established in 1959 along with the institute. It offers M.Sc. in Mathematics, M.Tech. in Industrial Mathematics and Scientific Computing (IMSC) and Ph.D. programmes. In addition, the department has taken the responsibility of teaching mathematics courses to the B.Tech., M.Tech. (other than IMSC), M.Sc. and Ph.D. students of the institute.

The major research areas of the department are the following:

1. Algebraic combinatorics
2. Algebraic geometry
3. Algebraic topology
4. Applied probability
5. Approximation theory
6. Category theory
7. Combinatorial optimization
8. Combinatorics
9. Combinatorics of words equations
10. Commutative algebra
11. Complex analysis
12. Conformal geometry
13. Contact and symplectic topology
14. Convective heat and mass transfer
15. Computational fluid dynamics
16. Computational number theory
17. Cryptology
18. Differential and integral equations
19. Differential topology
20. Fixed point theory
21. Fluid mechanics
22. Functional analysis
23. Fractals
24. Game theory
25. Graph algorithms
26. Graph theory
27. Harmonic analysis
28. Inverse and ill-posed problems
29. Linear algebra
30. Low-dimensional topology
31. Mathematical modeling
32. Mathematical study of ferromagnetic networks
33. Nonlinear analysis
34. Nonlinear analysis of functional differential
35. Nonlinear differential equations
36. Number theory
37. Operator algebras
38. Operator equations
39. Operator theory
40. Optimization
41. Partial differential equations
42. PDE numerics
43. Solid mechanics
44. Special functions
45. Systems and control theory
46. Theory of codes
47. Theory of computation
48. Theory of wavelets
49. Time frequency analysis
50. Wave structure interactions

4.12.2 Academic Programmes

Students on roll as of September 2019+ Ph.D admission in January 2020

Programme	Number of Students
M.Sc.	85
M.Tech.	40
Ph.D.	112
Total	237

Student/Scholars who attended conferences/seminars and symposia abroad/India

Sl.No.	Scholar	Roll No.	Conference/Seminar/Symposia/Workshop and Venue	Date	Financial Assistant
India					
1	Mrityunjay Ghosh	MA18D001	Short-term visit (seven days)	IISER Pune, Pune	27 October 2019

2	Vinay Sipani	MA19D005	Two-day workshop on How to do a good MS/Ph.D.? and How to write papers/thesis using LaTeX?	MRC Central Library	3 November 2019
3	Repana Devendra	MA16D020	Conference - Topological Data Analysis (TDA)	CMI Chennai	13 September 2019
4	Supriya Karmakar	MA18D201	Conference on Functional Analysis	IIT Bombay	20 October 2019
5	Abhishek Kesarwani	MA15D030	3rd SERB School on Nonlinear Dynamics	IIT Patna	31 December 2019
6	Mrityunjay Ghosh	MA18D001	AIS on "Geometric Analysis"	IIT Bombay	8-28 December 2019
7	Vinay Sipani	MA19D005	A two-day workshop on How to do a good MS/Ph.D.? and How to write papers/thesis using LaTeX?	MRC Central Library	11 March 2019
8	Abhishek Kesarwani	MA15D030	3rd SERB School on Nonlinear Dynamics	IIT Patna, Bihta, Patna	31 December 2019
9	V A Kandappan	MA16D300	Research Visit	University of Hyogo, Kobe, Japan	11 December 2019
10	Supriya Karmakar	MA18D001	3rd SERB School on Nonlinear Dynamics	IIT Patna	3-31 December 2019
11	Mrityunjay Ghosh	MA18D001	AIS-Geometric Analysis (2019)	IIT Bombay	9-28 December 2019
12	Aradhana Narang	MA16D017	International Conference on Mathematical Techniques and Applications	SRM Institute of Science and Technology, Kanchipuram, TN	30 January-1 February 2020
13	Pratiksha Shingavekar	MA17D004	AIS on Modular forms and Galois Representations	IISER Tirupati	11-17 December 2019
14	Subhajt Chanda	MA15D022	Advanced Commutative Algebra	IIT Kharagpur	23 December 2019-1 January 2020
15	Divya Murali	MA17D012	The Bloch-Kato Conjecture	IISER Pune	6-15 January 2020
16	Chiranjit Mondal	MA17D013	National Workshop on Special Matrices and Stochastic Games (WSMSG 2020)	Sikkim Manipal Institute of Technology, Sikkim	6-15 January 2020
17	Rajib Sarkar	MA17D006	Commutative Algebra and Algebraic Geometry Conference (CAAG 2019)	IISER Bhopal	2-6 July 2019
			Advanced Commutative Algebra, AIS - Conference	IIT Kharagpur	2-14 December 2019

Abroad

1	Vinay Sipani	MA19D005	Two-day workshop on How to do a good MS/Ph.D.? and How to write papers/thesis using LaTeX?	MRC Central Library	3 November 2019
2	V A Kandappan	MA16D300	Research visit	University of Hyogo, Kobe, Japan	11 December 2019

4.12.3 Faculty and Their Activities**Faculty**

Name and Qualifications	Major Areas of Specialisation
Professors	
Dr. A.K.B. Chand, Ph.D. (IIT Kanpur)	Fractals, approximation theory and wavelets
Prof. Arindama Singh, Ph.D. (IIT Kanpur)	Logic, numerical analysis
Prof. S. Ponnusamy, Ph.D. (IIT Kanpur)	Complex analysis, function spaces, special functions and conformal geometry
Prof. R. Radha, Ph.D. (IMSc Chennai)	Harmonic analysis, wavelets, time-frequency analysis
Prof. R. Rama, Ph.D. (Anna University)	Formal language and automata theory/molecular computing
Prof. Y.V.S.S. Sanyasiraju, Ph.D. (IIT Madras)	Computational fluid dynamics
Prof. Satyajit Roy, Ph.D. (IISc Bangalore)	Convective heat and mass transfer, computational fluid dynamics
Prof. K.C. Sivakumar, Ph.D. (IIT Madras)	Functional analysis, mathematical programming
Prof. Ch. Srinivasa Rao, Ph.D. (IISc Bangalore)	Non-linear differential equations
Dr. S.R. Manam, Ph.D. (IISc Bangalore)	Applied mathematics
Prof. S. Sundar, Ph.D. (IIT Madras)	Computational fluid dynamics, numerical analysis for partial differential equations, mathematical modeling
Prof. M. Thamban Nair, Ph.D. (IIT Bombay)	Applicable functional analysis: spectral approximation, operator equations, inverse and ill-posed problems
Prof. P. Veeramani, Ph.D. (IIT Bombay)	Fixed point theorems and their applications to problems in optimization and best approximation, fuzzy set theory
Prof. V. Vetrivel, Ph.D. (IIT Madras)	Non-smooth optimization, fixed point theory, complementarity problems
Dr. A.V. Jayanthan, Ph.D. (IIT Bombay)	Commutative algebra and algebraic combinatorics
Dr. A.J. Shaiju, Ph.D. (IISc Bangalore)	Game theory, systems and control theory
Associate Professors	
Dr. Kalpana Mahalingam, Ph.D. (University of South Florida, Tampa)	Theory of codes, DNA computing, combinatorics of words
Dr. Kunal Krishna Mukherjee, Ph.D. (Texas, A&M)	Operator algebras
Dr. Neelesh S. Upadhye, Ph.D. (IIT Bombay)	Probability theory and applications
Dr. Shruti Dubey, Ph.D. (IIT Kanpur)	Nonlinear analysis of functional differential equations, mathematical study of ferromagnetic systems
Dr. Sounaka Mishra, Ph.D. (ISI, Kolkata)	Discrete mathematics, approximation algorithm, combinatorial optimization
Dr. R. Balaji, Ph.D. (IIT Madras)	Linear algebra and optimization

Dr. V. Uma, Ph.D. (IMSC Chennai)	Topology and geometry of Toric varieties and related spaces
Assistant Professors	
Dr. P. Aprameyan, Ph.D.	Analysis on symmetric spaces, representations of real Lie groups, geometric quantization
Dr. T.V. Anoop, Ph.D. (IMSc Chennai)	Linear and nonlinear partial differential equations, nonlinear functional analysis
Dr. Arijit Dey, Ph.D.	Algebraic geometry
Dr. Dipramit Majumdar, Ph.D. (Brandeis University)	Algebraic number theory, p-adic aspects of modular forms and Galois representations
Dr. N. Narayanan, Ph.D. (IMSC, Chennai)	Graph theory: graph colouring, structural and extremal graph theory, probabilistic combinatorics, discrete mathematics
Dr. Priyanka Shukla, Ph.D (JNCASR, Bangalore)	Fluid mechanics: hydrodynamic instability, nonlinear dynamics, numerical PDE, granular flows, pattern formation
Dr. Ramesh Kasilingam, Ph.D (IIT Bombay)	Differential and algebraic topology and their interactions with differential geometry
Dr. Santanu Sarkar, Ph.D. (ISI, Kolkata)	Cryptology and computational number theory
Dr. Sarang S. Sane, Ph.D. (TIFR, Bombay)	Commutative algebra, homological algebra, algebraic K-theory, algebraic geometry
Dr. Sivaraman Ambikasaran, Ph.D (Stanford University)	Numerical linear algebra, fast algorithms, scientific computing
Dr. Soumen Sarkar, Ph.D. (ISI, Kolkata)	Algebraic topology, geometric topology, differential geometry, convex geometry, K-theory, topological complexity, persistent homology, ring of continuous functions
Dr. Sriram Balasubramanian, Ph.D. (University of Florida)	Functional analysis
Dr. Suhas Jaykumar Pandit, Ph.D. (ISI, Bangalore)	Geometric group theory and low-dimensional topology
Dr. Sumesh K. Ph.D (ISI, Bangalore)	Operator algebra
Dr. T.E. Venkata Balaji, Ph.D. (CMI, Chennai)	Algebraic geometry and commutative algebra
Emeritus Faculty	
Prof. S.H. Kulkarni, Ph.D. (IIT Bombay)	Functional analysis, numerical analysis
Prof. R. Usha, Ph.D. (IIT Madras)	Fluid dynamics
INSPIRE Faculty	
Dr. J. Jaikrishnan Ph.D. (IISc Bangalore)	Complex analysis
Adjunct Faculty	
Dr. S. Kesavan	Partial differential equation-homogenization, isoperimetric inequality
Institute PDF	
Dr. J. V. Ramana Reddy, Dr. Tarun Kumar Chakra, Dr. C. Gunasundari and Dr. N. Kousalya	

Short-term courses/workshops/seminars/symposia/conferences organised by the faculty members

Sl. No.	Coordinator(s)	Title	Period
Conferences			
1	Dr. T. V. Anoop	AIS on geometric measure theory and PDE in the Department funded by National Center for Mathematics	3-15 June 2019
2	Dr. Shruti Dubey, Prof. Ch. Srinivasa Rao	Evolution Equations: Theory and Computations	12-17 August 2019
3	Department Level	National Symposium On Mathematics and Its Applications (NSMA 2019)	22 December 2019

Special lectures delivered by the faculty in other institutions

Sl. No.	Faculty Member	Topic of Lecture	Institution	Date
1	Prof. S. Sundar	FDP Talk	Vel Tech Chennai	11 May 2019
		FDP Talk	KL University Vijayawada	24 May 2019
2	Prof. Arindama Singh	Six lectures on Linear Algebra	Ramanujan Institute of Advanced Studies, Chennai	8-13 May 2019
		Eleven lectures on Linear Algebra at NBHM programme in Statistics	KN College, Vijayawada	1-13 December 2019
		Three lectures on Combinatorics at IMP Camp	KVIIT, Chennai	26-27 December 2019
		Gödel's incompleteness theorems	IIT Tirupati	12 March 2020
3	Prof. Satyajit Roy	Eight lectures in TEQIP on FMNA-BVP	NIT Calicut	5-9 October 2019
4	Dr. Shruti Dubey	Abstract Cauchy Problem for Navier-Stokes Equations with Caputo Derivative	NIT Calicut	30 December 2020
		Functional Equations	KV School, IIT Madras	31 December 2019-1 January 2020
5	Prof. S. Ponnusamy	Colloquium Talk	Hunan Normal University, China	14 June 2019
		Colloquium Talk	Hengyang Normal University, China	5 June 2019
		Colloquium Talk	Guilin University of Technology, China	3 June 2019
		Colloquium Talk	Hunan Normal University, Changsha, China	15 June 2019

Invited talks/paper presentation at conferences/symposia/workshop

Sl. No.	Faculty Member	Programme	Paper/Talk/Lectures	Date
1	Prof. S. Sundar	INSPIRE Talk	IISER Trivandrum	16 May 2019

		Invited Talk ICADE 2019	IIT Mandi	17-18 June 2019
2	Dr. Priyanka Shukla	3rd IMA Conference on Dense Granular Flows	Shear banding instability in arbitrarily inelastic dense granular shear flows	1-4 July 2019
3	Dr. Priyanka Shukla	8th International Symposium on Bifurcations and Instabilities in Fluid Dynamics	Miscible-reactive viscous fingering in a porous medium	16-19 July 2019
4	Prof. A.K.B. Chand	CMMSE 2019	Invited talk on Quantum α -fractal Approximation	4 July 2019
5	Prof. S. Sundar	Invited lecture	SRM University	30 July 2019
		Invited talk	IISER Trivandrum	22 August 2019
		Invited talk - DAAD Workshop	IIT Madras	11 October 2019
		Invited talk - NCM Workshop	Bharathiyar University	20 November 2019
6	Prof. Y.V.S.S. Sanyasiraju	Delivered an invited lecture on RBF functions with optimized shape parameter for solving partial differential equations	NIT Calicut	17 July 2019
		Delivered two lectures on Numerical solutions of parabolic partial differential equations; AICTE-sponsored short-term course on Evolution equations: theory and computation conducted by Department of Mathematics	Department of Mathematics, IIT Madras	13-14 August 2019
		Delivered two lectures on Matlab introduction and practice in the AICTE-sponsored short-term course on Evolution equations: theory and computation	Department of Mathematics, IIT Madras	13-14 August 2019
7	Prof. M. Thamban Nair	Gave an invited talk on "Lax-Milgram lemma in Banach space setting" at IWM -Regional Workshop, Research Opportunities in Mathematics	NIT Meghalaya	19-21 October 2019
8	Prof. Sathyajit Roy	Invited talk in National Conference KSTA	Karnataka University, Dharwad	7-9 November 2019
9	Prof. M. Thamban Nair	Invited talk at a National Workshop on PDE and Applications	Central University of Kerala	19 December 2019
10	Prof. M. Thamban Nair	Lectures: Spaces and Operators	College Teachers at University of Calicut	14 December 2019
11	Prof. Arindama Singh	Talk: Analysis (eight talks)	Mini-MTTS	1-6 January 2020

Visit to other institutions

S.No	Faculty Member	Programme	Venue	Date
1	Prof. S. Sundar	Ph.D. Viva	JNTU Anantapur	24 April 2019
		FDP talk	Vel Tech Chennai	11 May 2019
		DST-SERB Review Meeting	KIIT Bhubaneswar	17-18 May 2019
		Ph.D. Viva	JNTU Anantapur	24 April 2019
		DST-SERB Review Meeting	KIIT Bhubaneswar	17-18 May 2019
		Ask the Expert-Mathrubhumi	Trivandrum	21 May 2019
		Ask the Expert-Mathrubhumi	Calicut	28 May 2019
		Ask the Expert-Mathrubhumi	Kochi	31 May 2019
2	Prof. Arindama Singh	Collaborative research work	IIT Kanpur	2-18 June 2019
		Review of GATE syllabus in Statistics	IIT Kanpur	2-3 November 2019
		Curriculum meeting at Department of Computer Science	IIT Pallakad	28 November 2019
		KVPY interview, organised by IISc. Bangalore	IISc. Bangalore	13-15 February 2020
		Faculty recruitment	VIT, Vellore	22 February 2020
3	Prof. Satyajit Roy	Ph. D. Viva	IIT Guwahati	29 May 2019
		Ph. D. Viva	Jawaharlal Nehru Technological University, Ananthapur, AP	31 May 2019
4	Dr. Shruti Dubey	Comprehensive DC meetings	Vellore Institute of Technology, Chennai	22 May 2019
5	Prof. S. Sundar	Ph.D. Viva	Alagappa University, Karaikudi	12 June 2019
		Ph.D. Viva	IIT Roorkee	10-12 July 2019
		Department Review Expert	Thiyagaraja College of Engineering, Madurai	4 July 2019
		Chief Guest-Mathematics Association	Meenakshi Women's College, Chennai	8 July 2019
		Board of Studies Meeting	NIT Trichy	17 July 2019
		Ph.D. Review Meeting	Shastra University, Thanjavur	17 July 2019
6	Dr. Shruti Dubey	DC Committee Meeting	SRM Institute of Science and Technology, Chennai	25 July 2019
7	Prof. S. Sundar	Faculty Selection	NIT Surathkal	2-3 August 2019
		DST-SERB PAC Meeting	IISc Bangalore	20-21 August 2019
		DST-TARE PAC meeting	New Delhi	27 August 2019
8	Prof. A.K.B. Chand	Comprehensive meetings for Ph.D. students	SRM University, Chennai	16 September 2019

9	Prof. S. Sundar	Chief Guest - Math Fest	Bala Vidhya Mandir School, Adyar, Chennai	19 October 2019
		Chief Guest and Talk - PALS FTP Programme	IIT Madras	18 October 2019
		Selection Committee - Faculty Recruitment	IIT Roorkee	29 November 2019
		Ph.D. Viva	IIT Banaras Hindu University	7 November 2019
		Ph.D. Viva	IIT Kharagpur	11 November 2019
		Chief Guest - Organised by The Times of India, Ganit Utsav	Saraswathi Vidhyalaya, Chennai	16 November 2019
		Ph.D. Viva conducted	JNTU, Ananthapur	25 November 2019
10	Prof. Y.V.S.S. Sanyasiraju	Ph.D. thesis and Viva Voce examiner	NIT Warangal	6 November 2019
		Ph.D. thesis and Viva Voce examiner	NIT Agartala	4 November 2019
		Internal expert member Ph.D. viva voce examination	SRM IST, Chennai	30 August 2019
		Expert Member, Ph.D. Viva voce examination	JNTU, Ananthapur	19 July 2019
		Expert Member, M. Phil Viva Voce examination	JNTU, Ananthapur	19 July 2019
		Expert Member JRF to SRF conversion of a CSIR fellowship candidate	NIT Calicut	17 July 2019
		Expert Member Ph.D. Viva Voce examination	JNTU, Ananthapur	28 May 2019
		External expert member Comprehensive viva voce examination	SRMIST	14 May 2019
		11	Prof. M. Thamban Nair	Faculty recruitment related work
DAB-Committee meeting	NIT Kozhikode			1 November 2019
12	Prof. A.K.B. Chand	Doctoral Committee Meeting	VIT Vellore	29 November 2019
		Doctoral Committee Meeting	SRM University	21 October 2019
		Joint Research Work	IIT Bhubaneswar	25 October 2019
13	Dr. A. V. Jayanthan	Irreducibility in polynomial rings	PSG College of Arts and Science, Coimbatore	18-22 November 2019
		Galois Theory	Victoria College, Palakkad	28 October 2019
14	Prof. S. Sundar	Faculty Selection	IIT Ropar	5 December 2019
		Staff Selection	ISRO, Bangalore	14 December 2019
		MATRICS Meeting	SERB, Delhi	19 February 2020
		Faculty Selection	NIT, Calicut	10 January 2020
		Faculty Selection	IIT, Palakad	23 January 2020

		Research discussion meeting	University of Colombo, Sri Lanka	24 January 2020
		SERB Research Award Selection	New Delhi	29 January 2020
15	Dr. Shruti Dubey	Ph.D. viva voce	NIT Calicut	30 January 2020
16	Prof. S. R. Manam	Ph.D. viva voce	IIT (ISM) Dhanbad	27 January 2020
17	Prof. A. K. B. Chand	Moderation work for national- level examination	NCERT-Delhi	19-21 January 2020
18	Prof. M. Thamban Nair	As Visitor's Nominee, attended the faculty selection committee meetings of Mathematics, Physics and Chemistry	NIT Trichy	16-18 March 2020
19	Prof. V. Vetrivel	Board of studies meeting	Alagappa University, Karaikudi	6 March 2020

Visits abroad by the faculty

Sl. No.	Faculty Member	Country visited	Date	Purpose of visit	Funding from
1	Prof A. K. B. Chand	Israel	21 May-1 June 2019	Research collaboration with Technion and Tel-Aviv University	Institute and MATRICS project
2	Dr. Suhas J. Pandit	Spain	6 May 2019	Research collaboration	Institute and MATRICS project
		Brussels, Belgium	13-14 May 2019		
		Paris, France	17-18 May 2019		
		Aachen, Germany	14-17 May 2019		
3	Dr. Anoop	Czech Republic	8-19 May 2019	Research collaboration with University of West Bohemia, Pilsen	Institute and MATRICS project
		Italy	20-24 May 2019	International Conference on Elliptic and Parabolic, Gaeta	
4	Prof. K. C. Sivakumar	USA	June-July 2019	Visited the Department of Mathematics, University of California, Santa Barbara and gave a short course on Nonegative Matrices	Others
		Brazil	July 2019	Organised a contributed Minisymposium on "M-matrices, Inverse M-matrices and their generalizations" in the International Linear Algebra Society (ILAS) Conference held at Rio De Janeiro, Brazil	Others

5	Prof. Thamban Nair	Singapore	13 June-8 July 2019	Visited School of Mathematics, Sun Yat-sen University, Guangzhou, China, as Visiting Mathematician	Others
		China	29 June 2019	Gave a colloquium talk on "An Inverse problem in PDE" at School of Mathematics, Sun Yat-sen University, Guangzhou, China	Others
6	Prof. S. Ponnusamy	University of Turku, Turku, Finland (supported by Indo-Finland Joint Call for Mobility of Researchers, DST, India)	22 December 2019-15 March 2020	Visiting Professor (Collaborative Research and Lecture Series)	Others
		Kazan Federal University, Kazan, Russia	31 August-13 September 2019	Visiting Professor (Collaborative Research with I. R. Kayumov and Lecture Series)	Others
		Hunan Normal University, Changsha, China	25 May-20 June 2019	Visiting Professor (Collaborative Research with Y. Li, and Lecture Series)	Others
		University of Turku, Turku, Finland	27 December 2019	Plenary Speaker at the one-day workshop on "Intrinsic geometry of domains and related topics" a) Impact of Bohr's phenomenon for mappings from disk into various domains	Others
			19 February 2020	Plenary Speaker at the one-day symposium on "Analysis" b) Problem of Gromova and Vasil'ev on integral means, and Yamashita's conjecture for convex mappings	Others
		Hunan Normal University, Changsha, China	15 June 2019	On the logarithmic coefficients of univalent functions and related investigations Plenary Speaker at the workshop on "Harmonic and quasiconformal mappings"	Others
		Hunan Normal University, Changsha, China	14 June 2019	Colloquium talks on "Problem of Gromova and Vasil'ev on integral means, and Yamashita's conjecture for conformal mappings"	Others
		Hengyang Normal University, Hengyang, China	5 June 2019	Colloquium talks on "Bohr's inequality for harmonic mappings and beyond"	Others

		Guilin University of Technology, Guilin, China	3 June 2019	Colloquium talks on "Simple journey to the family harmonic mappings"	Others
		Hunan First Normal University, Changsha, China	27 May 2019	Colloquium talks on "On the Bohr inequality with a fixed zero coefficient"	Others
9	Dr. Shruti Dubey	Spain	15-19 July 2019	Paper presentation and session chair at 9th International Congress on Industrial and Applied Mathematics, University of Valencia, Spain	Others
10	Dr. Santanu Sarkar	Switzerland	15 July-7 August 2019	Visit to Ecole Polytechnique Fédérale de Lausanne, Lausanne, Switzerland in connection with a research collaboration	Others
11	Dr. Soumen Sarkar	Korea	7-13 July 2019	Visit to Korea Advanced Institute of Science and Technology (KAIST), Daejeon, South Korea in connection with a research collaboration	Others
		Canada	14-20 July 2019	Visit to University of Regina, Saskatchewan Canada in connection with a research collaboration	Others
12	Dr. Neelesh S. Upadhye	Taiwan	25-27 June 2019	3rd International Conference on Econometrics and Statistics at National Chung Hsing University, Taichung, Taiwan in Connection with a research collaboration	Others
13	Prof. A.K.B. Chand	Spain	6-14 July 2019	Joint Research Collaboration, University of Zaragoza, Spain	Others
		Spain	17 July 2019	Minisymposium on Recent Advances in Iterated Function Systems and Fractal Functions at ICIAM-2019, University of Valencia, Spain	Others
14	Prof. S.R. Manam	Taiwan	22-26 September 2019	5th International Working group on Rotational Seismology, Sun Moo Lake, Taipei	CPDA
15	Dr. Soumen Sarkar	China	7-12 August 2019	X'ian Jiaotong-Liverpool University, Suzhou, China	Institute
			12-18 August 2019	Fudan University Shanghai, China	Institute
16	Dr. R. Balaji	Czech Republic	8-13 September 2019	International Conference on Matrix Analysis and its Application MAT-TRIAD 2019, Liblice	CPDA
17	Prof. S. Ponnusamy	China	27 May-5 July 2019	Hunzen Normal University, Changsha, Hunan, China	Project

18	Prof. S.R. Manam	Taiwan	22-26 September 2019	5th International Working Group on Rotational Seismology, Sun Moo Lake, Taipei	CPDA
19	Prof. S. Ponnusamy	Kazan, Russia	7-12 September 2019	Kazan XIV School Conference on Function Theory (Kazan 2019)	Institute
20	Prof. Y.V.S.S. Sanyasiraju	Dubai, United Arab Emirates	26-31 October 2019	GATE 2020	IIT Madras
21	Dr. Soumen Sarkar	USA	2-8 November 2019	Research collaboration	Partial with CPDA
22	Dr. Santanu Sarkar	Japan	2-12 November 2019	Research collaboration	Partial with CPDA
23	Dr. V. Uma	Japan	14-23 November 2019	Research collaboration	Partial with CPDA
24	Prof. S. Sundar	University of Colombo, Sri Lanka	24-26 January 2020	Research collaboration and discussion meeting	University of Colombo
25	Dr. Jayanthan A. V.	McMaster University, Hamilton, Canada	19-24 January 2020	Attend workshop	Partial from CPDA
26	Prof. K. C. Sivakumar	USA	1 January-30 April 2020	Visiting Faculty, University of California, Santa Barbara	
27	Dr. Neelesh Upadhye S.	London, UK	14-16 December 2019	12th International Conference	CPDA
28	Prof. S. Ponnusamy	Finland	22 December 2019-15 March 2020	Visiting Professor, University of Turku, Finland	(Supported by Indo-Finland Joint Call for Mobility of Researchers, DST, India)
		Russia	31 August-13 September 2019	Visiting Professor, Kazan Federal University, Kazan, Russia (collaborative research with I. R. Kayumov and lecture series)	Others
		China	25 May-20 June 2019	Visiting Professor, Hunan Normal University, Changsha, China (collaborative research with Y. Li and lecture series)	Others
29	Dr. Priyanka Shukla	University of Warwick, UK	15 May-15 July 2019	Research discussion and conference	Others
30	Prof. A.V. Jayanthan	Macmaster University, Hamilton, Canada	19-24 January 2020	Research visit	Others

		Dalhousie University, Halifax, Canada	24-26 January 2020	Workshop	Others
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Honours and awards obtained by the faculty

Sl. No.	Faculty Member	Award	Awarded by	Date of Award
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Awards

1	Prof. Ponnusamy	Elected as a President of the Ramanujan Mathematical Society, India	Ramanujan Mathematical Society, India	April 2019-March 2022
2	Prof. K. C. Sivakumar	Fellowship Award	ASEM-DUO	November 2019
3	Dr. Sarang S. Sane	Young Faculty Recognition Award - 2019		2019
4	Dr. Sivaram Ambikasaran	Young Faculty Recognition Award - 2019		2019
5	Dr. Kunal Krishna Mukherjee, Associate Professor	Exploratory research proposals 2019-20	Project: On uniformly bounded co-ordinates in GNS Spaces	December 2019

Nomination

1	Prof. S. Sundar	Nominated as a DAAD Research Ambassador		2018-22
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Fellowships of academies and professional societies

S.No.	Faculty Member	Position	Year of Admission
1	Dr. Shruti Dubey	Elected member of NASI	2019

Journal Editorial Boards

S.No.	Faculty Member	Position	Journal Name	Year
1	Prof. S. Sundar	Guest Editor	Issue of <i>Int. J. Adv. Eng. Sci. Appl. Math</i>	2019
2	Prof. Ponnusamy	Editor, The International Conference on Applied Analysis,, Mathematical Modeling and Computing Techniques (ICAAMMCT 2018): Proceedings of the ICAAMMCT-2018 Conference held at The Gandhigram Rural Institute (GRI), Gandhigram Pub.: <i>J Analysis</i> , Springer Eds.: P. Balasubramaniam, P. Muthukumar, S. Ponnusamy, and R. Uthayakumar	ISSN: 0971-3611 (Print) 2367-2501 (Online) 662pp	2019
3	Prof. K. C. Sivakumar	Nominated as Associate Editor	<i>Electronic Journal of Linear Algebra</i>	2019

4.12.4. Other Activities of the Department/Centre Seminar talks

Sl. No.	Faculty Member	Title	Date
1	Prof. Rajeeva Laxman Karandikar, CMI	Making Sense of Opinion Polls	11 April 2019
2	Dr. Divyum Sharma, University of Waterloo, Canada	Number of Representations of Integers by Binary Forms	25 April 2019

3	Prof. Thomas Goetz, Mathematik Institut, Universitaet Koblenz-Landau, Germany	Optimal Control and Applications—A Rigorous Mathematical Approach	22-26 April 2019
4	Prof. S. Thangavelu, Department of Mathematics, IISc Bangalore	Sparse Bounds for Lacunary Spherical Maximal Function on the Heisenberg Group	25 June 2019
5	Dr. Arideep Saha, Indian Statistical Institute Chennai	System of Hodge Bundles and Opers.	12 April 2019
6	Prof. Satadal Ganguly, Indian Statistical Institute Kolkata	Polya-Vinogradov Inequality for Representations of $GL(n, F_p)$	18 April 2019
7	Prof. S. Thangavelu, Department of Mathematics, IISc Bangalore	Sparse Bounds for Lacunary Spherical Maximal Function on the Heisenberg Group	25 June 2019
8	Dr. K. Sumesh, IIT Madras	On PPT Square Conjecture	8 August 2019
9	Dr. Parthanil Roy, ISI Bangalore	Continued Fractions, the Chen-Stein Method and Extreme Value Theory	22 August 2019
10	Ayineedi Venkateswarlu, ISI Chennai	Unimodular Polynominal Matrices Over Finite Fields	29 August 2019
11	Dr. Tapas Pandit, IISc. Bangalore	An Overview of Isogeny-Based Cryptosystems	12 September 2019
12	Dr. Ramesh Kasilingam, IIT Madras	Inertia Groups and Smooth Structures on Complex Projective Spaces	19 September 2019
13	Prof. Sourish Das, CMI	Understanding the Arctic Sea Ice Melting Via Functional Data Analysis	26 September 2019
14	Dr. Pradeep Sarvepalli, IIT Madras	Topological Quantum Codes: An Introduction	3 October 2019
15	Dr. R. Balaji, IIT Madras	Distance Matrices	10 October 2019
16	Prof. V. Raghavendra, IIT Tirupati	Introduction to Finite Element Analysis and Lax-Milgram Theorem	16-18 October 2019
17	Dr. Meghana Nasre, IIT Madras	Classified Matchings with One-Sided Preferences	17 October 2019
18	Dr. Suhas Jaykumar Pandit, IIT Madras	Embeddings of 3-Manifolds in 5-Dimensional Manifolds	24 October 2019
19	Dr. Mithun M., IISER, Thiruvananthapuram	Metrics on Completely Positive Maps	21 November 2019
20	Dr. T. E. Venkata Balaji, IIT Madras	The Nexus Between Good Definitions and Universal Properties in Mathematics	31 October 2019
21	Dr. Anand Sawant, TIFR Mumbai	Homotopy Invariance in Commutative Algebra and Algebraic Geometry	7 November 2019
22	Dr. Somesh Kumar, Professor, Department of Mathematics, IIT, Kharagpur	On the Problem of Estimating Parameters of Directional Distributions	17 December 2019
23	Prof. Dr. Joerg Kuhnert, Fraunhofer ITWM, Germany	Meshfree Numerical Modeling of Partial Differential Equations	6-10 January 2020
24	Dr. Alastair Darby, Xi'an Jiaotong-Liverpool University	Cluster Algebras and Algebraic PL-Invariants	19 December 2019

25	Ms. Katrin Kuhnert, International Relations Office, TU Kaiserslautern, Germany	Higher Studies Opportunities and Life at Kaiserslautern	8 January 2020
26	Prof. V. Srinivasa Chakravarthy Department of Biotechnology, IIT Madras	Computing with Rhythms: The Search for Deep Oscillatory Neural Networks	16 January 2020
27	Dr. Sivaram Ambikasaran, Department of Mathematics, IIT Madras	Tensor Decompositions and Applications	23 January 2020
28	Prof. Ratnasingham Shivaji, University of North Carolina, Greensboro, USA	An Introduction to the Analysis of Steady State Nonlinear Reaction Diffusion Equations	27-31 January 2020
29	Dr. K. Arul Prakash, Department of Applied Mechanics, IIT Madras	Finite Element Method for Thermo-Fluid Dynamics Applications	30 January 2020

4.12.5 Research and Consultancy Sponsored research projects (ongoing and new)

Sl. No.	Title	Period	Funding Agency	Amount (Rs. In lakhs)	Co-ordinators
New					
1	Mathematical Study of Anomalous Diffusion Processes via Partial Differential Equations	6 February 2020-5 February 2023	Science and Engineering Research Board	6.6	Shruti Dubey
2	Water Wave Interactions with Flexible Structures	6 February 2020-5 February 2023	Science and Engineering Research Board	6.6	Srinivasa Rao Manam
3	Quasiconformal Mappings	8 January 2019-31 January 2020	Department of Science & Technology	4	Ponnusamy S.
4	Cryptanalysis of Stream Cipher	2 July 2019-1 July 2022	Science and Engineering Research Board	21.26	Santanu Sarkar
5	Fractal Splines Solutions in Differential and Integral Equations	10 June 2019-31 March 2020	Department of Atomic Energy	1.9	Arya Kumar Bedabrata Chand
6	Cryptanalytic Study on Stream Ciphers	26 June 2019-25 June 2021	Department of Science & Technology	4.31	Santanu Sarkar
7	Indo-Finnish Joint Call for Mobility of Researchers	1 September 2019-31 March 2020	Department of Science & Technology	1	Ponnusamy S.
Ongoing					
8	The Structure of Proper Holomorphic Mappings	22 April 2015-21 April 2020	Department of Science & Technology	86.27	Jaikrishnan Janardhanan, MA
9	The Resonant Problems for the p-Laplace Operator	1 June 2015-31 May 2020	Department of Science & Technology	35	Anoop, MA
10	Equivalent bundles on Toric Variety	11 May 2017-10 May 2020	National Board for Hire Mathematics	3.33	Uma V., MA
11	On the Castelnuovo-Mumford Regularity of Binomial Edge Ideals of Graphs	9 November 2017-8 November 2020	Department of Atomic Energy	3.48	Jayanthan A. V., MA

12	Fast Accurate Numerical Linear Algebra Libraries for Elliptic Partial Differential Equations	16 February 2018-15 February 2021	Board of Research in Nuclear Sciences	25.41	Sivaram Ambikasaran, MA
13	Set Valued Optimization: Optimality Conditions and Algorithms - MATRICS	13 June 2018-12 June 2021	Department of Science & Technology	6.6	Vetrivel V., MA
14	Theory of Zipper Fractal Interpolation and Approximation - MATRICS	13 June 2018-12 June 2021	Department of Science & Technology	6.6	Arya Kumar Bedabrata Chand, MA
15	Noncommutative Ergodic Theory via Joinings - MATRICS	28 May 2018-27 May 2021	Department of Science & Technology	6.6	Kunal Krishna Mukherjee, MA
16	Elliptic Matrices - MATRICS	28 May 2018-27 May 2021	Department of Science & Technology	6.6	Balaji R., MA
17	Moduli of Sheaves Over Projective Varieties - MATRICS	28 May 2018-27 May 2021	Department of Science & Technology	6.6	Arijit Dev, MA
18	On Harmonic and Quasiconformal Mappings - MATRICS	28 May 2018-27 May 2021	Department of Science & Technology	6.6	Ponnusamy S., MA
19	Evolutionary Stability in Asymmetric Games with Continuous Strategy Space - MATRICS	28 May 2018-27 May 2021	Department of Science & Technology	6.6	Shaiju A. J., MA
20	Effect of Taking Connected Sum on Smooth Structures	3 September 2018-23 September 2020	Department of Science & Technology	19.5	Ramesh Kasilingam, MA
21	CFD of Thin Film Flow on Substrates Featuring Topography	19 September 2018-18 September 2021	Department of Science & Technology	19.98	Sanyasiraju Y. V. S. S., MA
22	M-matrix Generalizations in Complementarity Theory	8 March 2019-7 March 2022	Science and Engineering Research Board	6.6	Sivakumar K. C., MA
23	Some Problems on Completely Positive (CP) Maps and Co-completely Positive (Co-CP) Maps between C*-algebras - SERB-Matrix	12 March 2019-11 March 2022	Science and Engineering Research Board	6.6	Sriram B, MA
24	Topological and Geometrical Properties of Manifolds with Torus Actions	12 March 2019-11 March 2022	Science and Engineering Research Board	6.6	Soumen Sarkar, MA
25	Cryptology in the Era of Post Quantum	22 March 2019-21 March 2022	Science and Engineering Research Board	6.6	Santanu Sarkar, MA
26	Fast Algorithms for Low-Rank Factorization	3 March 2020-2 March 2023	Science and Engineering Research Board	6.6	Sivaram Ambikasaran, MA
27	P-matrices, M-matrices and Inverse M-matrices; Applications and Generalizations	28 March 2019-27 March 2021	Scheme for Promotion of Academic and Research collaboration	61.47	Sivakumar K. C., MA

4.13 Department of Mechanical Engineering

4.13.1 Introduction

The Department of Mechanical Engineering was established in 1959. The department offers Ph.D., M.S., M.Tech., B.Tech. and Dual Degree programmes, and has excellent facilities to carry out state-of-the-art research in three major disciplines of Mechanical Engineering, namely, Thermal Engineering, Mechanical Design and Manufacturing Engineering. The Thermal Engineering stream comprises of five laboratories, namely, Heat Transfer and Thermal Power, Turbo Machines, I.C. Engines, Refrigeration

and Air Conditioning, and Thermodynamics and Combustion.

The Design stream consists of Machine Design Section, Machine Dynamics Laboratory, NDE Laboratory, Rehabilitation Research and Device Development Laboratory.

The Manufacturing Engineering stream consists of Machine Tools Laboratory, Metrology Laboratory, Automation Laboratory, Sheet Metal Research Centre and Precision Engineering Laboratory.

4.13.2 Academic Programmes

New courses introduced

Sl. No.	Course No.	Title
1	ME5007	GIAN courses on Advanced Manufacturing and Material Processing
2	ME5010	Hybrid and Electric Vehicle Technology
3	ME5225	Engineering Design with Polymers
4	ME5115	Surfaces and Interfaces

New lab(s) established

Fluid Systems Laboratory

Students on roll as of September 2019+M.S. and Ph.D admission in January 2020

Programme	Year I	Year II	Year III	Year IV	Year V and others	Total
B.Tech.	178	85	80	74	-	417
Dual Degree	-	78	77	77	81	313
M.Tech	66	78	-	-	-	144
M.Tech (web-enabled)	37	21	29	-	-	87
M.S.	48	47	45	18	-	158
Ph.D.	37	55	43	53	172	360
Total	366	364	274	222	253	1479

* including web-enabled

Students/Scholars who attended conference/seminar and symposia abroad/India

Sl. No.	Student/Scholar	Roll No.	Conference/Seminar/Symposia/Workshop	Date and Venue	Financial Assistance from
Abroad					
1	Kirti Shankar Sharma	ME16S017	8th International Conference on Software and Computing Technologies (ICSCT 2019)	5-7 April 2019, Hong Kong	IIT Madras

2	Sudeepta Ranjan Sahoo	ME17D018			
3	Mithun S.	ME15S074	WCX SAE World Congress Experience	9-11 April 2019, Detroit, USA	IIT Madras
4	Prashant	ME16D017	Thermal and Fluids Engineering Conference (TFEC-2019)	14-17 April 2019, Las Vegas, USA	IIT Madras
5	Vijay Kumar S.	ME14D114	Recent Advances in Structural Dynamics (RASD 2019)	15-17 April 2019, Lyon, France	IIT Madras
6	Robins Mathew	ME14D097	Conference on Control, Decision and Information Technologies (CODIT 2019)	23-26 April 2019, Paris, France	IIT Madras
7	Suresh K.	ME16D016	IEEE 2nd International Conference on Power and Energy Applications	27-30 April 2019, NTU@one-north, Singapore	IIT Madras
8	Abhijeet Kumar	ME15D408	10th International Conference of Multiphase Flow	19-24 May 2019, Rio de Janeiro, Brazil	IIT Madras
9	Ketaki Ashutosh Purkar	ME16S038			IIT Madras
10	Sreeraj K.	ME15D018	74th STLE Annual Meeting & Exhibition	19-23 May 2019, Omni Nashville Hotel, Nashville, Tennessee, USA	
11	Madhusmita Mallick	ME16D013	International Conference on Metallurgical Coatings and Thin Films (ICMCTS 2019)	19-24 May 2019, International Conference Center Hiroshima (ICCH), 1-5 Nakajima-cho, Naka-ku, Hiroshima, Japan	IIT Madras
12	Shalini Singh	ME15D025	The 8th International Congress on Laser Advanced Materials Processing		IIT Madras
13	Shashikant Cholake	ME14D104	9th International Symposium on Radiative Transfer RAD19	3-7 June 2019, Athens Greece	IIT Madras
14	Kakka Priyesh Rajesh	ME17S069	ERCOFTAC Workshop Direct and Large Eddy Simulation 12	5-7 June 2019, Madrid, Spain	IIT Madras

15	Sarathkumar L.	ME14D101	47th North American Manufacturing Research Conference (NAMRC47)	10-14 June 2019, Penn State Behrend's School of Engineering Bayfront Convention Center, Erie, Pennsylvania, USA	IIT Madras
16	Vinoth Kumar	ME15D071	26th Assembly of Advanced Materials Congress	10-14 June 2019, Stockholm, Sweden	IIT Madras
17	Pillai Sreejith Prabhakaran	ME16D406	International Conference on Nonlinear Solid Mechanics	14-20 June 2019, Palazzo Argiletum, Facoltà di Architettura, Via della Madonna dei Monti, Roma	IIT Madras
18	Rajan Prasad	ME14D409	INTERNOISE-2019	16-19 June 2019, Madrid	IIT Madras
19	Shyamkumar R.	ME17S014	International Conference on Nonlinear Solid Mechanics (ICoNSoM 2019)	16-19 June 2019, Palazzo Argiletum, Rome, Italy	IIT Madras
20	Sagi Rathna Prasad	ME14D210	ASME Turbomachinery Technical Conference & Exposition	17-21 June 2019, Phoenix Convention Center, Phoenix, Arizona, USA	IIT Madras
21	Porika Niveditha	ME15D406			IIT Madras
22	Vishakh S. Kumar	ME16D403	Oceans 2019	17-21 June 2019, Marseille, France	IIT Madras
23	Ghate Kushal Dilip	ME14D202	6th International Conference on Fluid Flow, Heat and Mass Transfer (FFHMT'19)	18-19 June 2019, Ottawa, Canada	IIT Madras
24	Shraddha	ME14D411	FFHMT 2019		IIT Madras
25	Sandeep Kumar Sahu	ME12D209	6th Cavitation and Multi-phase Flows Workshop	20-30 June 2019, MAICh Conference Centre, Chania, Greece	IIT Madras

26	Ashish Uppu	ME16S014	9th IWA Specialised Membrane Technology Conference and Exhibition for Water and Wastewater Treatment	23-27 June 2019, Toulouse, France	IIT Madras
27	Feby Philip Abraham	ME15S088	European Conference on Constitutive Models for Rubber (ECCMR)	25-27 June 2019, Nantes, France	IIT Madras
28	Siddhant Lama	ME17S035	International Conference on Material Modelling	26-28 June 2019, Lund, Sweden	IIT Madras
29	Shanmugasundaram D.	ME16D025	Asia-Pacific Conference on Combustion-2019	28 June-7 July 2019, Fukuoka, Japan	IIT Madras
30	Praise Noah Johnson	ME17S080	Asia-Pacific Conference on Combustion 2019		IIT Madras
31	Shanmugasundaram D.	ME16D025	Asia-Pacific Conference on Combustion 2019	28 June-7 July 2019, Fukuoka International Congress Center, Fukuoka, Japan	IIT Madras
32	Praise Noah Johnson	ME16D025			IIT Madras
33	Ashutosh Bharti	ME17D004			IIT Madras
34	Mohamad Tousif	ME16D012			IIT Madras
35	S. Muthu Kumaran	ME15D210			IIT Madras
36	Saroj Ray	ME15D418			IIT Madras
37	Shubham Garg	ME16S041			IIT Madras
38	Mahamad Ibrahim	ME16D407			IIT Madras
39	Pranshu Rajput	ME15S085		26th International Congress on Sound & Vibration	7-11 July 2019, Montreal, Canada
40	Kanka Goswami	ME14D211	40th International MATADOR Conference on Advanced Manufacturing	8-10 July 2019, Sailing International Hotel Hangzhou, China	IIT Madras
41	Hari Srinivasa Rao Magham	ME14D012			IIT Madras

42	Vijayathithan	ME16D032			IIT Madras
43	Guntreddi Balakrushna	ME15D040			IIT Madras
44	Aditya Chilukuri	ME17S027	46th Annual Review of Progress in Quantitative Nondestructive Evaluation (QNDE)	13-18 July 2019, Red Lion Hotel on the River, Portland, Oregon, USA	IIT Madras
45	Gokul Raja S. G.	ME17S082			IIT Madras
46	Krishnadas V. K.	ME14D116			IIT Madras
47	Ahmed Al Zulkarnain	ME16S040			IIT Madras
48	Akash	ME14D054	Summer Heat Transfer Conference	14-17 July 2019, Hyatt Regency, Bellevue, Washington, USA	IIT Madras
49	Patel Akash Laxman	ME16S045	13th CIRP Conference on Intelligent Computation in Manufacturing Engineering	17-19 July 2019, Gulf of Naples, Italy	IIT Madras
50	Supriyo Mahata	ME17S037	CIRP Conference on Intelligent Computation in Manufacturing Engineering	17-19 July 2019, Gulf of Naples, Italy	IIT Madras
51	Saikat Chakraborty	ME11D048	14th International Conference on Heat Transfer, Fluid Mechanics and Thermodynamics	21-25 July 2019, Wicklow, Ireland	IIT Madras
52	Arjunbarath	ME17S071	26th IAVSD International Symposium on Dynamics of Vehicles on Roads and Tracks	12-16 August 2019, Gothenburg	IIT Madras
53	Alankrita Singh	ME15D424	International Conference on Heat Transfer and Fluid Flow	15-17 August 2019, Lisbon, Portugal	IIT Madras
54	K. M. Jyoti Singh	ME17S073	16th UK Heat Transfer Conference 2019	30 August-12 September 2019, University of Nottingham, United Kingdom	IIT Madras
55	Vivek Kashyap	ME15D207	46th Leeds Lyon Symposium on Tribology	2-4 September 2019, Lyon, France	IIT Madras

56	Polasanapalli Sai Ravi Gupta	ME16D401	The 7th Asian Symposium on Computational Heat Transfer and Fluid Flow 2019	3-7 September 2019, Tokyo University of Science (Katsushika Campus), Tokyo, Japan	IIT Madras
57	Sakthivel M.	ME16D001			IIT Madras
58	Sourabh Sadanand Jogee	ME16D023			IIT Madras
59	Vikas	ME17B117			IIT Madras
60	Aneesh K. Mohanan	ME16S026	XII International Conference on Computational Heat, Mass and Momentum Transfer	3-6 September 2019, Rome, Italy	IIT Madras
61	Prashant	ME16D017			IIT Madras
62	Amit Vijay Dodmani	ME17D200	The 3rd World Congress on Micro and Nano Manufacturing	10-12 September 2019, The Sheraton Raleigh Hotel, North Carolina, USA	IIT Madras
63	Vinoth Kumar	ME15D071			IIT Madras
64	Wazeem Nishad	ME15D020			IIT Madras
65	Baki Harish	ME16D412	39th International Conference on Radar Meteorology	16-20 September 2019, Nara Kasugano International Forum, IRAKA, Nara, Japan	IIT Madras
66	Utsab Banerjee	ME16D010	Droplets 2019	16-18 September 2019, Durham, UK	IIT Madras
67	S. K. Rameez Iqbal	ME15D402			IIT Madras
68	Sreeharsh Nair	ME17S005	ASME Internal Combustion Engine Fall Conference 2019	20-23 October 2019, Chicago, IL, USA	IIT Madras
69	Sreeraj K.	ME15D018	2019 Tribology Frontiers Conference	20-23 October 2019, Drake Hotel, Chicago, Illinois (USA)	IIT Madras
70	Vijjapu Naga Ramachandra Gupta	ME18S008	International Conference of Numerical Analysis and Applied Mathematics	23-28 September 2019, Rhodes, Greece	IIT Madras

71	Ajay A. P.	ME15D303	45th International Conference on Micro and Nano Engineering	23-29 September 2019, Rhodes, Greece	IIT Madras
72	Chinta Phani Rama Sandeep	ME14D201	2019 Joint Satellite Conference	28 September-4 October 2019, Boston, USA	IIT Madras
73	Harikanth M. Das	ME17S025	23rd International Congress on Acoustics (ICA 2019)	9-13 October 2019, Aachen, Germany	IIT Madras
74	Jhalu Gorain	ME15D203			IIT Madras
75	Manjeet Keshav	ME15D416	30th International Conference on Adaptive Structures and Technologies (ICAST2019)	7-11 October 2019, Montreal, Quebec, Canada	IIT Madras
76	Akhil Krishnan M.	ME15D403	International Desalination Association World Congress	19-25 October 2019, Dubai, World Trade Center	IIT Madras
77	Sreeharsh Nair	ME17S005	ASME Internal Combustion Engine Fall Conference 2019	20-23 October 2019, Chicago, IL, USA	IIT Madras
78	Kalichetty Srinivasa Sagar	ME15D034	International Mechanical Engineering Congress & Exposition (IMECE) 2019	8-14 November 2019, Calvin L. Rampton Salt Palace Convention Center, Salt Lake City, Utah	IIT Madras
79	Athul Sathyanath	ME15D069			IIT Madras
80	Guggilla Ganesh	ME15D405			IIT Madras
81	Pathak Mangesh Chandrakant	ME17S011			IIT Madras
82	Vishnu V.	ME17S009			IIT Madras
83	Josyula Sri Suryanarayana Tejaswi	ME16D004			IIT Madras
84	Alwar Samy	ME15D422	72nd Annual Meeting of the American Physical Society's Division of Fluid Dynamics (DFD)	23-26 November 2019, Washington State Convention Center in Seattle, Washington, USA	IIT Madras
85	Naveen Kumar Agrawal	ME17S070			IIT Madras

86	Aremanda Sudeepthi	ME15D079			IIT Madras
87	Shamik Hazra	ME16D201			IIT Madras
88	Anish R.	ME15D037	15th International Conference on Dynamical Systems Theory and Applications	2-5 December 2019, Lodz, Poland	IIT Madras
89	Sarathkumar L.	ME14D101	International Optics and Photonics Conference (Optics-2019)	5-9 December 2019, London, UK	IIT Madras
90	Khavieya A.	ME14D073	Conference on Feasibility Study of Measurement of Turning Based-Surfaces using Perthometer, Optical Profiler (Italy - 2019)	12-28 December 2019, Italy	IIT Madras
91	Vivek V. Shet	ME17S016	10th Asia Conference on Mechanical and Aerospace Engineering	26-31 December 2019, Bangkok, Thailand	IIT Madras
92	Rabindra Kumar	ME17S068	ISHMTC-2019	26-31 December 2019, IIT Roorkee	IIT Madras
93	Umesh V.	ME13Dw56		26-31 December 2019, IIT Roorkee	IIT Madras

Students/Scholars who won outside prizes and awards

Sl.No.	Student/Scholar	Roll No.	Prize	Awarded by
1	Somasree Chowdhury	ME12D071	Best Paper Award	11th International Energy, Exergy and Environment Symposium (IEEES-11)
2	Tanay Dwivedi	ME17B180	12th Position overall in the University Rover Challenge-2019	Mars Desert Research Station (MDRS)
3	R. Abhishek	ME16B030		
4	Shashank R.	ME16B164		
5	Shubham Jain	ME16B165		
6	Naveen Reddy Dyava	ME17B140		
7	S. Tarun Prasad	ME17B114		
8	Gunda Sai Venkat	ME17B013		

9	K. Ramasubramanian	ME13D046	Kapindra Precision Engineering, a start-up incubated by IITM Incubation Cell, on being adjudged as #1 Start-Up in the DRDO Dare to Dream Innovation Contest under the Open Category challenge area	DRDO Dare to Dream Innovation Contest
10	C. Nikhil	ME18S303		
11	Arun Veerabagu	ME17S021		
12	S. Vinothkumar	ME15D048	Best Paper: First Runner-Up Award	3rd World Congress on Micro Nano Manufacturing (WCMNM 2019)
13	Kalash Verma	ME18B052	Championship Trophy	35th Inter IIT Aquatics Meet
14	Shreeniwas Mahesh Jagdale	ME17B115		
15	Dev Priya Krishnakumar	ME17B106		
16	Gurdev Singh	ME13D219	Third position in the overall General Championship	54th Inter-IIT Sports Meet organised jointly by IIT Kharagpur and IIT Bhubaneswar
17	Mohammed Sohail	ME17B154		
18	Muthu Kumar	ME18D014		
19	Nitya Nanvani	ME19B138		
20	Shrinath Bhat	ME16B040		
21	Sritish Kumar	ME18B078		
22	Varun Sanklecha	ME17B073		
23	Yamuna Devi	ME18B115	First rank for fourth time in a row in the Women's General Championship	
24	Jenil Chavda	ME15D204	First position, Stand Up Comedy	4th Inter-IIT Cultural Meet organised by IIT Bombay
25	Rishbha Jain	ME16B162	Second place, Stag Play	
26	Rahul Garg	ME17B159		
27	Vaisakh Prakash	ME15B144		
28	S. Manjunath	ME18B167		
29	Rahul Roshan	ME16B033		
30	Radhyanesh Meshram	ME16B116		
31	Viplav K. S.	ME15B075	Third place, Band Competition	

Students/Scholars who won outside prizes and awards

Sl.No.	Student/Scholar	Roll No.	Prize	Donor
1	Shaswat Mohanty	ME14B135	Governor's Prize	Government of India
2	Achraj Sarma	ME15B152	Banco Foundation Prize	Banco Foundation
3	Vivek Boddapati Venkata	ME15B076		

4	Dommeti Sriram	ME14B108	Prof. G. V. N. Rayudu (IIT Madras) Prize	Prof G. V. N. Rayudu
5	Vaishnav R.	ME17M102	Prof. Ramamohana Rao Memorial Prize	Prof. Ramamohana Rao
6	Tara Dutt	ME17M109	Dr S. Vaidyanathan Memorial Prize	Dr S. Vaidyanathan
7	Venuthurupalli Venkata Naga Sai Pranav	ME17M057	Prof. B. Sengupto Prize	Prof B. Sengupto
8	Divanshu Kumar	ME14B161	Bhagyalakshmi and Krishna Ayengar Award	Bhagyalakshmi and Krishna Ayengar
9	Akshay Shivaji Molawade	ME15B044	Sivasailam Merit Prize	Dr. Sivasailam
10	Saeel Shrivallabh Pai	ME15B151	Vaidy Krishnan Memorial Prize	Vaidy Krishnan
11	Surathi Devisuma	ME17M110	Giri Brothers Prize	Giri Brothers
12	Venuthurupalli Venkata Naga Sai Pranav	ME17M057	S Anantharamakrishnan Merit Prize	S Anantharamakrishnan

4.13.3. Faculty and Their Activities

Faculty

Name and Qualifications	Major Areas of Specialisation
Professors	
Dr. Ramesh Babu N. (Head)	Manufacturing engineering—advanced machining processes, automation, process modeling, precision machine tool development
Dr. Arunn Narasimhan	Heat transfer and fluid flow in biological systems, heat transfer and fluid flow in porous medium, phase change materials, convection heat transfer, fluid mechanics
Dr. Babu Viswanathan	CFD, high-speed reacting flows, high-performance computing
Dr. Chakravarthy Balaji	Fundamental heat transfer, optimisation of thermal systems, inverse problems in heat transfer, satellite meteorology, numerical weather prediction
Dr. Chandramouli P.	Nonlinear dynamics, acoustics and noise control
Dr. Dhiman Chatterjee	Fluid mechanics, turbomachines, cavitation
Dr. Gnanamoorthy R.	Advanced materials and product design, design with polymer and nanocomposites, machine element and special purpose test machine design, damage tolerant and tribo design, behaviour of implant materials, surface engineering
Dr. Krishnan Balasubramaniam	Nondestructive evaluation, materials characterisation, online measurements
Dr. Krishna Kannan	Continuum mechanics, thermodynamics, constitutive modelling of polymeric materials
Dr. Mani A.	Refrigeration, desalination, solar energy
Dr. Maiya M. P.	Sorption technology, metal hydride systems, hybrid air conditioning
Dr. Mallikarjuna J. M.	In-cylinder flow studies in engines, HCCI and GDI engines, alternate fuels
Dr. Prasad B.V.S.S.S.	Blade cooling, thermal hydraulics, computational fluid dynamics (CFD)

Dr. Raghavan V.	Combustion modeling, droplet combustion, laminar flames
Dr. Raghu Prakash V.	Fatigue and fracture mechanics, random load life prediction, product design
Dr. Raju Sethuraman	Computational solid mechanics, fatigue and fracture of materials
Dr. Ramesh A.	I.C. engine combustion and emissions, electronic engine management, alternative fuels
Dr. Sarit Kumar Das	Heat exchangers, two-phase flow, nano fluids, jet oscillations, nuclear heat transfer
Dr. Samuel G. L.	Machining, metrology and computer-aided inspection, micromachining
Dr. Seshadri Sekhar A.	Rotor dynamics, condition monitoring, tribology
Dr. Shaligram Tiwari	Thermocapillary convection, heat and mass transfer
Dr. Shankar Krishnapillai	Structural vibrations, design optimisation, system identification
Dr. Srinivasa Reddy K.	Renewable energies, solar energy, energy conservation, energy environment, heat transfer in two-phase systems
Dr. Srinivasan K.	Jet flow and noise, active and passive flow control, measurement and instrumentation
Dr. Sujatha C.	Vehicle dynamics, machinery diagnostics, signal analysis
Dr. Sundararajan T.	Droplet combustion, supersonic reacting jet flows, CFD
Dr. Sujatha Srinivasan	Biomechanics, mechanisms, assistive devices
Dr. Shamit Bakshi	CFD in I.C. engines, liquid atomisation and spray systems, fuel nozzle modeling
Dr. Venkatrathnam G.	Refrigerant mixtures, new processes that work with refrigerant mixtures, improvement of performance of vapour compression refrigerators
Dr. Prabhu Rajagopal	Ultrasonic waves for nondestructive evaluation, health monitoring and process control, computational methods for modelling elastic wave phenomena

Associate Professors

Dr. Anand T. N. C.	CFD simulations of I.C. engines processes, laser-based diagnostics of sprays and combustion
Dr. Abhijit Sarkar	Vibration, acoustics, computational methods
Dr. Amitava Ghosh	Machining and grinding of advantage materials, development of abrasives
Dr. Arvind Pattamatta	Micro/nano scale energy transport, computational heat transfer, mesoscopic modeling, phase change heat transfer, turbulence modeling
Dr. Ashis Kumar Sen	Microfluidics, microsystems, thermo-fluids
Dr. Balaji Srinivasan	Fluid dynamics, turbulence in compressible and hypersonic flows, computation of rarefied flows, numerical analysis and high-performance computing
Dr. Manivannan P. V.	Robotics, automotive control system, autonomous vehicles, instrumentation and controls, mechatronic system design, microprocessor
Dr. Narasimhan Swaminathan	Computational materials science and mechanics, radiation damage in materials, multiscale modeling of complex phenomenon in nuclear and fuel cell materials, finite element method, continuum mechanics, multiscale modeling, radiation damage in materials, computational materials science
Dr. Parag Ravindran	Viscoelastic fluids constitutive modeling
Dr. Ratna Kumar Annabattula	Finite element analysis, granular mechanics, buckle-driven de-lamination, fusion materials, mechanics of micro-systems

Dr. Sathyan Subbiah	Novel applications of machining, diamond turning, layered material exfoliation, surface texturing
Dr. Somashekhar S. Hiremath	Micromachining, mechatronic system design, oil hydraulics, system simulation and modeling, finite element method (FEM)
Dr. Sushanta Kumar Panigrahi	Friction stir processing and welding, superplasticity, advanced metal forming techniques for producing bulk nanostructured/UFG metals and alloys, thermo-mechanical processing of light-weight structural metallic materials
Dr. Sundararajan Natarajan	Computational mechanics, moving boundary problems, composite mechanics
Dr. Anand K.	Low-temperature combustion engines, surrogate modelling of automotive fuels, engine emission reduction through fuel modifications
Dr. Arunachalam N.	Sustainable manufacturing, diagnostics, prognostics and health management of machine tools, smart machine tools
Dr. Mayank Mittal	IC engines, optical diagnostics, fluid mechanics
Dr. Ramkumar Penchaliah	Tribology, engine tribology, coatings, bio-implants, condition monitoring, WTG bearing failures, wear modelling and nanolubrication

Assistant Professors

Dr. Anil Kumar Meena	Casting processes, cast irons and steels manufacturing, microstructure and properties of ADI, dry and near-dry machining process
Dr. Hariharan K	Sheet metal forming, plasticity, fatigue and mechanical behaviour of materials
Dr. Kameswararao Anupidi	Fluid mechanics, computational fluid dynamics, bio-fluid dynamics, turbulence modelling
Dr. Krithika Narayanaswamy	Thermodynamics, combustion concepts and applications, numerical methods for thermal engineering
Dr. Manoj Pandey	Finite element analysis, dynamics and MEMS
Dr. Pallab Sinha Mahapatra	Surface engineering and wettability patterning, open surface microfluidics, multiphase flow, single and multiphase heat transfer
Dr. Piyush Shakya	Condition monitoring, fault diagnosis, prognosis
Dr. Sateesh Gedupudi	Heat exchangers, two-phase flow, nano fluids, jet oscillations, nuclear heat transfer
Dr. Shyama Prasad Das	Unsteady hydro and aerodynamics, turbomachines, interfacial hydrodynamics and transport
Dr. Sivasrinivasu Devadula	Manufacturing engineering
Dr. Soundarapandian S.	Additive manufacturing, computational modeling and simulation
Dr. Sourav Ratshit	Laser processing
Dr. Srikrishna Sahu	Spray dynamics, two-phase flows, optical diagnostics
Dr. Varunkumar S.	Thermo-chemical conversion of biomass and coal for energy and fuels and modeling instability in solid rocket motors.
Dr. Vishal V. R. Nandigana	Microfluidics and nanofluidics, nano manufacturing, battery synthesis, MEMS, NEMS
Dr. Vishwanath K.	Turbomachinery noise

Emeritus Professor/Visiting Faculty

Dr. M.S. Shunmugam (Emeritus Professor)	Metrology, manufacturing—gear, BTA machining, reaming, centreless grinding, EDM, friction welding; manufacturing automation and robotics, process planning, inspection and quality control
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Short-term courses/workshops/seminars/symposia/conferences organised by the faculty members

Sl. No.	Coordinator(s)	Title	Period
Conferences			
1	Dr. Gnanamoorthy R. (Chairperson), Dr. Shankar Krishnapillai (Vice Chairperson), Dr. Piyush Shakya (Secretary)	1st International Conference on Mechanical Power Transmission	11-13 July 2019
2	Dr. B.V.S.S.S Prasad	ASME GT India	5-6 December 2019
3	Dr. Raghu Prakash	Clinic on Failure Analysis 2019	13-14 December 2019
Workshops			
1	Dr. G. L. Samuel, Dr. Satish T. S., Bukkapatnam, Rockwell International Professor and Director, TEES Institution	International Workshop on Smart Manufacturing and Metrology	25-26 July 2019
2	V. Raghavan, S. Varunkumar	Solid Fuel Combustion for Practicing Engineers	22-23 July 2019
3	Dr. M. P. Maiya	CO ₂ (R744)	1-2 November 2019
4	Prof. N. Ramesh Babu, Dr. Sivasrinivasu Devadula, Dr. Piyush Shakya	Orientation program on Smart Manufacturing	4-5 December 2019
5	Dr.-Ing. habil. Manfred Groll, Professor Emeritus, Formerly at University of Stuttgart, Germany, Dr. M. P. Maiya	Efficient Heat Transfer Utilizing Liquid/Vapor Phase Change (An Introduction to Science and Technology of Heat Pipes and Closed Two-Phase Thermosyphons)	9-21 December 2019
6	Dr. V. Babu	Conducted a two-day external training program under the auspices of CCE for engineers of Tata Motors	17-18 February 2020
Short-term courses			
1	Prof. James Schmiedeler, University of Notre Dame, USA	Models of Walking & Running: Human Gait & Robot Locomotion	22-26 July 2019
2	Mr. Brij Bhushan, MIT, USA	Design of Mechatronic Systems	3-5 July 2019
3	Dr. Sundararajan Natarajan	Free Boundary Problems in Mechanics	23-31 October 2019
4	Dr. S. Soundarapandian	Additive Manufacturing: Key Challenges and Road Ahead	27 January-1 February 2020

Short-term courses/workshops/seminars/symposia/conferences/training attended by the faculty members in academic institutions and public sector undertakings

Sl. No.	Faculty Member	Title	Institution	Period
Workshops				
1	Dr. M. P. Maiya	Energy Efficient Comfort Cooling	Smart Energy Technologies For Buildings	5 April 2019
2		R & D and Innovation in Cooling and Refrigeration	Department of Science and Technology (DST), Ministry of Science and Technology (MoST), The Ozone Cell, Ministry of Environment, Forest and Climate Change (MoEFCC) and Bureau of Energy Efficiency, Ministry of Power	6 May 2019
3		Global Cooling Prize to Kick-Start the Innovation and R&D Ecosystem in India: Research Perspective		
4	Dr. Vishal V. R. Nandigana	INCAM Pre-workshop invited talk	Nano fluidics, IISc Bangalore, India	2 June 2019
5	Dr. Ratna Kumar Annabattula	Pre-Conference Workshop on Plasticity and Damage Mechanics	IISc Bangalore, India	2 July 2019
6	Dr. C. Balaji	Faculty Development Workshop	Sacred Heart College, Tirupattur	26 July 2019
7	Dr. Vishal V. R. Nandigana	INCAM Pre-workshop	IISc Bangalore, India	2-4 July 2019
8		Two-day Workshop on Research Advances in Computational Techniques for Characterizing Nanomaterial	SRM IST, India	23 August 2019
9	Dr. Somashekhar S. Hiremath	Structured Training programme on Robotics and Artificial Intelligence	Vikram Sarabhai Space Centre (VSSC), Thiruvananthapuram	22-26 July 2019
10		International Workshop on Smart Manufacturing and Metrology - SMM 2019	ICSR Hall III, IIT Madras	25-26 July 2019
11		Digital India Week celebration	Vikram Sarabhai Space Centre (VSSC), Thiruvananthapuram	29 July-2 August 2019
12		One day FDP on Micro-cutting tool and micro-machining dynamics	Vellore Institute of Technology, Vellore	24 August 2019
13	Dr. P. Ramkumar	DST-SERB sponsored Industrial Tribology Workshop	SRM University, Chennai, India	24 September 2019
14	Dr. Ratna Kumar Annabattula	Advanced Computational Methods for Fracture/Failure of Materials	IIT Bhubaneswar	6-7 December 2019

15	Dr. Pallab Sinha Mahapatra	Droplets and ice crystals: Industry/Academia Meet	University College London, UK	18 December 2019
16	Dr. M. P. Maiya	Deep dive workshop on low carbon, affordable heating and cooling of buildings	Mission Innovation, New Delhi	6 December 2019
17		Materials for energy conversion and storage	IIT Tirupati, Andhra Pradesh	24-25 December 2019
18	Dr. Narasimhan Swaminathan	Workshop on Advanced Computational Methods for Fracture/Failure of Materials	India	6-7 December 2019
19	Raghu Prakash	Clinic on Failure Analysis 2019	Chennai, India	13-14 December 2019
20	Dr. Parag Ravindran	Solid Propellant Technology: Processing and Structural Aspects	VSSC (ISRO), Thiruvananthapuram, India	9-10 January 2020
21	Dr. Srikrishna Sahu	Workshop on Frontiers in Sprays and Droplets	IISc, India	26-27 February 2020

Seminars

1	Dr. Somashekhar S. Hiremath	IITMAA Sangam 2019-Reimagining India in 2030	The Leela Palace, MRC Nagar, Chennai	14 September 2019
2	Dr. M. P. Maiya	CO ₂ Refrigerant for combined cooling and heating applications	4th National Seminar on Refrigeration & Cold Chain, ICSR Auditorium, IIT Madras	15 February 2020

Symposium

1	Dr. Piyush Shakya	National Symposium on Rotor Dynamics	Bengaluru, India	2-4 July 2019
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Conferences

1	Dr. M. P. Maiya	5th International Conference on Polygene Ration (ICP 2019)	Fukuoka, Japan	15-17 May 2019
2	Dr. G. L. Samuel	8th International Congress for Laser Advanced Metal Processing	Hiroshima, Japan	21-24 May 2019
3		North American Research Conference, NAMRC47	Erie, PA	10-14 June 2019
4	Dr. R. Gnanamoorthy	10th International Conference on Materials for Advanced Technologies	Singapore	23-29 June 2019
5	Dr. Ratnakumar Annabattula	Indian Conference on Applied Mechanics (INCAM-2019)	Bengaluru, India	2-5 July 2019
6		International Conference on Computational Mechanics (ICCM-2019)	Singapore	9-13 July 2019
7	Dr. Piyush Shakya	1st International Conference on Mechanical Power Transmission	Chennai, India	11-13 July 2019
8	Dr. Sujatha Srinivasan	National Conference on Assistive Technology for ALL 2030	Mobility India, Bengaluru, India	2-3 August 2019

9	Dr. Somashekhar S. Hiremath	National Conference on Emerging Multidisciplinary Trends in Biotechnology and Engineering: A future Perspective	Acharya Institute of Technology, Bengaluru, Karnataka	23-24 August 2019
10	Dr. Abhijit Sarkar	International Conference on Vibration Problems	Crete, Greece	1-4 September 2019
11	Dr. Kameswararao Anupindi	European Turbulence Conference 13 (ETC13)	Torino, Italy	3-6 September 2019
12	Dr. Shaligram Tiwari	ICCHMT 2019	Sapienza University and Roma Tre University, Rome, Italy	3-6 September 2019
13	Dr. Ratnakumar Annabattula	International Liquid Crystal Elastomer Conference (ILCEC-2019)	Eindhoven, The Netherlands	15-18 September 2019
14		Ceramic Breeder Blanket Interactions (CBBI-20)	Karlsruhe, Germany	18-21 September 2019
15	Dr. P. Ramkumar	STLE Tribology Frontiers Conference	Chicago, IL, USA	20-23 October 2019
16		Tribo India 2019 (10th International Conference on Industrial Tribology), IISc Bangalore	IISc Bangalore, India	1-4 December 2019
17	Dr. Somashekhar S. Hiremath	Second International Conference on Design, Materials & Manufacture, ICDEM 2019	National Institute of Technology Karnataka, Surathkal	6-8 December 2019
18	Dr. Sujatha Srinivasan	17th International Conference on Biomedical Engineering	NUS, Singapore	9-12 December 2019
19	Dr. Parag Ravindran	7th International Congress on Computational Mechanics and Simulation (ICCMS 2019)	IIT Mandi, Mandi, India	11-13 December 2019
20	Dr. A. Seshadri Sekhar	22nd International Conference on Composite Structures and 1st Chinese Conference on Composite Structures	Wuhan, China	31 October-3 November 2019
21		Computer Aided Engineering (CAE) -2019	GITAM, Hyderabad, India	13-14 December 2019
22	Dr. Pallab Sinha Mahapatra	25th National and 3rd International ISHMT-ASTFE Heat and Mass Transfer Conference (IHMTTC-2019)	IIT Roorkee, India	28-31 December 2019
23	Dr. B.V.S.S.S. Prasad	ASME GT India	IIT Madras, India	5-6 December 2019
24		25th National and 3rd International ISHMT-ASTFE Heat and Mass Transfer Conference (IHMTTC-2019)	IIT Roorkee, Roorkee, India.	28-31 December 2019

25	Dr. M. P. Maiya	25th National and 3rd International ISHMT-ASTFE Heat and Mass Transfer Conference (IHMTTC-2019)	IIT Roorkee, Roorkee, India	28-31 December 2019
26	Dr. Raghu Prakash	ASME IMECE 2019	Salt Lake City, USA	9-19 November 2019
27		International Conference on Advances in Materials Research 2019	Sathyamangalam, India	6-7 December 2019
28	Dr. Shyama Prasad Das	GTINDIA 2019	IIT Madras, India	5-6 December 2019
29	Dr. C. Balaji	iRAD 2020 Conference	Chennai, India	5-7 February 2020
30		International Conference on Climate Services	Pune, India	11-13 February 2020
31		International Conference on Ensemble Methods in Modelling and Data Assimilation (EMMDA-2020)	Noida, India	24-26 February 2020
32	Dr. Ratna Kumar Annabattula	Powders, Grains, Bulk Solids: Innovations and Applications	Patiala, India	27-29 February 2020
33	Dr. M. P. Maiya	NCRAC - 6th National Conference on Refrigeration and Air Conditioning () NCRAC 2020	Pottapalayam, Tamil Nadu, India	20-22 February 2020

Meetings

1	Dr. G. L. Samuel	Board of Studies Meeting	Satyabhama University, Chennai	12 April 2019
2		PhD viva	NIT Warangal	25 April 2019
3	Dr. A. Ramesh	6th Meeting of the Project Monitoring Committee on Hydrogen Application	New Delhi	28 March 2019
4		SAE World Congress and Exhibition	Cobo Center, Detroit, USA	9-11 April 2019
5	Dr. P. Ramkumar	74th STLE Annual Meeting and Exhibition	Nashville, TN, USA	19-23 May 2019
6	Dr. Mayank Mittal	Joint Research Collaboration Meeting	Michigan State University, USA	6-8 May 2019
7	Dr. J. M. Mallikarjuna	Joint Research Collaboration Meeting	Michigan State University, USA	
8			Ohio State University, USA	9-10 May 2019
9			Purdue University, USA	13-14 May 2019
10	Dr. P. Ramkumar	M.E. Final Project Viva Voce	College of Engineering Guindy, Anna University, Chennai	14 May 2019
11	Dr. V. Raghavan	Meeting with National Fire Protection Association (NFPA)	Boston, USA	17 May 2019

12	Dr. R. Gnanamoorthy	Anna University Research Board Meeting	Chennai, India	7 June 2019
13	Dr. M. P. Maiya	Chaired a session	5th International Conference on Polygene Ration (ICP 2019), Japan	15-17 May 2019
14		Doctoral Committee meeting	Mechanical Engineering Department, Anna University	17 June 2019
15	Dr. N. Ramesh Babu	HAG Selection Committee meeting	VNIT, Nagpur	4 May 2019
16		Faculty Selection Committee meeting	IIT Bombay	25 June 2019
17	Dr. M. P. Maiya	Attended Board of Studies (BoS) meeting	Department of Mechanical Engineering, VIT-AP, Amaravati	29 June 2019
18	Dr. C. Balaji	Meeting of the Editors of <i>International Journal of Thermal Sciences</i>	Paris, France	9 July 2019
19		Academic Council Meeting	Sastra Deemed University, Thanjavur	1 August 2019
20	Dr. Gnanamoorthy R.	National Expert Committee on Orbit Bearing Issues	VSSC Trivandrum	4-5 July 2019
21	Dr. Somashekhar S. Hiremath	Worked as a Chairman in Preliminary Design Review (PDR) on Design and Development of Automatic Track Tensioner and Attitude Control System (ATTACS)	Combat Vehicles Research and Development (CVRDE), Avadi, Chennai, India	10 July 2019
22		314th Meeting of the Board of Directors of Tamil Nadu Small Industries Corporation Limited (TANSI)	Registered Office of the Corporation A-28, Thiru-Vi-Ka Industrial Estate, Guindy, Chennai, India	23 July 2019
23	Dr. Vishal V. R. Nandigana	IMIEU organisation meeting over Skype	ICSR, India	20 August 2019
24	Dr. Sujatha Srinivasan	GReAT (Global Report on Assistive Technology) Consultation	World Health Organization, Geneva, Switzerland	22-23 August 2019
25	Dr. M. P. Maiya	Doctoral Committee Meeting	R&AC Lab, Anna University, Chennai, India	3 July 2019
26		Academic Council Meeting	Department of Mechanical Engineering, VIT, Vellore, India	10 July 2019
27		Department Advisory Committee meeting of the Mechanical Engineering Department of Loyola	ICAM College of Engineering and Technology (LICET), Chennai, India	12 July 2019
28		Interview committee for Junior Research Fellow	DoAS & T, AC Tech., Anna University, Chennai, India	16 July 2019

29		314th Meeting of the Board of Directors of TANSI	Registered Office of the Corporation A-28, Thiru-Vi-Ka Industrial Estate, Guindy, Chennai, India	23 July 2019
30		Member of Ph.D. viva voce committee	Department of Mechanical Engineering, NIT Warangal	1 August 2019
31		Committee Member for screening of New CRG Proposals	PAC Civil and Mechanical Engineering (Core Research Grant), International Advanced Research Centre for Powder Metallurgy & New Materials (ARCI) Hyderabad	2 August 2019
32	Dr. Sujatha Srinivasan	Invited speaker, Meeting of Rotary Club of Madras Central	Hotel Hyatt Regency, Chennai	18 November 2019
33		Invited speaker, Meeting of the Equitable Healthcare Access Consortium	Aravind Eye Hospital, Chennai	6 December 2019
34	Dr. A. Seshadri Sekhar	As a member of Peer review committee meeting for design and development of high-speed bearings	CVRDE, Chennai	22 January 2020
35	Dr. C. Balaji	Research Advisory Committee Meeting	National Centre for Medium Range Weather Forecasting, Ministry of Earth Sciences, Noida, India	27 February 2020

Short-term Course

1	Dr. Vishal Nandigana	Two-dimensional Materials: Physics and Applications	IIT Madras, India	21-28 September 2019
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Special lectures delivered by the faculty in other institutions

Sl. No.	Faculty Member	Topic of Lecture	Institution	Date
1	Dr. Ratna Kumar Annabattula	Photo mechanics: Interaction of mechanics with light in soft matter	School of Mechanical Engineering, IIT Bhubaneswar	4 April 2019
2		A short course on Introduction to Discrete Element Method and its Applications	School of Minerals, Metallurgical and Materials Engineering, IIT Bhubaneswar	4-5 April 2019
3	Dr. A. Seshadri Sekhar	Application of Condition Monitoring Techniques for Railway Vehicles	IIT Roorkee	29 May 2019
4	Dr. C. Balaji	Why is my paper not getting accepted?	NIT Meghalaya	9-10 June 2019
5	Dr. N. Ramesh Babu	Keynote talk on Industry 4.0 and Advanced Manufacturing	International Conference on Industry 4.0	29 June 2019

6	Dr. Somashekhar S. Hiremath	Fluid Power Enduring Trends: Present, Past and Future and Role of Modeling and Simulation: EHSV and EHA	Department of Mechanical Engineering, NIT Calicut, India	1-5 July 2019
7	Dr. C. Balaji	Why is my paper not getting accepted?	NIT Meghalaya	10 July 2019
8		The joy of research	Sacred Heart College	26 July 2019
9	Dr. Somashekhar S. Hiremath	Delivered technical talk on Intelligent Manufacturing in the Context of Industry 4.0	Department of Production Engineering, Sri Sairam Engineering College, Chennai	4 September 2019
10	Dr. K. Srinivasan	Lecture on Research Process in Engineering	IIT Madras	15 September 2019
11	Dr. G. L. Samuel	Delivered an Invited talk on Micromachining with Ultra Short Pulsed Lasers	International Conference For Applications In Laser Manufacturing, ARCI Hyderabad with Laser World of Photonics India	18 October 2019
12	Dr. Ratna Kumar Annabattula	Application of Computational Methods for Engineering Problems	S. V. Government Polytechnic, Tirupathi	17 December 2019
13	Dr. M. P. Maiya	Technical presentation on proposed CO ₂ heat pump for simultaneous heating of water for cooking and chilled water for air conditioning	Akshay Patra Foundation centralised kitchen	17 February 2020
14		Invited to meet the delegation headed by Mr. Sveinung Rotevatn, Norwegian Climate and Environment Minister, at Akshay Patra Foundation centralised kitchen		
15	Dr. C. Balaji	Thermal management of electronics working on periodic on-off cycles: A numerical study	International Conference on Advances in Applied Mathematics (ICAAM 2020), Bharatiyar University	21 February 2020
16		Ingesting multi-satellite radiances to improve the predictability of regional NWP model	International Conference on Ensemble Methods in Modelling and Data Assimilation (EMMDA-2020), NCMRWF	24-26 February 2020
17		The joy of research	Indian Institute of Information Technology Design & Manufacturing	28 February 2020

Visits abroad by faculty

Sl. No.	Faculty Member	Country Visited	Date	Purpose of Visit	Funding from
1	Dr. V. Raghavan	United States of America	12 May 2019	Research	Worcester Polytechnic Institute, Massachusetts
2	Dr. Ratna Kumar Annabattula	Singapore	8 July 2019	Conference	Institute (CPDA)
3	Dr. Sujatha Srinivasan	Switzerland	21 August 2019	Invitee to GReAT Consultation, WHO	Project
4	Dr. Abhijit Sarkar	Greece	31 August 2019	International Conference on Vibration Problems (ICOVP)	CPDA and PCF
5	Dr. Ratna Kumar Annabattula	The Netherlands	15 September 2019	International Liquid Crystal Elastomer Conference	
6		Germany	18 September 2019	Ceramic Breeder Blanket Interactions (CBBI)	
7	Dr. C. Balaji	Japan	5 September 2019	Keynote lecture at Asian Symposium on Computational Heat Transfer and Fluid Flow	
8	Dr. A. Seshadri Sekhar	China	2 November 2019	Present a paper at International Conference ICCS22, Wuhan	IIT Madras
9	Dr. Sujatha Srinivasan	Singapore	9 December 2019	The 17th International Conference on Biomedical Engineering (ICBME-2019) held in NUS, Singapore	Project, CPDA
10	Dr. Pallab Sinha Mahapatra	UK	14 December 2019	Collaborative meeting	PCF
11	Dr. Raghu Prakash	USA	9 November 2019	ASME IMECE 2019	Project
12		Italy	16 November 2019	Research collaboration - MoU between IITM and Politecnico di Milano, Milan, Italy university	Project

Honours and awards obtained by faculty

Sl. No.	Faculty Member	Award	Awarded by	Awarded for	Date of Award
i. Honours					
1	Dr. K. S. Reddy	Honorary Professor	University of Exeter, UK	Clean Technologies	
2	Prof. M. P. Maiya	Guest Editors	ISHMT-ASTFE Heat and Mass Transfer Conference 2017	ISHMT-ASTFE Heat and Mass Transfer Conference 2017	22 October 2019
3	Dr. Arvind Pattamatta				
ii. Awards					
1	Dr. M. P. Maiya	Best Poster Award	5th International Conference on Polygeneration (ICP 2019)	Performance Evaluation of Ejector Based CO ₂ System for Simultaneous Heating and Cooling Application in an Indian Dairy Industry, Dasi Koti, Simarpreet Singh, Guruchethan A.M., M.P. Maiya, Armin Hafner, Krzysztof Banasiak, Petter Neksa	15-17 May 2019
2	Dr. N. Arunachalam and Dr. S. Sathyan	Kapindra Precision Engineering, a start-up incubated by IITM Incubation Cell, on being adjudged as #1 Start-Up in the DRDO Dare to Dream Innovation Contest under the Open Category challenge area	DRDO Dare to Dream Innovation Contest	The heat dissipation issue (thermal management) of interstellar missiles during re-entry into the earth's atmosphere where they experience destructive high temperatures (>2,400 C)	DRDO Industry Meet, October 2019
3	Dr. Prabhu Rajagopal	Planys Technologies Private Limited, winner of the National Entrepreneurship Award 2019	Enterprise Award	Engineering Systems, Base Metals & Articles, Machinery & Mechanical Appliances and Medical Devices	9 December 2019
4	Divanshu Kumar (2019 ME DD alumnus) and is mentored by Dr. Prabhu Rajagopal	First Prize in the Water and Sanitation category	National Bio Entrepreneurship Competition 2019 (NBEC-2019)	Alcheme focusses on robotic solutions for septic tanks	14 December 2019
5	Dr. Sujatha Srinivasan	Abdul Kalam Technology Innovation National Fellowship	INAE-SERB, DST	Design and development of an indigenous lever-operated orthotic knee	1 February 2020

Fellowships of academies

Sl. No.	Faculty Member	Year of Admission
INAE		
1	Prof. K. Srinivas Reddy	Indian National Academy of Engineering (INAE) 2019

Journal Editorial Boards

Sl. No.	Faculty Member	Position (Editor/Member)	Journal Name
1	Dr. Chandramouli P.	Associate Editor (1 January 2020)	<i>ASME Journal of Computational and Nonlinear Dynamics</i>

4.13.4. Design and Development Activities

Brief and specific details of process/instruments/equipment/software designed and developed

Sl. No.	Faculty Member	Details
1	Dr. Vishal V. R. Nandigana	Lab items that we purchased in May-June 2019– lab chemicals/ lab reagents/nanocapillary membranes/graphene membranes/KOH solution/electrolyte/PMMA sheets/fluorescent dye
2		Software designed in May-June 2019–Designed software for machine learning/AI in engineering applications. We developed a deep learning based RNN framework to address engineering problems. The engineering problem we addressed first is ME related problems. We developed an ML/AI software to solve heat transfer and fluid.
3		AIsoft - Artificial Intelligence software for engineering applications

New facilities added or major equipment procured

Sl. No.	Equipment	Value (Rs. in lakh)
1	Nanocapillary membranes	0.34
2	Lab chemicals/reagents	0.7
3	Flexible low temperature combustion engine	30
4	1 ton electrodynamic shaker	22
5	Hot air oven	0.22
6	UV ozone cleaner	2
7	UV-Photo Source with necessary accessories (Wavelength: 200 nm-500 nm)	9

Patents

Patents filed

Sl. No.	Faculty Member	Topic of Patent
1	Dr. K. S. Reddy	A photovoltaic solar panel within built micro concentrator, 2019
2		A solar photovoltaic-thermal panel, 2019
3		A solar photovoltaic panel with integrated heat recovery jacket, 2019
4	Dr. Sujatha Srinivasan	Easy to use portable manual standing wheelchair with safety features and for outdoor use, filed in US and China

5	Dr. Anand Krishnasamy	A flexible low temperature combustion engine
6		High-pressure injection in heated anti-chamber (HPIHAC), a homogeneous mixture generation technique for HCCI engines
7		Variable valve timing (VVT) system
8		Novel concept of supercharging and turbo-compounding of a single cylinder engine
9	Dr. Vishal V. R. Nandigana	Deep learning and artificial intelligence for engineering problems (under preparation)
10		A scalable membrane for power generation, energy storage, energy harvesting, energy conversion, liquid electronics and artificial brain creation using salt and water
11		Machine learning, deep learning and artificial intelligence for physical transport phenomenon in thermal management
12	Dr. Sujatha Srinivasan	Provisional Application No: 201941041488, date of filing: 14/10/2019, title: A walk-chair with natural sit to stand motion for children with disabilities
13	Dr. S. Soundarapandian	Free-form measurement of bone using various scanning systems

Patents awarded

Sl. No.	Faculty Member	Topic of Patent
1	Dr. Piyush Shakya	Crankshaft for an internal combustion engine
2	Dr. Vishal Nandigana	A scalable membrane for power generation, energy storage, energy harvesting, energy conversion, liquid electronics and artificial brain creation using salt and water
3	Dr. Anand T. N. C.	Piezo-electric, ultrasonic, annular surface injection for emission reduction and better control in engines
4	Dr. B.V.S.S.S. Prasad	Inflatable bore well rescue device with improved holder mechanism
5	Dr. Sujatha Srinivasan and Dr. Ganesh Bapat	Tri-State hinge joint with Flex Lock

4.13.5. Research and Consultancy

Sponsored research/industrial consultancy/RBIC/retainer consultancy projects (ongoing and new)

Sl. No.	Title	Period	Funding Agency	Amount (Rs. in lakhs)	Coordinators
1	Design and development of sit-to-stand mobility aid	1 April, 2019-31 March 2020	Portescap	20	Dr. Sourav Rakshit, Dr. Sujatha Srinivasan
2	Low GWP refrigerant mixture replacement for R404A - Continuation of project started in February 2018	1 March 2019-30 April 2020	SRF Limited, New Delhi	14	Dr. G. Venkatarathnam

3	Modular portable motorized wheelchair with alternate control mechanism	27 March, 2019-26 October 2021	IMPRINT-2	106.5	Dr. Sujatha Srinivasan
4	Photo responsive actuation of thin polymer films: modeling and experiments	26 March 2019-25 March 2022	SERB	43.1	Dr. Ratna Kumar Annabattula, Dr. Pijush Ghosh (AM)
5	Precision nanoengineered, wettability patterned surfaces with potential applications in energy and healthcare	15 March 2019-14 March 2021	SPARC	47.08	Dr. Pallab Sinha Mahapatra, Dr. Arvind Pattamatta
6	Design and development of contact fatigue test facility for bearings used in high-speed railways and electric vehicles	Ends on 31 January 2021	DST	26.68	Dr. Gnanamoorthy R., Prof R. Sarathi, EE
7	Waste to engine—low temperature combustion of sustainable green fuels	14 March 2019-30 May 2021	Department of Science and Technology, Government of India	52.8	Dr. Anand Krishnasamy
8	Physical flow modelling of two-pass PC fired boiler to solve the problem of ash accumulation	6 March, 2019-5 March 2020	BHEL, Trichy	19.14	Dr. B.V.S.S.S. Prasad
9	Consultancy on metal forming and metallurgical issues	19 April 2019-30 June 2019	Rane NSK Steering System Private Limited	1.9	Dr Sushanta Kumar Panigrahi
10	Desiccant solar still	6 March, 2019-5 March 2022	Aero Nero Solutions Private Limited	15	Dr. M. P. Maiya
11	HVAC consultancy services to improve —performance of AC systems in ONGC offices	1 April, 2019-1 January 2020	ONGC Limited	3.93	
12	Seismic tests on 145 kV and 40.5 kV breakers	20 March-31 May 2019	CG Power & Industrial Solutions Limited	7.08	Dr. Sujatha C., Prof. A. Seshadri Sekhar and Dr. Abhijit Sarkar
13	Seismic test on 145 kV double break isolator	3 April-31 July 2019	Switchgears & Structural (India) Private Limited	3.77	Dr. Sujatha C., Dr. Parag Ravindran

14	Development of wettability-patterned soft surfaces for enhanced condensation	24 June 2019-24 June 2022	SERB	49.885	Dr. Pallab Sinha Mahapatra
15	Developing a novel twin-fluid atomizer for energy-efficient spray drying of high-viscosity liquids	23 May 2019-22 May 2022	SERB	46.3	PI: Dr. A. Madan Mohan, IIT Tirupati; Co-PI: Anand T. N. C., IIT Madras
16	Packed bed gasification of biomass with O ₂ -CO ₂ -steam mixtures	10 May 2019-9 May 2022	SERB	49.92	Dr. S. Varunkumar
17	Customized multi material product design and development with 3D network metal based composites using low cost additive route manufacturing	16 May 2019-15 May 2022	DST	55.7	Dr. R. Gnanamoorthy, Dr. Raghu V. Prakash
18	Estimation of Drucker-Prager plasticity parameters using DEM and experiments	5 July 2019-31 March 2021	BRNS	18.5	Dr. Ratna Kumar Annabattula, Dr. Narasimhan Swaminathan
19	Development and demonstration of algorithms for ingot handling system	22 July 2019-31 March 2021	BARC	49.68	Dr. Sourav Rakshit, G. Saravana Kumar and Sandipan Bandyopadhyay
20	Residential Building Energy Demand Reduction in India (RESIDE)	17 April 2019-28 December 2021	Science and Engineering Board	10.925	Dr. M. P. Maiya
21	Blue Energy	3 September 2019-5 September 2022	Refax energy	Agreed to investment	Dr. Vishal V. R. Nandigana, Dr. Pramoda Kumar Nayak
22	Evaluate the brake torque fade behaviour in elevator brake system	1 September 2019-31 March 2021	Kone Elevator Private Limited	4.602	Dr. P. Ramkumar
23	Evaluation of lubricants performance using dynamic load modified pin-on-disc at high frequency against white etching areas formation on different materials Phase I and II	1 September 2019-31 August 2021	Klüber, Munich, Germany	13.5	
24	Performance testing of new design hot water split air conditioner	1 year	M/s Chilton Refrigeration Private Limited, Ernakulum, Kerala	1.65	Dr. M. P. Maiya

25	Third party review and design vetting project seabird phase IIA DC 03 package	1 year	Project Seabird, New Delhi	29.94	
26	Structural analysis of a combat vehicle hull	1 November 2019-30 April 2020	Ordinance Factory Board	48.5	Dr. Ratna Kumar Annabattula, Dr. Narasimhan Swaminathan (ME) and Prof. H. S. N. Murthy (AE)
27	Technology development for biomass based thermal power plants	18 November 2019-17 November 2024	Sukhbir Agro Energy Limited	159.4	Dr. V. Raghavan, Dr. R. Vinu
28	Specialised manufacturing techniques for the development of high-power motor of indigenous AC fuel transfer pump	10 February 2020-9 February 2021	ADA Bangalore	18.216	Dr. G. L. Samuel
29	Development of advanced water washing system for compressor blade cleaning for gas turbine efficiency improvement	22 January 2020	Impacting Research Innovation and Technology - IMPRINT	107.25146	Dr. Srikrishna Sahu, Dr. Satyanarayanan Seshadri

Distinguished visitors to the department

Sl.No.	Visitor and Designation	Date of visit	Purpose of visit
1	Prof. J. Militky, Dr. Rajesh Mishra and Dr. Michal Petru, University of Liberec, Czech Republic	12 April 2019	Interaction with faculty
2	Dr. P. Ramdas, MD, ACE Designers Managing Director, Bengaluru, India	22 April 2019	
3	Prof. Kaushik Bhattacharya, California Institute of Technology, USA		
4	Dr. G. Ayyappan, Programme Director, Space Transportation System, VSSC, Trivandrum, India		
5	Mr. Deepak Parekh, Chairman, HDFC	22 April 2019	Visited Rehabilitation Research and Device Development (R2D2) to learn about out work and the new project they are funding through HDFC CSR
6	Prof. Shankar Balasubramanian, Michigan State University, USA	16 May 2019	Interaction with HOD and faculty members
7	Prof. John Abraham, Professor and Chair, Department of Mechanical Engineering, San Diego State University	24 June 2019	For discussions, seminar

8	Prof. Taura Hiroo, Nagaoka University of Technology, Japan	12 July 2019	Research collaboration
9	Prof. Christos Spitas, Space Technology Research Cluster, Nazarbayev University		
10	Prof. James Schmiedeler, University of Notre Dame	22 July 2019	Conducted GIAN course
11	Prof. Anil K. Bajaj, Arcot Ramachandran Chair Professor	30 October 2019	Interacting session on UG/PG Education at Purdue University
12	Shri Thaawarchand Gehlot, Hon'ble Union Minister of Social Justice and Empowerment	5 November 2019	Visit to R2D2 and launch of Arise Standing Wheelchair
13	Prof. Marcus Pandy, University of Melbourne	14 November 2019	VAJRA second visit for one month (14 November-15 December 2019)
14	Prof. Emil Hopfinger, Emeritus Professor, LEGI, Grenoble, France	13 January 2020	Scientific discussions and collaborative research
15	Dr. Dilip Banerjee, Researcher, NIST USA	23 January 2020-19th Mar 2020	As a Fulbright scholar
16	Dr. Kris D'Aout, Senior Lecturer, University of Liverpool	24-29 February 2020	Faculty collaboration and seminar talk
17	Dr. Yukio Ishida, Emeritus Professor, Nagoya University	5 February 2020	Interaction with faculty and students
18	C. Nataraj, Moritz Endowed Chair Professor in Engineered Systems, Villanova University	6 February 2020	Interaction with faculty and students

4.13.6. Other Activities of the Department

Sl.No	Faculty Member	Task/Activities
1	Dr. N. Ramesh Babu	Inauguration of Advanced Manufacturing Technology Development Centre (AMTDC) by Dr. A. R. Sihag, Secretary, Department of Heavy Industry, Government of India in the presence of Dr. Bhaskar Ramamurthi, Director, IIT Madras on 30 August 2019 at IIT Madras Research Park.
2	Dr. Vishal Nandigana	Visit to Palermo, Italy was confirmed to have a site visit meeting with IMIEU organisation regarding osmotic power generation using salinity gradients
3	Dr. K. Srinivasan	Research Process in Engineering article was selected as a Featured Article by the Editors of Physics of Fluids, and for AIP Scilight and tweeted by @AIP_Publishing. See links: https://doi.org/10.1063/10.0000162 https://twitter.com/AIP_Publishing/status/1183744576789663745
4	Dr. A. Seshadri Sekhar and Dr. Narasimhan Swaminathan	Department has started a new web-enabled M.Tech Programme in Mechanical Design - February 2020
5	Dr. Sujatha Srinivasan	The first product from the TTK Center for Rehabilitation Research and Device Development (R2D2) was launched on 5 November 2019. The standing wheelchair, named Arise, was launched at IITM Research Park by the Hon'ble Union Minister of Social Justice and Empowerment, Shri Thaawarchand Gehlot. With support for commercialisation from the Wellcome Trust (a UK foundation), the product was designed and developed at R2D2, and will be manufactured and marketed by Phoenix Medical Systems, a medical devices company founded and run by IITM alumnus, Mr. Sashi Kumar.



Faculty Visit

Sl.No	Faculty Member	Purpose of Visit	Date and Venue
1	Dr. N. Ramesh Babu	PAC Meeting	9 April 2019, DST, Delhi
2		Business Advisory Council Meeting	30 April 2019, CMTI, Bengaluru
3	Dr. Sushanta Kumar Panigrahi	To conduct Ph.D. viva voce examination	3 April 2019, NIT Surathkal
4	Dr. Ratna Kumar Annabattula	To deliver a short course on DEM; joint project on thermal energy storage with IIT Bhubaneswar	4 April 2019, IIT Bhubaneswar
5		Guest lecture at School of Mechanical Engineering	
6	Dr. B.V.S.S.S. Prasad	DST review meeting	4 April 2019, IEST, Kolkata
7		Ph.D. viva	18 April 2019, IIT Kharagpur
8	Dr. Somashekhar S. Hiremath	Ph.D. viva voce examination	27 April 2019, JNTU Ananthapur

9	Dr. Sushanta Kumar Panigrahi	To deliver Invited/Keynote lecture in a conference (13th NatFoE)	1 June 2019, IIT Bhubaneswar
10		Ph.D. viva examination	27 June 2019, NIT Trichy
11	Dr. J. M. Mallikarjuna	Ph.D. viva voce exam	14 June 2019, JNTU Ananthapur
12			15 June 2019, Bangalore Institute of Technology, Bengaluru
13	Dr. Pallab Sinha Mahapatra	Keynote speaker for the workshop on Computational Techniques in Heating and Cooling Systems	5 June 2019, National Institute of Technology Agartala
14	Dr. P. V. Manivannan	To deliver special invited guest lectures and hold discussions in connection with submission joint research proposal under the India-Czech Bilateral Scientific and Technological Cooperation – Call for Joint Project Proposals 2019 scheme	17 June 2019, Technical University of Liberec, Czech Republic
15	Dr. M. P. Maiya	Ph.D. viva voce exam	18 June 2019, Department of Mechanical Engineering, NIT Kurukshetra
16	Dr. Anand T. N. C.	Attended the first convocation	27 July 2019, IIT Palakkad
17	Dr. Somashekhar S. Hiremath	Delivered technical talk on Robot Kinematics - DH Parameters, Forward and Inverse Kinematics during one-week Structured Training Programme on Robotics and Artificial Intelligence	22 July 2019, VSSC, Thiruvananthapuram
18		As a Chief Guest and delivered an Invited Speech on Current and future research perspective on the occasion of Digital India Week Celebration, 29 July-2 August 2019, for the VSSC Community in Industry 4.0	2 August 2019, VSSC, Thiruvananthapuram
19	Dr. G. Venkatarathnam	To discuss joint projects and collaboration in the area of additive manufacturing of heat exchangers	12 August 2019, Intech Bengaluru-Additive manufacturing company
20		To discuss on possible collaboration in the area of automobile and tractor air conditioners	29 August 2019, Mahindra and Mahindra-R&D, Chennai
21	Dr. K. Hariharan	Talk on Material modelling and design optimization on sheet metal forming processes, Workshop on Optimization Techniques	13 September 2019, SRM institute, Chennai
22	Dr. Somashekhar S. Hiremath	Delivered technical talk on Micro-machining for miniaturization of product and processes on 23 September during a five-day workshop on Advances in Materials and Manufacturing Processes	23 September 2019, University College of Engineering and Technology (UCET), Vinoba Bhave University, Hazaribagh, Jharkhand 825319
23		Invited as a Judge during mini projects' contest organised by Department of Physics, Forum of Sciences - The Science Association	18 September 2019, SRM Institute of Science & Technology

24	Dr. Vishal Nandigana	Chief Guest and Speaker	23 September 2019, SRM Institute of Science and Technology
25	Dr. C. Balaji	Institute lecture on Why is my paper not getting accepted?	31 October 2019, IIT Kanpur
26		Ph.D viva	17 October 2019, IIT Bhubaneswar
27	Dr. Sujatha Srinivasan	Examiner for Ph.D Viva	10 October 2019, IIT Delhi, India (through Skype)
28	Dr. N. Ramesh Babu	Expert in the Faculty Selection Committee	23 September 2019, IIT - ISM Dhanbad
29		Chairman of Preliminary Design Review Committee	29 October 2019, NSTL, Vizag
30	Dr. Ratna Kumar Annabattula	Deliver a short-term course on Advanced Computational Methods for Fracture/Failure of Materials	6 December 2019, IIT Bhubaneswar
31	Dr. P. Ramkumar	Invited Lecture on Experimental Tribology	14 December 2019, VIT, Vellore
32	Dr. K. Srinivasan	Viva voce	18 December 2019, IIT Goa
33	Dr. Pallab Sinha Mahapatra	For attending a conference	27 December 2019, IIT Roorkee
34	Dr. M. P. Maiya	Ph.D. viva voce	22 November 2019, NIT Jalandhar
35		Chaired a session, Hydrogen absorbing materials	24 December 2019, IIT Tirupati
36		Participated in the proceedings	
37		25th National and 3rd International ISHMT-ASTFE Heat and Mass Transfer Conference (IHMT-2019)	28 December 2019, IIT Roorkee
38	Dr. Narasimhan Swaminathan	Invite Speaker	6 December 2019, IIT Bhubaneswar
39	Dr. Parag Ravindran	Project related discussion and to deliver a talk at a workshop	9 January 2020, Vikram Sarabhai Space Centre (VSSC), ISRO
40	Dr. Parag Ravindran	Evaluate PG Thermal Engineering Program	10-12 January 2020, National Institute of Technology Durgapur
41	Dr. M. P. Maiya	Symposium/Discussion meeting on Droplet Evaporation and Condensation	24 January 2020, Indian Academy of Sciences, Bangalore
42		Sadhana Editorial Board meeting	25 January 2020, Indian Academy of Sciences, Bangalore
43		Comprehensive Viva Voce Examination	30 January 2020, VIT Chennai
44		DC meeting	31 January 2020, Anna University
45		Conference Chairman	20-22 February 2020, KLN College of Engineering
46	Dr. A. Seshadri Sekhar	Project meeting	24 February 2020, HAL Bangalore

4.14 Department of Metallurgical and Materials Engineering

4.14.1 Introduction

One of the oldest departments of IIT Madras, the Department of Metallurgical and Materials Engineering (MME) was established in 1959 as the Department of Metallurgy. It was renamed as Department of Metallurgical and Materials Engineering in 2003. The department offers B.Tech., M.Tech., M.S. and Ph.D. degree courses, and is actively engaged in research, education and industrial consultancy. Its teaching, research and consultancy activities cover a broad spectrum ranging from conventional metallurgy to frontiers of materials science and engineering. The department is respected for its strong linkages with industry and expertise in industrial metallurgy.

Over the years, it has hosted excellent research infrastructure in the broad areas of material science and engineering, such as materials processing (forming, joining, casting, particulate processing and nanostructured materials), characterisation (X-ray diffraction, electron microscopy and thermal analysis), mechanical testing, environmental degradation/corrosion, surface engineering, computational materials science and electronic materials. The department continues to strive for excellence and realising its vision of becoming a pioneering department in the areas of materials science and engineering, while consolidating its strength in traditional areas of metallurgical engineering.

4.14.2 Academic Programmes

The department offers B.Tech., M.Tech., M.S. and Ph.D. programmes.

New courses introduced

S.No.	Course No.	Title
1	MM5440	Hot Rolling and Cold Rolling Technology

Programme	Year I	Year II	Year III	Year IV	Year V and others	Total
B.Tech.	51	32	32	26	3	144
Dual Degree	-	13	12	14	12	51
M.Tech.	19	11	-	-	-	30
M.S.	11	13	12	-	-	36
Ph.D.	15	32	30	30	47	154
Total	96	101	86	70	62	415

Students/Scholars who attended conference/seminar/workshop/symposia abroad/India

Sl. No.	Student/Scholar	Roll No.	Conference/Seminar/Symposia/Workshop	Date and Venue	Financial Assistance
Abroad					
1	Lipak Kumar Sahoo	MM15D416	Fluidization XVI	26-31 May 2019, China	IIT
2	B. Nithin	MM15D005	Beyond Nickel-Based Super Alloys - III	8-16 June 2019, Nara, Japan	IIT
3	N. Sreenivasulu	MM16D005	6th Nano Today Conference	16-20 June 2019, Lisbon, Portugal	IIT
4	K. Mohammed Rashad	MM13D209	16th European Ceramic Society Conference 2019	16-20 June 2019, Turin, Italy	IIT

5	Annu Sharma	MM15D405	6th Nano Today Conference	16-20 June 2019, Lisbon, Portugal	IIT
6	Anish Hiresha Verma	MM17S008	10th International Conference on Materials for Advanced Technologies	23-28 June 2019, Singapore	IIT
7	Sachania Hitanshu	MM17S003	International Conference on Advanced Materials Modeling	1-6 July 2019, Rennes, France	IIT
8	Deepu Mathew John	MM14D207	72nd IIW Annual Assembly and International Conference 2019	7-12 July 2019, Bratislava, Slovakia	IIT
9	Anil Bandi	MM15D011	72nd IIW Annual Assembly and International Conference 2019	7-12 July 2019, Bratislava, Slovakia	IIT
10	Rohit Ojha	MM13D014	CALPHAD 2019	2-7 July 2019, Singapore	IIT
11	S. H. Adarsh	MM16D013	International Conference on Materials and Nanomaterials (MNS-19)	17-19 July 2019, Paris, France	IIT
13	R. Jeyaraam	MM14D401	International Conference on Recrystallisation and Grain Growth - 2019	4-9 August 2019, Ghent, Belgium	IIT
14	Darshan Chalapathi	MM16D001	EUROMAT 2019	1-5 September 2019, Stockholm, Sweden	IIT
15	Varatharaja Nallathambi	MM17S007	10th International Conference on High Temperature Ceramic-Matrix Composites (HTCMC-10)	22-26 June 2019, Bordeaux, France	IIT
16	Y. S. Srinivas Chakrapani	MM17S013	COMPLAS 2019	3-5 September 2019, Barcelona, Spain	IIT
17	T. Hemanth	MM17S005	International Conference on Recrystallisation and Grain Growth - 2019	4-9 August 2019, Ghent, Belgium	IIT
18	S. Santosh	MM15D020	EUROMAT 2019	1-5 September 2019, Stockholm, Sweden	IIT
19	Anand Joy	MM13D211	International Conference on Diamond and Carbon Materials	8-12 September 2019, Seville, Spain	IIT
20	T. Deepika	MM17S019	TMS 2020	23-27 February 2020, San Diego, California, USA	IIT

21	Nitheesh M. Nair	MM16D300	10th International Conference on Materials for Advanced Technologies	23-28 June 2019, Singapore	IITM Alumni fund
22	Behara Santosh Kumar	MM16D401	Thirteenth Conference for Young Scientists in Ceramics - CYSC 2019	16-19 October 2019, Serbia	IIT
23	Mohammed Rashad K	MM13D209	16th Conference and Exhibition of The European Ceramic Society (ECerS)	Torino, Italy, 16-20 June, 2019	IIT

India

1	Pritam Banerjee	MM16D416	ISMANAM - 2019	8-12 July 2019, Chennai	IIT
2	Chiranjit Roy	MM16D014	ISMANAM - 2019	8-12 July 2019, Chennai	IIT
3	Garikapati Nagasarvari	MM17D015	ISMANAM 2019	8-12 July 2019, Chennai	IIT
4	Nitheesh M. Nair	MM16D300	ADMAT 2019	23-25 September 2019, Hyderabad	IIT
5	Adarsh S. H.	MM16D013	ADMAT 2019	23-25 September 2019, Hyderabad	IIT
6	Garikapati Nagasarvari	MM17D015	ADMAT 2019	23-25 September 2019, Hyderabad	IIT
7	S. Santosh	MM15D020	ADMAT 2019	23-25 September 2019, Hyderabad	IIT
8	Varatharaja Nallathambi	MM17S007	Annual Technical Meeting of IIM 2019 (NMD-ATM 19)	14-16 November 2019, Trivandrum	IIT
9	S. S. Lokesh Vendra	MM16D017	NMD-ATM 19	14-16 November 2019, Trivandrum	IIT
10	G. Swaminathan	MM18D010	NMD-ATM 19	14-16 November 2019, Trivandrum	IIT
11	Gokul Nanda	MM18S014	NMD-ATM 19	14-16 November 2019, Trivandrum	IIT
12	Kousik P.	MM18D004	NMD-ATM 19	14-16 November 2019, Trivandrum	IIT
13	Lalith Bhaskar	M15D404	NMD-ATM 19	14-16 November 2019, Trivandrum	IIT

14	Varatharaja Nallathambi	MM17S007	International Conference on Advanced Thermostructural Materials and Thermal Protection Systems (ADTHERM'20)	19-21 January 2020, Trivandrum	IIT
15	Swathi E.	MM16D002	COMPFLU 2019	5-7 December 2019, Bhopal	IIT
16	S. Santosh	MM15D020	2nd International Conference on Recent Trends in Metallurgy, Materials Science and Manufacturing	27-28 December 2019, Trichy	IIT
17	Garikapati Nagasarvari	MM17D015	XXth International Workshop on Physics of Semiconductor Devices (IWPSD 2019)	17-20 December 2019, Kolkata	IIT
18	Kevin Daniel	MM16B028	International Conference on Functional Materials (ICFM)	6-8 January 2020, Kharagpur	IIT
19	Gokul Nanda	MM18S014	ADTHERM'20	19-21 January 2020, Trivandrum	IIT
20	Kousik Papakollu	MM18D004	ADTHERM'20	19-21 January 2020, Trivandrum	IIT
21	Pritam Banerjee	MM16D416 (PhD)	12th Asia-Pacific Microscopy Conference (APMC-2020)	3-7 February 2020, Hyderabad	IIT
22	Santosh S.	MM15D020 (Ph.D.)	3rd International Conference on Advances in Mechanical Engineering (ICAME 2020)	24-29 February 2020, Chennai	IIT
23	Sufyan M. Shaikh	MM17D202	3rd International Workshop on High Entropy Materials	7-8 March 2020, IIT Kanpur	IIT
24	Rinsha Padmarajan P.V.	MM18D016	COMPFLU 2019	5-7 December 2019, Bhopal	IIT
25	Gollapalli Prince	MM17D012	ISMANAM 2019	8-12 July 2019, Chennai	IIT
26	Barun Bharadwaj Dash	MM16D200	12th Asia-Pacific Microscopy Conference (APMC 2020)	3-7 February 2020, Hyderabad	IIT
27	Shubhashis Dixit	MM15D200	APMC 2020	3-7 February 2020, Hyderabad	IIT
28	Nitheesh M. Nair	MM16D300	XXth International Workshop on Physics of Semiconductor Devices (IWPSD 2019)	17-20 December 2019, Kolkata	IIT

29	Karna Sivaji	MM18S011	Annual Technical Meeting of IIM 2019 (NMD-ATM 19)	14-16 November 2019, Trivandrum	IIT
30	Garikapati Nagasarvari	MM17D015	Saint-Gobain Technical Symposium University Collaboration	6 March 2020, Chennai	IIT
31	Sri Harsha Swarna Kumar	MM17D201	ICAM5, National Institute of Technology Warangal	25-27 September 2019, Warangal	ARCI (External)
32	Sourav Ghosh	MM17D301	ICMHCEE, NIT Trichy	9-11 September 2019, Trichy	IIT
33	Sourav Ghosh	MM17D301	ICNAN, VIT Vellore	29 November-1 December 2019, Vellore	IIT
34	N. Maheswari	MM15D013	APMC 2020	3-7 February 2020, Hyderabad	IIT
35	Rahul John	MM16F003	3rd International Workshop on High Entropy Materials	7-8 March 2020, IIT Kanpur	External
36	Rahul John	MM16F003	APMC 2020	3-7 February 2020, Hyderabad	External
37	Manoj S. N.	MM17D005	APMC 2020	3-7 February 2020, Hyderabad	IIT
38	Nitheesh M. Nair	MM16D300	Saint-Gobain Technical Symposium University Collaboration	6 March 2020, Chennai	IIT
39	Behara Santosh Kumar	MM16D401	Annual Technical Meeting of IIM 2019 (NMD-ATM 19)	14-16 November 2019, Trivandrum	IIT
40	Muni Bhaskar Siva Kumar	MM16D415	ISMANAM-2019 Pre-Conference Workshop on Advances in Nano-Scale Materials Characterization	7 July 2019, IIT Madras	ARCI (External)
41	G. Vijayaragavan	MM17D004	ISMANAM-2019 Pre-Conference Workshop on Advances in Nano-Scale Materials Characterization	7 July 2019, IIT Madras	ARCI (External)
42	Nischay Kaushik G.	MM15D202	APMC 2020	3-7 February 2020, Hyderabad	IIT
43	Janhavika Sonar		ISMANAM	8-12 July 2019, Chennai	IIT
44	N. Sreenivasulu	MM16D005	ICANN	17-20 December 2019, IIT Guwahati	IIT
45	Annu Sharma	MM15D405	IWHEM	7-8 March 2020, IIT Kanpur	IIT
46	Janhavika Sonar	MM17S014	IWHEM	7-8 March 2020, IIT Kanpur	IIT

Students/Scholars who won outside prizes and awards

Sl.No.	Student/Scholar	Roll No.	Prize	Awarded by
1	Rohit Ojha	MM13D014	Best Paper Award	CALPHAD 2019 Conference, Singapore
2	R. Mythreyi	MM15B022	Fellowship to attend Kenyon Review Young Science Writers Workshop	Kenyon College, Ohio, USA
3	Piu Rajak	MM13D301	TRIL Fellowship	ICTP, Trieste, Italy
4	Gorle Revathi	MM16D410	G. S. Tendulkar Award for Overall Best Oral Presentation	NMD ATM 2019, Indian Institute of Metals
5	Varatharaja Nallathambi	MM17S007	Best poster award	ADTHERM'20, Thiruvananthapuram
6	Swathi E.	MM16D002	Best poster award	COMPFLU 2019, IISER, Bhopal
7	S. Santosh	MM15D020	Best paper award	2nd International Conference on Recent Trends in Metallurgy, Materials Science and Manufacturing, NIT Trichy
8	Garikapati Nagasarvari	MM17D015	Dr. S. K. Agarwal Award for Best Poster	XXth International Workshop on Physics of Semiconductor Devices (IWPSD 2019), Kolkata
9	Kevin Daniel	MM16B028	Best poster award	International Conference on Functional Materials (ICFM), IIT Kharagpur
10	Sufyan M. Shaikh	MM17D202	Best poster award	3rd International Workshop on High Entropy Materials, IIT Kanpur
11	Nitheesh M. Nair	MM16D300	First prize in Innovation Pavilion	International Conference on Advanced Materials and Process for Defence Applications 2019, Hyderabad
12	Nitheesh M. Nair	MM16D300	AWSAR Award 2019 for Top 100 Best Science Stories	Department of Science and Technology (DST)
13	S. Santosh	MM15D020	Best paper award	3rd International Conference on Advances in Mechanical Engineering (ICAME 2020), Chennai
14	Rahul John	MM16F003	Poster award	3rd International Workshop on High Entropy Materials, IIT Kanpur
15	Muni Bhaskar Siva Kumar	MM16D415	Best poster award	National Conference on Science, Technology and Applications of Rare Earth (STAR) 2019- BARC, Bombay
16	G. Vijayaragavan	MM17D004	Best poster award	National Conference on Science, Technology and Applications of Rare Earth (STAR) 2019- BARC, Bombay

Students/Scholars who won Institute Convocation/Institute Day Prize

Sl.No.	Student/Scholar	Roll No.	Prizes	Awarded by
1	Bhusankar Talluri	MM15D305	Sudharshan Bhat Memorial Prize	IIT
2	Eranezuth Wasan Awin	MM12D018	Bhagyalakshmi and Krishna Iyengar Prize	IIT
3	Krishna Kumar	MM14D014	Institute Research Award	IIT

4.14.3 Faculty and Their Activities

Faculty

Name and Qualifications	Major Areas of Specialisation
Professors	
Uday Chakkingal, Ph.D. (Rensselaer Polytechnic Institute, USA) (HOD)	Metal forming and material processing, severe plastic deformation processes, aluminium alloys, sheet metal forming
M. Balasubramanian, Ph.D. (IIT Madras)	Advanced ceramics and composites, nanocomposites processing, materials characterization
S. S. Bhattacharya, Ph.D. (IIT Madras)	Nanocrystalline materials—synthesis, consolidation, characterisation and property evaluation, superplasticity of materials (analytical and experimental), superplastic forming, advanced materials testing
S. Ganesh Sundara Raman, Ph.D. (IIT Madras)	Fatigue and fracture of metallic materials and their weldments, fretting fatigue, fretting wear, high-temperature deformation, coatings, thermal spray processing, surface engineering
K. C. Hari Kumar, Ph.D. (IIT Delhi)	Computational thermodynamics and kinetics, ab initio calculations of thermochemical and thermophysical properties
M. Kamaraj, Ph.D. (IIT Madras)	High-temperature deformation studies on steels/super alloys, hot-corrosion studies, surface technology, development of wear surfacing materials, tribological studies on weld deposits/coatings/composites, failure analysis
B.S. Murty, Ph.D. (IISc, Bengaluru) (On lien - currently at IIT Hyderabad)	Nanocrystalline materials, bulk metallic glasses, high-entropy alloys, composites, phase transformations, electron microscopy, atom probe tomography
G. Phanikumar, Ph.D. (IISc, Bengaluru)	Solidification using electromagnetic levitation and melt spinning, transport phenomena in manufacturing processes, microstructure simulation and characterization
Prathap Haridoss, Ph.D. (University of Wisconsin-Madison, USA)	Production and characterisation of carbon nanotubes, synthesis of CdS nanocrystals, CO-tolerant PEM fuel cell catalysts
Ranjit Bauri, Ph.D. (IISc, Bengaluru)	Metal matrix composites, aluminium alloys, solid oxide fuel cells
N. V. Ravi Kumar, Ph.D. (MPI-Stuttgart and University of Stuttgart, Germany)	Polymer-derived ceramics, silicon carbide/silicon nitride ceramics, high-temperature mechanical properties, object-oriented finite element programming for prediction of macroscopic properties
V. Sampath, Ph.D. (IISc, Bengaluru)	Shape memory alloys/smart materials, composite materials, powder metallurgy, structure-property correlations in materials
T. S. Sampath Kumar, Ph.D. (IISc, Bengaluru)	Nanostructured biomaterials, antimicrobial ceramics and delivery systems, value-added biomaterials from natural wastes

S. Sankaran, Ph.D. (IIT Kanpur)	Mechanical behaviour of materials, electron microscopy, structure-property correlations
V. Subramanya Sarma, Ph.D. (IIT Madras)	Materials processing, development, characterisation and microstructure, mechanical property correlations in engineering materials
G.D. Janaki Ram, Ph.D. (IIT Madras) (On lien - currently at IIT Hyderabad)	Welding, additive manufacturing, failure analysis
Somnath Bhattacharyya, Ph.D. (MPI-Stuttgart and University of Stuttgart, Germany)	Studying correlation of the structure and chemistry of materials at atomic scale with physical properties using transmission electron microscopy, development of new methodology related to TEM/STEM to study materials, studying nano-bio conjugation using electron probe
Associate Professors	
K. Ravi Sankar, Ph.D. (IISc, Bengaluru)	High-temperature deformation, super plasticity, nanocrystalline materials, size effects in plastic deformation
Srinivasa Rao Bakshi, Ph.D. (Florida International University, Miami, USA)	Thermal spraying, carbon nanotube-reinforced composites, microstructure property correlations at different length scales, nuclear materials
Lakshman Neelakantan, Ph.D. (MPIE Dusseldorf and RUB, Bochum, Germany)	Corrosion characteristics, smart coating for corrosion protection, electro-dissolution, planarisation and deposition
Parasuraman Swaminathan, Ph.D. (University of Illinois, Urbana- Champaign, USA)	Printed electronics, vapour-deposited thin films and nanoparticles, optical and electrical properties of doped metal oxides, photovoltaics
Ajay Kumar Shukla, Ph.D. (IIT Kanpur)	Process modeling, control and optimisation of iron and steel making, computational thermodynamics and its application to high-temperature metallurgical processes, heat and mass transfer
Sabita Sarkar, Ph.D. (IISc, Bengaluru)	Process modelling/design of metallurgical and chemical processes, modeling and simulation of flows through packed beds, fluidised beds, heat and mass transfer, granular flows, multi-phase flows, reacting flows
Tiju Thomas, Ph.D. (Cornell University, USA)	Energy materials, environmental remediation materials [nitrides, oxynitrides, oxides (in nano, meso and bulk forms)], photofunctional materials (for solar cells, photocatalytic applications), optical materials and devices, surfaces, interfaces and transformation of nanostructures, green approaches to functional nanomaterials
Assistant Professors	
Anand K. Kanjarla, Ph.D. (Katholieke Universiteit Leuven Belgium)	Microstructural approach to mechanics of materials, finite element method and fast Fourier transform approach to crystal plasticity (CPFEM and CPFEM), plastic anisotropy and crystallographic texture, microstructure evolution in irradiated systems
Manas Mukherjee, Ph.D. (Technical University Berlin, Germany)	Metal foam production and characterisation, physics of foaming, X-ray tomography, solidification
Murugaiyan Amirthalingam, Ph.D. (Delft University of Technology, Netherlands)	Welding metallurgy, welding processes development, steels product development, in situ 3D synchrotron X-ray diffraction and additive manufacturing

Satyesh Kumar Yadav, Ph.D. (University of Connecticut, USA)	Physics and chemistry of materials from first-principles electronic structure modelling, first-principles thermodynamics, modeling of materials using quantum mechanics derived potentials, understanding structure, property, and processing relation of materials
Sreeram K. Kalpathy, Ph.D. (University of Minnesota, USA)	Soft matter: colloid and polymer science, interfacial fluid mechanics, physical chemistry of surfaces, coating and printing methods
K. G Pradeep, Ph.D (MPIE-Düsseldorf and RWTH Aachen University, Germany)	Combinatorial alloy design, atom probe tomography and field ion microscopy, magnetic materials, thin films and hard coatings, correlative microscopy, amorphous and nanocrystalline materials mechanical behaviour of materials

Adjunct Faculty

R. Gopalan, Ph.D. (IIT Madras), Associate Director and Head, Centre for Automotive Energy Materials, ARCI, Chennai	Magnetic materials, thermo-electric materials, fuel cells
Raju Ramanujan, Ph.D. (CMU, USA), Professor, NTU, Singapore	Nanofunctional materials
T. Venugopalan, Ph.D. (NIT, Rourkela)	R&D in steel technology
M. Sundararaman, Ph.D (University of Mumbai)	Phase transformation and structure property correlation in metallic materials, ordered-disordered transformation under equilibrium and non-equilibrium conditions, micromechanics of plasticity, material characterisation, physical metallurgy of super alloys, defect analysis using microscopy

Short-term courses/workshops/seminars/symposia/conferences organised by the faculty members

S.No.	Coordinator	Title	Period
Symposium			
1	Dr. B. S. Murty	26th International Symposium on Metastable, Amorphous and Nanostructured Materials	Hotel Raintree, Chennai, 8-12 July 2019
Workshops			
2	Dr. N. V. Ravi Kumar	Residual Stresses and Demonstration on a Table Top Residual Stress Analyser	IIT Madras, 29 May 2019
3	Dr. A. Murugaiyan and Dr. G. D. Janaki Ram	Workshop on Magnetically Impelled Arc Butt Welding	IIT Madras, 13 April 2019
4	Dr. K. G. Pradeep	ISMANAM pre-conference workshop on Advances in Nano-scale Materials Characterization	IIT Madras, 7 July 2019
5	Dr. V. Subramanya Sarma, Dr. K. G. Pradeep	Workshop and lab demonstration on Advances in HRSEM imaging	IIT Madras, 8-9 November 2019
6	Dr. V. Subramanya Sarma, Dr. K. G. Pradeep	Workshop on Advances in Energy Dispersive Spectroscopy and Electron Backscatter Diffraction	IIT Madras, 11-12 November 2019
7	Prof. Hari Kumar and Prof. Ravi Kumar N. V.	Two-day hands-on tutorial on Ab initio Quantum Monte Carlo (QMC) Method	IIT Madras, 21-22 January 2020

8	Dr. K. G. Pradeep	Advances in Correlative Microscopy Techniques	IIT Madras, 31 January 2020
9	Dr. K. G. Pradeep and Dr. Subramanya Sarma	Diffraction Techniques in SEM	IIT Madras, 29-30 January 2020
10	Dr. N. V. Ravi Kumar	Chemical Processing of Functional Inorganic Material	IIT Madras, 3-4 March 2020

Short-term courses

11	Dr. Murugaiyan A; Foreign Instructor: Prof. John Norrish, University of Wollongong, Australia	GIAN course: Advanced Welding Processes and Metallurgy	IIT Madras, 9-13 December 2019
12	Dr. Murugaiyan A; Foreign Instructor: Prof. Ian Robertson, Delft University of Technology, Netherlands	GIAN course: Fusion Welding Processes and Methodology	IIT Madras, 16-20 December 2019

Short-term courses/workshops/seminars/symposia/conferences/training attended by faculty members in academic institutions and public sector undertakings

S. No.	Faculty Member	Title	Institution	Period
Workshop				
1	Dr. Murugaiyan A	India-UK Workshop on Advancement in Welding	NIT Trichy	22 June 2018
Conferences				
2	Dr. Sabita Sarkar	Conference on the Advances of Process Metallurgy, 2019	IISc. Bangalore	4-5 July 2019
3	Dr. V. Sampath	International Mechanical Engineering Congress (IMEC) 2019	NIT Trichy	29 November-1 December 2019
4	Prof. Ravi Kumar N. V.	2nd International Conference on Nanoscience & Nanotechnology (ICNAN2019)	VIT Vellore	29 November-1 December 2019

Special lectures delivered by the faculty in other institutions

Sl. No.	Faculty	Topic of Lecture	Institution	Date
1	Dr. Satyesh Kumar Yadav	Accelerating Design of Materials from Electronic Structure Modeling	Chennai	26 June 2019
2	Dr. Satyesh Kumar Yadav	Chemically Graded Interface in Metal/Ceramic Heterostructures	NCTU Taiwan	12 July 2019
3	Dr. Sreeram K. Kalpathy	Polymers: Some Fundamental Characteristics and Applications	Viswajyothi College of Engineering and Technology, Muvattupuzha, Kerala	31 July 2019
4	Dr. Ravi Kumar N. V.	Kick-off meeting of the SPARC project	Materials Day Cologne, Institute of Inorganic Chemistry, University of Cologne, Germany	21 June 2019
5	Dr Srinivasa Rao Bakshi	Invited talk: Reactive Spark Plasma Sintering of Ultra High Temperature Borides	ADMAT, Hyderabad	23 October 2019

6	Prof. N. V. Ravi Kumar	Microstructural Design of Precursor Derived Ceramics for Structural and Functional Applications	Keynote lecture at the 1st International Conference on New Research & Development in Technical & Natural Science-2019, Radinci, Slovenia	18 September 2019
7	Prof. M. Balasubramanian	Introduction to Composites Materials	NIT Agartala	23 August 2019
8	Prof. M. Balasubramanian	Materials Characterisation Techniques	NIT Agartala	23 August 2019
9	Dr. V. Sampath	Smart Materials	KCG College of Technology, Chennai	1 October 2019
10	Dr. V. Sampath	Shape Memory Alloys	Department of Mechanical Engineering, College of Engineering, Guindy, Anna University, Chennai	19 October 2019
11	Dr. Sreeram K. Kalpathy	Marangoni Flows in Thin Liquid Films	NIT Karnataka, Surathkal	30 October 2019
12	Prof. Ravi Kumar N. V.	Architectural Design and Thermomechanical Properties of Si-Based Ceramics Obtained From Molecular Precursors	ADTHERM'20, Thiruvananthapuram	19 January 2020
13	Dr. Parasuraman Swaminathan	Internet of Things: Materials for Industry 4.0	Amrita Vishwa Vidyapeetham, Chennai	28 February 2020
14	Prof. S. S. Bhattacharya	Multicomponent Equimolar Oxides-A Novel Class of Functional Materials	Invited lecture at International Conference on Advanced Materials, ICAM, Kannur	11 June 2019
15	Prof. S. S. Bhattacharya	Phase-Pure Multicomponent Equimolar Oxides-A Novel Class of Functional Materials	Invited Lecture at ISMANAM 2019, Chennai	11 July 2019
16	Prof. S. S. Bhattacharya	Phase-Pure Multicomponent Equimolar Oxides as A Novel Class of Functional Materials: Synthesis, Characterisation and Properties	Invited Lecture-cum-Workshop at Conference of Young Scientists in Ceramics, CYSC, Novi Sad, Serbia	18 October 2019
17	Prof. S. S. Bhattacharya	Phase-Pure Multicomponent Equimolar Oxides as A Novel Class of Functional Materials: Synthesis and Characterisation	Invited lecture at ICANN, IIT Guwahati	19 December 2020
18	Dr. K. G. Pradeep	Advanced Materials and Characterisation-Macroscopic to Atomic Resolution	GCE Salem	29 August 2019

Visits abroad by faculty

Sl. No.	Faculty Member	Country Visited	Date	Purpose of Visit	Funding from
1	Prof. Prathap Haridoss	Spain	28 May-2 June 2019	Discussion on research and teaching, University of Barcelona, Barcelona	IIT

2	Prof. Prathap Haridoss	Germany	12-22 April 2019	MIELES Study Visit meeting on E-Learning and E-Learning Strategies	IIT
3	Prof. B. S. Murty	China	"Beijing, 19-23 May 2019"	Discussion on research collaboration with University of Science and Technology, Beijing	IIT
4	Dr. K. G. Pradeep	Germany	5-26 June 2019	Project meeting at RWTH-Aachen and MPIE Dusseldorf	IIT
5	Dr. Parasuraman S.	Singapore	24-29 June 2019	10th International Conference on Materials for Advanced Technologies, (ICMAT 2019)	IIT
6	Dr. Satyesh Kumar Yadav	Taiwan	24-29 June 2019	Workshop IITM-NCTU	IIT
7	Dr. M. Kamaraj	USA	25-26 June 2019	Cold Spray Action Team meeting (CSAT)	IIT
8	Dr. M. Kamaraj	USA	27 June 2019	Meeting GE-Aviation	IIT
9	Dr. M. Kamaraj	Austria	15-17 July 2019	Welding Technology Exchange Programme organised by Fronius International GMBH	IIT
10	Dr. Srinivasa Rao Bakshi	USA	25-26 June 2019	Cold Spray Action Team meeting (CSAT)	IIT
11	Dr. Srinivasa Rao Bakshi	USA	27 June 2019	Meeting GE-Aviation	IIT
12	Dr. V. Subramanya Sarma	Belgium	Belgium, 5-9 August 2019	7th International Conference on Recrystallisation and Grain Growth	IIT
13	Dr. Ajay Kumar Shukla	Japan	9-10 September 2019	"First India-Japan Workshop on Science and Technology in Iron Making and Steel Making"	IIT
14	Dr. M. Kamaraj	USA	6-9 August 2019	ASM International Chapter Leadership Days 2019	IIT
15	Dr. N. V. Ravikumar	Slovenia	18-20 September 2019	1st International Conference on New Research and Development in Technical and Natural Science	IIT
16	Dr. N. V. Ravikumar	France	22-26 September 2019	10th International Conference on High Temperature Ceramic Matrix Composites	IIT

17	Dr. Sabita Sarkar	Japan	9-13 September 2019	The First India-Japan Workshop on Science and Technology in Iron Making and Steel Making	IIT
18	Prof. Ravi Kumar N. V.	Japan	27 October-1 November 2019	13th Pacific Rim Conference of Ceramic Societies (PACRIM13)	IIT
20	Prof. Ravi Kumar N. V.	Japan	1 November 2019	Visit to Photon Production Limited - Industry	IIT
21	Prof. S. S. Bhattacharya	Germany	12-15 October 2019; 20-23 October 2019	Discussions concerning an Indo-German DST-DFG project	IIT
22	Prof. S. S. Bhattacharya	Serbia	15-20 October 2019	Give an invited talk at the CYSC, Novi Sad, Serbia	IIT
23	Dr. K. C. Hari Kumar	Germany	16-20 February 2020	Resource person for 4th MSIT Winter School on Materials Chemistry, and attend 4th International Seminar on Multicomponent Heterogeneous Equilibria, Scholss Ringberg, Germany	IIT
24	Dr. K. G. Pradeep	USA	23-27 February 2020	TMS Annual Meeting 2020	IIT

Honours and awards obtained by faculty

Sl. No.	Faculty Member	Award/Honour	Awarded by	Awarded for	Date of Award
i. Honours					
1	Dr. N. V. Ravi Kumar	Honorable Member	Serbian Society for Ceramic Materials	Contribution to international ceramic community	12 June 2019
2	Dr. V. Sampath	First Prize in Metallography Contest	Indian Institute of Metals	Best micrograph in transmission electron microscopy	14 November 2019
3	Dr. G. Phani Kumar	Metallurgist of the Year	Ministry of Steel, Government of India	Excellence in Metallurgical Engineering	14 November 2019
4	Dr. A. Murugaiyan	I T Mirchandani Memorial Award	Indian Institute of Welding	Best research paper in Welding Metallurgy	5 February 2020
5	Dr. Tiju Thomas	Best Reviewer Award	Transactions of Indian Institute of Metals	Excellence in reviewing	12 February 2020

Fellowships of academies and professional societies

S. No.	Faculty Member	Year of Admission
INAE		
1	Dr. B. S. Murty	2007

INSA		
1	Dr. B. S. Murty	2013
Others		
FASM (Fellow of ASM International, USA)	Dr. B. S. Murty Dr. M. Kamaraj	2010 2018
FIWS (Fellow of Indian Welding Society)	Dr. M. Kamaraj	2018
FIE (Fellow of Institution of Engineers)	Dr. M. Kamaraj	
FIMSA (Fellow of International Medical Sciences Academy)	Dr. T. S. Sampath Kumar	2007
FBOA (Fellow of Society of Biomaterials and Artificial Organs)	Dr. T. S. Sampath Kumar	2011
FTWAS (Fellow of The World Academy of Sciences)	Dr. B. S. Murty	2018
FAPAS (Fellow of Andhra Pradesh Academy of Sciences)	Dr. B. S. Murty	2016
FIIM (Fellow of Indian Institute of Metals)	Dr. B. S. Murty Dr. M. Kamaraj	2015 2019
FAPAM (Fellow of Asia Pacific Academy of Materials)	Dr. B. S. Murty	2013
FIAS (Fellow of Indian Academy of Sciences)	Dr. B. S. Murty	2008
FNAS (Fellow of National Academy of Sciences)	Dr. B. S. Murty	2008

Journal Editorial Boards

S.No.	Faculty Member	Position (Editor/member)	Journal
1	Somnath Bhattacharyya	Editorial Board member	<i>Scientific Reports</i>
2	B. S. Murty	Chief Editor	<i>Transactions of The Indian Institute of Metals</i>
3	A. Murugaiyan	Corresponding Editor and Principal Reviewer	<i>Welding in the World</i> , Springer, International Institute of Welding
4	N. V. Ravi Kumar	Editor	<i>Surface Innovations</i>
5	Somnath Bhattacharyya	Editor	<i>Indian Journal of Materials Science</i>
6	T. S. Sampath Kumar	Member	<i>Biomaterials and Tissue Technology</i>
7	A. Murugaiyan	Editor	<i>Transactions of The Indian Institute of Metals</i>
8	V. Subramanya Sarma	Key Reader	<i>Metallurgical and Materials Trans. A</i>
9	Uday Chakkingal	Associate Editor	<i>Sadhana</i>
10	Prof. S. S. Bhattacharya	Key Reader	<i>Metallurgical and Materials Transactions A</i>

4.14.4 Design and Development Activities New facilities added or major equipment procured

Sl.No.	Equipment	Value (Rs. in lakhs)
1	Brookfield Viscometer	9.36
2	Glove box with electronic panel board and vacuum pump	3.94
3	LC-IPC Interfaced DC Sputtering system	49.7
4	Rack Server	6.9
5	Apereo S model HR Scanning Electron Microscope with EDS and EBSD	380

6	Creep testing machines (2 nos.)	40
7	Vibratory polishing machine	8
8	High-temperature furnaces (2 nos.)	7
9	Data acquisition system	5.8
10	Magnetically Impelled Arc Butt Welding machine	115
11	Flame spray pyrolysis system	110
12	High-pressure cold spray system	258
13	Particle velocity measurement system	40
14	High velocity oxyfuel (HVOF) spray system	150

Patents

Patents filed

Sl. No.	Faculty Member	Topic of Patent
1	Dr. Somnath Bhattacharyya and Dr. S. Sankaran	High-strength steel composition and method thereof; patent application number: 201911030090
2	Dr. Tiju Thomas	A chromium oxynitride electrochemical storage device and a chromium oxynitride nanoparticle electrode
3	Dr. Tiju Thomas	Al-Cu core-shell nanoparticles with tunable optical spectra
4	Dr. Tiju Thomas	Method and apparatus design for hydrogen production from sea water using a green route
5	Dr. N. V. Ravi Kumar	Standalone miniature in-situ multiaxial universal testing equipment

4.14.5 Research and Consultancy

Sponsored research projects (ongoing and new)

Sl. No.	Title	Period	Funding Agency	Amount (Rs. in lakhs)	Coordinators
New					
1	Physical and mathematical modeling of centrifugal atomization process for powder production	26 March 2019-25 March 2022	Science and Engineering Research Board	42.43	Sabita Sarkar and Sreeram Kalpathy
2	Silver nanowire-based transparent and flexible tactile and force sensors	31 December 2019-30 December 2022	Ministry of Human Resource and Development	46.04	Parasuraman Swaminathan
3	Hierarchically designed electrodes of air breathing zinc-ion batteries	4 March 2020-3 March 2023	Science and Engineering Research Board	44.39	Ranjit Bauri
4	Investigation of novel high temperature shape memory alloys for critical applications	6 March 2020-5 March 2023	Science and Engineering Research Board	60.66	Sampath V.
5	Quantum mechanically guided design and multi-scale characterisation of novel, interface strengthened multi-principal element compositionally complex alloys	28 March 2019-27 March 2022	Scheme for Promotion of Academic and Research	68.51	B. S. Murty and K. G. Pradeep

6	Processing, joining and microstructure modeling of net shaped casting of primary Al-Zn-Mg alloys through an integrated computational materials engineering (ICME) approach	30 April 2019-29 April 2021	Scheme for Promotion of Academic and Research	73.05	Ranjit Bauri and G. Phanikumar
7	Reviving Bidricraft: A study on alternative patination process with a focus from fundamentals to final technology	1 March 2019-28 February 21	Department Of Science & Technology	36.79	Lakshman Neelakantan and Manas Mukherjee
8	Combinatorial design on novel, rare-earth free permanent magnets	12 June 2019-11 June 2023	Science and Engineering Research Board	49.58	Pradeep K. G.
9	Estimation of physical properties of slag and investigation of slag morphology during solidification and development of mathematical model to estimate heat transfer coefficient in continuous casting molds	22 July 2019-21 July 2021	Department of Science & Technology	7.44	Ajay Kumar Shukla
10	Ionogel electrolyte membrane fuel cell (IEMFC) with plasma electrolytic nitrated (PEN) metallic bipolar plate and effective flow field design	2 September 2019-1 September 2022	Department of Science & Technology	56.74	Lakshman Neelakantan, Arul Prakash, Raghuram Chetty and R. Kothandaraman
11	Understanding the phase stability of oxides and nitrides in the context of fine tuning their functional properties—a combinatorial approach based on computations and experiments	26 June 2019-25 September 2021	Department of Science & Technology	5.67	Ravikumar N. V. and K. C. Hari Kumar
12	Oxynitride-composites based low-weight supercapacitor unit: materials enhancement and device development	20 September 2019-19 September 2022	Department of Science & Technology	35.99	Tiju Thomas and Ranga Rao
13	Alloy development through artificial intelligence (ADAI)-development of tool steel	7 September 2019-6 September 2021	Mishra Dhatu Nigam Limited	17.28	Gandham Phanikumar
14	Synthesis and characterization of ZrO ₂ dispersed Ti, Ti-6Al-4V, Ti-6Al-5V, Ti-6Al-7Nb composite	1 November 2019-31 October 2022	Science and Engineering Research Board	10.05	Kamaraj M.
15	Rational design of non-stoichiometric transition metal compounds	26 November 2019-25 November 2021	Science and Engineering Research Board	17.64	Satyesh Kumar Yadav

16	Development and tribological study of multilayer nitride coatings on surface modified Co-Cr-Mo alloy against cross linked polymer surface in wet sliding environment for orthopaedic applications	18 November 2019-17 November 2022	Science and Engineering Research Board	10.05	Kamaraj M.
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Ongoing

Sl. No.	Title	Period	Funding Agency	Amount (Rs. in lakh)	Coordinators
1	Performance of coatings under fretting wear conditions	13 November 2015-12 May 2020	Aeronautics Research & Development Board	103.47	Ganesh Sundara Raman and M. Kamaraj
2	Centre of Excellence in Iron and Steel Technology (COEXIST)	9 May 2017-8 May 2022	Ministry of Steel	3555	Hari Kumar K. C. and others
3	Cold spray technology development for repair and coating of aircraft engine components	27 October 2016-26 October 2020	Uchhatar Avishkar Yojana - IIT Madras	520	Kamaraj M. and S. R. Bakshi
4	Development of fluidized bed reduction roasting process for slimes and low-grade iron ores by utilizing thermal grade coal for improving their magnetic susceptibility properties and maximizing the iron recovery	18 November 2016-17 November 2020	Ministry of Steel	122.76	Sabita Sarkar, B.V.S.S. Prasad, K. C. Hari Kumar, Srikrishna Sahu
5	Studies on functional fatigue behaviour of shape memory alloys for actuator and sensor applications	20 February 2017-19 August 2020	Department of Science & Technology	48.16	Sampath V., MM
6	Development of a novel electrolyte-free single layer solid oxide fuel cell	16 March 2017-15 June 2020	Department of Science & Technology	43.66	Ranjit Bauri, MM
7	Development of hot stamping process with low spring back for advanced high-strength steels	11 May 2017-10 May 2020	Department of Science & Technology	34.23	Uday Chakkingal and A. Murugaiyan
8	Microwave-assisted reduction of iron ore/slimes: an innovative and cost effective approach for steel production	30 December 2017-29 December 2020	Impacting Research Innovation and Technology - IMPRINT	331.8	Ajay Kumar Shukla
9	Stress-rupture property evaluation of advanced superalloys for small turbo fan engine (STFE) technologies	30 May 2017-29 May 2021	DRDO	435.61	Ravi Sankar K
10	High-temperature erosion damage characterization of downstream components by particle erosion testing	30 May 2017-29 May 2020	DRDO	115.29	Srinivasa Rao Bakshi, S. R. Chakravarthy, B.V.S.S. Prasad, Kamaraj M.

11	Characterization of selective laser melted Inconel 718 and Ti-6Al-4V	30 May 2017-28 May 2020	DRDO	161.53	Ravi Sankar K, S. R. Chakravarthy, B.V.S.S. Prasad, S. Ganesh Sundara Raman, Subramanya Sarma, D.G. Janaki Ram
12	Development and characterization of novel materials for capacitor-based energy storage devices	28 June 2017-27 June 2020	Department of Science & Technology	35.6	Ravikumar N. V.
13	Development of liquid metal processing route for closed cell magnesium foam - DST SERB	8 August 2017-7 August 2020	Department of Science & Technology	16.21	Manas Mukherjee
14	Advanced Manufacturing of New High Entropy Alloys -(DST-AISRF)	23 October 2017-22 October 2020	Department of Science & Technology	40.85	Murty B. S., D. G. Janaki Ram
15	Centre of Excellence in Advanced Materials and Manufacturing (CoE)	28 November 2017-9 April 2020	Deakin University	175	Murty B. S., A. Murugaiyan
16	High-strength, wear and corrosion-resistant steel for high-speed rail and elastic clip	11 December 2017- 10 December 2020	Impacting Research Innovation and Technology - IMPRINT	137.4	Sankaran S., Somnath Bhattacharyya
17	Multicomponent entropy stabilized oxides: Synthesis, processing and characterisation of a new class of ceramic materials	7 August 2017-6 August 2020	Department of Science & Technology	29.06	Bhattacharya S.
18	Non-destructive, atomically resolved off-stoichiometry determination within nanostructures using intensity distribution of Scanning Transmission Electron Microscopic (STEM) images	21 March 2018-20 March 2021	Department of Science & Technology	33.22	Somnath Bhattacharyya
19	In-situ experimental and numerical studies of abnormal grain growth and twinning during annealing of cold worked nickel	20 March 2018-19 March 2021	Department of Science & Technology	82.59	Subramanya Sarma V. and Srikanth Vedantam
20	Development of Zr, La, B and C containing single source proceramic polymer for high temperature applications	1 November 2018-31 October 2020	Indian Space Research Organisation	36	Ravikumar N. V., MM

21	Understanding the evolution of residual stress during repair and refurbishment of gas turbine components via laser additive manufacturing	7 May 2018-6 May 2020	Uchhatar Avishkar Yojana - IIT Madras	66.04	Gandham Phanikumar, MM
22	Development of oxide dispersion strengthened steels for super critical thermal boilers and fusion reactors	7 May 2018-6 May 2021	Uchhatar Avishkar Yojana - IIT Madras	378.3	Murty B. S., MM
23	Friction Stir Processing (FSP) of Al 7075 alloy and investigation on thermal stability and high temperature mechanical properties	7 July 2018-6 July 2021	Aeronautics Research & Development Board	36.81	Ranjit Bauri, MM
24	VAJRA Visiting Faculty - Dr. Juergen Eckert	4 May 2018-3 May 2021	Department of Science & Technology	33.69	Murty B. S., MM
25	Combinatorial design of novel rare-earth free, high-entropy based permanent magnets	1 June 2018-31 May 2021	Max Planck Institute for Nuclear Physics	37.7	Pradeep K. G., MM
26	Development of new dephosphorisation model for primary steel making	26 June 2018-25 June 2020	Department of Science & Technology	7.04	Ajay Kumar Shukla, MM
27	JC Bose Fellowship	12 November 2018-11 November 2023	Department of Science & Technology	95	Murty B. S., MM
28	Refractory high entropy alloys for high temperature structural applications	24 August 2018-23 August 2020	Air Force Office of Scientific Research	35	Murty B. S., MM
29	Electrosprayed nano structures for the sustained release of anti-glaucoma drugs	7 September 2018-6 September 2021	Department of Biotechnology	55.25	Sampath Kumar T. S., Ravikumar, N. V.
30	Enhancement of creep rupture, hot corrosion and liquation cracking resistance of alloy 617M through grain boundary engineering	11 October 2018-10 October 2021	International Advanced Research Centre for Powder Metallurgy & Materials	272.2	Subramanya Sarma V., Kamaraj M.
31	Development of self-cleaning coatings on glass using TiO ₂ nano particles developed at Indian Rare Earth Limited	6 September 2018-5 September 2021	Indian Rare Earths Limited	78.68	Murty B. S., MM
32	High-entropy alloys for high temperature aircraft components	15 December 2018-14 December 2021	Impacting Research Innovation and Technology - IMPRINT	44.83	Murty B. S., V. Subramanya Sarma, Arul Prakash K.

33	Thermal insulation of toughened yttria stabilized zirconia reinforced with carbon nanotube and graphene for the application of thermal barrier system	5 February 2019-4 February 2021	Science and Engineering Research Board	19.2	Srinivasa Rao Bakshi
34	Tailoring tantalum nitrides and oxy-nitrides and designing electrocatalytic devices for green energy	15 March 2019-14 March 2021	Scheme for Promotion of Academic and Research collaboration	63.83	Ravikumar N. V., K.C. Hari Kumar
35	Investigation of tribological and rolling contact fatigue analysis of AISA 52100 steel with micro and nano additives dispersed in vegetable and mineral oil	11 November 2018-10 November 2021	Science and Engineering Research Board	10.05	Kamaraj M, MM
36	Physical and mathematical modelling of centrifugal atomization process for powder production	26 March 2019-25 March 2022	Science and Engineering Research Board	42.43	Sabita Sarkar, Sreeram Kalpathy
37	Silver nanowire-based transparent and flexible tactile and force sensors	31 December 2019-30 December 2022	Ministry of Human Resource and Development	46.04	Parasuraman Swaminathan, MM
38	Hierarchically designed electrodes of air breathing zinc-ion batteries	4 March 2020-3 March 2023	Science and Engineering Research Board	44.39	Ranjit Bauri, MM
39	Investigation of novel high temperature shape memory alloys for critical applications	6 March 2020-5 March 2023	Science and Engineering Research Board	60.66	Sampath V, MM
40	Quantum mechanically guided design and multi-scale characterisation of novel, interface strengthened multi-principal element compositionally complex alloys	28 March 2019-28 March 2021	Scheme for Promotion of Academic and Research collaboration	68.51	Murty B. S., K.G. Pradeep
41	Processing, joining and microstructure modeling of net shaped casting of primary Al-Zn-Mg Alloys through an Integrated Computational Materials Engineering (ICME) approach	30 April 2019-29 April 2021	Scheme for Promotion of Academic and Research collaboration	73.05	Ranjit Bauri, G. Phanikumar
42	Reviving Bidricraft: a study on alternative patination process with a focus from fundamentals to final technology	1 March 2019-28 February 2021	Department of Science & Technology	36.79	Lakshman Neelakantan, Manas Mukherjee
43	Combinatorial design on novel, rare-earth free permanent magnets	12 June 2019-11 June 2022	Science and Engineering Research Board	49.58	Pradeep K. G., MM

44	Estimation of physical properties of slag and investigation of slag morphology during solidification and development of mathematical model to estimate heat transfer coefficient in continuous casting molds	22 July 2019-21 July 2021	Department of Science & Technology	7.44	Ajay Kumar Shukla, MM
45	Ionogel electrolyte membrane fuel cell (IEMFC) with plasma electrolytic nitrided (PEN) metallic bipolar plate and effective flow field design	2 September 2019-1 September 2022	Department of Science & Technology	56.74	Lakshman Neelakantan, Arul Prakash K., Raghuram Chetty, R. Kothandaraman
46	Understanding the phase stability of oxides and nitrides in the context of fine tuning their functional properties – a combinatorial approach based on computations and experiments	26 June 2019-25 June 2021	Department of Science & Technology	5.67	Ravikumar N. V., K. C. Hari Kumar
47	Oxynitride-composites based low-weight supercapacitor unit: materials enhancement and device development	20 September 2019	Department of Science & Technology	35.99	Tiju Thomas, Ranga Rao
48	Alloy development through artificial intelligence (ADAI)– development of tool steel	7 September 2019-19 September 2022	Mishra Dhatu Nigam Limited	17.28	Gandham Phanikumar
49	Synthesis and characterization of ZrO ₂ dispersed Ti, Ti-6Al-4V, Ti-6Al-5V, Ti-6Al-7Nb composite	1 November 2019-31 October 2022	Science and Engineering Research Board	10.05	Kamaraj M.
50	Rational design of non-stoichiometric transition metal compounds	26 November 2019-25 November 2021	Science and Engineering Research Board	17.64	Satyesh Kumar Yadav
51	Development of technology and processes to produce nanomaterials: nanocomposites, nanocoatings nanolubricants and nanoceramics	18 April 2018-15 April 2021	DST	102.9	Prof. S. S. Bhattacharya
52	Development and tribological study of multilayer nitride coatings on surface modified Co-Cr-Mo alloy against cross-linked polymer surface in wet sliding environment for orthopaedic applications	18 November 2019-17 November 2022	Science and Engineering Research Board	10.05	Kamaraj M.

Industrial consultancy projects (ongoing and new)

Sl.No.	Faculty Member	Title	Industry	Amount (Rs. in lakhs)
New				
1	Pradeep K. G.	Correlative microscopic analysis of advanced ceramics and wear-resistant tool materials	Carborundum Universal Limited	15
2	Srinivasa Murthy B.	Development of non-sticking coating for steel ladles to avoid sticking of slag	JSW Steel Limited	9.91
3	Murugaiyan Amirthalingam and Ravikumar N. V.	Metallurgical analysis of thermit portions used for aluminothermic welding in South Central Railway	South Central Railway	4.45
4	Pradeep K. G.	Correlative microscopy of 617m and 304 steels	Indira Gandhi Centre For Atomic Research	47.9
5	Pradeep K. G.	Microscopic analysis of precipitates in Cu alloyed steels	Common Code	0
6	Subramanya Sarma V.	SEM-EDS-EBSD testing analysis	Common Code	11.8
7	Ranjit Bauri	Conversion process of FW and old aluminium framework to aluminium alloy	L&T Construction	2.36
8	Pradeep K. G.	Correlative analysis of precipitation in steel	Deakin University	1.92
9	Murugaiyan Amirthalingam and K. C. Hari Kumar	Common Code	Testing of C-S and gas analysers	5
10	Murugaiyan Amirthalingam and K. C. Hari Kumar	Common Code	Testing of C-S and gas analysers	5
11	Murugaiyan Amirthalingam	Resistance spot welding process development for fuel tanks	Greaves Cotton Limited	4.62
Ongoing				
1	Srinivasa Rao Bakshi, MM	Characterization and analysis of the materials	Renault Nissan Technology & Business Centre India Private Limited	11.5
2	Sankaran S., MM	Rolling Mill Facility at MFL	Common Code	15
3	Sankaran S., Somnath Bhattacharyya	Central Electron Microscopy Facility	Common Code	5
4	Lakshman Neelakantan, D. G. Janaki Ram	Investigation on the corrosion issue of 30 ft Sardar Vallabhbhai Patel bronze statue: an XRD analysis	Common Code	0

5	Murugaiyan Amirthalingam, B. S. Murty	Technical consultancy on non-ferrous physical metallurgy and failure analysis	Common Code	0
6	Srinivasa Rao Bakshi, MM	Characterization of materials	Common Code	0
7	Kamaraj M., MM	Materials testing, characterisation and analysis	Common Code	0.94
8	Sankaran S., MM	Rolling Mill Facility at MFL	Common Code	15
9	Sankaran S., Somnath Bhattacharyya	Central Electron Microscopy Facility	Common Code	5
10	Ravi Sankar K., S. Ganesh Sundara Raman, A. Murugaiyan	Electrical Discharge Machining (EDM)	Common Code	5
11	Murty B. S., MM	Microstructural analysis and testing	Stork HKB India Private Limited	5
12	Pradeep K. G., MM	National Facility for Atomic Scale Materials Characterization using Remotely Operable Atom Probe Tomography (NFAPT)	Common Code	5
13	Pradeep K. G., MM	National Facility for Atomic Scale Materials Characterization using Remotely Operable Atom Probe Tomography (NFAPT)	Common Code	5
14	Somnath Bhattacharyya, MM	Electron microscopic investigation of steel with various composition and processing conditions	Indira Gandhi Centre for Atomic Research	4.84
15	Pradeep K. G., MM	Correlative microscopy analysis of additive manufactured complex alloys	University of New Brunswick	10.75
16	Durga Janaki Ram Gabbita, MM	Metallurgical consultancy for construction of Chhatrapati Shivaji Maharaj Memorial	L&T Construction	29.5
17	Ravikumar N. V., MM	Failure analysis of metallurgical components	Common Code	0
18	Balasubramanian M., MM	Testing of epoxy composite samples	Common Code	0
19	Ravi Sankar K., MM	Mechanical testing and characterization	Common Code	0
20	Pradeep K. G., MM	Correlative microscopy analysis of 9Cr-1Mo steels	L&T Construction	15
21	Somnath Bhattacharyya, MM	TEM investigation of hot ductile, stress relaxed cracked samples of SANICRO25 and Alloy 617M	Indira Gandhi Centre for Atomic Research	7.25
22	Pradeep K. G., MM	Correlative microscopic analysis of advanced ceramics and wear-resistant tool materials	Carborundum Universal Limited	15
23	Pradeep K. G., MM	Correlative microscopy of 617M and 304 steels	Indira Gandhi Centre for Atomic Research	47.9

24	Pradeep K. G., MM	Microscopic analysis of precipitates in Cu alloyed steels	Common Code	0
25	Subramanya Sarma V., MM	SEM-EDS-EBSD testing analysis	Common Code	11.8
26	Pradeep K. G., MM	Correlative analysis of precipitation in steel	Deakin University	1.92
27	Murugaiyan Amirthalingam, K. C. Hari Kumar	Testing of C-S and gas analysers	Common Code	5
28	Murugaiyan Amirthalingam, K. C. Hari Kumar	Testing of C-S and gas analysers	Common Code	5

RBIC projects (ongoing and new)

Sl.No.	Faculty Member	Title	Industry	Amount (Rs. in lakhs)
1	Gandham Phanikumar, Hari Kumar K. C.	Modeling of segregation behavior of beta stabilization elements during solidification of a beta titanium alloy (containing Fe and/or CR) after vacuum arc melting	Defence Research and Development Organisation	11
2	Sankaran S., Somnath Bhattacharyya	Advanced microstructural studies on ultra high strength steels for armour applications	Defence Research and Development Organisation	32.2
3	Sabita Sarkar, B.V.S.S. Prasad, K. C. Hari Kumar, Srikrishna Sahu	Development of reduction roasting technology using iron ore and coking coal to maximize iron recovery	JSW Steel Limited	22.8
4	Sankaran S., A. Arockiarajan	Effect of dwell time of LCF behaviour of GTM SU - 263	Gas Turbine Research Establishment	68.58
5	Satyesh Kumar Yadav, N. Lakshman, Parasuraman Swaminathan	First principles modeling and combinatorial electrodeposition of Cu-based alloys for IC interconnects	Lam Research Corporation	17.5
6	Somnath Bhattacharyya, MM	Electron microscopic investigation of steel with various composition and processing conditions	Indira Gandhi Centre for Atomic Research	4.84
7	Parasuraman Swaminathan, N. Lakshman	Development of encapsulants for flexible electronics applications	Saint-Gobain Research India Limited	15.46
8	Parasuraman Swaminathan, Kavita Arunachalam	Development of printed antennas for automotive applications	Saint-Gobain Research India Limited	8.5
9	Ranjit Bauri, Kamaraj M.	Wear resistant iron matrix composites for cement and mining industries	FLSmidth Private Limited	16

10	Murty B. S., MM	Development of non-sticking coating for steel ladles to avoid sticking of slag	JSW Steel Limited	9.91
11	Murugaiyan Amirthalingam, MM	Resistance spot welding process development for fuel tanks	Greaves Cotton Limited	4.62

Distinguished visitors to the department

Sl.No.	Name and Designation	Date	Purpose of visit
1	Prof. John Norrish, University of Wollongong, Australia	9-13 December 2019	To deliver GIAN course, Advanced Welding Processes and Metallurgy
2	Prof. Ian Robertson, TU Delft, Netherlands	16-20 December 2019	To deliver GIAN course, Fusion Welding Processes and Methodologies
2	Prof. Mukesh Jain, McMaster University, Canada	23 November-13 December 2019	For discussions on SPARC projects
4	Prof. Hamish Fraser, Ohio State University	27 September-4 October 2019	For discussions on SPARC projects
5	Prof. Sanjay Mathur, University of Koln, Germany	24 February-8 March 2020	For discussions on SPARC projects
6	Dr. Mona Pierrette Moret, CAMECA, France	9 May 2019	Invited lecture: Electron probe microanalysis quantitative analysis and latest development at CAMECA
7	Prof. Shriram Ramanathan, Purdue University, USA	10 May 2019	Invited lecture: Strongly correlated oxide semiconductors
8	Dr. Richard White, Sales and Marketing Director, Surface and Microanalysis, Thermo Fisher Scientific, East Grinstead, UK	18 June 2019	Invited lecture: Recent advances in surface analysis using X-ray photoelectron spectroscopy
9	Prof. Shampa Aich, Department of Metallurgical and Materials Engineering, Indian Institute of Technology, Kharagpur, India	28 June 2019	Invited lecture: Smart materials based on metallic materials used in actuation
10	Prof. Rajarshi Banerjee, Department of Materials Science and Engineering, University of North Texas, Denton	30 July 2019	Invited lecture: Phase stability, deformation twinning and strain-hardening in FCC-based high-entropy alloys/ complex concentrated alloys
11	Prof. Dilip K. Sarkar, Aluminum Research Centre (CURAL), University of Quebec at Chicoutimi (UQAC)	31 July 2019	Invited lecture: Nanostructured superhydrophobic thin films surfaces with water roll off properties: fundamentals and applications

12	Dr. R. Venkatesan, Scientist G and Group Head OOS, National Institute of Ocean Technology, Chennai	13 September 2019	Invited lecture: Materials in the marine environment
13	Prof. Rajan Ambat, Technical University of Denmark, DK 2800 Lyngby, Denmark	13 August 2019	Invited lecture: Interplay of humidity and electrochemical processes imposing reliability problems in electronics
14	Dr. Dheepa Srinivasan, Chief Engineer, Pratt and Whitney, United Technology Corporation India Private Limited, Bengaluru	5 September 2019	Invited lecture: Additive manufacturing for gas turbine hot gas path components
15	Dr. O. Volkova, Institute of Iron and Steel Technology, TU Bergakademie Freiberg, Germany	22 October 2019	Invited lecture: Atomising new iron based materials—process control and melt optimization
16	Dr. Mert Celikin, University College Dublin, School of Mechanical and Materials Engineering Belfield, Dublin 4, Ireland	15 October 2019	Invited lecture: In-situ high temperature characterization of 3D-printed Ti64 alloys
17	Prof. G. Ramanath, RPI, USA (alumnus, 1990/MT)	16 December 2019	Invited lecture: Molecularly- tailored inorganic nanomaterials and interfaces with novel properties
18	Prof. Sanjay Sampath, Stony Brook University, USA	30 January 2020	Invited lecture: Structurally integrated damage resistant coatings
19	Prof. Guenter Motz, University of Bayreuth, Germany	10 January 2020	Invited lecture: The potential of the polymer-derived ceramics hashtag PDC technology to solve problems of the modern economy
20	Prof. Vilupanur Ravi, Cal Poly Pomona, USA	6 January 2020	Invited lecture: Alloy design, corrosion and biocompatibility studies of candidate implant alloys
21	Dr. Dheepa Srinivasan, Pratt and Whitney R&D Center, Bengaluru, India	7 February 2020	Invited lecture: Gas turbine component life extension via advanced coating technologies
22	Dr. Stefan Zaefferer, MPIE Düsseldorf, Germany	27-31 January 2020	Bilateral discussion and to deliver invited lecture series on diffraction in scanning electron microscope

4.15 Department of Ocean Engineering

4.15.1 Introduction

The Ministry of Education and Social Welfare, as per the decision of Council of Indian Institute of Technology, established the Ocean Engineering Centre of IIT Madras in 1977 based on the recommendation of the committee headed by Dr. Y. Nayudamma. The department is to act as a Centre of Excellence for advancing the frontiers of science and to provide breakthrough technology and develop education and training programmes in the field of ocean engineering. A national advisory committee consisting of the representatives of the then Ministry of Education and institutions such as Council of Scientific and Industrial Research (CSIR), University Grants Commission

(UGC), Department of Science & Technology (DST), Oil and Natural Gas Corporation (ONGC) and Engineers India Limited (EIL), other IITs and user industries with the Director, IIT Madras as the chairman monitored the progress of the department over the years. A review committee headed by Prof. M.G.K. Menon also reviewed the progress of the department in 1982, and its recommendation has since been implemented towards progress of the department as an independent centre of excellence. Even since, several peer reviews were done and recommendations were implemented. The last review of the department was done in 2013. The recommendations of this review have also been implemented by the department.

4.15.2 Academic Programmes

B.Tech and M.Tech (Dual Degree) in Naval Architecture and Ocean Engineering, B.Tech and M.Tech (Dual Degree) in Naval Architecture and Applied Mechanics, M.Tech in Offshore Structures (before Ocean Engineering), M.Tech in Ocean Technology - UoP (MoES), M.Tech in Petroleum Engineering, M.S. and Ph.D in Ocean Engineering (OE) and Petroleum Engineering (PE).

New courses introduced

Sl. No.	Course No.	Title
1	PE5010	Petroleum Geomechanics
2	PE6040	Advanced Seismic Data Analysis and Interpretation
3	PE6050	Exploration and Formation Evaluation of Oil and Gas Reservoirs

New lab established

1. Development of Reservoir Simulation Laboratory in 2019: Reservoir Simulation Laboratory was developed during the early 2019. The laboratory currently accommodates around 12-15 research scholars working on various flow and transport mechanisms associated with an oil/gas reservoir. The concept of Computational Fluid Dynamics (CFD) is applied in order to characterise complex sub-surface petroleum reservoir. The applications

include enhanced oil recovery; flow through fractured reservoirs; carbonate reservoirs, shale gas reservoir, coal-bed-methane reservoirs; tight-gas reservoirs, CO₂ sequestration, reservoir compaction and land-subsidence; multi-stage hydraulic-fracturing; low-salinity water flooding; pressure transient analysis; heavy-oil extraction; onshore and offshore oil spill.

2. Triaxial Loading facility for geomechanical estimations as part of Petroleum Geomechanics Lab

Students on roll as of September 2019+M.S. and Ph.D admission in January 2020

Programme	Year I	Year II	Year III	Year IV	Year V and Others	Total
B.Tech.	58	34	33	1	5	159
Dual Degree	3	15	18	17	20	73
M.Tech.	30 (OE - 23, PE - 7)	31 (OE - 24, PE - 7)	-	-	-	61
M.S.	20	9	8	2	2	41
Ph.D.	16	37	27	18	79	177
Total	127	126	86	38	106	511

Student/Scholar who attended conferences/seminars/workshops/symposia abroad/India

Sl. No.	Student/ Scholar	Roll No.	Conferences/ Seminars/ Symposia/ Workshops	Date and Venue	Financial Assistance from
Abroad					
1	Shantanu Pandey	OE16S014	8th International Conference on Engineering and Innovative Materials (ICEIM)	Tokyo Denki University, Tokyo, Japan, 6-8 September 2019	IIT Madras
2	Shashank Sharma	OE15D205	"The 6th International Conference on Renewable Energy Technologies (ICRET 2020)"	8-10 January 2020 Perth, Australia	Curtin University, Australia for international student support
3	Kunal Tiwari	OE14D025	5th International Conference on Ocean Engineering (ICOE 2019)	29 July-1 August 2019, Mauritius	ICOE
4	Akhil Balagopalan	OE15D001	5th International Conference on Ship Manoeuvring in Shallow and Confined Water (MASHCON)	19-23 May 2019, Ghent, Belgium	IITM
5	Tapas Kumar Das	OE15D016	The 13th European Turbomachinery Conference (ETC)	8-12 April 2019, Lausanne, Switzerland	
6	F. A. Varghese	OE17D022	Proceedings of 5th International Conference in Ocean Engineering (ICOE 2019)	28 July-1 August 2019, Mauritius	
7	K. Murali	OE16D017	Numerical analysis of blade lean in ocean energy harvesting turbine, 15th Asian International Conference on Fluid Machinery (AICFM15)	25-27 September 2019, Busan, Korea	
8	Sandip Banerjee	OE16D019	The X International Conference, Current Problems of Optics of Natural Water (ONW'2019)	9-11 October 2019	IIT Madras
9	Rashmita Sahoo	OE15D005	The X International Conference, ONW'2019	9-11 October 2019	IIT Madras

India					
1	Susmit Chakraborty	BT16D301 (Interdisciplinary)	8th International Groundwater Conference on Sustainable Management of Soil-Water Resources (IGWC 2019)	21-24 October 2019, IIT-Roorkee, India	IIT Madras
2	Vishnu Vijayasankar	OE16S017	India & IEEE-(OES) Conference on Technologies for Renewable Energy and Water- INDACON 2019	7-9 March 2019, Chennai, India	Vishnu Vijayasankar
3	Vishnu Vijayasankar	OE16S017	International Conference on Mechanical Engineering Design (ICMECHD 2019)	18-19 April 2019, Chennai, India	Vishnu Vijayasankar
4	P. Madhan Kumar	OE15D027	International Conference on Mechanical Engineering Design (ICMECHD 2019)	18-19 April 2019, Chennai, India	P. Madhan Kumar
6	Gautam Maurya	OE17S020	ASME GTIndia Conference 2019	5-6 December 2019, Chennai, India	Gautam Maurya

Students/Scholars who won outside prizes and awards

Sl.No.	Student/Scholar	Roll No.	Prize	Prize awarded by
1	Suman Kumar	OE19S002	Best paper	ASME GT India conference
2	Rakesh Kumar Singh	OE12D028	Institute Research Award 2018-19 (The IR award consists of a merit certificate and a cash award of Rs. 20,000)	IIT Madras
3	John Ashlin	OE14D200	Institute Research Award	IIT Madras
4	John Ashlin	OE14D200	Prof. Vallam Sundar prize	IIT Madras
5	Ashok Kumar S.	OE15D021	Meritorious winner in poster session for young scholars and outstanding winner	22 July-2 August 2019, International Summer School Programme on Ocean Engineering at Shanghai China
6	Ashok Kumar S	OE15D021	Outstanding winner in the Model Ship Design and Racing Competition	22 July-2 August 2019, International Summer School Programme on Ocean Engineering at Shanghai China

7	Saravanan Gurusamy	OE13D203	ASME Outreach for Engineers Specialty Forum Scholarship of \$600, 9-13 June 2019, Glasgow, UK	
8	V. Prabu Kumar	OE14D028	ASME Outreach for Engineers Specialty Forum Scholarship of \$600, 9-13 June 2019, Glasgow, UK	
9	Vignesh Chellappan	OE15D023	ASME Outreach for Engineers Specialty Forum Scholarship of GBP 550, 9-13 June 2019, Glasgow, UK	
10	Mainak Chakraborty	OE17S022	Best Poster Presentation Award for the paper titled, Numerical investigation of microbial transport in a saturated reservoir system	IGWC 2019, IIT Roorkee, 21-24 October 2019
11	Shantanu Savita Pandey	OE16S014	Best Paper Award - First place for the paper, Weight spacer design for elevated temperature conditions to mitigate barite settling by identifying suitable viscosifier	ICEIM, Tokyo Denki University, Tokyo, Japan, 6-8 September 2019

4.15.3 Faculty and Their Activities

Faculty

Name and Qualifications Professors	Major Areas of Specialisation
Prof. K. Murali (Head)	Numerical modelling of coastal hydrodynamics, sediment transport and pollutant transport, CFD modelling for pollutant transport, CFD application to ship and underwater hydrodynamics
Prof. S. K. Bhattacharya	Ship and offshore structures, structural dynamics, fluid-structure interaction, finite element method, dynamics of floating bodies, ocean acoustics, controllability of marine vehicles
Prof. R. Sundaravadivelu	Computer-aided analysis, design and experimental studies of coastal and offshore structures, port and harbour structures
Prof. S. A. Sannasiraj	Wave-structure interaction, breaking waves, numerical modeling of nonlinear wave propagation
Prof. S. Surendran	Ship motion analysis and control, ship structures and alternate materials for ship construction
Prof. P. Krishnankutty	Ocean wave-structure interaction, ship hydrodynamic interactions, ship motions and controllability, biomimetic propulsion for marine vehicles
Prof. S. Nallayarasu	Analysis and design of offshore structures, wave structure interaction, hydrodynamic response of spar hulls, damping elements in floating systems
Prof. Srinivasan Chandrasekaran	Nonlinear dynamic analysis of offshore compliant structures, earthquake-resistant analysis and design of structures, modal pushover analysis of framed structures, base isolated structures, semi-active damping devices for response control of structures, seismic analysis of offshore structures, shell structures under shock and impact loads
Prof. P. Shanmugam	Oceanography, coastal zone management, ocean optics and acoustics imaging radiative transfer modelling and algorithm development
Prof. R. Panneer Selvam	Stochastic modelling and simulation analysis, system identification, nonlinear dynamical fluid structure systems—applications in ocean and wind engineering

Prof. G. Suresh Kumar	"Reservoir engineering and reservoir simulation, enhanced oil recovery flow through fractured/shale-gas/CBM reservoirs"
Prof. Palaniswamy Ananthakrishnan	Ship hydrodynamics: resistance and seakeeping biomimetic propulsion and control of marine vehicles finite-difference analysis of nonlinear wave hydrodynamics
Dr. Jitendra Sangwai	Enhanced oil recovery, flow assurance, nanotech applications for O&G, gas hydrates in bulk and porous media, rheology of complex fluids, drilling fluids, polymer science, PVT studies
Dr. Rajiv Sharma	Design of deep water drilling solutions and floating structures; computer-aided geometric design, computational geometry, visualization, and their applications in design, robotics and manufacturing; dynamic data driven forecasting systems; and participatory/democratic economy
Dr. Abdus Samad	Marine energy, fluid machinery, design optimization
Dr. Nilanjan Saha	Offshore wind and wave energy, dynamics of offshore structures, extreme value statistics and fatigue, nonlinear methods in ocean engineering, offshore soil-structure interaction, stochastic processes, filtering and identification

Associate Professors

Dr. Rajesh R. Nair	Petroleum: geomechanics, fracturing and recovery process, geostatistics for reservoir modeling and seismic characterization and near surface geophysics including ground penetrating radar data analysis and seismic refraction
Dr. Deepak Kumar	Structural dynamics, random vibration, nonlinear dynamics, stochastic control and stability, time-frequency domain analysis, structural dynamics experiments
Dr. V. Sriram	Numerical modeling/computational hydrodynamics meshfree methods, hydro-elasticity violent wave-current-structure interactions, experimental wave generation and extreme wave interactions
Dr. R. Vijay Kumar	Marine hydrodynamics, warship design, submarine design

Assistant Professor

Dr. Tarun K. Chandrayadula	Signal processing and propagation modeling
Dr. Suresh Rajendran	Numerical modelling of fluid-structure interaction, nonlinear ship dynamics and hydrodynamics, hydroelasticity, maneuvering in waves, parametric rolling of ships
Dr. Abhilash Sharma (newly joined faculty member)	Ship hydrodynamics
Emeritus Scientist/ Emeritus Professor Prof. V. Sundar	Coastal engineering, coastal structures, fluid flow problems

Short-term courses/workshops/seminars/symposia/conferences organised by the faculty members

Sl. No.	Coordinator(s)	Title	Period
Conference			
1	Prof. S. A. Sannasiraj, Prof. K. Murali, Prof. V. Sundar	Fifth International Conference in Ocean Engineering, Mauritius	28 July-1 August 2019

Workshops

1	Prof. P. Shanmugam	Coastal and Ocean Vulnerability Assessment using Geospatial Technologies	22 April-12 May 2019
2	Prof. K. Murali	Workshop of Deputy Conservators of All Ports	30 April 2019
3	Prof. K. Murali	Training on CIRIA Manual for Cost Standards of Dredging Equipment	12-13 September 2019
4	Prof. Doug Schmitt, Purdue University, USA	GIAN workshop on Petrophysical modeling	5 days, October 2019
5	Prof. Vamegh Rassouli, University of North Dakota, USA	GIAN workshop on Geomechanical modeling	5 days, November 2019
6	Dr. Abdus Samad	One-day National Symposium on Modelling of Marine Energy Systems	1 November 2019
7	Abdus Samad	Automated optimization	19-23 August 2019

Short-term Course

1	Prof. P. Krishnankutty and Dr. R. Vijayakumar	Experimental Hydrodynamics	21 October-1 November 2019
2	Prof. S. Nallayarasu	Design of Offshore Structures - Module 4	16-20 April 2019
3	Prof. S. Nallayarasu	Design of Offshore Structures - Module 5	20-25 May 2019
4	Prof. S. Nallayarasu	Design of Offshore Structures - Module 1	26-30 August 2019
5	Prof. S. Nallayarasu	Design of Offshore Structures - Module 2	16-21 September 2019
6	Prof. S. Nallayarasu	Design of Offshore Structures - Module 3	21-25 October 2019
7	Prof. S. Nallayarasu	Design of Offshore Structures - Module 4	25-29 November 2019
8	Prof. S. Nallayarasu	Design of Offshore Structures - Module 5	16-20 December 2019
9	Prof. S. Nallayarasu	Design of Offshore Structures - Module 1	19-23 November 2019
10	Prof. S. Nallayarasu	Design of Offshore Structures - Module 2	7-11 January 2020
11	Prof. S. Nallayarasu	Design of Offshore Structures - Module 3	10-14 February 2020
12	Prof. S. Nallayarasu	Design of Offshore Structures - Module 4	16-20 March 2020

Short-term courses/workshops/seminars/symposia/conferences/trainings attended by the faculty members in academic institutions and public sector undertakings

Sl. No.	Faculty Member	Title	Institution	Period
Conferences				
1	Prof. P. Krishnankutty	5th International Conference on Ocean Engineering (ICOE 2019), Mauritius	University of Mauritius	29 July-1 August 2019
2	Prof. P. Krishnankutty	2nd International Conference on Smart & Green Technology for Shipping and Maritime Industries	ASRANet, Glasgow, UK	11-12 July 2019

3	Prof. P. Krishnankutty	International Conference on Coastal and Inland water Systems (CIS 2019)	Bhubaneswar, India	16-17 December 2019
4	Prof. Abdus Samad	Proceedings of 5th International Conference in Ocean Engineering (ICOE 2019)	Mauritius	27 July-2 August 2019
5	Prof. Abdus Samad	13th European Wave and Tidal Energy Conference	Italy	1-6 September 2019
6	Prof. V. Sundar	Coastal Structures Conference	Tampa, USA	30 September-2 October 2019
7	Prof. V. Sundar	IEEE OCEANS 2019 Conference	Marseilles, France	17-20 June 2019
8	Prof. V. Sundar	5th International Conference in Ocean Engineering, ICOE 2019	Mauritius	29 July-1 August 2019
9	Prof. K. Murali	5th International Conference in Ocean Engineering, ICOE 2019	Mauritius	29 July-1 August 2019
10	Prof. K. Murali	Brief visit of United Kingdom to visit city, as an academic visitor	University of London	22 May-4 June 2019
11	Prof. S. Surendran	38th International Conference on Ocean Offshore and Arctic Engineering	Glasgow, Scotland, UK	9-14 June 2019
12	Prof. Nilanjan Saha	Brief visit of Slovenia, Spain and Croatia; visit to MCU offices for discussion; 7th International Conference on Marine Structures (MARSTRUCT 2019)	Slovenia, Spain and Dubrovnik, Croatia	3-12 May 2019
13	Prof. R. Sundaravadivelu	MARSTRUCT2019	Dubrovnik, Croatia	16-23 May 2019
14	Dr. Tarun K. Chandrayadula	CTBTO Science and Technology Conference 2019 (SnT2019)	Vienna, Austria	24-28 June 2019
15	Prof. S. A. Sannasiraj	IEEE-Oceans 2019 Conference; visit to University of Nice, Ecole Civil Engineering, MoU for student exchange	Marseille, France	17-21 June 2019

Meeting

1	Prof. V. Sundar	APAC International Scientific Executive Committee Meeting	Ho Chi Minh City and Hanoi, Vietnam	26-28 September 2019
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Special lectures delivered by the faculty in other institutions

Sl. No.	Faculty Member	Topic of Lecture	Institution	Date
1	Prof. Abdus Samad	Indo-German Centre for Sustainability workshop, Towards Resilient Energy Systems	Technische Universität, Berlin, Germany	2019
2	Prof. Abdus Samad	International Seminar on Ocean Energy	Saga University	4 March 2019
3	Prof. P. Shanmugam	Idea Challenge and Innovation 2020	AMET University, Chennai, India	20 February 2020

4	Prof. P. Shanmugam	Geospatial Technology	Department of Earth Sciences, University of Madras	19-20 February 2020
5	Prof. P. Shanmugam	Special lecture on Faculty Development Program	AMET University, Chennai, India	17 January 2020
6	S.A. Sannasiraj	Wave Energy Assessment, Challenges and Options in India	IIT Bombay	30 September-1 October 2019
7	S.A. Sannasiraj	Ocean Energy: Potential, Assessment and Challenges in India	Indian Maritime University, Chennai	5 November 2019
8	S.A. Sannasiraj	Coastal Protection Measures along the coast of Kerala	NIT Calicut	11 December 2019
9	S.A. Sannasiraj	Tsunami and its Effects on Coastal Structures	NIT Calicut	11 December 2019

Visits abroad by faculty

Sl. No.	Faculty Member	Country Visited	Date	Purpose of Visit	Funding from
1	Prof. P. Krishnankutty	USA	June 2019	Texas A&M	Project
2	Prof. P. Krishnankutty	UK	July 2019	Conference	CPDA/Project
3	Prof. P. Krishnankutty	Mauritius	July 2019	Conference	CPDA/Project
4	Prof. Abdus Samad	USA	19 May-3 June 2019	Research	NREL-USA
5	Prof. Abdus Samad	Italy	1-6 September 2019	Conference	CPDA, PCF
6	Prof. Abdus Samad	Mauritius	27 July-2 August 2019	Conference	CPDA, PCF
7	Prof. Abdus Samad	Japan	3-7 March 2019	Seminar	Saga University, Japan
8	Prof. P. Shanmugam	Institute of Oceanography, Hangzhou, Zhejiang, China		Visiting Ocean - Star Professor in the State Key Laboratory of Satellite Ocean Environment Dynamics (SOED), Second Institute of Oceanography, Hangzhou, Zhejiang, China	China
9	Prof. V. Sundar	Tampa, USA	27-30 May 2019	Coastal Structures conference	Project
10	Prof. V. Sundar	Marseilles, France	18-20 June 2019	To present a paper in IEEE Oceans 2019 conference	Project
11	Prof. V. Sundar	Mauritius	29 July-1 August 2019	5th International Conference in Ocean Engineering (ICOE 2019)	Project

12	Prof. V. Sundar	Ho Chi Minh City and Hanoi, Vietnam	26-28 September 2019	APAC International Scientific Executive Committee Meeting	Project
13	S.A. Sannasiraj	Marseille, France	16-22 June 2019	IEEE-Oceans 2019	Project
14	S.A. Sannasiraj	Melbourne, Australia	10-14 November 2019	Waves Conference	Project
15	Prof. S. Nallayarasu	Malaysia	31 March-2 April 2019	Meeting with a client	Project
16	Prof. S. Nallayarasu	Malaysia	4-5 May 2019	Meeting with a client	Project
17	Prof. S. Nallayarasu	Malaysia	14-15 May 2019	Meeting with a client	Project
18	Prof. S. Nallayarasu	Malaysia	26 July 2019	Meeting with a client	Project
19	Prof. S. Nallayarasu	Malaysia	28 September 2019	Meeting with a client	Project
20	Prof. S. Nallayarasu	Malaysia	6-8 October 2019	Meeting with a client	Project
21	Prof. S. Nallayarasu	Malaysia	4-6 December 2019	Meeting with a client	Project
22	Prof. S. Nallayarasu	Malaysia	16-17 January 2020	Meeting with a client	Project
23	Prof. S. Nallayarasu	Malaysia	20 February 2020	Meeting with a client	Project
24	Prof. K. Murali	UK	May-June 2019	Academic visitor	Project
25	Prof. K. Murali	Belgium	September 2019	Ministry of Shipping delegation	Project

Honours and awards obtained by faculty

Sl. No.	Faculty Member	Award	Awarded by	Date of Award
1	Prof. V. Sundar	Fellow	Indian National Academy of Engineering (INAE)	1 November 2019

Fellowships of academies and professional societies

Sl. No.	Faculty Member	Year of Admission
Others		
1	Dr. P. Krishnankutty	RINA Vice President (Asia Region) and Council Member, The Royal Institution of Naval Architects (RINA), London, September 2019 - present
2	Abdus Samad	ASME, 2019
3	Abdus Samad	IMechE, 2019
4	Abdus Samad	IE-India, 2019

Journal Editorial Boards

Sl. No.	Faculty Member	Position (Editor/Member)	Journal Name
1	Prof. Abdus Samad	Editorial board member	<i>The International Marine Energy Journal (IMEJ)</i>
2	Prof. Abdus Samad	Associate Editor	<i>International Journal of Fluid Machinery and Systems</i>
3	Prof. Abdus Samad	Editorial board member	<i>The International Marine Energy Journal (IMEJ)</i>
4	Prof. V. Sundar	Member	<i>Journal of Applied Water Engineering and Research</i>
5	Prof. V. Sundar	Associate Editor	<i>Journal of Hydro-Environment Research (Elsevier Publishing Co.)</i>
6	Prof. V. Sundar	Associate Editor	<i>Ocean Engineering (Elsevier Publishing Co.)</i>
7	Prof. V. Sundar	Member	<i>Institution of Mechanical Engineers, Part M: Journal of Engineering for the Maritime Environment</i>
8	Prof. V. Sundar	Associate Editor	<i>Indian Society of Hydraulics journal</i>
9	Prof. V. Sundar	Member	<i>JAWER - Journal of Applied Water Engineering and Research</i>
10	Prof. V. Sundar	Member	Fourth Editorial Board of <i>China Ocean Engineering</i>

4.15.4 Design and Development Activities

Developed new turbines for navigational buoy

Brief and specific details of process/instruments/equipment/software designed and developed
As a first step in the commercialisation of technology: Fabrication license of the technology for

Enhanced oil and gas recovery trademarked by IITM and (Permeate IOR and EOR) invented by Prof. Rajesh R Nair is sold out to Techno Industrial Marketing Pvt Ltd

New facilities added or major equipment procured

Sl. No.	Equipment	Value (Rs. in lakhs)
1	Triaxial Loading equipment	15
2	Planar Motion Mechanism in Towing Tank (Prof. P. Krishnankutty)	50
3	Floating False Bottom in Towing Tank (Prof. P. Krishnankutty)	20
4	Biomimetic (Oscillating Foil) Propulsion Test System (Prof. P. Krishnankutty)	15

Patents

Patents filed

Sl. No.	Faculty Member	Topic of Patent
1	Rajesh R. Nair	Permeate IOR and EOR
2	V. Sundar, S. A. Sannasiraj, K. Murali, V. Sriram	IDF 1693: Method and system providing data modeling for one or more zones in a marine domain

4.15.5 Research and Consultancy

Sponsored research projects (ongoing and new)

Sl. No.	Title	Period	Funding Agency	Amount (Rs. in lakhs)	Coordinators
1	Development of bio-mimetic autonomous underwater vehicles (BAUV) for maritime surveillance (Phase I)	January 2020-December 2023	Naval Research Board	201.72	Prof. P. Krishnankutty, Prof. T. Asokan, Dr. R. Vijayakumar, Dr. Suresh Rajendran
2	Controllability of ships in harbour and navigational channels	March 2018-March 2021	Ministry of Surface Transport	90.912	Prof. P. Krishnankutty
3	Experimental investigations and parametric optimization of spherical helical free flow hydrokinetic water turbines using towing tank tests	2019-2022	DST-TARE	10.05	PI: D. Muruganandam, Co-PI: Prof. Abdus Samad
4	A new motor-pump coupling for a progressive cavity pump	2019-2020	IIT Madras	2	PI: Prof. Abdus Samad
5	Powering defense surveillance system by ocean waves	2019-2020	IIT Madras	2	PI: Prof. Abdus Samad
6	Optimization of wave energy system - a primitive model for Indian coastal lines	2019-2021	DST/DAAD	6.64	PI: Prof. Abdus Samad, PI: Nithya Venkatesan
7	Development of a strategy for optimal power production from 100 kW class horizontal axis tidal turbines	2018-2021	DST-KNRF	32	PI: Prof. Abdus Samad/Shin-Hyung Rhee, Co-PI: Nithya Venkatesan
8	An automated optimization framework for turbomachinery design	2017-2019	GTRE- DRDO	34	PI/Co-PI: Abdus Samad, B.V.S.S.S. Prasad
9	Assessment of sea surface solar radiation and pCO ₂ fluxes in coastal and estuarine waters using OCM-2/OCM-3 data	2017-2021	IITM-ISRO Cell	25.56	Prof. P. Shanmugam
10	Estimation of heat content and its variability depending on the determining factors in the Arctic seas from multi-mission satellite and in-situ observation data (Indo-Russian)	2020-2022	Indo-Russian Project	27.57	Prof. P. Shanmugam (Foreign PI: O.V Kopelevich, P.P. Shirshov Institute of Oceanology, Russia)

11	Assessment tool for assessing the impact of ship/boat wake waves on the banks and protection measures for inland waterways	March 2018-March 2021	Ministry of Shipping	69.51	Prof. K. Murali and Dr. V. Sriram
12	Inlet dynamics and shoal process-a complete numerical, laboratory and field study	March 2018-March 2021	Ministry of Shipping	63.51	Prof. K. Murali
13	New concepts of pile supported breakwater with berthing facility	March 2018-March 2021	Ministry of Shipping	59.11	Prof. S. A. Sannasiraj
14	Potential impact of climate change on extreme waves and wave induced sediment transport coastal erosion siltation and shoreline shifts, DST	March 2018-March 2023	DST	34.46	Prof. S. A. Sannasiraj
15	Prediction of coastal morphological changes due to climate change variation of sea level rise, DST	March 2018-March 2023	DST	34.46	Prof. S. A. Sannasiraj
16	Effects and adaptation for sea level rise on major coastal infrastructure in India, DST	March 2018-March 2023	DST	95.96	Prof. K. Murali, Prof. S. A. Sannasiraj, Prof. R. Sundaravadivelu
17	Implementation of Coastal Management Information System (CMIS)	15 February 2020-15 February 2021	Central Water Commission, Department of Water Resources Government of India	414.31	Prof. K. Murali, Prof. S. A. Sannasiraj
18	Advanced ship manoeuvring prediction based on machine learning and artificial intelligence for autonomous ship navigation	15 May 2019-14 May 2021	Scheme for Promotion of Academic and Research collaboration	43.13	Suresh Rajendran
19	Development of numerical and experimental model for unified seakeeping and manoeuvring of ships in seaway	6 May 2019-5 May 2022	Science and Engineering Research Board	35.28	Suresh Rajendran
20	Vortex induced vibration of slender cylindrical structures and cables under wave and current	23 November 2016-22 November 2020	Naval Research Board	51	Prof. S. Nallayarasu and Prof. S.K. Bhattacharyya
21	Shelf sea and shelf break processes of the Antarctic margins and the production of dense shelf water	July 2019-June 2021	NCPOR	23	Prof. K. Murali and Dr. Manikandan Mathur

Industrial consultancy projects (ongoing and new)

Sl. No.	Faculty Member	Title	Industry	Amount (Rs. in lakhs)
1	P. Krishnankutty	Hydrodynamic (CFD) analysis of a fast patrol vessel	Mazagon Docks	7
2	P. Krishnankutty	Resistance, propulsion and seakeeping model tests for a FBOP hull	Cochin Shipyard	25.5
3	P. Krishnankutty	CFD analysis for FPV hull form	Goa Shipyard	
4	P. Krishnankutty	Bare hull resistance estimation for NGMV vessel	Mazagon Docks	6
5	Dr. R. Sundaravadivelu, Dr. P. Shanmugam	Land subsidence studies in Ramnad basin using SAR interferometry and field techniques		138
6	Prof. R Sundaravadivelu, Prof. P Shanmugam	Subsidence studies in ONGC's operational area in onshore Ramanathapuram PML Block, Ramanathapuram district	Oil and Natural Gas Corporation Limited	138.06
7	Dr. V. Sundar	Sea coast protection for Vazhakkuttam and Ottamassery in Alappuzha district, Kerala	Irrigation Division Alappuzha	14.16
8		Shore protection works in Vypin coastal area in Ernakulam district – studies and mitigation measures	Kerala State Coastal Area Development Corporation Limited	35
9		Shore protection works from Kollam Beach to Thanni in Kollam district	Kerala State Coastal Area Development Corporation Limited	8.26
10		Wave flume studies for the proposed breakwaters at Arcottuthurai Fishing Harbour	Indomer Coastal Hydraulics Private Limited)	2.75
11		Technical study on GRW system of protection of walkway and flexi geotextile tubes as submerged groins for beach reclamation	Department of Tourism	27.14
12		Field monitoring of shoreline changes and intake basin for SWIO system for a period of three years at sea water intake and outfall system for 2x8002x800 MW SDSTPS Nellore (A.P.)	WAPCOS Limited	127.82
13		Periodical monitoring of the received body at the discharge point (diffuser outlet point) for SWIO system for a period of three years at 2x800 MW SDSTPS Nellore (A.P.)	WAPCOS Limited	74.17
14		Study for removal of lock at HDC and extended monitoring study of shopping channel leading to HDC	Kolkata Port Trust	297.4
15		Consultancy services for conducting LNG jetty dredging study by NTCPWC	Kamarajar Port Trust	30.68

16	Prof. S. Nallayarasu	Feasibility study of Kandla Jetty for erection of MLA	Aegis Logistics Limited	10
17	Prof. S. Nallayarasu	Consultancy services for alternate design of NQL platform topsides of ONGC's new LQ and revamp	L&T Hydrocarbon Engineering Limited	8
18	Prof. S. Nallayarasu	Assessment of D30-2 Jacket Leg damaged during installation for in service condition for Cluster-8 Marginal Fields Project of ONGC	L&T Hydrocarbon Engineering Limited	15
19	Prof. S. Nallayarasu	Pre-bid engineering for Mozambique LNG E-house project	L&T Hydrocarbon Engineering Limited	10
20	Prof. S. Nallayarasu	Feasibility study for additional well slot in RF (3Nos.), RH (2Nos.) and RB (2Nos.) platform project	Petro6 Engineering & Construction Private Limited	17.33
21	Prof. S. Nallayarasu	Pre-bid FEED verification for GOP offshore structures and water intake pipelines - Package 2	Archirodon Construction (Overseas) Company Limited	27
22	Prof. S. Nallayarasu	Preparation of FEED and tender documents for 1 No wellhead PF - D12, 1 Nos pipelines (D12 to 192-5 locations)	Petro6 Engineering & Construction Private Limited	19.55
23	Prof. S. Nallayarasu	Consultancy services towards construction of Breakwaters, Project Varcha at Rambilli, Visakhapatnam	Navayuga Engineering Limited	35
24	Prof. S. Nallayarasu	Preparation of DPR for upgradation/ improvement of water supply system, sewage system, storm water drainage system and rainwater harvesting of JNPT Township	Jawaharlal Nehru Port Trust	135
25	Prof. S. Nallayarasu	Detailed engineering for third chemical berth at Pir Pau	Mumbai Port Trust	50
26	Prof. S. Nallayarasu	Assessment and design of fender replacement for JD-4	Mumbai Port Trust	5
27	Prof. S. Nallayarasu	Detailed feasibility report (DFR) for conversion of car berth (General Cargo Berth) to oil berth at Kamarajar Port, Ennore	Bharat Petroleum Corporation Limited	20
28	Prof. S. Nallayarasu	Consultancy services for estimation of tonnage for Ratna Process Platform	Oil and Natural Gas Corporation Limited	20
29	Prof. S. Nallayarasu	Alternate design based on Mono pile for STS Jetty in Johor - Berth 1 and 2	Sapura Fabrication Sdn Bhd	14.14
30	Prof. S. Nallayarasu	Detailed engineering for deck extension	Petro6 Engineering & Construction Private Limited	8.6
31	Prof. S. Nallayarasu	Consultancy services for estimation of tonnage for NLRNC Project	Oil and Natural Gas Corporation Limited	20
32	Prof. S. Nallayarasu	Verification of pipeline design for HDD crossing under railway crossing for ETBPNMTPL R-LNG pipeline project	India Oil Corporation Limited	45

33	Prof. S. Nallayarasu	Design proof consultancy for of providing separate approach for cargo movement in Swaraj Dweep Jetty in Andaman and Nicobar Island	Andaman and Lakshadweep Harbour Works	25
34	Prof. S. Nallayarasu	Design proof consultancy for widening approach and extension of berthing head by 182m x 21m at Kamorta Island in Nancowry group of islands	Andaman and Lakshadweep Harbour Works	25
35	Prof. S. Nallayarasu	Feasibility study for the offshore platform terminal for loading/unloading at El Gamil, Port Said	TCI Sanmar Chemicals S.A.E	7
36	Prof. S. Nallayarasu	Detailed RC design of intake head structure for MRPL desalination plant	Va Tech Wabag Limited	4
37	Prof. S. Nallayarasu	Detailed structural engineering and design for ONGC HRP III Project - HM & HN Jackets	L&T Hydrocarbon Engineering Limited	120
38	Prof. S. Nallayarasu	Foundation design of new marine arm at liquid jetty of IFFCO Kandla	Indian Farmers Fertiliser Cooperative Ltd	6
39	Prof. S. Nallayarasu	Design and detailing for ocean swimming pool at Aberdeen Water Sports Complex	Andaman Public Work Department	10
40	Prof. S. Nallayarasu	Third party check of works in terms of quality, quantity and timelines for extension and strengthening of existing jetty at Aberdeen and replacement of crane track at Haddo Wharf at Port Blair (Bollard 1 to 41)	Ministry of Shipping	11.88
41	Prof. S. Nallayarasu	Consultancy of up-gradation/modernization to International Cruise Terminal at Indira Dock, Mumbai	Mumbai Port Trust	60
42	Prof. S. Nallayarasu	Pre-bid assistance for CRPO 54 - SFNY -626/635 & 636/645 - New Topside and SFNY-94 & 940 Modification	Petro6 Engineering & Construction Private Limited	10.5
43	Prof. S. Nallayarasu	Technical feasibility and detailed engineering for increase in rail span from 20m to 30m or any suitable span at JNPCT	Jawaharlal Nehru Port Trust	60
44	Prof. S. Nallayarasu	Detailed engineering for deck extension for installation of three additional well slots at LA and LB platforms	Petro6 Engineering & Construction Private Limited	20.9
45	Prof. S. Nallayarasu	Pre-bid assistance for CRPO 51 & 52 - Decks	Petro6 Engineering & Construction Private Limited	26.5
46	Prof. S. Nallayarasu	Design of pipeline stability and intake tower and diffuser dispersion for MRPL desalination plant	Va Tech Wabag Limited	22
47	Prof. S. Nallayarasu	Preparation of detailed feasibility report (DFR) for LPG Import Jetty at Dahej, Gujarat	Hindustan Petroleum Corporation Limited	150

48	Prof. S. Nallayarasu	LNG Petronet Standby Jetty at Dahej - verification of approach trestle design during bid and detailed design stage for arbitration purpose	Afcons Infrastructure Limited	11.8
49	Prof. S. Nallayarasu	Pre-bid structural design for float-over installation of deck and jacket	L&T Hydrocarbon Engineering Limited	9.44
50	Prof. S. Nallayarasu	Engineering services for structural design review and re-analysis for KG-DWN-98/2 project	Sapura Fabrication Sdn Bhd	231
51	Prof. S. Nallayarasu	Preparation of conceptual study - artificial lift for LB platform	Petro6 Engineering & Construction Private Limited	6
52	Prof. S. Nallayarasu	Pre-feasibility study for installation of single point mooring near Tata Power land Dherand near Alibaug for HPCL	Bharat Petroleum Corporation Limited	4
53	Prof. S. Nallayarasu	Infrastructure up-gradation work of existing Ballard Pier Berths (BPS and BPX) for cruise ships and other cargo ships	Mumbai Port Trust	31
54	Prof. S. Nallayarasu	Detailed mooring analysis of barge for positioning and station keeping at Vizhinjam Port area for construction of breakwater	ITD Cementation Limited	10
55	Prof. S. Nallayarasu	Proof-checking for EPC for construction of Jetty-1, Jetty-2 and Tug Berth for LNG Swan at Jaffrabad	Afcons Infrastructure Limited	35
56	Prof. S. Nallayarasu	Feasibility study for preparation of DPR for OTR Ports at Kamorta and Campbell Bay	Ministry of Shipping	207
57	Prof. S. Nallayarasu	Naval Refit Jetty	Andaman Lakshadweep Harbour Works	117
58	Prof. S. Nallayarasu	Review of design for jetty extension	Ministry of Shipping	45.8
59	Prof. S. Nallayarasu	Feasibility study of Kandla Jetty for erection of MLA	Aegis Logistics Limited	10
60	K. Murali	Recirculation study for Indo-Bangladesh 2 X 660 MW Maitree Super Thermal Power Project, Rampal	BHEL	13.9
61	K. Murali	Extended monitoring study of shipping channel leading to HDC and updated numerical model study for removal of lock at HDC/alternate option for Haldia Dock (Phase IV)	KoPT	232.8
62	K. Murali	Geo Physical Survey for DS 3 JNPT	JNPT	7.9
63	K. Murali	Independent Quality Inspection for works of MMT Haldia, Varanasi and Sahibganj and New navigational lock at Farakka	IWAI	16
64	K. Murali	Appointment of technical advisor for revamping and up gradation of firefighting system and associated facilities at oil jetties	DPT	40.1

65	K. Murali	Witnessing pre, post and monthly survey during maintenance dredging at PPT	PPT	7.5
66	K. Murali	Monitoring pre, post and progressive survey for maintenance dredging at JNPT	JNPT	3.75
67	K. Murali	Monitoring of maintenance dredging at Mumbai Harbour channel and JN Port Channel	JNPT	38.5
68	K. Murali	Conducting bathymetry survey on all basins, turning circle, channels, sand trap, port limit (open sea to shoreline) and fishing harbor entrance area in Chennai Port from July 2019 to June 2020	"Chennai Port Trust"	13.66
69	K. Murali	Replacement and revamping of pipeline network at Oil Jetty Area, Kandla	DPT	216
70	K. Murali	Supply, installation, telemetry integration and commission of automated tide gauge (ATG) system in River Hugli and its estuary	KoPT	1009
71	K. Murali	Rehabilitation of LCT jetty at Kachuberia in Block and P.S. - Sagar, Dist-South 24 Paraganas	Government	29
72	K. Murali S A Sannasiraj	Preparation of detailed estimate and detailed drawings and tender document for assessment and rectification of north breakwater	Kamarajar Port Limited	20.88
73	K. Murali	Technical consultancy services for the reconstruction of south coal berth at Cochin Port	Cochin Port Trust	36.5
74	K. Murali	Tranquility study, detailed engineering design of breakwaters and berthing structure	RITES	26
75	K. Murali	Implementation of coastal management information system (CMIS) in the states of Tamil Nadu, Kerala and UT of Pondicherry	CWC	351.1
76	K. Murali	Study of siltation in LNG basin	Petronet	13.5
77	K. Murali	Consultancy services for numerical wave propagation and shoreline change study for planning shore protection scheme of proposed FOB Tuticorin	MES	15.7
78	K. Murali	Annual maintenance, support and management of web-enabled GIS-based integrated land management system for Paradip Port Trust	PPT	43.2
79	K. Murali	Monitoring of maintenance dredging at outer channel and inner harbour area and Bathymetry surveys at channels of Cochin Port	Cochin Port Trust	246.24
80	K. Murali	Project management consultancy services for Project Trident Mauritius	RITES	68

RBIC projects (ongoing and new)

Sl. No.	Faculty Member	Title	Industry	Amount (Rs. in lakhs)
1	P. Krishnankutty, R. Vijayakumar	Hydrostatic and hydrodynamic analysis of manned submersible	NIOT	212.49
2	P. Krishnankutty, T. Asokan	Mathematical and physical modeling for a vessel maneuvering	L&T	135.7
3	P. Krishnankutty	Mazagon Docks projects for enhancement of industry-academia interactions	MDL	5
4	P. Krishnankutty	Study of hydrodynamic effects of shallow bulbous dome for a research vessel	NPOL	11.09
5	Rajesh R. Nair	Geophysical and geotechnical investigations to estimate the source of water at Barmer, Cairn Vedantha site	Cairn Vedantha	56
6	Rajesh R. Nair	Seismotectonics of oil and gas plant at Kukrahati	BCPL	21
7	Rajesh R. Nair	Seismotectonics of oil and gas plant at Kakinada	East Coast Concessions Limited	21
8	Prof. V. Sundar	Implementation of coastal management information system (CMIS)	Central Water Commission, Department of Water Resources, Government of India	414.31
9	Prof. S. Nallayarasu	Development of SIMS for offshore platforms of ONGC	Oil and Natural Gas Corporation Limited	221

Faculty members' participation with other institution under MoU

Sl. No.	Faculty Member	Participation details	University/Institution
1	Rajesh R. Nair	Project Coordinator	Hindustan Oil Exploration Private Limited (IITM-HOEC Advanced Internship for Petroleum Engineering students) based on TEEDE model of Erasmus Plus
2	Rajesh R. Nair	Project Coordinator	MagGenome Private Limited (IITM-MagGeneome Advanced internship for Biotechnology students) based on TEEDE model of Erasmus Plus
3	Rajesh R. Nair	Project Coordinator	Advanced Bosch internship for working at Bosch (open for IITM-RWTH Aachen visiting students), Bengaluru for automobile, biomedical, artificial intelligence for students based on TEEDE model of Erasmus Plus
4	Rajesh R. Nair	Project Coordinator	Advanced internship on artificial intelligence for computer science students working at Bosch Centre, IITM

Distinguished visitors to the department

Sl.No.	Visitor and Designation	Date of Visit	Purpose of Visit
1	Mr. Yong Jae Cho and Mr. GyukPo Park	6-17 January 2019	Bilateral research project
2	An Indonesian team	1 May 2019	Shown the facilities in the department
3	50 students from Sunbeam School, Vellore	5 October 2019	Shown the facilities in the department
4	A Ghana University team	4 July 2019	Visit to DOE
5	Prof. Antonio Pascoal, University of Lisbon	20 August 2019	Under SPARC Programme
6	Mr. Henrik, Vice President, DHI	30 August 2019	Seminar: New developments in MIKE software
7	Prof. Doug Schmitt, Chair Professor, Purdue University, USA	2-13 October 2019	GIAN lectures along with host Dr. Rajesh R. Nair
8	Prof. Vamegh Rasouli, Chair Professor, North Dakota University, USA	11-15 November 2019	GIAN lectures along with host Dr. Rajesh R. Nair
9	Prof. J. Ko	14-17 October 2019	Bilateral research project
10	Emeel Kerikous	15 November-25 December 2019	Bilateral research project

4.15.6 Other Activities of the Department/Centre

Results obtained in research work (from M.S. and Ph.D thesis) of the scholar/faculty

- Madhan Kumar P., Ph.D. thesis: Various novel passive flow control methods are studied to improve the performance of Wells turbine and a significant improvement in the operating range and the torque was reported.
- Suchithra R., Ph.D. thesis: Wave to Wire Modelling and sliding mode control of oscillating water column wave energy converter.
- Tapas Das, Ph.D. thesis: A new Wells turbine blade geometry is developed using design optimization techniques. The numerical and experimental analysis of the new blade geometry shows significant improvement in turbine performance compared to the reference turbine
- Karthikeyan T., Ph.D. thesis: A multi-disciplinary optimisation to analyze and enhance the performance

An international recognition to ocean engineering

Indian Institute of Technology Madras has been ranked 37th in the Ocean Engineering subject ranking declared by Academic Ranking of World Universities (ARWU) 2019. This is the first time we are entering in the marine/ocean engineering subject ranking.

This ranking system was listed as one of the criteria in ocean engineering.

World Rank	Country	Total Score	Institution	PUB
37	India	146.5	Indian Institute of Technology Madras	38.6

of a horizontal axis marine current turbine was reported. This included various studies such as CFD, FEA, FSI, cavitation and unsteady analysis

Interdisciplinary group achievements of the departments

- A project with Hawaii University-USA, Uppdala University-Sweden and the Department of Applied Mechanics-IITM to desalinate water using wave energy. The team won Wave Energy prize of the Department of Energy, USA. The total prize money received was \$10,000.

International collaboration achievements by the Department

- DST-DAAD Project with Otto von Guericke University, Germany

3. Activities initiated

Major infrastructure development made in the department

- Location : Marakkanam Backwaters, East Coast of Tamil Nadu
- Duration : 5 February 2020

Faculty in Limelight

IIT Madras, NIOT Researchers Developing Turbines to Convert Wave Energy to Electricity

The research is being headed at IIT Madras by Dr. Abdus Samad, Associate Professor, Department of Ocean Engineering, who works towards extracting energy from the ocean waves.

Publication: NDTV

The Research Team comprises Mr. Aravind George, Ms. Suchithra Ravikular, Mr. R. Ananthnarayan and Dr. Abdus Samad from the Department of Ocean Engineering, IIT Madras, and Mr. Prasad Dudhgaonkar, Mr. Biren Patnaik, and Dr. Purnima Jalihal from NIOT. Dr. Jalihal is the Head of Energy and Fresh Water Group, NIOT.



Convocation of the Department of Ocean Engineering

The 56th Convocation took place on 30 September 2019 in CLT.



Faculty Academic Achievements

The book of Prof. Srinivasan Chandrasekaran, Department of Ocean Engineering, Structural Health Monitoring with Application to Offshore Structures has been published by World Scientific Publishing Co., Singapore.

Dr. Abdus Samad was elected as Fellow of the Institution of the Mechanical Engineers (IMechE-UK) and conducted interviews for the membership of IMechE from 24-26 May 2019.

Dr. Abdus Samad's book *Swapnatarir Majhi - An Inspirational Memoir* (written in Bengali) got published by Aponzone Publisher, Kolkata.

4.16. Department of Physics

4.16.1. Introduction

The Department of Physics established in 1959. The department conducts research in many frontier areas in the sylvan campus of IIT Madras. These include experimental solid state physics, quantum electronics, optical and laser physics, soft condensed matter physics and various aspects of theoretical and computational physics, ranging from condensed

matter to string theory and cosmology.

The Department of Physics offers a vibrant undergraduate programme, B.Tech. Engineering Physics in conjunction with the Department of Electrical Engineering. The department offers three master's programmes: the Dual Degree (B.S. and M.S.), M.Sc. and M.Tech. programmes in physics. The department also conducts a regular doctoral research (Ph.D.) programme.

4.16.2 Academic Programmes

Engineering Physics (B. Tech.), Dual Degree (B.S. and M.S.), M. Sc., M. Tech. (Functional Materials and Nanotechnology) and Ph.D.

New lab(s) established: M.Tech. Functional Materials and Nanotechnology Laboratory

Students on roll as of September 2019 + M.S. and Ph.D admission in January 2020

Programme	Year I	Year II	Year III	Year IV	Year V and others	Total
B.Tech.	31	30	26	28	4	119
Dual Degree	12	9	10	11	8 + 2	52
M.Sc.	43	40	2	-	-	85
M.Tech.	12	5		-	-	17
Ph.D.	44	39	32	26	36 + 13	190
Total	142	123	70	65	63	463

Endowment prize instituted

1. Dr. Aditi Simha Endowment Prize
2. Dr. Usha Krishnaswami Endowment Prize
3. V. Kalyanasundaram Memorial Prize

Student/Scholar who attended conference/seminar and symposia abroad/India

Sl.No.	Student/Scholar	Roll No.	Conference/Seminar/Symposia/Workshop	Date and Venue	Financial Assistance from
Abroad					
1	B. Sharmila	PH14D041	Conference on Quantum Information & Measurement	4-7 April 2019, Rome, Italy	IIT Madras
2	Pradip Laha	PH13D040	Conference on Quantum Information & Measurement	4-7 April 2019, Rome, Italy	IIT Madras
3	B. Sharmila	PH14D041	Visited the Centre for Optical Quantum Technology	8-9 April 2019, Hamburg, German	IIT Madras
4	Pradip Laha	PH13D040	Visited the University of Camerino, Italy	8-9 April 2019, Camerino, Italy	IIT Madras
5	Anita	PH15D203	Collaboration visit to the University of Oxford	8 April-5 May 2019, Oxford	IIT Madras

6	Pritam Kalbhor	PH16D038	Visited the CMS-CERN (Compact Muon Solenoid), the European organisation for nuclear research	13 April-29 May 2019, Geneva, Switzerland	IIT Madras
7	Subhajit Nandy	PH15D013	2019 MRS Spring Meeting & Exhibit	22-26 April 2019, Phoenix, USA	IIT Madras
8	Niharika Rout	PH16D021	Conference on Flavor Physics and CP Violation (FPCP 2109) at University of Victoria	6-10 May 2019, Victoria, Canada	IIT Madras
9	Anupama Roy	PH13D022	Conference on Statistical Physics of Complex System	7-11 May 2019, Stockholm, Sweden	IIT Madras
10	Malayaja Chutani	PH15D015	Conference on Complex Network, Theory, Methods and Applications, Lake Como School of Advanced Studies	13-17 May 2019, Como, Italy	IIT Madras
11	Niharika Rout	PH16D021	Research visit to KEK	14-29 May 2019, KEK, Japan	IIT Madras
12	T.S. Suraj	PH14D046	Spincaloritronics Meeting	19-24 May 2019, Netherland	IIT Madras
13	Shubhayan Bhattacharya	PH13D205	Conference on Photonics North 2019	21-23 May 2019, Quebec, Canada	IIT Madras
14	T.S. Suraj	PH14D046	EMRS Spring Meeting 2019	27-31 May 2019, Nice, France	IIT Madras
15	Anu B	PH14D023	EMRS Spring Meeting 2019	27-31 May 2019, Nice, France	"European Materials Research Society (E-MRS)"
16	Raghunath Pradhan	PH18D026	CMS-CERN for research work	27 May-10 July 2019, Geneva, Switzerland	IIT Madras
17	Subash Chandra Behera	PH18D015	CMS-CERN for research work	27 May-10 July 2019, Geneva, Switzerland	IIT Madras
18	Mayarani	PH14D035	5th International Soft Matter Conference 2019 (ISMC2019), University of Edinburgh, titled, Structure and Dynamics of Soft Particle Mediated Colloidal Glasses at Planner Interface	3-7 June 2019, United Kingdom	IIT Madras

19	Krishnakumar Ravindran	PH14D008	Gave a talk on "Report on open charm measurements at BESIII" in 27th International Workshop on Weak Interaction and Neutrinos	3-8 June 2019, Italy	IIT Madras
20	Sachin Krishnan TV	PH13D074	Summer school and workshop in multi-scale modelling on title "Morphology of membranes undergoing non-equilibrium area fluctuation"	17-28 June 2019, Netherlands	IIT Madras
21	M Alibordi	PH15D043	Visited Fermilab at Batavia, IL in collaboration with CMS, part of CERN	20 June-10 July 2019, USA	IIT Madras
22	Soumen Pradhan	PH16D044	Visited the CRISMAT Lab for research purpose	22 June-27 July 2019, France	IIT Madras
23	Anju Saroha	PH14D022	10th International Conference on Materials for Advanced Technology 2019 (ICMAT) on title, A Systematic Study on Magnetic and Optical Properties of $Y_3Fe_5O_{12}$ (YIG)	23-28 June 2019, Singapore	IIT Madras
24	Karthika C	PH13D034	10th ICMAT on title, Synthesis, Structural and Magnetic Properties of Single-Layer Ruddlesden-Popper Oxides $RSrFe_{0.5}Co_{0.5}O_4$ (R=Nd and Eu)	23-28 June 2019, Singapore	IIT Madras
25	M. Juvaaid M	PH13D201	10th ICMAT on title, Magneto-Transport Studies on Sulphur-Deficient WS_2 Thin Films Grown Via Pulsed Laser Deposition	23-28 June 2019, Singapore	IIT Madras
26	Anusree V. K.	PH13D206	10th ICMAT on title, Structural and Dielectric Investigation on the Multiferroic Behavior of $HoCrO_3$	23-28 June 2019, Singapore	IIT Madras
27	Dileep K.	PH15D003	10th ICMAT on title, A Cost-Effective Realization of Strong Light-Matter Coupling in Single-Crystalline Microplates of a Layered Metal-Organic-Framework	23-28 June 2019, Singapore	IIT Madras
28	Resmi P. K.	PH14D039	Gave a talk on title, Measurement of the CKM Angle Gamma at Belle II, at 3rd Jagiellonian Symposium on Fundamental and Applied Subatomic Physics 2019	24-28 June 2019, Kraków, Poland	IIT Madras
29	Shashi B. Mishra	PH13D045	International Conference on Advance Material Modelling (ICAMM) on title, Formation of Suspended Fluorine Magnetic Layers in Interrelated Graphene	26 June-7 July 2019, Rennes, France	IIT Madras

30	Sumeet Kumar	PH14D044	3rd Quantitative Infrared Thermography Asian Conference 2019 on title, Simultaneous Determination of Emissivity and Temperature of Titanium at High Temperature	1-5 July 2019, Tokyo, Japan	IIT Madras
31	Resmi P.K.	PH14D039	EPS-HEP Conference 2019	10-17 July 2019, Ghent, Belgium	DST/Alumni
32	Joydev Khatua	PH16D049	International Advance School in Muon Spectroscopy 2019, STFC Rutherford Appleton Laboratory, Didcot	13-25 August 2019, United Kingdom	IIT Madras
33	Biprojit Sana	PH16D053	International Advance School in Muon Spectroscopy 2019, STFC Rutherford Appleton Laboratory, Didcot	13-25 August 2019, United Kingdom	IIT Madras
34	Ranjana Rani Das	PH13D042	International Advance School in Muon Spectroscopy 2019, STFC Rutherford Appleton Laboratory, Didcot	13-25 August 2019, United Kingdom	IIT Madras
35	Induja P	PH17D302	Participated in the 8th International Symposium on Recurrence Plots, Zhenjiang	21-23 August 2019, China	IIT Madras
36	Anusree V. K	PH13D206	16th Oxford School on Neutron Scattering 2019, ISIS Facility, Didcot; gave an oral talk	2-13 September 2019, United Kingdom	IIT Madras
37	Mahima M. Kurian	PH16D047	16th Oxford School on Neutron Scattering 2019, ISIS Facility, Didcot; gave an oral talk	2-13 September 2019, United Kingdom	IIT Madras
38	Sukrut Mondkar	PH17D047	Participated in (i) Saalburg Summer School of MPI Potsdam, Germany (ii) DKPI Summer School, Austria	2-20 September 2019, Germany and Austria	NFSG
39	Aishwarya Chauhan	PH18D022	Participated in 1. Autumn School on Correlated Electron 2. Research collaboration at Freie University and presented the paper, Projective symmetry group classification of quantum spin liquids on the simple cubic lattice	16-27 September 2019, Germany	IIT Madras
40	Vasumathy Ravishankar	PH13D054	Graphene Week 2019, Helsinki	23-27 September 2019, Finland	SERB

41	Soumen Pradhan	PH16D044	Exchange programme on Short-Term Scientific Mission at CRISTMAS	23 September-20 November 2019, France	IIT Madras
42	Shubhayan Bhattacharya	PH13D205	OSA Laser Congress; presented the paper, Effect of polarization on the Raman scattering of the 2D material-Tungsten Di-sulphide	30 September-3 October 2019, Austria	IIT Madras
43	Ajay Piriya	PH15D302	236th ECS Meeting	13-17 October 2019, USA	SERB DST
44	Pradip Laha	PH13D040	Visited Department of Optics and Quantum Optics Laboratory at Palacky University Olomouc for research work	14-18 October 2019, Czech Republic	IIT Madras
45	Ravi Kashikar	PH14D038	Nanofall Meeting 2019 and gave a presentation on title, Occurrence of invariant Dirac states in CsSnI ₃ polymorphs under strain, Berlin	4-8 November 2019, Germany	IIT Madras
46	Md. Mahabul Islam	PH14D036	Nanofall Meeting 2019 and gave a presentation on Electronic and transport properties of novel 2D-pentagraphene system: A density function theory study	4-8 November 2019, Berlin, Germany	IIT Madras
47	Anita A.	PH15D203	Attended BES III Winter Collaboration Meeting at Chinese Academy of Science	17 November 2019-15 January 2020 Beijing, China	IIT Madras
48	Muhammad Alibordi	PH15D043	Visited the Kansas University, Kansas for collaboration work and to analyse Test-Beam data	20 November 2019-20 January 2020, USA	IIT Madras
49	Akshay Kumar	PH15D401	MRS Fall Meeting and Exhibit 2019 and presented poster, Influence of defects and crystallinity on high-rate capability and cycling stability of MoS ₂ nanosheets in intercalation regime	1-6 December 2019, Boston, USA	IIT Madras
50	Swati Dhua	PH15D014	MRS Fall Meeting and Exhibit 2019 and presented poster, Template free fabrication and characterization of vertically aligned BiFeO ₃ nanorods	1-6 December 2019, Boston, USA	IIT Madras
51	Mamta	PH15D200	Workshop titled, Kenyon-IITM Science Writing Workshop, organised by Kenyon College, Gambier, Ohio, USA and IITM	16-19 December 2019, Ohio, USA	IIT Madras

52	Subhajit Pal	PH15D041	International Conference on Physics for Sustainable Development and Technology and presented a poster, Linear bulk photovoltaic effect and photo deflection characteristic on modified BaTiO ₃ base lead free ferroelectric	18-19 December 2019, Chittagong, Bangladesh	IIT Madras
53	Pranab Biswas	PH14D012	International Conference on Physics for Sustainable Development and Technology and presented a poster, Study switchable photovoltaic effect and self-driven photodetector on sol-gel derived BiFeO ₃ thin films	18-19 December 2019 Chittagong, Bangladesh	IIT Madras
54	Niharika Rout	PH16D021	Visited KEK, High Energy Accelerator Research Organization	11 January-9 February 2020, Japan	IIT Madras
55	Malayaja Chutani	PH15D015	NetSci-X 2020: International School and Conference on Network Science and presented a poster, Study of overlaps in scientific collaboration networks	20-23 January 2020, Tokyo, Japan	IIT Madras
56	Soumendra Kumar Das	PH14D013	APS March Meeting 2020 and presented poster, Strain induced tuning and annihilation of Dirac point in topological insulator Bi ₂ Se ₃ (001) surface	2-6 March 2020, Colorado, USA	IIT Madras
57	Mrinal Sarkar	PH13D203	APS March Meeting 2020	2-6 March 2020, Denver, Colorado	IIT Madras

India

1	Sukrut Mondkar	PH17D027	The Myriad Colorful Ways of Understanding Extreme QCD matter (ICTS-TIFR program)	1-17 April 2019, ICTS-TIFR, Bangalore	ICTS-TIFR
2	Anusree V. K.	PH13D206	International Conference on Nano Technology for Better Living, NBL - 2019	7-12 April 2019, NIT, Srinagar	IIT Madras
3	M. Juvaed M	PH13D201	NBL - 2019	7-12 April 2019, NIT, Srinagar	IIT Madras
4	Mayarani M.	PH14D035	International Conference on Nanomaterials 2019	12-14 April 2019, G.M. University, Kottayam	IIT Madras
5	Vetrivel	PH17D300	Nano India-2019	26-27 April 2019, Mahatma Gandhi University, Kerala	IIT Madras

6	Pradip Laha	PH13D040	Workshop on Data Analysis and Machine Learning	24-28 April 2019, IISER, Tirupati	IIT Madras
7	Anusree V. K	PH13D206	International Conference on Advanced Materials, ICAM-2019	12-14 June 2019, Nirmalagiri College, Kerala	IIT Madras
8	Pritha Dey	PH17D006	ICAM-2019	12-14 June 2019, Nirmalagiri College, Kerala	IIT Madras
9	Urvashi Nakul	PH17D048	Participated in ICTS Program of Bangalore School for Statistical Physics - X	17-28 June 2019, ICTS, Bangalore	IIT Madras
10	V. Naga Dileep	PH18D012	Participated in ICTS Program of Bangalore School for Statistical Physics - X	17-28 June 2019, ICTS, Bangalore	IIT Madras
11	Abinash Sahu	PH18D002	Participated in ICTS Program of Bangalore School for Statistical Physics - X	17-28 June 2019, ICTS, Bangalore	IIT Madras
12	Arya C. S.	PH17D028	Participated in ICTS Program of Bangalore School for Statistical Physics - X	17-28 June 2019, ICTS, Bangalore	IIT Madras
13	Sreeram P. G.	PH16D046	Participated in ICTS Program of Bangalore School for Statistical Physics - X	17-28 June 2019, ICTS, Bangalore	IIT Madras
14	Imon Kalyan	PH13D032	Participated in Summer School in Optics and Photonics	17-21 June 2019, IISc Bangalore	IIT Madras
15	Mahima M. Kurian	PH16D047	47th National Seminar on Crystallography at DAE Convention Centre, BARC	19-22 June 2019, Mumbai	IIT Madras
16	Sreejith D. K.	PH15D036	47th National Seminar on Crystallography at DAE Convention Centre, BARC	19-22 June 2019, Mumbai	IIT Madras
17	Rajalekshmi R.	PH16D028	47th National Seminar on Crystallography at DAE Convention Centre, BARC	19-22 June 2019, Mumbai	IIT Madras
18	Harikrishnan R.	PH15D045	47th National Seminar on Crystallography at DAE Convention Centre, BARC	19-22 June 2019, Mumbai	IIT Madras
19	Saroj Kumar Barik	PH16D056	Visited laboratory for the experiments	7-15 July 2019, TIFR Mumbai	IIT Madras
20	Ajay Piriya	PH15D302	26th International Symposium on Metastable, Amorphous and Nanostructured Materials	8-12 July 2019, Chennai, India	IIT Madras
21	Amit Chauhan	PH17D008	2nd Annual Conference on Quantum Condensed Matter	8-10 July 2019, IISc, Bangalore	IIT Madras
22	Ravi Kashikar	PH14D038	2nd Annual Conference on Quantum Condensed Matter	8-10 July 2019, IISc, Bangalore	IIT Madras

23	Guruprasad S. Hegde	PH16D008	26th International Symposium on Metastable, Amorphous and Nanostructured Materials (ISMANAM 2019) Symposium	8-12 July 2019, Chennai	IIT Madras
24	Ajay Priya V. S.	PH15D302	ISMANAM 2019 Symposium	8-12 July 2019, Chennai	IIT Madras
25	Swati Dhua	PH15D014	11th International Exergy, Energy & Environment Symposium 2019	14-18 July 2019, SRM Institute of Science & Technology, Chennai	IIT Madras
26	Subash Chandra Behera	PH18D015	India-CMS-Collaboration Meeting; gave oral presentation, Multiplicity and transverse momentum dependence of two particle correlation and charge balance function and flow measurement	21-24 August 2019, Delhi University	IIT Madras
27	Raghunath Prathan	PH18D026	India-CMS-Collaboration Meeting and presented a poster, Lambda-Lambda correlation and search for exotic particles	21-24 August 2019, Delhi University	IIT Madras
28	Anju Saroha	PH14D022	Visited lab for experiment	22-23 August 2019, IISc, Bangalore	IIT Madras
29	Vishnu P. K.	PH18D005	Short course on Introduction to High Performance Computing	13-14 September 2019, IISc, Bangalore	IIT Madras
30	Midhunlal P. V.	PH14D009	International Conference on Physics of Materials & Nanotechnology (ICPN-2019)	19-21 September 2019, Mangalore University	IIT Madras
31	Vijay K. Sagar	PH15D048	International Conference on Physics of Materials & Nanotechnology (ICPN-2019)	19-21 September 2019, Mangalore University	IIT Madras
32	Anu B.	PH14D023	International Conference on Physics of Materials & Nanotechnology (ICPN-2019)	19-21 September 2019, Mangalore University	ISRO & DRDO
33	Shubhayan Bhattacharya	PH13D205	International Conference on Physics of Materials & Nanotechnology (ICPN-2019)	19-21 September 2019, Mangalore University	IIT Madras

34	Shanmugapriya K.	PH17D202	International Conference on Physics of Materials & Nanotechnology (ICPN-2019)	19-21 September 2019, Mangalore University	IIT Madras
35	Soumyodeep Dey	PH16D041	International Conference on Physics of Materials & Nanotechnology (ICPN-2019)	19-21 September 2019, Mangalore University	IIT Madras
36	Subhajit Pal	PH15D041	International Conference on Physics of Materials & Nanotechnology (ICPN-2019)	19-21 September 2019, Mangalore University	IIT Madras
37	Rahul V. R.	PH17D023	Student conference on Optics And Photonics 2019 and presented a paper: In-Vivo rheology using viscoelastic model and optical tweezers	23-29 September 2019, Ahmedabad, Gujarat	IIT Madras
38	Midhunlal P. V.	PH14D009	7th National Conference on Condensed Matter Physics and Applications (CMPA-2019) and presented paper, Electrical transport and ab initio studies on magnetic moment compensated $Mn_2V_{1-x}Co_xAl$ ($x= 0, 0.25, 0.5, 0.75, 1$) Heusler alloys	27-28 September 2019, Manipal Institute of Technology	IIT Madras
39	Sumanta K. Sahu	PH18D054	Presented poster, Perovskite solar cells at IIT Bombay	15-16 October 2019, IIT Bombay	IIT Madras
40	Akshaya J.	PH15D002	Conference on Quantum Foundation, Technology & Application 2019	18-21 October 2019, IISER, Mohali	IIT Madras
41	Guruprasad	PH16D008	Workshop Training Program of Electrochemical Power System- Li-ion Battery (ECPS02)	21-25 October 2019, Karaikudi, Tamil Nadu	IIT Madras
42	Dipsikha Ganguly	PH16D301	Workshop Training Program of Electrochemical Power System- Li-ion Battery (ECPS02)	21-25 October 2019, Karaikudi, Tamil Nadu	IIT Madras
43	Shakshi Gupta	PH18D007	Short-term course on Spectroscopic Ellipsometry at Jawaharlal Nehru Centre for Advanced Scientific Research	3-5 November 2019, Bangalore	IIT Madras
44	Sai Smruti Samantaray	PH15D009	Participated in DAE-CCS 2019 Symposium	7-9 November 2019, BARC Mumbai	IIT Madras

45	Suhail Ahmad	PH18D018	Conference on Thermolisation, Many Body Localization and Hydrodynamics	11-29 November 2019, ICTS Bangalore	IIT Madras
46	Bibekananda Das	PH16D004	International Conference on Condensed Matter Physics - IEMPHYS 2019	14-16 November 2019, IEM, Kolkata WB	IIT Madras
47	Abinash Sahu	PH18D002	Conference on Thermolisation, Many Body Localization and Hydrodynamics	25-29 November 2019, ICTS Bangalore	IIT Madras
48	Urvashi Nakul	PH17D048	STATPHY Kolkata X and presented poster, A mathematical and computational study of protein friction in the transport of cargo handle by one or more molor proteins	25-29 November 2019, Presidency University, Kolkata	IIT Madras
49	Arya C. S.	PH17D028	STATPHY Kolkata X and presented poster, Super diffusive motion of eukaryotic cell: A stochastic formalism	25-29 November 2019, Presidency University, Kolkata	IIT Madras
50	Anirban Das	PH18D020	National Conference on Electronic Structure: NCES 2019 at SN Bose National Centre for Basic Sciences	27-29 November 2019, Kolkata	IIT Madras
51	Bibekananda Das	PH16D004	International Conference on Laser Deposition (iCOLD) 2019 at Alva's Institute of Engineering & Technology	27-29 November 2019, Mangalore, Karnataka	IIT Madras
52	Rajelekshmi	PH16D028	iCOLD 2019, Alva's Institute of Engineering & Technology	27-29 November 2019, Mangalore, Karnataka	IIT Madras
53	M. Javid Mohammad	PH13D201	iCOLD 2019, Alva's Institute of Engineering & Technology	27-29 November 2019, Mangalore, Karnataka	IIT Madras
54	Dhruba Das	PH15D027	iCOLD 2019, Alva's Institute of Engineering & Technology	27-29 November 2019, Mangalore, Karnataka	IIT Madras

55	Soumen Pradhan	PH16D044	iCOLD 2019, Alva's Institute of Engineering & Technology	27-29 November 2019, Mangalore, Karnataka	IIT Madras
56	Anubhab Sahoo	PH15D025	iCOLD 2019, Alva's Institute of Engineering & Technology	27-29 November 2019, Mangalore, Karnataka	IIT Madras
57	Sreejith P. K.	PH15D036	iCOLD 2019, Alva's Institute of Engineering & Technology	27-29 November 2019, Mangalore, Karnataka	IIT Madras
58	Anju Saroha	PH14D022	iCOLD 2019, Alva's Institute of Engineering & Technology	27-29 November 2019, Mangalore, Karnataka	IIT Madras
59	Buddhadeb Debnath	PH17D027	National Conference on Electronic Structure: NCEs 2019 at SN Bose National Centre for Basic Sciences	"27-29 November 2019, WB	IIT Madras
60	Mayank Gupta	PH16D203	APCTP-IACS-IITM Joint Conference	27-30 November 2019, IIT Bombay	IIT Madras
61	Ravi Kashikar	PH14D038	Conference on Emergent Phenomena in Novel Oxide Materials and Low-Dimensional System	28-30 November 2019, IIT Bombay	IIT Madras
62	Sourav Kajli	PH15D037	2nd International Conference on Nano Science and Nano Technology and presented a poster	29 November-1 December 2019, VIT, Vellore	IIT Madras
63	Sagarika Tripathy	PH17D025	Workshop on High Energy Physics Phenomenology XVI	29 November-11 December 2019, IIT, Guwahati	IIT Madras
64	Ragavendra	PH16D018	Workshop on High Energy Physics Phenomenology XVI, IIT Guwahati	1-10 December 2019, Assam	IIT Madras
65	Pankaj Saha	PH19IPF02	Workshop on High Energy Physics Phenomenology XVI, IIT Guwahati	1-10 December 2019, Assam	IIT Madras (IPDF Contingency Grant)
66	Sampurn Anand	PH19NPF02	Workshop on High Energy Physics Phenomenology XVI, IIT Guwahati	1-10 December 2019, Assam	DST (National Postdoctoral Fellowship)

67	Niharika Rout	PH16D021	Workshop on High Energy Physics Phenomenology XVI, IIT Guwahati	1-10 December 2019, Assam	IIT Madras
68	Debottam Nandi	PH17IPF05	Workshop on High Energy Physics Phenomenology XVI, IIT Guwahati	1-10 December 2019, Assam	IIT Madras (IPDF Contingency Grant)
69	Mitali M.	PH18D052	Second International Conference On Nanoscience & Nanotechnology, VIT College	4-6 December 2019, Vellore, Chennai	IIT Madras
70	Sanket Kumar	PH18D013	Participated in Complex Fluids 2019 Conference at IISER Bhopal	5-7 December 2019, Bhopal	IIT Madras
71	Merin Jose	PH17D004	Participated in Complex Fluids 2019 Conference at IISER Bhopal	5-7 December 2019, Bhopal	IIT Madras
72	Rahul V. R.	PH17D023	Participated in Complex Fluids 2019 Conference at IISER Bhopal and poster presentation on title "Study of self-generated nanowaves at the interface of an evaporating sessile water droplet"	5-7 December 2019, Bhopal	IIT Madras
73	Dhrubajyoti Biswas	PH17D205	Conference on Nonlinear Systems and Dynamics 2019 & ACM Winter School on HPC 2019, IIT Kanpur and presented poster, Characterizing the effects of randomness in a new piecewise smooth map	5-12 December 2019, Kanpur	IIT Madras
74	Sonu Vishva Karma	PH15D202	64th DAE Solid State Physics Symposium (SSPS-2019), IIT Jodhpur	10-22 December 2019, Rajasthan	IIT Madras
75	H. V. Ragavendra	PH16D018	International Conference on Gravitation and Cosmology at IISER, Mohali and presented poster, Imprints of the onset of inflation on the scalar bispectrum	10-13 December 2019, Punjab	IIT Madras
76	Pankaj Saha	PH19IPF02	Ninth International Conference on Gravitation and Cosmology at Indian Institute of Science Education and Research, Mohali	10-13 December 2019, Mohali	"IIT Madras (IPDF Contingency Grant)"
77	Divyajyoti	PH19D057	International Conference on Gravitation and Cosmology, IISER, Mohali and presented poster, Imprints of the onset of inflation on the scalar bispectrum	10-13 December 2019, Punjab	IIT Madras

78	Debottam Nandi	PH17IPF05	Ninth International Conference on Gravitation and Cosmology at Indian Institute of Science Education and Research, Mohali	10-13 December 2019, Mohali	"IIT Madras (IPDF contingency Grant)"
79	B. Srinivas	PH14D028	Participated in Recent Topics In Statistical Mechanics (RTSM-2019)	11-13 December 2019, Bhubaneswar	IIT Madras
80	Induja. P	PH17D302	Conference on Nonlinear Systems and Dynamics and presented poster, Early warning signals for rate delayed tipping	12-15 December 2019, Kanpur	IIT Madras
81	B. Sharmila	PH14D041	Conference on Nonlinear Systems and Dynamics and presented poster, Signatures of avoided energy level crossings in tomograms	12-15 December 2019, Kanpur	IIT Madras
82	Soumyabrata Paul	PH18D043	12th National Conference On Nonlinear Systems and Dynamics (CNSD-2019)	12-15 December 2019, Kanpur	IIT Madras
83	Pritha Dey	PH17D006	Workshop on Recent Advances in Photonics - 2019, IIT Guwahati	13-14 December 2019, Assam	IIT Madras
84	Bibekananda Das	PH16D004	2nd International Conference on Advanced Materials (SCICON-2019), Amrita Vishwa Vidyapeetham University	15-17 December 2019, Coimbatore	IIT Madras
85	Hari K.	PH18D009	Participated in Kenyon - IITM Writing Workshop	16-20 December 2019, IIT Madras	IIT Madras
86	Suvashis Maity	PH18D024	Participated in Kenyon - IITM Writing Workshop	16-20 December 2019, IIT Madras	IIT Madras
87	Pankaj Saha	PH19IPF02	Participated in Kenyon - IITM Writing Workshop	16-20 December 2019, IIT Madras	IIT Madras
88	Sagarika Tripathy	PH17D025	Participated in Kenyon - IITM Writing Workshop	16-20 December 2019, IIT Madras	IIT Madras
89	Dinesh Kumar S.	PH18D027	Participated in International Workshop on Physics of Semiconductor Devices (IWPSD)-2019, S. N. Bose Centre for Basic Sciences, Kolkata	16-22 December 2019, West Bengal	IIT Madras

90	Subhamoy Sahoo	PH14D202	Participated in IWPSD 2019, S.N. Bose Centre for Basic Sciences, Kolkata	16-22 December 2019, West Bengal	IIT Madras
91	Hanuma Kumar Dara	PH13D071	Visited UGC-DAE, BARC Mumbai for research work	16-22 December 2019, Mumbai	IIT Madras
92	Sumalatha	PH14D049	64th DAE Solid State Physics Symposium, IIT Jodhpur	18-22 December 2019 Rajasthan	IIT Madras
93	Nisha	PH16D300	6th International Conference on Advanced Nanomaterials and Nanotechnology at IIT Guwahati; presented poster, MgO/Boron nitride based nano fluids for enhanced heat transfer applications	18-21 December 2019, Assam	IIT Madras
94	Anamika Ghosh	PH16D200	6th International Conference on Advanced Nanomaterials and Nanotechnology at IIT Guwahati; presented poster, MgO/Boron nitride based nano fluids for enhanced heat transfer applications	18-21 December 2019, Assam	IIT Madras
95	Tulika Agrawal	PH18D010	International Conference on Atomic Molecular Optical and Nano Physics with Application (CAMNP), Delhi Technological University	18-20 December 2019, New Delhi	IIT Madras
96	Anubhab Sahoo	PH15D025	CAMNP, Delhi Technological University	18-20 December 2019, New Delhi	IIT Madras
97	Vijay Kumar Sagar	PH15D048	CAMNP, Delhi Technological University	18-20 December 2019, New Delhi	IIT Madras
98	Md. Serajuddin Ansari	PH16D052	3rd International Conference on Solon Energy Photovoltaics, KIIT, Bhubaneswar	19-21 December 2019, Bhubaneswar	IIT Madras
99	Dinesh Kumar S.	PH18D027	Poster presentation at NSLMI-2019 (National Symposium on Light Matter Interactions)	26 December 2019, IIT Madras	IIT Madras
100	Mamta	PH15D200	International Conference on Smart Materials and Nanotechnology (ICSMN)-2020	2-4 January 2020, Maharashtra	IIT Madras
101	Vijay Kumar Sagar	PH15D048	Tromboy Symposium on Radiation and Photochemistry BRP-2020 at BARC	5-9 January 2020, Mumbai	IIT Madras

102	Pankaj Saha	PH19IPF02	Chennai Symposium on Gravitation and Cosmology at IITM	22-24 January 2020, Madras	IIT Madras
103	H. V. Ragavendra	PH16D018	Chennai Symposium on Gravitation and Cosmology at IITM	22-24 January 2020, Madras	IIT Madras
104	Sagarika Tripathy	PH17D025	Chennai Symposium on Gravitation and Cosmology at IITM	22-24 January 2020, Madras	IIT Madras
105	Sampurn Anand	PH19NPF02	Chennai Symposium on Gravitation and Cosmology at IITM	22-24 January 2020, Madras	IIT Madras
106	Debottam Nandi	PH17IPF05	Chennai Symposium on Gravitation and Cosmology at IITM	22-24 January 2020, Madras	IIT Madras
107	Suvashis Maity	PH18D024	Chennai Symposium on Gravitation and Cosmology at IITM	22-24 January 2020, Madras	IIT Madras
108	Anup K Sikdar	PH16D055	India-CMS Collaboration Meeting at Punjab University	24-25 January 2020, Punjab	IIT Madras
109	Akshya Kumar Budumuru	PH15D401	12th Asia-Pacific Microscopy Conference	3-7 February 2020, Hyderabad	IIT Madras
110	Rohini M. S.	PH16D006	12th Asia-Pacific Microscopy Conference	3-7 February 2020, Hyderabad	IIT Madras
111	Lokeshwara Roy	PH15D047	12th Asia-Pacific Microscopy Conference	3-7 February 2020, Hyderabad	IIT Madras
112	Abhijitha V. G.	PH18D031	ACCMS-ICMG 2020 Conference, SRM University, Amaravati	5-7 February 2020, Hyderabad	IIT Madras
113	Shashi B. Mishra	PH13D045	ACCMS-ICMG 2020 Conference at SRM University, Amaravati	5-7 February 2020, Hyderabad	IIT Madras
114	Mayank Gupta	PH16D203	ACCMS-ICMG 2020 Conference at SRM University, Amaravati	5-7 February 2020, Hyderabad	IIT Madras
115	B. Srinivas	PH14D028	7th Indian Statistical Physics Community Meeting at ICTS	19-21 February 2020, Bangalore	IIT Madras
116	Mrinal Sarkar	PH13D203	7th Indian Statistical Physics Community Meeting at ICTS	19-21 February 2020, Bangalore	IIT Madras
117	Sanjay C.	PH16D050	7th Indian Statistical Physics Community Meeting at ICTS	19-21 February 2020, Bangalore	IIT Madras
118	Rabindev Bishal	PH14D201	7th Indian Statistical Physics Community Meeting at ICTS	19-21 February 2020, Bangalore	IIT Madras

119	Sachin C. N.	PH16D045	7th Indian Statistical Physics Community Meeting at ICTS	19-21 February 2020, Bangalore	IIT Madras
120	Sourav Banerjee	PH13D204	8th Topical Conference on Atomic and Molecular Collision for Plasma Application, IIT Roorkee	3-5 March 2020, Uttarakhand	IIT Madras
121	Souvar Dutta	PH18D004	8th Topical Conference on Atomic and Molecular Collision for Plasma Application, IIT Roorkee	3-5 March 2020, Uttarakhand	IIT Madras
122	Nihar Ranjan Behera	PH18D017	8th Topical Conference on Atomic and Molecular Collision for Plasma Application, IIT Roorkee	3-5 March 2020, Uttarakhand	IIT Madras
123	Saroj Kumar Barik	PH16D056	8th Topical Conference on Atomic and Molecular Collision for Plasma Application, IIT Roorkee	3-5 March 2020, Uttarakhand	IIT Madras
124	Sutapay Dey	PH16D010	International Conference on Nano Science & Technology	5-7 March 2020, New Town, Kolkata	IIT Madras
125	Sourav Banerjee	PH13D204	Participated Workshop on Atomic Physics Deliberation in The Atomic Physics (DAP) at IIT Mandi	15-23 March 2020, Himachal Pradesh	IIT Madras

Students/Scholars who won outside prizes and awards

Sl.No.	Student/Scholar	Roll No.	Prize	Prize Awarded by
1	M. Mayarani	PH14D035	Best Presentation Award	4th International Conference on Nanomaterials, Kerala, 12-14 April 2019
2	Pritha Dey	PH17D006	Best Poster Award	International Conference on Advanced Materials 2019 sponsored by ISRO and KSCSTE, Kerala
3	Shubhayan Bhattacharya	PH13D205	Best Poster Award	International Conference on Physics of Materials and Nanotechnology (ICPN-2019), Mangalore University, 19-21 September 2019
4	Dipsikha Ganguly	PH15D301	Best Poster Prize	2nd One-day workshop on Hydrogen and Fuel Cell for Sustainable Future, Chennai, 18 October 2019
5	Subish John	PH14D015	Best Poster Prize	International Conference on Advanced Materials for Sustainable Energy and Sensor Applications (INCAMSES 2019), Karaikudi
6	Alexander Soloviev (International Student)	PH19F001	Erwin Schrodinger Fellowship	Austrian Science Foundation (FWF) (visited IIT Madras for his doctoral work)

7	Akshaya Jayashankar	PH15D002	Best Poster Award	Conference on Quantum Foundations, Technology and Applications 2019 (QFTA-2019), Mohali, 18-21 October 2019
8	Nisha Ranjan	PH16D300	ACS Award for Best Poster	6th International Conference on Advanced Nanomaterials and Nanotechnology (ICANN-2019), Guwahati, 18-21 December 2019 by ACS Chemistry of Materials
9	Dr. Nasima Khatun (IPDF)	PH19IPF04	Best Poster Award	International Workshop on Physics of Semiconductor Devices (IWPSD 2019), Kolkata, 16-19 December 2019
10	Tanay Kibe	PH19D003	PMRF (Prime Minister's Research Fellowship)	Ministry of Human Resource Development
11	P. V. Midhunlal	PH14D009	Best Poster Presentation	7th National Conference on Condensed Matter Physics and Applications, Manipal Institute of Technology

Students/Scholars who won Institute Convocation/Institute Day Prize

Sl.No.	Student/Scholar	Roll No.	Prizes	Donor
1	Mayarani	PH14D035	Institute Research Award	IIT Madras
2	Antarjami Sahoo	PH13D021	Institute Research Award	IIT Madras
3	Biporjoy Sarkar	PH13D083	Institute Research Award	IIT Madras
4	Sreetama Ghosh	PH14D302	Institute Research Award	IIT Madras
5	Ajay Piriya	PH15D302	Institute Research Award	IIT Madras
6	Dr. Priji Chandran	PH12D063	Mrs. Abayamabal and Natarajan Award	Endowment
7	Pratyush Anand	EP15B020	Hema Balasubramanian Excellence Award	Endowment
8	Tanay Milind Kibe	PH14B009	Prof. J. Sobhanadri Prize	Endowment
9	Ponnaganti Ravi Teja	PH17M004	Sri Krishnamurthy Sundarambal Prize	Endowment
10	Shraddha Gupta Anoma Ganguly	PH17C038 PH17C006	Prof. Chilukury Rama Sastry Memorial Prize	Endowment
11	Debika Chowdhury	PH13D028	Prof. A. L. Lashkar Prize	Endowment
12	Sreetama Ghosh	PH14D302	Bhagyalakshmi and Krishna Ayengar Award	Endowment

4.16.3 Faculty and Their Activities

Faculty

Name and Qualifications	Major Areas of Specialization
Professors	
Dr. Sethupathi K. (Head)	Experimental condensed matter physics, magnetic oxide materials and cryogenic insulation
Dr. Arul Lakshminarayan	Quantum information, complex quantum systems, mathematical physics
Dr. Ganesan A. R.	Applied optics, holography, adaptive optics

Dr. Harish Kumar N.	Superconductivity, spintronics, novel magnetic materials
Dr. James Frederick Libby	Experimental high-energy physics
Dr. Jatindra Kumar Rath	Photovoltaics, nanomaterials, CVD
Dr. Kasiviswanathan S.	Near- and far-field response of plasmonic structures, films of transparent oxide and ternary semiconductors, systems exhibiting quantum coherence
Dr. Lakshmi Bala S.	Quantum dynamics and dynamical systems
Dr. Manoj Gopalakrishnan	Theoretical biological physics, stochastic processes, statistical mechanics
Dr. Markandeyulu G.	Magnetism, magnetic materials
Dr. Murugavel P.	Ferroelectrics, dielectrics and multifunctional oxides for multiferroic and photovoltaic studies
Dr. Neelima M. Gupte	Nonlinear dynamics, statistical physics
Dr. Nirmala R.	Intermetallics, rare earth intermetallics
Dr. Prafulla Kumar Behera	Experimental high energy physics, neutrino experiment, proton-proton, e+e- experiment and particle detector development
Dr. Prasanta K. Tripathy	String theory, high energy physics
Dr. Prem B. Bisht	Ultrafast laser spectroscopy, fluorescence microscopy
Dr. Rajesh Narayanan	Condensed matter theory
Dr. Ramachandra Rao M. S.	Correlation effect in metal oxide and doped diamond, electrical, optical and magnetic properties of metal oxide thinfilms and nanostructures and photovoltaic materials
Dr. Ramaprabhu S.	Nanomaterials, fuel cells, Li battery
Dr. Sankaranarayanan V.	Low-temperature physics and cryogenics, magnetocaloric effect, superconductivity
Dr. Santhosh P. N.	Multiferroics, layered oxide materials, CuO-based nanomaterials
Dr. Satyanarayana M. V.	Quantum optics, laser physics, photonics
Dr. Srinivas Veeturi	Magnetic materials
Dr. Sriramkumar L.	Semi-classical and quantum gravity, inflationary cosmology and the cosmic microwave background, gravitation and cosmology
Dr. Subrahmanyam A.	Photovoltaics, photocatalysis, electrochromics, bio-medical engineering, surface engineering
Dr. Subramanian V.	Microwave techniques, propagation and devices dielectrics and multi-ferroics
Dr. Sunil Kumar P. B. (IIT Palakad)	Soft condensed matter physics, biological physics and computational physics
Dr. Suresh Govindarajan	String theory
Dr. Vijayan C.	Nanophotonics, light-matter interaction
Associate Professors	
Dr. Aravind G.	Autoionization and autodetachment resonances in atomic, molecular and cluster systems
Dr. Dawood Kothawala	Semi-classical gravity, quantum mechanics of black holes, QFT with minimal length scale
Dr. Dillip Kumar Satapathy	Experimental soft condensed matter physics, X-ray and neutron characterization of materials organic and hybrid thermoelectrics

Dr. Krishnamurthy C. V.	Non-destructive evaluation, microstructural modelling, light scattering
Dr. Mahaveer Kumar Jain	Semiconductors, photovoltaics, chemical sensors
Dr. Manu Jaiswal	Elastic, electronic properties of graphene and other 2D-systems, applications of graphene for solar energy, sensing and filtration, conducting polymers and other carbon-based systems
Dr. Pattabiraman M.	Experimental atomic physics, quantum optics, magnetometry
Dr. Prahallad Padhan	Magnetic materials and heterostructures, spintronic devices
Dr. Ranjit Kumar Nanda B.	Condensed matter physics
Dr. Sivarama Krishnan	Femtosecond dynamics, photonics, quantum dynamics
Dr. Somnath Chanda Roy	Experimental materials science, nanomaterials and thin films, nanotechnology for energy and environment
Dr. Sudakar Chandran	Materials for energy applications, defect-structure property correlations, multifunctional materials
Assistant Professors	
Dr. Abhishek Misra	Electrical transport in quantum materials, device physics, nanoelectronics
Dr. Ashwin Joy	Condensed matter physics
Dr. Ayan Mukhopadhyay	Theoretical physics, quantum field theory and string theory, quantum many-body systems
Dr. Basudev Roy	Experimental soft matter, optical tweezers
Dr. Chandra Kant Mishra	Gravitational waves
Dr. Jayeeta Bhattacharyya	Semiconductors, optical spectroscopy, THz spectroscopy
Dr. Panchanana Khuntia	Experimental condensed matter physics
Dr. Prabha Mandayam	Quantum information and computing, quantum optics
Dr. Prabhat Ranjan Pujahari	Experimental high energy physics
Dr. Shanthanu Mukherjee	Condensed matter theory
Dr. Sunethra Ramanan	Nuclear structure, renormalization group/effective field theory approaches, neutron star physics
Dr. Vaibhav Madhok	Quantum information theory, chaos and complex systems
Dr. Yasir Iqbal	Theoretical condensed matter physics, frustrated magnetism, quantum spin liquids
Dr. Vidya Praveen Bhallamudi (ID)	Condensed matter physics magnetism, magnetic resonance, optics
Distinguished Professors	
Prof. G. Baskaran, IMSc, Chennai	Condensed matter physics and strongly correlated materials
Visiting Faculty	
Prof. Surendra Pal Singh, University Distinguished Professor, University of Arkansas, Fayetteville, USA	Lasers, quantum, classical, and nonlinear optics, light-matter interaction, optical techniques in biophysics
Prof. Marcel Mudrich, SPARC - Aarhus University	Nature and technology, molecules and atoms, spectroscopy, molecular physics
Adjunct Faculty	
Prof. V. Balakrishnan, IIT Madras	Dynamical systems, quantum dynamics and stochastics

Prof. Shanker Balasubramanian, University Distinguished Professor, Michigan State University, USA	Applied electromagnetics, computational electromagnetics, non-linear materials
Prof. P. C. Deshmukh, IIT Tirupati	Atomic, molecular and chemical
Dr. Rajeev Pattathil, Rutherford Appleton Laboratory	Novel accelerator science
Prof. Peter van Straten, Utrecht University	Optics and photonics
DST INSPIRE Faculty	
Dr. K. Lakshmi Ganapathi	Nanoelectronic devices, device physics, 2D materials and High-k dielectrics integration, thin films synthesis, properties and their applications
DST Ramanujan Fellow	
Dr. Pramoda Kumar Nayak	Two-dimensional materials, topological insulators, quantum dots, Van der Waals heterostructures, novel superconducting materials

Short-term courses/workshops/seminars/symposia/conferences organised by the faculty members

Sl. No.	Coordinator(s)	Title	Period
Conferences			
1	Dr. Ayan Mukhopadhyay	The Myriad Colorful Ways of Understanding Extreme QCD Matter (ICTS-TIFR Bangalore programme); an international programme with funding of Rs.22 lakh from ICTS-TIFR	1-17 April 2019
2	Prof. M. S. Ramachandra Rao (Co-Chair), Prof. K. Sethupathi (Co-convenor)	International Conference on Laser Deposition- (iCOLD-2019) was organised by Indian Institute of Technology Madras in association with Departments of Electronics and Communication and Mechanical Engineering, Alva's Institute of Engineering and Technology, Mangalore, Karnataka	27-29 November 2019
3	Dr. Prem B. Bisht (Convener)	National Symposium on Light Matter Interactions (NSLIMI2019)	26-28 December 2019
Seminars			
1	Dr. Dillip. K. Sathapathy	In-House Colloquium: Title: Novel phenomena in confined soft matter	3 April 2019
2	Dr. L. Sriramkumar	Special talk: Towards constructing viable bouncing scenarios, IIT Madras	11 April 2019
3	Dr. Arul Lakshminarayan	In-House Colloquium: Title: Quantum physics and the butterfly effect	9 October 2019
Symposia			
1	Dr. Jayeeta Bhattacharyya	5th Physics In-House Symposium in Department of Physics, IIT Madras; there were a total of 25 talks and 30 poster presentations	8-9 November 2019

2	Dr. L. Sriramkumar, Dr. Chandra Kant Misra	The Chennai Symposium on Gravitation and Cosmology was organised by the Gravitation and Cosmology Group, with support from the Department of Physics and the Office of the Dean, International and Alumni Relations, IITM	22-24 January 2020
3	Dr. Prabha Mandayam, Dr. Arul Lakshminarayan, Dr. Anil Prabhakar (EE)	Indo-German Symposium on Quantum Science and Technologies	9-10 February 2020

Short-term Courses

1	Dr. Ayan Mukhopadhyay	A Practical Mini-Course on Applied Holography by Dr Matteo Baggioli (IFT; UAM Madrid; Spain)	16-20 September 2019
2	Dr. M. S. Ramachandra Rao, Dr. Pramoda K Nayak, Dr. K. L. Ganapathi	AICTE sponsored a short-term course on Two-dimensional Materials: Physics and Applications jointly organised by the Department of Physics and Centre for Continuing Education, IIT Madras, during 21-26 September 2019	21-26 September 2019

Short-term courses/workshops/seminars/symposia/conferences/training attended by the faculty members in academic institutions and public sector undertakings

Sl. No.	Faculty Member	Title	Institution	Period
Workshops				
1	Dr. Yasir Iqbal	Advances in Condensed Matter Physics: New Trends and Materials in Quantum Technologies	Samarkand University, Samarkand, Uzbekistan	7-15 May 2019
2	Dr. Yasir Iqbal	Low-Dimensional Emergent Phenomena in Correlated Systems and Topological Quantum Matter	Georgian Academy of Sciences, Tbilisi, Georgia	1-10 June 2019
3	Dr. Yasir Iqbal	Topological Quantum Matter: Concepts and Realizations	Kavli Institute for Theoretical Physics, University of California at Santa Barbara (USA)	2 October-22 November 2019
4	Dr. L. Sriramkumar	International Workshop on Frontiers in High Energy Physics	University of Hyderabad, Hyderabad	14-17 October 2019
5	Dr. L. Sriramkumar	The Sixteenth Workshop on High Energy Physics Phenomenology	Indian Institute of Technology, Guwahati	1-10 December 2019
6	Dr. Yasir Iqbal	Novel Phases of Quantum Matter	International Centre for Theoretical Sciences (ICTS), Bengaluru	23 December-2 January 2019
Seminars				
1	Dr. Jim Libby	WHEPP XVI	IIT Guwahati	30 November-10 December 2019

2	Dr. Jim Libby	India-CMS Collaboration Meeting	Punjab University	24-25 January 2020
3	Dr. Sivarama Krishnan	Invited to serve as Guest Editor for the Special Topics on Intense Laser Matter Interaction for the year 2020	<i>European Physical Journal</i>	6 January 2020

Symposia

1	Dr. Prabha Mandayam	National Mission on Quantum Technologies and Applications, Consultative Meeting	IISER, Trivandrum	5-6 November 2019
2	Dr. L. Sriramkumar	Chennai Symposium on Gravitation and Cosmology	Indian Institute of Technology Madras, Chennai	22-24 January 2020

Conferences

1	Dr. N. Harish Kumar	1st International Conference on Advances in Electronics and Communication Devices (AECD-2019)	Suresh Gyan Vihar University, Jaipur	5-6 April 2019
2	Dr. N. Harish Kumar	National Conference on Novel Materials Synthesis and Characterization Techniques for Future World	Sri Parama Kalyani College, M. S. University, Alwarkurichi, Tamil Nadu	16-17 August 2019
3	Dr. L. Sriramkumar	Bala Fest: The Future of Gravitational-Wave Astronomy	International Centre for Theoretical Sciences, Bengaluru	19-20 August 2019
4	Dr. Dillip K Satapathy	Water Desorption Form Hydrogel Films: Effect of Geometrical Confinement	TU Dresden and Leibniz-Institute for Polymer Sciences	16-19 September 2019
5	Dr. Ramaprabhu	Low Pt-loaded Nitrogen-Doped Carbon as Efficient Catalyst Support for Proton Exchange Membrane Fuel Cells and Towards High-Performance Proton Exchange Membrane Fuel Cells Using Polymer-Coated Heteroatom-Doped Partially Unzipped Carbon Nanotubes as Catalyst Support	236th ECS Meeting, Atlanta, USA	15 October 2019
6	Dr. L. Sriramkumar	The Ninth International Conference on Gravitation and Cosmology	Indian Institute of Science Education and Research, Mohali	10-13 December 2019
7	Dr. Dillip K. Satapathy	Two-dimensional Evaporative Self-Assembly of Soft Colloids at Interfaces	National Institute of Science Education and Research (NISER), Bhubaneswar, India	11-13 December 2019
8	Dr. Yasir Iqbal	Entanglement in Strongly Correlated Systems	Centro De Ciencias De Benasque Pedro Pascual Benasque, Spain	9-15 February 2020

9	Dr. Dillip K. Satapathy	Sorption and Desorption Kinetics of Water in Polymer Films: Role of Crosslinking and Confinement	Indian Materials Conclave and 31st AGM of MRSI, CSIR-CGRI, Kolkata, India	11-14 February 2020
10	Dr. Dillip K. Satapathy	Desiccation Cracks in Colloidal Films: Role of External Fields	National Conference on Soft Matter and Functional Materials (SMFM 2020), National Institute of Technology, Calicut	2-4 March 2020

Short-term Course

1	Dr. Dillip Kumar Satapathy	AICTE/QIP short-term course on Rheology of Complex Materials and Microstructure of Polymers and Colloids: Scattering Techniques	Department of Chemical Engineering, Indian Institute of Technology, Madras, Chennai	11-15 November 2019
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Special lectures delivered by the faculty in other institutions

Sl. No.	Faculty Member	Topic of Lecture	Institution	Date
1	Dr. N. Harish Kumar	Invited talk: Halfmetallic Compensated Ferrimagnets for Novel Spintronic Device Applications	Suresh Gyan Vihar University, Jaipur	5 April 2019
2	Dr. Jatindra Kumar Rath	Invited talk: Why silicon-based solar cells still dominate the PV market? at Research Laboratory for Plasmonics, E & C, MIT	Manipal	17 April 2019
3	Dr. V. Subramanian	International Conference on Microwave Integrated Circuits, Photonics and Wireless Networks (IMICPW-2019) and Special talk: Photonic crystals and metamaterials	NIT, Tiruchchirappalli	22 April-24 May 2019
4	Dr. L. Sriramkumar	Towards Constructing Viable Bouncing Scenarios	Saha Institute of Nuclear Physics, Kolkata	6 May 2019
5	Dr. Yasir Iqbal	Functional Renormalization Group Method for Quantum Magnetism	Aligarh Muslim University, Aligarh, India	20-28 May 2019
6	Dr. Ayan Mukhopadhyay	The Queer and Rebellious Two-Dimensional Nearly Anti-de Sitter Space	ENS, Paris, France	21 May 2019
7	Dr. V. Subramanian	National Workshop on Theory and Practice of X-ray Diffraction and Scanning Electron Microscope and Special talk: Microwave Imaging - SNMM	Sethu Institute of Technology, Kariappatti, Madurai	30-31 May 2019
8	Dr. Ayan Mukhopadhyay	Semiholographic Non-Fermi Liquids	University of Würzburg, Germany	12 June 2019

9	Dr. S. Ramaprabhu	Carbon Nanotubes-Polymer based Flexible Piezoresistive Strain Sensor for Wearable Device Applications	TechConnect World Innovation Conference and Expo, Boston, USA	17 June 2019
10	Dr. Ramachandra Rao M. S.	Invited talk: Electronic and optical properties of metal oxides and doped diamond films at International Workshop on Thin Films for Electronics, Electro-Optics, Energy and Sensors (TFE3S)	Reykjavik, Iceland	24-26 June 2019
11	Dr. S. Ramaprabhu	Basics and Applications of Nanomaterials	IGCAR, Kalpakkam, India	3 July 2019
12	Dr. S. Ramaprabhu	Synthesis of Carbon Nanomaterials for Energy Applications	BITS Pilani, Hyderabad, India.	4 July 2019
13	Dr. Ayan Mukhopadhyay	The Queer and Rebellious Two-dimensional Nearly Anti-de Sitter space	TU Wien, Vienna, Austria	4 July 2019
14	Dr. N. Harish Kumar	Lecture with Experimental Demonstration of Physics Concepts	VIT Chennai	6 July 2019
15	Dr. Manu Jaiswal	QMAT 2019 and gave a talk on The puzzle of thermal expansion coefficient of graphene	IISc Bangalore	10 July 2019
16	Dr. Ramachandra Rao M.S.	Invited talk: The exciting world of metal-oxide thin films and nanostructures: TOBE (towards oxide-based electronics)	CRISMAT	15 July 2019
17	Dr. Ramachandra Rao M.S.	Invited talk: Physics of doped diamond and the technology of nanocrystalline diamond coatings	ENSICAEN	18 July 2019
18	Dr. Jim Libby	Anomalies 2019 Workshop	IIT Hyderabad	18-20 July 2019
19	Dr. N. Harish Kumar	Half Metallic Fully Compensated Ferrimagnets for Spin Injection Electrode Application in Spin Transfer Torque Devices	Sri Parama Kalyani College, M. S. University, Alwarkurichi, Tamil Nadu	16 August 2019
20	Dr. L. Sriramkumar	Invited talk: Generation and amplification of primordial gravitational waves	The Future of Gravitational-Wave Astronomy, International Centre for Theoretical Studies, Bengaluru	19-22 August 2019
21	Dr. N. Harish Kumar	Lecture in Spintronics	DG Vaishnav College, Chennai	21 August 2019
22	Dr. Jayeeta Bhattacharyya	Special lecture: Quantum confinement in semiconductors	D. G. Vaishnav College, Chennai	22 August 2019
23	Dr. Jim Libby	Indian CMS Collaboration meeting	Delhi University	22-24 August 2019
24	Dr. Jayeeta Bhattacharyya	Special lecture: Carrier transfer in organic semiconductor blends	IIT Tirupati	26 August 2019

25	Dr. Jim Libby	Presented lecture: Searching for beauty: Finding one in a billion with the CMS experiment	Visvesvaraya Industrial & Technological Museum, Bengaluru	30 August 2019
26	Dr. L. Sriramkumar	Colloquium talk: Are bouncing scenarios a viable alternative to inflation?	Department of Physics, Indian Institute of Science, Bengaluru	30 August 2019
27	Dr. P. Murugavel	Invited talk: Photovoltaic and photodetector characteristics of ferroelectric oxides in the International Conference and Sensors (INCAMSES-2019)	Alagappa University, Karaikudi, Tamil Nadu	16-17 September 2019
28	Dr. Ayan Mukhopadhyay	Toy models for nonperturbative physics of the QGP	IMSc Chennai	19 September 2019
29	Dr. Nirmala R.	Presented lecture, Magnetism in the Bulk and Nanoscale-Fundamentals and Applications in the Workshop on Condensed Matter and Materials Science	C-MET, Thrissur, Kerala	21 September 2019
30	Dr. Pramoda Kumar Nayak	Invited talk: An atlas of two-dimensional materials and their heterostructures	NIT, Rourkela	1 October 2019
31	Dr. L. Sriramkumar	Invited talk: Suppression of scalar power on large scales and associated bispectra in International Workshop on Frontiers in High Energy Physics	University of Hyderabad	14-17 October 2019
32	Dr. S. Ramaprabhu	Synthesis of Metal Encapsulated Carbon-Based Nanomaterials for Energy Applications	Spelman College, Atlanta, USA	17 October 2019
33	Dr. Pramoda Kumar Nayak	Twistronics: A Recent Avenue in van der Waals Heterostructures at Faculty Development Programme (FDP) on Design and Development of Materials for Technological Applications (D-MTA) 2019	VSSUT, Burla, Odisha	21-26 October 2019
34	Dr. Jayeeta Bhattacharyya	Invited lecture at Workshop on Utilization of THz radiation for material science	IUAC	24 October 2019
35	Dr. L. Sriramkumar	Colloquium talk: The status of the inflationary paradigm	Indian Institute of Science Education and Research, Pune	30 October 2019
36	Dr. L. Sriramkumar	Lecture series: Inflation and cosmological perturbation theory	Indian Institute of Science Education and Research, Pune	30-31 October 2019
37	Dr. L. Sriramkumar	Formation of Structure in the Universe	Talk organised by the Tamil Nadu Science Forum at Anna Centenary Library, Chennai	16 November 2019
38	Dr. Prabha Mandayam	Approximate quantum error correction: theory and applications	RWTH, Aachen, Germany	12 November 2019

39	Dr. P. Murugavel	Invited talk: Magnetoelectric and photovoltaic effect on PLD grown BCT-BZT thin films in the iCOLD-19	Alva's Institute of Engineering and Technology, Moodbidri, Karnataka	27-29 November 2019
40	Dr. Manu Jaiswal	Confined water and ions in graphene oxide membranes	IISER Bhopal, CompFlu 2019	5-7 December 2019
41	Dr. L. Sriramkumar	Contributed a talk in the Ninth International Conference on Gravitation and Cosmology on title, Can bouncing scenarios generate primordial features?	Indian Institute of Science Education and Research, Mohali	10-13 December 2019
42	Dr. Jatindra Kumar Rath	Invited talk at National Conference Optoelectronic and Nano Materials for Advanced Technology (ONMAT 2020)	Cochin University of Science and Technology	3-4 January 2020
43	Dr. L. Sriramkumar	Introduction to General Relativity Five lectures at IUCAA-CUTN School on Introductory General Relativity and Cosmology	Central University of Tamil Nadu, Thiruvarur	4-6 January 2020
44	Dr. S. Ramaprabhu	Carbon-nanomaterials for battery and fuel cells	HPCL, Bangalore, India	7 January 2020
45	Dr. Yasir Iqbal	Novel phases of matter in frustrated magnets: the fascinating pyrochlore architecture	Jawaharlal Nehru University, New Delhi, India	8 January 2020
46	Dr. L. Sriramkumar	Talk organised by The Academy of Sciences: Formation of structure in the universe	College of Engineering, Anna University, Chennai	8 January 2020
47	Dr. N. Harish Kumar	Exotic phenomena in condensed matter physics and applications	DST INSPIRE Internship Camp, Vel Tech University, Avadi, Chennai	26 January 2020
48	Dr. L. Sriramkumar	Talk: Cosmic structure: Its origins and history	Tamil Nadu Science and Technology Centre, Chennai	12 February 2020
49	Dr. L. Sriramkumar	Talk organised by the Indian Physics Association: Formation of structure in the universe	Indira Gandhi Centre for Atomic Research, Kalpakkam	13 February 2020
50	Dr. L. Sriramkumar	Seminar: Did the universe bang or bounce?	Department of Nonlinear Dynamics, Bharathidasan University, Tiruchirappalli	13 February 2020
51	Dr. L. Sriramkumar	Tech talk: The origin and evolution of cosmic structure	Dhishna, Cochin University of Science and Technology, Kochi	19 February 2020
52	Dr. Jatindra Kumar Rath	Invited talk: The prospect of crystalline silicon based tandem solar cells, Hind High Vacuum Company Private Limited	Bengaluru	19 February 2020

53	Dr. N. Harish Kumar	Learning physics concepts through experiments	G.V.G. Visalakshi College for Women, Udumalpet, Tamil Nadu	19 February 2020
54	Dr. Jatindra Kumar Rath	Invited talk: Keynote talk on IEEE VLSI DCS 2020 (IEEE VLSI Device, Circuit and System Conference)	Meghnad Saha Institute of Technology	21-22 February 2020
55	Dr. P. Murugavel	Invited talk: Enhanced magnetoelectric effect in lead-free BCT-BZT piezoceramic based laminate composite by resonance tuning method	The National Conference on Hierarchically Structured Materials, SRM University	21-22 February 2020
56	Dr. Prabha Mandayam	Computing with quantum bits, Ethiraj College for Women, Chennai, India	Ethiraj College for Women, Chennai, India	28 February 2020
57	Dr. L. Sriramkumar	Two lectures in Research Training School in Physics on Introduction to Cosmology	Department of Physics, Cochin University of Science and Technology, Kochi	29 February 2020
58	Dr. Manu Jaiswal	Keynote lecture in National Conference on Soft Matter and Functional Materials (SMFM2020): Electromechanics in two-dimensional and layered systems	NIT Calicut	2-4 March 2020

Visits abroad by the faculty

Sl. No.	Faculty Member	Country Visited	Date	Purpose of Visit	Funding from
1	Dr. James Frederick Libby	Torino, Italy	8-12 April 2019	XXVII International Workshop on Deep Inelastic Scattering and Related Subjects, University of Torino	CPDA
2	Dr. Basudev Roy	Arizona, USA	14-17 April 2019	Bio-photonics Congress: Optics in the Life Science, Tucson	CPDA
3	Dr. Prem B. Bisht	London, UK	14-17 April 2019	Focus on Microscopy 2019	CPDA
4	Dr. Subrahmanyam A.	California, USA	27-29 April 2019	62nd Annual SVC Technical Conference, Long Beach	CPDA
5	Dr. Rajesh Narayanan	Dresden, Germany	6-10 May 2019	International Workshop on Quantum Ferromagnetism and Related Phenomena	CPDA
6	Dr. Ramaprabhu S.	France	7-21 May 2019	Brief visit to University of Toulouse	CPDA
7	Dr. Yasir Iqbal	Uzbekistan	7-15 May 2019	Workshop on Advances in Condensed Matter Physics: New Trends and Materials in Quantum Technologies, Samarkand	CPDA

8	Dr. Rajesh Narayanan	Germany	10-15 May 2019	Brief visit to the University of Regensburg	CPDA
9	Dr. Shanthanu Mukherjee	Switzerland	12-17 May 2019	Gordon Research Conference, Les Diablerets	CPDA
10	Dr. Vijayan C.	Malaysia	13-14 May 2019	Delivered a talk at International Conference on Material Science and Nanostructure Engineering Conference, Kuala Lumpur	CPDA
11	Dr. Arul Lakshminarayan	Kraków, Poland	15 May-30 June 2019	Brief visit to Jagiellonian University	CPDA
12	Dr. Rajesh Narayanan	San Francisco, USA	16-19 May 2019	Brief visit to Stanford University	CPDA
13	Dr. Shanthanu Mukherjee	Denmark	17-21 May 2019	Brief visit to Copenhagen University	CPDA
14	Dr. Rajesh Narayanan	Rolla, USA	19-31 May 2019	Brief visit to Missouri University of Science and Technology	CPDA
15	Dr. Ayan Mukhopadhyay	Paris, France	23-30 May 2019	Short visit to Laboratoire De Physique De L'Ecole Normale Superieure for scientific collaboration	DST Ramanujan grant and LPENS Paris
16	Dr. Arul Lakshminarayan	Sopot, Poland	20-23 May 2019	First Joint International Symposium on Quantum Resources and their Application in Quantum Information Centre of Gdańsk	CPDA
17	Dr. Arul Lakshminarayan	Warsaw, Poland	24-26 May 2019	9th Workshop on Quantum Chaos and Localization Phenomena	CPDA
18	Dr. Prabhat R. Pujahari	Switzerland	25 May-26 June 2019	Short visit to CERN for CMS Collaboration, Geneva	CPDA
19	Dr. Dillip K. Satapathy	Eger, Hungary	27-31 May 2019	11th Conference on Colloid Chemistry	CPDA
20	Dr. Jayeeta Bhattacharyya	Nice, France	27-31 May 2019	EMRS Spring Meeting 2019	CPDA
21	Dr. Rajesh Narayanan	Eugene, USA	31 May-7 June 2019	Brief visit to University of Oregon	CPDA
22	Dr. Ayan Mukhopadhyay	Germany	1-15 June 2019	Research collaboration and delivering seminar at University of Würzburg	University of Würzburg
23	Dr. Arul Lakshminarayan	Dresden, Germany	1 June -15 July 2019	Visited the Max Planck Institute for the Physics of Complex Systems	CPDA
24	Dr. Ayan Mukhopadhyay	Vienna, Austria	1 June -17 July 2019	Visited Vienna University of Technology	DST Ramanujan grant and TU Vienna

25	Dr. Yasir Iqbal	Tbilisi, Georgia	1-10 June 2019	Workshop: Low-Dimensional Emergent Phenomena in Correlated Systems and Topological Quantum Matter, Ilia State University	CPDA
26	Dr. Jatindra K. Rath	Shanghai, China	3-6 June 2019	13th International Photovoltaic Power Generation and Smart Energy Conference & Exhibition (SNEC 2019)	CPDA
27	Dr. Santhosh P. N.	Kyoto, Japan	13 June-12 August 2019	Visited the Kyoto University under FY2019 JSPS Invitational Fellowship for Research	CPDA
28	Dr. Sivarama Krishnan	Hamburg, Germany	16-22 June 2019	Ultrafast X-Ray Summer School (UXSS 2019) at Deutsches Elektronen-Synchrotron (DESY)	CPDA
29	Dr. Ramaprabhu S.	Massachusetts, USA	17-19 June 2019	Nanotech 2019 Conference & Expo and TechConnect World Innovation Conference Boston	CPDA
30	Dr. Prafulla Kumar Behera	Geneva, Switzerland	22 June-22 July 2019	Participated in the CMS Experiment Work	CPDA
31	Dr. Ramachandra Rao M. S.	Iceland	24-26 June 2019	3rd International Workshop on Thin Films for Electronics, Electro-Optics, Energy and Sensor	CPDA
32	Dr. Prabhat Ranjan Pujahari	Moscow, Russia	25-28 June 2019	2nd International Symposium on Cosmic Rays and Astrophysics (ISCRA 2019)	CPDA
33	Dr. Sivarama Krishnan	Aarhus, Denmark	25-30 June 2019	Visited Aarhus University	CPDA
34	Dr. Ramachandra Rao M. S.	Caen, France	27 June-26 July 2019	Visited CRISMAT Laboratory	CPDA
35	Dr. Chandra Kant Mishra	Paris, France	29 June -7 July 2019	Visited Institut d'astrophysique de Paris	CPDA
36	Dr. Prabha Mandayam	Cannes, France	2-5 July 2019	2019 IEEE 20th International Workshop on Signal Processing Advances in Wireless Communications (SPAWC)	CPDA
37	Dr. Yasir Iqbal	Berlin, Germany	3-13 July 2019	Visited Freie University, Berlin	
38	Dr. Chandra Kant Mishra	Valencia, Spain	7-12 July 2019	22nd International Conference on General Relativity and Gravitation and 13th Edoardo Amaldi Conference on Gravitational Waves (GR22-Amaldi 13)	CPDA

39	Dr. Dawood Kothawala	Valencia, Spain	7-12 July 2019	22nd International Conference on General Relativity and Gravitation	CPDA
40	Dr. Neelima M. Gupte	Buenos Aires, Argentina	8-12 July 2019	27th International Conference on Statistical Physics (StaPhys 27)	CPDA
41	Dr. Neelima M. Gupte	Sao Paulo, Brazil	16-19 July 2019	Conference on Perspectives in Nonlinear Dynamics 2019	CPDA
42	Dr. Jatindra Kumar Rath	France	4-9 August 2019	28th International Conference on Amorphous and Nano-Crystalline Semiconductors, Palaiseau	CPDA
43	Dr. Subrahmanyam A.	Germany	15-20 September 2019	18th European Conference on Applications of Surface and Interface Analysis at Dresden	CPDA
44	Dr. Dillip Kumar Satapathy	Germany	16-19 September 2019	Visited Active Polymeric Materials and Microsystems Conference at Technical University, Dresden	CPDA
45	Dr. A. Subrahmanyam	Poland	16-19 September 2019	E-MRS 2019 Fall Meeting at Warsaw	CPDA
46	Dr. Jim Libby	China	17-22 September 2019	BESIII Physics and Software Workshop, Beijing	CPDA
47	Dr. Dillip Kumar Satapathy	Germany	20-21 September 2019	Visited Leibniz Institute of Polymer Research, Dresden	CPDA & Project
48	Dr. Dillip Kumar Satapathy	Netherlands	21-23 September 2019	Discussion meeting	Project
49	Dr. Dillip Kumar Satapathy	Germany	23-24 September 2019	Visited Humboldt University, Berlin	CPDA
50	Dr. A. R. Ganesan	Spain	23-25 September 2019	World Congress on Lasers, Optics and Photonics, Barcelona	CPDA
51	Dr. C. Vijayan	Spain	23-25 September 2019	World Congress on Lasers, Optics and Photonics, Barcelona	CPDA
52	Dr. Ayan Mukhopadhyay	Vienna, Austria	5-12 October 2019	Visited Vienna University of Technology	CPDA
53	Dr. Ramaprabhu	Georgia, USA	13-17 October 2019	236th Electrochemical Society Meeting, Atlanta	CPDA
54	Dr. Ramaprabhu	Georgia, USA	19-25 October 2019	Visited Spelman College, Atlanta	CPDA
55	Dr. Sriramkumar L.	Yangon, Myanmar	21-27 October 2019	Visited to promote IIT Madras for the newly instituted ASEAN Ph.D Fellowship	CPDA

56	Dr. Yasir Iqbal	California, USA	28 October-22 November 2019	Workshop: Topological Quantum Matter: Concepts and Realizations, Kavli Institute for Theoretical Physics, University of California at Santa Barbara	CPDA
57	Dr. Srinivas V.	Las Vegas, USA	4-8 November 2019	2019 Conference on Magnetism and Magnetic Materials (MMM)	CPDA
58	Dr. Prabha Mandayam	Aachen, Germany	10-16 November 2019	Visited to RWTH Aachen University	CPDA
59	Dr. Prabha Mandayam	Aachen, Germany	11-16 November 2019	IITM-RWTH strategic partnership program	UGC-DAAD (via Office of Dean IAR)
60	Dr. Sivarama Krishnan	Trieste, Italy	11-20 November 2019	Visited Elettra Synchrotron Trieste	CPDA
61	Dr. Ramachandra Rao M. S.	Montpellier, France	11-14 November 2019	Visited the University of Montpellier	CPDA
62	Dr. Ramachandra Rao M. S.	Lambeth, United Kingdom	15 November 2019	Editorial Board Meeting of <i>Journal of Physics D: Applied Physics</i>	CPDA
63	Dr. James Frederick Libby	Beijing, China	17-23 November 2019	BESIII Collaboration Meeting at Institute of High Energy Physics, Chinese Academy of Sciences	CPDA
64	Dr. Prabat Ranjan Pujahari	Prague, Czech Republic	18-22 November 2019	11th International Workshop on Multiple Partonic Interactions	CPDA
65	Dr. Yasir Iqbal	Trieste, Italy	23 November-21 December 2019	Project research collaboration with The Abdus Salam International Centre for Theoretical Physics (ICTP)	CPDA
66	Dr. Prafulla Kumar Behera	Geneva, Switzerland	24 November-15 December 2019	Visited for CMS Experiment work	CPDA
67	Dr. Prabat Ranjan Pujahari	Belgrade, Serbia	25 November 2019	Visited University of Belgrade	CPDA
68	Dr. Ramachandra Rao M. S.	United States of America	1-6 December 2019	Materials Research Society (MSR) Symposium, Boston	CPDA
69	Dr. Prafulla Kumar Behera	Bangkok, Thailand	16-20 December 2019	Chulalongkorn University	CPDA
70	Dr. Subrahmanyam A.	Thailand	1 January-2 February 2020	1st International Symposium on Applied Plasma Science and Engineering for Agro and Bio Industry, Chiang Mai	CPDA

71	Dr. Yasir Iqbal	Germany	6-8 February 2020	Project research collaboration with University of Würzburg	Host institution
72	Dr. James Frederick Libby	United Kingdom	9-17 February 2020	Visited the University of Oxford under UKIERI project, Oxford	CPDA
73	Dr. Yasir Iqbal	Spain	9-15 February 2020	Entanglement in Strongly Correlated Systems conference	Project and host institution
74	Dr. Yasir Iqbal	United Kingdom	9-17 February 2020	Collaborative visit to the University of Oxford under UKIERI Project, Oxford	CPDA

Honours and awards obtained by the faculty

Sl. No.	Faculty Member	Award	Awarded by	Awarded for	Date of Award
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i. Awards

1	Dr. Ayan Mukhopadhyay	Early Career Research Award	DST-SERB	Research	1 April 2019
2	Dr. Ashwin Joy	Young Faculty Recognition Award (YFRA)	IIT Madras	Research	November 2019
3	Dr. P. Murugavel	Fellow of Academy of Science	Academy of Sciences Chennai for Scientific Achievements	Research	January 2020
4	Dr. Yasir Iqbal	Simons Associateship of the International Centre for Theoretical Physics	Simons Foundation, New York, USA	Carrying out research in theoretical condensed matter physics	5 February 2020

Journal Editorial Boards

Sl. No.	Faculty Member	Position (Editor/Member)	Journal Name
1	Dr. Sivarama Krishnan	Guest Editor from January 2020 onwards	<i>European Physical Journal</i>

4.16.4 Design and Development Activities

New facilities added or major equipment procured

Sl. No.	Equipment	Value (Rs. in lakhs)
1	Dell Precision 7920 workstation	13,42,484

Patents

Patents filed

Sl. No.	Faculty Member	Topic of Patent
1	Prof. S. Ramaprabhu	Hetero-atom induced ferromagnetism in antiferromagnetic hematite
2	Prof. S. Ramaprabhu	Iron ion rechargeable battery and method of making thereof
3	Prof. S. Ramaprabhu	Lithium ion battery with magnetic anode material

4	Prof. S. Ramaprabhu	Strain sensor for wearable electronics and method of preparation thereof
5	Dr. Pramoda Kumar Nayak	A scalable membrane for power generation, energy storage, energy harvesting, energy conversion, liquid electronics and artificial brain creation using salt and water
6	Dr. Pramoda Kumar Nayak	Osmotic power generation using salinity gradient

4.16.5 Research and Consultancy

Sponsored research projects (ongoing and new)

Sl. No.	Title	Period	Funding Agency	Amount (Rs. in lakhs)	Co-ordinators
1	Competing magnetic interaction as a route to giant exchange bias in layered perovskite oxides	26 March 2019-25 March 2022	Science and Engineering Research Board	14.25	Dr. Santhosh P. N.
2	Quantum emitters based on atomic defects in diamond and 2D materials	31 December 2019-30 December 2022	Ministry of Human Resource and Development	97.27	Dr. Bhallamudi Vidya Praveen, Dr. Pramoda Kumar Nayak
3	Reprogrammable polymer based soft actuators	31 December 2019-30 December 2022	Ministry of Human Resource and Development	49.88	Dr. Dillip Kumar Satapathy
4	Whispering gallery enabled light scattering: achieving enhanced efficiency in perovskite quantum dot sensitized mesoporous metal oxide whisperonic solar cells	31 December 2019-30 December 2022	Ministry of Human Resource and Development	99.41	Dr. Sudakar Chandran, Dr. Ranjit Kumar Nanda
5	Exploring photocatalytic and photovoltaic properties of dimensionally tuned, vertically aligned BiFeO ₃ nanorods and heterostructures	10 February 2020-9 February 2023	Science and Engineering Research Board	29.3	Dr. Somnath Chanda Roy
6	Quantum information technologies with nitrogen vacancy and magnetic resonance	24 February 2020-23 February 2023	Department of Science & Technology	502.14	Dr. Bhallamudi Vidya Praveen, Dr. Ramachandra Rao M.S., Dr. Sethupathi K., Dr. Anil Prabhakar, Dr. Ranjit Kumar Nanda, Dr. Basudev Roy
7	Quantum chaos and many-body phenomena in the light of semi-classics and quantum information theory	3 December 2019-2 December 2021	Science and Engineering Research Board	14.45	Dr. Vaibhav Madhok

8	Projective symmetry group classification of quantum spin liquids and spin nematics for systems with arbitrary spin	5 February 2020-4 February 2023	Science and Engineering Research Board	6.6	Dr. Yasir Iqbal
9	Integration of PZT with 2D layered MoS ₂ for low-power non-volatile memory and broad band photodetectors	14 May 2019-13 May 2021	Science and Engineering Research Board	56.46	Dr. K. Lakshmi Ganapathi, Dr. Ramachandra Rao M. S., Dr. Sethupathi K., Dr. Pramoda Kumar Nayak
10	An experimental investigation of resonances and stable excited states of interstellar medium anions through photoexcitation	5 October 2019-5 September 2022	Science and Engineering Research Board	69.29	Dr. Aravind G.
11	Exotic magnetic properties and spin dynamics of low dimensional and frustrated quantum magnets	16 May 2019-15 May 2022	Department of Science & Technology	90.89	Dr. Panchanana Khuntia
12	Multifunctional plasmonic nanosystems for photodynamic therapy	4 January 2019-31 March 2020	Alumni Association	2.75	Dr. Prem B. Bisht
13	Bolometer-based millimeter wave sensing for the development of microwave camera	6 July 2019-5 July 2022	Science and Engineering Research Board	40.52	Dr. Subramanian V., Dr. Ramachandra Rao M.S.
14	Investigating the observational imprints of non-trivial inflationary dynamics	27 June 2019-26 June 2022	Science and Engineering Research Board	10.19	Dr. Sriramkumar L.
15	Examining the imprints of cosmic magnetic fields on primordial correlations	9 August 2019-8 August 2021	Science and Engineering Research Board	19.2	Dr. Sriramkumar L.
16	Synthesis and electrochemical properties of transition metal oxides (Mg, Ca and Sr-doped LaFeO ₃) for high-performance electrodes	15 September 2019-14 March 2020	Department of Science & Technology	4	Dr. Sudakar Chandran
17	Thermoelectric power studies on materials showing simultaneous magnetic and crystal structural transitions	1 July 2019-31 March 2022	Council of Scientific and Industrial Research	13	Dr. Nirmla R

18	Spin current transport across antiferromagnetic/metallic oxide interfaces	4 September 2019-3 September 2021	Department of Science & Technology	7.5	Dr. Ramachandra Rao M. S.
19	Investigation of effect of carbon quantum dots on carrier generation in organic semiconductor thin films for photovoltaic applications	1 July 2019-31 March 2022	Council of Scientific and Industrial Research	13.23	Dr. Jayeeta Bhattacharyya, Dr. Vijayan C., Dr. Debdutta Ray
20	Sn Integrated 3D, porous carbon-based scaffolds as high capacity anode for sodium-ion batteries	21 October 2019-20 October 2022	Science and Engineering Research Board	10.05	Dr. Sudakar Chandran
21	Flexible quantum light emitting devices from van der Waals layered materials	28 November 2019-27 November 2022	Impacting Research Innovation and Technology - IMPRINT	87.76	Dr. Abhishek Misra, Dr. Ramachandra Rao M.S., Dr. Jayeeta Bhattacharyya, Dr. Lakshmi Ganapathi, Dr. Pramoda K. Nayak
22	Network models for climate studies	30 October 2019-29 October 2021	Department of Science and Technology	13.76	Dr. Neelima M. Gupte
23	Keldysh renormalization group for quantum spin liquids	16 December 2019-15 December 2021	Science and Engineering Research Board	31.5	Dr. Yasir Iqbal
24	Development of high-performance and low-cost boron-doped diamond electrodes for waste water treatment	4 December 2019- 3 January 2022	Impacting Research Innovation and Technology - IMPRINT	142.78	Dr. Ramachandra Rao M.S., Dr. Kothandaraman Ramanujam, Dr. Arunachalam N., Dr. Sathyan S.
25	Development of large area two-dimensional layered quantum material for memristor applications	5 February 2020-4 February 2023	Ministry of Human Resource and Development	99.48	Dr. Abhishek Misra, Dr. Anbarasan P., Dr. Lakshmi Ganapathi K., Dr. Pramoda K. Nayak
26	Scaling electronic dynamics in finite quantum systems from angstrom to nanoscale	15 November 2016-31 October 2020	Max Planck Institute for Nuclear Physics	43.67	Dr. Sivarama Krishnan
27	Indigenous low-cost compact optical non-contact device for in-situ characterisation of soft-matter	19 August 2017-17 August 2021	Impacting Research Innovation and Technology - IMPRINT	118.46	Dr. Sivarama Krishnan, Dr. Dillip K Satapathy

28	Single crystal growth magnetic, electronic and thermal transport studies of multi-functional materials: oxides, intermetallics and polymers - FIST	31 March 2017-30 March 2022	Department of Science & Technology	385	HoD and others
29	Development and characterization of 3D graphene foam as a thermal insulator for space applications	31 October 2017-30 June 2020	Indian Space Research Organisation	27.99	Dr. Manu Jaiswal
30	Durable fuel cells based on polymer coated nanocarbon composites (DUPONT)	15 May 2017-14 May 2020	Indo-French Centre for the Promotion of Advance Research	17.46	Dr. Ramaprabhu S.
31	2D Semiconductor heterostructure devices for next generation electronics	5 June 2017-4 June 2022	Department of Science & Technology	86.27	Dr. Lakshmi Ganapathi K
32	Design and development of sensors for the detection of explosive agents	27 July 2017-26 July 2020	DRDO	82.84	Dr. Somnath Chanda Roy, Dr. Ranjit Kumar Nanda
33	Development of graphene based composite materials for solar energy applications	27 July 2017-26 July 2020	Department of Science & Technology	30.7	Dr. Somnath Chanda Roy
34	Photovoltaic effect in oxygen vacancy-controlled $\text{Bi}_{1-x}\text{A}_x\text{FeO}_{3-g}$ (A = Ca^{2+} , K^+ , Cs^+) perovskite: polarization modulated and nanoparticulate sensitized solar cells	4 August 2017-3 August 2020	Department of Science & Technology	45.28	Dr. Sudakar Chandran
35	Surface dominated electronic transport in lateral and vertical two dimensional layered topological insulator heterostructures- Ramanujan Fellowship	18 September 2017-17 September 2022	Department of Science & Technology	114.3	Dr. Pramoda Kumar Nayak

36	Immobilization of calnuc protein on ZnO nanostructures film for biosensor applications	29 December 2017-28 December 2020	Department of Biotechnology	45.97	Dr. Santhosh P. N., Dr. Murugavel P., Dr. Gopala Krishna A., BT
37	Development of technology and processes to produce nanomaterials, nanocomposites, nanocoatings, nanolubricants and nanoceramics	16 April 2018-15 April 2021	Department of Science & Technology	1029.21	Dr. Ramachandra Rao M.S., Dr. Ramaprabhu S., Dr. Bhattacharya S. S., MM
38	A novel paradigm for strongly correlated systems—Ramanujan Fellowship	5 June 2018-4 June 2023	Department of Science & Technology	38	Dr. Ayan Mukhopadhyay
39	Emergent phenomena in frustrated magnets and Heusler materials	6 July 2018-5 July 2021	Department of Science & Technology	42.2	Dr. Panchanana Khuntia
40	Investigation of spin hall magnetoresistance (SMR) in highly spin-orbit coupled oxide/magnetic insulator heterostructures – DST SERB	16 July 2018-15 July 2021	Department of Science & Technology	28.6	Dr. Ramachandra Rao M.S., Dr. Sethupathi K.
41	Highly porous 3D graphene composites for protecting electronic equipment from electromagnetic interference (EMI)	31 August 2018-30 August 2020	Uchhatar Avishkar Yojana - IIT Madras	162.45	Dr. Subramanian V., Dr. Ramaprabhu S., Dr. Krishnan Balasubramanian, ME
42	Development of a diverse lab-on-a-chip platform for plastic electronics, microcatalysis and biosensing applications using microlithography by directed self-assembly driven by laser-induced microbubbles	2 January 2019-1 January 2022	Impacting Research Innovation and Technology - IMPRINT	5.08	Dr. Basudev Roy
43	Exploring magnetic, magnetocaloric and magnetoresistive properties of $Ti(Fe_{1-x}Co_x)_2$ ($0 < x < 1$)	4 December 2018-3 December 2021	Science and Engineering Research Board	10.05	Dr. Nirmala R.
44	Edge saturated Si ₂ BN nano-ribbon as high-capacity anode materials for next generation Mg ion batteries	29 November 2018-28 November 2021	Science and Engineering Research Board	10.05	Dr. Ranjit Kumar Nanda

45	A novel non-perturbative approach for understanding heavy-ion collisions	11 March 2019-10 March 2022	Science and Engineering Research Board	9.02	Dr. Ayan Mukhopadhyay
46	Unravelling radiation damage processes in biologically relevant mesoscopic systems	15 March 2019-14 March 2021	Scheme for Promotion of Academic and Research collaboration	74.27	Dr. Sivarama Krishnan
47	Setting up silicon detector characterization facility	20 March 2019-19 March 2022	Science and Engineering Research Board	39.95	Dr. Prafulla Kumar Behera
48	TMDC transistors interfaced with graphene electrodes on flexible substrates	25 March 2019-24 March 2021	Science and Engineering Research Board	22.34	Dr. Manu Jaiswal
49	Van der Waals heterostructures for non-volatile flash memory applications	19 March 2019-18 March 2022	Science and Engineering Research Board	41.91	Dr. Abhishek Misra

Industrial consultancy projects (ongoing and new)

Sl. No.	Faculty Member	Title	Industry	Amount (Rs. in lakhs)
1	Dr. Ramachandra Rao M. S.; Dr. Ramaprabhu S. (Co-Investigator)	Testing of external sample by various sophisticated instruments	Common Code	5
2	Dr. Basudev Roy	To design high numerical aperture lenses for small diameter cameras	Common Code	0
3	Dr. Ramachandra Rao M.S.; Dr. Bhattacharya S. S.; Dr. Ramaprabhu S. (Co-Investigator)	Testing of internal samples by various sophisticated instruments	Common Code	5
4	Dr. Murugavel P., Dr. Dillip Kumar Satapathy (Co-Investigator)	Dielectric relaxation spectroscopic measurements at Physics Department facility - IT	Common Code	5
5	Dr. Murugavel P., Dr. Dillip Kumar Satapathy (Co-Investigator)	Dielectric relaxation spectroscopic measurements at Physics Department facility	Foxconn Technology (India) Private Limited	5
6	Dr. Krishnamurthy C. V.	Assessment of changes in capacitance due to process changes	Common Code	0
7	Dr. Ganesan A. R.	Study and analysis of phase aberrations due to atmospheric effects using Shack-Hartmann Wavefront Sensor (SHWFS)	Centre for High Energy Systems and Science	9.95
8	Dr. Ramachandra Rao M. S.	Detailed characterization study on piezoelectric thin films (PZT) and single crystals for various piezosensors and actuator applications	Defence Research and Development Organisation	23.72

9	Dr. Ramaprabhu S., Co-Investigator: Dr. Manu Jaiswal	Synthesis and characterisation of platinum nano-catalyst for fuel cell, hydrogen sensor applications in the context of cold trap regeneration of sodium cooled fast reactors	Indira Gandhi Centre for Atomic Research	42.48
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RBIC projects (ongoing and new)

Sl. No.	Faculty Member	Title	Industry	Amount (Rs. in lakhs)
1	Dr. S. Ramaprabhu	Synthesis and characterisation of platinum nano-catalyst for fuel cell, hydrogen sensor applications in the context of cold trap regeneration of sodium cooled fast reactors	IGCAR	36
2	Dr. S. Ramaprabhu	Capture and conversion of CO ₂ gas from automobile I.C. engine exhaust gases using nanocomposite materials	Tide Water Oil Co. Limited	25
3	Dr. Manu Jaiswal (Co-Investigator), Dr. K. Lakshmi Ganapathi, Dr. S. Ramaprabhu	Graphene-based membranes for water purification applications	TATA Steel (TSAMRC)	16.57

Exchange programme with other universities, including institutions/universities under MoU

Faculty members' participation with other institution under MoU

Sl. No.	Faculty Member	Participation details	University/Institution which has MoU
1	Dr. Prem B. Bisht	Collaborative research	University of Sydney, Australia
2	Dr. Prem B. Bisht	Collaborative research	University of Southampton, UK

Distinguished visitors to the department

Sl.No.	Visitor and Designation	Date of Visit	Purpose of Visit
1	Prof. Atul Varshney, Institute of Science and Technology (IST), Austria	5 April 2019	Seminar talk: Viscous flow of polymers and viscous electron
2	Prof. Vincent G. Harris, Northeastern University	5 April 2019	Seminar talk: Modern magnetoceramics: basic principles and the impact of rf ferrites devices on the 5G revolution
3	Prof. Surendra Pal Singh, University of Arkansas, USA	8, 9, 15, 16 April 2019	Pedagogical lecture on Laser Theory
4	Prof. Surendra Pal Singh, University of Arkansas, USA	10 April 2019	Seminar talk: Orbital angular momentum carrying light beams-II
5	Mr. K. Narayan, CMI, Chennai	19 April 2019	Seminar talk: Extremal surfaces, de Sitter entropy and entanglement in ghost systems
6	Prof. Kaushik Roy, Stony Brook University and BNL	19 April 2019	Seminar talk: QCD in the Regge-Gribov limit: an introduction to the color glass condensate (CGC) EFT

7	Prof. Surendra Singh, University of Arkansas	24 April 2019	Colloquium talk: Floating frogs and levitating lattoos
8	Prof. Abhishek Atreya, Bose Institute, Kolkata	25 April 2019	Seminar talk: On dark matter self-interactions, viscosity and cosmic expansion
9	Prof. K. Easwaran, Director (Acting CEO), Altech Power and Energy Systems Private Limited	14 May 2019	Seminar talk: On the pathway to the Riemann Hypothesis
10	Prof. Prafulla Oak, IMSc, Chennai	15 May 2019	Seminar talk: Beta function computations: using exact RG and holography
11	Prof. John Bechhoefer, Simon Fraser University of Canada	24 May 2019	Seminar talk: The details are in the devil: Maxwell's demon in the real world
12	Mr. V. Sreenath, Inter-University Centre for Astronomy and Astrophysics, Pune	29 May 2019	Seminar talk: Spherical collapse of fuzzy dark matter
13	Prof. Saptarshi Mandal, IOP Bhubaneswar	2 July 2019	Seminar talk: Defect production and quench dynamics in three-dimensional Kitaev model
14	Prof. Suryanarayana J., IIT, Hyderabad	9 July 2019	Seminar talk: Magnetotransport through magnetostriuctive nanocontacts
15	Prof. Abhishek Iyer, INFN, Napoli, Italy	15 July 2019	Seminar talk: Probing physics across the energy frontier
16	Prof. Laura Jeanty, University of Oregon	30 July 2019	Seminar talk: Searching for long-lived supersymmetry with the ATLAS experiment
17	Prof. Jayson Paulose, University of Oregon	31 July 2019	Seminar talk: Condensed matter physics at large scales: from mechanical meta-materials to spatial evolution
18	Prof. Daniel Grumiller, Technical University, Wien	14-23 August 2019	Seminar talk: Local quantum energy conditions in non-Lorentz invariant QFTs
19	Mr. Amitabh Virmani, CMI	21 August 2019	Seminar talk: BTZ black hole violates cosmic censorship
20	Prof. Arindam Chatterjee, Indian Statistical Institute, Kolkata	22 August 2019	Seminar talk: Searching for new physics on earth and in the sky — the case for inflaton and dark matter
21	Prof. Matteo Baggioli, Marie-Curie Fellow at IFT, UAM Madrid	12-21 September 2019	Delivering mini course and research collaboration
22	Prof. Bart Sorée, KU Leuven and University of Antwerpen, Belgium	13 September 2019	Seminar talk: Novel classical and quantum devices beyond
23	Prof. Baggioli, Institute of Theoretical Physics, Madrid	16-21 September 2019	Conducted a practical mini-course on Applied Holography
24	Prof. Tarun Souradeep, IISER-Pune	18 September 2019	Colloquium talk: Quest for cosmic origin
25	Prof. Varun Sethi, Delhi University	20 September 2019	Seminar talk: Holographic nuclear matter - Why, how, and the phases

26	Prof. Aavek Bid, Indian Institute of Science Bangalore	25 September 2019	Colloquium talk: Quantum phase transition in atomically-thin layers of NbSe ₂
27	Prof. Naveen S. Prabhakar, Department of Theoretical Physics, TIFR (Mumbai)	4 October 2019	Seminar talk: Large N exact Landau-Ginzburg potentials for Chern-Simons theories coupled to fundamental matter
28	Prof. Shovon Pal, ETH Zurich	10 October 2019	Seminar talk: Low-energy excitation and time-resolved dynamics in heavy-fermion systems
29	Prof. T. S. Mahesh, IISER-Pune	23 October 2019	Colloquium talk: Nuclear spins as quantum bits
30	Prof. Abhimanyu Susobhanan, Department of Astrophysics, TIFR (Mumbai)	24 October 2019	Seminar talk: Nanohertz gravitational waves from eccentric supermassive binaries
31	Prof. Pramod A. Pullarkat, RRI, Bangalore	30 October 2019	Colloquium talk: Mechanical responses of living cells
32	Prof. Maria Eugenia Toimil-Molares, GSI Helmholtz Centre for Heavy Ion Research, Darmstadt	1 November 2019	Seminar talk: Ion-track nanotechnology
33	Prof. Raghuveer Parthasarathy, University of Oregon	5 November 2019	Colloquium talk: Glimpses of gut microbes in their physical world
34	Prof. Balachandra Suri, IST- Austria	7 November 2019	Seminar talk: Turbulence: dynamics, geometry, and topology
35	Prof. John Ellis, King's College, London	13 November 2019	Colloquium talk: What are we? Where do we come from? Where are we going?
36	Prof. Amritha Janardhnan, University of Manchester	13 November 2019	Seminar talk: Ballistic mass transport and dead dielectric water in graphitic nanochannels
37	Prof. John Ellis, King's College, London, UK	14 November 2019	Seminar talk: Cosmological inflation: a bridge between string theory and particle physics
38	Prof. Wilfrid Prellier, CRISMAT, Caen, France	25 November 2019	Seminar talk: Functional oxide thin film for diverse applications
39	Prof. Jayendra Bandyopadhyay, BITS-PILANI	25 November 2019	Seminar talk: Floquet Analysis of the dynamics of current flow in a periodically driven hard-core bosonic system
40	Prof. Yury Gogotsi, Drexel University Philadelphia, US	29 November 2019	Seminar talk: MXenes - 2D materials far beyond graphene
41	Prof. Rau Louisiana State University, Baton Rouge, USA	29 November 2019	Seminar talk: Combinatorics of fifteen schoolgirls, a pair of qubits, a rainbow of four colours: common patterns and an Indian connection
42	Prof. Yury Gogotsi, Drexel University, Philadelphia, US	2 December 2019	Seminar talk: MXenes - 2D Materials far beyond graphene
43	Prof. Servet Ozdemir, University of Manchester	2 December 2019	Seminar talk: Quantum transport on topologically protected flat bands of ABC-stacked multilayer graphene

44	Prof. Michele Heurs, Leibniz University, Hannover	5 December 2019	Seminar talk: Gravitational wave detection using laser interferometry beyond the standard quantum limit
45	Prof. Srinivasa Prasanna, Physical Research Laboratory, Navrangpura, Ahmedabad	18 December 2019	Seminar talk: The role of accurate molecular calculations to probe fundamental physics
46	Prof. P. S. Saumia, JINR Dubna	18 December 2019	Seminar talk: Effects of magnetic field on plasma evolution in relativistic heavy-ion collisions
47	Prof. Anirban Chakraborti, JNU	19 December 2019	Seminar talk: Phase separation behavior in financial markets
48	Prof. Venkatesh Ramakrishnan, Chile and the Event Horizon Telescope Consortium	2 January 2020	Seminar talk: First image of a supermassive black hole
49	Prof. Chandan K. Mishra, University of Pennsylvania, USA	9 January 2020	Seminar talk: Seeing is believing: experimental insights about supercooled liquids, glasses and controlled crystallization
50	Prof. Gopal Dixit, Department of Physics, IIT-Bombay	10 January 2020	Seminar talk: Attosecond sciences meet condensed matter physics
51	Prof. Benoit Doucot, Sorbonne Universities, LPTHE Paris	10-25 January 2020	Research collaboration and seminar
52	Prof. Giuseppe Policastro, CNRS - LPENS Paris	10-31 January 2020	Research collaboration and seminar
53	Prof. Satish K. Saravanan, International Institute of Physics - UFRN, Brazil	13 January 2020	Seminar talk: Influence of spin in curved geometries
54	Mr. Gautam Venugopalan, Caltech (IITM alumnus)	13 January 2020	Seminar talk: Current and next generation terrestrial gravitational wave detectors
55	Prof. Bala Iyer, ICTS-TIFR, Bangalore	22 January 2020	Colloquium talk: Experiments driving theory: The two-body problem in general relativity
56	Prof. Arnab Kundu, SINP	3 February 2020	Seminar talk: Maximal chaos with a boundary
57	Prof. Balpreet Singh Ahluwalia, The Arctic University of Norway	5 February 2020	Seminar talk: Nano-optics using integrated photonics
58	Prof. Anders Sandvik, Boston University, USA	5 February 2020	Colloquium talk: Quantum annealing: myths and realities
59	Prof. Michael Urban, Universite Paris-Saclay	6 February 2020	Seminar talk: RPA response functions in neutron matter and their effect on pairing
60	Prof. Sujit Sarkar, Poornaprajna Institute	7 February 2020	Seminar talk: A study of interaction effects and Quantum Berezinskii-Kosterlitz-Thouless Transition in the Kitaev Chain
61	Prof. Anton Rebhan, TU Wien, Vienna	7-22 February 2020	Research collaboration and seminar

62	Prof. Sukannya Bhattacharya, Physical Research Laboratory, Ahmedabad	12 February 2020	Seminar talk: Primordial black holes and gravitational waves in non-standard cosmologies
63	Prof. Harald Skarke, Lecturer, TU Wien, Vienna	12-23 February 2020	Research collaboration and seminar
64	Prof. Tanmoy Modak, National Taiwan University	13 February 2020	Seminar talk: Signature of sub-TeV resonances at the LHC and beyond
65	Prof. S. Sridhar, Raman Research Institute, Bangalore	26 February 2020	Colloquium talk: Structure and dynamics of galaxies
66	Prof. Gautam Menon, Ashoka University and IMSc, Chennai	6 March 2020	Colloquium talk: Landscapes in physics and biology
67	Dr. Guvinder Singh, Guru Nanak Dev University	3-6 March 2020	Collaborative research

4.16.6. Other Activities of the Department/Centre

Results obtained in research work (Ph.D thesis) of the scholar/faculty

S.No	Scholar	Guide	Title
1	Buchepalli Venkateshwarlu (PH09D006)	Dr. Harish Kumar N.	Structural, magnetic and electrical transport properties of quaternary Heusler alloys $\text{Cu}_2(\text{Mn, Fe})\text{Al}$ and $\text{Co}_2(\text{Ti, Fe})\text{Ge}$
2	Fabitha K (PH11D013)	Dr. M. S. Ramachandra Rao	Rare earth ion doped ZnO nano- and micro-structures for light emission applications in the visible spectral range
3	Abdul Basith K. (PH12D019)	Dr. Prafulla Kumar Behera	Measurements of branching fraction and direct CP asymmetry in $B^\pm \rightarrow K_S^0 K_S^0 K_S^0 K_S^0 K^\pm$ and a search for $B^\pm \rightarrow K_S^0 K_S^0 K_S^0 K_S^0 \pi^\pm$ at Belle
4	Asalatha A.S. (PH12D026)	Dr. S. Ramaprabhu	Contact metal permeation effects and potential hydrogen storage in carbon based materials
5	Bramhachari Khamari (PH12D029)	Dr. B. Ranjit Kumar Nanda	Band topology of Bi-based perovskite oxides
6	Lakshmi Kola (PH12D038)	Dr. P. Murugavel	Dielectric, magnetoelectric and photovoltaic studies on $\text{BaTi}_{1-x}\text{Sn}_x\text{O}_3$ piezoceramics
7	Prabal Sen (PH12D043)	Dr. S. Kasiviswanathan	Persistent photocurrent and low temperature electrical conduction in indium oxide and gold nanoparticles incorporated indium oxide thin films
8	Shibnath Samanta (PH12D055)	Dr. K. Sethupathi, Dr. Sankaranarayanan V.	Study on electrocaloric effect, energy storage and bandgap tuning in PZT-based compounds
9	Subhasis Samanta (PH12D056)	Dr. B. Ranjit Kumar Nanda	Electronic structure of strongly correlated non-polar oxide interfaces
10	"Suresh G. (PH12D058)"	Dr. Dillip Kumar Satapathy, Dr. M.S. Ramachandra Rao	Exploring the physical and mechanical properties of poly (vinylidene fluoride), its blends and composites
11	Haripriya G. R. (PH13D004)	Dr. Sankaranarayanan V., Dr. K. Sethupathi	Effect of cationic substitution on the structure and magnetic properties of $\text{A}_2\text{FeC}_0\text{O}_6$ (A = Ho, Dy, Tb, Eu and Sm)

12	K. Rajan Rebin (PH13D005)	Dr. Jim Libby	Effect of event-by-event reconstruction and low event statistics on the sensitivity of neutrino oscillation parameters at ino-ical detector
13	Usahasi Roy (PH13D014)	Dr. Manoj Gopalakrishnan	Intrinsic noise in the biochemical sensory pathway of Escherichia coli and its implications
14	Antarjami Sahoo (PH13D021)	Dr. Prahallad Padhan	Interfacial antiferromagnetic coupling derived exotic physical phenomena in SrRuO ₃ -PrMnO ₃ superlattices
15	Arpita Ghosh (PH13D023)	Dr. S. Ramaprabhu	Electrochemical studies of carbon nanostructures in conjunction with metal composites towards energy conversion and storage applications
16	Debika Chowdhury (PH13D028)	Dr. L. Sriramkumar, Dr. Dawood Kothawala	Inflation, bounces, primordial correlations
17	Geethu P.M. (PH13D031)	Dr. Dillip Kumar Satapathy	Interfacial rigidity and intracellular polymer dynamics in microemulsions
18	Manikya Pratima B. (PH13D035)	Dr. A. Subrahmanyam, Dr. Mahaveer Kumar Jain	Studies on sol-gel derived mixed metal oxides of titania-silica for protective coatings and titania-tungsten oxide for electrochromic applications
19	Pretheesh Kumar V. C. (PH13D041)	Dr. A. R. Ganesan	Development of novel interferometric methods for nano radian tilt measurement
20	Ranjana Rani Das (PH13D042)	Dr. P. N. Santhosh	Exchange bias and spin-phonon studies in perovskite-based functional materials: role of competing magnetic interactions
21	Shashikant Singh Kunwar (PH13D046)	Dr. Rajesh Narayanan	Interplay of disorder and interactions in two-dimensional systems
22	Sutapa Samanta (PH13D052)	Dr. Suresh Govindarajan	Microscopic and macroscopic counting of BPS states in four-dimensional superstring theories
23	Atal Bihari Swain (PH13D073)	Dr. P. Murugavel, Dr. V. Subramanian	Ferroelectric, magnetoelectric and photovoltaic properties of multifunctional 0.5Ba(Zr _{0.2} Ti _{0.8})O ₃ -0.5(Ba _{0.7} Ca _{0.3})TiO ₃ oxide in bulk and thin films
24	Biporjoy Sarkar (PH13D083)	Dr. Manu Jaiswal, Dr. Dillip Kumar Satapathy	Conducting polymers under mechanical deformation and vapor-induced swelling: physics and sensor applications
25	Gummaluri Venkata Sivasree PH14D005	Dr. C. Vijayan	Novel strategies for enhanced random lasing and biocompatible Raman lasing
26	Hisay Lama (PH14D007)	Dr. Dillip Kumar Satapathy, Dr. Basavaraja M. Guruppa, CH	Desiccation cracks in colloidal deposit: effect of particle shape and external fields
27	Soumyajit Saha (PH14D014)	Dr. G. Aravind, Dr. P. C. Deshmukh	Wigner time delay studies in photoionization and photodetachment of atomic systems
28	Mr. Kanka Ghosh (PH14D034)	Dr. C. V. Krishnamurthy	Molecular dynamics investigations of structure and dynamics of fluids under partial confinement

29	Sreetama Ghosh (PH14D302)	Dr. S. Ramaprabhu, Dr. R. Sarathi, EE	Carbon capture and electrochemical carbon dioxide reduction utilising metal oxide and metal carbide based nanocomposites
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Socially relevant activities carried out by the department

1. A short-term course on Two-dimensional

Materials: Physics and Applications was conducted with the sponsorship of AICTE, jointly organised by the Department of Physics and Centre for Continuing Education, IIT Madras, from 21-26 September 2019. It was coordinated by Prof. M. S. Ramachandra Rao, Dr. Pramoda K. Nayak and Dr. K. L. Ganapathi. In total, 38 passionate participants participated in the short-term course and arranged with 21 lecture series. The participants visited many labs (MSRC, LTP, Graphene Lab and Research Park) during the course.

2. International Conference on Laser Deposition:

Nanostructures, Heterostructures and 2D layers (iCOLD-2019) was organised by the Indian Institute of Technology Madras in association with the Departments of Electronics and Communication and Mechanical Engineering, Alva's Institute of Engineering and Technology, Mangalore, Karnataka, from 27-29 November 2019.

Prof. M. S. Ramachandra Rao was the Co-Chair and Prof. K. Sethupathi was the Co-convenor of the conference. Seven faculty members from IITM attended the conference and presented Plenary and invited talks; 10 scholars had oral/poster presentations in the conference.

3. In-House Symposium:

The Department of Physics organised the annual 5th Physics In-House Symposium (8-9 November 2019) where all faculty members and students actively participated and showcased their ongoing research work. On this occasion, the department also invited eminent faculty/scientists to be part of the symposium and deliver lectures. The

symposium helped to inculcate intra-departmental scientific discussions and collaborations.

4. National Symposium on Light Matter Interactions (NSLIMI2019)

National Symposium on Light Matter Interactions (NSLIMI2019) was conducted during 26-28 December 2019. The inaugural session of the symposium was held at IC&SR Hall III. The symposium mainly focused on rapid advances in nano-photonics and plasmonics and areas such as random lasing, optical mode propagation in symmetric systems and optical fibers along with biomedical applications.

5. The Chennai Symposium on Gravitation and Cosmology

was organised from 22-24 January 2020, by the Gravitation and Cosmology Group, with support from the Department of Physics and the Office of the Dean, International and Alumni Relations, IITM.

The two broad aims of the symposium were: (i) to showcase Chennai as an attractive destination for research in the areas of gravitation and cosmology, and (ii) to provide exposure to graduate students and post-doctoral fellows to the recent developments in these areas.

6. Project Survey and Experiments

The following two internship projects were undertaken during the summer of 2019 under the summer internship scheme of Rural Technology Action Group (RuTAG) cell of the Indian Institute of Technology Madras, under the guidance of Prof. Prem B. Bisht, Department of Physics:



i Study on Water Harvesting From Rain and Natural Resources in Uttarakhand (Champawat)

Varun Navaneeth and Yagna Madhavan, Sri Venkateswara College of Engineering, Sriperumbudu, under the guidance of Prof. Prem. B. Bisht, IIT Madras

The report aims to review the natural sources of Champawat, a hilly terrain in the state of Uttarakhand. The district faces acute shortage of water in spite of a good annual rainfall. It is because of the absence of rainwater harvesting structures and lack of awareness for it. The study was carried out by visiting source sites like Mathkhani Khola, Kharkharki and Moonghat, which were the sources of water supply to the villages. Interaction with the residents and reading the detailed project reports by the government agencies gave an in-depth understanding of the situation.

A visit to the schools in and around the Champawat block was undertaken. There were also short trips undertaken to Nainital (the lake) and Pancheswar (Kali river). On comparing the conditions in Chennai and Champawat, the issue was found to be more severe in Chennai, as there are variations in geographical location, development, occupation and water usage. The findings of the study revealed that water management is not given due attention. Good

maintenance of natural sources and carrying out water-auditing exercises will reduce the suffering of public in summer and while undertaking agriculture.

ii Survey on Science Experiments in Rural Schools of Uttarakhand

Abinaya Parasakthi P., Ramco Institute of Technology, Rajapalayam, TN; Shohan. S, K. S. Rangasamy College of Technology, Tiruchengode, TN; under the guidance of Prof. Dr. Prem B. Bisht, IIT Madras.

Exposure to experiments is an important aspect of education for generating employment at various levels. The main aim of this survey is to know how good the students are in their experimental skills and to know whether the rural schools follow the practical sessions in their regular time schedule. We started our work with Learning and Science Resource Centre (LSRC), Kulethi by knowing some simple experiments and went to various schools for survey. We planned to visit seven schools in Champawat town. However, we visited four schools; three schools were invited to the LSRC, Kulethi, where many experiments are available to students to improve their practical knowledge. In the following table, a summary of the site visit is given.

Date of Visit	Schools Visited
23 May 2019	GHSS (Palson), Champawat
24-25 May 2019	LSRC Kulethi, Champawat
27 May 2019	Sunshine School, Champawat
27 May 2019	GUPS School-Kulethi
28 May 2019	VVMIC School-Champawat
29 May 2019	GGIC School-Champawat
30 May 2019	Jawahar Navodaya Vidhyalaya-Champawat
7-8 June 2019	Participated in a workshop, Modern digital learning methods for STEM in hilly areas at GGIC, Champawat

Our main aim was to take stock of the level of science experiments in each school. As a conclusion, we came across following three issues, which make the students lacking in the practical knowledge during their course of study in schools.

1. Lack of time for experiments
2. Lack of lab facilities
3. Lack of maintenance

There was one exception of Jawahar Navodaya Vidhyalaya Champawat that stands distinct in the experimental facilities among all the schools visited. We recommend that all the schools should take example from this school to start improving the experimental facilities and procedures in their school.

International collaboration achievements by the department

1. Faculty visit

Sl.No	Faculty Member	Purpose of Visit	Date and Venue
1	Dr. V. Srinivas	Guiding Scholar: Mr. Sudhakar Rao Hari, Universidad de Castilla-La Mancha, 13071 Ciudad Real, Spain	
2	Dr. Ayan Mukhopadhyay	Joint guidance for Mr. Alexander Igor Soloviev, registered at Technical University, Wien (Vienna); he is a Erwin Schrodinger Fellowship awardee	October 2015-October 2020
3	Dr. Sivarama Krishnan	Joint guidance for Mr. Hemkumar Srinivas with Prof. Thomas Pfeifer, Max Planck Institute of Nuclear Physics, registered at the University of Heidelberg	15-30 May 2019
4	Dr. Sivarama Krishnan	Visited SPARC international Co-PI Prof Dr. Marcel Mudrich, Aarhus university to engage in collaborative research as part of the ongoing project.	15-30 June 2019
5	Dr. Marcel Mudrich	Visiting faculty from Aarhus University, visited IIT-Madras as part of SPARC collaboration	15-30 November 2019
6	Dr. Ramaprabhu S	1. A collaborative project on the development of flexible strain sensors with TATA 2. New nanocoating on glass with Saint Gobain nanofluids/nanolubricants with NTPC	January 2020
7	Dr. Ramaprabhu S	A Distinguished Visiting Professor at Japan Advanced Institute of Science and Technology, Japan	March 2020

2. Student visit

Sl.No	Student	Purpose of Visit	Date and Venue
1	Muhammed Juvaaid M. PH13D201	Joint guidance Ph.D. programme in NUS	April 2019
2	Gayathri R. PH17D045	International collaboration research visit of IITM-NTU Singapore on Photonics, Light-Matter Interaction	August 2019-August 2020
3	Shubhayan Bhattacharya PH13D205	The scholar is being guided jointly with faculty from ORC Southampton, UK, on Ultrafast Optics and Spectroscopy	December 2019
4	Anubhab Sahoo PH15D025	Joint guidance with Dr. Rajeev Pattathil, Rutherford Appleton Labs, UK	

Activities initiated

Major infrastructure development made in the department

1. Nano Functional Materials Technology Centre

Located in MSRC building, the Nano Functional Materials Technology Centre (NFMTC) was built with funding from the Department of Science and Technology and industry under the Nano-Mission programme. The centre is one of its kind in terms of working closely to solve industry-related problems, which is one of the mandates of the DST-Nano-mission. Establishing a centre with the support from the industry (80% DST and 20% industry) nearly 15 years ago, is unique and a first in the country amongst

any IIT. It has sort of provided a nucleation point for many IITs/institutes to look for such opportunities. The phase-1 of the five-year project was dealt with Murugappa Group and Orchid Chemicals. Researchers worked closely on the development of nanocrystalline diamond coatings on WC dies (TI Cycles Group) to solve the mechanical-wear of the WC dies. The other two important projects that were carried out with industry (CUMI) were on the development of nanoceramics for abrasive applications and production of CNTs. The research work on nanocrystalline diamond coatings has been quite successful, and it has been further extended to improving the life-time of machine tools, turning inserts and carbide components used in

automobile and aerospace industries.

The success of the diamond-technology developed by Prof. MSR Rao's group for mechanical, thermal and bio-medical applications has led to the incubation of a company in IIT Madras Research Park by Prof. Rao. The start-up also won a national level contest, Dare to Dream. The award was given to Prof. Rao's group to develop thermal coatings for defence applications. The phase-2 project of NFMTTC is currently on with continued industry support. It is noteworthy to mention that Prof. M.S.R. Rao is helping engage a core-group of researchers from Physics and other departments in using his diamond growth and all peripheral characterisation tools for quantum computing applications: basic and applied aspects. NV-centres in diamond are the key for the fabrication of qubits, and Prof. M.S.R. Rao's Group is probably the only group in India that has developed many technological applications of diamond. Establishment of superconductivity in boron-doped diamond is one of the key successes of Prof. MSR's group, and boron-doped-diamond (BDD) electrodes are being tried for treating dye-contaminated water. Diamond coatings developed in NFMTTC find applications as bio-compatible coatings on body and dental implants. Some electronic industries and space research are working closely with this group for utilising diamond coating technology for heat-spreading and wear-resistance applications.

In summary, NFMTTC carries out multidisciplinary research in the areas of Applied Physics, Advanced and Nano-Materials. Sophisticated facilities in NFMTTC include HRSEM, PPMS, SPM, XPS, XRD, HRTEM and Raman spectroscopy. In addition to this, the centre houses a HFCVD reactor, which is a state-of-the-art facility to grow micro-/nano-/ultra-nano- crystalline diamond for various electronic, defence, space and bio-medical applications, including heat dissipation and preventing mechanical-wear. Doped diamond is the future material for quantum information/computing. Research scholars from various disciplines use NFMTTC/MSRC facilities to characterise DST-IITM Solar Energy Harnessing Centre.

2. DST Solar Energy Harnessing Centre

The DST Solar Energy Harnessing Centre (DSEHC) based at IIT Madras was established in June 2018. In addition to the research activities of IITM, the

objective of the centre is to support the research institutions in southern India to carry out solar-related research. Over 39 faculties from IIT Madras and over 29 faculties from collaborating institutions are involved in this centre. These faculties have backgrounds ranging from the basic sciences (physics and chemistry) to engineering (electrical, materials and mechanical). The objectives of the proposed DSEHC are to take a truly multi-pronged and multi-disciplinary approach with a critical mass of R&D activities related to tapping solar energy. These activities include (i) development of novel materials, (ii) devices, (iii) device deployment and field testing and, and (iv) energy and sustainability analysis. The objectives and deliverables will be met via DSEHC activities categorised into four domain areas: (a) photovoltaics (b) energy storage (c) solar thermal and (d) solar fuels. One sub-domain of the photovoltaics domain will focus on developing industrially processable silicon heterojunction (SHJ) solar cell manufacturing. The other sub-domain within the PV domain pertains to perovskite and DSSC technology, which focuses on developing efficient dyes, hole transporting materials, light-harvesting perovskite and large-area DSSC fabrication. The Energy Storage domain area will focus on addressing technology gaps in vanadium redox flow batteries (VRFB) by building a complete, practical all-liquid vanadium redox flow battery system and integrate it with a solar PV. The Solar Thermal domain will focus on providing a comprehensive solution towards making power, good-quality water and cold storage facilities (for agro products) available for local communities. The Solar Fuels domain will focus on using solar energy, to split commonly and abundantly available small molecules (H_2O and CO_2) and converting them to basic raw materials (hydrogen and syngas). The fund sanctioned for this project is Rs.39,73,78,400. The activities of DSEHC is also complemented and sustained with additional funding brought by the stakeholders of this centre. The centre is headed by Prof. M.S.R. Rao with its secretariat located in MSRC building and other major equipment of different domains housed in NAC and HSB. Other core PIs of various domains are Prof. T. Sundararajan (ME), Prof. Sreenivasa Jayanti (CH), Prof. G. Ranga Rao (CY), Prof. Jatin Rath (PH), Dr. R. Kothandaraman (CY), Dr. Sathyan Subbiah (ME) and Dr. Tiju Thomas (MME).





Sophisticated Analytical Instrument Facility

5.1 Introduction

The Sophisticated Analytical Instrument Facility (SAIF), established with financial support from the Department of Science and Technology, provides sophisticated instruments and equipment to students, scientists, researchers and faculty members from IIT Madras as well as academia, educational institutions, national laboratories, R&D establishments and industries from all over India in general and south India in particular. Its primary purpose is to enable the scientific community to collect data and carry out analysis using extremely sophisticated analytical equipment for advanced research at very nominal rates.

SAIF also undertakes, on request, servicing of sophisticated analytical instruments at other institutions and provides training in the operation and maintenance of such equipment. Periodically, SAIF conducts workshops, seminars and conferences to disseminate information on new trends in sophisticated instrumentation and methods in addition to providing training and hands-on experience. Students from educational institutions, colleges and schools visit SAIF regularly to gain exposure to the use of sophisticated instruments for analysis.

5.2 Academic Programmes

The SAIF does not have any academic programmes. It is purely a service facility.

New lab established: Vibrating Sample Magnetometer (VSM) Facility

5.3 Faculty and Their Activities Faculty

Name and Qualifications	Major Areas of Specialisation
Professor	
Prof. S.S. Bhattacharya, Ph.D. (Head)	Nanocrystalline materials - synthesis and characterization, superplasticity - theoretical and experimental, metal forming
Adjunct Professor	
Prof. S. Subramanian, Ph.D.	Nuclear magnetic resonance spectroscopy, electron spin resonance spectroscopy

Senior Technical Officer C. Baby, Ph.D.	Nuclear magnetic resonance spectroscopy, fluorimetry
Technical Officers K.V. Rama, Ph.D.	Analytical chemistry, ICP-OES, thermal and elemental analyses
K.P. Paranjothi, Ph.D.	Mass spectroscopy, electronics and instrumentation
Sudhadevi Antharjanam, Ph.D.	Single crystal x-ray diffractometry, optical spectroscopy
Junior Technical Superintendent N.K. Gopinath, M.Sc., M.Phil.	Materials science
Junior Technicians P. Thiruppathi, IEEE A. Varalakshmi, M.Sc. P.V. Narayanan, M.Sc.	Electronics and instrumentation Chemistry Physics

Short-term courses/workshops/seminars/symposia/conferences organised by the faculty members

Sl. No.	Coordinator(s)	Title	Period
Seminar			
1	Dr. C. Baby	Nuclear Magnetic Resonance Spectroscopy and its Applications	3 December 2019
Workshops			
1	Dr. P.K. Sudhadevi	Single Crystal XRD Data Analysis	25 July-7 August 2019
2	Dr. K.V. Rama	One-Day Workshop on Theory and Application of ICP-OES	8 November 2019

Short-term courses/workshops/seminars/symposia/conferences/trainings attended by the faculty members in academic institutions and public sector undertakings

Sl. No.	Faculty Member	Title	Institution	Period
Workshop				
1	Dr. C. Baby	QTOF-MS	Organised jointly by the Department of Chemistry, IIT Madras and Agilent Technologies India Private Limited	24-25 June 2019

Special lectures delivered by the faculty in other institutions

Sl. No.	Faculty Member	Topic of Lecture	Institution	Date
1	Dr. C. Baby	Nuclear Magnetic Resonance Spectroscopy and its Applications	SSN College of Engineering, Chennai	24-25 October 2019
2	Dr. K.V. Rama	Theory and Applications of ICP-OES	SSN College of Engineering, Chennai	24-25 October 2019
3	Dr. P. K. Sudhadevi	Practical Aspects of Single Crystal Data Collection	Department of Chemistry, IIT Madras	3 February 2020

4	Dr. P. K. Sudhadevi	Structure Solution from Single Crystal XRD Data Using WinGX and SHELX Software's	Department of Chemistry, IIT Madras	4 February 2020
5	Dr. P. K. Sudhadevi	Single Crystal X-Ray Data Analysis and Practical Demonstration on Single Crystal X-Ray Structure Solution From SC-XRD Data	Rajalakshmi Engineering College, Thandalam Chennai	22 February 2020
6	Prof. S. Subramanian	The Evolution of Magnetic Resonance Spectroscopy from Physics to Chemistry to Biology to Medicine - An Amazing Journey, National Seminar on Green Approaches Towards Chemical Synthesis	Postgraduate Department of Chemistry, St. Gregorios College, Kottarakkara, Kollam, Kerala	7-8 November 2019
7	Prof. S. Subramanian	Recent Progress in EPR Imaging In Vivo: CW and Pulsed Imaging Strategies for SAR Reduction, 26th National Magnetic Resonance Society Meeting and Conference on NMR—From Molecules to Human beings	Department of Chemistry, Saurashtra University, Rajkot-360005 Gujarat (India)	18-21 February 2020
8	Prof. S. Subramanian	Electron Paramagnetic Resonance Imaging and Quantitative In Vivo Oximetry: Implications in Cancer Research	CSIR-Central Salt and Marine Chemicals Research Institute, Bhavanagar, Gujarat	26 February 2020

5.4 Design and Development Activities

New facilities added or major equipment procured

Sl. No.	Equipment	Value (Rs. in lakhs)
1	Lakeshore 7410S VSM Facility	230
2	Netsch DSC 204 F1 Phoenix	28

5.5 Other Activities of the Facility

Major infrastructure development made in the facility

A laboratory/facility with a Vibrating Sample Magnetometer (VSM, Make: Lakeshore, Model 7410S) has been set up for magnetic studies, primarily in the low-temperature regime (15 K-300 K) with a field range of ± 2.5 Tesla for powder, liquid and thin film samples. This is now being used, at a nominal charge, by students and research scholars from IIT Madras as well as academic institutions from all over the country. In addition, the facility is also available for Government R&D institutions as well as industries against payment.



Centres of Special Facilities

6.1 Centre for Continuing Education

6.1.1 Introduction

The Centre for Continuing Education (CCE) was established in June 1986. The centre supports faculty members in meeting the following objectives of IIT Madras:

- Providing knowledge-based technological services to satisfy the needs of society and industry
- Helping build national capabilities in science, technology, humanities, management, education and research
- Effectively participating and contributing to the institute's commitment of providing a broad base of learning opportunities through the following major activities:

1. Conducting academic programmes (M.Tech. and Ph.D.) under the Quality Improvement Programme (QIP) (sponsored by the AICTE)
2. Conducting short-term courses (STCs) under QIP (sponsored by the AICTE)
3. Writing books under the Book Writing Scheme

4. Conducting Continuing Education Programmes (CEPs) for professionals from industry

5. Developing and conducting User-Oriented Programmes (UOPs) for specific industries through which their engineers acquire higher degrees (M.Tech.)

6. Developing and conducting web-enabled M.Tech. programmes for industries.

7. Conducting courses under National Programme on Technology-Enhanced Learning (NPTEL)

8. Recording important activities through the facilities in the Central Photographic Section

9. Conducting conferences/seminars/workshops/symposia

10. Allotment of ISBN numbers for textbooks and other publications of faculty members

11. Conducting online, short-term, continuing education programmes for industries

12. Conducting courses under Global Initiative of Academic Networks (GIAN)

13. Conducting courses under IIT PA

6.1.2 Quality Improvement Programme

The faculty development activities under AICTE that are funded by the Ministry of Human Resources Development are geared to ensure quality, relevance, excellence and equity in technical education by supporting activities under the Quality Improvement Programme (QIP) scheme. Deputation to the academic

programmes (M.Tech. and Ph.D.) of the institute facilitates the career development of faculty members of AICTE-approved technical institutions in the country. Since the inception of the programme till 2019-2020, 554 faculty members from other institutions have obtained Ph.D. degrees and 610 faculty members have obtained M.Tech. degrees

Period	Ph.D.			M.Tech.		
	Admitted	No. on Roll	Awarded	Admitted	No. on Roll	Awarded
2019-2020	7	39	4	-	6	-
Since inception	681 (674+7)	—	554	643	—	610

Short-term training programmes under QIP

Organisation of short-term courses under QIP for faculty members of engineering institutions is supported by the AICTE, and these courses (AICTE-STC) open up avenues in which the institute's faculty members with rich experience in new and upcoming areas can share their expertise with others. Under this programme, 17 courses (with a total duration of 17 weeks) were conducted during 2019-2020 and 474

teachers of engineering institutions participated. From 1970-1971 to 2019-2020, 438 (421+17) programmes have been conducted, and 10,863 (10,389 +474) teachers from various engineering colleges have participated and benefited from these courses. The details of the courses conducted in 2019-2020 are given in the following table:

List of Short-Term Course under QIP (AICTE-STC-2019-20)

S.No	Coordinators	Department	Title and Project No	Date	Participants
1	Dr. Ethayaraja Mani, Dr. T. Renganathan	Chemical Engineering	Chemical Engineering Thermodynamics Laboratory for Undergraduates CCE/QIP/04/EM&TR/CH/2019-20	24-29 June 2019	15
2	Dr. Shruti Dubey, Dr. Ch Srinivasa Rao	Mathematics	Evolution Equations: Theory and Computation CCE/QIP/08/SD&CHSR/MA/2019-20	12-17 July 2019	29
3	Dr. Pramod Kumar Nayak, Prof. M. S. Ramachandra Rao, Dr. K. Lakshmi Ganapathi	Physics	Two-dimensional Materials: Physics and Applications CCE/QIP/15/PKN&MSRR&KLG/PH/2019-20	21-26 September 2019	35
4	Dr. Anindita Sahoo, Dr. Srinivasa Chakravarthy	Humanities and Social Sciences Biotechnology	Appreciating Linguistics: An Interdisciplinary Approach CCE/QIP/13/AS&SC/HSS&BT/2019-20	7-12 October 2019	37
5	Dr. Sateesh Gedupudi, Dr. Pallab Sinha Mahapatra, Dr. Srikrishna Sahu	Mechanical Engineering	Advances in Thermofluidics of Multipurpose Flows CCE/QIP/05/SG&PSM&SS/ME/2019-20	4-11 November 2019	37
6	Dr. Abhijit P. Deshpande	Chemical Engineering	Rheology of Complex Materials CCE/QIP/20/APD/CH/2019-20	11-15 November 2019	27
9	Dr. Piyush Chaunsali	Civil Engineering	Advanced Concrete Technology CCE/QIP/07/PC/CE/2019-20	18-23 November 2019	27

10	Prof. R. Sarathi	Electrical Engineering	Recent Trends in Condition Monitoring of Power Apparatus-Adaptability to Smart Grid CCE/QIP/16/RS/EE/2019-20	20-25 November 2019	36
11	Dr. Mayank Mittal, Prof. A Ramesh	Mechanical Engineering	Measurement and Analysis of In-Cylinder Processes in Engines CCE/QIP/06/MM&AR/ME/2019-20	3-8 December 2019	31
12	Dr. Santanu Ghosh, Dr. Arul Prakash	Aerospace Engineering, Applied Mechanics	Advanced Computational Techniques for Fluid Dynamics: Grid-free and Immersed Boundary Methods with Applications CCE/QIP/17/SG&AP/AE&AM/2019-20	25-30 November 2019	33
13	Dr. Bhargava Rama Chilukuri, Dr. Lelitha Devi Vanajakshi	Civil Engineering	Modeling and Control of Traffic Under Mixed Conditions CCE/QIP/14/BRC/LDV/14/CE/2019-20	2-7 December 2019	27
14	Dr. Sridharakumar Narasimhan, Dr. Nirav Pravinbhai Bhatt	Chemical Engineering, Biotechnology	Data Analysis for Modelling of Chemical and Biochemical Reaction Systems: Theory to Practice CCE/QIP/12/SN&NPB/CH&BT/2019-20"	2-6 December 2019	31
	Prof. Chidella Srinivasa Rao, Dr. A. J. Shaiju	Mathematics	Mathematical Epidemiology CCE/QIP/02/CSR&AJS/MA/2019-20	9-14 December 2019	24
15	Dr. Abhijit Chaudhuri, Dr. Dali Naidu Arnepalli	Applied Mechanics, Civil Engineering	Porous Medium Theory and Applications CCE/QIP/03/AC&DNA/AM&CE/2019-20	6-11 January 2020	29
	Dr. Soundarapandian	Mechanical Engineering	Additive Manufacturing: Key Challenges and Road Ahead CCE/QIP/19/SP/ME/2019-20	27-31 January 2020	31
16	Prof. M. P. Maiya, Dr. Shaligram Tiwari, Dr. S. M. Shiva Nagendra	Mechanical Engineering, Civil Engineering	Air Delivery Systems and Indoor Environmental Quality (ADS & IEQ) CCE/QIP/11/MPM&ST&SMSN/ME&CE/2019-20	2-7 March 2020	21
17	Dr. V. Vijayalakshmi	Management Studies	Re-Energizing the Classroom! Through the Use of Gamification and Experimental Activities in Management Education CCE/QIP/09/VV/MS/2019-20	2-7 March 2020	27
Total participants					476

6.1.3. Continuing Education Programmes

Several short-term courses (STCs) were organised for professionals from industry and R&D establishments on a need basis. The programmes were tailor-made to suit the requirements of industries. The Continuing Education Programmes (CEPs) are divided in two categories: Internal CEPs and External CEPs. From their inception in 1980 to 2019-2020, a total of 1,604 STCs have been conducted, from which 2,89,761 participants have benefitted. Seventy to eighty such programmes are generally organised every year. In 2019-2020, 89 STCs were conducted and 59,791 participants attended these programmes. The following STCs were conducted during 2019-2020:

List of Internal CEPs 2019-20

Sl. No.	Department/s	Coordinator/s	Title of the Proceedings	Duration	Number of Participants
1	Management Studies	Prof. T.J. Kamalanabhan and Dr. Rupashree Baral	Supervisory Development Program	3-8 April 2019	27
2	Management Studies	Dr. V. Vijayalakshmi and Prof. T. J. Kamalanabhan	Nurturing the Inner You: For Personal, Group, Organizational Excellence	4-5 April 2019	14
3	Central Electronics Centre	Prof. V. Jagadeesh Kumar and Ms. N. Karthiyayini	Awareness Program on ISO/IEC 17025: 2017 General Requirements for the Competence of Testing and Calibration Laboratories	15-16 April 2019	3
4	Ocean Engineering	Prof. S. Nallayarasu	Offshore Structural Engineering for the Engineers of ONGC	9 January-8 July 2019	10
5	Mechanical Engineering	Prof. G.L. Samuel, Prof. Satish Bukkapatnam	Smart Manufacturing and Metrology	25-26 July 2019	77
6	Management Studies	Prof. Saji K Mathew and Prof. Arun Kumar	India Immersion program-Victoria University Wellington, New Zealand	19-20 April 2019	30
7	Mechanical Engineering	Dr. Ratna Kumar Annabattula	Mechanical Design	23 February-14 September 2019	150
8	Biotechnology	Dr. Smita Srivastava	Technological Interventions to Standardize the Indigenous System of Medicine in India	20-26 September 2019	30
9	Chemical Engineering	Prof. Rajagopalan Srinivasan	Advanced Course in Human Factors	21-24 May 2019	27
10	Management Studies	Dr. T.J. Kamalanabhan	Project Leadership and Management Development Program	13-22 May 2019	30
11	Electrical Engineering	Dr. Radha Krishna Ganti	Summer Projects and Workshop-2019	5-19 June 2019	34

12	Management Studies	Prof. T. J. Kamalanabhan and Dr. Rupashree Baral	Supervisory Development Program	10-15 June 2019	27
13	Metallurgical and Materials Engineering	Dr. Ajay Kumar Shukla	One-Day Workshop on Advances in Steelmaking: Strategies for Achieving the Targets in a Steel-melting Shop	30 July 2019	2
14	Ocean Engineering	Prof. S. Nallayarasu	35 Days' residential and training programme on Offshore Structural Engineering for the Engineers of LTHE (L&T Hydrocarbon Engineering Limited)	15 July-31 December 2019	10
15	Engineering Design	Dr. Venkatesh Balasubramanian	Operational Excellence Through Lean and Digital Manufacturing	1 August-30 April 2020	10
16	Management Studies	Prof. L. Prakash Sai	Management Development Program for First Time Managers	23-24 July 2019	30
17	Management Studies	Prof. T. J. Kamalanabhan and Dr. Rupashree Baral	Management Development Program - Bloom for L&T	5-10 August 2019	30
18	Central Electronics Centre	Prof. V. Jagadeesh Kumar and Dr. C. R. Jeevandoss	Setting of question paper and conducting trade test	11 September 2019	46
19	Civil Engineering	Dr. Radhakrishna G. Pillai and Prof. Manu Santhanam	5th CRI Symposium	14 September 2019	181
20	Management Studies	Prof. T. J. Kamalanabhan and Prof. M. Thenmozhi	Workshop on Fundamentals of Research in Management and Engineering	14, 15, 24 and 22 September 2019	12
21	Mechanical Engineering	Prof. M. Prakash Maiya and Dr. Simarpreet Singh	CO ₂ (R744) Cooling Technology: An Application Based Approach	1-2 November 2019, 15-16 to 29-30 November 2019, 6-7 December 2019	23
22	Management Studies	Dr. Rupashree Baral and Prof. T.J. Kamalanabhan	NAV DISHA - Development Training Program for INDANE Distributors, Indian Oil Corporation Limited	3-4 September 2019	35
23	Management Studies	Prof. C. Rajendran	Six Sigma Green Belt	14 October-15 November 2019	9
24	Management Studies	Prof. T. J. Kamalanabhan and Prof. M. Thenmozhi	Project Leadership and Management Development Program	14-23 October 2019	29

25	Engineering Design	Prof. C.S. Shankar Ram	Control System	4, 15, 18 and 21 November 2019	15
26	Chemical Engineering	Prof. Abhijit P. Deshpande	Rheology of Complex Materials	11-15 November 2019	5
27	Management Studies	Dr. V. Vijayalakshmi	Coaching with Depth	12 October 2019	8
28	Management Studies	Prof. Saji K. Mathew	Author Development Workshop	29-30 November 2019	18
29	Management Studies	Dr. Rupashree Baral and Prof. T.J. Kamalanabhan	NAV DISHA - Development Training Program for INDANE Distributors, Indian Oil Corporation Limited	24-25 October 2019	41
30	Civil Engineering	Dr. Piyush Chaunsali	Advanced Concrete Technology (RILEM-ICI Doctoral Course)	18-23 November 2019	30
31	Chemical Engineering	Prof. Sridharakumar Narasimhan	Flow Chemistry	6 December 2019	7
32	Robert Bosch Centre for Data Science and Artificial Intelligence	Prof. Nirav Bhatt	Course on Artificial Intelligence and Machine Learning	18-30 November 2019	29
33	Humanities and Social Sciences	Prof. Rajesh Kumar	Aviation English Language Proficiency Training	15-19 November 2019	76
34	Management Studies	Prof. T.J. Kamalanabhan and Dr. Rupashree Baral	Management Development Program - Bloom for L&T	11-16 November 2019	33
35	Electrical Engineering	Prof. R. Sarathi	Recent Trends in Condition of Power Apparatus - Adaptability to Smart Grid	18-19 November 2019	6
36	Ocean Engineering	Prof. S. Nallayarasu	Training program on Offshore Structural Engineering for the Engineers of LTHE	11 November 2019-30 April 2020	12
37	Management Studies	"Dr. Rupashree Baral and Prof. T.J. Kamalanabhan"	NAV DISHA - Development Training Program for INDANE Distributors, Indian Oil Corporation Limited	15-16 November 2019	33
38	Management Studies	Prof. Nandan Sudarsanam	Critical Thinking and Leadership	14 November-23 December 2019	30
39	Chemical Engineering/ Centre for Social Innovation & Entrepreneurship	Prof. R. Nagarajan	International Winter School on Sustainable Architecture	9-14 December 2019	21

40	Management Studies	Prof. V. Vijayalakshmi	Coaching with Depth	17 November 2019	8
41	Management Studies	Prof. T.J. Kamalanabhan and Prof. M. Thenmozhi	Project Leadership and Management Development Program (PLMDP)	25 November-4 December 2019	31
42	Management Studies	Prof. T.J. Kamalanabhan and Dr. Rupashree Baral	Talent Management and Career Progression for CPCL (Chennai Petroleum Corporation Ltd) officers	9-13 December 2019	19
43	Engineering Design	Dr. Palaniappan Ramu	Interdisciplinary CEP for Southern Railways	7-9 January 2020	46
44	Management Studies	Prof. T.J. Kamalanabhan and Dr. Rupashree Baral	Talent Management and Career Progression for CPCL officers	6-10 January 2020	16
45	Mechanical Engineering	Prof. Chandramouli P.	Noise and Vibration	20-23 January 2020	19
46	Management Studies	Prof. T.J. Kamalanabhan and Prof. M. Thenmozhi	Strategic Leadership Program	23-24 January 2020	27
47	Management Studies	Prof. T.J. Kamalanabhan and Prof. M. Thenmozhi	Strategic Leadership Program	20-21 January 2020	25
48	Management Studies	Prof. T.J. Kamalanabhan and Dr. Rupashree Baral	Talent Management and Career Progression for CPCL officers	27-31 January 2020	27
49	Mechanical Engineering	Prof. M. P. Maiya	Climate Etc Technology Services Private Limited, Bangalore	2-3 March 2020	3
50	Management Studies	Prof. Prakash Sai	Management Development Program	27-29 January 2020	26
51	Dean, IC&SR	Dr. Ravindra Gettu	Workshop in Advanced Automotive Research	13 February 2020	70
52	Management Studies	Prof. L. Prakash Sai and Dr. Lata Dyaram	Management Development Program	10-14 February 2020	29
53	Civil Engineering	Prof. Koshy Varghese	Development of online course on Lean Project Delivery	1-29 February 2020	20
54	Civil Engineering	Prof. Murali Krishnan	Laboratory Training Course for Advanced Testing of Bituminous Binders and Mixture	10 February-6 March 2020	2
55	Mechanical Engineering	Prof. Ratna Kumar Annabattula and Prof. Narasimhan Swaminathan	Caterpillar India Private Limited & Chennai	7 March-18 July 2020	35
Total	1,643				

List of External CEPs 2019-20

Sl. No.	Department/s	Coordinator/s	Title of the Proceedings	Duration	Number of Participants
1	NPTEL	Prof. Andrew Thangaraj	IITM-NPTEL Online Certification Exam	1 January-31 March 2019	49,580
2	NPTEL	Prof. Andrew Thangaraj	IITM-NPTEL Online Certification Exam	1 January-30 April 2019	1,54,475
3	Computer Science	Prof. V. Kamakoti	Serba Data Analytics CoE @IITMRP-Competency building	20 March-5 April 2019	10
4	Electrical Engineering	Dr. Saurabh Saxena and Prof. Nagendra Krishnapura	High Speed Serial Links	20-23 May 2019	25
5	Chemical Engineering	Prof. Rajagopalan Srinivasan	Advanced Course in Human Factors	21-24 May 2019	27
6	Mechanical Engineering	Prof. N. Ramesh Babu	Design of Mechatronic Systems	3-5 July 2019	40
7	Electrical Engineering	Prof. Shanthi Pavan	Delta Sigma Data Converter Design	24-28 June 2019	20
8	Management Studies	Prof. Arshinder Kaur	Business Analytics Program	1 August-31 December 2019	30
9	Electrical Engineering	Prof. Nagendra Krishnapura	Basics of Analog IC Design	17-19 and 24-25 July 2019	20
10	Management Studies	Prof. L. Prakash Sai	Management Development Program	15-17 July 2019	28
11	Mechanical Engineering	Prof. V Raghavan and Prof. S Varunkumar	Solid Fuel Combustion for Practitioners	22-23 July 2019	10
12	Engineering Design	Dr. Venkatesh Balasubramanian	Design Thinking for Organizational Excellence	23 July 2019-30 March 2020	14
13	Engineering Design	Dr. Venkatesh Balasubramanian	Operational Excellence through Lean and Digital Manufacturing—Project Implementation	1 August 2019-3 April 2020	10
14	Management Studies	Prof. Usha Mohan	Two-Day Workshop on Optimization	2-3 August 2019	30
15	Engineering Design	Prof. C. S. Shankar Ram	Component Sizing of Electrified Powertrains	23 August 2019	40
16	Electrical Engineering	Dr. S. Aniruddhan	RF Integrated Circuit Design	26-30 August 2019	15
17	Civil Engineering	Prof. J. Murali Krishnan	Bituminous Material Characterization and Pavement Construction	20-21 September 2019	16
18	Engineering Design	Dr. Ganapathy Krishnamurthi	Machine Learning and Artificial Intelligence	20-22 September 2019	43

19	Civil Engineering	Prof. Ashwin Mahalingam	Mentoring and Augmenting Planning Skills 10.1	3 September 2019-31 January 2020	25
20	Engineering Design	Dr. R. Jayaganthan	Corrosion Mechanics and Prevention Techniques	7 September 2019	10
21	Ocean Engineering	Prof. P. Krishnankutty and Dr. R. Vijayakumar	Short-Term Lab Course on Experimental Hydrodynamics	20 October-1 November 2019	60
22	NPTEL	Prof. Andrew Thangaraj	IITM-NPTEL Online Certification Exam	1 June-30 November 2019	83,405
23	Humanities and Social Sciences	Prof. Rajesh Kumar	Aviation English Training for Airports Authority of India	2-6 December 2019	76
24	Management Studies	Prof. Usha Mohan	Analytics for Intelligent Manufacturing	22-24 November 2019	30
25	NPTEL	Prof. Andrew Thangaraj	IITM-NPTEL Online Certification Exam	1 June-30 November 2019	1,69,998
26	Management Studies	Prof. Nandan Sudarsanam	Reinforcement Learning	11 November-21 December 2019	10
27	Mechanical Engineering/ Advanced Manufacturing Technology Development Centre	Prof. N. Ramesh Babu, Dr. Devadula Sivasrinivasu and Dr. Piyush Shakya	Orientation Programme on Smart Manufacturing	4-5 December 2019	25
28	Management Studies	Prof. T.J. Kamalanabhan	Web-enabled Management Training program for CPCL	16, 17, 26, 27, 30, 31 December 2019	20
29	Management Studies	Prof. T.J. Kamalanabhan	Talent Assessment and Progression	12-13 December 2019	14
30	Mechanical Engineering	Prof. V. Babu	Aerodynamics and Aero Acoustics of Road Vehicles	3-4 February 2020	10
31	Management Studies	Dr. R. K. Amit	Awareness Program on Blockchain	10 January 2020	30
32	Management Studies	Prof. L. Prakash Sai	Strategic Planning Workshop	17 February 2020	40
33	Management Studies	Prof. L. Prakash Sai	Workshop on R&D Management	4 March 2020	40
34	Management Studies	Prof. L. Prakash Sai	Workshop on Project Management	5 March 2020	40
Total	4,58,266				

List of External CEPs 2019-20

Sl. No.	Department/s	Coordinator/s	Title of the Proceedings	Duration	Number of Participants
1	NPTEL	Prof. Andrew Thangaraj	IITM-NPTEL Online Certification Exam	1 January-31 March 2019	49,580
2	NPTEL	Prof. Andrew Thangaraj	IITM-NPTEL Online Certification Exam	1 January-30 April 2019	1,54,475
3	Computer Science	Prof. V. Kamakoti	Serba Data Analytics CoE @IITMRP-Competency building	20 March-5 April 2019	10
4	Electrical Engineering	Dr. Saurabh Saxena and Prof. Nagendra Krishnapura	High Speed Serial Links	20-23 May 2019	25
5	Chemical Engineering	Prof. Rajagopalan Srinivasan	Advanced Course in Human Factors	21-24 May 2019	27
6	Mechanical Engineering	Prof. N. Ramesh Babu	Design of Mechatronic Systems	3-5 July 2019	40
7	Electrical Engineering	Prof. Shanthi Pavan	Delta Sigma Data Converter Design	24-28 June 2019	20
8	Management Studies	Prof. Arshinder Kaur	Business Analytics Program	1 August-31 December 2019	30
9	Electrical Engineering	Prof. Nagendra Krishnapura	Basics of Analog IC Design	17-19 and 24-25 July 2019	20
10	Management Studies	Prof. L. Prakash Sai	Management Development Program	15-17 July 2019	28
11	Mechanical Engineering	Prof. V Raghavan and Prof. S Varunkumar	Solid Fuel Combustion for Practitioners	22-23 July 2019	10
12	Engineering Design	Dr. Venkatesh Balasubramanian	Design Thinking for Organizational Excellence	23 July 2019-30 March 2020	14
13	Engineering Design	Dr. Venkatesh Balasubramanian	Operational Excellence through Lean and Digital Manufacturing–Project Implementation	1 August 2019-3 April 2020	10
14	Management Studies	Prof. Usha Mohan	Two-Day Workshop on Optimization	2-3 August 2019	30
15	Engineering Design	Prof. C. S. Shankar Ram	Component Sizing of Electrified Powertrains	23 August 2019	40
16	Electrical Engineering	Dr. S. Aniruddhan	RF Integrated Circuit Design	26-30 August 2019	15
17	Civil Engineering	Prof. J. Murali Krishnan	Bituminous Material Characterization and Pavement Construction	20-21 September 2019	16
18	Engineering Design	Dr. Ganapathy Krishnamurthi	Machine Learning and Artificial Intelligence	20-22 September 2019	43

19	Civil Engineering	Prof. Ashwin Mahalingam	Mentoring and Augmenting Planning Skills 10.1	3 September 2019-31 January 2020	25
20	Engineering Design	Dr. R. Jayaganthan	Corrosion Mechanics and Prevention Techniques	7 September 2019	10
21	Ocean Engineering	Prof. P. Krishnankutty and Dr. R. Vijayakumar	Short-Term Lab Course on Experimental Hydrodynamics	20 October-1 November 2019	60
22	NPTEL	Prof. Andrew Thangaraj	IITM-NPTEL Online Certification Exam	1 June-30 November 2019	83,405
23	Humanities and Social Sciences	Prof. Rajesh Kumar	Aviation English Training for Airports Authority of India	2-6 December 2019	76
24	Management Studies	Prof. Usha Mohan	Analytics for Intelligent Manufacturing	22-24 November 2019	30
25	NPTEL	Prof. Andrew Thangaraj	IITM-NPTEL Online Certification Exam	1 June-30 November 2019	1,69,998
26	Management Studies	Prof. Nandan Sudarsanam	Reinforcement Learning	11 November-21 December 2019	10
27	Mechanical Engineering/ Advanced Manufacturing Technology Development Centre	Prof. N. Ramesh Babu, Dr. Devadula Sivasrinivasu and Dr. Piyush Shakya	Orientation Programme on Smart Manufacturing	4-5 December 2019	25
28	Management Studies	Prof. T.J. Kamalanabhan	Web-enabled Management Training program for CPCL	16, 17, 26, 27, 30, 31 December 2019	20
29	Management Studies	Prof. T.J. Kamalanabhan	Talent Assessment and Progression	12-13 December 2019	14
30	Mechanical Engineering	Prof. V. Babu	Aerodynamics and Aero Acoustics of Road Vehicles	3-4 February 2020	10
31	Management Studies	Dr. R. K. Amit	Awareness Program on Blockchain	10 January 2020	30
32	Management Studies	Prof. L. Prakash Sai	Strategic Planning Workshop	17 February 2020	40
33	Management Studies	Prof. L. Prakash Sai	Workshop on R&D Management	4 March 2020	40
34	Management Studies	Prof. L. Prakash Sai	Workshop on Project Management	5 March 2020	40
Total	4,58,266				

6.1.4. User-Oriented Programmes

The User-Oriented Programmes (UOPs) are designed to suit the requirements of industrial organisations. Two-year M.Tech programmes are being organised to meet the specific needs of the associated industries. So far, 25 programmes have been conducted or are being conducted by the Departments of Civil Engineering, Ocean Engineering, Mechanical Engineering, Engineering Design and Management Studies.

List of User-Oriented Programmes (UOPs)

Sl.No	Department/s	Coordinator/s	Title of the Proceedings	Project No
1	Civil Engineering	Dr. K. Ramamurthy and Prof. Koshy Varghese	Construction Technology & Management (CT&M)	CCE/CEP/UoP/19A/KR&KV/CE/16-17
2	Civil Engineering	Dr. K. Ramamurthy and Dr. Koshy Varghese	UoP M.Tech (Construction Technology & Management) - 20th Batch	CCE/CEP/UoP/20/KR & KV/17-19
3	Ocean Engineering	Dr. Nallayarasu and Prof. S. K. Bhattacharyya	M.Tech. Offshore Technology	CCE/CEP/UoP/12/OE/ SN-SKB/11-12
4	Management Studies	Prof. G. Srinivasan and Dr. Rahul Marathe	VLM Project	CCE/CPE/UoP/18/VLM/15-16
5	Civil Engineering	Dr. R.G. Robinson	PG Diploma Programme on Metro Rail Technology and Management	CCE/CEP/UoP/21/RGR/CE/17-18
6	Civil Engineering	Prof. K. Ramamurthy and Prof. Koshy Varghese	Construction Technology & Management (CT&M)	CCE/CEP/UoP/22/KR&KV/CE/18-19
7	Civil Engineering	Dr. R.G. Robinson	PG Diploma Programme on Metro Rail Technology and Management	CCE/CEP/UoP/23/RGR/CE/18-19
8	Civil Engineering	Prof. K. Ramamurthy and Prof. Koshy Varghese	Construction Technology & Management (CT&M)	CCE/CEP/UoP/24/KR&KV/CE/19-20
9	Civil Engineering	Dr. R.G. Robinson	PG Diploma Programme on Metro Rail Technology and Management	CCE/CEP/UoP/25/RGR/CE/19-20

6.1.5. Web-enabled M.Tech. programmes for industries

IIT Madras has been actively interacting with leading industries through R&D, consultancy projects and continuing education programmes. Several projects have been undertaken towards development of products and processes. Based on approval and guidelines of the Senate and the needs of industries, IIT Madras has come up with web-based M.Tech. programmes with adequate opportunity for student and teacher interaction. In these programmes, post-class interaction is facilitated by an effective course management platform. Candidates have to take approved core and elective courses of their choice and can complete the entire M.Tech. programme at their own pace. On completion of each course, a certificate will be awarded, and on finishing the required credits in different categories, the candidate will be eligible for a master's degree. The candidate may also do a set of laboratory experiments and projects as defined by the curriculum. Seven programmes jointly worked out with industries by the concerned departments have been approved by the Senate. The details are given in the table below.

The web-enabled M.Tech (Automotive Technology) course was started in May 2017. Five automotive industries sponsored 29 students for this course in the first year. This was followed by two other courses offered by the Department of Electrical Engineering, namely M.Tech (VLSI) with 27 students and M.Tech (Communication Systems Engineering) with 49 students. The second batch of students joined the M.Tech (Automotive Technology)

programme in November 2018. Two more automotive industries sent their candidates for this programme for the second batch. The second batch of students joined the M.Tech (VLSI) and M.Tech (Communication Systems Engineering) programmes in September 2018. A new web-enabled programme, M.Tech (Information Security) was started in September 2018 with 33 students.

List of Senate-approved web-enabled M.Tech programmes for industries

S.No	Department	Title
1	Aerospace Engineering	Mathematical Methods for Aerospace Engineers
2	Aerospace Engineering	Aerodynamics and Aircraft Performance
3	Computer Science and Engineering	M.Tech in Computer Science and Engineering with specialisation in Information Security
4	Electrical Engineering	Master's in Communications Systems Engineering
5	Electrical Engineering	Master's in VLSI
6	Mechanical Engineering	Automotive Technology
7	Metallurgical and Materials Engineering	Industrial Metallurgy

	2017	2018	2019	Companies	Total Earnings (amount in Rs.)	Number of Faculty
EE-Comm	40**	44	31	Qualcomm, BEL, ADI, SignalChip, Sankalp, Valeo, Cypress	9.03 crore	18
EE-VLSI	26**	26	23			
CS-Soft Security		28	28	Qualcomm, BNY, Cypress, Valeo	1.86 crore	7
ME-Automotive Technology	29	21	15	Mahindra, TAFE, FCA, SCL, BOSCH, TVS, Hanon Automotive	1.63 crore	11
ME-Machine Design*	-	-	21	Mahindra, Daimler, Lam, Siemens Gamesa	1 lakh	2

* Launched on 27 February 2020

** A small number of students (about 15) will complete the programme in July 2020.

Web-enabled M.Tech programme in Automotive Technology

The Department of Mechanical Engineering, Indian Institute of Technology Madras offers Web-Enabled M.Tech (Automotive Technology), WEMAT. The objective of WEMAT is to help automotive industries enhance the technical skills of their engineers through a post-graduate degree, which not only upgrades their skills and knowledge in the automotive domain, but also prepares them for taking up tasks in the emerging fields. The WEMAT is structured in a way to equip the participants with technical, mathematical and analytical skills through four core courses followed by six elective courses. The electives can be chosen from a basket of about 50 courses available in the department. Two new electives, namely Introduction to Electric Vehicles and Hybrid and Autonomous Vehicles, have been introduced specifically for this programme in consultation with the experts from

automotive industries and other departments due to their interdisciplinary nature. The programme structure also requires the participants to complete one mini project and one major project. The problem statements for these projects are defined by the respective industries for which the participants work and are guided by a mentor from the industry and a faculty member from IITM. Due to the interdisciplinary nature of the programme, the candidates can work under any professor of the institute irrespective of their departmental affiliation, which is a unique feature of this programme. The delivery of lectures is done online in synchronous mode with two-way communication emulating the traditional classroom experience. The classes are conducted in the evening, generally from 5 to 7 pm, for three to four days per week so that their routine work is not disturbed. In addition to theoretical courses, the programme involves a laboratory course that is conducted at IIT

Madras during the break after the first semester. The course's content is the same as that of the M.Tech. programme of IIT Madras.

The students have been interacting with the course faculty to clarify their doubts if any before the quizzes in person at IIT Madras. However, they can interact with the faculty members at any time during the programme by email or any other means. The first batch of students has completed their mini project and started working on the main project. The project evaluation is done through three intermediate evaluations. At the moment, there are three batches of students enrolled for WEMAT. The industries participating in this programme include Mahindra & Mahindra, Robert Bosch, Fiat Chrysler Automobiles (FCA), Daimler, Hanon Systems, Sundaram Clayton, TAFE and Ashok Leyland Ltd. The feedback for the programme so far has been very good both from students and industries. The first batch of students is expected to graduate in December 2020. In 2019, a new batch (third batch) with 15 participants was started with the participation from Mahindra & Mahindra, Hanon Systems, TAFE and FCA. The programme is coordinated by Prof. A. Ramesh, Prof. J. M. Mallikarjuna and Dr. P.V. Manivannan from the Department of Mechanical Engineering, IIT Madras.

Web-enabled M.Tech. Programme in Mechanical Design (WebMed)

The Web-enabled M.Tech. Programme in Mechanical Design (WebMed) is an online M.Tech. programme of the Department of Mechanical Engineering, IIT Madras. The unique aspect of this programme is that all its participants are currently sponsored by core mechanical industries. Consequently, the curriculum is also tailored for these industries. The programme provides adequate opportunity for student-teacher interaction through online lectures. Post-class

interaction is also facilitated by an effective course management platform. The candidates complete Senate-approved courses conducted by the IITM faculty. They also carry out projects appropriate for their industry. In this framework, an excellent mix of academic rigour and industrial application is ensured. Candidates will take five core courses and five elective courses of their choice and can complete the entire M.Tech programme within five years. On completion of each course, a certificate will be awarded, and on acquiring enough credits, the candidate will be eligible for a master's degree. The candidate will also complete a set of laboratory experiments at his/her industry and IIT Madras. Two projects completed in the industry will be evaluated at the institute. The set of five core courses, five elective courses, two laboratory courses and two projects will complete the degree requirements.

The current batch of the programme was registered on 25 February 2020 and classes began on 5 March 2020. We understood the difficulty of industry candidates, who are not in touch with an academic environment for a long time, to pursue advanced courses. To help them, preparatory classes were offered by our faculty voluntarily between 17 and 27 February 2020. Currently, there are 21 candidates participating in the course from four industries. These industries are Daimler India Commercial Vehicles Limited., Mahindra and Mahindra, Siemens Gamesa and Lam Research. In spite of the Covid-19 pandemic, IITM faculty is delivering their lectures and interacting with candidates constantly. Soon, tests and quizzes will also be conducted as per IITM guidelines.

We do believe that the programme is progressing very well and the candidates and the company are extremely happy with this set up. We hope that more companies will sponsor their candidates in future.

6.1.6. Global Initiative of Academic Networks

The Government of India approved a new programme, Global Initiative of Academic Networks (GIAN) in Higher Education aimed at tapping the talent pool of scientists and entrepreneurs internationally to encourage their engagement with the institutes of higher education in India so as to augment the country's existing academic resources, accelerate the pace of quality reform and elevate India's scientific and technological capacity to global excellence. Under this scheme, 12 courses (listed below) were conducted along with accomplished researchers and technologists from all over the globe from 1 April 2019-31 March 2020. The status of the proposals for GIAN courses from IIT Madras as on 31 March 2020 is indicated in the following tables.

S. No.	GIAN Course Title	Host Faculty	Duration of the Course	No. of Weeks	No. of Participants
1	Urban Air Pollution, Human Exposure Assessment and Public Policy	Dr. S. M. Shiva Nagendra (Civil Engineering)	7-17 October 2019	2	45
2	Mechanics of Unsaturated Soils	Dr. T. Thyagaraj (Civil Engineering)	10-20 December 2019	2	45

3	Design and Construction of Sustainable Concrete Pavements	Prof. A. Veeraraghvan (Civil Engineering)	9-13 December 2019	1	51
4	Models of Walking and Running: Human Gait and Robot Locomotion	Prof. Sujatha Srinivasan (Mechanical Engineering)	22-27 July 2019	1	46
5	Free Boundary Problems in Mechanics	Prof. Sundararajan Natarajan (Mechanical Engineering)	23-31 October 2019	1	7
6	Mechanics of Mechanical Metamaterials	Dr. Ratna Kumar Annabattula (Mechanical Engineering)	18-22 November 2019	1	13
7	Efficient Heat Transfer Utilizing Liquid/Vapor Phase Change	Prof. M.P. Maiya (Mechanical Engineering)	9-21 December 2019	2	40
8	Fusion Welding Processes and Methodologies	Prof. Murugaiyan Amirthalingam (Metallurgical and Materials Engineering)	16-21 December 2019	1	29
9	Advanced Welding Processes and Metallurgy	Prof. Murugaiyan Amirthalingam (Metallurgical and Materials Engineering)	9-13 December 2019	1	46
10	Petro-physical Measurements of Conventional and Unconventional Reservoir Rocks	Prof. Rajesh Nair (Ocean Engineering)	7-11 October 2019	1	24
11	Design of Coastal Structures Including Extreme Events	Dr. V. Sriram (Ocean Engineering)	14-18 October 2019	1	42
12	Introduction to Geo-Engineering Applications in Conventional and Unconventional Hydrocarbon Reservoirs	Prof. Rajesh Nair (Ocean Engineering)	11-15 November 2019	1	17

6.1.7. Conferences

IIT Madras has instructed faculty members (vide circular No. F.R.150/3/2011 dated 31 March 2011) to register all national and international conferences, workshops, seminars, symposiums and other such events organised by them with the CCE. The following programmes were registered with the CCE in 2019-2020:

S. No	Coordinator	Department	Title of the Proposal	Period	Number of Participants
1	Raghunathan Rengaswamy, Nirav Bhatt, Sridharakumar Narasimhan	Chemical Engineering, Biotechnology	Indian Process Systems Engineering	18-19 July 2019	120
2	V. Sundar, S.A. Sannasiraj	Ocean Engineering	Fifth International Conference in Ocean Engineering (ICOE 2019)	28 June-1 July 2019	100

3	G. Rajesh, R. Sriram	Aerospace Engineering	6th National Symposium on Shock Waves (NSSW2020)	26-28 February 2020	150
4	Usha Mohan, Usha Ramanathan	Management Studies	Current Issues and Challenges in Agri-Business in South India: A Multilateral Vies	26 June 2019	52
5	S.R. Chakravarthy, Indumathi M. Nambi, Usha Nagarajan	Aerospace Engineering, Civil Engineering, NCCRD, IITM, Chennai	1st Abdul Kalam Conference India 2020 Update - Sustainable Human Development	11-14 July 2019	280
6	K.G. Pradeep, B. S. Murty, M. Nagini	Metallurgical and Materials Engineering, National Facility for Atom Probe Tomography	Advances in Nano-Scale Materials Characterization	7 July 2019	210
7	Beeraiah Baire, P. Venkatakrishnan	Chemistry	Natural Product Prospecting for Therapeutic Application	1-2 November 2019	220
8	V. Kamakoti	Computer Sciences & Engineering	SANJOG 2019	8-10 June 2019	50
9	R. Gnanamoorthy, M. Kamaraj	Mechanical Engineering	Indo-Japan Bilateral Symposium on the Materials and Manufacturing for Next Generation Electric and High Speed Railway	2-3 March 2020	20
10	Shiva Nagendra S.M., Virendra Sethi	Civil Engineering	4th Indian International National Conference on Air Quality Management (IICAQM 2019)	8-10 June 2019	160
11	Smita Srivastava, Guhan Jayraman, Nirav Bhatt	Biotechnology	Biological Engineering Society Conference 2019	18-19 October 2019	125
12	M. Michael Gromiha, N. Manoj, R. Sakthivel	Biotechnology	5th IIT Madras-Tokyo Tech Joint Symposium on Current Trends in Bioinformatics: Big Data Analysis, Machine Learning and Drug Design	6-7 March 2020	0
13	Gitakrishnan Ramadurai, Sreenivas Gollapudi	Civil Engineering, Google, USA	Smart Mobility—Data-Driven Models and Algorithms	2-4 December 2019	75
14	Arnab Rit Anbarasan	Chemistry	CIHS-2019 (Chemistry In-House Symposium 2019)	21-21 July 2019	350

15	Athi Narayanan N., Satyajit Mayor	Biotechnology NCBS-TIFR, Bengaluru	Young Investigators' Meeting (YIM) 2020	14-18 February 2020	55
16	Nitish R. Mahapatra, Amal Kanti Bera	Biotechnology	20th International Symposium on Chromaffin Cell Biology (ISCCB-20)	23-26 January 2020	100
17	V. Kamakoti, Chester Rebeiro, Balaji Shanmugham	Computer Sciences and Engineering	Cyber Security Workshop	30-31 July 2019	50
18	Manoj Pandey, Ratna Kumar Annabatula	Mechanical Engineering	Workshop on Automation in Finite Elements	23-27 July 2019	20
19	Prem Ballabh Bisht, S. Balaji, Mahaveer Jain	Physics, Electrical Engineering, Physics	National Symposium on Light-Matter Interactions	26 December 2019	50
20	Arun K. Tangirala, Sebastian Engell, Shaikh Faruque Ali	Chemical Engineering, Biochemical and Chemical Engineering, Tu Dortmund, Germany, Applied Mechanics	Advances in Control and Optimization of Dynamical Systems (ACODS) 2020	16-19 February 2020	250
21	Rajesh Kumar, Santhosh Abraham, Avantika Singh, Sruti Ranjani	Humanities and Social Sciences	Annual Academic Conference 2020	24-30 January 2020	30
22	Karthik Raman, Victor De Lorenzo, Himanshu Sinha	Biotechnology	Engineering Meets Evolution: Designing Biological Systems	30 January-1 February 2020	78
23	B.S. Murty	Metallurgical and Materials Engineering	Advanced Concepts for Light Weighting Through Materials, Design and Manufacturing	5 September 2019	100
24	Balaji Narasimhan, B.V. Mudgal, Sachin Gunthe	Civil Engineering	4th Conference on India Radar Meteorology (IRAD 2020)	5-7 February 2020	160
25	R. Vinu	Chemical Engineering	PYRO Asia 2019	12-13 December 2019	115
26	Radhakrishna G. Pillai, Piyush Chaunsali, Manu Santhanam	Civil Engineering	5th IITH CRI Symposium (Concrete Research In India)	14 September 2019	100
27	Santhosh Abraham	Humanities and Social Sciences	Republic of Plants	10-14 December 2019	60

28	K. Murali	Ocean Engineering	Impart Training on CIRIA Manual for Dredging	12-13 September 2019	40
29	Balaji Narasimhan, B.S. Murty	Civil Engineering	Upscaling Catchment Processes for Sustainable Water Management in Peninsular India (UPSCAPE): Final Stakeholders Workshop	25 October 2019	50
30	Devendra Jalihal, Sri Chaitanya, L.S. Ganesh	Electrical Engineering, Saraswat Institute, Management Studies	Conference on Ontological Distinctions Between Mechanical, Chemical and Biological Systems: Perspectives from Systems Philosophy	31 January-1 February 2020	65
31	V. Kamakoti, Chester Rebeiro	Computer Sciences & Engineering	Open Source Systems and Secure Microarchitecture Week	10-14 October 2019	160
32	Abdus Samad	Ocean Engineering	Modelling of Marine Energy Systems	1 November 2019	50
33	Devendra Jalihal, David Koilpillai, Venkatesh Ramaiyan	Electrical Engineering	Smart City Symposium 2019	30-31 October 2019	30
34	S.A. Sannasiraj	Ocean Engineering	Marine Technology Society (MTS) India - Students Section, IIT Madras		100
35	Karthik Raman, Rahuman Sheriff	Biotechnology	IITM-EBI Modelling Workshop	2-5 December 2019	40
36	G. Rajesh, R. Sriram	Aerospace Engineering	24th International Shock International Symposium	12-16 October 2020	70
37	R. Krishna Kumar, R. Ravichandran	Engineering Design, MIOT Hospital	International Conference on Non-Communicable Diseases	19-21 March 2020	210
38	Abhijit P. Deshpande, Devendra Jalihal	Chemical Engineering, Electrical Engineering	Rural Technology Development and Delivery 2020-RTDD 2020	12-14 March 2020	210
39	Rajagopalan Srinivasan Rajinish Kumar	Chemical Engineering	International Symposium on Natural Gas Value Chain	9-11 December 2019	0
40	D. Janakiram	Electrical Engineering	First International Conference on Urban Data Science	20-21 January 2020	0
41	Anindita Sahoo, Sweta Sinha	Humanities and Social Sciences	2nd Conference on Indigenous Languages—Towards Sustainable Multi-lingualism (ICOIL - 2)	13-14 February 2020	70

42	Nilesh J. Vasa, T. Asokan, C. S. Shankar Ram	Engineering Design	Workshop for Motivating ITI Graduands for Incubation and Entrepreneurship in Industrial Automation/ Automotive Engineering	2-6 December 2019	25
43	Guhan Jayaraman	Biotechnology	Workshop on Bio- Entrepreneurship: Recombinant Protein Production	6-10 January 2020	20
44	K.G. Pradeep, Velu Sampath	Metallurgical and Materials Engineering	Advances in Correlative Microscopy	31 January 2020	75
45	Manu Santhanam	Civil Engineering	SPARC Workshop on Sustainability and Durability of Concrete Structures with By- Products and Recycled Materials	7-18 January 2020	210
46	Rajesh R. Nair	Ocean Engineering	Synergizing Dual Education Model Based on TEEDE Model of Erasmus Plus, European UNION	16 January 2020	0
47	K. Murali	Ocean Engineering	RINA International Conference on Computational and Experimental Marine Hydrodynamics (MARHY 2020)	26-28 November 2020	100
48	Arun Menon, G.S.V. Suryanarayana Murthy, Jigna Desai	Civil Engineering, ICOMOS India	ICOMOS Annual General Body Meeting and Scientific Symposium	21-23 May 2020	103
49	Sivarama Krishnan	Physics	Indo-UK Symposium on Intense Laser Application and Innovation	27-29 January 2020	35
50	Pallab Sinha Mahapatra, Arvind Pattamatta	Mechanical Engineering	Nanoengineered Interfaces for Energy and Healthcare	16-17 March 2020	40
51	Abhijit P. Deshpande, Devendra Jalihal, Sreenivas Shigullapalli	Chemical Engineering, Electrical Engineering, RuTAG, IITM	Workshop for ITI Instructors - Case Study of Electric Vehicles	21 February 2020	50

52	A. Boominathan, K.S. Rama Krishna, R.G. Robinson	Civil Engineering, Chairman, DFI of India, Civil Engineering	10th Anniversary Conference on Deep Foundation Technologies for Infrastructure Development in India - DFI-India 2020	19-21 November 2020	265
53	S. Mohan	Civil Engineering, Australian National University	Recent Advances in Air Pollution Assessment, Modelling and Control	9-10 March 2020	60
54	Shiva Nagendra S.M., Sotiris V.	Civil Engineering, Australian National University	Indian International Conference on Air Quality Management (IICAQM 2020)	10-11 December 2020	200
55	Sonika Gupta, Jayadeva Ranade	Humanities and Social Sciences CCAS	Evolving a Himalayan Policy for India	7 April 2020	15
56	G. Sekar Ramesh L. Gardas	Chemistry	Indo-German Meeting 2020: Adaptive Natural and Synthetic Systems	23-27 September 2020	45

NPTEL: A joint initiative of the IITs and IISc, funded by MHRD

The National Programme on Technology Enhanced Learning (NPTEL), a project funded by the Ministry of Human Resource Development (MHRD), was first conceived in 1999 to pave the way for introducing multimedia and web technology to enhance learning of basic science and engineering concepts. NPTEL, implemented using information and communication technology (ICT), is India's largest technical dissemination programme. Several web and video-based material for science and engineering courses have been developed to date. IIT Madras is the coordinating institute of this project.

Courses completed (discipline-wise–video and web)

Discipline	Video (Completed)	web (Completed)	Grand Total (Completed) till April 2020)
Environmental Science	0	3	3
Atmospheric Science	3	1	4
Mining Engineering	3	1	4
Nanotechnology	2	3	3
General	12	0	12
Special Series 12	12	0	12
Architecture	14	0	14
Engineering Design	14	8	22
Textile Engineering	12	14	26
Multidisciplinary	26	0	26
Ocean Engineering	26	1	27
Basic courses-Sem 1 and 2	14	7	31
Aerospace Engineering	41	17	58
Biotechnology	54	16	80
Metallurgy and Material Science	60	13	73

Physics	64	16	80
Chemistry and Biochemistry	77	17	94
Electronic & Communication Engineering	85	27	112
Management	110	13	123
Mathematics	100	25	125
Chemical Engineering	94	35	129
Humanities and Social Science	136	25	161
Electrical Engineering	147	24	170
Civil Engineering	122	57	179
Computer Science and Engineering	159	32	192
Mechanical Engineering	200	432	266
Total	1604	432	2036

Number of courses (video and web) completed by each institute

Institute	Video	Web	Grand Total (till April 2020)
IEST Shibpur	1	0	1
IIIT Bangalore	1	0	1
IIIT Delhi	1	0	1
IIIT Hyderabad	1	0	1
IIITB	1	0	1
IISER Mohali	1	0	1
IIT Mandi	1	0	1
NCL Pune, IISER Pune	1	0	1
IIT Patna	4	0	4
IIT Patna	4	0	4
IIT Ropar	4	0	4
IISER Bhopal	5	0	5
IISER Pune	86	37	123
IIT Delhi	86	37	123
IISc Bangalore	191	39	140
IIT Bombay	125	46	171
IIT Roorkee	154	30	184
IIR Guwahati	114	81	196
IIT Kanpur	267	75	342
IIT Kharagpur	361	48	409
IIT Madras	369	76	445
Total	1804	432	2036

NPTEL courses are used extensively by faculty members and students across the world to further their knowledge on various subjects in different disciplines. The learning material is supplemented with references and recommended reading material, and contains self-assessment quizzes for students. The courses developed for NPTEL can be viewed at <http://nptel.ac.in> and on YouTube (as a separate channel, at <http://www.youtube.com/iit>).

Transcripts and MP3 versions of video lectures (as of April 2020)

Edited transcripts (in the form of PDF files), audio extract of video lectures (in the MP3 format) and subtitled text (in the form of srt files) are all hosted at the ICT home page, the URL of which is <http://textofvideo.nptel.iitm.ac.in>. These may be downloaded by users free of charge. All NPTEL video lectures are transcribed and edited so that students can access the content in a video lecture as textual material. The process of verifying the text transcripts is going on. The same text is also used for subtitling the video lectures. The audio of a video lecture is extracted as an MP3 file, which is small in size compared to the corresponding video lecture.

This file, coupled with the text transcript, serves as a good educational resource. So far, more than 49,051 lectures have been transcribed through a manual transcription process, and more than 48,006 videos are available with subtitles in English. The availability of complete text material for technology courses will enable the lectures to be subtitled in Hindi and other regional languages. This will help non-native English speakers and students in rural colleges throughout India to learn the concept through a partial or complete translation of the spoken content in their first language.

Video Lectures	
Total	69,798
Transcribed	68,541
Verification completed	30,506
PDF available on site	25,395
SRT available on site	40,028

Translation of text transcripts to local languages

Translation of English text transcripts of NPTEL courses are being carried out in eight Indian regional languages viz., Bengali, Gujarati, Hindi, Kannada, Malayalam, Marathi, Tamil and Telugu. Once verified by language experts, notes and subtitles of language transcripts are made available on NPTEL site, along with the videos. Here is a gist of the progress:

1. Identifying translators across eight languages:

Translators are identified from faculty from our partner colleges and research scholars from the IITs who are technically sound in specific disciplines across the languages.

2. Total translators identified across eight languages: 3,182

Translated courses' count and courses under process

The following table shows the translations completed in various languages and their duration:

S. No.	Language	Translation Completed		Translation Ongoing	
		No. of Courses	Total Hours	No. of Courses	Total Hours
1	Hindi	45	904	66	1320
2	Bengali	21	484	15	300
3	Tamil	21	390	28	610
4	Telugu	16	331	27	560
5	Gujarati	13	303	24	510
6	Marathi	11	256	27	550
7	Kannada	12	318	17	360
8	Malayalam	6	113	23	550
Total		145	3099	227	4760

3. Translated courses are published on NPTEL website as lecture notes, subtitles and e-books.

Sl. No	Language	Translated Courses		
		PDF Transcripts	Subtitles	Books
1	Hindi	45	37	23

2	Bengali	21	16	16
3	Tamil	21	13	10
4	Telugu	16	12	3
5	Gujarati	13	11	5
6	Marathi	11	8	6
7	Kannada	12	6	5
8	Malayalam	6	5	5
Total		145	108	73

Statistics of NPTEL usage

NPTEL has created a small analytics team that is looking into the data that has been collected during course runs over the past six years. The team looks into enrolment, course assignment, exam registration and final exam scores to identify trends and patterns visible. The course enrolment data trend shows that NPTEL learner base has been consistently increasing with close to 10 lakh new learners getting enrolled in the last two semesters alone. A similar growth has also been seen in the exam registration that has crossed 3 lakhs in the January-June 2020 semester.

A careful analysis of the data shows that the volume of learners registering from the NPTEL Local Chapters (i.e. micro NPTEL learning units within the institution) is around 80-85% of the total exam registrations in the past couple of semesters. The increased awareness about NPTEL and policy support for integrating MOOCs in regular curriculum can be attributed to this increased contribution. The number of Local Chapters has now reached 3,800, and there are many more institutions that are in the pipeline for application. With more institutions turning to online courses and teaching-learning practices due to the lockdown situation, we expect these numbers to grow enormously in the subsequent year as well.

NPTEL Online Courses

Online learning has gone through a major revitalisation in the last few years, with major worldwide players such as Coursera (www.coursera.org) and edX (www.edx.org) offering free education for anyone who is interested. These courses have been named Massive Open Online Courses (MOOCs) and are quite popular today. NPTEL has recently embarked on a project offering online courses, called NPTEL Online Courses (NOC), through the SWAYAM portal (<https://swayam.gov.in/>).

MOOCs are essentially an asynchronous platform and a process for teaching using pre-recorded lectures, resource video materials, lecture notes, assignments and quizzes, which are usually online and provide self-assessment at regular intervals during learning. The learning happens in fixed time duration, and,

therefore, the simultaneous participation of teachers and a large number of students may be termed synchronous. This learning is thus similar to that which takes place in a classroom, although the Internet enables it and the size of the class is much larger. The extended classrooms on the Internet facilitate the development of new methodologies and are well suited to the current mobile-Twitter-Facebook-YouTube-Instagram generation of students. When offered through supplementary notes and mobile-delivered content, these enable quality and equitable access to a much larger population of students, especially in non-urban and rural areas, and can lead to a significant rise in the Gross Enrolment Ratio.

NPTEL online certification

The objective of 'enabling students obtain certificates for courses' is to make students employable in industry or pursue a suitable higher education programme. Four-week, eight-week and 12-week online courses, typically on topics relevant to students (usually in their final years of higher education), basic core courses in sciences and humanities and relevant exposure to tools and technologies, are being offered through an online portal. Enrollment in these courses and the learning process involve no cost. At the end of each online course, an in-person, proctored certification exam is conducted, and a certificate is provided through participating institutions and industry, when applicable. To date, more than 2,000 courses have been offered under NPTEL online certification.

Methodology

The following are the features of a typical online course:

1. Clear assumptions about prerequisites
2. Clear learning outcomes
3. Duration of four weeks (10 hours), eight weeks (20 hours) and 12 weeks (30-40 hours)
4. Two to four hours of lectures every week
5. The lectures are broken up into short modules.
6. Each module has a clear description of its contents and expected learning outcomes.
7. Objective/subjective/programming assessments

every week as decided by the faculty member

8. A discussion forum where students can raise questions and get their doubts answered
9. An announcements section in which announcements are posted
10. A progress page where a student can view his or her scores and an analytics page for the course instructor that provides an overview of a student's performance and interest in the course
11. LIVE interactive sessions from course instructors

The content of online courses will be peer reviewed to assess if it meets all the requirements.

Certification process

NPTEL began the initiative of offering certification for courses in March 2014. The process of certification is as follows:

1. Subject Matter Experts (SMEs, faculty members of IITs or partner institutes, with input from industry) create new content in the MOOCs format or use course content that has already been created for NPTEL and offer the entire course for certification or slice up the content and use parts of it to make a 20-hour course.
2. The course is uploaded on the portal and opened for enrollment, which is free.
3. Every week, about 2-3 hours of video content is released along with an assignment, which is

evaluated and provides the student with a score.

4. Teaching Assistants (TAs) and faculty members support the discussion forum, answering questions and clearing doubts.
 5. Registration for the online-proctored certification exam is opened (which is optional) in collaboration with an exam partner, and nominal fees of Rs. 1100 per course is charged.
 6. The certification exam is conducted on pre-announced dates (preferably Saturdays/Sundays) after the course has been run, giving the student flexibility in terms of the date of the exam.
 7. Certificates (hard copies, e-verifiable on a website) are issued. The scores on the certificates are combinations of scores for assignments and final scores. These certificates are issued by the CCEs (Centre for Continuing Education) of IITs (in partnership with industry bodies, if applicable).
 8. Now certificates are being used by select universities for transfers to make the student more employable or to enhance her or his growth in the current place of work.
- Certification courses completed – from March 2014 to date
- 20 exam runs; 1,660 courses completed
 - Ongoing: 392 courses for January-April 2020
 - Upcoming: 420+ courses for July-December 2020

Certification completed - course statistics

No. of Courses	Exam Period	Course Run	Enrolled	Registered	Certified
392	April 2020	January-April 2020	2084516	306093	Ongoing
359	October 2019	July-December 2019	1828301	253648	164765
291	April 2019	January-April 2019	1619065	204038	161250
269	October 2018	July- December 2018	1311846	161228	124319
226	April 2018	January-April 2018	917644	87020	66136
94	October 2017	July- October 2017	459274	26725	23957
65	September 2017	July- September 2017	581064	43702	39433
66	April 2017	January-April 2017	314042	23419	19341
64	March 2017	January-March 2017	219899	23598	19064
31	October 2016	July-October 2016	144769	8250	6832
73	September 2016	July-September 2016	245124	23176	19988

35	April 2016	January-April 2016	90925	4265	3574
29	March 2016	January-March 2016	150766	13080	11736
18	November 2015	July-November 2015	38037	1722	1398
18	September 2015	July-September 2015	122782	5562	4629
27	July 2015	May-June 2015	26408	2425	1848
15	May 2015	February-May 2015	31684	1659	853
12	March 2015	January-March 2015	78924	2262	1856
2	November 2014	September-November 2014	58947	1653	1549
1	July 2014	March-August 2014	53807	1380	1182

Courses offered for certification in July-December 2020 semester

The number of courses offered for certification during the July-December 2020 semester is 420 (as of 28 April 2020). The detailed course list is available on the NPTEL site: <https://nptel.ac.in/>

Discipline	Count of Courses for Certification
Aerospace Engineering	11
Agriculture Engineering	7
Applied Mechanics	2
Architecture and Planning	12
Biotechnology and Bioengineering	25
Chemical Engineering	20
Chemistry	20
Civil Engineering	29
Computer Science and Engineering	40
Design Engineering	6
Earth Sciences	1
Electrical and Electronics Engineering	43
Humanities and Social Sciences	46
Law	3
Management	36
Mathematics	30
Mechanical Engineering	48
Metallurgical and Materials Engineering	15
Multidisciplinary	7
Ocean Engineering	2
Physics	11

Textile Engineering	6
Grand Total	420

Role of Centre for Continuing Education of IIT in NOC

Each online course will be conducted administratively under the Centre for Continuing Education (CCE) of the IIT whose faculty member is offering the course for certification. All financial transactions and contracts will be done through the CCE. The final course completion certificate and scorecard from the proctored exam will be issued by the Chairman of the CCE and NPTEL jointly.

Use of NPTEL video and web material as GATE preparation aids

The NPTEL has taken up the task of mapping every question in the GATE question papers (2014-2016) to NPTEL reference material, readily available within existing NPTEL courses.

Question papers in 21 disciplines have been mapped so far with the help of postgraduate student volunteers, and the answers have been further validated by the faculty members specialising in the area. Both the

students and the faculty members have been paid honorarium.

In addition, we have also initiated the process of mapping video resources in the NPTEL to the GATE syllabi across various domains. As a pilot, we have mapped 618 video resources from eight different domains.

NPTEL Local Chapters

NPTEL has been actively organising Local Chapters (LCs) in colleges. These chapters provide a platform for continuous engagement with the colleges involved and serve as a direct point of contact that acts as champions of NPTEL in these colleges. These chapters are a recent initiative of NPTEL, but have received a tremendous response. We have Local Chapters outside India too, like in Afghanistan, Ethiopia and Ghana, among others.

Today, there are close to 3,800 colleges within and outside India that have NPTEL Local Chapters. The details of the chapters are given below.

Local Chapters inside India

State/UT	Count	State/UT	Count
Andaman and Nicobar	1	Lakshadweep	1
Andhra Pradesh	266	Madhya Pradesh	140
Arunachal Pradesh	3	Maharashtra	746
Assam	20	Manipur	4
Bihar	40	Meghalaya	2
Chandigarh	1	Mizoram	2
Chhattisgarh	34	Nagaland	2
Dadra and Nagar Haveli	1	Odisha	52
Daman & Diu	3	Pondicherry	19
Delhi	29	Punjab	70
Goa	12	Rajasthan	86
Gujarat	146	Sikkim	2
Haryana	57	Tamil Nadu	585
Himachal Pradesh	13	Telangana	201
Jammu and Kashmir	17	Tripura	10
Jharkhand	41	Uttar Pradesh	428
Karnataka	245	Uttarakhand	40
Kerala	223	West Bengal	163
Total	3705		

Local Chapters outside India

Country Name	LC Count
Ghana	2
Malawi	1
Guinea	1
Benin	1
East Africa	2
Country in West Africa (Sierra Leone)	1
Country in West Africa (Côte d'Ivoire)	1
Afghanistan	1
Zambian Central Province	1
Uganda	1
Sudan	1
Democratic Republic of the Congo	2
East Africa	1
East Africa's Mozambique	1
Country in Asia	1
Benin	1
UAE	1
Total	20

As of April 2020

Count of LCs	
Inside India	3705
Outside India	21
Grand Total	3726

The Local Chapters have helped spread awareness about NPTEL, gauge the needs of colleges in the academic environment, fill the gaps and identify how more students across colleges can benefit from the certification courses. It is through these Local Chapters that NPTEL is able to interact with colleges and award fee waivers to deserving candidates who come from economically weaker sections. Many Local Chapters have also started implementing credit transfer mechanism wherein students, who get certified through NPTEL, are given equivalent credit at the college/university.

Feedback on NPTEL

The feedback from many students, teachers and other users is being collected regularly. Several feedback forms have been designed for this purpose with varying degrees of detail. The feedback collected from Local Chapter SPOCs has been used to understand the use of NPTEL courses and resources in respective institutions. This has further resulted in the initiation

of an impact study about NPTEL usage at Local Chapters by an independent agency.

NPTEL awareness workshops

Workshops are routinely conducted for students and faculty members of other institutes to create awareness about NPTEL. Four types of workshops are conducted by NPTEL:

- NPTEL awareness workshops for students
- NPTEL awareness workshops for faculty members
- NPTEL course-specific workshops for faculty members
- NPTEL MOOCs workshop for faculty members

Since the participants at these workshops are from various institutes, the information reaches a large number of colleges. Typically, the issues addressed are—what is NPTEL? How is the content procured? How can the content be used by students and faculty members? What are the special features of NPTEL? Suggestions are also invited from the participants for improvements to enhance the learning experience.

Year	Awareness Workshops Conducted
2017	62
2018	72
2019	54
2020 (As of April)	12
Total	200

The faculty is informed about the ways to adapt the content for their classes. More than 2,00,000 teachers and students have attended these workshops. Last year, several MOOCs workshops were conducted across the country to familiarise the faculty members with the MOOCs form.

NPTEL lab workshops

Many colleges across the country, be it engineering or science, have very poor facilities in terms of laboratories for performing experiments, especially colleges in Tier-2 and Tier-3 towns. To provide the NPTEL course toppers an opportunity to experience world-class facilities that might motivate them further, week-long laboratory workshops at some of the top institutes such as the IITs, IISERs and IIITs were conducted. These were attended by students in person.

Year	Workshops Conducted
2019	14
2020	1
Total	15

Collaboration with industry

The NPTEL is working towards bringing in an industry perspective to its technically rich courses, which led to the inception of NPTEL Industry Associate (NIA). The NPTEL aims to partner with organisations in a mutually beneficial manner by offering courses to train fresher graduates and to cross-skill and up-skill the existing workforce. This will bridge the gap between academics and companies. CSR initiatives are also explored as part of this association. Ideally, the next step in empowering the students is to make them job ready.

The industry partner may do any one of the following:

- Co-offer a course with an IIT faculty
- Sponsor a course
- Provide CSR funds, which goes towards providing fee waivers to deserving students
- Provide job/internship opportunities to NPTEL toppers

With the growing number of colleges partnering with NPTEL, the CSR support from the industries will create

a wider impact on the students, who are otherwise devoid of quality education due to their economic conditions.

Benefits of becoming an NPTEL Industry Associate (NIA)

The following portals have been created:

- <http://nptel.ac.in> - This portal was given a better design and the NPTEL office continues to add new features to this website.
- <http://nptel.ac.in/noc> - The link is for candidates to check scores and details regarding courses.
- <http://nptel.ac.in/LocalChapter> - The website is for NPTEL Local Chapters with login for single point of contact (SPOCs) and mentors of NPTEL Local Chapters.
- <http://nptel.ac.in/IndustryAssociate/> - For Industry Associates
- <http://nptelonlinecourses.iitm.ac.in/> - Exam Registration Link

S.No	Organisation	S.No	Organisation
1	Ants Global Systems Private Limited	23	Intimetec Visionsoft Private Limited
2	Archons Solutions Private Limited	24	IREL (India) Limited
3	Aricent Technologies (Holding) Limited	25	Mahindra & Mahindra Limited
4	Basukala Private Industrial Training Institute	26	Medicove Health Guard India Private Limited
5	Cloudsigma Technologies Private Limited	27	NLC India Limited Neyveli
6	Defence Research and Development Organisation	28	Numaligarh Refinery Limited
7	Educational Consultants India Limited (EDCIL)	29	Onnsa Research Innovations Private Limited
8	ESP Engineering Solution Provider (Engineering Design)	30	Our World Together Foundation
9	Ether Services	31	Patient Planet Health Services Private Limited
10	Freshersworld (Team Lease)	32	Power Grid Corporation of India Limited
11	Fronius India Private Limited	33	Qualcomm
12	Garden Reach Shipbuilders & Engineers Limited (GRSE)	34	Rajlee Electronics and Innovations Private Limited
13	Glass Academy Foundation	35	SJVN Limited
14	Green Research IT Solutions	36	Springrole India Private Limited
15	HILTI India	37	Sri Satya Surya Engineering and Trading Services Private Limited
16	HPCL Mittal Energy Limited	38	Stigmata Techno Solutions LLP
17	IBM India Private Limited	39	TAFE
18	Indian Institute of Industry Interaction Education and Research	40	Tech Mahindra Limited
19	Infosys Limited	41	Tejas Networks Limited
20	Infoziant Systems Private Limited	42	The Institution of Engineers (India)
21	Intech DMLS Private Limited	43	Ultratech Cement Limited (UTCL)
22	Internshala	44	Vunet Systems

Soft skills training for NPTEL toppers

As a pilot initiative, NPTEL has begun giving NPTEL topper students free soft skills training for job interviews. Further, we conduct online mock interviews, online interactive sessions and live video sessions, and give feedback to students on areas of improvement in the context of employment.

The following activities are conducted as part of the soft skills training initiative:

1. Collect resume database from NPTEL toppers
 2. Conduct employability assessment and English test
 3. Online interactive session with learners
 4. One-on-one online mock interview
- One-on-one Mock Technical Interview

Summary of soft skill activities

Sl. No.	Soft Skills Activities	No. of Students
1	Mock interviews (One-on-One Interview)	200
2	Interactive sessions with a group of 10 students (Google Hangouts)	740

3	Technical interviews (offered to only interested students)	9
4	Employability assessment	9,211
5	Spoken English assessment	52

Recruitment

The profiles of NPTEL toppers, who have completed the entire process of soft skill training, will be shared with companies for recruitment. The NPTEL team is actively approaching many companies for recruitment. The companies will also benefit from this initiative, as they will get access to a very good talent pool through NPTEL.

Infosys Recruitment: Infosys shared a job requirement with NPTEL for Systems Engineer Specialists in January 2020. NPTEL toppers were filtered (using the resume database) based on the criterion laid, and 1,400 student profiles were shared with Infosys. The company conducted an online assessment and shortlisted 185 students for the interview. After conducting the interviews, Infosys selected 57 students for the role of Systems Engineer Specialist.

CSR initiatives

NPTEL has a lot of initiatives planned for the benefit of the NPTEL student community. Since, NPTEL operates on a non-profit mode, it requires funding. Some of the activities of NPTEL are not funded by the MHRD. Hence, NPTEL partners with the companies for their CSR support for some of the initiatives.

Aricent Technologies, Capgemini and Tata Technologies have partnered with NPTEL through IITM - OAA to sponsor scholarships for students in financial need to aid payment for the certification exams. More than 1 lakh students have benefited from this effort.

NPTEL exam fee waiver initiative

When a survey was done among students, who had scored well in the assignments during the course, but who had not registered for the certification exam, a large percentage of them quoted the fee of Rs. 1,000 being too high to pay due to their economic background and ongoing educational loans. With the objective of aiding students from economically weak backgrounds complete the course and get a certificate from the IITs that might help them with better employability or higher education, the fee waiver support request for Rs. 500 per candidate per course was implemented. If the student's financial concerns are reduced, they can focus more on studying and learning, which can lead to better retention of knowledge, which in turn, can increase their chances at the job front. Hence, the possibility of some external agency instituting some kind of scholarships that enable students to overcome the situation of the fee being a hurdle to obtain certification was thought of. This scholarship would be distributed to the students on a merit-cum-means basis.

As of today, NPTEL was able to provide exam fee waiver to more than 23,000 students in the year 2019. A total of Rs. 1,26,00,000 was given as exam fee waiver to the students through CSR support from various companies during the year. The NPTEL has also been approaching many companies to support its various initiatives.

Need for Fee Waiver – Rs.500 per Student

Promote NPTEL to
non-engineering
students

Motivate girl
students to do
Online Courses



Students in Tier 2
and Tier 3 towns
need support

First Generation
Learners

Fee Waiver is given to the students who clear NPTEL Certification

Impact stories on NPTEL learners

The biggest sources of motivation are the stories of hundreds out there in the world, who are doing things differently. This is precisely why we work on uncovering inspiring stories of NPTEL learners from various spheres of life via blog entries.

NPTEL courses have helped students in cracking jobs and competitive exams, including GATE. These articles cover the journey, motivation and success stories of the achievers. These will further inspire NPTEL learners to use NPTEL courses effectively.

We have students, employees and even faculty enrolling themselves in the NPTEL courses. This year saw a 12-year-old enroll himself for a course on Design Thinking. Cross-skilling is no longer a luxury, as we have quite a few domain scholars who have specialised outside their primary field of specialisation. These impact stories are posted to encourage learners to accomplish what they set out to, no matter what. Each story is unique, and reflects determination and perseverance of the learners.

NPTEL Special Lecture Series

NPTEL, IIT Madras launched the Special Lecture Series online, targeting learners who were forced to stay back home due to the COVID-19 lockdown. The Lecture Series started on 13 April 2020. The one-hour interactive lectures range from career guidance to technology/general topics, and are live streamed on NPTEL-IIT Madras YouTube channel, available free of cost to public.

These lectures provide students an exposure to listen to eminent speakers from various domains. They can go a long way in motivating students to aspire higher and learn better. NPTEL was always keen to launch such a full-fledged lecture series on career options available to students. These talks by industry professionals provide the students first-hand insights into the aspects of the courses to be pursued, the work-life balance in the career described, and so on. There is no better time than now to offer this series, as it would benefit students and faculty members who have to remain in their homes for their safety.

The one-hour interactive lectures deal with topics ranging from career guidance to the latest updates on technology and topics of general interest. A Google Form will be available during the sessions through which viewers can ask questions in real time. Each lecture is around 45 minutes' long and is followed by 15 minutes of question-and-answer session.

- The Lecture Series are conducted on the following topics:
 - Careers and job opportunities
 - Technology and research
 - General topics of interest like time management, joy

of teaching, soft skills, film sense, entrepreneurship, among others

- The inspiring journeys of successful people

We plan to invite people from varied walks of lives such as musicians, sportspeople, banking/finance sector professionals, medical doctors and others, to share their experiences to enthuse the young blood to dream big and achieve the impossible.

NPTEL is actively reaching out to IIT Madras alumni and major technology companies such as IBM, Google, Capgemini, Infosys and GE Healthcare to have their heads participate in this lecture series. The lectures will also be archived on nptel.ac.in and will remain open for everyone.

The response for the lectures from the learners has been very good. The list of Special Lecture Series is given in NPTEL site <https://nptel.ac.in/>.

NPTEL portals for various workflows

The following portals have been created and are currently functional:

<http://nptel.ac.in> - This portal was given a better design, and the NPTEL office continues to add new features to this website.

<http://nptel.ac.in/noc> - This portal is for candidates to check scores and details regarding courses

<http://nptel.ac.in/LocalChapter> - This is for NPTEL Local Chapters with login for Single Point of Contact (SPOCs).

<http://nptel.ac.in/IndustryAssociate/> - For Industry Associates

https://nptel.ac.in/noc/faculty_dashboard/ - Faculty dashboard for their course statistics

http://scoringtool.nptel.ac.in/scoring_tool_march/ - Scoring tool for score signoff from faculty

<https://nptelmarchexam.swayam.gov.in/> - March Exam form

<https://nptelaprilexam.swayam.gov.in/> - April Exam form

<https://bcbexam.swayam.gov.in/> - Medical Exam form

Social media

NPTEL has new Facebook, Twitter, You Tube and Instagram accounts as well.

(as on April 2020)

<https://www.facebook.com/NPTELnoc> - 1,43,030 (likes) + 1,44,696 followers

<https://twitter.com/nptelindia> - 11,200 (followers)

<https://www.youtube.com/user/nptelhrd> - 16,80,000 YouTube Subscribers

<https://www.linkedin.com/company/nptel> - 20,111 followers

https://www.instagram.com/swayam_nptel/ - 11,500 followers

NPTEL Stars

Over the past five years, we have seen a small group of learners coming back repeatedly to NPTEL courses and completing exams with us. In its current operational format, barring the individual course certificates, there aren't any other incentives for these learners. The NPTEL Stars was initiated in 2019 to acknowledge such dedicated efforts by learners.

We have looked at various meaningful ways in which such learners can take up more than one course exam in NPTEL, and have identified seven broad categories into which these Stars can be classified.

We briefly describe each of these categories below. Further details are available on our webpage, <https://nptel.ac.in/>.

Stars categories

Categories	Description	Count of Qualified Learners
NPTEL Domain Scholars	NPTEL has been giving out course-level certificates since 2014 and there have been quite a few students doing multiple courses from NPTEL. Some of them need guidance on what courses to take up together and also a classification of courses based on the end goal, whether it is appearing for some competitive exam or becoming job ready or specialising in an area of study. Domains are being created in multiple disciplines (more domains will be put out as newer courses are created).	8
NPTEL Super Stars	Candidates must have been present for 4/5/6 exams and toppers in at least three exams	19
NPTEL Evangelists	We consider the last four years/eight semesters for these. Candidate should have passed in at least two/three of exams applied. (For example, if someone was present for 18 exams, they should have passed at least 12.)	25
NPTEL Motivated Learners	NPTEL learners must have been present for eight or more NPTEL exams in the last four semesters and should write at least one course per exam and pass in 75% or more of the exams.	187
NPTEL Enthusiasts	NPTEL learner must have been present for eight or more NPTEL exams in the last four semesters and passed in 75% or more of the exams appeared.	302
NPTEL Discipline Stars	Candidates should have completed courses whose duration totals to 50 weeks or more and should complete all course in the same discipline with final score ≥ 55 .	1288
NPTEL Believers	Candidates must present for 4/5/6 exams in that semester and certified in at least four exams in which they have appeared.	367

Live sessions by NPTEL course instructors

To provide learners an opportunity to interact with the online course instructors, NPTEL offers live sessions each semester, details of which are shown below

Live Sessions

Institute	January-June 2019	July-December 2019	January-May 2020
IISc Bangalore	13	25	11
IIT Bombay	38	42	37
IIT Delhi	10	11	3
IIT Guwahati	12	77	44
IIT Kanpur	21	27	9
IIT Kharagpur	18	62	99
IIT Roorkee	37	19	9
IIT Madras	55	59	44
Total	204	322	256

Internship

The main intent of the internship is to provide opportunity for toppers to be able to interact with the instructor and his/her team and be motivated to pursue higher education or identify projects they may want to be a part of at the institute.

Internship is offered to students who are toppers in NPTEL online certification exams. The internship programme is with the course instructor of the courses they are toppers in. The duration of the internship can be 2/4/8/12 weeks based on the mutual convenience of the faculty and the interns. The internship will be held in the institute that the faculty is attached to.

Institute Name	2018		2019	
	Summer	Winter	Summer	Winter
IIT Madras	6	8	11	5
IIT Kharagpur	4	5	13	2
IIT Bombay	1	1	1	2
IIT Roorkee	1	-	1	1
IIT Ropar	0	9	8	0
IISc Bangalore	1	1	0	0
IIT Kanpur	0	2	4	0
IIT Tirupati	0	1	0	0
IIT Delhi	-	-	1	-
Other Institutes	-	-	-	2
Total	13	27	39	12

Virtual classrooms over the National Knowledge Network

The National Knowledge Network (NKN) during 2019-2020 had given us tremendous boost to conduct as much as 9000 hours of usage for virtual classes, meetings and several PhD defences in addition to special meetings with the Ministries of HRD, Defence, IT, Health, Urban Development and others of the

Government of India.

STSI with Hokkaido University, Japan

Under International Research Skills Programme for developing sustainable transportation system and infrastructure (STSI), regular presentation sessions with Hokkaido University, Japan along with IIT Hyderabad and IIT Bombay were conducted.

Web Enabled M. Tech

The Web Enabled M. Tech class for working professionals is offered in three disciplines of Engineering – Computer Science, Electrical and Electronics, and Mechanical Engineering. The class has helped several working professionals in the industry and is still continuing to do so. We express our gratitude to the NIC and their multiparty conferencing units for their support.

Live streaming and live webcast

- Live streaming of several events and workshops held by various departments
- First Abdul Kalam Conference on Sustainability
- Live streaming of the visit of Honourable Prime Minister Shri Narendra Modi to the IIT Madras campus for Convocation 2019 and IIT Madras Research Park for Hackathon 2019

NPTEL

National Programme on Technology Enhanced Learning (NPTEL) is continuously using NKN to deliver exclusive lectures, uploading video courses, monitoring registrants and archiving video data.

Short-term courses for international learners

The institute has also offered two short-term courses in Data Science on behalf of Ministry of External Affairs covering countries like Ghana, Armenia, Kazakhstan, Vietnam, Morocco, Laos and Myanmar.

Swayam Prabha

A huge repository of recorded videos meant for broadcast and the original recorded data are being uploaded to Google drives for posterity using NKN.

Ph.Ds in Defence

Several Ph.D. defence presentations are being conducted regularly through NKN using dedicated virtual classrooms or from the seminar halls of the departments.

Research

Uchhatar Avishkar Yojana

Over 500 video conference sessions, using NKN, were conducted to evaluate the progress of Uchhatar Avishkar Yojana involving all participating IITs and industry partners.

International Workshops

Several international workshops that are organised in IITM require participation from foreign delegates. To avoid long-distance travel, the institute has arranged for virtual meetings for delegates to deliver lectures. NKN proved to be a boon when the Covid-19 pandemic emerged in December 2019. Delegates from China and Japan had to deliver lectures for the annual event of CCBR international workshop.

From early March 2020, all the special classes and workshops are being conducted from faculty cabins and so are the collaborative research progress discussions with the agencies abroad and the offices of Government of India.

6.2 Centre for Industrial Consultancy and Sponsored Research

6.2.1 Introduction

The Centre for Industrial Consultancy and Sponsored Research (IC&SR) was set up in 1973 to foster and promote sponsored research activities as well as relationships with industries. It facilitates active participation of the faculty in various interactive programmes organised for the benefit of the industries and the institute. The Centre also plays a proactive

role in managing the intellectual property generated by the institute and its commercialisation. In addition, the Centre provides administrative support for carrying out consultancy and sponsored research projects, particularly for recruitment of project staff, maintenance of accounts, and purchase of equipment and materials.

Some of the major activities of the IC&SR are:

- Sponsored research programmes
- Consultancy projects: Research based/retainer/institutional
- Collaborative projects with organisations and industries in foreign countries
- ISRO-IITM Space Technology Cell joint projects
- Patenting and technology transfer
- Faculty and student entrepreneurship and incubation
- Maintenance of common research facilities
- Blue Sky Team research initiatives
- Facilitation of international collaboration

6.2.2 Sponsored Research

In 2019-20, 294 projects of value totaling to Rs.33310.41 lakh were sanctioned to the institute.

Sl. No.	Agency Name	No. of Projects	Value (Rs. In Lakhs)
1	Office of the Principal Scientific Adviser	1	3157.45
2	Science and Engineering Research Board	97	2976.27
3	Department of Science and Technology	40	2431.12
4	Ministry of Electronics & Information Technology	8	1904.2
5	Scheme For Promotion of Academic and Research	19	1134.9
6	Ministry of Human Resource and Development	12	1118.48
7	Impacting Research Innovation and Technology - Imprint	12	1058.78
8	Ministry of Defence	1	995
9	Department of Science and Technology	4	815.21
10	Department Of Biotechnology	6	609.16
11	Uchhatar Avishkar Yojana - IIT Madras	1	309.6
12	Naval Research Board	3	300.83
13	Scheme for Promotion of Academic and Research collaboration	6	257.17
14	Tezos Foundation	1	169.8
15	Alumni Office	5	166.75
16	UK Research and Innovation	1	141.12

17	Indian National Academy Of Engineering	3	133.5
18	Ministry of Earth Sciences, New Delhi	2	126.32
19	Indian Space Research Organisation	6	125.51
20	National Security Council	2	119.2
21	Indo-German Science & Technology Centre	2	105.38
22	Department of Heavy Industry	1	100
23	Defence Research and Development Organisation	1	91.08
24	Defence Research and Development Organisation	2	75.14
25	Council of Scientific and Industrial Research	6	75.13
26	Biotechnology Industry Research Assistance Council	2	74.45
27	Board of Research in Nuclear Sciences	3	73.64
28	Indo-French Centre for the Promotion of Advanced Research	1	69.57
29	United States Army International Technology Center	1	64.48
30	Centre for Development of Advance Computing	1	63.98
31	National Centre for Polar and Ocean Research	2	50.63
32	Bhabha Atomic Research Centre	1	49.68
33	Samagra Shiksha - Tamil Nadu	1	46.4
34	Department of Health Research (ICMR)	1	46.15
35	Department of Police, Government of Tamil Nadu	1	42
36	The Ganga Foundation	1	40
37	Sandvik Asia Private Limited	1	38
38	Mahindra & Mahindra	1	37.5
39	Ministry of Mines	1	34.64
40	Indo-US Science and Technology Forum	3	33
41	Robert Bosch Centre for Data Science and Artificial Intelligence	1	29.25
42	Indian Council for Medical Research	3	26.17
43	Ministry of Road Transport and Highways	1	25
44	Aeronautics Research & Development Board	1	23.96
45	Space Application Centre	1	23.4
46	Honeywell Technology Solutions Lab Private Limited	1	22
47	Indian Council of Social Science and Research	2	20.66
48	National Rural Road Development Agency	2	19.2
49	Socially Relevant Projects	6	17.6
50	Mishra Dhatu Nigam Limited	1	17.28
51	IBM Corporation	1	15.44
52	AeroNero Solutions Pvt Ltd	1	15
53	Department of Atomic Energy	2	12.14
54	National Disaster Management Authority	2	10.21
55	National Commission for Women	1	9.56

56	Indian Council of Medical Research	1	9.48
57	Wheels India Niswarth Foundation	1	7.5
58	Indian Institute of Technology Mandi	1	7
59	Centre national de la recherche scientifique	1	6.72
Additional Sanction Value			13731.62
Grand Total		294	33310.41

The above list of projects includes international collaborative and industry sponsored projects. About 198 faculty members served as coordinators for projects sanctioned in 2019-20. The value of the ongoing sponsored projects in 2019-20 is Rs.119484.33 lakh. About 708 faculty members were actively involved in these ongoing sponsored research projects.

6.2.3 Consultancy Programmes

In 2019-20, 609 consultancy assignments amounting to Rs.23715.71 lakh were initiated.

Consultancy Project Type-wise

Type of Consultancy	Number of Projects	Value (Rs. in lakh)
Corporate Social Responsibility	26	1860.07
Institutional Consultancy	409	7092.09
Research-based Industrial Project	130	10624.14
Retainer Consultancy	30	241.87
Internal Testing	7	90
External Testing	7	65
CSR Additional		1998.07
Additional Value		1744.47
Total	609	23715.71

In 2019-2020, 155 faculty members were actively involved in consultancy projects. The total value of the ongoing consultancy projects is Rs.35475.43 lakh.

Corporate Social Responsibility: The Corporate Social Responsibility (CSR) activities, as defined in Schedule VII of the Companies Act 2013, have many areas in which the Indian Institute of Technology Madras is actively involved with industries. Twenty six projects were assigned in the 2019-2020 financial year with the value of Rs.3,868.14 lakh.

Type of Consultancy	Number of Projects	Value (Rs. in lakh)
Corporate Social Responsibility	26	1860.07
CSR Additional		2008.07
Total		3868.14

6.2.4 New Faculty Scheme

The institute provides funds for new faculty members to initiate research in their area of specialisation at IIT Madras. This funding will also help them to get sponsored research grants to continue and establish their research activities at IIT Madras. This scheme is operated as a project under the Centre for Industrial Consultancy and Sponsored Research. Proposals for projects up to Rs.5 lakh will be recommended by the Dean, IC&SR to the Director for approval. In the case of proposals requiring special equipment, institute support to the project up to Rs.30 lakh is possible. During the year, 16 proposals were approved for funding under the New Faculty Scheme for a total sum of Rs.403.71 lakh.

6.2.5 Industrial Associateship Scheme

In 2019-2020, 77 (16 large scale, 46 medium scale and 15 small scale) industries were members of this scheme. The members use the library facilities and are encouraged to interact with IITM faculty for R&D support.

6.2.6 Other Programmes

ISRO-IITM Space Technology Cell joint projects

These are ongoing activities sponsored by the ISRO where research projects of interest to ISRO are being taken up at IIT Madras. Seventeen ongoing projects totaling to a value of Rs.548.83 lakh are currently in progress and six new projects for a value of Rs.125.51 lakh have been taken up in 2019-2020.

IGCAR-IITM Cell

Three new projects of a total value of Rs.125.07 lakh were initiated during this period.

NIOT-IITM Cell

Set up in 2010-2011, National Institute of Ocean Technology (NIOT) was launched to initiate further NIOT-sponsored research activities at IIT Madras. One new project for a total value of Rs.212.48 lakh was initiated by the NIOT-IITM Cell in 2019-20.

Technologies for Social Development

IIT Madras has ongoing activities for transfer of technologies of immediate relevance to society. For this purpose, the following three schemes were taken up:

- (1) Socially Relevant Projects
- (2) Rural Technology Action Group (RuTAG)
- (3) Centre for Social Innovation & Entrepreneurship (CSIE)

A write-up on the activities of the above projects is given in Annexure 1a, b and c.

Distinguished visitors to the centre

Delegations from many organisations, including visitors from the following companies, visited IIT Madras for discussions on possible collaborative research work.

- CSL Capital Management
- Mahindra & Mahindra Limited
- Volvo Eicher Commercial Vehicles
- Daimler India Commercial Vehicles
- Weir EnSci Group
- Stanadyne India Private Limited
- NLC India Limited
- Tata Motors
- Shell
- Michelin India Technology Private Limited
- Railway Designs and Standard Organisations (RDSO)
- L&T Engineering Services
- Buckman International
- RITES Limited

MoUs/Agreements signed

MoUs/Agreements were signed by IIT Madras with the following organisations/institutions in 2019-2020.

- E-Parisaraa Private Limited (IP office)
- Tribi Systems Private Limited
- Addgene
- Research for Resurgence Foundation (RFRF)
- Samagra Shiksha
- HiTech Concrete Solutions Private Limited
- Tunga Services Private Limited
- BIRAC
- Omics Data Automation
- Deendayal Port Trust
- LAM Research
- SINTEF Energi AS
- WHO
- Helyxon Healthcare Solution Private Limited
- Queen's University of Belfast
- Indian Oil Corporation Limited
- Dr. Rela Institute and Medical Centre
- Tezos Foundation
- National Institute of Technology Kurukshetra
- BNY Mellon
- Government of Kochi (India)
- Kerala State Coir Machinery Manufacturing Company Limited
- National Institute of Ocean Technology
- Bhabha Atomic Research Centre
- CII - Godrej Green Business
- Mahindra Lifespace
- Tata Motors Limited
- Sivisoft Solutions Private Limited
- Intel Technology India Private Limited
- Solinas Integrity Private Limited
- Freshworks Inc.
- Mishra Dhatu Nigam Limited
- Greenenvironment Innovation and Marketing India (P) Ltd
- SEG Automotive India Private Ltd
- Societe General Global Solution Centre Private Limited
- iFuture Globistic Enterprise Limited
- Laboratory of Vascular Biology
- Bloom Healthcare
- Cyber Security Works Private Limited
- Renault Nissan Technology and Business Centre Private Limited
- Tata Consultancy Services Limited
- Cygni Energy Private Limited
- Indian Oil Corporation Limited
- Software Technology Parks of India
- Sukhbir Agro Energy Limited
- Central Manufacturing Technology Institute
- Tamil Nadu Police
- The J. Paul Getty Trust
- Tamil Nadu Industrial Development Corporation Limited (TIDCO)
- Oil and Natural Gas Corporation Limited" "Exide Industries Limited
- SVP Laser Technologies Private Limited (UAY agreement)
- Global Mantra Innovations
- Vatsalya Foundation
- Centre for Social Development
- Total Marketing Services
- Rathi Aerospace
- GE India Industrial Private Limited
- Shell India Markets Private Limited
- Bharat Heavy Electricals Limited
- Saint-Gobain India Private Limited
- Societe Generale Global Solution Centre Private Limited
- Confederation of Indian Industry (CII)
- GE India Industrial Private Limited
- Aerostrovilos Energy Private Limited
- IBM Canada
- Fuji Electric Co. Limited
- DiabEndo
- NLC India Limited
- Cummins Inc
- Blue Industries
- Cameca

- Spastics Society of TN
- RIMES
- Cygni Energy Private Limited/Grinntech Motors and Services Private Limited
- Vajujal Technologies/Incubation Cell
- X2Fuels and Energy Private Limited
- Samudhyoga Waste Chakra Private Limited
- Samkalpa Systems
- The Himalaya Drug Company
- Vedanta limited
- Saint-Gobain India Private Limited
- Measured Inc.
- Motorz Design and Manufacturing Private Limited
- Techno Industrial Marketing
- Society For Microwave Electronics Engineering and Research
- Lightmotif Automation Sensors and Systems Pvt. Ltd
- V. R. Techniche Consultants Private Limited
- Sri Ramachandra Institute of higher education and Research
- IISC/Society for Innovation and Development
- Madurai Division Southern Railway
- Pfizer Healthcare India Private Limited
- YNOS Venture Engine CC Private Limited
- Torchit Electronics Private Limited
- Defence Institute of Advanced Technology Pune
- The Linux Foundation
- Jasmin Infotech
- Flowtrik Technologies Private Limited
- Vimaan Robotics India Private Limited
- Phyto Specialities

6.2.7 Technology Transfer/Royalty

Sl.no	Party Name	Receipt Amount (Rs. In lakh)
1	Aerostrovilos Energy Private Limited	2.36
2	Benchmark Electronic Systems Private Limited	1.05
3	Cyber Security Works Private Limited	4.37
4	Defence Research and Development Organisation	199.5
5	Diamondbay Technologies Private Limited	6.98
6	FIB-SOL Life Technologies Private Limited	0.04
7	GE India Industrial Private Limited	65.78
8	Indian Institute of Technology Dharwad	2.1
9	Kapindra Precision Engineering Private Limited	1.68
10	Neomotion Assistive Solutions Private Limited	2
11	Planys Technologies Private Limited	0.22
12	Prof. S.V. Prabhu	0.59
13	Qunu Labs Private Limited	5.9
14	Safewater Nano Pte. Limited	1.44
15	Shira Medtech Private Limited	0.78
16	Swadha Energies Private Limited	2.99
17	Torchit Electronics Private Limited	0.17
18	Ultratech Cement Limited	37.59
19	Weaver Technologies LLP	0.12
20	Wipro GE Healthcare Private Limited	16.8
21	Deltron Ado Continental Device India Private Limited	0.26
22	Synkromax Biotech Private Limited	1.94

23	Benchmark Electronic Systems Private Limited	0.23
24	Detect Technologies Private Limited	11.8
25	Micromatic Grinding Technologies Limited	0.75
	Grand Total	367.43

6.2.8 Publications

The Centre for Industrial Consultancy and Sponsored Research brought out the IITM Calendar and the IITM Diary for 2020.

6.2.9 Research Fund

To promote research activities at IITM, the Board of IC&SR decided to use its corpus to support several new initiatives. A part of the earnings of IC&SR from consultancy projects was invested in term deposits and the interests earned through them are used to support various schemes like ERP, NFIG, R&D Award, and IP Cell activities. From an initial amount of Rs.50 crore, the corpus was increased to Rs.120 crore.

The broad allocation for expenses for this financial year (2019-2020) is as given below:

1. R&D Award: 50% from the Institute Fund and 50% from Research Fund; five awards for a total value of Rs.230 lakh.
2. Innovation Ecosystems: No new projects were initiated during this period.
3. Exploratory Research Projects: To support projects from any faculty who has a "breakthrough" idea, and wishes to initiate work without waiting for their proposal to be sanctioned by the funding agency; maximum of Rs. 10 lakh with duration of 12 months; 30 projects for a total value of Rs.246.90 lakh
4. New Faculty Initiation Grant: A start-up grant up to maximum of Rs.5 lakh; national and international travel is permitted for new faculty members; 17 projects for a total value of Rs.85 lakh
5. One Team Project of significance which as demonstrated proof of concept will be eligible for funding for a period of two years with an initial maximum budget of Rs.200 lakhs. The project will be selected through peer review members; two new projects for a total value of Rs.400 lakh
6. Patenting and commercialisation activities by IP Cell: A maximum amount of Rs.50 lakh was earmarked per year.
7. Maintenance of capital equipment and operation of these facilities: This will be supported by IC&SR initially

for a value of Rs.25 lakh, which will be used for hiring a technical person for maintaining and operating select central research facilities. Maintenance funds for capital equipment will require further steps on the modalities and will be considered in the near future; 31 projects for a total value of Rs.193.41 lakh.

6.2.10 Positive Messaging and Outreach Program

IIT Madras is one of the few high-ranking academic institutions in India that is prompt, active and well connected on social media. Our Facebook page has over 1,95,422 likes and is extremely well updated with a response time of few hours and actively engaging over 54,000 people every week. IIT Madras' tweets have 326K impressions every month on an average. We have noteworthy LinkedIn impressions of 658K. We are also ahead of the curve in our presence across other social media platforms like Instagram, Facebook, Twitter and LinkedIn. A monthly e-newsletter is sent to all the stakeholders of IITM.

6.2.11 Other information

- The first Space Technology Cell Confluence 2019 was held at IIT Madras, Chennai on 16-17 September 2019. The objective was to share information about the research underway in various institutions, the salient findings, and to understand the utilisation of output by ISRO.
- The Integrated Office and Accounting Software was implemented in 2019 to reduce the duplication and errors found in the pre-existing system. IC&SR is in the process of integrating the Purchase and Recruitment departments into this software, which will thereby ensure seamless, smooth and efficient functioning of the systems at IC&SR.
- IP management software has also been upgraded and automated to keep track of impending deadlines and time-bound activities.
- A common facility for preliminary experimentation was created for research scholars and faculty members at NAC. Several tabletop and user-friendly equipment have been installed for this purpose.

CSR activities during 2019-2020

IIT Madras has been actively interacting with and attracting funds from corporates under their Corporate Social Responsibility (CSR) budget, to undertake societal-based research at various laboratories at IIT Madras.

Some of the projects where there is direct impact on the societal improvements are briefly discussed below:

I. Low-Cost Micro-Composting Centres for Rural and Urban Communities

(Prof. Indumathi Nam bi, Department of Civil Engineering)

The objective of this project (phase I) was to identify the right choice of organic waste and composition, which will result in accelerated and effective composting compared to existing layman methods. Lab-scale trials have been conducted using flower pots with different combinations of waste and in different proportions of vegetable waste and bulking agents. The bulking agents are extremely effective to control the air supply, moisture and carbon-to-nitrogen ratio (C/N ratio). Corncobs, sugarcane bagasse, sawdust and dry leaves were used in each of the trials as bulking agents. Parameters such as moisture content, temperature, pH and volume reduction were monitored throughout the composting process and the C/N ratio was measured pre- and post-composting. The experiments were run for 30 to 60 days until the compost was ready.

Based on the study, the composting set-up using sugarcane bagasse has comparatively less volume reduction, is easily available, and has a faster rate of degradation. Also, the organic waste gets blended with the bagasse. White fungi were seen all over the reactor, indicating a high decomposition rate and balanced input. The blended mixture created air passage throughout the reactor which was only at the final stages of other reactors.

The composting using corncobs had a greater rate of degradation and volume reduction, while the one with sawdust has very slow rate of volume reduction. Composting set-up using sugarcane bagasse demonstrated highest rate of degradation and comparatively less volume reduction, was easily available, and had a faster rate of degradation. Since bagasse is also readily available with roadside vendors, it may be the ideal bulking agent for the micro-composting centres of Greater Chennai Corporation. Individual houses and apartments can use dry leaves along with kitchen waste even though it takes slightly longer for composting.

As phase II, a pilot, low-cost, continuously fed composting using waste tyres was attempted. The composting of organic waste using a bin made of used tyres is a low-cost, decentralised form of composting. The central parts of the used tyres are removed and placed one above other. Usually, four tyres are used for the set-up; the bottom tyre is used for leachate collection.

The dry leaves were used as bulking agent. The C/N ratio was calculated and the appropriate quantities

of organic waste, dry leaves and cow dung was mixed and placed inside the reactor. The set-up was covered to protect it from rain. The temperature and volume reduction were monitored daily. The samples were collected daily for the analysis of pH and C/N.

The new waste was added once in three days. The entire waste inside the set-up was taken out, mixed accordingly to maintain C/N ratio and placed inside the reactor. By the end of 15 days, only the organic waste and cow dung were added since the bulking agent inside the reactor was enough to maintain the C/N. While the turning of the waste inside the set-up is found hard in conventional system, one can easily drag the tyre and the waste can be turned. The experiments conducted so far have given us insights into the right bulking agents. The feasibility of setting up and operating low-cost composting units using used tyres was tested and proved to be successful. The operational constraints, such as handling of waste during filling and turning, make it difficult for non-enthusiasts to adopt composting at household level. The work is going on to develop:

- A user-friendly table for different available ingredients and their proportions
- A hassle-free composting system at different scales for effective composting
- A testing method for C/N compost quality and completion of composting.

The design of a hassle-free composter is going on and will be fabricated. Trial runs in IITM apartment buildings will be done and recommendations will be made to Greater Chennai Corporation.

II. Potent, Economical and Agro-Waste Based Adsorbent Filter, Developed In-house, to Treat Textiles Dyeing Units Effluents in Villages

(Prof. A. Kannan and Prof. T. Renganathan, Department of Chemical Engineering)

The objectives of the project were to understand the ground realities in a nearby village where dyeing effluents disposal is a problem, taking the help of an NGO. After analysing the water quality, a methodology had to be developed for pre-treating the water before sending it into an adsorbent filter. The adsorbent's capacity for simultaneously taking different dyes had to be estimated and the physicochemical properties of the adsorbent were to be characterised. The ultimate aim is to implement the technology in the village and disseminate the application, maintenance and reuse of the filter. Data collected may be used for scaling up the process.

The progress of activities, during this year, are summarised as follows:

- Project coordinator (Dr. Kannan A) and co-coordinator (Dr. T. Renganathan) visited Kanchipuram to get first-hand view of the situation. Accompanied by an NGO representative from NEEDS, they visited a typical fabric-colouring unit and a dye plant, and observed the processes and nature of effluents. They also visited Weavers Service Centre to talk to officials on the problems in the locality.

- A few common dye samples that were commonly used on textiles were procured at Kanchipuram. Due to intermittent showers, water sample collection had to be delayed to avoid dilution effects.

- The dyes procured were analysed with UV-Vis. The researchers tested dyes, such as acid orange 10, acid blue and reactive orange 16, used for colouring textiles.

- Simultaneous removal rates with different adsorbents were investigated at different conditions - pH, temperature, initial concentration and different types of activated carbons.

- Point of zero charge was also estimated for the adsorbent.

- Adsorbent capacities for different dyes were measured and suitable isotherms were developed.

- Adsorbent samples have been given for FTIR, EDX and BET studies.

- A small continuously operating adsorbent filter was developed in-house to study the adsorbent removal capacities for different dyes. It has been made operational and results on breakthrough curve have been collected.

- In the next few months, it is proposed to carry out the following activities:

1. Analyse actual water samples collected from Kanchipuram locality for dissolved ions

2. Devise pre-treatment operations to remove non-dye related ions from water before treating the dye containing effluents in the filter.

3. Show videos of the process to sensitise suitable small-scale dyeing plant owners in Kanchipuram and discuss possible measures to adopt the technology for their units.

III. Kidney Exchange—Models and Algorithms

(Prof. Meghana Nasre, Department of Computer Science and Engineering)

Kidney failure, also called End Stage Renal Disease (ESRD), is a condition that is not treatable. Patients with this condition have to resort to either dialysis

at regular intervals or undergo a one-time kidney transplant. Much like blood donation, a patient can receive kidney from donors who are “mutually compatible” with him/her. However, when the donor (typically, a close relative) is incompatible, one needs to look at another patient-donor incompatible pair and facilitate a kidney exchange.

This project involves investigating the challenges in kidney exchange and the use of software-based systems to enable certain components. The tasks were divided into three parts: meeting and discussing with nephrologists, investigating the notions of optimality to suit the Indian context, and building a working prototype as a proof of concept.

The Professor held discussions with the nephrologists at Mehta Hospital, which is the primary contact. It is understood that the above-proposed system is useful to have if a set of (four to five) private hospitals come together to pool their data. It is best done for a collection of private hospitals separately and government hospitals separately due to the considerably different charges. The nephrologist at Mehta Hospital is in the process of discussions with other like-minded private hospitals.

On the software side, the researcher developed a back-end, which allows us to represent patient-donor pairs and their properties in a particular file format called the JSON file format. Using this format, the team implemented known cycle based linear programming algorithms, which give candidate matches for the input data.

Currently, the above implementation has three optimisation parameters, and the team would like to add or retune them based on discussions with doctors. The implementation resulted in the clearing of a pool of about 75 patient-donor pairs in reasonable time, and worked on identifying and fixing the bottlenecks to speed this up. However, we do not expect the pool of patient-donor pairs to be huge in practice.

IV. HomoSEP: A Robot for Homogenisation of Contents and Cleaning of Septic Tanks

(Prof Prabhu Rajagopal, Department of Mechanical Engineering)

Problem: Roughly 40% of households in India (as per Census 2011; and perhaps a larger fraction more recently due to new sanitation initiatives such as Swachh Bharat) use toilets connected to septic tanks, which require manual intervention for cleaning and repair. Although manual scavenging has been made illegal in India in 2013, the practice is prevalent due to lack of options, killing several hundreds of people every year. We have to find alternate solutions, which



are affordable and accessible at scale. Every year, thousands of manual scavengers die in the process of cleaning septic tanks and sewer lines and millions of them risk their lives even otherwise in this hazardous occupation. This is a complex and challenging problem with social and technological implications (read more here: <https://www.downtoearth.org.in/coverage/waste/urban-shit-53422>). Though some technologies have been developed for sewer lines, solutions tailored for septic tanks are limited. We are working on a novel two-step robotic solution (Step-1: homogenisation, Step-2: intervention) that can be applied in both septic tanks and sewer lines. The main problem associated with septic tanks is that the faecal sludge starts solidifying into a clay-like substance with harder parts settling at the bottom. While vacuum pumps can suck out the liquid and semisolid material like they do for sewer lines, they cannot break down the sludge. This is where the risk of a manual scavenger comes into the picture, when they have to enter to break the sludge using a hammer or with their bare hands.

Our solution: Currently, we have a prototype ready with us, named HomoSEP, along with a strong technical team, who are working to get the product ready to be used commercially in next 12-15 months. In line with our approach towards an intrinsically safe design, the HomoSEP is divided into two modular sections:

- The first part (containing mechanical parts) remains inside the tank and does the job of homogenisation and cleaning. A specially designed mechanism is set into motion by the two lead screw transmission, which is also inside the tank. This type of transmission ensures there are no sparks inside the tank, making it extremely safe.
- The second part (containing electronics parts)

contains motors and controls, which remain outside the tank and provide support to the cutter through power transmission. The speed of the rotation varies between 30-60 rpm, which can be increased as per requirement. The height of HomoSEP can also be changed, depending upon the tank's depth. Also, the robot's control panel is designed to be operated by the Safai Karamcharis with minimal training.

The figure below presents a photograph of the preliminary prototype of HomoSEP. We are working on making improvements to HomoSEP, including

- Being more light-weight and portable
- Better capabilities for sludge homogenisation
- Better sensing capabilities

Figure: The prototype of HomoSEP robot and testing with synthetic sludge

Ultimately, the goal is to further develop an 'end-to-end' technological offering for the septic tank problem.

V. Book Writing/Translation work

(Prof. V. Srinivasa Chakravarthy, Department of Biotechnology)

The aim is to publish science books at high school level in regional languages (Telugu and Tamil) and donate them to village school libraries.

The following books were written/translated:

- Dhvani (Sound): Prof. Chakravarthy have written this book in English and got this translated by a friend into Telugu. This book will be published as a bilingual so that the readers can learn both science and English.

- Virus: The book was written in its original form in Telugu. Since the topic is of current relevance, it is expected to be received well in schools.

- The book of Erwin Shrodinger, What is Life was translated into Telugu.

The three books will be sent for publication soon. A set of 500 copies of each of the book will be ordered and donated to village school libraries.

VI. Energy Generation Using VAWT-Focus on Incorporating Modular Design and Low RPM Generation

(Prof. Palaniappan Ramu, Department of Engineering Design)

The design for the new structure was carried out accounting for modularity. The fabrication of the structure was taken up in parallel and is in progress.

The work on Low RPM Generator was taken up with the partner company in IITM Research Park.

Rural Technology Action Group, IIT Madras

Activities during 2019-2020

• **2nd International conference on Rural Technology Development and Delivery:** RuTAG, IIT Madras organised and hosted the 2nd International Conference on Rural Technology Development and Delivery (RTDD) from 12-14 March 2020. RTDD 2018, the first event in the series, was organised by IIT Delhi and focused on bringing together faculty and students from all RuTAGs to discuss their achievements, difficulties, challenges and the way forward in next 10-15 years. In addition, other organisations working in the similar directions were invited to submit papers and participate to evolve a sustainable synergy between participants. The conference had discussions on dissemination and scaling of rural innovations, and possibility of funding through other government schemes.



■ Participants of RTDD 2020

Over the three days of 12-14 March 2020, RTDD 2020 (<https://web.iitm.ac.in/rtdd2020/>) brought together practitioners and experts for a critical examination of the issues related to rural technologies and their dissemination challenges from a community perspective. The conference combined presentations by experts and researchers with structured discussion sessions on the cross-cutting areas such as technology and entrepreneurship, technology and policy. It also outlined the opportunities in the space of rural technologies with a focus on implementation challenges.

• **Electronic jacquard handloom:** Funding of Rs. 47 lakh received from Tamil Nadu Handicrafts Development Corporation Limited by RuTAG and CSIE, IITM, RuTAG has established a Common Facility Centre (CFC) with four units of fine mat-weaving electronic jacquard handloom (EJH) in Pattamadai Fine Mat Weavers Co-operative Society, Tirunelveli,

Tamil Nadu. Two units of fine mat-weaving EJH developed by Dr. S. Ganesan, RuTAG were installed at Veeravanallur in March 2020. Training to the weavers to operate the loom and using software to create intricate designs was completed in January 2020. This loom increases their productivity by 300 per cent and enables easy weaving of intricate designs in mats, while being ergonomically comfortable.



■ EJH installed at weaver's society at Pattamadai

• **Small-scale paddy thresher:** A small-scale paddy developed by Prof. Shankar Krishnapillai, Mechanical Engineering, IITM was field tested in Madurantakam, Palakkad and Coimbatore with 10 varieties of paddy during December 2019-March 2020. The fabrication is being done by M/s Ganesh Engineering Works, Coimbatore.



■ On-field paddy thresher trials at Madurantakam

• **Workshop on Electric Vehicles:** A workshop on electric vehicles was organised by RuTAG IIT Madras on 21 February 2020 with the funding support from the Tamil Nadu Skill Development Corporation (TNSDC). The workshop aimed at instructors from ITIs

across Tamil Nadu. Around 50 instructors from IITs participated in the workshop.



■ . Workshop on Electric Vehicles

• **Proposal Writing and Ideation Workshop:** A proposal writing and ideation workshop was organised by RuTAG IIT Madras on 12 February 2020 for the faculty from PAN Alumni Leadership Series (PALS) affiliated engineering colleges across Tamil Nadu, staff members from MCRC and M.S./Ph.D. scholars from IIT Madras. Around 35 participants were present in the workshop. The workshop was organised with the funding support from PALS and RuTAG, IIT Madras.

• **Summer internships in collaboration with PALS:** RuTAG, in collaboration with Pan-IIT Alumni Leadership Series, selected 20 students for the Summer Internship Programme 2019 to be mentored by various IITM faculty members over a period of eight weeks in topics of rural/societal impact. RuTAG also appointed four other students from Engineering and Polytechnic streams to work on RuTAG projects.

• **Construction of Common Facility Centre at Perumudivakkam for potters:** IIT Madras and Indian Oil Corporation Limited-Southern Region Pipelines signed an MoU on 16 May 2019 to undertake integrated pottery development in Tiruvallur district. Under support from IOCL-SRPL's CSR, RuTAG IITM will be facilitating implementation of the project in collaboration with Centre for Social Development, Nagercoil. In addition to assistive technology support for traditional potters such as pottery wheels and firing kilns, a CFC with advanced technology will be set up for pottery training and production of microwave-resistant pottery (a RuTAG IITM technology). The project aims to increase income of potters manifold by introducing product value addition and improving market linkages.

■ Construction of CFC at Perumudivakkam for microwavable pottery



• **Conduct of agro-tech needs identification workshop in Coimbatore:** RuTAG organised a Technology Need Identification workshop in Coimbatore on 9 May 2019 in the sector of agro-technology. Fifteen local entrepreneurs and farmers participated in the event in PSG College of Technology to discuss and compile technical problem statements in the categories of water quality of lakes for irrigation, farm mechanisation and agro-processing.



■ Technology Needs Identification workshop in Coimbatore

Participation in events

Team Tech4Dev participated in GDC I-NCUBATE Cohort 7 at IIT Madras

The RuTAG, IIT Madras team had undergone an eight-week programme I-NCUBATE Cohort 7 organised by the Gopalakrishnan Deshpande Centre for Innovation and Entrepreneurship (GDC) at IIT Madras. The cohort's main focus was customer discovery, problem-solution fit for each team's idea/intervention. There were eight teams in Cohort 7. As part of this cohort, RuTAG conducted customer discovery exercise for silkworm cocoon sorter/grader. The team completed 108 customer interviews during eight weeks in three states, across five different customer segments

(farmers, reelers, weavers, breeders, market officers, and cocoon quality inspectors) in the silk value chain. The RuTAG team comprised Prof. Abhijit Deshpande (Faculty-in-charge, RuTAG, IIT Madras) as faculty lead, Mr. Ramesh Subbaraj as GDC mentor, Mr. Sreenivas Chigullapalli (Project Officer, RuTAG, IIT Madras) as entrepreneur lead, and Mr. M. Muthukumaran (Project Associate), Mr. R. Pradhap (Project Associate), Mr. Goldy Penumaka (Dual Degree student of the Department of Civil Engineering) and Ms. Mounika Varaganti as team members.

Fig. Interaction with sericulture farmers at Hindupur cocoon market in Andhra Pradesh



• Participation in Tech for Impact Asia 2019

Mr. Sreenivas Chigullapalli, a project officer, participated in the Tech for Impact Asia 2019, New Delhi, on 23-24 September 2019. Selected RuTAG IIT Madras technologies were presented during the event. The technologies included EJH for the Korai grass mat weaving, Bidriware and household oil expeller. The technologies were appreciated by the audience and received good response for further collaborations by many CSR and development organisations.

• Stall by Pattamadai Society at Trichy Utsav

As part of DC Trichy Utsav, 6-8 September 2019, the Pattamadai Lebbai mat weaver's society had a stall for their product portfolio, woven out of Korai grass using EJH. The products displayed received mixed response. Also, RuTAG team interacted with the artisans present in the event for identification of relevant problem statements for technology improvements and development.

• Visit to Pattamadai Society

The RuTAG team visited the Pattamadai Lebbai mat weaver's society for identifying the land for the construction of CFC in phase II of the project. An area of around 650 sq.ft has been identified and the

society had given their consent to construct CFC in their premises.

• Visit to IINRG Ranchi

Mr. Sreenivas Chigullapalli (Project Officer, RuTAG, IIT Madras) along with Mr. Nitish Kumar Tripathi (Project Associate, Applied Mechanics, IIT Madras) visited IINRG Ranchi to get technical support on Integrated Lac Processing Machine.

• Visit to CTR&TI Ranchi

Mr. Sreenivas Chigullapalli (Project Officer, RuTAG IIT Madras) along with Mr. Nitish Kumar Tripathi (Project Associate, Applied Mechanics, IIT Madras) visited CTR&TI Ranchi to understand the silk cocoon supply chain and their requirement for developing a sorter/grader/counter for tasar silkworm cocoons.

• Participation in MDP on Rural Entrepreneurship at IIT Delhi

Mr. R. Pradhap (Project Associate) and Mr. M. Muthukumaran (Project Associate) attended the management development programme on Rural Entrepreneurship at IIT Delhi. The MDP was organised by RuTAG, IIT Delhi.

• Visit to Perumudivakkam

RuTAG team visited Perumudivakkam village in Karur district to identify and demarcate the land for the construction of CFC for microwavable pottery. The project is being funded by IOCL SRPL and being implemented by CSD, Nagercoil.

• Visit to KSCMMC

RuTAG team visited KSCMMC for understanding their requirement on improving the automatic coir spinning machine. Prof. Shankar Krishnapillai, Mechanical Engineering, IIT Madras is leading this project.

• Interaction with M.S./Ph.D. students at IIT Madras

An interaction session was organised with M.S./Ph.D. students of IIT Madras to seek more engagement of the researchers in the RuTAG activities/projects. The session was attended by around 150 M.S./Ph.D. students and received good response. Students were also requested to generate problem statements if they come across any rural challenge.

• New project on low-cost hearing aid by Prof. C. Balaji, IIT Madras

A new project, Affordable and Wearable Assistive Device for Hearing-Impaired People to Convert Audio into Visual and Haptic Feedback, is funded by RuTAG. The project is being led by Prof. C. Balaji, Mechanical Engineering, IIT Madras

Centre for Social Innovation and Entrepreneurship

1. Introduction

Centre for Social Innovation and Entrepreneurship (CSIE) at IIT Madras was founded in August 2010 with a focus on teaching and research in the field of social enterprise in India. The centre works in promoting social entrepreneurship through education, research and dissemination of research output. It has successfully reached out to a number of high schools, higher educational institutions and social entrepreneurs internationally through various project activities. It undertakes research projects and livelihood improvement projects to build capacities of social entrepreneurs and enrich knowledge in this sector. For all these initiatives, CSIE work closely with institutions, builds partnerships and helps build capacities to create awareness, identify and nurture aspiring social entrepreneurs.

1.1 Mission

To build an environment that will facilitate the creation of social enterprise knowledge through research and empower students to apply their entrepreneurship abilities to develop solutions for greater social impact.

This is achieved by:

- **Education.** Offering academic programmes on social innovation and entrepreneurship for students across disciplines and degrees at IIT Madras and outside
- **Research.** Providing an enabling environment for both students and faculty researchers interested in social enterprise research within the IIT campus
- **Consultancy and Outreach.** Encouraging young innovators and entrepreneurs by assisting in the development of socially beneficial products and ideas
- **Collaboration.** Creating an ecosystem of social entrepreneurship and extending the same to other technology institutions, including IITs.

1.2 Evolution of activities

2010-13 Education & Research

- Minor course for IITM
- Research

2013-2015 Education, Research and Outreach

- Minor course
- Idea Spark
- Camp for school students
- FDS/SDP
- Research

2015-20 Education, Research, Outreach and Consultancy

- Education course
- Certificate course
- International Summer/Winter School
- Ideaspark
- Camps for school students
- FDP/SDP/CBP
- Consultancy
- Livelihood enhancement

1.3 Impact till date

Education

- Five batches of Innovation and Social Entrepreneurship courses; around 200 students from IIT Madras enrolled; about 10 students have started enterprises
- Four International Summer/Winter Schools on Social Entrepreneurship; 82 students participated
- Four certificate courses; about 100 participants enrolled

Outreach

- Five Faculty Development Programmes, one Student Development Programme, eight Entrepreneurship Awareness Camps, three Business Plan workshops conducted; reached out to 50 colleges, 120 faculty and 1,050 students from engineering colleges
- Six school camps; 500 students from different schools in Tamil Nadu participated
- Four Idea Spark editions; 700 students participated; 70 ideas discovered
- "Involve" a social enterprise based on peer-to-peer learning model for Government schools was rendered incubation support

Research

- Nine research papers presented in international conferences and one book chapter published

Capacity building and livelihood promotion

- Strengthened management capacities of 105 Farmer

Producer Companies (FPCs) and 22 NGOs through eight Capacity Building programmes through which 263 farmers benefited and developed eight case studies on 'best practices of FPCs'

- CSIE has become a key organising node for state and national seminars on farmer producer organisations.

- Developed social media platform to promote Korai Mats – result: more than 2,500 followers, two retailer connects and Rs.3,50,000 worth of sales facilitated through exhibit spaces at IIT Madras, international conferences and institutional sales

- Established a CFC for Pathamadai Korai Mats under the Revival of Languishing Crafts initiative by the Tamil Nadu Government.

- Established a Skill Development Centre at Vellapakkam village under the CSR initiative of Chennai Petroleum Corporation Limited (CPCL).

- Established a rural enterprise to manufacture biochar under the Technology Transfer initiative with Shri AMM Murugappa Chettiar Research Centre.

2. Governance structure

The Governance Committee (GC) consists of representatives from the sponsors ('84 batch), IIT Madras faculty members and the partnering agency. The members of GC are:

- Dr. R. Nagarajan, Project Coordinator, CSIE Professor and Head, Chemical Engineering
- Prof. L.S. Ganesh, Professor, Management Studies
- Prof. Ashwin Mahalingam, Associate Professor, Civil Engineering
- Prof. Devendra Jalihal, Professor, Electrical Engineering
- Prof. L. Prakash Sai, Professor, Management Studies
- Prof. Mahesh Panchagnula, Dean, International and Alumni Relations Professor, Applied Mechanics
- Dr. V. Kalyanaraman, Project Consultant, RuTAG, IITM
- Dr. Tamaswati Ghosh, CEO, IITM Incubation Cell
- Mr. Joseph Thomas, Development Office, IITM
- Mr. Rangarajan Ganesan, Advisor, C-TAP, IITM

2.1 Staff

- James Rajanayagam, Senior Project Advisor, CSIE
- Gangaram Sandeep Kumar, Project Officer, CSIE
- Aishwarya Raman, Senior Project Officer, CSIE
- Krishnaveni P., Senior Project Assistant, CSIE
- Suba Ramesh, Project Associate, CSIE

3. Activities

3.1 Education

Education in the field of social entrepreneurship was identified as one of the primary objectives of CSIE. CSIE believes that by educating students in the field of social entrepreneurship, we are creating a ready-source of talent for the sector.

3.1.1. International Winter School on Social Entrepreneurship

International Winter School on Sustainable Architecture, 9-14 December 2019: From the success of the first three editions of the International Summer/Winter School on Social Entrepreneurship, CSIE embarked on a new theme, Sustainable Architecture, in its flagship programme, International Winter School in December 2019. The programme saw enthusiastic participants who interacted with architects, academicians and entrepreneurs symbolising Indian architecture. By developing such a tailored programme on the new theme, CSIE was able to tap not only the IITM ecosystem, but also the relevant departments of local state governments such as Slum Clearance Board and renowned PPP projects in the city.

"It is highly valuable. I was able to get inputs on environmental sustainability as well as architecture and the intertwining aspects of these domains. The site visits are incredible and conveyed us how the traditional housing models had such environmental concerns in the core and how we need to adapt in the current scenario." - **Ryan Mueller, Architecture Student, Swinburne University of Technology**

"Interesting challenges we observed here in the context of sustainable housing. Tackling social and environmental concerns along with individualistic preferences in adapting to sustainable housing was well covered through the field visits. Interactions with the builders were incredibly useful for students. Innovation in India, with targets of rapid construction for houseless, was unveiled by these exposures. The course content also covered the cultural context and urbanisation-led challenges in South Indian architecture." - **Prof. Marcus White, Swinburne University of Technology**

The resource persons of the schools include faculty members of IIT Madras, experts, social entrepreneurs from the industry and government.

The two-week Winter School includes classroom lectures, field visits for orientation and immersion, interactions with accomplished social entrepreneurs, discussions on case studies and documentaries, including self-study and peer-learning opportunities. Participants had to give presentations and submit reports as part of the course. Details: <http://csie.iitm.ac.in/socentschool/>

3.1.2 MSDE-UKIERI Social Entrepreneurship Capacity Building

The CSIE is actively engaged in UK-India Social Entrepreneurship Education Network (UKISEEN) through University of Southampton. The network is engaged in education promotion activities through conferences, seminars, workshops, competitions and related projects.

The Centre for Social Innovation & Entrepreneurship, IIT Madras along with Social Impact Lab at University of Southampton, UK is now working towards Building Social Entrepreneurship Capacity among Technology Graduates.

The programme aims to build capacity for socially entrepreneurial activity with specific focus on skill-based opportunities in the domains such as handicrafts and food processing by providing college students in Tamil Nadu and Kerala with skills training through curriculum-based social entrepreneurship education. The skills will be in the areas of social media technologies, value addition to food processing and big data analytics, among others.

This is being done by supporting teachers in technology colleges to develop and implement social entrepreneurship modules with focus on the skills listed above and providing students with experiential and cross-cultural learning opportunities in social venture creation and real-world problem-solving.

Activities

- A consultation meeting for the 11 colleges from Tamil Nadu and Karnataka interested in the project was organised on 19 September 2019 at IIT Madras.
- A three-day Faculty Development Programme was conducted on 25-27 November 2019 at IIT Madras focused on skill-based social entrepreneurship. Eleven colleges participated in the programme.
- Free elective and certificate courses were deemed feasible by most of the participating colleges.
- CSIE had one-on-one meetings with three colleges interested in introducing the social entrepreneurship

courses at their respective universities.

- CSIE is currently working on designing the course structure to be implemented in the interested colleges. Two formats are being designed: a three-credit course (45 hrs) and a certificate course (30 hrs)
Details: <http://ukiseen.org/msde-ukieri-sept>

3.2 Consultancy

CSIE undertakes consultancy assignments to provide business development support for social enterprises (including FPCs). It also undertakes impact assessment for philanthropic projects.

3.2.1 Capacity Building of FPCs for Better Management Practices and Sustainable Growth

Objective: To build capacities of FPCs in way of equipping them to make active role in the agricultural supply chain network

Activities

- A state-level seminar was organised to corroborate the ecosystem of FPCs in Tamil Nadu
- The centre represented in a national seminar on FPOs at XIMB, Bhubaneswar
- New projects and agreements embarked on supporting women entrepreneurs

Seminar: Building the Ecosystem of FPCs

CSIE along with Sustainable Livelihood Institute, Puducherry organised a state-level consultative seminar on Building an Ecosystem for FPOs in Tamil Nadu on 25-26 July 2019. Representatives from World Bank, RBI, agribusiness providers, organic certification agencies, ecologists, academicians and stakeholders representing senior management of FPOs across Tamil Nadu attended the programme. The discussions and briefings from various forums of the seminar have streamlined the interventions derived for Tamil Nadu Rural Transformation (TN RTP) project, a mega project being implemented in 26 districts of Tamil Nadu.

National Seminar on FPOs

The seminar is organised every year and CSIE has been representing for the last two years. In the context of FPO policies, operational guidelines, practices and research outputs, a set of multi-dimensional issues and questions relating to the sustainability of FPOs were deliberated at the National Seminar on FPOs. The deliberations and outputs of this seminar relate to the experiences of researchers, scholars from various fields, senior policy executives and senior

practitioners in the field of FPOs that can improve the implementation process and give insights for further research on FPOs and related issues. The case studies and insights conveyed by the CSIE have been included in the Synthesis report drafted further to the seminar, and the document is available online.

Apart from state and national level representations and deliberations on this context, Aishwarya Raman, Senior Project Officer at CSIE, also made it to an international workshop organised by ICRA, Netherlands, Making Agribusiness Work. The workshop was organised at Ibadan, Nigeria and enabled cross-cultural knowledge sharing and learning of novel tools and techniques in the value chain analysis of farmer collectives.

- Presented CSIE's activities and research on FPOs to Additional Chief Secretary, Rural Development and Panchayat Raj
- Made visits to SIRD, Maraimalainagar to establish potential focus areas for CSIE in TNRTP

3.2.2 Business development and livelihood enhancement of Pathamadai weavers' community

Funding source: Tamil Nadu Handicrafts Development Corporation Limited, RmKV Silks CSR

Objective: To improve the livelihood of weavers in Pathamadai by penetrating technology developed by RuTAG and business development by establishing market linkage.

Activities

- A part of the Pathamadai Mat Weaving Society has been renovated into a CFC by commissioning two of the RuTAG-developed EJH. Training has been given to weavers.
- After successful training of weavers, CSIE appointed a Marketing-cum-Production staff, Ms. Mohammed Fathima (daughter of one of the weavers) for the Pathamadai Mat Weaving Society along with training in social media marketing.
- 32 Designs; more than 100 mats; more than Rs.2,00,000 in revenue have been facilitated with the current infrastructure and training.
- IIT Madras placed an order for Gandhi motif mats and presented one to the Honourable Prime Minister of India, Shri Narendra Modi during the convocation ceremony in August 2019.
- The picture has been shared on Prime Minister's official social media handles on Instagram, Twitter and Facebook.

- Four more machines were installed by RuTAG IIT Madras in January 2020.

3.2.3 Commercialisation and Transfer of Technologies developed by Shri Murugappa Chettiar Research Centre (MCRC)

Funding source: MCRC

Objective: To identify the technologies which are market-ready for transfer and to connect potential entrepreneurs to take up selected technologies

Activities

- CSIE facilitated interaction with three entrepreneurs for two technologies: Fortified Panchagavya (FP) and biochar during phase 1 of the project. One entrepreneur has commenced production of FP on a trial basis.
- CSIE has received additional funding from MCRC to undertake phase 2 of the project involving technology transfer.
- CSIE facilitated technology transfer of biochar technology to M/s SSV Oil Mills, Pattukottai. The unit was commissioned on 3 August 2019. Production at SSV Mills started at a capacity of 50 kg, selling to local goldsmiths and laundry workers with plans to expand the capacity.

3.2.4 Skill Development Project at Nagapattinam

Funding source: CSR project by Chennai Petroleum Corporation Limited (CPCL)

Objective: Skill development of the youth in three villages in Nagapattinam district, namely Panangudi, Vellapakkam and Goparajapuram.

Activities

- First skill centre was established in Vellapakkam village. It was inaugurated on 1 July 2019 by Dr. S. Suresh Kumar, IAS, District Collector, Nagapattinam and Mr. S.N. Pandey, Managing Director, CPCL.
- The first batch of 21 students of tailoring and six students of IT passed out in December 2019. Certificates were issued to the participants.
- A motivational workshop by a faculty from Puducherry University was organised for the trainees.
- Second batch of skill training in tailoring and IT started in January 2020.
- In addition, spoken English training is being given on the weekends to school students and women of the village.

3.3 Outreach

CSIE offers one to three day/s entrepreneurship awareness programmes, capacity-building programmes to high school students, students and faculty members from higher educational institutions, and social entrepreneurs.

3.3.1 Faculty Development Programme (FDP)

Funding Source: Fullerton India Private Limited
Fifteen faculties from various colleges across India participated in a one-week FDP on Entrepreneurship conducted by CSIE from 10-15 June 2019 at IIT Madras to promote entrepreneurial thinking among faculty and help them become trainers of entrepreneurship at their respective institutions. The programme was composed of lectures by IITM faculty, industrialists and entrepreneurs, including field visits to Mahindra City World, Pi-Beam Labs and FIBSOL.

3.3.2 Idea Spark 2019-20

CSIE, as part of its social entrepreneurship promotion project sponsored by Fullerton India, conducted the Grand Finale of Idea Spark competition along with Shaastra, the annual technical festival of IIT Madras, on 6 January 2020 at New Academic Complex (NAC) Building at IIT Madras. The theme of the event was Promoting Sustainable Livelihood Technologies of Indian Artisans. The main objective of the event was to facilitate technology transfer to the Indian artisans, who lack modern technological support. The participants included students from Engineering and Arts colleges of Tamil Nadu. The jury comprised of faculty from IIT Madras and Ethirajan Bhaskaran, Joint Director, Department of Industries and Commerce, Tamil Nadu. Staff members from RuTAG, IIT Madras also took part in the event. The programme comprised of power-point/video presentations and demonstrations of prototypes by student participants. A cash award of Rs.1,75,000 was given to the top three teams. Details below:

- First Prize: Team Agri Stars, Kongu Engineering College, Perundurai, Erode. Prototype: Seed sowing machine
- Second Prize: Team Kongunadu Mechanizers, Kongunadu College of Engineering & Technology, Thottiam, Trichy. Prototype: Engine Care Equipment
- Third Prize: Team Inspired Innovators, Kongu Arts and Science College, Erode. Prototype: UNISONOUS—a hearing aid equipment

3.3.3 IITM-RWTH Student Entrepreneurship Summit 2019

The IITM-RWTH Student Entrepreneurship Summit 2019, jointly organised by IIT Madras and RWTH Aachen University, brought together young innovators from India and Germany to create lasting connections and enable cooperation in environmentally and socially relevant fields of action.

The event was embedded in a two-week-stay of students of RWTH at IIT Madras and was conceptualised as a joint initiative by CSIE and RWTH Aachen University, International Office, Division International Strategy.

The summit built upon prior connections between CSIE and RWTH, and the two teams of Enactus e.V. Aachen and Enactus IIT Madras, both engaged in social entrepreneurship initiatives, co-organised the event. An ongoing cooperation existed in the field of biotechnology, which enabled an involvement of iGEM Aachen e.V. and iGEM IIT Madras.

The summit aimed at expanding these success stories to include topics like electric mobility, app development, architecture, and clean water and energy efficiency.

Altogether 16 people from RWTH came to Chennai, representing six different initiatives and start-ups. With the inclusion of exchange students and guest scientists, 20 persons with RWTH-affiliation took part in the event. Through the IITM internal network, CSIE enabled the inclusion of outstanding entrepreneurs based in IITM's Research Park and invited senior IITM faculty members. The summit was presided by the Chief Guest, German Consul General, Ms. Karin Stoll.

3.3.4 Train the Trainer programme on Entrepreneurship for Polytechnic Faculty

Funding Source: CSR funds from Capgemini Technology Services India

- A one-day consultation meeting on Entrepreneurship for the Polytechnic Faculty of Tamil Nadu was conducted by CSIE, IIT Madras on 13 March 2020. The programme was led by Prof. L.S. Ganesh from the Department of Management Studies, IIT Madras.

- In continuation, a four-day webinar, Setting Up of Incubation Cells in the Polytechnic Institutions, was conducted for Tamil Nadu polytechnic faculty on the following dates: 9, 11, 12 and 16 May 2020.

3.4 Research

3.4.1 Engineering for Change (E4C) Research Collaboration

- The CSIE guided two fellows of E4C in their research work, Challenges for Commercialization of Sustainable Technologies
- The final report is published on the E4C. Report can be found by clicking here.

3.4.2 Research activities by the staff

An article on technology transfer by James Rajanayagam, Senior Project Officer, CSIE has been published online.

4 Sustainability and Finance

Corpus Funds by Prof. Dinesh Kumar Kant

Prof. Dinesh Kumar Kant, RMIT University, Australia, an IITM alumnus of 1982 batch, has generously donated to CSIE a corpus fund of Rs.50 lakh. The CSIE thanks Prof. Kant for the support and the faith in its mission. The proceeds from the interests of the corpus will be targeted towards women entrepreneurship promotion and sustainable innovation imbibing Chanakya's principles of Vedic management.



6.3. Central Electronics Centre

6.3.1. Introduction

The Central Electronics Centre (CEC) was established in 1971 with the main objective of servicing and maintaining the wide variety of sophisticated electronic equipment at the institute. A key attribute of this centre is a blend of an academic environment and an industry-like working atmosphere.

The centre is housed in a dust-free environment. The CEC has a team of qualified, experienced and talented staff members, trained in India and Germany in various aspects of electronic instrumentation, testing and calibration. The infrastructural facilities and equipment have been continually enhanced over the years using Government in India funds and successive Indo-German collaborative projects.

When the centre was established, in 1971, a critical need for training service engineers for maintaining electronic equipment was foreseen, and an 18-month training programme, the first of its kind in the country, was started in the same year. Later, the period of the training programme was extended to 24 months. In view of the large demand for trained personnel both within the institute and outside, conducting such long-term training programmes has become one of the important activities of the centre.

The centre has diversified its activities and now offers the following services:

- Servicing and maintenance of electronic equipment/instruments
- Training programmes for manpower development
- Calibration of electronic test and measuring instruments
- Testing of electronic products
- Development of custom-built equipment
- Consultancy services to industries in the above-mentioned

areas

- Servicing and maintenance of personal computers and printers

So far, the CEC has provided expertise and services in the above areas to more than 230 industries/organisations inside and outside the country.

The CEC has been playing a key role in the area of renewable energy by conducting training programmes related to solar photo-voltaics (SPV). Forty SPV training programmes have been conducted and more than 860 personnel have been trained. The project was sponsored by the Indian Renewable Energy Development Agency (IREDA), New Delhi. SPV laboratory (indoor and outdoor) facilities have been established to promote developmental activities in this area. The CEC is active in diverse projects involving SPV technology.

Four special (customised) 12-week training programmes were organised for radio officers of the merchant navy so that they could become Electro-technical Officers. The project was sponsored by AMET (Academy of Maritime Education and Training), Chennai. As and when requests are received from industries, the centre conducts the short-term training programmes, Calibration Requirements and Uncertainty Calculations as per NABL Accreditation ISO 17025:2005.

As the centre has expanded its activities, most of the laboratories have been upgraded. In 2001, the CEC received the ISO 9001:2000 quality certification from RWTÜV, Germany for having established quality systems in its services. Also, the centre received NABL accreditation in 2004 for testing and calibration laboratories in accordance with ISO/IEC 17025 standards. The ISO and NABL accreditations were actively maintained through adherence to the specified processes and procedures.

6.3.2. Faculty and Their Activities

Short-term courses organised for industries

Sl. No.	Coordinator(s)	Title	Period
Short-Term Course for Industries			
1	Prof. V. Jagadeesh Kumar and N. Karthiyayini	Awareness Program on ISO/IEC 17025:2017 General Requirements for the Competence of Testing and Calibration Laboratories	15-16 April 2019

Training attended by the staff members in public sector undertakings

Sl. No.	Faculty Member	Title	Institution	Period
Trainings				
1	G. Saravanan, Technical Superintendent	NABL Assessor Training program	NABL	29 May-2 June 2019
2	P.V.S. Chandra, Junior Technician	LED Lighting Systems and Intelligent Lighting	CPRI, Bangalore	29 August 2019

3	N. Bharaidasan, Junior Technician	Grid Connected Inverters	CPRI, Bangalore	24 January 2020
4	N. Bharaidasan, Junior Technician	Demystifying EMC India	Rohde & Schwarz India	4 February 2020
5	P.V.S. Chandra, Junior Technician	Demystifying EMC India	Rohde & Schwarz India	4 February 2020

6.3.3. Design and Development Activities

New facilities added or major equipment procured

Sl. No.	Equipment	Value (Rs.)
1	Antenna with accessories	9,00,000
2	RF Power amplifier	8,00,000

Industrial consultancy projects (ongoing and new)

Sl. No.	Faculty Member	Title	Industry	Amount (Rs.)
1	Head, CEC	Tests on street light fitting of 20W LED	M/s Sabhari Electricals, Chennai	42,480
2		Tests on GPON telecom products	Alphion India Private Limited, Chennai	97,200
3		Sound-level test on acoustic booth	Elixir Electronics, Chennai	17,700
4		Vibration tests on AGM VRLA battery 12V-3Ah	TAFE, Kanchipuram	11,800
5		Designing of a power supply for e-locking product	Kriti Labs Technologies, Chennai	59,000
6		Testing of LED lamps	Crompton Greaves Consumer Electricals Limited, Chennai	28,320
7		1K 10 Testing on LED tunnel light	Lighting Technologies India Private Limited, Bengaluru	5,900
8		Vibration tests on battery	TAFE, Kanchipuram	17,700
9		Testing of shunts and other accessories	EMD Electronic Instruments Limited, Chennai	26,550
10		Vibration tests on battery	TAFE, Kanchipuram	11,800
11		Type testing of float boost battery charger	Megatronix	61,360
12	Head, CEC	Test on digital keyboard as per IS 13252	Lookman Electroplast Industries Limited	53,100
13		Test on full HD fixed type IP colour camera as per IEC 60571	Lookman Electroplast Industries Limited	1,52,220
14		Test on mobile network video recorder as per IEC 60571	Lookman Electroplast Industries Limited	61,438
15		Test on emergency light	Green Ray Technologies Private Limited, Chennai	14,160
16		Test: Temperature raise	Southern Electricals, Chennai	18.88
17		Tests on LED lights (short circuit, surge, impact tests)	Southern Electricals, Chennai	12,980
18		Testing of floodlights	SIECHEM Technologies Private Limited, Pondicherry	28,320
19		Surge test on RPM meter products	Sun Industrial Automation and Solutions, Chennai	9,440
20		Test on LED light	Balinga Lighting Equipments, Chennai	14,160
21		Calibration of thermal wire stripper	Vishay Precision Transducers India Private Limited, Kanchipuram	9,000
22		High-temperature, damp heat and low-temperature testing of sending unit assembly	EMD Electronics Instruments Limited, Chennai	89,680

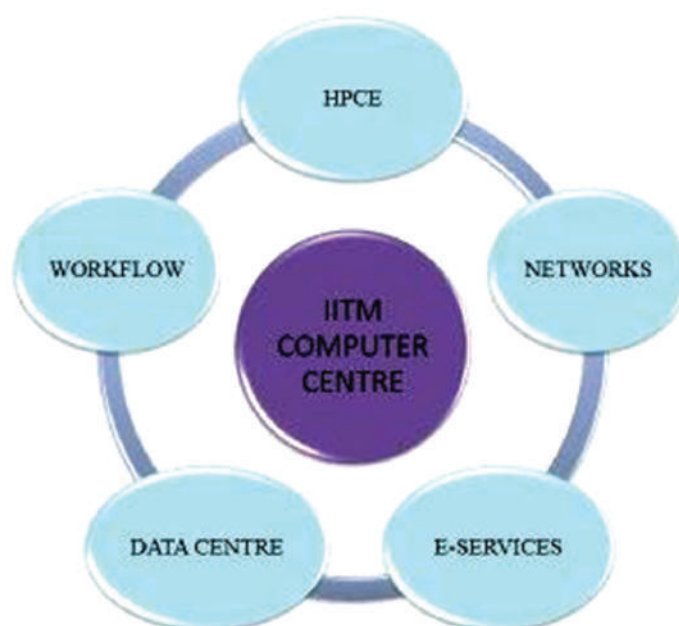
23		Measurement of irradiation level of 45W FLP/ WP LED	Flexpro Electricals Private Limited, Navasari	23,600
24		Testing of batteries	Gulf Oil Lubricants India Limited, Mumbai	1,87,620
25		Testing of LED products as per LM79	Surya Roshni Limited, Chennai	14,160
26		Testing of LED products as per LM79	Surya Roshni Limited, Chennai	14,160
27		Calibration of THD in UPS with load	Hi Tech Calibration Services, Chennai	5,900
28		Test of VRLA battery	TAFE, Kanchipuram	29,500
29		Testing of LED lights, SPV module, battery and control gear	Tirupathi Airport, Reningunta	71,980
30		LED Construction parameters, light fitting parameters and surge protections	AAI, Chennai	47,200
31		Measurement of irradiation level of 60W FLP/ WP LED	Flexpro Electricals Private Limited, Navasari	23,600
32		Testing of LED sitting (LM79 and Test: temperature rise)	Pothys Private Limited, Chennai	1,65,200
33	Head, CEC		Mahaveer Electric Agencies, Chennai	2,65,500
34		Testing of LED fittings	k-Lite Industries, Chennai	1,55,760
35		Testing of LED fittings	k-Lite Industries, Chennai	94,400
36		Composite temperature and humidity-environmental test	BMQR Certification Private Limited, Chennai	24,000
37		Testing of components	SAMVI Plastic Products, Puducherry	2,47,800
38		Testing of LED products as per LM79	Surya Roshni Limited, Chennai	2,30,100
39		Testing of audio-video system	LUX Decibels, Chennai	10,000
40		Class C environmental test for electromagnet	EMD Electronics Instruments Limited, Chennai	1,18,000
41		S/N Ratio test of CCTV	Lookman Electroplast Industries Limited, Chennai	23,600
42		Damp heat test	Lookman Electroplast Industries Limited, Chennai	37,760
43		Class C environmental test for electromagnet	EMD Electronics Instruments Limited, Chennai	1,18,000
44		Testing of LED fitting (LM79 and temperature rise test)	Pothys Private Limited, Chennai	33,040
45		Calibration of relay test set	Instrulab, Chennai	17,700
46		Class C environmental test for electromagnet	EMD Electronics Instruments Limited, Chennai	306,800
47		Testing of LED lamps	Baliga Lighting Equipments Private Limited, Chennai	75,520
48		Testing of LED lamps as per LM79	Sanjana Enterprises	14,160
49		Surge voltage test 4 KV	Baliga Lighting Equipments Private Limited, Chennai	5,900
50		Safety testing of medical equipment	Green Ocean Research Labs Private Limited, Chennai	15,930
51		C10 Capacity test and cold HRD test on batteries	Gulf Oil Lubricants India Limited, Mumbai	2,33,640
52		Measurement of battery life of patient call monitor	Rajmall Inventives Private Limited, Chennai	5,900
53		Testing of LED lamps as per LM79	SACDEEIL Science LLP, Puducherry	14,160

6.4 P.G. Senapathy Centre for Computing Resources

6.4.1 Introduction

The Computer Centre at IIT Madras was established in 1973 to provide centralised computing resources and support the academic initiatives of the institute. It has had professionally maintained facilities that have served the IIT Madras community, from the IBM System 370 in the 1970s and the Siemens system in the 1980s to the SGI, IBM Power and Sun Systems in the earlier part of this millennium and the super-computers and communication and network services of today. Over the years, the computing and information technology requirements of IIT Madras community have been increasing. The Computer Centre's organisation has also evolved with the increase in requirements. In 2007, the infrastructure of the Centre was significantly upgraded through an endowment given by Mr. S. Gopalakrishnan in the name of his father Mr. P.G. Senapathy.

The activities of the centre are organised under five verticals: 1. High-Performance Computing Environment (HPCE), 2. Networks, 3. E-Services, 4. Data Centre and 5. Workflow.



6.4.2 High-Performance Computing Environment

The High-Performance Computing Environment group was established to cater to the ever-increasing demand for super-computing facilities from researchers at IIT Madras.

The Virgo super-cluster, with 292 nodes and two iDataPlex dx360 M4 master nodes, with FDR 10 InfiniBand connectivity, is already in use. These nodes have 2 × Intel E5-2670 eight-core, 2.6 GHz processors, with 4 GB of memory per core. This machine, which caters to the needs of the research community, mostly uses parallel programming.

The Virgo system has a storage capacity of two 80 TB General Parallel File system and a 50 TB NAS file system for backup. The AMC of Virgo system has not been renewed from this year as it is being replaced by a new cluster.

The Computer Centre has a cluster for B.Tech users called GNR, named after the great scientist Prof. G.N. Ramachandran, with one head node from Supermicro, with Intel Xeon CPUs with a memory of 32 GB and 500 GB hard disks and eight compute nodes of the same configuration. This cluster has a file system of 14 TB, and PBSPro is the job scheduler. Eight compute nodes have been provided by the Biotechnology Department, and eight nodes are from the institute grant.

The GNR cluster has 16 compute nodes with dual processors, eight-core Intel Xeon Ivy Bridge E5-2650v2 series processors with 4 × 8 GB RAM and a 500 GB SATA hard disk in each node and a head node with a Supermicro server with dual processors, eight-Core Intel Xeon Ivy Bridge E5-2650v2 series processors with 4 × 8 GB RAM and a 500 GB SATA hard disk with 14 TB of shared storage. Warranty of GNR expired is March 2018 and it is under AMC for one year.



A new cluster has been added in the HPCE called AQUA and the installation process has started. It is mainly based on a water-cooled system with 280 CPU nodes and 27 GPU nodes and 1PB parallel system, 200TB

NAS file system of storage. The following are some active research areas that use the Virgo cluster and will migrate to the Aqua cluster: aerospace engineering; atmospheric and ocean modeling; analysis of large structures; flows and combustion modeling; material sciences; social, ecological and physical network modeling; numerical weather prediction and data assimilation; molecular modeling; spectroscopy; and VLSI.

The HPCE group also maintains machines from various departments and centres. This group supports users in improving code and organises training programmes related to effective use of the facility. This group maintains all commercial software related licenses and implements the 80:20 policy for all commercial software, procured by the computer centre for HPCE users. Detailed information about HPCE, including the latest usage statistics and software availability, is posted at the website www.cc.iitm.ac.in.

6.4.3 E-Services: <https://eservices.iitm.ac.in>

The E-Services vertical focuses on services such as Web system configurations, e-mail, Web access, Web security, storage solutions, virtualization, Web services, etc. Several new services were enhanced and added by the E-Service group. The services maintained and initiated by the group are listed here:

Mail services

1. IIT Madras (email.iitm.ac.in) Microsoft exchange 2013
2. Students (smail.iitm.ac.in)
3. Alumni (alumni.iitm.ac.in)
4. Retirees (retiree.iitm.ac.in)
5. Conferences (wmail.iitm.ac.in)
6. Projects (imail.iitm.ac.in)

User management services

1. Active Directory Service (ADS)
2. Lightweight Directory Access Protocol (LDAP)

Web services

1. Virtual hosting
2. Mailing list
3. Employee user Web portal
4. Websites
5. Shared hosting
6. Moodle online learning platform
7. Posting to campus community portal
8. Online web portals for user registration
9. Online statistics of service usage

Security and monitoring services

1. Firewall tuning
2. Hack solution
3. Security gateway (spam appliances)
4. Web application firewall (WAF)
5. Log analytics
6. Digital certificate
7. IT Infrastructure monitoring (NAGIOS)

8. Antivirus

Storage solution

1. Backup and restore process
2. Disaster recovery
3. Server and desktop consolidation by virtualization (VMWARE)
4. Hyper converged infrastructure (HCI)

Development and deployment services

1. Convocations
2. Distinguished Alumnus Awards
3. User registration for Centre for Industrial Consultancy & Sponsored Research
4. HPCE Web-based user management
5. Faculty and staff portal
6. Web-based training
7. VTLS support (Library)
8. Support to students' elections
9. Support to JEE
10. Support to HSEE
11. Support to departments with Web services
12. Support to Office of Alumni Affairs
13. Support to Placement Office
14. Support for conferences
15. Support to ICSR
16. Support to Citrix academic

Other services

1. SMS gateway
2. Google API services
3. Intranet services

- 4. Project management support
- 5. Online ticketing system
- 6. Home portal for staff/faculty
- 7. Cloud services (own cloud)
- 8. Authenticated mail service
- 9. Local/global FTP
- 10. VDI (Virtual Desktop Infrastructure)
- 11. Resources booking system

- 12. Microsoft licensing
- 13. Request Tracker
- 14. M.S./Ph.D. online exam through Moodle
- 15. English O-level exam through Moodle
- 16. Digital certificates
- 17. Open virtual desktop infrastructure
- 18. Google Hangouts
- 19. Online portal registration links



A virtual machine is a software computer that, like a physical computer, runs an operating system and applications. An operating system installed on a virtual machine is called a guest operating system. The virtual machine gets a CPU, memory, video cards, access to storage and network connectivity from the host it runs on.



VMware server: Before virtualization



After virtualization

E-Services Server Area in Data center



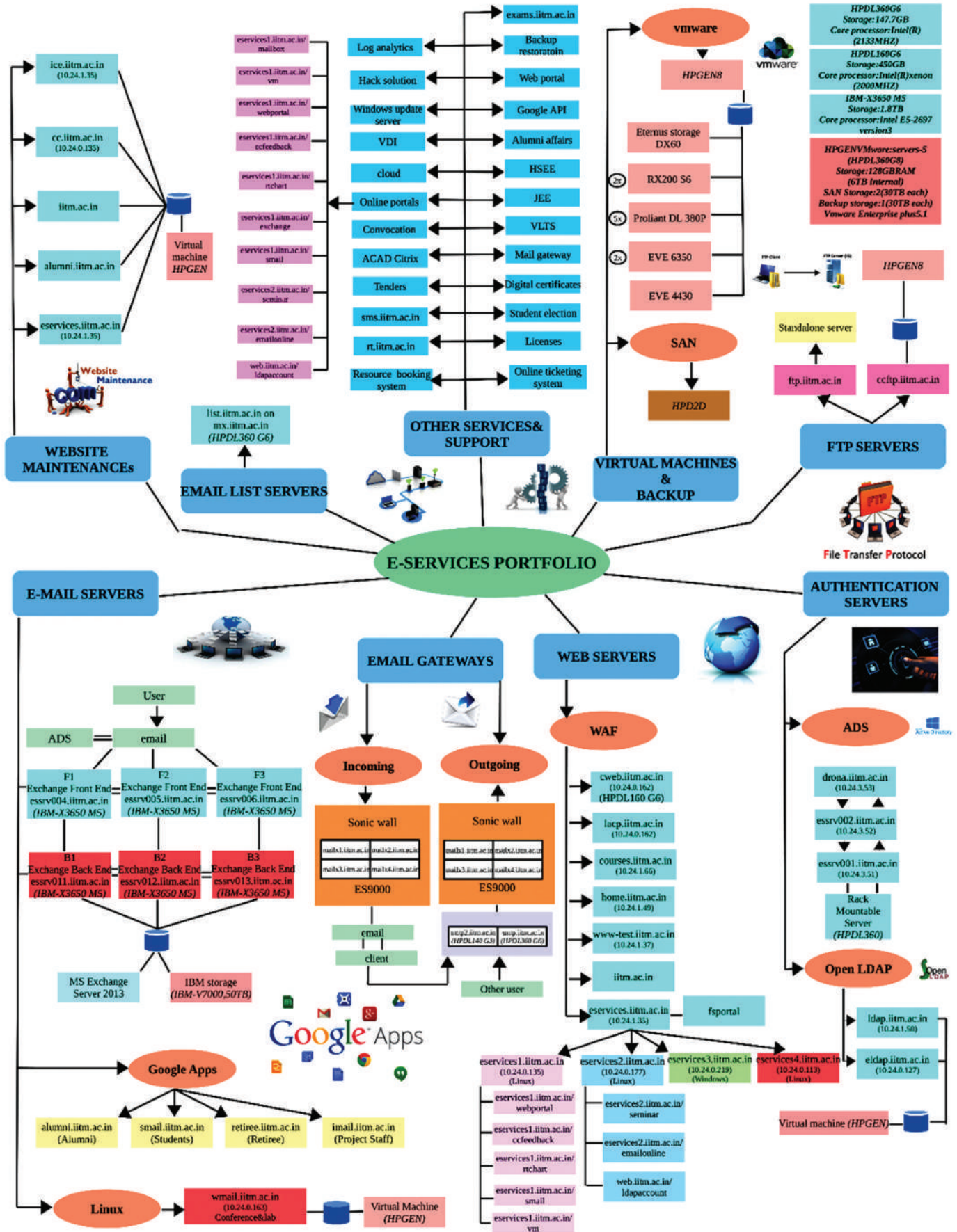
Web Application Firewall: WAF Fortinet 1000 series
Acts as the firewall for websites

<https://eservices.iitm.ac.in>

Email Gateway: Sonic WALL

All incoming mails and outgoing mails go through this appliance.

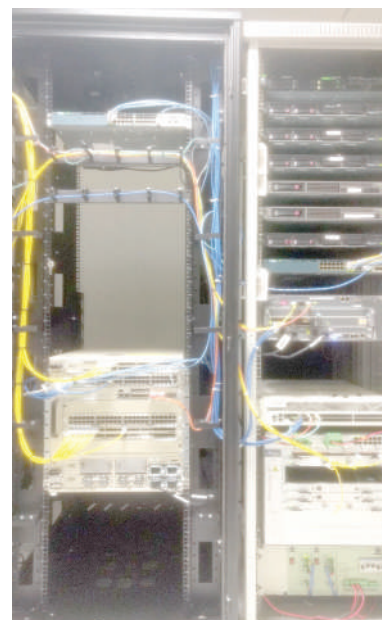




6.4.4 Network

The campus computer network was established in 1994, connecting about 18 buildings in the Academic Zone using telephone cables. The initial bandwidth was 64 kbps. Today, we have a fiber-backbone high-speed network connectivity of 10 Gbps for all the buildings in the Academic Zone. In addition, a backbone inter-connecting the three zones (Academic Zone, Hostel Zone and Residential Zone) is also operational. The total number of nodes in the campus is approximately 25,000. The network equipment in the Academic Zone was upgraded to provide 100/1000 Mbps connectivity to the nodes. All the buildings in the Academic Zone are provided with dual fiber connectivity. Facilitation for video conferencing, virtual class rooms, Web casting important events, EDUROAM and VPN was also provided under the network service. The network vertical also oversees the procurement of external network services as well as the design, installation and maintenance of the network structure, switches and cabling across the IIT Madras campus. A summary of the key activities of the Network Group for the year under consideration is as follows:

1. Implementation of GPON in the Residential Zone is in process.
2. Supported for conducting online examinations and online courses.
3. Supported for web casting of important institute events.



6.4.5 Data Centre

The function of the data centre is to ensure appropriate management of facilities so that all verticals of the computer centre function efficiently and without interruptions. These facilities include the uninterrupted power supply, backup power supply (DG set), CCTV, climate control, access control, water leakage system, fire protection under BMS, and office space maintenance. The data centre operates and maintains the following equipment:

Sl. No.	Description of Equipment	Capacity	Quantity
1	Diesel generator set (Caterpillar) with 12 V/200 AH (Exide)—2 Nos.	600 kVA	2 Nos.
2	Synchronizing panel for parallel operation	3 X 600 kVA	1 No.
3	UPS (DB) with 12 V/200 AH (batteries)—96 Nos	160 kVA	2 Nos.
4	UPS (SOCOMEK) with 12 V/200 AH (batteries)—60 Nos.	200kVA	2Nos
6	UPS (SOCOMEK) with 12 V/150 AH (batteries)—32 Nos.	80 kVA	1 No.
7	UPS (Emerson) with 12 V/42 AH (batteries)—34 Nos.	30 kVA	1 Nos.
7	UPS (DELTA) with 12 V/65 AH (batteries)—40 Nos.	30 kVA	1 Nos.
8	UPS (SOCOMEK) with 12 V/200 AH (batteries)—60 Nos.	20 kVA	1 No.
8	UPS (DELTA) with 12 V/42 AH (batteries)—32 Nos.	20 kVA	1 No.
10	PRAC AC (Blue Star)	17 TR (60 kW)	7 Nos.
11	PRAC AC (Blue Star)	13.5 TR (48 kW)	2 Nos.
12	PAK AC (Blue Star)	11 TR	4 Nos.
13	PAK AC (Blue Star)	5.5 TR	2 Nos.
14	Ductable split AC (Blue Star)	8.75 TR	2 Nos.
15	Ductable split AC (Blue Star)	5.5 TR	6 Nos.
16	RO plant (Excelwater System)	250 LPH	1 No.
17	Air-cooled type chiller (York)	36 TR	3 Nos.
18	CRV Row Based (Vertiv)	11 TR	6 Nos.
19	PAC (Vertiv)	10 TR	2 Nos.

The data centre has upgraded the building management systems with the latest technology as follows:

Details of New Building Management Systems

BMS

1. Enterprise Buildings Integrator (EBI) R430 server
2. CP IPC panel—1 No. (with IPC controller—1 No.)
3. CP SPC panel—3 Nos. (with SPC controller—8 Nos.)
4. Battery monitoring system for all UPS Single Zone (FAAST)

5. VESDA panel for network area (fire alarm aspiration seeing technology)

Security system

6. CCTV Camera

- IP-based IR indoor/outdoor (Capture)-27 Nos.
- Sixteen-channel encoder-2 Nos.

Fire system

7. Fire alarm system

- Intelligent photoelectric smoke detector-84 Nos.
- Response indicator-40 Nos.
- Intelligent heat detector-2 Nos.
- Temperature sensor-2 Nos.
- Manual pull station-4 Nos.

- Hooter-9 Nos.

- Isolator module-3 Nos.

8. Fire fighting

- Gas release panel (Ravel) -2 Nos.

Door access system

9. Access control

- TEMA server-1 No.
- Biometric card reader-4 Nos.
- Emergency push switch-13 Nos.

PA system

10. Plena 480 W amplifier (Bosch)

Infrastructure development

1. New department server area civil partition and necessary false floor tiles work has been completed.

2. New HPCE (AQUA) area civil partition and necessary false floor tiles work has been completed.

3. New chillers and CRV units and their associated panels installed for AQUA and RCC basement (civil) provided for chiller unit.

4. 2 x 400A MCCB installed at Main EB panel for chillers.

5. 17.5 TR PRAC installed at New Department Server Area

6. 63A X 16 nos 3P+N+E industrial socket installed for server input

7. 4 x 8 way TPN DB installed for server socket input

8. 1 x 8 way TPN DB installed for CRV inputs

9. UPS panel installed for 2 x 200 kVA UPS for distribution

10. New earthing system installed for 2 x 200 kVA UPS, servers rack and CRV units

11. 20 kVA UPS x 1 Nos and 30 kVA UPS x 1 Nos with batteries has been installed for chillers and chiller pump, respectively.



CRV Units



Chiller units

6.4.6. Workflow

The implementation of enterprise resource planning (ERP) software, or what is internally referred to as a Workflow:

The Workflow Group at the computer centre works with various sections of the institute to support system usage and capture changes in requirements involved in process development activities, maintaining reporting websites that collect data from Workflow, and generating reports

using new software tools.

Online processes have a distinct advantage of transparency, accessibility and analytics. In the financial year 2019-20, we have made major development in analytics part. We have provided extensive reports through Workflow Reports website using the open source tool R.

Processes such as Employee creation, Student travel, Course introduction, ICSR purchase indent creation, Tax

declaration, Makeup exam application, few academic section reports, etc were optimised. All these processes have better tracking system now which is Task summary. The enhanced reports are flexible and data can be searched with ease. Similar to older optimised processes, SLAs (Service Level Agreements) are implemented in various steps of the process to move it automatically and avoid delays. Automatic email triggers are also generated.

Enhancement to synopsis and thesis evaluation process was carried out. All student documents are pushed to a storage server and a screen provided for academic section to upload the same through academic website. Faculty advisors, respective Deans, department staff and academic section staff can view these documents in the students' e-file from within Workflow.

More enhanced reports are designed for FAP - Annual faculty academic profile based on management requirements. Analyzing this data has helped management to understand how our faculty colleagues have wonderfully contributed towards making IITM the top-ranked institute year after year.

Along with regular development and optimisation activities, enhancement to vehicle pass website for outsiders, enhancement to workflow document maintenance website and enhancement to academic website were also carried out in this financial year.

Like in previous financial year, the data extracted from workflow have been analysed and utilised by the administration to align our internal processes to support our vision for IIT-Madras.

Faculty/Staff members and areas of work

Sl. No.	Name	Designation	Area of Focus
1	Prof. Harishankar Ramachandran	Chairman	Overall coordination and planning
2	Prof. Phanikumar G.	Chairman in-charge	Overall coordination
3	Dr. Rupesh Nasre	Faculty-in-Charge	High-Performance Computing Environment
4	Prof. N.S. Narayanaswamy	Faculty-in-Charge	E-Services
5	Prof. Rahul Ratnakar Marathe	Faculty-in-Charge	Workflow
6	Banavath Baman	Assistant Systems Engineer	Training
7	S. Anand Kumar	Assistant Systems Engineer	Mail domains, mail gateways, server hardware, VMWARE, Web services, virtualization, support services
8	V. Selvaraju	Assistant Systems Engineer	Network design, servers, switches, campus network maintenance and administration
9	S. Priya	Assistant Systems Engineer (contract)	Workflow, software development
10	T.V. Subba Rao	Technical Superintendent	Workflow—Administration Module
11	R. Thiruneelagandan	Technical Superintendent	Planning, operations and maintenance of D.G. sets, UPS', A/c's, BMS, furniture and all data centre related equipment
12	P. Gayathri	Technical Superintendent	High-performance computing, system software, installation of open source applications and commercial applications, user education development
13	M. Irudayaraj	Junior Technical Superintendent	Web programming, Linux, e-Services
14	R. Madhanarasan	Junior Technical Superintendent	Data Centre, BMS and ISO
15	E. Arun	Junior Technical Superintendent	Workflow
16	P. Mahesh Mithreevan	Senior Technician	Computer networks, servers, switches, campus network, maintenance
17	M. Jeevanantham	Senior Technician	Computer networks
18	C. Rajendran	Senior Assistant	Administration

Apart from the permanent staff listed in the foregoing, there are Project Officers, Project Associates and Project Technicians assigned to each vertical in the Computer Centre to support its various activities.

6.5 Central Facilities

6.5.1. Central Workshop Facilities

Central Workshop (CWS) was established in 1959. Initially, it consisted of shops associated with three major manufacturing processes, i.e. metal cutting, metal joining and metal forming. Later, sections on other modern manufacturing processes and control systems were introduced in workshop training.

Presently, Central Workshop of Indian Institute of Technology Madras has the facilities in different shops and sections. The list of shops and sections with their facilities are given below.

S.No.	Shop	Facilities
1	Carpentry	Wood working with planing, circular saw cutting, turning, thickness reducing, polishing processes and hand-operated power tools
2	Fitting and Tool Room	Filing, drilling, tapping, jig boring, tool milling, engraving, marking, slotting, grinding and cutting
3	Machine Shop	Horizontal and vertical milling machines, lathes, planing machine, radial drilling machine, tool and cutter grinder, CNC lathes, CNC milling machines, universal milling machines and computer-aided manufacturing software
4	Gear Shop	Spur, helical and bevel gear cutting and gear inspection
5	Electrical Shop	Trainers for single-phase electrical circuits, three-phase direct online and star-delta starter trainers
6	Instrument Shop	Calibration of pressure gauges up to 1000 bar and precision machines, rapid prototyping machines (3D printers)
7	Welding Shop	Arc welding, gas welding, brazing, TIG welding, plasma arc cutting and arc welding simulator
8	Foundry Shop	Sand molding, melting and die casting machines
9	Smithy Shop	Open hearth furnace
Sections		
10	Pneumatics and Hydraulics	Basic and advanced pneumatics trainers, electro pneumatic trainer, PLC for pneumatics trainer, basic and advanced hydraulic trainers
11	FRP	Manufacturing polymer reinforced composites by hand lay-up Process
12	Plastics	Introduction to plastics, demonstration and production in hand-operated, semi-automatic injection and compression moulding of plastics
13	Instrumentation and Communication Lab	Introduction to basic communication systems, exercises on optical fiber communication; introduction to various kinds of transducers, microprocessor based control applications, example of stepper motor control and traffic light controller and PLC

In addition, Central Workshop maintains institute buses.

The Central Workshop is training 916 B. Tech./Dual Degree (first year) students of 2019-20 batch through workshop courses WS1301, WS1302 and WS1030 (exclusively for the students of Engineering Design). The details of the students and training modules are given below.

Department	Number of Students	Training Modules
1. Electrical Engineering	129	1. Power Tools
2. Engineering Physics	34	2. Machining process - Turning
3. Mechanical Engineering	189	3. Machining process - Milling
4. Metallurgical and Materials Engineering	55	4. Foundry and Smithy
5. Aerospace Engineering	61	5. Plastics and FRP
6. Chemical Engineering	98	6. Welding
7. Naval Architecture and Ocean Engineering	69	7. Electrical
8. Civil Engineering	108	8. Electronics
9. Biological Engineering	36	9. Pneumatics and Hydraulics
10. Computer Science and Engineering	74	10. Instrumentation and Communication
11. Engineering Design	63	
Total	916	

The first-semester workshop training courses for 2019-20 were conducted for 14 days, from 26 December 2019 to 11 January 2020. The second semester training course for this batch will be scheduled as per the academic calendar.

The second-semester training courses for 2018-19 batch (first year) B. Tech./Dual degree students were conducted for 15 days, from 23 November-10 December 2019.

Experiments on Programming of CNC Machining Centre and Pneumatic and Hydraulic Circuits were conducted for M.Tech (Automotive Technology) web-enabled course 2018 students as part of Automotive Technology Laboratory (ME7570) at Central Workshop on 15-16 February 2020.

The Central Workshop offers support to B.Tech/M.Tech students and M.S./Ph.D. scholars of the institute for manufacturing experimental set-ups and their accessories. The new web portal developed for online submission and processing of CWS work orders was launched on 15 May 2019. A total of 904 work orders were executed in 2019-2020.

Different appreciations/newspaper highlights of CWS activities

• CWS feels proud of being a part of Team Anveshak's success: Director, IIT Madras, through an email dated 9 July 2019 appreciated Central Workshop, while mentioning the following:

Team Anveshak, a competition team from the Centre for Innovation (CFI), on its rover CAESAR being placed

at the 12th position overall in the University Rover Challenge 2019 conducted by The Mars Society and held at the Mars Desert Research Station, Utah, 30 May-1 June 2019.

"The team's achievement would not have been possible without the support of Central Workshop, CFI, sponsors and all others who have contributed to the team's efforts."

Prof. Bhaskar Ramamurthi, Director, IIT Madras

• CNC machining of components for prototype for Team TechHOUNDS (excerpts from mail dated 22 July 2019 from the research scholar, Team TechHOUNDS, IIT Madras):

Team TechHOUNDS, a group of research scholars from Manufacturing Engineering Section, IITM, participated in the Smart India Hackathon hardware edition 2019 (SIH 2019), received a lot of support from Central Workshop in manufacturing various components of their prototype. The efforts put forward by the staff team of CWS for these projects helped the team to emerge as winners in SIH 2019. The team wishes to express sincere gratitude to all the staff of the CWS for making this success possible.

• CWS feels proud of being a part of Team Raftar's success:

Director, IIT Madras, through an email dated 19 September 2019 appreciated Central Workshop, also while mentioning the following:

Team Raftar participated in the Formula Student Germany 2019 held at the renowned Formula One

Circuit Hockenheimring from 5-11 August 2019 and achieved several top places. Formula Student Germany (FSG) is a premier international-level design competition attended by top universities across the world, where students are challenged with the task of designing, manufacturing, testing and racing a

prototype race car within a certain set of rules set by SAE. Please also join me in thanking Dr. A. Ramesh (Faculty Advisor), Centre for Innovation, Alumni, the Central Workshop, and others who have helped them in achieving this feat.

- Prof. Bhaskar Ramamurthi, Director, IIT Madras

Major projects undertaken by CWS

UAY Project - Manufacturing of parts for hydro turbine test section



CWS has fabricated different parts and assembled the hydro turbine test set-up.



CWS contributions to the institute

Natural wood furniture made from the trees fallen during Vardha cyclone

CWS contribution towards clean campus manufacturing of monkey-proof dustbins



The CWS has initiated to make 250 numbers of foot pedal operated monkey-proof dustbins and supplied them to hostel management of the institute.

Central Workshop contributed to the following COVID-19 related projects:

- The Central Workshop supported the prototyping of low-cost ventilators by Health Care Technology Centre, Research Park, IIT Madras. The device provides respiratory support to patients using the controlled and automated squeezing of a self-inflating or AMBU bag and includes functionalities to control respiratory rate (breaths per minute), tidal volume, pressure parameters, etc. The staff of CWS put lot of efforts to redesign and to make parts of prototype using CNC

machines and 3D printing.

- CWS staff members visited and interacted with medical practitioners of Tamil Nadu Medical Council to understand the patient isolation intubation box while fixing respiratory tube to Covid-19 patients. The intubation boxes were designed and are being fabricated.
- The CWS has started developing different versions of foot-operated sanitiser dispensers.
- The CWS also coordinated to develop touch-free sanitiser dispenser.

• The CWS facilitated to make disinfection spray, parts of respiratory devices, fixture face shield transparent sheet drilling, etc.

In addition to training and fabrication works for the

students of the institute, the Central Workshop has trained 29 apprentice trainees with ITI, Diploma and B.E. qualification. Four of them have been trained for maintenance of buses in Auto Shop.

The following HRD training programmes were attended by the CWS staff members in 2019-20:

Sl. No.	Staff Member	Designation	Details of Training	Date and Duration of Training
1	S. Praveen	Senior Technician	Calibration of Dimensional Measuring Equipment at Central Manufacturing Technology Institute, Bengaluru	Five days from 8 July 2019
2	K. Kumar	Technical Superintendent	Calibration and Uncertainty Measurements as per NABL requirements and ISO/IEC 17025:2017	Two days from 23 September 2019
3	S. Chellapandian B. Manikandan R. Damodaran P. Arun	Senior Technician Senior Technician Senior Technician Senior Technician	Gear Manufacturing Processes, organised by Indian Machine Tools Manufacturer's Association (IMTMA) in Bengaluru	Three days (10-12 February 2020)

Central Workshop staff members are actively participating in the product development of IIT Madras incubated start-up companies. Its facilities were demonstrated to trainees from National Skill Trainers' Institute, engineering colleges and school children as part of their industrial visit/study tour in 2019-20.

Two second-year students of Diploma in Mechanical Engineering from CPCL Polytechnic College, Manali, Chennai were mentored by the Central Workshop from 22 April 2019 for the eight-week summer internship programme by RuTAG, IIT Madras in collaboration with PALS (PAN IIT Alumni Leadership Series) on Mechanisation for compacting hand-woven Pathamadai fine mats after weaving.

About 80 school children of various Government-aided schools attended the two-day Engineering is Fun programme on 30-31 January 2020. Hands-on practice sessions were offered in various modules such as basic electrical circuits, wood working, plastics and FRP and foundry techniques.

6.5.2 Central Glass Blowing Section

The Central Glass Blowing Section (CGBS) is one of the important infrastructural facilities of Indian Institute of Technology Madras. Established in 1972, the facility undertakes design and fabrication of sophisticated glass apparatus for research and development in various departments. It has a range of modern glass working equipment that has been largely procured from Germany under a collaborative programme. The apparatus includes a horizontal-cum-vertical lathe, a universal forming lathe and a high-vacuum system. The section is also well equipped with a good number of

sophisticated burners, drilling and cutting machines, grinding and polishing equipment and such other tools necessary for fashioning varied glass apparatus. It has an adequate facility for quartz working and has developed a high level of expertise in this area.

The sophisticated apparatus fabricated includes cryostats, spherical and cylindrical Dewar flasks, lugging probes, laser housing tubes with water jackets, reactor tubes, vacuum tube collectors (for solar energy) and quartz ware. From April 2019 to March 2020, the CGBS undertook 650 work orders from various departments.



International and Alumni Affairs

Introduction

The office of the Dean (International and Alumni Relations) (IAR) was created in 2012 and has grown significantly in its activities in the past eight years. Owing to the significant growth in activities, the office was bifurcated as Dean (Alumni and Corporation Relations) and Dean (Global Engagement) in January 2020 vide 243rd meeting of the Board of Governors of the institute. The two offices shall continue to grow IIT Madras' relations with university, alumni and corporate partners. The Office of Alumni and Corporate Relations (A&CR) headed by the new Dean (A&CR) strives to support the institute's drive towards global excellence in education, research, relations

with industry, innovation and entrepreneurship, sustainability and social impacts, and infrastructure.

The vision of the Office of A&CR is to enhance the global stature and impact of IIT Madras by leveraging alumni and corporate relations. The Office of Global Engagement, earlier known as Office of International Relations, strives to support the institute's drive towards global excellence in education, research, innovation and internationalisation. Its mission is the development of strong and sustainable international partnerships with research laboratories, academic institutions, industry and entrepreneurs to meet the aspirations of faculty and student communities.

Visits of international delegations

University of Barcelona, Spain, 1 April 2019

Prof. Alex Aguilar, Vice-Chancellor for Outreach and Internationalization, and the Director for International Development, Ms. Esther Martra from University of Barcelona, Spain visited IITM to discuss about possible research collaborations and exchanges between students and investigators.

China University of Petroleum - Beijing, 15 April 2019

Prof. Zhang Laibin, President, China University of Petroleum - Beijing CUPB, Prof. Yao Jun - Professor and Deputy Director, Office of International Cooperation and Exchange, Prof. Li Zhenlin, Dean, College of

Mechanical and Transportation Engineering, and Prof. Chen Chonghe, Senior Engineer Dean, Online and Continuing Education from China University of Petroleum, visited IITM to establish the cooperation between China University of Petroleum - Beijing and IITM.

Technical University of Liberec, Czech Republic, 12 April 2019

Prof. Jiří Militký, Senior Professor of Textile Engineering, Dr. Rajesh Mishra and Dr. Michal Petru from Technical University of Liberec, Czech Republic visited IITM to discuss about India-Czech Bilateral Scientific and Technological Cooperation and project proposal.

University of Koblenz, Germany, 23 April 2019

Prof. Thomas Goetz from Department of Mathematics and Ms. Holstein - Alter and Ms. Ines Tobis from international office of University of Koblenz, Germany visited IITM in connection with exchange programme under ERASMUS+ programme.

Michigan State University, 14-16 May 2019

Prof. Shanker Balasubramaniam from Michigan State University (MSU) had meetings with the key IITM Chairs to discuss adjunct faculty appointments at MSU.

University of Twente, Netherlands, 7 June 2019

Dr. Martijn J. Booij, Associate Professor from University of Twente, Netherlands had meetings with the IITM Civil Engineering Department and Prof. T. Pradeep.

University of Liverpool, 25 June 2019

Prof. Ahmed Elsheikh, Professor of Biomaterial Mechanics, Civil Engineering and Industrial Design, and Mr. Rohit Ramesh, External Relations from University of Liverpool, visited IITM. The purpose of this visit was to explore areas of collaboration and exchange between both the universities.

**Swissnex India, 3 July 2019**

Ms. Maitree Dasgupta, Head of University Partnerships, Swissnex India, Consulate General of Switzerland met Dean IAR to introduce Swissnex India.

Kwame Nkrumah University of Science and Technology, Ghana, 2 July 2019

Prof. Kwabena Biritwum Nyarko, Prof. Abdul Rahman, Prof. S.I.K. Ampadu, Prof. George Obeng from Departments of Petroleum Engineering, Electrical Engineering and Mechanical Engineering visited IITM to explore ways of collaborating in research and postgraduate training with the College of Engineering, KNUST.

University of Peradeniya, Sri Lanka, 10-11 July 2019

A delegation comprising Prof G.B.B. Herath (Dean/Engineering), Dr K.B.S.N. Jinadasa (Director/International Affairs Office), Dr A.C. Ratnaweera (Head/Department of Mechanical Engineering), Dr B.G.L.T. Samaranyake (Senior Lecturer/Department of Electrical and Electronic Engineering), Dr D. Elkaduwe (Senior Lecturer/Department of Computer Engineering) and Dr K.K. Wijesundara (Senior Lecturer/Department of Civil Engineering) visited to explore ways of research collaboration and academic



exchange of staff and students between IITM and UOP. During the visit, the delegation had a meeting with Dean IAR, NPTEL and visited IITM Research Park.

Nagaoka University of Technology, Japan, 12 July 2019

Prof. M. Okazaki, Prof. Miyashita and Prof. Taura of NUT had a meeting with Dean IAR during their visit to IITM.

**University of Moratuwa, Sri Lanka, 15 July 2019**

A delegation from University of Moratuwa comprising Dr. Nuwan Dayananda, Head Electronics and Telecom Engineering, Dr. Thilini Ariyadasa, Senior Lecturer - Chemical and Process Engineering, Dr. Charith Chithraranjan, Senior Lecturer, Computer Science



and Engineering, and Ms. Yashodara Karunarathne AR, External Affairs and Publicity, visited to explore potential areas of collaboration.

University of Calgary, Canada, 23 July 2019

Dr. Janaka Ruwanpura accompanied by Dr. Gopal Achari - Associate Dean of Graduate Studies in the Schulich School of Engineering visited the institute. The purpose of their visit was to initiate collaboration at IIT Madras.

University of College London, UK, 25 July 2019

Dr Amit Khandelwal, Vice-Provost (International) | Global Engagement Office (GEO) and Senior Partnership Manager (South Asia) visited IITM and had a meeting with the Faculty of Built Environment, Healthcare Innovation, Cancer Tissue Bio Bank, AI and Innovation Centres.

Counsellor (Economic and Commercial), Embassy of Finland, 26 July 2019

Mr. Mikko Pötsönen, Counsellor (Economic and Commercial), Embassy of Finland visited IITM and had a meeting with Dean IAR for discussions.

John Hopkins University, Baltimore, 30 July 2019

Dr Prasanna Santhanam, a well-known doctor with John Hopkins University in Baltimore, visited IITM to explore possibilities to associate with IITM faculty, as co-author for his research in Biomedical Engineering topics, especially neural networking-AI, thermal imaging of thyroid, etc. Dr. Prasanna has been working with Canadian and European universities. During the visit, Dr. Prasanna had meetings with the faculty of Applied Mechanics and Biotechnology.

Macquarie University, Australia visited on 1 August 2019

A delegation from Macquarie University, Australia comprising Prof. Sakkie Pretorius, Deputy Vice Chancellor Research, Dr. Kate Roth, Deputy Director, Higher Degree Research Partnerships and Scholarships, Dr. Vito Millaco, Associate Dean, Higher



Degree Research, Macquarie Business School and Mr. Abizer Merchant, Director India & Sri Lanka, Macquarie International visited IITM to explore collaboration possibilities between both the institutes.

University of Technology Sydney, 4 August 2019

Dr. Farookh Khadeer Hussain, Associate Professor from University of Technology, visited IITM and interacted with the faculty of the Department of Computer Science.

University of Melbourne, Australia, 20 August 2019

Professor Mark Cassidy, Dean of the Melbourne School of Engineering, and Dr Meenakshi Arora, Senior Lecturer in Environmental Engineering and Assistant Dean International-India at The University of Melbourne, visited IITM. During the visit, they had a meeting with the heads of departments (HoDs) and key people at IITM to discuss existing collaboration and a joint doctoral programme (JDP).

German Research Foundation (Deutsche Forschungsgemeinschaft, DFG), 26 August 2019

Prof. Holger Braunschweig from Universität Würzburg, Germany accompanied by DFG delegation visited IITM. A talk was delivered by Prof. Dr. Holger Braunschweig, Head and Chair of Inorganic Chemistry at the University of Würzburg and holder of Germany's most prestigious academic prize, the Leibniz Prize.

RMIT, Australia, 29 August 2019

Prof Raj Das from RMIT visited IITM to discuss about an MoU and joint student guidance.

KTH Sweden, 5 September 2019

Ms. Zofia Laine, International Coordinator, had discussions with the Office of Global Engagement staff.

RWTH Aachen, Germany, 18 September 2019

A talk by Prof. Axel Sowa from RWTH Aachen was organised for the IITM students and faculty on the

topic of New Crafts - A Challenge for Architectural Theory and Practice.



INESTEC, Porto Workshop was held on 23-24 September 2019 at IITM.

Arizona State University, USA, 26 September 2019

A delegation from Arizona State University comprising Prof. Raghu Santanam, Prof. Arunachala Mada Kannan and Mr. Deepraj Ghataraj held talks with the faculty.

University of Leeds, 27 September 2019

A delegation comprising of Prof. Hai-Sui Yu, Prof. Muhammed Basheer, Dr. Samit Chakrabarty, Prof. Linda McGowan, Dr Bhoopesh Mishra, and Mr. Martin Maule visited IITM and signed the renewal MoU. Talks by Dr. Samit Chakrabarty, Prof. Linda McGowan and Dr Bhoopesh Mishra were arranged during the visit.

Ngee Ann Polytechnic, Singapore, 27 September 2019

Ms. Serene Koh, Director, International Office, Ms. Peck Hong Eng, Director, School of Design and Environment, Ms. Chandra Gopalan, Senior Lecturer, School of Business and Accountancy, visited IITM and discussed various activities with Prof. Mahesh Panchagnula, Dean IAR and international staff.

Michigan State University, 4 October 2019

Prof. B. Shankar visited IITM and had discussions with Prof. Mahesh Panchagnula, Dean IAR and International office staff.

Swinburne University, Australia, 17 October 2019

Prof Scott Thompson-Whiteside, Pro Vice-Chancellor for Faculty of Health, Arts and Design, Associate Professor Georgina Willets (Nursing Director) and Prof Sivanes Phillipson, Associate Dean International, Faculty of Health, Arts and Design visited IITM.

National Formosa University, Taiwan, 18-19 October 2019

Prof. Shou-Yin (Ian) Yang, with Ms. Peggy visited IITM



to discuss industrial-academic cooperation between IITM and NFU.

Visit by Finnish delegation, 5 November 2019

Ministerial and academic delegation comprising Mr. Pekka Haavisto, Minister for Foreign Affairs of Finland, Mr. Erik af Hällström, Embassy of Finland, Ms. Miia Rainne, Diplomatic Adviser to the Minister for Foreign Affairs, Ms. Nina Vaskunlahti, Under Secretary of State for External Economic Relations, Ministry for Foreign Affairs, Ms. Ritva Koukku-Ronde, Ambassador-Designate, Ministry for Foreign Affairs, Mr. Mika Tirronen, Counsellor, Embassy of Finland, New Delhi, Mr. Jukka Holappa, Commercial Counsellor, Embassy of Finland, New Delhi, Ms. Mari Walls, President, University of Tampere, Ms. Taru Pilvi, Director, Innovations, University of Tampere, Mr. Pauli Kuosmanen, Director, University of Tampere, and Mr. Sasu Tarkoma, Professor, Director, University of Helsinki visited IITM to discuss specific areas of joint research.

A delegation comprising officials from University of Helsinki and Tampere University led by Finland Foreign Minister Mr Pekka Haavisto held talks with IITM researchers to discuss on specific areas for joint research, and student and scholar mobility and exchange.

North Dakota University, USA, 11 November 2019

Prof Vamegh Rasouli from North Dakota University, USA visited IITM and had a meeting with Prof. Mahesh Panchagnula, Dean IAR, and IITM faculty.

Thales, France, 14 November 2019

A delegation from Thales, ESPCI, Lab-STICC, IEMN and IMS visited IITM to finalise collaboration activities.

Norway Embassy, 18 November 2019

A delegation from Royal Norwegian Embassy comprising H.E. Mr. Hans Jacob Frydenlund, Ambassador, accompanied by Mrs. Gina Lund - Special Advisor, Ministry of Education & Research and Dr. Maan Singh Sidhu - Counsellor, Science

and Technology, visited IITM to know more about IIT Madras and identify areas of common interest between the visiting delegation and IIT Madras.

University of Technology Sydney, Australia, 18-19 November 2019

Kirstein Murray (Director of UTS FEIT International), Dr. Farookh Khadeer Hussain and Dr Nabin Sharma visited IITM and had a meeting with Dean IAR and the faculty of Computer Science and Engineering.

University of Passau, Germany, 19 November 2019

Prof. Oliver Entrop, Professor of Finance, University of Passau, Germany visited IITM as a part of the DAAD programme, A New Passage to India, between University of Passau and IIT Madras.

Curtin University, 19 November 2019

A delegation comprising Prof. Seth Kunin, Deputy Vice Chancellor International, Prof. Kate Trinajstic, Dean Research, Faculty of Science and Engineering and Prof. Abhijit Mukherjee, Dean International South Asia



visited IITM. The purpose of the visit was to review of the progress of partnership, plan the priorities for the next year, and sign the MoU.

Universiti Technology Petronas, Malaysia, 20 November 2019

A delegation comprising Professor Dr Mohamed Ibrahim bin Abdul Mutalib, Vice Chancellor, Mr Zaimizi bin Hamdani, Director Strategic Alliance Office, Associate Prof Dr Vijanth Sagayan Asirvadam, Director, Institute of Autonomous System (for Autonomous Facilities) and Raja Moha Haekal Bin Raja Jamaludin, Executive, Project Management Office visited IITM for the signing of an MoU.

Deakin University, Australia, 21 November 2019

Professor Aaron Russell, Pro Vice-Chancellor, Researcher Development visited IITM and had a meeting with Dean IAR and Global Engagement. The discussions were regarding the next steps on Deakin-

IIT Madras partnership and Centre of Excellence.

University of Manchester, UK, 22 November 2019

A delegation from the University of Manchester led by Vice-President Martin Schroder, Professor Stephen Flint, Associate Vice-President International, and Prof. Christopher Hardacre representing Chemistry, Energy, Engineering, Materials and Life Sciences visited IITM to discuss strengthening and expanding of future collaborations in research and other areas of potential such as Dual-award Ph.D. programmes and Shared Master's provision, thus, deepening existing valuable partnerships.

Auckland University of Technology, New Zealand, 25 November 2019

A delegation from Auckland University of Technology (AUT), New Zealand visited IITM comprising Dr. Rosanne Ellis, Associate Pro Vice Chancellor Research Engagement, Lester Khoo, Group Director, AUT International, and Dr. Ashwin Polishetty, Faculty of Design and Creative Technologies, visited IITM to discuss strategic research collaboration between IITM and AUT. The team from AUT also visited the Mechanical Engineering Department and met the HoD to discuss research collaborations in specific areas.

University of New Brunswick, UK, 29 November 2019

A delegation of Dr. Paul Mazerolle, President and Vice-Chancellor, Dr. John Kershaw, Assistant Vice-President Academic (Partnerships), Dr. Dharendra Shukla, Chair - J. Herbert Smith Centre for Technology Management and Entrepreneurship, and Mr. David Andrews, Coordinator Global Academic Programs visited the institute. This was the first visit of the University of New Brunswick's President to develop a new India initiative.

KTH Sweden, 4 December 2019

A delegation comprising Prof. Rajeev Thottappillil and Ms. Alphonsa L. visited IITM to discuss about the partnership between IITM and KTH.

US Consulate, 5 December 2019

A delegation from the US consulate comprising Christine Saclarides, Spencer Nelson, Ema Turanovicova, Michele Giovia, Juan Clar, Laura McAdams, Collin Neal, Damien Vrignon, Yanique Campbell and Ashlie Menard visited IITM and had a meeting with Dean IAR. They participated in a panel discussion on Ethical Considerations in Technological Development and visited the IITM Research Park.

EU delegation, 5 December 2019

A delegation of European Research and Innovation officials visited IITM to present bilateral and

multilateral funding schemes with Government of India as well as fellowship programmes so that more researchers could take part in the EU-India research programmes. The delegation (17 visitors in total) comprised the Science, Technology and Innovation counsellors, attachés and directors of the institutes from European countries, headed by Ms. Tania Friederichs, Head of Research and Innovation, EU Delegation to India.

The purpose of the visit was to learn about IITM initiatives in academic, research and innovation, and a possible cooperation with Europe, both at EU level and with the countries of the participating delegates. The presentations by the delegates provided information about various cooperation and funding



opportunities for collaborative research/innovation as well as mobility/skill development schemes in the EU research and innovation programme, Horizon 2020 and Start-up Europe-India Network scheme.

Georgia Institute of Technology, USA, 13 December 2019

Vice Provost Prof. Yves Berthelot and Prof. Sivakumar from Georgia Tech, USA visited IITM. The purpose of their visit was to get a better understanding of IITM and explore possible actions of mutual interest. During the visit, the delegates had meetings with the faculty of Electrical Engineering and Computer Science.

Swinburne University, Australia, 17 December 2019

A delegation from Swinburne University, Australia comprising Prof. Ajay Kapoor, Pro Vice-Chancellor (Research - Sarawak), Prof. Gavin Lambert, Director, Iverson Health Innovation Research Institute, and Prof Simon Moulton, Faculty of Science, Engineering & Technology visited IITM. They had discussions with the faculty of Mechanical Engineering.

Curtin University, Australia, 18 December 2019

Prof. Piyush Sharma from Curtin University visited IITM for discussions regarding a

JDP with Dr. Vijaylakshmi and Dr. Arshinder Kaur from Department of Management Studies, Dr. Sachin Gunthe, Faculty Adviser, Global Engagement and Dr. Jitendra Sangwai from Department Ocean Engineering.

OBREAL, EU consortium, 18 December 2019

Dr. Nicolás Patrici, Global Observatory, Universitat de Barcelona OBREAL visited IITM to discuss the general agenda and have a formal presentation of the projects and observatory. Dr. Nicolas Patrici also had a meeting with Prof. Prathap Haridoss to discuss potential NTPPEL cooperation with other regions of the world.

Grenoble INP, France, 20 January 2020

A delegation from Grenoble INP, France comprising Prof Gulgun Alpan and Prof Eric Blanco from the School of Industrial Engineering, and Prof. Pierre Lemaître-Auger, Vice-President of International Relations visited IITM to know more about the institute and discuss possible future collaborations.

Norway Embassy, 21 January 2020

Mrs. Camilla Dannevig - Counsellor Cooperation and Lalitha Kumar, Secretary to Ambassador, Royal Norwegian Embassy visited IITM, had a meeting with the International office, and visited IITM Research Park.

University of Sussex, 29 January 2020, UK

Prof. Natalia Beloff (research into big data, block chain and E-business) and Mr Leo Cutting, Senior International Officer for Central and South Asia at the University of Sussex visited IITM during which they had a meeting with the faculty to explore opportunities to collaborate. The delegates interacted with the faculty of the Departments of Management Studies, Electrical Engineering, and Computer Science and Engineering. Dr. Beloff also delivered a talk, Jobs of the Future: Emerging Trends in AI.

ECAM, France, 31 January 2020

Prof. Thierry Bails, Lecturer-Researcher and Ms. Caroline Hanras, Director, International Relations, visited IITM and had discussions with Global Engagement office regarding student mobility. A general talk was also organised for the students.

Lublin University of Technology, Poland, 4 February 2020

A delegation from Lublin University of Technology, Poland visited IITM to discuss possible collaboration with IITM. The delegation comprised Prof. Grzegorz Litak, Ph.D., D. Sc. (Eng.), Prof. Piotr Wolszczak, Ph.D. (Eng.), Mrs Beata Kijak-Mitura, MSc - from International Relations Office, Lublin University of Technology, and

Dr. Krzysztof Kucab, Ph.D. from University of Rzeszów.

Australian Consulate, 4 February 2020

The delegation from Australian Consulate comprising Ms. Catherine Gallagher, Senior Trade & Investment Commissioner and Minister Commercial, Munish Sharma, Trade Commissioner, and Priyanka Vaidyanath, Education Lead, South Asia visited IITM for discussions.

Nagoya University, 5 February 2020

Prof. Yukio Ishida, Institute of International Education and Exchange and Prof. Emmanuel Leleito visited IITM and had a meeting with Dean IAR and later delivered a talk at MDS hosted by Prof. Seshadri Shekar.

Norwegian Minister, 5 February 2020

Director General Ms Anne Line Wold and Director Joakim Bakke, both from the Ministry of Education and Research, Norway Ambassador H.E. Mr. Hans Jacob Frydenlund, Ms. Berit Kjeldstad, Vice President, Norwegian University of Science and Technology, and Dr. Maan Singh Sidhu had a meeting with IITM Director for possible collaboration between Norwegian institutes and IITM.

University of Tours, France, 11 February 2020

A delegation comprising Mr Christophe Demazières, Director of the Planning and Architecture Department, Polytech Tour and member of the laboratory CITERES and Mr Germain Rousseau, Project Officer at the International Direction, University of Tours visited IITM for the signing of MoU.

University of Melbourne, Australia, 11 February 2020

Professor Anish Nagpal is the Assistant Dean (Graduate Research) at the Faculty of Business and Economics, University of Melbourne, Australia. He visited DoMS to initiate collaboration and introduce a JDP to faculty and students.

University of Waikato, New Zealand, 12 February 2020

Dr Trevor Drage, Associate Dean, Global Engagement and Partnerships, University of Waikato, New Zealand met Dean IAR for discussions about potential collaborations.

University of Guelph, Canada, 13 February 2020

Dr. Gwen Chapman, Dean, College of Social and Applied Human Sciences and Dr. Sharada Srinivasan, Associate Professor, Sociology and Anthropology Department and a Canada Research Chair in Gender, Justice and Development, University of Guelph, Canada visited IITM. They had a meeting with the faculty members of

Humanities and Social Sciences Department.

IMT Atlantique, France, 13 February 2020

Prof. Yann Busnel, Head of the Department of Network Systems, Cyber Security and Digital Law (SCRD), and Stéphane Roy, Director of International Affairs visited IITM to explore avenues for developing the partnership that IMT Atlantique and IIT Madras have undertaken.

Wrocław University of Science and Technology, Poland, 14 February 2020

Prof. Andrzej Moczko Ph.D., Director, Office of International Affairs and Associate Prof. in Faculty of Civil Engineering, WUST visited IITM and had a meeting with Dean IAR, Global Engagement Office staff. They also visited IITM Research Park.

TU Graz, Austria, 21 February 2020

Dr. Wolfgang Slany from TU GRAZ, Austria visited IITM and delivered a talk on AI.

Hokkaido University, Japan, 22 February 2020

A delegation from Hokkaido University, Japan comprising Prof. Koichi Sasaki, Prof. Masahiro Todoh and Prof. Ram Avatar visited IITM, during which meetings with various departments were arranged.

Major Activities, Workshops and Events

GRIESHMA (Global Research Internships in Engineering, Science, Humanities and Management)

The **GRIESHMA** programme was initiated by Prof. Mahesh Panchagnula, Dean IAR, in 2019 for the students from SAARC countries to take up internships at IITM during their summer break. This is a fully funded internship programme, as the students are given a monthly stipend and their round trip airfare is reimbursed. This programme is open to all students from the SAARC region throughout the year. This year, the programme is being extended to all countries with which IITM is partnering with.

Outline of GRIESHMA

- This international summer school aims to expose participants to cutting-edge research facilities, Research Park, workshop, laboratories and academic environment of IIT Madras.
- It provides a platform for intensifying their research ability to take up research as career.
- The students are provided with a stipend for two months.
- The first phase of GRIESHMA (July-September 2019) hosted a total of 21 students from six countries.

Water, Green Infrastructure and Urban Resilience



Workshop, 14 May-19 July 2019

- Chennai Urban Resilience Program 2019 is a unique multi-institutional, multi-disciplinary collaboration between IIT Madras, the University of British Columbia, Yale-NUS, and Cambridge University in partnership with the City of Chennai.
- It brings together 26 students from four institutions to work on projects for the city related to urban resilience, water and green infrastructure.



IIT Madras and US universities' joint workshops

Joint workshops were organised at Michigan State University, Ohio State University and Purdue University from 6-14 May 2019. A delegation from IITM comprising IITM faculty headed by Dean IAR participated in the workshops.

Virtual Thematic Workshop in Transportation Engineering – Michigan State University and IITM, 26 August 2019

A virtual thematic workshop was organised at IITM between the faculty of Civil Engineering of MSU and IITM. The workshop was attended by the research scholars at IITM. Prof. Lelitha Devi and Prof. Bhargava Rama Chilukuri from IITM joined the workshop and Prof. Zeenat Kotval-Karamchandani, Prof. Teresa Qu, Dr Peter Savolainen and Prof. Mark Wilson from MSU joined the workshop.



Talk on International JDP/JSP/Exchange Opportunities, 25 July 2019

The Career Development Cell (CDC) Research along with the Office of Global Engagement organised an awareness session for international Joint Degree Programmes/Joint Supervision Programme/Exchange programmes offered by IIT Madras. In this session, representatives from the Office of Global Engagement presented various international opportunities available for scholars of IIT Madras.

MIELES workshop was held on 15-16 April 2019 in Berlin hosted by TU Berlin.

EQUAMBI meetings were held on 25-26 April 2019 at IITM, on 10-11 June at Stockholm, Sweden, and on 13-14 June at Valencia, Spain.

Heritage meeting was held at IST Portugal on 28-29 May. A visit to the University of Porto, Portugal by IITM International office staff was on 30-31 May 2019.

Shibaura Institute of Technology, Japan—The Engineering English Programme at IITM, 4-17 August 2019

Fifteen students from Shibaura Institute of Technology, Japan visited IIT Madras for two weeks. The students visited a few department labs to have an insight into technical education and research facilities at IITM.





student representative addressed the students and answered a few queries.

International Day

The 8th Edition of International Day, 31 October 2019

- The day marked several fun and cultural events for international students at IITM with more than 80 students from various countries such as Germany, France, Portugal, Spain, Japan, Indonesia, Bangladesh, Ethiopia and Madagascar in attendance.
- The celebrations aimed at introducing a vast array of

International students' meet, 8 August 2019

The Office of Global Engagement organised a formal meeting on 8 August 2019 with all the international students for the Fall semester 2019. More than 70 students from 19 different countries attended the meet, which was addressed by Director Prof. Bhaskar Ramamurthi and Dean IAR, Prof. Mahesh Panchagnula. The meeting was followed by a talk on cross-cultural sensitisation by Mr. Shiva Subramaniam.



Awareness programmes for IITM students on international opportunities



subjects on global cultures, cuisines and art forms to Indian and foreign students in tandem.

- The activities of the day were broadly divided into two—the first half showcased the native culinary dishes of the foreign students, while the second half had cultural events organised by our exchange students.

Visit to ASEAN countries for promoting ASEAN Ph.D. Fellowship launched by MHRD

- The Office of Global Engagement along with the

Awareness programmes are organised frequently for IITM students to update them about various study abroad programmes and international opportunities offered by IITM partner universities. An outbound



Professors, visited ASEAN countries such as Brunei, Malaysia, Vietnam and Myanmar to promote Ph.D. Fellowship programme.

- Launched under the purview of MHRD, GoI, IITM has so far received more than 10% of the total applications.

DIES Dialogue

Internationalisation: Strategies, Implementation and Structures. Chances and Challenges for Indian Universities, 10-11 October 2019

- The programme, Dialogue on Innovative Higher Education Strategies (DIES) jointly coordinated by the German Academic Exchange Service (DAAD) and the German Rectors' Conference (HRK) aims at improving the institutional higher education management so as to contribute to stronger and more international universities in developing countries.
- This seminar focused on the implications of internationalisation of higher education at Indian universities.
- The methods used for this seminar included presentations by experts, discussions of good practices, and interactive hands-on workshops with group exercises.
- Participants were given a chance to share their experiences, learn from good practices, exchange thoughts on case samples, as well as widen their



network among institutions.

- It provided the home universities a deeper understanding of their weaknesses and strengths with regard to internationalisation, and gain ideas on how to meet the challenges of implement internationalisation strategies.
- Many universities pan-India participated in the seminar. The participants included IIT Bombay, NIT Trichy, VIT Chennai and NIT Tirupati.



University of Sydney, Australia, Strategic Partnership with IIT Madras and Joint Workshop, 18 November 2019

A workshop delegation comprising Prof. Hala Zreiqat, Dr. Claire Hiller, Dr. Shailendra Sawleshwarkar, Dr. Marnee McKay, Dr. Nathan Bachmann, Dr. Milena Simic, Dr. Yixiang Gan, Dr. Ranjeeta Menon, Dr. Michael Walsh and Dr. Yogambha Ramaswamy visited the institute on 18 November 2019 for a joint workshop.

International students' welcome meet Spring 2020, 4 February 2020

- International students were given an opportunity to voice their opinions on academic and administrative issues to help us serve them better
- 58 Students from 17 countries were present

Shibaura Institute of Technology, Tokyo, 23 February-6 March 2020

Eight students from Shibaura Institute of Technology, Japan visited IIT Madras for two weeks. The students visited a few department labs to have an insight into technical education and research facilities at IITM. They also visited Johnsons Lifts for their industrial visit and Mahabalipuram on a cultural visit. They visit IITM twice every year and this is their fourth consecutive year.

Strategic partnership and Joint Workshop between Tel Aviv University and IITM, 30-31 January 2020

The workshop delegation comprised:

- Prof. Itzhak Benenson: Faculty of Exact Sciences (Porter School of Environment and Earth Sciences,) Geosimulation and Spatial Analysis Lab
- Prof. Eyal Ben-Dor: Remote sensing of the Earth, multi and hyperspectral imaging
- Prof. Juval Portugali: Human Geography, Head of the Environmental Simulation Laboratory (ESLab) and of the Environment, Society and Planning Graduate Program
- Prof. Hadas Mamane: Faculty of Engineering Environment
- Prof. Pavel Ginzburg: Electromagnetics
- Prof. Yuval Shavitt: Internet security
- Prof. Abdussalam Azem: Faculty of Life Sciences, Dean, Biochemistry and Molecular Biology
- Prof. Adi Avni: Plant Sciences and Food Security
- Dr. Jason Friedman: Faculty of Medicine (School of Health Professions) and Sagol School of Neuroscience Physical Therapy
- Dr. Eyal Fridman: Volcani Institute Plant Sciences, Vegetable and Field Crops
- Dr. Evgeni Eltzov: Postharvest and Food Sciences
- Ms. Sharon Ziv Kafri: Office of the Vice President Event Coordinator

The workshop was organised at IITM starting off

with introductions by Dean IAR and Prof. Azem. Faculty meetings were organised at the respective departments along with a tour to the IITM Research Park. Individual meetings and discussions were continued on the second day of the workshop with a glimpse of culture with a tour to old Chennai.

IITM-RWTH Aachen University Indo-German Partnership Knowledge Capture Workshop, 17-19 February 2020

The Office of Global Engagement hosted the visit of

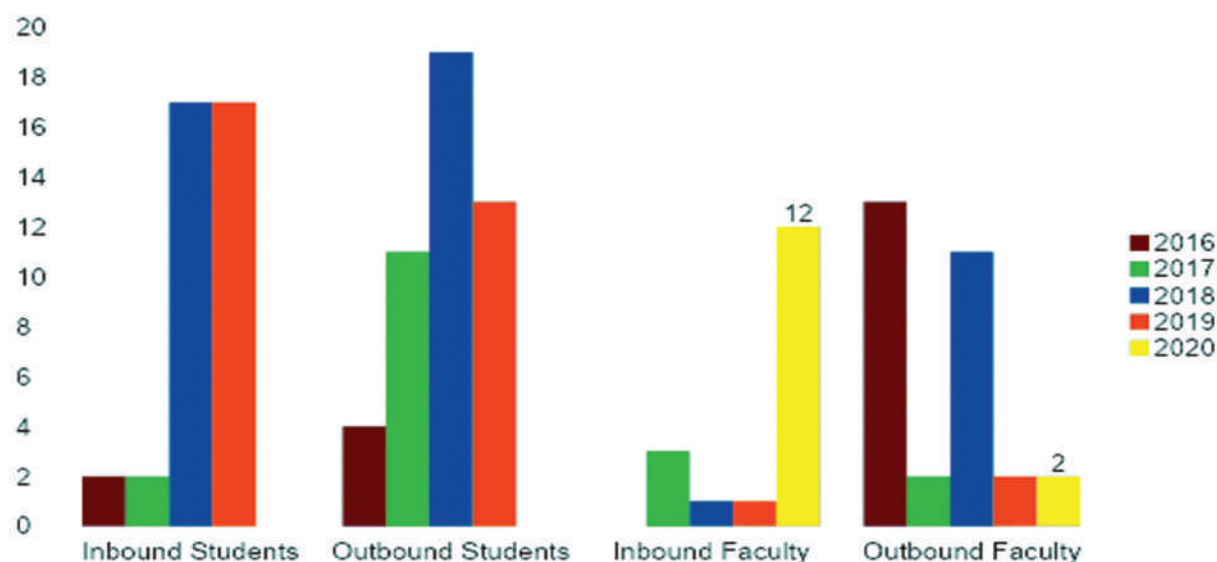
Science Delegation of RWTH Aachen University led by the Rector Prof. Dr. rer. nat. Dr. H.c. mult. Ulrich Rüdiger.

The RWTH Aachen University has conferred the prestigious RWTH Honorary Fellow Award on Prof. Bhaskar Ramamurthi, Director, IIT Madras.

During the workshop, discussions were held for the extension of the IGP project. The 10 years of partnership between RWTH and IITM were also celebrated, which commenced with a gala dinner.



RWTH Aachen - IITM (Indo-German programme) Mobility details of the RWTH - IITM Project

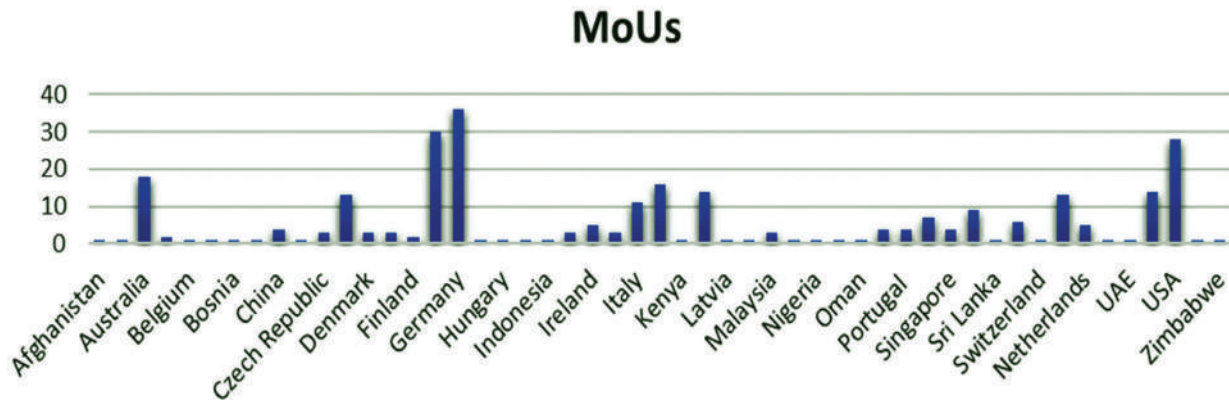


Year	2020	2019	2018	2017	2016
Inbound Students	0	17	17	2	2
Outbound Students	0	13	19	11	4
Outbound Faculty	2	2	11	2	13
Inbound Faculty	12	1	1	3	0

MoUs/Agreements signed with foreign universities

- Newcastle University, UK
- Heidelberg University, Germany (Joint Supervision Agreement)
- INSA Strasbourg, France
- A* Star, Singapore
- University of Porto, Portugal
- ECAM Lyon School of Engineering, France (Student Exchange Agreement)
- Australian National University, Australia (Joint Doctoral Agreement)
- TU Bergakademie Freiberg, Germany
- University of Pavia, Italy
- University of Cantabria, Spain
- The University of British Columbia, Canada (Student Exchange Agreement)
- University of Barcelona, Spain
- IOWA State University, USA
- Tel Aviv University, Israel (student exchange agreement)
- Montanuniversitat Leoben, Austria
- Thales-IITM- IMT Atlantique (Studentship agreement)
- IITM-FEUP Faculty of Engineering of the University of Porto - INESC TEC Institute for Systems and Computer Engineering Portugal
- INESC TEC Institute for Systems and Computer Engineering, Portugal
- Universidade Federal de Ouro Preto, Brazil
- Fondazione Istituto Italiano di Tecnologia, Italy
- Macquarie University, Australia

IITM partners with 240+ universities worldwide



List of Joint Doctoral Programmes

Australia

- Australian National University
- Deakin University
- Queensland University of Technology
- Curtin University
- University of Technology Sydney
- The University of Melbourne
- Swinburne University

Finland

- Aalto University

France

- Ecole Centrale De Nantes
- University of Bordeaux

Germany

- RWTH Aachen
- University of Duisburg
- University of Passau

Singapore

- Nanyang Technical University
- National University of Singapore

Taiwan

- National Chiao Tung University
- National Tsing Hua University

USA

- Michigan State University

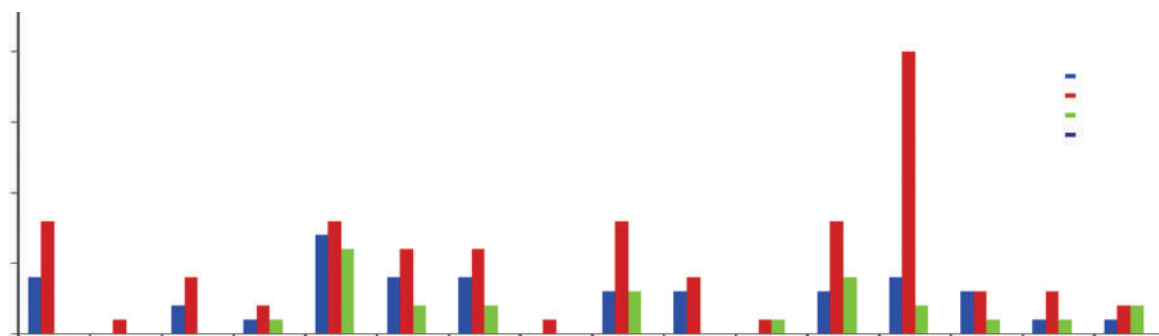
List of Joint Supervision Programmes

- Kungl Tekniska Hogskolan (KTH), Sweden
- Heidelberg University, Germany
- University of Sydney, Australia
- Deakin University, Australia
- The University of Melbourne, Australia
- Purdue University, USA

List of Joint Masters Programmes:

- National Tsing Hua University, Taiwan
- University of Passau, Germany

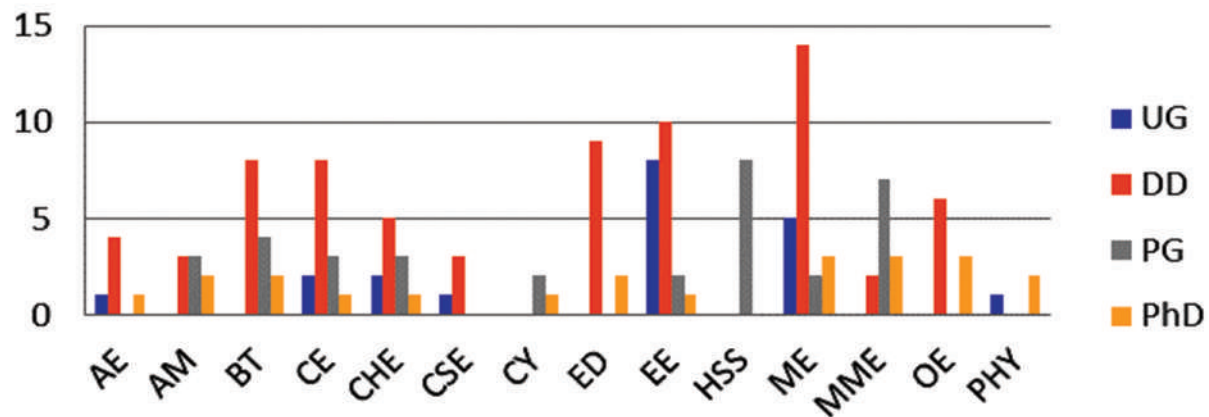
Inbound Students' Data



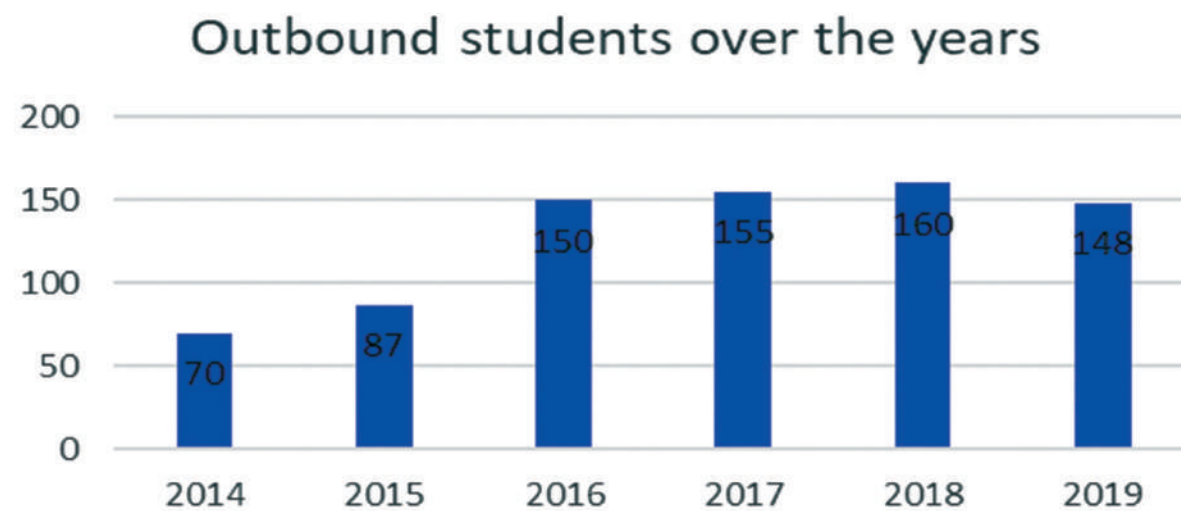
Total number of international students over the years



Outbound students' data



Outbound students over the years

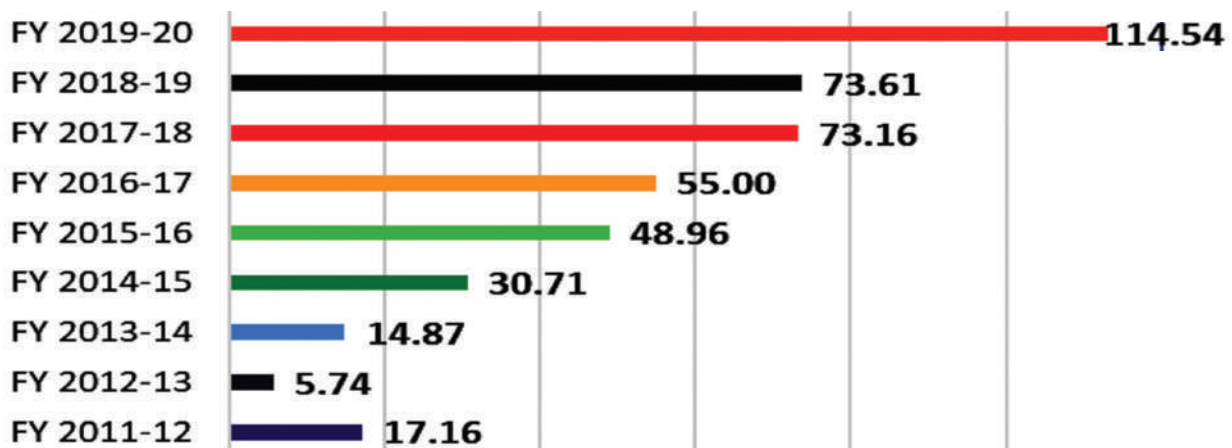


Report of the Office of Alumni and Corporate Relations

The Office of A&CR and Office of Institutional Advancement raised Rs.114 crore during the FY2019-20 for various projects of the institute—the highest ever such funds raised so far, thanks to the generous alumni the world over, large-hearted and socially-conscious corporates, and other well-wishers of the institution. The Office of Institutional Advancement was formerly known as the Development Office.

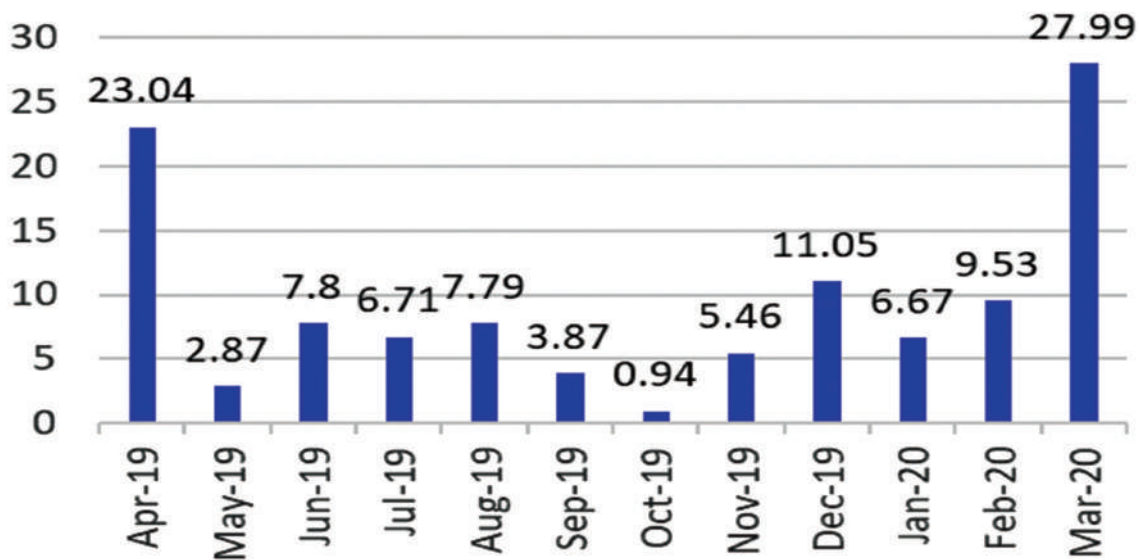
Statistics of Funds Received - FY 2019-20

Financial year-wise contribution amount (in crore)

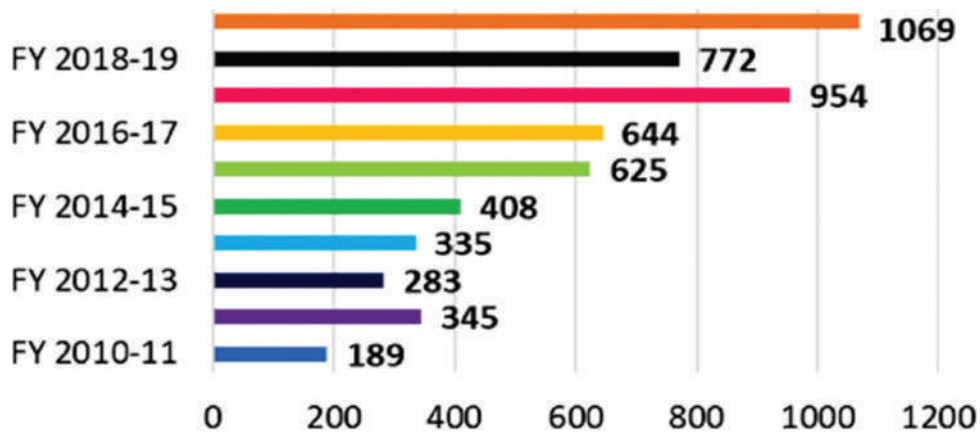


As we see below, we started the decade with about 200 donors giving to IIT Madras (in 2010-11) and closed the decade with over 1,000 alumni giving back in 2019-20. Over half of these alumni are new and first-time donors, which is an encouraging sign.

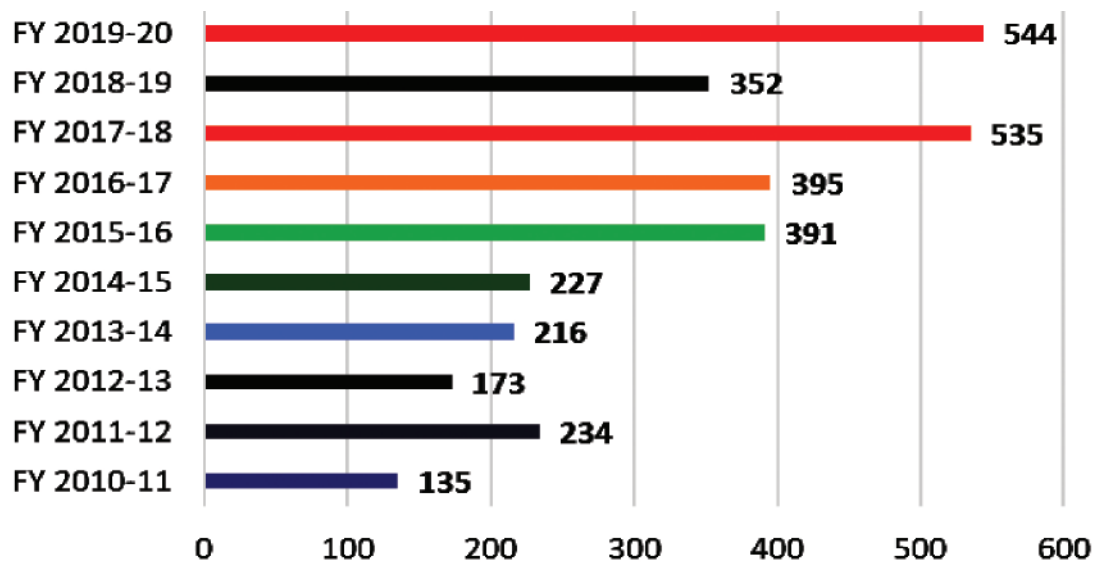
Month-wise funds received (amount in crore of Rs.)



Number of annual donors (2011-20)



Number of new donors annually (2011-20)



We are immensely thankful to all alumni and IITM well-wishers, for the support towards achieving these goals. Their generosity will have a positive impact on IITM's future and its contribution to society.

Major donations

Corporate Social Responsibility

IIT Madras is working with the industry to help fulfil their corporate social responsibility (CSR) obligations in an impactful fashion. There are four ways that IITM is working with corporates on CSR.

- Support for IITM incubators
- Support for socially relevant projects lead by IITM faculty
- Designing R&D programmes with industry
- Support through scholarships for economically challenged IITM students

S.N.	Donors	Amount (in crore of Rs.)
1	Chennai Petroleum Corporation Limited	9.63
2	Robert Bosch Engineering and Business Solutions Private Limited	5
3	HT Parekh Foundation	2.82
4	Bill Desk	2.5
5	IndoMIM Private Limited	2.5
6	American Express Services India	2.28
7	Capgemini Technology Services India Limited	1.36
8	Tata Elxsi	1
9	City Union Bank Limited, Sterlite Technologies Limited, J. Mitra (each)	1
10	Verizon	0.88

Non CSR

S.No	Donors	Amount (in crore of Rs.)
1	Mitra Medical Services LLP	1.29
2	J. Mitra & Company Private Limited	0.78
3	Engineers India Limited	0.63
4	Applied Materials India Private Limited	0.31

Select major donors

S.No	Donors (S/Shri)	Batch Details	Amount (in crore of Rs.)
1	Kris Gopalakrishnan	1979/MT/CS and 1977/M.Sc/PH	7.546
2	Prem Watsa	1971/BT/CH	5.2
3	T.T. Jagannathan	1970/BT/ME	5
4	Pratap Subrahmanyam	1985/BT/ME	3.9
5	Gururaj "Desh" Deshpande	1973/BT/EE	3.4
6	Krishna S. Kolluri	1986/BT/ME	1.3
7	Harcharan "Harry" Singh	1970/BT/MT	1.002
8	V.M. Thomas	1973/BT/ME	1
9	Prakash Arunachalam	Well-wisher	1.777
10	S. Sridhar	Well-wisher	1
11	N. Lakshminarayanan	Well-wisher	1
12	Krishna Mahesh	Well-wisher	1

Batch reunions

A reunion is a much-awaited event by the alumni fraternity of IIT Madras. This event is a homecoming for several alumni and the alumni pledge for a pivotal cause benefitting the growth and development of IIT Madras.

S.No	Donors	Batch Details	Amount (in crore of Rs.)
1	Malladi Durga Prasad	1993/BT/ME	0.45
2	Santhanam B.	1978/BT/CE	0.35
3	Sanjeev Kumar	1993/BT/CS	0.33

4	Krishnakumar Doraiswami	1983/BT/ME	0.18
5	Bhasker N.	1978/BT/ME	0.17
6	Srinivasan Raghunathan	1984/BT/EE	0.16
7	Sunil Dutt B.	1977/BT/ME	0.15
8	Rohini S. Chakravarthy	1993/BT/EC	0.13
9	Shivashankar T.S.	1994/BT/MT	0.1
10	Shrikumar Suryanarayanan	1982/BT/CH	0.1

Distinguished Alumni Awards

The Distinguished Alumnus Award (DAA) is the highest award given to its alumni by IIT Madras in recognition of their achievements of exceptional merit and excellence. The DAAs are awarded for outstanding accomplishments in the areas of entrepreneurship, leadership and management, academia, social and technological innovation, and service to humanity at large. The awards are presented annually by the institute since 1996.

Distinguished Alumni Awards for 2020



Shri Chandran Ratnaswami
1970/B.Tech./CE

Chief Executive Officer and
Director
Fairfax India Holdings, Canada



Shri Paresh Chari
1973/M.Tech./MT

Chairman of the Board and CEO (Retired)
Duraline Corporation, United States



Dr. Mridula Nair
1975/M.Sc./CY

Research Fellow, Distinguished Inventor &
Product Leader
Eastman Kodak Company, United States



Shri Mahesh Wagle
1976/B.Tech./ME

Founder & Director
Cybermetik Technologies Pvt Ltd, India



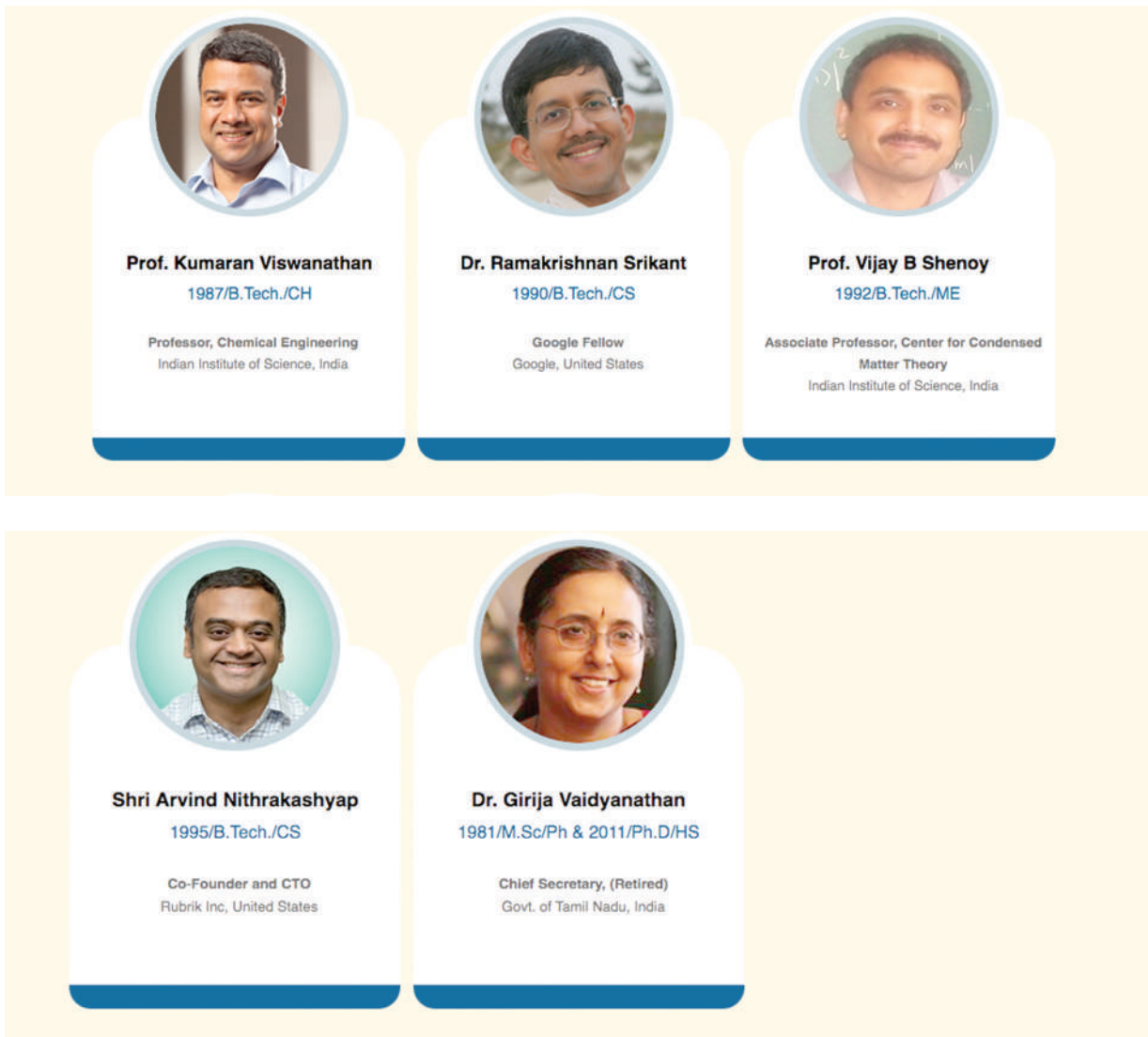
Shri Rajkumar Duraiswamy
1982/B.Tech./EE

Chairman & Managing Director
Bharat Petroleum Corporation Ltd., India



**Prof. Sivaramakrishnan
Balachandar**
1983/B.Tech./ME

William F. Powers Professor
University of Florida, United States



60th Institute Day

- The Institute Day was celebrated on 22 April 2019.
- Shri V. Shankar, Founder, CAMS Private Limited Chennai (Distinguished Alumnus of IITM) was the Chief Guest.
- Eight out of the 12 DAAs of 2019 received their awards on the Institute Day.
- Sixty-six alumni-sponsored Institute Day Prizes were also distributed to the students.



Inauguration of the Centre for Computational Brain Research

- The new dedicated Office Centre of Computational Brain Research, IIT Madras, was inaugurated on 20 May 2019.
- Shri Kris Gopalakrishnan inaugurated the new premises for CCBR in the presence of Prof. K. VijayRaghavan, Principal Scientific Advisor, Government of India and Prof. Bhaskar Ramamurthi, Director, IITM.



A Day @IIT Madras

- The event was held on 22 June in the IC&SR Building.
- The top rankers of JEE Advanced 2019, including Campus Kids who have cleared JEE (Advanced), were invited.
- A campus tour was held to showcase facilities and life at IIT Madras.



Diamond Jubilee celebrations at IIT Madras

- IIT Madras celebrated the Diamond Jubilee (DJ) of its foundation on 31 July 2019.
- Ms. Karin Stoll, Consul General, German Consulate, Chennai, attended the event and spoke about the relationship between IIT Madras and Germany.
- A glimpse of the DJ celebrations (IITM@60) held by alumni across the world on 13 July 2019 was feast to the eyes.
- Various cultural programmes were performed by students and alumni. Students enacted the dressing fashion at IITM over six decades.
- Many first batch alumni made their presence for the occasion as a testament to their love and affection for

their alma mater.

- Prof. Bhaskar Ramamurthi, Director, IIT Madras addressed the event and spoke about the achievements of IITM over the decades.
- The former Directors of IIT Madras, Prof. R. Natarajan and Prof. M.S. Ananth, and the current Director Prof. Bhaskar Ramamurthi were felicitated by the alumni. Prof. N.V.C. Swamy could not attend the event.
- Prof. Mahesh Panchagnula, Dean, A&CR, delivered the concluding remarks as the coordinating head of the grand DJ event.



Girija Vaidyanathan Institute Chair and K. Ganesh and Meena Ganesh Scholarship Launch, 20 August 2019

- Girija Vaidyanathan Institute Chair and K. Ganesh and Meena Ganesh Scholarship were launched on 20 August 2019.
- Shri K. Ganesh and Smt. Meena Ganesh delivered the talk on The Impact of Entrepreneurship and Start-ups.
- K. Ganesh and Meena Ganesh Scholarship winners received the certificate.
- Dr. Neelima M. Gupte, Department of Physics, is the first occupant of Girija Vaidyanathan Institute Chair.



IIT Madras-Ministry of Heavy Industries and Public Enterprises Technology Conclave

- Indian Institute of Technology Madras organised the IIT Madras-Ministry of Heavy Industries and Public Enterprises Technology Conclave and Exhibition to work towards Vision New India 2022 – Development through Technology for All on 15-16 September 2019.
- Shri Arjun Ram Meghwal, Minister of State (Heavy Industries and Public Enterprises), Government of India, inaugurated the event.
- The event brought forth thought leadership for intensifying collaboration between IIT Madras and Central Public Sector Enterprises (CPSEs) in research and CSR initiatives.

- The key objective was to explore future collaborative engagements in technology development and capacity building for the benefit of society.
 - Several Maharatna, Navaratna and Miniratna PSUs participated in the conclave.
- The exhibition showcased CSR activities of PSUs, IIT Madras Centres of Excellence, and start-ups in the social space and highlighted their conversion of technology from laboratory to the real world.



Singapore India Hackathon 2019, 28-30 September 2019

- The second edition of the Singapore India Hackathon 2019 (an initiative of Honourable Prime Minister Shri Narendra Modi) took place at IIT Madras from 28-29 September 2019.
- The hackathon was focused on three themes: good health and well-being, quality education, and affordable and clean energy.
- Singapore India Hackathon 2019 had 20 teams, and for the first time, each participating team had three students from India and three students from Singapore, thereby paving the way for exchange of culture and ideas.
- The Honourable Prime Minister of India gave away the prizes to the winning teams on 30 September 2019.



AlumNite 2019

- AlumNite 2019 was held on 29 September 2019.
- More than 400 alumni attended the event.
- Five Named Chairs were launched.
- Five Faculty Fellow Programs were launched.
- Several other awards and prizes were given to faculty and students.

The following faculty fellowship programmes and Institute Chairs were launched during AlumNite 2019:

Mindtree Faculty Fellowship programme	Anand and Venky Harinarayan Chair
Mukta Pai Faculty Fellowship programme	Sant Rajinder Singh Ji Maharaj Chair
Pandurangan Faculty Fellowship programme	Prof G. Aravamudan Chair
Prof. V. Ramamurthi Faculty Fellowship programme	Dr. D. Srinivasan Institute Chair
Nita and KG Ganapathi Faculty Fellowship programme	Institute Chair funded by Shri Kris Gopala Krishnan



Various alumni-sponsored prizes were given during the 56th Convocation

- The 56th Convocation Day was held on 30 September 2019.
- The Honourable Prime Minister of India was the Chief Guest for the day and handed over numerous awards and prizes to the 2019 Graduates.
- Various alumni-sponsored prizes were also given to students for different categories.

Richard M. Karp Chair Launch and Lecture

- Richard M. Karp Chair was launched on 15 October 2019
- The first occupant of the Chair is Prof. C. Siva Ram Murthy, Computer Science and Engineering Department, IITM
- There was an Alumni Perspective talk delivered by Dr. Prabhakar Raghavan, Senior Vice President of Engineering, Google
- Prof. Richard M. Karp also delivered a lecture on Computational Complexity in Theory and in Practice.



Winter course on Computational Brain Research, 2-10 January 2020

- The third annual winter course on Computational Brain Research was held from 2-10 January 2020.
- Around 300 participants attended the course.
- The course focused on four main areas of robust interactions between engineering and neuroscience—vision, speech/audition, natural language and reinforcement learning—and included related topics such as classical machine learning, hardware and statistical physics.



Subra Suresh Distinguished Lecture Series

- This new distinguished lecture series was made possible by a generous gift from our alumnus, Senapathy 'Kris' Gopalakrishnan, Chairman of Axilor Ventures, Bengaluru, and co-founder of Infosys.



The MoA signed on 4 January 2020 in Bangalore

- This Lecture Series will bring leading international scholars, engineers and scientists to IIT Madras on a periodic basis, to discuss key advances in scientific discoveries and technological innovation.

Alumni Chapter Meets

Mumbai-Pune Chapter Meet

- The Mumbai-Pune Chapter meet was held on 6 April 2019.
- More than 130 alumni attended the event.
- A panel discussion on Entrepreneurship Scenario in India was held in the meet.

Bengaluru chapter meet

- The Bengaluru Chapter Meet was held on 7 April 2019.
- More than 140 alumni attended the event.
- A panel discussion on Gearing up AI powered World was held along with a networking session.

Hyderabad Chapter Meet

- The Hyderabad Chapter Meet was held on 20 April 2019.
- More than 160 alumni attended the event.
- Celebrated the IIT Madras NIRF ranking



IIT Madras Alumni Meet in Germany

- An alumni meet was held in Germany on 17 August 2019.
- Around 20 alumni attended the event.

Delhi Chapter Meet

- The Delhi Chapter Meet was held on 22 February 2020.
- Around 80 alumni participated in the event.
- Dean A&CR, Prof. Mahesh Panchagnula talked about the latest developments at the institute.

Reunions

Golden Reunion, 7 September 2019

- The Batch of 1969 had their golden reunion on 7 September 2019 at IIT Madras
- Around 70 alumni attended the event along with their families



Reunion Day, 27 December 2019

- Around 350 alumni and their family attended the event.
- Batches of 1989, 1994, 1999, 2004, 2009 and 2014 had their reunion.
- Marti Mannariah Gurunath Institute Chair in Department of Chemical Engineering, IIT Madras was launched.
- On the occasion, a Distinguished Alumnus Award for 2019 was conferred to Dr. Parthasarathy Ranganathan (1994, B.Tech, (Electrical Engineering)), a Distinguished Engineer at Google.
- A Tech Expo was organised with several student teams and IIT Madras-incubated start-ups demonstrating their innovation to the alumni.
- Distinguished Alumnus Awards were announced by the Director. The awards will be presented at a later date.



Coral Reunion, 1 January 2020

- The Class of 1984 had their coral reunion on 1 January 2020.
- Around 60 alumni and their families attended the event.

Ruby Reunion, 2 January 2020

- The Class of 1979 had their ruby reunion on 2 January 2020.
- Around 65 alumni and their families attended the event.

Golden Jubilee Reunion, 27 January 2020

- The Class of 1970 had their golden reunion on 27 January 2020 at ICSR building, IIT Madras.
- Around 110 alumni and their spouses participated in the event.

Golden Jubilee Reunion, 27 January 2020

- The Class of 1970 had their golden reunion on 27 January 2020 at ICSR building, IIT Madras.
- Around 110 alumni and their spouses participated in the event.

Young Faculty Recognition Award

- The Young Faculty Recognition Award (YFRA) was sponsored by our alumnus, Dr. P. Balasubramanian [1971/ BT/AE & 1973/ MT/IM]. Seven IITM faculty members received the award on Teachers' Day function.



Dr. Mitesh M. Khapra, Assistant Professor, Computer Science and Engineering



Dr. Janakiraman V., Assistant Professor, Department of Electrical Engineering



Dr. Ananth Krishnan, Associate Professor, Department of Electrical Engineering



Dr. Ashwin Joy, Assistant Professor, Department of Physics



Dr. Kameswararao Anupindi, Assistant Professor, Department of Mechanical Engineering



Dr. Sarang Sharad Sane, Assistant Professor, Department of Mathematics



Dr. Sivaram Ambikasaran, Assistant Professor, Department of Mathematics

The Office of Alumni and Corporate Relations, IIT Madras will continue to work with alumni and corporate in taking forward vision of IIT Madras.





Central Library

The Central Library is equipped with all modern facilities and has a rich collection of information resources in the form of CD-ROMs, online databases, e-journals, e-books, e-standards, e-patents and printed material related to applied science, engineering, technology, humanities, management, social science and emerging subjects. The Central Library holds 3,94,536 items, including 2,562 current journals, catering to the information needs of 13,184 members, providing various value-added services with the help of modern information-handling tools and techniques. The major activities of the Central Library between April 2019 and March 2020 are described in this section.

8.1 Library Information Services: Statistics

Item	2018-2019	2019-2020
Collections		
Books (General)	235256	236255
Books (Gratis)	2996	6911
Books (Hindi)	450	539
Books (Project)	1509	1663
Theses	8312	8707
Book Bank	14,972	15291
Current periodicals by subscription	962	2563
Back volumes of periodicals	1,15,049	1,08,088
CD-ROMs	1510	1510
Audio/Video cassettes	448	448
e-Books	8684	12561
Total	390148	394536
Membership		
Staff	718	674

Faculty/SSO/SO/Emeritus Prof./Vis. Fac./Adj. Prof.	756	631
Students	12900	10976
Retired Faculty /Officer	103	165
Alumni members	421	433
Corporate members	42	42
Special members	0	0
IAS members	196	207
Project coordinators	56	56
Total	15192	13184
Services: Circulation		
Number of books/journals issued	63,477	56001
Number of books issued–Book Bank (GS)	2735	2362
Number of books issued–Book Bank (WS)	1716	1660
Overdue and other charges collected (₹)	1043112	941484
Photocopy charges collected (₹)	0	0
Item	2017-2018	2018-2019
Project loans to Faculty/Departments/Centres		
Books issued	718	705
Inter-library loan transactions		
Borrowed from other libraries	1	1
Loaned to other libraries	7	9
DDS/Reprint service		
Reprints received from other institutions (pages)	92	195
Reprints supplied to other institutions (pages)	23	770
Smart Cards		
Cards generated/issued	5214	5069
Expenditure in (lakhs of ₹)		
1. Purchase of books/eBooks (₹)	110	162
2. Subscriptions to journals and databases (₹)	1622.15	1797.53
Journals/databases deleted	0	10
New journals/databases added	0	8

8.2 ISO 9001:2015 Activities

The Central Library actively participated in ISO 9001:2015 activities and successfully maintained quality-based library system services and procedures. The major activities related ISO 9001:2015 are listed here.

1. An Internal Audit for ISO 9001:2015 was conducted on 3 July 2019.
2. An ISO management review meeting (QSM-I and QSM-II) was held on 20 July 2019.
3. Internal Audit for ISO 9001:2015 was conducted on 7 January 2020.

4. An ISO management review meeting (QSM) was held on 29 January 2020.

8.3 Major Initiatives

The Central Library has taken various initiatives to improve the existing infrastructure, facilities, services and procurement of bookshelves to increase the collections to provide strong and dynamic support to the academic, research, development, continuing education, and industrial interaction programmes and policies of the institute. Some of these initiatives are described in the following sections.

8.3.1 Online book recommendation system

The online book recommendation system is implemented with the help of alumni <https://books.iitm.ac.in>. The server has been integrated with ADS/LDAP authentication. The faculty members login with his/her ADS credential; they have to provide only ISBN of the book in the form. It will search the book details with Google Books API and fetch the bibliographic details. The faculty members recommend the book for purchase. The system will then send an auto-generated email to the department LAC member. The member will approve or reject the request. After the approval, the library will initiate the book procurement.

8.3.2. Online resources (e-journals, e-databases, e-books, patents and standards)

The IIT Madras is getting online journals, and databases access from 15 publishers through eShodh Sindhu MHRD consortia.

Access to the e-databases and e-journals of various publishers, including the following, were renewed: American Chemical Society, AGU, AIAA, AIP, American Mathematical Society, Blackwell, BMJ, De Gruyter, Elsevier, ICE, Indian Economy Database, IOP, ISI–Emerging Market, JSTOR, Journal Citations Report (JCR), MANEY, MathSciNet, Mendeley Institution Edition, NPG, One Petro, ORBIT Express, Oxford University Press, ProQuest: Dissertations and Theses (PQDT), PsyArticle, RSC-Gold, Sage, SIAM, Sage Research Methods Online (SRMO), SciFinder Scholar, Science (online subscription), Scopus, Taylor & Francis, Thomson Core Patents, Thomas Telford, Turnitin, UpToDate, Web of Science, Wiley, Xlpat-Novelty Checker

E-Books from AMS, Cambridge University Press, CRC, De Gruyter, Elsevier, Edward Elgar, Emerald, ICE, IOP (2018 collection), McGraw-Hill, Oxford University Press, Pearson, RSC, SAE, Wiley, World Scientific, ProQuest Ebrary and EBSCO, Morgan and Claypool eBook collection, McGraw Hill Business and HR collection, IET Digital Library (2015-19) eBooks were purchased with perpetual access rights.

The eBook subscription packages: ProQuest Academic complete subscription, EBSCO Engineering eBook collection and Knovel-Engineering Technical Reference Information.

The Brill Humanities & Social Sciences Journal Collection (228 titles) package is added and EBSCO Business Source complete up-graded to Business Source Ultimate.

8.3.3 e-ShodhSindhu Consortium

The MHRD has formed e-ShodhSindhu Consortium for Higher Education Electronic Resource merging three consortia initiatives, namely UGC-INFONET

Digital Library Consortium, NLIST and INDEST-AICTE Consortium. The main objective of the e-Shodh Sindhu: Consortia for Higher Education E-Resources is to provide access to qualitative electronic resources, including full-text, bibliographic and factual databases to academic institutions at lower rates of subscription to universities, colleges and centrally funded technical institutions in India. The IIT Madras is getting access for 15 e-resources from eShodh Sindhu for the year 2020.

8.3.4 Extended working hours on Saturday and Sundays

The working hours of the Central Library have been extended up to midnight on Saturdays and Sundays during quiz and end-semester and make-up exams for the benefit of students.

8.3.5 Systematic re-shelving of books

Two groups consisting of eight members each have been formed that devote one hour daily in the morning/afternoon in the stack areas to facilitate easy retrieval of books. The first phase of re-shelving of books has been completed, and the second phase is in progress. This initiative has produced considerable satisfaction among users.

8.3.6. Smart card facilities

The Central Library provides the smart card facility to institute students, faculty and staff members and other members (IAS and corporate members, alumni and retired employees of the institute). A dual-side retransfer smart card printer is used. The library also provides dependent cards to the dependents of the current employees of the institute.

8.3.7 Major reorganisation of library book in stacks

Back volumes were shifted from the basement to the third floor and the second floor left wing to right wing and third floor left wing to right wing to create more reading space for users. The Children's Corner Library shifted to the first floor. The order is placed for the procurement of bookshelves towards increasing the space for books and journal back volumes.

8.3.8 Scholars/Faculty profile

Central Library has set up a Scholars' profile of the faculty members of IIT Madras with an IRINS. The Indian Research Information System Management (IRINS) is a web-based service developed by the Information and Library Network (INFLIBNET) Centre in collaboration with the Central University of Punjab. <http://iitm.irins.org>

8.3.9 Remote Access off-campus e-Resources access facility

Central Library has set up a Remote Access off-campus facility server <<https://idp.iitm.ac.in>> by using the SHIBBOLETH Open Source software with INFED -

INFLIBNET Access Management Federation. The off-campus access enabled through LDAP authentication for 48 e-journals/eBooks/databases/standards electronic resources to the IITM users' community (faculty/scholars/students and staff).

8.4 Usage statistics of e-Journals and eBooks

e-Journals Usage statistics

Sl.No	Particulars	2019								
		April	May	June	July	Aug'	Sep'	Oct'	Nov'	Dec'
1	ACS Package	37712	36781	20366	21223	21343	17412	19578	18242	18247
2	AIAA (5)	293	416	360	380	438	564	401	409	374
3	AMS	244	181	239	225	289	243	174	161	101
4	CUP (S&T, HSS pkg)	2017	1686	2185	1693	1689	1400	1766	1152	1031
5	Elsevier	84433	80115	79665	65687	45443	84631	90037	82689	76891
6	Emerald	1453	1124	985	903	997	593	728	649	874
7	ICE (10)	156	134	309	203	167	212	251	211	232
8	IEEE/IEL	11289	25449	22053	26643	25840	25281	25991	11616	10423
9	IOP Package	4888	4205	3680	3994	4471	4256	4901	4822	4715
10	Nature Pub. (17)	10539	9105	8652	8857	9791	9015	11434	15540	9815
11	OSA	1233	1147	966	989	807	913	908	1086	1069
12	RSC Package	16293	8397	7155	11336	11222	10057	10994	11145	10749
13	Sage (13) & IMeche (18)	2157	2129	1771	4218	4318	1903	1924	1340	1056
14	SIAM	109	146	165	133	108	153	156	131	134
15	T&F	5901	5808	6147	6516	6896	6767	7835	6699	6409
16	Wiley (94)	28448	23052	18588	11778	10798	10568	11114	10655	9842

e-Journals Usage statistics

Sl.No	Particulars	2020			
		January	February	March	Total
1	ACS Package	21095	21660	14984	268643
2	AIAA (5)	424	457	246	4762
3	AMS	6	2	4	1869
4	CUP (S&T, HSS pkg)	1335	1089	828	17871
5	Elsevier	95093	84833	70187	939704
6	Emerald	723	762	542	10333
7	ICE (10)	174	184	153	2386
8	IEEE/IEL	24794	18512	16600	244491
9	IOP Package	5124	5069	3825	53950
10	Nature Pub. (17)	11306	12743	10303	127100
11	OSA	593	402	370	10483
12	RSC Package	11579	11328	7165	127420
13	Sage (13) & IMeche (18)	1282	1324	1019	24441
14	SIAM	175	113	84	1607
15	T&F	3689	4358	3450	70475
16	Wiley (94)	11771	13849	8133	168596

The following e-Journals access provided by e-ShodhSindhu

1	ACM Digital Library	856	742	724	915	901	1024
2	AIP	7093	7053	6725	6434	5994	5451
3	APS	4429	3024	3529	4093	4198	3516
4	ASCE	1283	1562	1328	1604	1727	1439
5	ASME	1673	1751	1433	1416	1318	1107
6	OUP	2207	1868	1675	1616	1612	1575
7	Springer	14727	13145	12293	13455	15224	12990

eBook Usage statistics

1	AIAA	4	7	25	26	8	11
2	CUP	449	341	574	361	332	197
3	Elsevier	650	677	632	513	465	821
4	Emerald	4	0	7	13	16	2
5	ICE	73	20	74	131	178	16
6	IEEE Wiley	114	187	203	131	178	206
7	IOP	43	138	189	119	200	148
8	RSC	2567	2557	2153	18	38	25
9	Springer	2567	2557	2568	5735	4259	3133
10	Wiley	3736	1023	4109	539	1207	741

The following e-Journals access provided by eShodh Sindhu (eSS) MHRD consortia

1	ACM Digital Library	1087	683	699	753	663	511
2	AIP	6445	6244	5061	5954	5782	4319
3	APS	2960	4222	4953	2170	3726	3019
4	ASCE	1617	1783	1495	1476	1472	1289
5	ASME	1438	1546	1148	1444	1545	868
6	OUP	1642	2165	1523	3946	3697	2840
7	Springer	18343	15540	12929	14799	14463	11384

eBook Usage Statistics

1	AIAA	7	7	7	9	4	11
2	CUP	304	304	418	567	450	373
3	Elsevier	659	659	529	947	1661	1008
4	Emerald	24	24	8	9	89	7
5	ICE	13	13	9	52	38	3
6	IEEE Wiley	190	146	86	335	195	65
7	IOP	188	188	176	54	63	34
8	RSC	16	20	39	88	74	32
9	Springer	5835	5675	3579	4316	2941	8957
10	Wiley	799	1180	363	2704	3513	2150

8.5 Retirement of staff members

Mr. D. Madheswaran, Junior Superintendent, retired in June 2019.

8.6 Recruitment/Promotion of staff members

Dr. M. Muthu was promoted as Library Superintendent on 8 November 2019

Eight library trainees were recruited for a period of two years.

8.7 Automation

The e-books have been cataloged in the library WEBOPAC (<http://webopac.iitm.ac.in/>.)

The new library website has been designed.

Data relating to 2,430 patrons' (students, faculty and staff members, alumni, IAS members) records were added to the Virtua-VTLS database.

8.8. Faculty and Their Activities

Faculty Member	Qualifications	Major Areas of Specialisation
Mahendra N. Jadhav, Librarian	M.Sc., M.L.I.Sc., M.Phil., Ph.D.	Library management and planning, library automation, digital library, open source software, library portals, RFID, and e-resources, scholars profile, remote access
M. Ananda Murugan, Deputy Librarian	M.L.I.Sc., M.Phil., Ph.D.	Library administration acquisition, technical processing, smart card
K. Saravanan, Assistant Librarian	M.L.I.Sc., M.Phil., Ph.D.	Library circulation, periodical and bound volumes, book bank and library maintenance

Short-term courses/workshops/seminars/symposia/conferences/meetings/ training programmes attended by faculty and staff members at recognised academic institutions

Sl. No.	Faculty/Staff Member	Title	Institution	Dates
1	Dr. Mahendra N. Jadhav	The 5th eBook South Asia Forum, Guwahati	Elsevier	21-22 May 2019
2	Dr. Mahendra N. Jadhav	Expert panel member for Assistant Librarian Selection Committee	Central University Karnataka, Kalburgi	6 June 2019
3	Mr. Bholeswar Kisan	Hindi official language workshop	IIT Madras	26 June 2019
4	Dr. Mahendra N. Jadhav	Expert panel member for Librarian Selection Committee	Central University Karnataka, Kalburgi	8 August 2019
5	Dr. K. Saravanan	Training programme on Usage of Government e-market (GeM Portal)	Stores and Purchase Section, IIT Madras	29 August 2019
6	Dr. S. Muthumari	Training programme on Usage of Government e-market (GeM Portal)	Stores and Purchase Section, IIT Madras	29 August 2019
7	Mr. K. Thiagarajan	Training programme on Usage of Government e-market (GeM Portal)	Stores and Purchase Section, IIT Madras	29 August 2019
8	Mr. K. S. Murasoli	Training programme on Usage of Government e-market (GeM Portal)	Stores and Purchase Section, IIT Madras	29 August 2019
9	All staff members and Library trainees	VTLS (Library Management Software) Training	VTLS, New Delhi	11-12 October 2019
10	Dr. Mahendra N. Jadhav	Expert panel member for Deputy Librarian Selection Committee	IIFE, Visakhapatnam	16 October 2019
11	Dr. Mahendra N. Jadhav	NDLI-UNESCO International Symposium on Knowledge Engineering for Digital Library Design	IIT Delhi	9-11 November 2019
12	Dr. Mahendra N. Jadhav	Expert panel member for Librarian Selection Committee	NIT Trichy	12 November 2019
13	Dr. Mahendra N. Jadhav	Cambridge University Press, South Asian Librarian Advisory Board meeting, New Delhi	CUP	18-19 November 2019
14	Dr. Mahendra N. Jadhav	IOP-Library Advisory Board Meeting, Jaipur	IOP	22-23 November 2019
15	Dr. Mahendra N. Jadhav	Chair the Technical session at International Conference on Digital Technologies and Transformation in Academic Libraries	NITK Surathkal	26-27 December 2019
16	Dr. Mahendra N. Jadhav	Expert panel member for CAS promotion of Assistant Librarians	Pondicherry University	20 January 2020
17	Dr. Mahendra N. Jadhav	Expert panel member for Assistant Librarian Selection Committee	IIT Dharwad	31 January-1 February 2020
18	Ms. V. Saradhambal	Hindi official language workshop	IIT Madras	10 March 2020

Special lectures delivered by faculty members at other institutions

Sl. No.	Faculty Member	Topic of Lecture	Venue and Date
1	Dr. Mahendra N. Jadhav	Acquisition and management of e-Books	UGC-sponsored Refresher Course in Library and Information Science, 16 November 2019, University of Madras
2	Dr. Mahendra N. Jadhav	Library automation	Information and Communication Technology (ICT) In Libraries, LIBYCON 2019, Sree Balaji Medical College, Chennai, 28 December 2019
3	Dr. Mahendra N. Jadhav	How to write a research article for journal publications?	MIMRD Workshop, MEASI Institute of Management, Chennai, 29 February 2020
4	Dr. Mahendra N. Jadhav	Ethics in research and publication	Meenakshi Ammal Dental College and Hospital, Chennai, 5 March 2020

8.9 Distinguished visitors/groups to the library

Sl. No.	Name and Designation	Date	Purpose of Visit
1	NITTTR, Chennai (International Library and Information Science delegates)	11 September 2019	Study the functioning of library and its infrastructure facilities
2	Centre for Adult and Continuing Education, School of Education, Pondicherry University	25 November 2019	Study the functioning of library and its infrastructure facilities

8.10 Children's Corner Library

We have shifted the Children's Corner Library to the first floor. At the entrance, right side area, we have created more pigeon holes to keep users' belongings.

8.11 Weeding out of books

1. The 145th Library Advisory Committee recommended weeding out of 6,995 abstracting and indexing journals.
2. The 146th Library Advisory Committee recommended weeding out of 2,078 old B.Tech and M.Tech project reports.

8.12 Future plans

1. To initiate the submission of scholars' electronic thesis into the I-Repository of IIT Madras
2. To initiate the creation of a database of bound volumes
3. Updation of project/permanent loan book database
4. To organise professional development lectures and other professional events
5. To weed out and write off mutilated, very old, unused books and German books
6. Condemnation of old outdated computer hardware and furniture, etc.
7. Reorganisation of book stacks
8. Creation of extra reading room facility



Student Amenities and Activities

9.1. Hostels

IIT Madras being a residential institute requires the students to reside in the hostels on campus. At present, there are 16 men's hostels and four ladies hostels for accommodating students of the UG and PG programmes, research scholars and project staff. A total of 6,948 single rooms, 70 double rooms, 196 triple rooms, five quadruple rooms and three pentuple rooms are available in the hostels. Research scholars and some students in the master's programmes who are married and seek family accommodation on campus are housed in earmarked quarters. Students from the armed forces are provided accommodation in the MOH quarters. During the period under report, there were 8,420 students residing in the hostels.

At present, there are 10 dining halls (messes) that cater to the students and project staff members in the hostels. Of these 10 messes, six are in Himalaya building, two are in Nilgiri building and the remaining two (for lady students) are in Vindhya building. These dining halls are run by private contract caterers. The mess registration and allocation of mess to students is done online based on the preference given by them. Similarly, the accommodation request and allotment process is done online. The housekeeping services in the hostel are outsourced.

Each hostel is administered by a Warden (a faculty member), an Assistant Warden (a senior research scholar or project staff member) and a Hostel Council, consisting of student secretaries and the Assistant Warden, which assists the Warden. Each hostel office is supported by the staff of the Office of the Hostel Management (OHM), which is a centrally administered body in charge of the functioning of the hostels.

During the year, Hostel Management has initiated

efforts to make major of its activities online. An online portal with all student-required menu was introduced and now students are using the following facilities extensively:

Mess registration: Student can log in and choose the mess of his/her choice every month

Mess accounts: The mess account is updated daily and student can know the balance instantly

Mess rebate: Student can avail his/her rebate by sending the request online

Mess extras: ID card can be charged instantly and used in messes for availing extras

Mess entry: Biometry entry of students to the messes was enabled

Mess fee: Fee remittance made online by which student can remit fee from anywhere

SAARANG/LTAP fees: Student can avail SAARANG tickets, opt and pay for the courses through portal

South Indian Menu\North Indian Menu\Food court was introduced.

Guest food coupons were introduced. QR code enabled. Biometric door access for students was enabled in 11 hostels and access for remaining nine is under process.

Request for temporary accommodation/guest accommodation, allotment of rooms and payment towards boarding and lodging enabled through online.

Process of vacating rooms by students made online.

Students' medical insurance coverage for married research scholars introduced on par with hostel residents and day scholars.

Online bulk booking accommodation facility for conferences, short-term courses, among others, was introduced. Students' entry to exit made online.

S.No	Warden	Hostel
1	Dr. Sathyanarayana N. Gummadi, Professor, Biotechnology	Chairman, Warden Council
2	Dr. Thyagaraj T., Associate Professor, Civil Engineering	Alakananda
3	Dr. R. Jayaganthan, Professor, Engineering Design Department	Bhadra
4	Dr. Jayalal Sarma M. N., Associate Professor, Computer Science Department	Brahmaputra
5	Dr. Srinivasa Rao Ch., Professor, Mathematics	Cauvery
6	Dr. Kothandaraman R., Associate Professor, Chemistry	Ganga
7	Dr. K. Chandraraj, Professor, Biotechnology	Godavari
8	Dr. Raghuram Chetty, Associate Professor, Chemical Engineering	Jamuna
9	Dr. Benny Raphael, Professor, Civil Engineering	Krishna
10	Dr. Anup Kumar Bhandari, Associate Professor, Humanities and Social Science	Mahanadhi
11	Dr. Raghavendra Sai V.V., Associate Professor, Applied Mechanics	Mandakini
12	Dr. Vignesh Muthuvijayan, Associate Professor, Biotechnology	Narmada
13	Dr. Ramesh Gardas, Associate Professor, Chemistry	Pampa
14	Dr. Ethayaraja Mani, Associate Professor, Chemical Engineering	Saraswathi
15	Dr. Lelitha Devi, Associate Professor, Civil Engineering Department	Sarayu
16	Dr. Lata Dyaram, Associate Professor, Department of Management Studies	Sharavati
17	Dr. Radha R., Professor, Mathematics	Sabarmati
18	Dr. Anbarasan P, Associate Professor, Chemistry	Sindhu
19	Dr. Sushanta Kumar Panigrahi, Associate Professor, Mechanical Engineering Department	Tamiraparani
20	Dr. Shankar Ram C.S., Associate Professor, Engineering Design	Tapti
21	Dr. Arshinder Kaur, Associate Professor, Management Studies	Tunga

9.2. Institute Gymkhana

The Institute Gymkhana takes care of the general welfare, sports, co-curricular, and cultural activities of students. Sports activities form an integral part of the overall development of personality, which prepares the students to overcome challenges in their life after their graduation. Students are encouraged to organise and participate in a number of sports activities.

The following tournaments were conducted during the year 2019-2020 by the Institute Gymkhana of IIT Madras.

- Freshie Tournament for Year I B.Tech students (for all games).
- Agrata 2019 (the inter-collegiate invitation tournament formerly called Sportfest)
- N.S.O selection for Year I B.Tech/Dual Degree students (with compulsory attendance of 85%).
- Post Graduate Students' Talent Search Programme
- Inter-Departmental League – for all students, excluding Inter-IIT team probable
- Inter-IIT mini-camp (20 days, compulsory for Inter-IIT probables)
- Inter-IIT coaching camp (15 days, compulsory for Inter-IIT contingent)
- Inter-hostel tournament for men, Schroeter Trophy
- Inter-hostel tournament for women, Women's Schroeter

PG League – for PG students

- Dean (Students) Trophy for men and women
- Beginner's session on Sports days of the week
- Inter-IIT Aquatic Meet 2019
- Inter-IIT Main Meet 2019
- Fit India
- Other Inter-Collegiate tournaments
- Club membership

Agrata 2019

The Inter-collegiate Invitation Tournament was conducted for city colleges, for both men and women, from 16-20 September 2019. This tournament helps finalise the probable Inter-IIT team. Tournaments were conducted on a league cum knock-out basis. Winners' trophies were awarded for various sports. The institute students took part enthusiastically in all the games and won in some of the events. The results are listed in the following table:

Game	First place	Second place	Third place	Fourth place
Athletics (Men)	MCC	IITM	Guru Nanak College	VIT
Athletics (Women)	IITM	WCC	Chellamal Women's College	Nazareth College of Arts & Science (Nazareth)
Athletics Overall	MCC	IITM	WCC	Guru Nanak College
Badminton (Men)	BSA	Guru Nanak College	IITM A	IITM B
Badminton (Women)	Loyola	WCC	Stella Maris College (Autonomous)	IITM B
Basketball (Men)	VIT	IITM A	Hindustan University	SVCE
Basketball (Women)	Chellamal Arts College	IITM	SIET	VIT
Chess	DG Vaishnav College	IITM A	IITM B	VIT Chennai
Football	IITM A	Ramakrishna Mission Vivekananda College	Jeppiaar Engineering College	VIT
Hockey	Stanley	Guru Nanak College	Nazareth	IITM
Table Tennis (Men)	Ramakrishna Mission Vivekananda College	Loyola ICAM	VIT Chennai	IITM A
Table Tennis (Women)	BSA Crescent	IITM A	IITDM	IITM B
Tennis (Men) Singles	Loyola - ICAM	Loyola - ICAM	IITM	IITM
Tennis (Men) Doubles	Loyola - ICAM	IITM	IITM	VIT
Tennis (Women) Singles	WCC	LICET	LICET	IITM
Tennis (Women) Doubles	Loyola - ICAM	Stella Maris College (Autonomous)	IITM	IITM
Volleyball (Men)	Hindustan College of Arts & Science	DB Jain	Vel Tech	IITM
Volleyball (Women)	Queen Mary's College (Autonomous)	WCC	IITM	CWC
Weightlifting	IITM A	Vellamal	RMK	IITM B

Sponsorship deals

- Fisto Sports Private Limited
- Decathlon Sports India
- Foodstreet.in

Events

Other non-competitive events conducted during Agrata were

- **Marathon:** The 3.6 km marathon was conducted prior to the start of Agrata on 15 September 2019 as the flagship event.
- **Sports Quiz:** This event was conducted on 21 September 2019 in collaboration with Quiz Club and Sangam. Winners were awarded prizes from Decathlon Sports India.
- **Sports Photography contest:** This event stretched out for the entire of Agrata (16-21 September 2019). The top three entries of the week were selected and awarded prizes from Fisto Sports Private Limited
- **Fisto Panel discussion:** Sports and its influence on lifestyle—a panel discussion was arranged for three well-known speakers, Deepthi Akki, Dr. Rohini Rau and S. Vilassini.

National Sports Organisation

The National Sports Organisation (NSO) functions as per the Government of India's decision to improve sports with special reference in maintaining the fitness of students. IIT Madras has been taking the necessary steps to encourage students to participate in various games and sports events and in activities for maintaining physical fitness.

Nearly 649 NSO first-year undergraduate students were registered under NSO in the academic year 2019-2020. Coaches and experts from various sports federations and the Sports Development Authority of Tamil Nadu were engaged to coach the NSO students in 18 sports and games (both men and women).

The noteworthy performance of Year I students in various tournaments, namely Inter-IIT Sports Meet, Inter-IIT Aquatic Meet and Sportsfest, is partly due to the quality of training given and the hard efforts put in by them during the NSO programme.

S.No.	Game	First Place	Second Place	Third Place
1	Basketball	Department of Chemical Engineering	Department of Computer Science	Department of Engineering Design
2	Chess	Department of Civil Engineering	Department of Electrical Engineering	Department of Computer Science and Engineering
3	Cricket	Department of Mathematics	Department of Chemical Engineering	Department of Physics
4	Football	To be decided	To be decided	To be decided
5	Frisbee	Department of Aerospace Engineering	Department of Humanities and Social Sciences	Department of Mechanical Engineering
6	Volleyball	Department of Mechanical Engineering	Department of Metallurgy	Department of Biotechnology

Inter-Hostel Tournaments 2019-2020

This year's Schroeter was more competitive than ever, as many hostels grabbed points in different sports with no major dominance unlike previous years. However, most of the tournaments were called off in the middle due to the unexpected Covid-19 crisis and related issues.

Schroeter Trophy (Inter-IIT events)

S.No.	Games
1	Badminton (Men and Women)
2	Basketball (Men and Women)
3	Chess (Men and Women)
4	Football (Men and Women)
5	Hockey (Men)
6	Tennis (Men and Women)
7	Swimming (Men and Women)
8	Squash (Men and Women)
9	Table tennis (Men and Women)
10	Volleyball (Men and Women)
11	Water polo (Men)
12	Weightlifting (Men)

PG League 2019-20

The following events were conducted during the academic year 2019-20 exclusively for postgraduate students, namely M.Sc, M.Tech, M.B.A., M.S. and Ph.D.

S.No	Sport
1	Athletics (Men and Women)
2	Badminton (Men)
3	Cricket (Mixed)
4	Squash (Men and Women)
5	Table Tennis (Men and Women)

Athletics: The PG League for athletics was conducted on 27-28 August 2019. The events conducted were 100m, 200m, 400m, 800m, 1500m, high jump, long jump, shotput, discus throw and javelin throw for both men and women.

Badminton: The PG League for Badminton was organised in both singles and doubles category for men on 14-15 March 2020. Seventy-six participants participated in which 52 were men and 24 were women, however, the women's league was cancelled due to the Covid-19 pandemic. In single's, Raghu Nandhan (EE18S020), Amizthan (EE19S084) and Amaya S. Dhobley (EE18M025) were the top three winners, respectively; on the other hand, the duos of Raghu Nandhan and Amaya S. Dhobley, Rabindev Bishal and Gunjan Kapadia, Jaswanth and Parinith Ramakrishna were the top three winners for double's, respectively.

Cricket: A total of 24 teams participated with two girls in each team. The team Ocean Warriors won the league and DOMS XI were the runner up. The matches were from 1-15 March 2020.

Squash: The PG League for Squash was conducted on 22-23 February 2020. Twenty-one participants participated in which 16 were men and five women. Shiv Sharma (ME15D013) and Kantamani Krishna Tejaswini (EE15D021) emerged winners in men's and women's category, respectively.

Table tennis: The table tennis matches were conducted on 2-3 February 2020. There were around 20 men and five women participants. Divya Srinivasan and Praveen Singh emerged as the winners in women's and men's, respectively.

Dean's Trophy

S.No	Games
1	Six-a-side football (Men)
2	Cycle race (Men and Women)
3	Triathlon (Men and Women)
4	Powerlifting (Men)

All these events were aimed at encouraging participation from the students/campus community. They were a grand success, attracting a large number of participants, from both staff and students, and student spectators, who witnessed and encouraged their hostel teams. Planning the calendar of sports events in advance, including the fixtures for the Schroeter and Dean's Trophy events, helped in smooth, timely and satisfactory conduct of the events. Certain other events planned were not conducted because of the COVID-19 crisis and the unforeseen closure of the institute.

Amazon's Race

This race was conducted for all women, wherein various stations with tasks across eight sports were set up. This was conducted in a similar fashion as treasure hunt. The race reached out to 52 women across undergraduate and postgraduate students. It introduced the eight sports that are present for women in the Inter-IIT competition in an effort to increase their approachability towards captains and convenors and the sporting scene in general.

Beginner's Camp

Beginners' Camps of 10 days each were conducted for all

women for the sports, cricket, football and swimming in the months of January and February 2020. Each of these camps saw a great turnout and in total helped reach out to and teach over 200 women. Beginners' sessions were also conducted for all students for various inter-IIT sports, frisbee and bridge.

Madrush Race

This race was conducted for all institute students. The event was a modified version of road race, coupled with an obstacle course race at Manohar C. Watsa Stadium. The participants had to jump over and crawl through

five hurdles each (set at the minimum height) during the obstacle course running after the road race. This race reached out to 144 students in the institute.

Perpendicular Sports Series

Seven unconventional sports were introduced to women in the form of one-day workshops. These sports included pool, skateboarding, chess, bridge, martial arts, swimming and powerlifting. A tournament was also conducted for women powerlifting with a title of Insti Strong Woman. Each of these workshops saw a great number of participants and helped engage many women into the spirit of sports.

35th Inter-IIT Aquatic Meet 2019

The 35th Inter IIT Aquatics Meet was organised by IIT Kharagpur from 29 September-3 October 2019. The IIT Madras' aquatics contingent – The Madras Shark's performance this year has been as formidable as their

name. The Madras Sharks clinched the overall swimming championship in both the men's category for the fourth time and women's category for the fifth time in a row! Two records were broken and an impressive medal tally of 16 golds, four silvers and two bronzes, and a bronze in water polo.

Highlights of the meet

- Overall Swimming Championship (Men) - IIT Madras (75 points)
- Overall Swimming Championship (Women) - IIT Madras (46 points)
- Best Swimmer (Women): Kamala Devi L. R. (Best Swimmer for the third time in a row)
- Water polo (Men) - Third place

Records broken

50 m Breaststroke for Men: Anuj Sindgi
4X100 m Freestyle Relay for Men: Ruchir Kaul, Anuj Sindgi, Kalash Verma, Harsh Ladani

Contingent	Name	Roll no	Gold	Silver	Bronze (including water polo)	Relay (Gold)	Total
	Anuj Sindgi	ED16B030	3		1	2	6
	Ruchir Kaul	CE16B113	2		1	2	5
	Jai Kedia	CE17B037		1	2		3
	Aniruddha Kawade	CS18B002		1	1		2
	Harsh Ladani	AE17B027			2	2	4
	Varad Joshi	ME17B038			1		1
Aquatics (Men)	Shreeniwas Jagdale	ME17B115			1		1
	Gaurav Vaidya	PH18B008			1		1
	B. Sreeram	MM18B014			1		1
	Palash Pantawane	AE17B105			1		1
	Omkar Satpute	ED17B049			1		1
	Kalash Varma	ME18B052	3		1	2	6
	Shagnik Pal	EE17B147			1		1
	Vibhu Krishna	HS18H044			1		1
	Sphurtti Agarwal	CH16B066	1	2		2	5
Aquatics (Women)	Kamala Devi	HS15H016	3			2	5
	Breasha Gupta	BE17B015				2	2
	Devpriya	ME17B106				2	2
	Mahima Raut	CS17B112					

54th Inter-IIT Sports Meet 2019

The 54th Inter-IIT Sports Meet was organised in Kharagpur and co-hosted by Bhubaneswar from 12-23 December 2019. Twenty-three IITs participated in 13 sports for men, and six sports for women. The opening ceremony was conducted on 13 December 2019.

In 54th Inter-IIT Sports Meet, IIT Madras secured the following positions:

Sport	Student Name	Roll No.	Achievement
Men			Silver in 100m
	Muthu Kumar	ME18D014	Silver in 200m
			Fourth in Long Jump
			Silver in 4x100m Relay
			Bronze in 4x400m Relay
	Amit Kumar	BT17S300	Gold in Pole Vault
			Silver in 110m hurdles
			Fourth in 400m hurdles
	Aniket Singh	AM18M022	Bronze in 4x400m relay
Athletics			Silver in 400m hurdles
	Shrinath Bhat	ME16B040	Fourth in 110m hurdles
	Adithya Banoth	CE17B001	Silver in 4x100m Relay
			Bronze in 4x400m Relay
			Silver in 4x100m Relay
	Savio	NA17B027	Bronze in 4x400m Relay
	Sritish Kumar	ME18B078	Silver in 4x100m Relay
	Nipam Basumatary	CS16B111	
	Siddartha Gowtham	CH15B076	
	Aditya Singh Mahala	CE17B023	
	Harshavardhan M. Sali	EE17B128	
Badminton	Vignesh S.	EE16B127	Silver
	Abhishek Kumar Raj	BS18B010	
	Anudeep Annarapu	BE12B002	
	Arun Madhav	EE16B029	
	Deepan Jayaraman	ED15D002	
	Gurdev Singh	ME13D219	
	Karthikeyan R.	EE18B015	
	Krishna Praneet	MM16B029	
	Kulandaisamy A.	BT15D045	
	Manoj Meena	MM12B017	
Hockey	Nirmalraj B. V.	EE15B078	Fourth place
	Prasana Manikanda Kartik J.	BT16D302	
	Sadees P.	OE16D021	
	Siva Shanmugam	BT16D040	
	Sudharsanan S.	MM15D025	
	Vamshi P.	CH17B013	
	Vinod V. Patwardhan	EE19M055	
	Girinath P.	CS18B032	
	Shubham	BS18B028	
	Varun Sanklecha	ME17B073	
	Avinash Singh Hora	AE18M008	
Squash	Akhil Vannan M.	AE16B103	Gold
	Niteesh Myneni	EE18D041	
	Anant Shah	EE16B105	
	Nitya Nanvani	ME19B138	

Tennis	Sakthi Ashwin M.	ED16B052	Silver
	Bipul Makhal	CE17B111	Bronze (above 77 kg category)
Weightlifting	Gulam Ahmed Raza	AE16B105	Fourth place (up to 56 kg category)
	Pathi Sai Kiran	CE16B045	Gold (up to 65 kg)
Para-Powerlifting	Ajitesh Kumar Rai	MM17B007	Gold (up to 80 kg)
	Mohammed Sohail	ME17B154	Silver (up to 54 kg)
Women	Varsha Gopal	HS17H007	Silver in Long Jump
			Bronze in 100m
			Bronze in 200m
			Bronze in 4x100m Relay
			Bronze in 4x400m Relay
			Silver in 400m
			Bronze in 800m
			Fourth in 1500m
			Bronze in 4X100m Relay
		Sajusha Ashok	HS19H035
Athletics	M.L. Aparna	MM18D301	Bronze in 4X100m Relay
	B. Swati	ED19B005	Bronze in 4X100m Relay
	Yukti	CE16B136	Bronze in 4X400m Relay
	Renu Yadav	PH18D046	Bronze in 4X400m Relay
	Roshni	BE17B009	Gold
Badminton	Manjari	BS17B021	
	Deepika Indluri	CS19B056	
	Navodita Sharma	CS16B110	
	Sahithi	CH16B118	
Squash	Gaurangi	AE17B026	Fourth place
	Breasha Gupta	BE17B015	
	Shruthi Parvathi	EE16B032	
Tennis	Swati Dhua	PH15D014	Gold
	N. Shruthi Chandra	ED15B028	
	K. Vani	CE19B061	
	Anushka Pillai	ED19B002	
	Ankita verma	ED17B004	
	Aaysha Anser Babu	AE18B014	
	Sucharitha M.	BE17B021	
	Yamuna Devi	ME18B115	
	Pranjali Vatsalaya	EE17B144	
	Snigdha L. M.	AE18B106	
Saloni Jain	AM19S023		
Volleyball	N. Bhavya Sai	EE15B102	Bronze

Highlights of the meet

Breasha Gupta was adjudged best player in Tennis (Women).

Nipam Basumatry and Roshni Shetty were adjudged best players in Badminton Men and Women, respectively

Records broken

Amit Kumar broke the record in pole vault.

Other Inter-Collegiate Tournaments

The IIT Madras contingent, in addition to participating in Inter-IIT also participated in various inter-collegiate tournaments. These tournaments went a long way in preparing the teams and honing their skills by giving them an unparalleled exposure.

S.No	Sport	Tournament(s) Participated
1	Athletics (Men and Women)	BITS Arena
2	Badminton (Men and Women)	BITS Arena
3	Basketball (Men and Women)	Amity Premier League Bertram Memorial Tournament Vibrance 2020 (VIT Chennai)
4	Cricket (Men and Women)	Guru Nanak Inter-collegiate Tournament
5	Football (Men and Women)	BITS Arena
6	Hockey (Men)	Dr. Porchezian Memorial Inter Collegiate Tournament Anna University Sports Fest, Vibrance 2020 Vibrance 2020
7	Tennis (Men and Women)	SRM Open Tournament TNTA League
8	Squash (Men and Women)	BITS Arena
9	Table Tennis (Men and Women)	BITS Arena Vibrance 2020
10	Volleyball (Men and Women)	Vibrance 2020 14th M. A. M. Muttiah Kumararaja Tournament

Noteworthy achievement

Ramesh Naidu (EE12B094) represented India at the Physical Disability World Series organised by ICC in August 2019 in London, UK. The Indian (PD) team defeated England by 36 runs in the final to clinch the elusive trophy.

FIT India

The National Sports Day is celebrated on 29 August, on the birthday anniversary of the hockey legend Major Dhyan Chand who won gold medals in Olympics for India in the years 1928, 1932 and 1936.

The Fit India movement was launched on Thursday, 29 August (National Sports Day) and the following events and activities were conducted to encourage people to include physical activity and sports in their everyday life at IIT Madras.

- A fitness pledge was taken by the participants of Fit India Challenge, which was conducted at Manohar C. Watsa Athletics Stadium. Around 80 participants from the campus participated and completed the challenge.
- The Fit India Challenge was a 1,200 metre run, which is three laps of the 400 metre track of Manohar C. Watsa Athletics Stadium, with various challenges along the way. Ten hurdles at a stretch of 100 metre were placed and the participants had to jump or hop over them with running their three laps.
- Thirty pushups had to be completed after the first lap of 400 metre and 30 full squats after the second lap of 400 metre to finish the challenge. The participants were

encouraged to upload the photos and videos taken during the run with the following hashtags: #HumFitTohIndiaFit and #iitmsports.

- Online publicity was done for this event on the IIT Madras Sports page to promote fitness among the students and staff of IIT Madras.
- Fit India (#HumFitTohIndiaFit) campaign was launched at IIT Madras to encourage students to share photos and videos of themselves doing physical activity and promoting fitness on social media with the following hashtags: #HumFitTohIndiaFit and #iitmsports.
- Athletics events, 800 metre race and Long Jump were conducted at Manohar C. Watsa to encourage participation in sports.

Club membership

All the Gymkhana clubs, including Fitness Club, Skating Club, Badminton Club, Tennis Club and Swimming Pool Club functioned very well during this period. More than a few thousand students, staff and faculty members and campus children benefited from these excellent facilities and coaching offered by the Gymkhana.

The Fitness Club had a registered membership of 250, the Tennis Club a membership of 25, the Skating Club a membership of 30, the Badminton Club a membership of 35, the Swimming Pool Club a membership of 1600, the Squash Club a membership of 15, and the Aerobics Club with a membership of 40. Excellent training and able guidance were given to students and campus residents at the Fitness Club and Yoga Club, underlining the

importance of maintaining a good physique and health.

Events

- Information was collected via a Google Form from the previous year's MITr and Saathi teams to identify potential professors from each department to act as MITr Faculty Advisors, in the first week of June 2019.
- At the orientation programme for MBA students on 10 July 2019, information about MITr was presented to the new batch.
- On 29 July 2019, there was a meeting between the Core Team and the new co-faculty advisor of MITr, Prof. Ramesh Gardas.
- On 30 July 2019, MITr was presented to the new students at the B.Tech. Orientation Session.
- In the first week of August 2019, selection was conducted for MITr Coordinators by the old Core Team, new Core Team and the faculty advisor of MITr. Eleven applied, of which nine were selected.
- MITr Core Team members participated in the Student Secretaries' Workshop conducted on 4 August 2019 by Lt. Col.(Retd.) Jayakumar.
- A meeting between faculty members, Wellness Centre and MITr Core Team Members took place on 9 August 2019.
- On 10 August 2019, a Spot and Act training session was conducted by Ms. Sushmitha Roy of Medall for all the members of Team MITr.
- On 17 August 2019, a follow-up and evaluate training session was conducted by Ms. Tamil Selvi of Medall for all the members of Team MITr.
- An introduction of MITr was done at the MEA (Mechanical Engineering Association) Inaugural on 22 August 2019.
- A review of SOPs (Standard Operating Procedures), as well as ideation on the roles of Department Faculty Advisors and Wellness Centre was done by the Core Team on 24 August 2019. There was a meeting with co-faculty advisor, Prof. Ramesh Gardas regarding the same on 26 August 2019.
- MITr Student All Team Meeting was on 26 August 2019.
- MITr T-shirts from the previous year were distributed to all student members of the team.
- MITr Core Team Members attended the MITr Faculty Members' Meet on 27 August 2019, where the SOPs were discussed.
- MITr Faculty Student Meet was held on 17 September 2019, in which the Core Team members were involved.
- MITr Team members assisted in the conduct of the Life Skills Class at SAC on 20 September 2019.
- Barefoot Counselling Training by Dr. Sumathi for the MITr Faculty Members, as well as MITr Core Team Members on 24 September 2019.
- MITr Student All Team Meeting on 21 October 2019, in which the MITr Faculty Advisors also attended.
- Drafted and Prepared an SOP on being a MITr student volunteer, and submitted to Wellness Centre by 10

December 2019.

- MITr Faculty Members Monthly Meeting on 9 December 2019.
- MITr Student All Team Meeting on 24 January 2020, in which the MITr Faculty Advisors and Wellness Centre Staff also attended.
- Prof. Nilesh J. Vasa takes over as the new Faculty Advisor for MITr on 27 January 2020.
- Meeting between Core Team and the new Faculty Advisor on 1 February 2020.
- MITr Faculty Members' monthly meeting was on 7 February 2020.
- A proposal for restructuring Team MITr, submitted to MITr Faculty Advisor after discussion with Wellness Centre, was submitted on 25 February 2020.
- Another MITr Faculty Members' monthly meeting took place on 26 February 2020.
- A meeting with NIMHANS representatives was held on 13 March 2020.
- The MITr Team assisted in the correction of Life Skills Course Assignments during 16-19 May 2020.

Counselling

The coordinators of MITr helped students by talking to them and providing one-on-one guidance or counselling wherever required. Students reached them using contact details provided or were referred to by the Wellness Centre.

Additionally, MITr student members actively worked to find distressed people and provide them assistance when required or redirect them to Wellness Centre for more professional help.

The Wellness Centre worked as the nodal agency coordinating with the MITr Student Team, MITr Faculty Members, YourDost and Medall, and working towards improving student's general mental well-being on campus.

Saathi

Odd Semester

1. Insti Immersion Program

Date: 25 July-2 August 2019; organised by DOST, IITM Alumni, Saathi; coordinated by Team Saathi

Around 700 first-year students of the undergraduate B.Tech programme, Dual Degree and M.A. programme were welcomed into the institute and provided with an overall outlook of life on campus. The Freshman Guidebook was written, re-edited and re-designed to be circulated to the entire freshman in these orientation programmes

2. Mindfulness Workshop

Date: 14, 22, 29 August 2019; organised by Rofia Ramesh, Ph.D. scholar in Mindfulness; coordinated by Sajith

Mindfulness is the art of staying in the present, without being stuck in our past or anxious about our future. Mindfulness is a particularly productive practice in this age of distraction, endless to-do lists and multiple screens and tabs. A workshop for three days (14, 22 and 29 August) for one hour each from 6-7 pm was conducted. The facilitator was Ms. Rofia Ramesh, an expert in the field of Mindfulness. More than 150 students attended the successful sessions.

3. Ikigai: Finding Your Life's Purpose Workshop

Date: September 2019; organised by Arjuna Venkatesh, Ippy; coordinated by Sajith

Ikigai is a Japanese concept originally from the island of Okinawa, the place with the highest concentration of centenarians on the planet. It refers to finding one's life's purpose, i.e. one's reason for being or finding work that will get one to jump out of their bed every morning and feel fulfilled at night or the inner drive and motivation behind work. Saathi conducted a successful workshop on 15 October 2019 with a turnout of about 250 students. The following questions were addressed in the workshop.

1. How to discover one's Ikigai? 2. How do I confirm it?
3. What if the journey is too challenging? Should I retreat?
4. How do I deal with issues such as: responsibilities towards family, peer pressure, fear of failure? 5. How do I equip myself for the journey?

4. Breakthrough Fear Workshop

Date: 29 September 2019; organised by Sunita Ramadurai, Neoway; coordinated by Sajith

A workshop for understanding the lite side of fear and gaining new ways of thinking and living was conducted by Saathi. The two-day workshop conducted on 21-22 September 2019 helped students in discovering how they think about the situation that causes the fear makes a world of difference in overcoming it. The theme of Day 1 was Getting Curious and Understanding the Structure of Fear and Day 2 was Reframe that Fear. A low turnout of 10 students for the two days was observed.

5. Weekly PMR Relaxation Session

Date: 2, 14, 21 October 2019; organised by Karthik, Your Dost; coordinated by Saathi coordinators

The revolutionary Progressive Muscle Relaxation (PMR) technique teaches us about how to beat stress, insomnia, anxiety, and even pain, on our own. Saathi conducted weekly PMR sessions, which were hugely appreciated by students. An overall turnout of around 100 students benefited from the sessions.

What can be improved?

The initiative was a success. The concept of having a day in a week dedicated to PMR was continued henceforth.

6. Faculty Interaction and Engagement with Students Through Activities (F.I.E.S.T.A)

Date: 9 September 2019; organised by Rishabh Gupta;

coordinated by Saathi coordinators

F.I.E.S.T.A. was held to break the ice between faculty and students. A decent amount of participants from the faculty side was observed. Events like Pictionary, charades, poker, chess, karaoke and the pani-puri eating competition were conducted. We attracted a large crowd of around 100 people from the student community.

7. Well-being Challenge

Date: November 2019; organised by Saathi; coordinated



by Sajith

The Digital Wellness Challenge aimed to address mental health through a series of challenges that motivate students to take one step at a time. Five challenges like Best Room Challenge, Emergency Playlist, Selfcare tips, My Day and Read Today were rolled out. Student responses were collected until the end of November.

8. Students Mentorship Cell (SMC Mentors)

Date: Entire year, started on 29 July 2019; organised by Saathi; coordinated by Saathi Team

SMC-Saathi was introduced to reduce the misconception regarding Saathi as an organisation mainly for undergraduate fresher orientation. SMC is to be responsible for the mentoring that was earlier undertaken by Saathi mentors. Around 100 student mentors were selected through an application process to guide the first-year students in aspects of academics, personal life, social life, and others.

9. Mentor Coaching Session

Date: 19 October 2019; organised by Saathi; coordinated by Akshaya

A coaching session for the Saathi mentors was conducted by IITM alumni Prashant Vasu on 19 October. The session addressed the values and methods student mentors must undertake with their mentees. Only a small number of mentors could attend due to unexpected rains.

10. Acad Buddy

Date: October 2019; organised by Sajith; coordinated by Saathi

The Acad buddy programme for first-year undergraduates was rolled out from the month of October. In this programme, freshies who need some additional help with their academics were allocated a senior (Acad Buddy) to help them out with their courses. The Acad

Buddies will be paid a flat sum of Rs.1500 from Saathi at the end of semester on account of satisfactory review by their mentees. Forty students signed up for the Acad Buddy programme.

11. Move to Refresh by Crossfit

Date: 8 November 2019; organised by Dinesh Kasana, Cult Fit; coordinated by Saathi

A session on body-mind connection was conducted to help students with their exam preparation, as exercising releases endorphins, gives joy and enhances focus. Dinesh Kasana, a Crossfit Coach, led the session where he trained the students some basic warmup exercises for students to relax and strengthen their mind and body. He is a certified cross fit, Animal Flow and cluster fitness trainer. Due to the upcoming end semester exams, only 10 students participated in the event.

Even Semester

1. Joy Weekend

Date: 24-25 January 2020; organised by Prashanth Vasu, Heartfulness coach and partner, Mckinsey India | Rajiv Lochan | Shyamala | Raghavan Manian; coordinated by Sajith

A two-day-long session was organised in which various theories and techniques related to the Science of Happiness were discussed by Prashanth Vasu. How to achieve the state of flow, science of peak performance, and science of sleep and power of habits can change our lives and help in improving our performance were the topics addressed. We had an alumni panel with Rajiv Lochan, Shyamala and Raghavan Manian onboard, where they talked about the satisfaction of giving and radiating joy. On how to discover your interests, we had a group run in the end organised by Prof. Preeti. The participants were given t-shirts and Saathi booklets. A varying number of students attended the sessions. On average, 50 to 60 participants were there at every session.

2. Weekly Mindfulness Jam

Organised by Rofia Ramesh, Ph.D. in Mindfulness; coordinated by Sajith

The mindfulness workshop was a huge success in the previous semester. The participating students were happy and wanted more sessions, so we decided to have the sessions on weekly basis from this semester. We already had three sessions till now. Roughly 200 students attend all the sessions.

The programme was a huge success. It will be continued as weekly relaxation series covering more techniques every week with various speakers. It resources will be uploaded on the website from time to time.

3. Melody and Memory

Date: 27 February 2020; organised by Mrs. Janaki Sabesh, Actor; coordinated by Rishabh Gupta

The Melody and Memory event was a soulful lec-dem conducted by Mrs. Janaki Sabesh who is an actor, author,

storyteller, trainer, theatre and voice artist, marketer, film producer and much more. Mrs. Sujatha and the participants shared personal memories attached to various pieces of music. Though the event had a low turnout of around 15 people, the audience was extremely satisfied by the end of the event.

4. Lockdown challenges

Date: March-April; coordinated by: Sajith, Kushal and Akshaya

Various challenges to keep people engaged during the lockdown were tried. The Cook a Dish challenge was successful with regular entries. An Instagram page became popular during this time. Quarantine Times series was started in April gathering posts about how people go about spending their day in these times.

Advisor, Weaker Section

The institute has nominated an Advisor and a committee of students to take care of the welfare of foreign nationals, academically weak, differently abled students and weaker section students. The Advisor, Student General Secretary and committee members periodically meet these students and counsel them on various academic and non-academic matters. During the period under report, efforts were taken to address the issues faced by differently abled candidates, students with a learning disability, women candidates and academically weak students. The differently abled students were given counselling in the beginning of the academic year, and various facilities provided by the institute were explained to them, to instill confidence in them. Wheel chairs, reading assistance software, financial assistance for attending conferences abroad, magnifying lenses and other necessary assistance were given to them. The standing committee has been careful in fulfilling its original mandate to study and understand the special needs and issues facing students from marginalised communities, women and students of socially and culturally backward communities, and students with disabilities, and propose necessary legislation to ensure sensitivity towards the students in the campus. A proposal has been made to establish Accessibility and Learning Centre for Physically Challenged (ALCPC).

A web-based buddy system for academically weak students is proposed to help the senior students, who are yet to clear some of the courses in the lower semesters. A dinner meeting was arranged in Taramani Guest House inviting all the physically challenged students on 26 September 2019. Prof. Anil Kumar, CSE and Prof. Sujata Sreenivasan, ME also attended the meeting and informed about the accessibility efforts taken in IIT Madras. A Facebook page, Accessibility Services IITM is also created.

Efforts were made to create awareness to understand the needs of the differently abled students, such as low-vision students who can't see classroom board, hard books,

presentations or question paper were given a large-font question paper or extra time for the examinations and quizzes.

The Engineering Unit of our institute has taken initiatives to make the academic buildings accessible for students with special needs.

A special interactive session was organised for the PwD student representatives from various course and research scholars with Dean (Students) and several issues were discussed and an action plan was made to address all these issues.

Some of the visually challenged students attended the 35th batch of our Career Centric Computer Skill Training combined with Life Skill Training from 6 January 2020 to end of March 2020 organised by Mitra Jyothi. A special initiative was taken in by Shaashtra 2020, to integrate technology in the life and learning of visually challenged students.

The data of the students weaker in studies were also collected to see the pattern of failures in various courses to help them complete their degree.

National Cadet Corps

There was no registration of students for National Cadet Corps (NCC) for the last academic year.

National Service Scheme, IIT Madras

The National Service Scheme (NSS) was launched in 1969, the birth centenary year of Mahatma Gandhi, and is aimed at involving students in community service. NSS comes under the Union Ministry for Youth Affairs and Sports and is an academic requirement in many universities, including IITs and NITs. The fact that NSS is a service organisation and an academic requirement makes working with the NSS both challenging and exciting.

The National Service Scheme, IIT Madras is guided by a faculty advisor and organised into specific sub-groups of equal footing, working within the NSS Managerial Team. Some of these include Event Management, Project Administration, Finance, Design and Web Operations. Our current Faculty Advisor, Professor K.C. Sivakumar from the Department of Mathematics took charge as the NSS Faculty Adviser on 10 August 2016.

The NSS activities in a year can be broadly classified into two categories—projects and events. We also carry out Winter Internships or as we call it, The Winterns. Projects are those initiatives which are oriented towards specific areas and goals. Every project team includes one or more Project Representatives, who ideate, design and execute the project and 15-20 volunteers who actively participate in the process under the guidance of the Project Representative. Events, on the other hand, require participation from all volunteers and include service, awareness and motivational activities. Winterns are camps organised by NSS during the winter vacation, in collaboration with service-oriented NGOs.

Events

The NSS activities for 2019-20 commenced with a common orientation session for all fresh students and the NSS selection test on 12 and 28 August 2019 following which, the new team of NSS volunteers was inducted. The NSS activities for the 2019 batch formally began with the inauguration ceremony on 17 September 2019. The inaugural address was given by Ms. Sumithra Prasad from the national award winning Dorai Foundation. She gave



an inspiring talk, which included a description of Dorai Foundation and its various activities.

Gandhi Jayanti celebrations were organised on 2 October 2019 in collaboration with our alumnus Mr. M.D Menon, attended by students, faculty members and members of a social work club named Probus. Various people spoke about Gandhiji and his philosophies apart from a talk on social enterprises. Snippets of the movie Gandhi were also shown.

On 20 January 2020, a session was conducted by the members of the Gandhi Fellowship, a fellowship designed to develop young change leaders who embody and practice leadership skills that are needed to cause large-



scale social and public systems change.

On 4 February 2020, a presentation was organised in collaboration with B2W (Born to Win), an NGO that supports various causes, primarily focusing on minimising pollution caused by plastic, by replacing plastic bags with cloth bags. The presentation enlightened students on how they could bring down their carbon footprint within the institute by using cloth alternatives for plastic.

The presentation was followed by a screening of the movie, *Alive Inside*, which shed light on diseases such as MS, Alzheimer's and Dementia depicting how music therapy can "awaken" the minds of such patients. The documentary also went on to indict the American healthcare system for its various shortcomings. A collection drive was organised on 8 March 2020 in collaboration with the aforementioned NGO, B2W. The cloth material that was collected from this was to be made into cloth bags that would be sold at nominal rates.

In addition, NSS conducted two monthly collection drives in the odd semester on 27 October and 3 November

2019. In the even semester, NSS conducted one collection drive on 2 February 2020. The collected items include mostly non-perishable items like books, toys and clothes, which were then donated to the various NGOs working in the city.

WINTERN

NSS collaborated with the Dorai Foundation and organised a Wintern for a few of our students. Their work involved interacting and spending time with the physically challenged and the elderly.

Project	Aim	Description
Suyam	Educate the students with limited means and help them stay abreast with the competitive world	Suyam is a charitable society founded by youth to help children in Vyasarpadi who would otherwise end up begging due to their families' economic condition. The trust has grown in strength and now they have a small school with basic facilities. Teams went to Suyam at Vyasarpadi every weekend.
		Classes were taken in Maths, Physics and Chemistry for students of classes 7-12.
Teach for National Olympiad	To expose students to various types of Olympiad questions and improve their understanding skills of basic concepts.	Volunteers visited Nehru Middle School in Velachery and taught basic concepts of maths and science to class 4-8 students. They helped students solve logical questions useful for Olympiad and with their school curricula.
Teach your Neighbour	To assist the students living around the campus to get a better standard of primary education. The main objective is to give students a better exposure of dealing with their subjects and other competitive exams, which most of the volunteers are good at.	This project is an attempt to help students improve their basic aptitude, math and communication skills. These classes hope to fulfill the students' quest to learn the seemingly abstract concepts. Classes were conducted within the IIT campus, thus making it convenient for both volunteers and students. This initiative will hopefully lead to fun, frolic and fulfillment for both sides.
Shravayam	Creating quality audio content in English and vernacular languages. Distribution of such content and making sure that it reaches the needy.	As a part of this project, volunteers are expected to convert textual material (mostly non-academic) into audio files. Apart from English literature, vernacular texts, set in Malayalam and Tamil, are given priority.
Engineering Can Be Fun	To raise awareness about the fun aspects of engineering.	Collaborated with NGO Chudar and visited schools in Kotturpuram and interacted with class 6-8 students.
Bring a Smile	The objective is to visit a cancer hospital to spend time with the children diagnosed with cancer. Our goal is to make them happy and engage them in various activities during their time in the hospital. Our secondary goal is to create awareness about cancer.	Volunteers visited Adyar Cancer institute every Saturday for over two hours. They engaged the children in various activities such as colouring pictures, drawing, solving puzzles, and toys.
Science Teaching Kit	Teach high school students basic laws in science using simple toys, conduct career counselling classes, other science-related demonstrations, quizzes, video presentation, etc.	Volunteers made models of diverse interesting experiments illustrating basic science concepts. They visited nearby schools and demonstrated those to students.
Blood Connect	To raise general awareness about blood donation and the importance of it.	Organised blood donation camps once a semester with 142 donations in the odd semester and 156 in the even semester. Increasing the awareness activities and encouraging active participation from the institute, especially student body.

Education Blog	To provide free accessible articles with valuable information for high school students	Volunteers wrote articles illustrating high school subject concepts. They also wrote articles on topics of general interest. Students across the country could get direct assistance from IITians through this blog.
Uddhar (Uplift India)	To spread the culture of excellence and ethics in the student community with the spirit of selfless service.	Volunteers conduct seminars in Chennai schools teaching the concepts from books, Art of Concentration in the Age of Distractions and Time Management (Arjuna Group Trust Publications). Website development, database management, preparing questions from AOC, TM books and making a repository for IWAT. Designing PPT, newsletter, picture quotes, posters, making videos for teaching concepts of AOC Concept clarification sessions for giving support to class 9-12 students in CBSE schools.
Drishti	To inculcate compassion and empathy among volunteers. The project creates a platform for interactions with the visually challenged and hearing impaired kids.	Volunteers of this project visited St. Louis special school in Adyar every weekend. They spent quality time with the kids and helped them in their academics. Volunteers teach them and also learn from them.
Project Paws	To develop bond with animals and take care of their hygiene and other requirements during the visits.	Volunteers take care of the animals at the Blue Cross chapter near the institute. Sessions were conducted every alternate weekend.

Most of the teaching projects are in collaboration with various NGOs in and around Chennai and our volunteers worked as tutors in places around the city. Content generation projects were centred on creating quality content in cyberspace and in other areas. We have had audio content generation projects for the visually challenged. We also have projects focusing on other social issues, which could be bettered by humble efforts of the manpower we have. This includes, but is not restricted to, visits to the neighbouring cancer centre, etc.

We are also happy to announce that we have collaborated with many new NGOs this year, such as Little Drops, Teach for India, Dorai Foundation and Born to Win Foundation contributing to the ever-growing pool of NGOs in the city we work with. It helped us locate our target groups. On a happier note, we have not restricted our activities to the external premises of the institute; we have had projects working for the betterment of various demographics inside the institute as well.

A few students were also engaged in Project Bharti to spread awareness about the use and benefits of Bharti script. Volunteers spread awareness about the script by developing interactive games involving the script, translating story books and other content into Bharti, teaching school students, etc.

We collaborated with the Disaster Management Committee and attended Chaupal, which is an annual meet-up organised by Goonj (a non-profit organisation) that helped increase awareness about charitable endeavours that one could undertake.

Additionally, a few students were engaged with the local Teach for India branch and went to teach students

from a nearby school thrice a week.

To summarise, for the volunteers as well as the members of the managerial team, the experience with NSS helped in manifold ways to realise how much the student community can contribute for the betterment of society. No matter whether the impact is small or big, the kind of satisfaction that the students derive by working with NSS is unparalleled.

The NSS team extends its gratitude to Professor Bhaskar Ramamurthi, Director, IIT Madras for his support in all its activities. NSS thanks the IITM administration for the help with our initiatives in all ways possible. We thank Professor M. S. Sivakumar, Dean (Students) as well as the Office of the Dean of Students for their continuous support and contributions to NSS. We are ever grateful to Professor K.C. Sivakumar, our beloved faculty advisor for his enthusiasm and love for NSS and all its activities. We thank the staff and community at IIT Madras who were generous in their donations and support.

We would also like to thank the various NGOs with whom we have collaborated over the year. We thank the various speakers who consented to come for our events. We thank the NSS family, our previous managerial team members for their support. We also thank the IITM student community, our volunteers for their enthusiasm and dedication in working with NSS.

We hope that we were able to give all the volunteers an opportunity to explore how they could contribute to society at large, through the services that they have rendered as part of NSS.



Students' placement

Introduction

The Office of Training and Placement at IIT Madras helps students in identifying and applying for full-time job opportunities. This office liaises with companies and enables them to share the details of opportunities with students.

The placement activity for the academic year 2019-2020 commenced with Pre-Placement Talks from

13 August 2019. The actual process of campus recruitment began on 1 December 2019. A total of 208 companies visited the campus this year. The majority of the companies were from core engineering and analytics sectors. Additionally, companies from finance, education, consulting, IT services and R&D sectors recruited students.

The number of students placed during 2019-20 is summarised below:

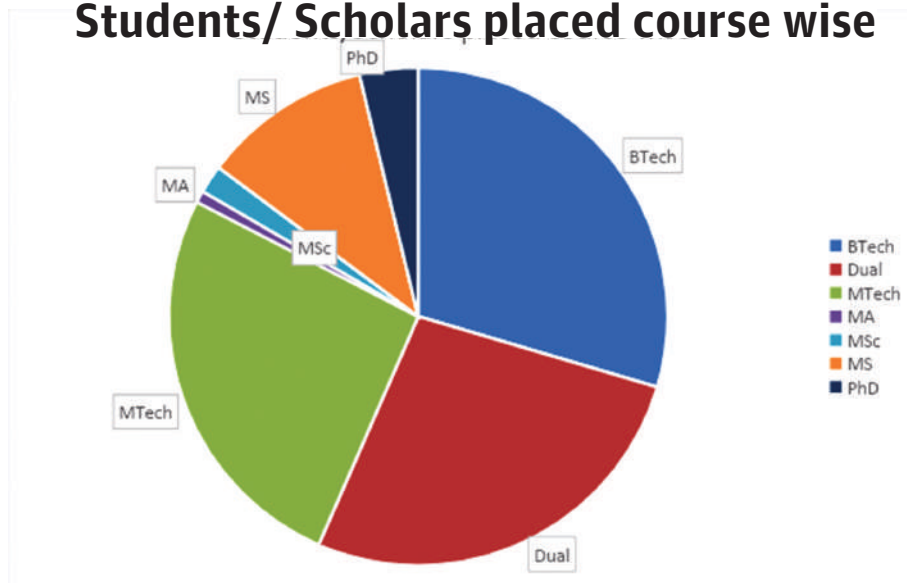
Students/Scholars Placed

Branch	B.Tech	Dual	M.Tech	M.A.	M.Sc.	M.S.	Ph.D.	Total
Aerospace Engineering	17	12	12	0	0	3	1	45
Applied Mechanics	0	0	4	0	0	5	1	10
Biotechnology	0	20	11	0	0	0	1	32
Civil Engineering	34	22	29	0	0	2	0	87
Chemical Engineering	33	16	13	0	0	3	1	66
Chemistry	0	0	0	0	10	0	0	10
Computer Science and Engineering	24	3	34	0	0	22	4	87
Electrical Engineering	31	30	34	0	0	16	10	121
Engineering Design	0	33	0	0	0	7	0	40
Humanities and Social Sciences	0	0	0	6	0	0	0	6
Mathematics	0	0	16	0	2	0	0	18
Mechanical Engineering	45	55	25	0	0	23	8	156

Metallurgical and Materials Engineering	12	4	5	0	0	2	0	23
Ocean Engineering	17	10	16	0	0	1	3	47
Engineering Physics	13	0	0	0	0	0	0	13
Physics	0	1	0	0	2	0	0	3
	226	206	199	6	14	84	29	764
Pre-placement offers								126
Total								890

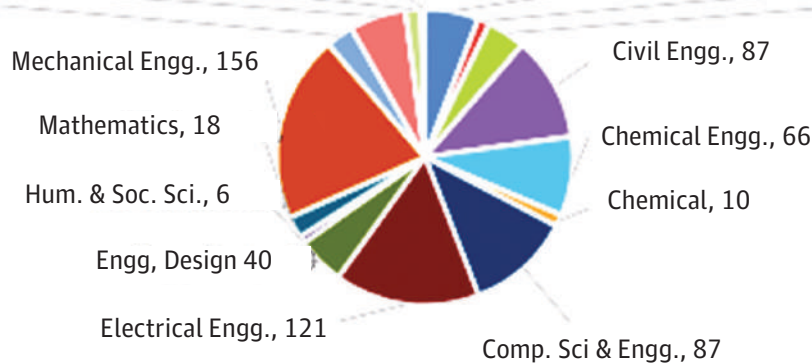
During the year, 890 students/scholars were placed in various organisations (excluding MBA).

Students/ Scholars placed course wise



Students/ Scholars placed Department wise

Metl. & Met. Engg., 23 Ocean Engg., 47 Engg. Physics, 13 Aero space Engg., 45 App. Mechanics, 10 Bio Technology, 32



- Aerospace Engg.
- App. Mechanics
- Bio Technology
- Civil Engg.
- Chemical Engg.
- Chemistry
- Comp.Sci.& Engg.
- Electrical Engg.
- Engg. Design
- Hum. & Soc. Sci.
- Mathematics



Financial Assistance to Students

Financial assistance in the form of scholarships and fellowships are given to meritorious students, who are pursuing engineering, technology and science education at the institute. The details of scholarships and fellowships sanctioned to the students of different programmes in the academic year 2019-20 are given in this section.

Assistance to B.Tech/Dual Degree students

Merit-cum-means scholarship: Students admitted to B.Tech/Dual Degree programmes and with parental income less than Rs.4.5 lakh were sanctioned MCM Scholarship (i.e. exempted from payment of tuition fee of Rs.1,00,000 per semester plus pocket allowance of Rs.1,000 per month). Students whose parental income is between Rs.1 and Rs.5 lakh are given two-third tuition fee waiver of Rs.66,666 per semester and a pocket allowance of Rs.1,000 per month by the International & Alumni Relations office through various donors. During the period under report, 420 students benefited. The year-wise details of the number of students benefited are given in Table 11.1(b).

Sl.No	Scholarships	Number of Students
1	ST Scholarships, Ministry of Tribal Affairs, Government of India	23

All SC/ST/PwD students are exempted from the tuition fee of Rs.1,00,000 per semester. SC/ST students admitted to the B.Tech/Dual Degree programmes and with parental income less than Rs.4.5 lakh were given the concession of free messing, pocket allowance of Rs.250 p.m. and exemption from tuition fees and hostel seat rent. As on 31 March 2020, 137 students were benefited.

Alumni-funded scholarship for B.Tech/Dual Degree programmes were sanctioned to General/OBC students with parental income between Rs.1-Rs.5 lakh. One-third of tuition fees for these students were also waived off.

The batch-wise details of the number of students benefited are given below

Batch	MCM Scholarship	SC/ST Scholarship
2019	91	31
2018	99	25
2017	82	29
2016	148	52
Total	420	137

Top 7% of the General category students admitted to B.Tech/DD programme are eligible for Notional Prize of Rs.1,000 (one time) and a Certificate of Merit on the basis of the rank in JEE (Advanced) and parents' income exceeding Rs.4.5 lakh. In July 2019, 468 General category students were admitted to B.Tech/DD and 29 students were eligible for Notional Prize. The alumni-funded scholarship are available to topper students based on their academic performances, as proposed by the sponsoring alumni.

Other scholarships

Scholarships were sanctioned by NCERT, GOI and State Governments to meritorious students pursuing B.Tech programme in this institute.

Number of State Government scholarship obtained by B.Tech/DD students

Scholarship	Batch/Total Number of Students				Total
	2018	2017	2016	2015	
NCERT	NA*	11	7	9	27

* Data lost due to server crash.

M.Tech

Students who joined M.Tech programme through GATE were awarded Half-Time Teaching Assistantship (HTTA) at Rs.12,400 per month. During the period under report, 419 fresh assistantships and 1,058 renewed assistantships were given. The discipline-wise details are given below:

Number of HTTA awarded

Sl. No.	Discipline	Fresh - 2019 batch	Renewal 2019 batch	Renewal - 2018 batch	
		I Sem.	Jan-May 2020	Jul-Nov 2019	Jan-May 2020
1	Aerospace Engineering	12	11	23	23
2	Applied Mechanics	19	16	13	13
3	Biotechnology - Clinical Engineering and Bioprocess	26	24	25	25
4	Chemical Engineering	29	26	32	31
5	Civil Engineering	49	44	57	57
6	Computer Science and Engineering	59	59	40	40
8	Electrical Engineering	70	57	54	54
9	Mathematics - Industrial Maths and Scientific Computing	21	19	20	20
10	Mechanical Engineering	71	46	47	47
11	Metallurgical and Materials Engineering	16	16	8	8
12	Ocean Engineering + Petroleum Engineering	35	27	27	27
13	Physics - Functional Materials and Nanotechnology	12	12	5	51
Total		419	357	351	350

M.Tech Dual Degree

The students of 2015 batch who joined M.Tech programme under Dual Degree were awarded HTTA at Rs.12,400 per month from 1 June 2019 onwards based on their obtaining valid GATE score or on securing CGPA of 8.0 or above. During the period under review, 277 students were awarded fresh assistantships from June to December 2019, and 277 renewed assistantships in January 2020, out of which 263 students were renewed HTTA at the rate of Rs.12,400 p.m. and 14 students at the rate of Rs. 6,950 p.m., as they obtained CGPA of less than 6.5 in the July-November 2019 semester. The department-wise details are given below:

Sl. No.	Discipline	2015 batch	
		Fresh (Ninth Semester)	Renewal (Tenth Ninth Semester)
1	Aerospace Engineering	16	16
2	Biotechnology	35	35
3	Chemical Engineering	9	9
4	Civil Engineering	25	25
5	Computer Science and Engineering	13	13
6	Electrical Engineering	47	47
7	Engineering Design	38	38
8	Mechanical Engineering	67	67
9	Metallurgical and Materials Engineering	9	9
10	Naval Architecture and Ocean Engineering	12	12
11	Physics	6	6
Total		277	277

M.Sc.

Students admitted to M.Sc programme were sanctioned Rs. 1,000 p.m. merit scholarship as per rule. Certain students were also exempted from the payment of tuition fee. During the period under report, 116 students were benefited. The department-wise details are given below:

Number of Merit Scholarship and Freeship awarded

Sl. No.	Course	Merit Scholarship		Freeship (Tuition Fee Waiver)		50% Freeship (50% Tuition Fee Waiver)	
		1st Year	2nd Year	1st Year	2nd Year	1st Year	2nd Year
1	Chemistry	19	16	6	5	8	3
2	Mathematics	4	10	3	4	1	1
3	Physics	13	11	5	4	1	2
Total		36	37	14	13	10	6

M.A.

Institute Merit Scholarship: 25% of students admitted to the M.A. programme and with parental income less than Rs.4.5 lakh were sanctioned Merit Scholarship (i.e. exempted from the payment of tuition fee of Rs.3,000 per semester plus payment of pocket allowance of Rs.1,000 per month).

The SC/ST students admitted to the M.A. programme and whose parental income is less than Rs.4.5 lakh were sanctioned the concession of free messing plus pocket allowance of Rs.250 p.m. and exemption from payment of tuition fees and hostel seat rent as per Government of India post-matric scholarship rules.

Institute free studentship scholarships for M.A. programme were sanctioned to students. These scholarship comprises of exemption from payment of tuition fees.

The batch-wise details of the number of students benefitted are given below:

Batch	Merit Scholarship	SC/ST Scholarship
2019	0	0
2018	1	0
2017	1	0
2016	2	4
2015	2	1
Total	6	5

M.S.

The scholars admitted to the M.S. programme through GATE are given Half-Time Teaching Research Assistantship (HTRA) of Rs.12,400 p.m. for two years that is later extended to three years on the recommendation of General Test Committee (GTC). During the period under report, 336 scholars received these assistantships of which 195 were fresh scholars. The department-wise details of the assistantships awarded and renewed are given below:

Number of HTRA awarded

Sl. No.	Discipline	Fresh	Renewal	Total
1	Aerospace Engineering	14	11	22
2	Applied Mechanics	23	20	40
3	Biotechnology	7	4	11
4	Chemical Engineering	9	7	16
5	Civil Engineering	17	14	30
6	Computer Science and Engineering	15	19	28
7	Engineering Design	7	7	14
8	Electrical Engineering	36	19	49
9	Management Studies	13	9	20
10	Mechanical Engineering	35	47	73
11	Metallurgical and Materials Engineering	9	9	18
12	Ocean Engineering	10	8	15
Total		195	174	336

Ph.D.

The scholars admitted to the Ph.D. full-time programme in Engineering are sanctioned HTTA/HTRA of Rs.31,000 p.m. for first two years and Rs.35,000 p.m. for next three years. During the period under report, 1,671 scholars obtained assistantships of which 318 were fresh scholars. The department-wise details of the assistantships awarded and renewed are given below

Number of HTRA awarded

Sl. No.	Discipline	Fresh	Renewal	Total
1	Aerospace Engineering	11	62	73
2	Applied Mechanics	23	110	133
3	Biotechnology	23	94	117
4	Chemical Engineering	21	74	95

5	Chemistry	13	89	102
6	Civil Engineering	37	126	163
7	Computer Science and Engineering	7	36	43
8	Engineering Design	8	39	47
9	Electrical Engineering	33	157	190
10	Humanities and Social Sciences	17	57	74
11	Management Studies	18	49	67
12	Mathematics	9	53	62
13	Mechanical Engineering	38	157	195
14	Metallurgical and Materials Engineering	12	85	97
15	Ocean Engineering	12	64	76
16	Physics	36	101	137
Total		318	1353	1671

Fellowship deemed to be equivalent to Institute Pre-Doctoral Fellowship (except contingency) will be awarded for a maximum period of six months from the date of submission of final synopsis with thesis for the regular Ph.D. scholars, who have submitted thesis within four-and-a-half years and for direct/

upgraded regular Ph.D. scholars within five years. They will pursue the work as defined for an Institute Pre-Doctoral Fellow. During the year under report, 50 Ph.D. scholars were sanctioned Pre-Doctoral Fellowship.

Financial assistance to research scholars for international conferences

This institute is encouraging the research scholars to present papers in international conferences for which they are given financial assistance. The financial assistance provided to M.S. and Ph.D. scholars is up to the limit of Rs.1,50,000, including registration fee

National conference/seminar/symposium/workshop/visit to other laboratories, etc. within India

Research scholars are given the following financial assistance for presentation of papers in national conferences in India:

Claim type	Eligibility
Registration fees	As per actuals, with the recommendation by DC/GTC
Travel	II Tier AC train fare
Local travel (at Chennai and at the place of conference)	Four trips for the duration of the conference by auto/taxi/bus at actuals subject to an upper limit of Rs.500 per trip
Lodging	Hostel/Guest House/Hotel for the conference days plus one day each prior to and after the conference days at actuals subject to a ceiling of Rs.1,000 per day.
Per diem	Rs.500 per day for conference days plus one day each prior to and after the conference days.
Poster charges	Maximum amount of Rs.1,500 per poster (with bill).



Weaker Section and Foreign National Students

B.Tech and Dual Degree programme

As per the Government of India (GOI) orders, 27%, 15% and 7.5% of seats are reserved for OBC, SC and ST students, respectively, in the B.Tech. and Dual Degree programmes. These students are admitted through the Joint Entrance Examination (Advanced) with a relaxation. These students have to get only

60% of the marks obtained by the last student of the General category to get qualified for admission. During counselling prior to admission, an advisor will explain to each student the requirements of different branches. This helps the students to choose a suitable branch based upon their capability and interest.

The following are the details of the number of SC/ST students admitted to the B.Tech. programme through JEE (Advanced) 2019-20 and Preparatory Course during 2018-19:

Total Sanctioned Intake	Sanctioned Intake		Number Joined Through						
			Programme	JEE		Preparatory Course			
	SC	ST		SC	ST	SC PD	ST	GE PD	OBC PD
B.Tech. 762	114	56	B.Tech	120	65	-	3	1	1
Dual Degree 157	24	13	Dual Degree	23	11	-	6	3	-

SC/ST students admitted against reservation are given the following benefits:

Tuition fee waiver

Free lodging and messing (basic menu only) and pocket allowance of Rs.250 p.m. provided their parents' income is Rs.4,50,000 net per annum or less.

A Book Bank as part of Central Library is maintained for the benefit of the SC/ST students. The students are issued 12 tickets for taking books from the Book Bank. Books are issued for a semester.

Help in getting placement. Wherever possible, industries are requested to conduct separate interviews for SC/ST students and the requirements for these students are lower than those for the General category.

Preparatory Course for admission to B.Tech./Dual Degree programme:

A Preparatory Course of one academic year was initiated by the Ministry of Human Resource Development, Government of India, exclusively for SC/ST/PwD students. Selection to this course is from the JEE (Advanced) list of SC/ST/PwD students, who did not qualify for admission. Upon successfully completing the preparatory course at the IIT, they would be eligible to join the B.Tech./Dual Degree programme and will not require to write the JEE (Advanced) again. Following are the details of admission in July 2019: (IIT Madras, IIT Dharwad, IIT Tirupathi and IIT Palakkad)

Offer issued for PC			
SC PD	ST PD	OBC PD	GE PD
1	7	6	8

Thirteen Preparatory Course 2017-18 candidates were offered admission to B.Tech./Dual Degree Programme in July 2019, as they successfully completed the course.

M.Tech programme

Seats are reserved for SC and ST candidates as per the Government of India orders. They are admitted through GATE by a separate merit list. Following are the details of admission in July 2019:

Offer issued		Number joined (HTTA)	
SC	ST	SC	ST
63	32	59	30

M.Sc. programme

Admission was made to the M.Sc. programme through JAM entrance examinations only. Twenty-one SC and 10 ST students were admitted in M.Sc. These students were given tuition fee waiver.

M.Tech and M.Sc students admitted against reservation are given the following benefits:

Book Bank facility with 12 library tickets. Books are issued for a semester.

Both public sector and private sector industries were requested to recruit SC and ST students. Other special steps were also taken to enhance the recruitment of this category of students.

Scholarship is given to these students as per Government of India norms.

Admission of foreign national students and Indian nationals residing abroad

In July 2016, one student joined the Dual Degree programme and in July 2017, one student joined the Ph.D. programme. In July 2019, three students joined the M.Tech. programme, three students joined the Ph.D. programme and two students joined the Joint MBA programme.

At the end of March 2020, 10 foreign nationals were on the rolls of the institute. The programme and country-wise details are given below:

Country	Year I	Year II	Year III	Year IV	Year V	Total
Foreign National Students						
Dual Degree						
South Korea				1		1
M.Tech						
Bangladesh	2					3
Madagascar	1					
Ph.D.						
Ethopia	2		1			4
Afghanistan	1					
Joint MBA						
Germany	2					2

Foreign students are also permitted to use the Book Bank. The Book Bank Library tickets are issued to each student. Books are issued for a semester.

In addition, IIT Madras Alumni Association provides financial assistance to students under IITMAANA Travel Grant programme to assist IITM students to visit USA and present their papers at nationally recognised technical conferences. The grant covers airline ticket charges and visa fees, but exclude payment of conference registration fees.



Campus Amenities

Engineering Unit

The Engineering Unit is entrusted with the responsibility of construction, maintenance of buildings and operations and maintenance services of the institute. The works are carried out through contract by calling tenders and quotations in a transparent manner.

For maintaining the quality in construction of buildings, the advice of faculty members, who are experts in their respective areas, is sought. To complete the projects in time, the Engineering Unit holds review meetings with the stakeholders periodically. The Engineering Unit has also introduced new materials and technologies in the construction and maintenance activities.

The status of works (completed, in progress and in the planning stage) is as follows:

Major works completed

Sl. No.	Work	Rs. (in lakhs)
Executed by Engineering Unit		
1	Development of forecourt at NAC1	75
2	Repair and renovation of ICSR auditorium	40
3	Creation of Recording Studio at Class Room Complex	90
4	Repair and renovation of toilets Phase-I in Bio-Technology (Block 1)	42
5	Repairing and leak-proof works in toilet, bathroom and repairing works for ceiling and sunshade for various quarters in IITM	30
6	Providing and fixing emergency staircase and all-round fencing at Vana Vani School	25
7	Deepening of lake at IIT Madras	77
Executed by CPWD		
1	Construction of additional rooms for Taramani Guest House (TGH) at IIT Madras	447

Major works in progress

Sl. No.	Work	Rs. (in lakhs)
Executed by Engineering Unit		
1	Waterproofing works to the terraces of Residential Zone buildings at IITM	47
2	Addition and alteration of D1 type quarters from D1-25 to D1-48 (24 units) at IIT Madras	433
Executed by CPWD and funded by the Ministry of Shipping		
1	Construction of Port Centre in Thaiyur Campus	2700
Executed by the Engineering Unit under Higher Education Financing Agency (HEFA)		
1	Construction of Annex building (G+3) at the existing Computer Science and Engineering (CSE) building	2180
2	Construction of Electrical Science Block-II (ESB-II) Ground+6 floors	2908
3	Construction of 64 Nos. of G1 type quarters for married research scholars	2205
4	Upgrade of existing sewerage system in IIT Madras	3458
5	Providing pumping mains and water distribution system to the entire campus of IIT Madras (Upgrade of the existing water supply system in IIT Madras)	3700
6	Construction of girls' hostel by replacing the existing rear wing of Sarayu Hostel	4262
Executed by CPWD under HEFA		
1	Construction of New Academic Complex-II	18770
2	Construction of new hostel (1200 no.) by replacing the existing Mandakini hostel	14675

Major works to be executed in 2020-21

Sl. No.	Work	Rs. (in lakhs)
1	Integration and automation of In and Out gates with boom barrier (Automation + Civil Works) (100.30 L+314.00 L)	427
2	Re-carpeting of major roads in the IITM campus	112
3	Painting of institute and Hostel Zone buildings (216 L+292 L)	508
4	Creation of emergency staircase at Ocean Engineering Department, replacing AC cement sheet with cement fiber sheets in Chemical Engineering workshop bay, development of parking facility in Velachery Gate	51
5a	Renovation of existing terrace portion at the campus café to accommodate 500 seats for gathering space (fabric roof structure and civil works)	192
5b	Providing light fittings, fans and power points for the newly developed AC and Non-AC dining areas in the terrace of campus café inside the premises	10.4
5c	Provision of AHUs and extension of chilled water lines to the terrace of campus café for Multipurpose Hall in IIT Madras	42
6	Renovation of toilets on all the floors in the Admin building	125
7	Repair and renovation of the basement floor of Central Library	129
8	Waterproofing works in AZ buildings	100
9	Renovation of toilets in Student Activity Centre (SAC) Building	83
10	Monkey-proofing works in girls' hostels	25
11	Providing additional aluminum sheet roofing over the existing roofing at Sports Complex building in IIT Madras	75

12	Waterproofing treatment to sloped roof at Himalaya Mess in IIT Madras	77
13	Constructing emergency escape staircases in Cauvery and Krishna Hostels	48
14	Augmentation works at Taramani Gate and widening of the road connecting Taramani Gate and Hostel Avenue Road in IIT Madras	41
15	Renovation of toilets and replacing the damaged sunshades in Electrical Science Block	139
16	Renovation of toilets and replacing the damaged sunshades in Mechanical Science Block	102
17	Renovation of toilets in Open Air Theater (OAT)	152
18	Installation of video walls at three more locations in IIT campus	75
19	Renovation of Senate Room on Administrative Building Fifth Floor	45
20	Renovation of Taramani Guest House	301
21	Revamping the electrical installation in the guestrooms of Taramani Guest House, IIT Madras	48
22	Tiling of new wing rooms, providing cupboard shutters, internal painting and corridor tiling of Krishna Hostel	275
23	Repair and renovation of toilets in Bio-Tech (Phase II)	70

Housing facilities

The campus of IIT Madras has 553 faculty quarters, 412 staff quarters and 232 students' quarters for accommodation. There are 165 servant quarters in the campus as well.

Horticulture

The Horticulture unit is functioning under the Engineering Unit. It maintains 56,702 m² of lawns (39,358 m² of lawns at various locations and 17,344 m² of turf in stadiums and play fields). In addition, hedges and garden elsewhere in the campus are maintained. No chemical pesticides sprays are advocated anywhere within the campus (only Azadiractin 10,000 ppm sprays are used, when necessary to control pests beyond ETL), and vermicompost is used as the sole nutritional supplement.

The lawn turf in Manohar C. Wasta Stadium has been raised organically with local grass species. The green patches serve as a niche location for both cervid species (blackbuck and spotted deer) that regularly visit the areas for food.

Miyawaki gardens that were developed adjacent to the newly constructed housing complexes (Chera, Chola and Pandya) are currently being maintained to improve the green cover in a considerably shorter time. Nearly 200 tree saplings—planted by the staff on the day of their retirement—are maintained with tree guards and adequate care. The irrigation of lawns and garden area is carried out with treated sewerage water meeting irrigation-quality standards through a dedicated pipeline network.

The horticulture section also takes care of providing water troughs at 70 locations for institute's cervid

population (black buck and spotted deer). The water containers are cleaned and refilled on a daily basis. These containers also feed a whole lot of smaller fauna within the campus such as bonnet macaque, squirrels and birds.

Public health

The horticulture section takes care of the prevention of mosquito-breeding grounds and control of larval and adult mosquitos through benign sprays and fumigation. It also takes care of termite control within the campus.

The campus has solid waste management through safe disposal of garbage. Hazardous waste is collected from various departments and disposed as per protocol through Tamil Nadu Waste Management Company Limited.

Telephone facilities: PBX telephone system

The campus telephone facility has been extended to the office and residential quarters of faculty members, laboratories of various departments, and miscellaneous services from HiPath 4000 ISDN PBX system with 5000 line capacity interfaced with BSNL through ISDN PRA lines. There are 18 remote telephone systems housed at various buildings in Academic, Hostel and Residential Zones connected to main PBX system via optical fiber link.

The complaints of campus telephone lines are attended within two hours from the time of receipt/registration. Online campus telephone directory is available on the institute website under Contact Tab >> Telephone Directory.

Local body approval

Chennai Metropolitan Development Authority (CMDA) has approved 21 buildings in the campus. Plans for other buildings constructed and under construction in the campus have been submitted to the CMDA and are under approval.

Central Supplies Unit

The Central Supplies Unit functions under the administration of a warden. The unit procures milk from the Tamil Nadu Cooperative Milk Producers' Federation (TCMPF) and supplies to hostels. It procures major items from wholesale suppliers through Provision Selection Committee and Provision Purchase Committee, and supplies them to hostels, thus, economising the mess expenses. Branded cosmetics and eatables from wholesale dealers are other items procured and made available to students through Students' Amenities Centres at reduced prices.

Hospital

The institute hospital is a 25-bedded primary to secondary hospital, which caters to the health needs of the students, staff and their dependents.

The hospital working hours are

Week days : 08.15 am - 05.45 pm

Saturday : 08.15 am - 1.00 pm

Saturday : 1.00 pm onwards: Emergency care

Sunday and Government Holidays: Emergency care

Staff

High-quality, ethical care is given to all users by a dedicated team of hospital staff that includes

1) Regular doctors:	11
2) Visiting consultants:	25
3) Nurses:	14
4) Nursing Assistants (female):	6
5) Nursing Assistants (male):	3
6) Reception/MRD:	3
7) X-Ray/U/S/ECG Technician	2
8) Hospital Office	2
9) Office attenders	2
10) Hospital storekeeper	1
11) Consultant (Finance)	1

Facilities available

- 1) Pharmacy: Outsourced to Apollo
- 2) Clinical lab: Outsourced to Lister Metropolis
- 3) Physiotherapy: Outsourced to M/s. Indus Therapeutic Solutions

In-house facilities

- 1) ECG

- 2) X-ray Unit
- 3) Ultrasonography
- 4) Well-equipped labour room with baby warmer
- 5) Operation theatre
- 6) Inpatient wards

Academic activities

To update the hospital staff on the hospital activities, a meeting of all staff is held on alternate months. A medical topic of common interest is also discussed. Doctors and staff nurses are encouraged to take part in CME and medical conferences out of the campus.

Clinical activities

1) Time-to-time medical camps are conducted to screen users for chronic ailments.

2) Women's camp: Every year, in the month of March, a medical camp is held for women. Due to the pandemic, it was cancelled this year.

3) Regular outpatient clinic is where patients with health-related issues are consulted. In case a specialist opinion is required, patients are appropriately referred either within the hospital or outside as per the requirement.

4) Immunisation is carried out on the second Saturday and fourth Friday of every month. The Universal Immunization Schedule as per the Government of India is followed for children. Adult immunisation and booster doses are given as and when necessary. In case of epidemic, mass immunisation is also done.

5) Screening of employees and their dependents for chronic ailments, especially for those above 40 years, are done on an outpatient basis. High-risk patients and those with strong genetic risk are screened earlier or whenever necessary as the case may be.

6) Workshops and talks are held for students through NCC and Disaster Management Committee.

Special administrative activities

Hospital Review Board looks into the administrative matters of the institute staff, such as appointments, special medical leave, exemption from work, allotment of quarters and hostels accommodations on medical grounds.

Hospital Advisory Committee with representatives from all sections of the institute staff and students meets on the first Friday once in three months.

Annual Census of Hospital for the Year 2019-2020

2019-2020	O.P.	Emergency	In patient in	In Patient	Surgery
	Day	Cases	Casualty	(In ward)	Major
	8am - 6pm	6pm - 8am	admission		
April 2019	7978	832	395	38	-
May 2019	6266	678	284	11	-
Jun 2019	4738	577	221	15	-
July 2019	8458	786	366	37	-
August 2019	10250	1215	477	46	-
September 2019	9070	1146	395	41	-
October 2019	8935	1048	396	55	-
November 2019	10240	1086	417	46	-
December 2019	7887	760	237	28	-
January	10589	1156	385	21	-
February 2020	9535	1135	373	44	-
March 2020	7005	731	259	28	-

Annual Census of Hospital for the Year 2019-2020

2019-2020	Surgery - Minor	Diagnostic	Dental	X-ray	ECG	USG	Physio
		Procedure					
April 2019	3	5	127	362	88	-	713
May 2019	7	9	111	233	49	-	731
Jun 2019	4	2	107	237	59	-	612
July 2019	7	16	133	863	93	-	737
August 2019	12	15	141	416	59	-	984
September 2019	6	14	86	265	83	-	766
October 2019	4	8	108	337	54	-	834
November 2019	8	14	130	365	86	-	935
December 2019	3	7	138	351	68	-	850
January	13	11	143	405	67	-	802
February 2020	13	11	126	378	96	-	987
March 2020	2	8	74	243	73	-	900

Grand Total = 1,16,716 patients for the year 2019-2020

Taramani Guest House

The institute has two guest houses within the campus: the Bose-Einstein Guest House near the Administrative Building and Taramani Guest House (TGH) in the Hostel Zone. The Bose-Einstein Guest House has 18 air-conditioned suites. Each room has a telephone, fridge and TV. VIPs, institute guests and invited guests are usually accommodated here. TGH has 83 rooms, of which 18 are suites and 65 are air-conditioned rooms. The guest house provides board and lodging facilities for institute guests and visitors, newly appointed faculty members, staff members, delegates and participants attending conferences, seminars, symposia and workshops.

Bank

The State Bank of India has a branch and two ATMs on campus. Canara Bank also has a branch and an ATM facility within the institute. In addition, ICICI Bank has installed an ATM in the Hostel Zone.

Post office and telecom centre

There is a post office on campus to cater to the needs of the campus community. A 24-hour telecom centre caters to the needs of the employees, students and residents.

Schools

Vana Vani Matriculation Higher Secondary School

(VVMHSS), administered by the IIT Madras Educational Trust, and a Kendriya Vidyalaya (KV) function on campus. VVMHSS offers courses from LKG to class 12 and the KV offers courses from class 1 to 12.

Open-Air Theatre

The Open-Air Theatre is used by the Film Club to screen films during weekends. It is also used for other functions of the institute and schools.

Student Activities Centre

This building is used by students for indoor games. Important functions such as convocations and orientation programmes for freshers are also conducted here.

Cafeteria

There are two canteens, the IIT Staff Canteen and the IRTC restaurant on campus to cater to the needs of employees and students.

Crèche

A crèche is functioning on the campus for the benefit of the staff and working women. There were about 157 children in the crèche during the period under report.

Transport services

The institute has eight LYNX buses that provide transport facilities to the staff, students and residents of the campus. Transport facilities are also available for official work.

Security Section

The Security Section is an important constituent of IITM, as it is vested with the task of ensuring the security of men and materials on the campus. The section is also responsible for the maintenance of peace and harmonious coexistence of campus residents. As a part of support service, it is on call of the campus residents for various types of emergencies and contingencies, which may adversely affect the normal life of the campus.

The security policy of IIT Madras is that the core security functions and critical areas will be manned by the IIT's own security personnel, and the allied security functions and areas will be outsourced and coordinated by the institute personnel. Similarly, the institute has been progressively introducing greater automation. The current year has been eventful and rewarding too.

This section mainly focuses on the following areas:

- Key responsibility areas: security of the institute property and coordination with the law enforcement agencies
- Regulating men and materials through all the gates
- Traffic management
- Patrolling
- Maintenance of fire equipment and fire prevention; periodical checking/testing of fire equipment
- Conducting training on fire safety to students, staff, faculty and school children

- Conducting fire and evacuation drill at high-rise buildings

Regulating men and materials

The Security Section is vested with the task of ensuring the security of men and materials on the campus by issuing passes for vehicles and ID cards for contractors and their workers. The Material Gate pass system is in place to allow materials after verifying the specimen signatures. In addition to the passes, token system is being introduced on certain gates.

Traffic management

The Security Section is vested with the task of ensuring proper traffic management since the campus has been housed with two schools and Tech Kids (crèche). The section manages the traffic by diverting vehicles and ensuring speed limits using scientific gadgets to avoid accidents in the campus. There have been no major accidents in the campus.

Patrolling

To have an effective patrolling, the entire campus has been divided in three zones, namely Institute Zone, Residential Zone and Hostel Zone. Apart from this, the perimeter wall patrolling is being carried out by foot and vehicles to check the physical condition of the wall and of any security breach.

Maintenance of fire equipment and fire prevention

Periodical servicing of fire equipment installed in the buildings is done with the objective of keeping readiness all the time to control any fire incident. There are about 1,500 fire extinguishers of different types and capacity installed in the campus in addition to fixed fire protection system, i.e. sprinklers, wet risers and downcomers, and yard hydrants, fire detection and alarm system in the multi-storeyed building, sophisticated and computer centres, etc. Monthly checking of these systems is carried out for their effective use, and records with this effect are maintained with security section.

Cover for under-care quarters

The Security Section provides security cover to vacant quarters. During the year under report, there were 32 under-care quarters guarded when the licensees were away from the campus due to various reasons. These quarters were handed over to the licensees without any loss/theft of property.

Training on fire safety and evacuation drill

In 2019-20, the Security Section conducted training programmes round the year, particularly for students, departmental staffs and faculty, to create awareness about the use of fire safety equipment. For 1,682 students, around 314 security staff members were trained. The evacuation drill for hostel students staying in multi-storeyed buildings was done with the assistance of local fire brigades and

students' disaster management cell.

Fire training programme for IIT Security Staff-2019-2020

Fire Safety Training programme was conducted for Outsourcing Security Staff BSNP, SIS and CISS on regular basis. A weekly training programme on squad drill, special gate checking, and perimeter wall checking was also conducted for the security personnel.



Familiarisation training programme for new fire extinguishers

A training programme for the familiarisation on the use of new fire extinguishers was conducted for the security staff (demo, operating methods and hands-on practice).



Fire awareness programme during National Fire Service Day-14 April 2019

Several competitions were conducted during the Fire Services Week, 14-20 April 2019, to create awareness on

fire safety. Here is the list of the competitions:

- Fire drill competition for the institute security staff - 30 participants
- Drawing competition for school students - 40 students
- Programme for wives of employees residing on Campus - five participants
- Essay writing competition for faculty, students and staff - three participants

Servicing and maintenance of fire extinguishers

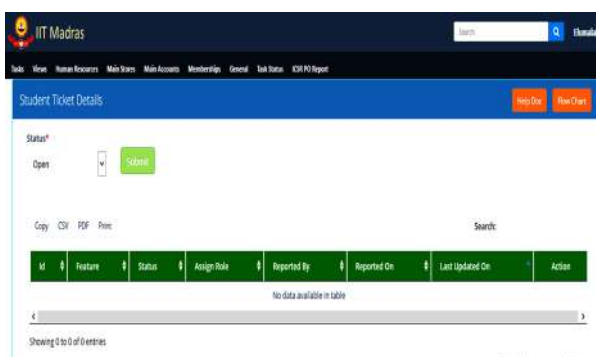
Quarterly servicing/maintenance of portable fire extinguishers installed in the campus was carried out in coordination with the Engineering Unit.

Testing of fire alarm and detection system

Fire detection and alarm (FDA) system was also done jointly with Engineering Unit (EU) and found in order.

Student online ticket

To avoid time delay and physical presence to lodge a complaint to the security section, we have facilitated online complaint ticket for students through workflow.



How to apply

- Step 1: Login to the workflow, <https://workflow.iitm.ac.in/> employee
- Step 2: Select General in task bar
- Step 3: Select Student Ticket option and raise the complaint

QR code token for students' bicycles

In the current academic year 2019-2020, we have introduced QR code token for students' bicycles for tracking purpose. A QR code token is stuck to the frame of the bicycle, which is visible to the person at the entry and exit gates to scan. So far, 1,570 new bicycles have been registered. The details of the student and bicycle are synchronised to the QR code token number issued to



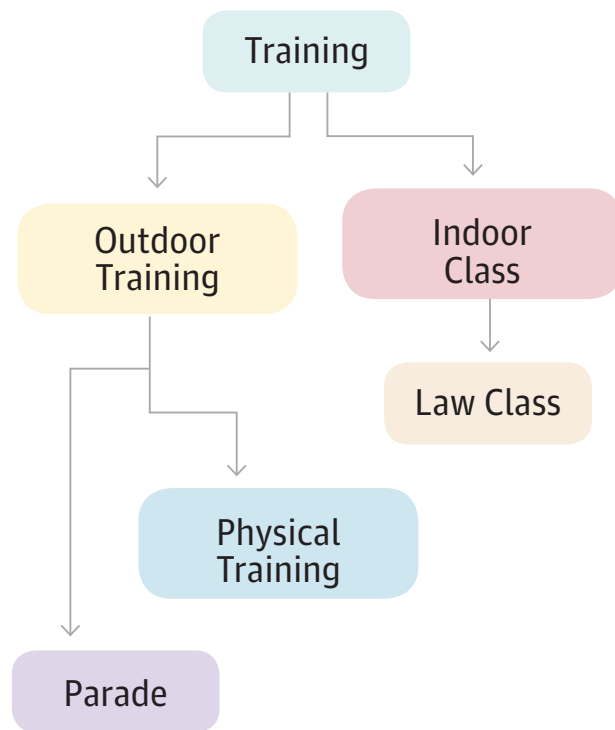


the student.

An Android application, Mobapp team has been developed by the institute students.

Refresher Training Programme-PRS AVADI

One-week Refresher Training Programme for institute security personnel was conducted at Police Recruits School (PRS), Avadi.



Daily Training Routine (05.45 hrs to 1800 hrs) Seminar and in-house training programme for security personnel

During the period under report, the institute security personnel attended the workshops and in-house training programme.

Campus visit and security arrangements

Special gate checking

Special gate checking was carried out at all entry gates. Identity cards (IDs), vehicle pass,

Hostel Nights

Extra security guards were posted during the Hostel Nights celebrated by the students staying in various hostels.

UG and PG admission 2019

Orientation programme and admission for first-year B.Tech/Dual Degree/M.A./M.Tech/ M.Sc. students was conducted at SAC Building from 22-26 July 2019. Additional security guards were deployed at all gates and SAC building to regulate crowd and traffic. Security personnel were deployed at Gajendra Circle to guide new students and parents.

Diamond Jubilee Celebration (31 July 2019)

The Institute diamond jubilee celebration was conducted in SAC building on 31 July 2019. The Consul General from the German Embassy was the chief guest. The Security Management, regulating students and traffic control, was managed by the Institute and Outsourced Security personnel.

Independence Day Celebrations

The 73rd Independence Day was celebrated on 15 August 2020 at Manohar C. Watsa Stadium. Eight contingents participated, including two schools (Kendriya Vidyalaya and Vana Vani with band team), in the ceremonial parade. Cash award for the best turnout personnel was awarded during the function. The best marching contingent was also selected and Vana Vani School, IIT won the prize. The ceremonial parade was commanded by Chief Security Officer, Shri N. Elumalai.

56th Convocation (30 September 2019)

The 56th Convocation of the Indian Institute of Technology Madras was held on 30 September 2019 (Monday). The main function was held at SAC in forenoon. Honorable Prime Minister, Shri Narendra Modi was the Chief Guest. The department degree distribution programme was conducted at different departments at the Academic Zone and IITM Research Park in the afternoon.

The Honorable Union Minister of HRD, His Excellency the Governor of Tamil Nadu, Honorable Chief Minister of Tamil Nadu, Consulate Generals, industrialists and other dignitaries attended the convocation.

The Special Protection Group (SPG) along with Tamil Nadu police force took over the protection of SAC building and campus. The institute security personnel and outsourcing securities were effectively deployed for security, traffic and parking arrangements during the convocation.

Safety precautions for Diwali

The announcement on fire and safety precautions was

made for the awareness of campus residents. Some Dos and Don'ts on safety were also given.

Shaastra 2020 (3-6 January 2020)

The technical festival, Shaastra was held from 3-6 January 2020, and the security personnel were deployed at all posts and vulnerable areas.

Saarang 2020 (10-14 January 2020)

The cultural festival, Saarang took place from 10-14 January 2020. The security personnel were deployed at KV ground, SAC and OAT, and with increased strength at all gates.

Temporary fire points were installed at SAC, OAT, KV school ground, stall areas, CLT, parking areas (2 and 4 wheelers). Police and fire service personnel were present during the programme.

Republic Day celebrations

The 71st Republic Day was celebrated on 26 January 2020 at Manohar C. Watsa Stadium. Nine contingents participated, including two schools (Kendriya Vidyalaya and Vana Vani School with band team), in the ceremonial parade. Cash award for the best turnout personnel was awarded during the function. The best marching contingent was also selected and Vana Vani School won the prize. The ceremonial parade was commanded by the Chief Security Officer, Shri N. Elumalai.

VVIP visit

Vice President of India, Shri Venkaiah Naidu attended the programme, India 2020-2030: The Gen Y's Vision for the Decade, in the Student Activity Centre on 29 February 2020.

Security arrangements

- IIT security personnel along with the Tamil Nadu Police performed the duty.
- The security personnel were deployed from the Main Gate to the SAC building.
- All ASO's were instructed to clear the traffic till the programme ended.
- All parking arrangements were effectively maintained by the security personnel.

Tamil Nadu Commando Force Drill (14 March 2020)

The Tamil Nadu Commando Force team led by the SP (TNCF) conducted a counter-insurgency drill on 14 March 2020 at the New Academic Complex (NAC) along with Chief Security Officer, Security Section, Outsourcing Security Personnel, IIT hospital ambulance, Tamil Nadu Fire and Rescue Service, local Police personnel and Tamil Nadu BDDS.

National-level lockdown

During the phase-wise lockdown, the security deployment was done as per the Government guidelines with instructions to facilitate entry and exit of faculty, research scholars, project staff, essential services, and campus residents for emergency/hospital, etc.

Installation of surveillance cameras and monitoring system

The security section periodically checks the cameras installed at all the gates, Academic Zone, hostels and residential areas to monitor the movement of men and materials.

Sl.No	Location	No of Cameras
1	Academic Zone	907
2	Residential Zone	90
3	Hostel Zone	313
4	SFC Zone	156
Total number of cameras		1466

Perimeter surveillance and use of drone

Improvised watch tower has been set up to keep vigil on the perimeter wall. Security guards were deployed round the clock with wireless sets. They constantly monitor the lakes, perimeter wall and forested areas. Using drones, a video was captured with high-definition cameras, covering the densely forested areas, perimeter wall and lake areas.

Protection of deer

Since February 2018, security guards constantly monitor the female deer (black buck) during their delivery and save the fawn from dog bites, particularly in the black buck habitation area in the Hostel Zone (SAC, Sangam Ground, CCW, swimming pool, and Himalaya). The section strives hard to save wildlife in coordination with the Forest Department and rescue them for timely treatment for injuries. There was a rare occasion when the section united a mother and baby deer with the help of Forest Department.

Other activities

The students selected for internship/projects to industries, particularly of security-sensitive jobs, are given police clearance certificate from the local police stations with the help of Security Section. The section controls and organises the traffic during events like marathon race and cycling race. The section provides security to various VIPs during their visit for national and international conferences and functions held at the campus. The section provides security cover during the Gate and JEE examinations as well.

During the year, the security personnel also benefitted and gained knowledge to enhance their performance in discharging of duties in a professionalised manner.

Campus News

Published every Friday, the Campus News highlights the important events of the institute



Finance and Accounts

The financial year of the institute corresponds with that of the Government of India (1 April to 31 March of the following year). The accounts of the institute are annually audited by the Office of the Director General of Audit (Central), Chennai on behalf of the Comptroller & Auditor General of India.

The 89th Finance Committee of the institute, in its meeting held on 29 November 2019, recommended revised estimates of Rs.692.00 crore (gross) for the year 2019-20 and budget estimates of Rs. 871.00 crore (gross) for the year 2020-21 under revenue expenditure head. The committee also recommended a revised estimate of Rs.82.00 crore for 2019-20 and budget estimates of Rs.100.00 crore for 2020-21 under capital expenditure. The same were approved by the Board of Governors of the institute in their 243rd meeting held on 29 November 2019.

The following is a summary of the revised estimates for 2019-20 and budget estimates for 2020-21 under revenue expenditure and capital expenditure, as approved by the Board of Governors of the institute in their 243rd meeting held on 29 November 2019.

(Figures in crores of Rs.)

Item	Budget Estimate 2019-20	Revised Estimate 2019-20	Budget Estimate 2020-21
Grant under OH-36 and OH31			
Institute income projected	91.2	84	88
Grant projected for salary (OH-36)	307.35	272	330
Grant projected for pension and pensionary benefits (OH-31)	110	118.23	118
Grant for scholarships (OH-31)	110	105.34	124
Grant for non-salary component (OH-31)	219.65	196.43	299
Grant expected under OH-36 and OH-31	747	692	871
Grant under OH-35			
Grant projected for asset creation			
35.01 - Buildings	44	31.57	25
35.02 - Equipments	45	23.9	45

35.03 - Library	20	19.94	20
35.04 - Furniture	5	6.59	10
Grant expected under OH-35	114	82	100

Audit

The annual accounts of the institute for 2018-19 were audited by the Office of the Director General of Audit (Central), Chennai during June-July 2019. A certified copy of the annual accounts with the audit report was sent to the MHRD after the annual accounts were duly adopted by the Board of Governors of the institute on 29 November 2019 for the MHRD to arrange for placing the same before both the Houses of Parliament during the winter session.

Summary of provisional revenue and capital grant utilisation for 2019-20 (Figures in crores of Rs.)

Item	Amount
Grant under OH-35	
Opening balance	18.68
Grant received under OH-35	70
Total funds available under OH-35	88.68
Expenditure under OH-35	
Building and electrical installation	36.05
Academic equipment	13
Equipment for specialised centre	-
Infrastructure (furniture/computers, etc.)	23.21
Periodicals/journals/books for library	18.7
Total Expenditure under OH-35	90.96
Grant under OH-31 and OH-36	
Opening balance	-7.9
Grant received under OH-31 and OH-36	543.9
Institute Income	85.26
Total funds available under OH-31 and OH-36	621.26
Expenditure under OH-31 and OH-36	
Salary and related items (OH-36)	238.94
Pension and other terminal benefits (OH-31)	105.22
Scholarship payments (OH-31)	91.27
Non-salary, non-pension items (OH-31) (Other components)	170.67
Total Expenditure under OH-31 and OH-36	606.1



Publications

Papers published in national and international journals

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14. Alexeev, E.M., Ruiz-Tijerina, D.A., Tartakovskii, A.I; et al. 2019. Resonantly hybridized excitons in Moiré superlattices in van der Waals heterostructures. *Nature* 567(7746): 81-86. doi: 10.1038/s41586-019-0986-9
15. LIGO Scientific Collaboration and the Virgo Collaboration, T., Abbott, B.P., Abbott, R., Jaranowski, P; et al. 2019. Binary black hole population properties inferred from the first and second observing runs of advanced LIGO and Advanced Virgo. *Astrophysical Journal Letters* 882(2). doi: 10.3847/2041-8213/ab3800

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Appendices

Appendix 1. The Senate

Sl. No.	Name	Department
1	Amit Kumar	Aerospace Engineering
2	Bhaskar K.	Aerospace Engineering
3	Chakravarthy S.R.	Aerospace Engineering
4	Luoyi Tao	Aerospace Engineering
5	Murthy Haradanahalli S.N.	Aerospace Engineering
6	Nandan Kumar Sinha	Aerospace Engineering
7	Ramakrishna M.	Aerospace Engineering
8	Ramakrishna P.A.	Aerospace Engineering
9	Sameen Abdulvahab	Aerospace Engineering
10	Sivasambu Mahesh	Aerospace Engineering
11	Sriram P.	Aerospace Engineering
12	Sujith R.I.	Aerospace Engineering
13	Sunetra Sarkar	Aerospace Engineering
14	Muruganandam T.M.	Aerospace Engineering
15	Velmurugan R.	Aerospace Engineering
16	Anuradha Banerjee	Applied Mechanics
17	Arockiarajan A.	Applied Mechanics
18	Arul Prakash K.	Applied Mechanics
19	Baburaj A.P.	Applied Mechanics
20	Lakshmana Rao C.	Applied Mechanics
21	Mahesh Panchagnula	Applied Mechanics
22	Manivannan M.	Applied Mechanics

Sl. No.	Name	Department
23	Prasad Patnaik B.S.V.	Applied Mechanics
24	Ramakrishnan Swaminathan	Applied Mechanics
25	Ramasubba Reddy M.	Applied Mechanics
26	Ramesh K.	Applied Mechanics
27	Sayan Gupta	Applied Mechanics
28	Sivakumar M.S.	Applied Mechanics
29	Sujatha Narayanan Unni	Applied Mechanics
30	Vengadesan S.	Applied Mechanics
31	Amal Kanti Bera	Biotechnology
32	Anju Chadha	Biotechnology
33	Baskar R.	Biotechnology
34	Chandraraj K.	Biotechnology
35	Gopala Krishna Aradhyam	Biotechnology
36	Guhan Jayaraman	Biotechnology
37	Karunakaran D.	Biotechnology
38	Kesavan V.	Biotechnology
39	Madhulika Dixit	Biotechnology
40	Mahalingam S.	Biotechnology
41	Michael Gromiha M.	Biotechnology
42	Nitish R. Mahapatra	Biotechnology

Sl. No.	Name	Department
43	Rama Shankar Verma	Biotechnology
44	Rayala Suresh Kumar	Biotechnology
45	Sanjib Senapati	Biotechnology
46	Sathyanarayana Naidu G.	Biotechnology
47	Srinivasa Chakravarthy V.	Biotechnology
48	Subramaniam K.	Biotechnology
49	Suraishkumar G.K.	Biotechnology
50	Alagusundaramoorthy P.	Civil Engineering
51	Amlan Kumar Sengupta	Civil Engineering
52	Appa Rao G.	Civil Engineering
53	Arul Jayachandran Sanjeevi	Civil Engineering
54	Balaji Narasimhan	Civil Engineering
55	Benny Raphael	Civil Engineering
56	Bhairavavajjula Nageswara Rao	Civil Engineering
57	Boominathan A.	Civil Engineering
58	Devdas Menon	Civil Engineering
59	Dodagoudar G.R.	Civil Engineering
60	Gandhi S.R.	Civil Engineering
61	Indumathi Manivannan Nambi	Civil Engineering
62	Karthik K. Srinivasan	Civil Engineering
63	Koshy Varghese	Civil Engineering
64	Lelitha Devi Vanajakshi	Civil Engineering
65	Ligy Philip	Civil Engineering
66	Manu Santhanam	Civil Engineering
67	Meher Prasad A.	Civil Engineering
68	Mohan S.	Civil Engineering
69	Murali Krishnan J.	Civil Engineering
70	Murthy B.S.	Civil Engineering
71	Murty C.V.R.	Civil Engineering
72	Raghukanth S.T.G.	Civil Engineering
73	Rajagopal K.	Civil Engineering
74	Ramamurthy K.	Civil Engineering
75	Ravindra Gettu	Civil Engineering
76	Robinson R.G.	Civil Engineering
77	Saravanan U.	Civil Engineering

Sl. No.	Name	Department
78	Sathish Kumar S. R.	Civil Engineering
79	Satyanarayana K. N.	Civil Engineering
80	Shiva Nagendra S.M.	Civil Engineering
81	Sivanandan R.	Civil Engineering
82	Srinivasan K.	Civil Engineering
83	Sudheer K.P.	Civil Engineering
84	Veeraragavan A.	Civil Engineering
85	Abhijit P. Deshpande	Chemical Engineering
86	Arun K. Tangirala	Chemical Engineering
87	Kannan A.	Chemical Engineering
88	Nagarajan R.	Chemical Engineering
89	Niket Satish Kaisare	Chemical Engineering
90	Preeti Aghalayam	Chemical Engineering
91	Pushpavanam S.	Chemical Engineering
92	Raghuram Chetty	Chemical Engineering
93	Ragunathan Rengasamy	Chemical Engineering
94	Rajagopalan Srinivasan	Chemical Engineering
95	Ramanathan Srinivasan	Chemical Engineering
96	Ravi Krishna R.	Chemical Engineering
97	Ravi R.	Chemical Engineering
98	Shankar Narasimhan S.	Chemical Engineering
99	Sreenivas Jayanti	Chemical Engineering
100	Sridharakumar N.	Chemical Engineering
101	Susy Varughese	Chemical Engineering
102	Tanmay Basak	Chemical Engineering
103	Upendra Natarajan	Chemical Engineering
104	Anurag Mittal	Computer Science
105	Chandrasekhar C.	Computer Science
106	Deepak Khemani	Computer Science
107	Hema A. Murthy	Computer Science
108	Janakiram D.	Computer Science
109	Kamakoti V.	Computer Science
110	Krishna Moorthy Sivalingam	Computer Science
111	Madhu Mutyam	Computer Science
112	Narayanaswamy N.S.	Computer Science
113	Pandurangan C.	Computer Science
114	Ravindran B.	Computer Science

Sl. No.	Name	Department
115	Siva Ram Murthy C.	Computer Science
116	Sreenivasa Kumar P.	Computer Science
117	Sukhendu Das	Computer Science
118	Archita Patnaik	Chemistry
119	Bhaskaran S.	Chemistry
120	Bhyrappa P.	Chemistry
121	Debashis Chakraborty	Chemistry
122	Dhamodharan R.	Chemistry
123	Dillip Kumar Chand	Chemistry
124	Edamana Prasad	Chemistry
125	Govindasamy Sekar	Chemistry
126	Indrapal Singh Aidhen	Chemistry
127	Mangala Sunder K.	Chemistry
128	Mishra A.K.	Chemistry
129	Muraleedharan K.M.	Chemistry
130	Narasimha Murthy N	Chemistry
131	Pradeep T.	Chemistry
132	Rajakumar B.	Chemistry
133	Ranga Rao G.	Chemistry
134	Sangaranarayanan M.V.	Chemistry
135	Sanjay Kumar	Chemistry
136	Sankararaman S.	Chemistry
137	Selvam P.	Chemistry
138	Sundargopal Ghosh	Chemistry
139	Vidyasagar K.	Chemistry
140	Asokan Thondiyath	Engineering Design
141	Krishnakumar R.	Engineering Design
142	Nilesh J. Vasa	Engineering Design
143	Ramanathan M.	Engineering Design
144	Rengaswamy Jayaganthan	Engineering Design
145	Saravana Kumar G.	Engineering Design
146	Shankar Ram C.S.	Engineering Design
147	Srikanth Vedantam	Engineering Design
148	Venkatesh Balasubramanian	Engineering Design
149	Amitava Dasgupta	Electrical Engineering
150	Andrew Edwin Raj T.	Electrical Engineering
151	Anil Prabhakar	Electrical Engineering

Sl. No.	Name	Department
152	Anjan Chakravorty	Electrical Engineering
153	Aravind R.	Electrical Engineering
154	Balaji Srinivasan	Electrical Engineering
155	Bijoy Krishna Das	Electrical Engineering
156	Boby George	Electrical Engineering
157	Christopher S.	Electrical Engineering
158	Devendra Jalihal	Electrical Engineering
159	Enakshi Bhattacharya	Electrical Engineering
160	Giridhar K.	Electrical Engineering
161	Harishankar Ramachandran	Electrical Engineering
162	Jagadeesh Kumar V.	Electrical Engineering
163	Jhunjhunwala A.	Electrical Engineering
164	Karmalkar S.	Electrical Engineering
165	Krishna Vasudevan	Electrical Engineering
166	Mahesh Kumar	Electrical Engineering
167	Nagendra Krishnapura	Electrical Engineering
168	Nandita Dasgupta	Electrical Engineering
169	Rajagopalan A.N.	Electrical Engineering
170	Ravinder David Koilpillai	Electrical Engineering
171	Sarathi R.	Electrical Engineering
172	Shanthi Pavan Y.	Electrical Engineering
173	Shanthi Swarup K.	Electrical Engineering
174	Shanti Bhattacharya	Electrical Engineering
175	Sridharan K.	Electrical Engineering
176	Srikrishna Bhashyam	Electrical Engineering
177	Srinivasan Umesh	Electrical Engineering
178	Srirama Srinivas	Electrical Engineering
179	Vinita Vasudevan	Electrical Engineering
180	Aysha Iqbal Viswamohan	Humanities and Social Sciences
181	Jyotirmaya Tripathy	Humanities and Social Sciences
182	Malathy Duraisamy	Humanities and Social Sciences
183	Muraleedharan V.R.	Humanities and Social Sciences
184	Rajesh Kumar	Humanities and Social Sciences

Sl. No.	Name	Department
185	Senkamalam Periyasamy Dhanavel	Humanities and Social Sciences
186	Sreekumar N.	Humanities and Social Sciences
187	Srilata K.	Humanities and Social Sciences
188	Sudhir Chella Rajan	Humanities and Social Sciences
189	Suresh Babu M.	Humanities and Social Sciences
190	Swarnalatha R.	Humanities and Social Sciences
191	Umakant Dash	Humanities and Social Sciences
192	Arindama Singh	Mathematics
193	Arya Kumar Bedabrata Chand	Mathematics
194	Chidella Srinivasa Rao	Mathematics
195	Ponnusamy S.	Mathematics
196	Radha R.	Mathematics
197	Rama R.	Mathematics
198	Sanyasiraju Y.V.S.S.	Mathematics
199	Satyajit Roy	Mathematics
200	Sivakumar K.C.	Mathematics
201	Srinivasa Rao Manam	Mathematics
202	Sundar S.	Mathematics
203	Thamban Nair M.	Mathematics
204	Vetrivel V.	Mathematics
205	Arunn Narasimhan	Mechanical Engineering
206	Babu V.	Mechanical Engineering
207	Balaji C.	Mechanical Engineering
208	Chandramouli P.	Mechanical Engineering
209	Dhiman Chatterjee	Mechanical Engineering
210	Gnanamoorthy R.	Mechanical Engineering
211	Krishna Kannan	Mechanical Engineering
212	Krishnan Balasubramaniam	Mechanical Engineering
213	Mallikarjuna J.M.	Mechanical Engineering
214	Mani A.	Mechanical Engineering
215	Prabhu Rajagopal	Mechanical Engineering
216	Prakash Maiya M.	Mechanical Engineering
217	Prasad B.V.S.S.S	Mechanical Engineering

Sl. No.	Name	Department
218	Raghavan V.	Mechanical Engineering
219	Raghu Prakash V.	Mechanical Engineering
220	Raju Sethuraman	Mechanical Engineering
221	Ramesh A.	Mechanical Engineering
222	Ramesh Babu N.	Mechanical Engineering
223	Samuel G.L.	Mechanical Engineering
224	Sarit K. Das	Mechanical Engineering
225	Seshadri Sekhar A.	Mechanical Engineering
226	Shaligram Tiwari	Mechanical Engineering
227	Shamit Bakshi	Mechanical Engineering
228	Shankar Krishnapillai	Mechanical Engineering
229	Srinivasa Reddy K.	Mechanical Engineering
230	Srinivasan K.	Mechanical Engineering
231	Sujatha C.	Mechanical Engineering
232	Sujatha Srinivasan	Mechanical Engineering
233	Sundararajan T.	Mechanical Engineering
234	Vekatarathnam G.	Mechanical Engineering
235	Balasubramanian M.	Metallurgical and Materials Engineering
236	Bhattacharya S.S.	Metallurgical and Materials Engineering
237	Gabbita Durga Janaki Ram	Metallurgical and Materials Engineering
238	Gandham Phanikumar	Metallurgical and Materials Engineering
239	Ganesh Sundara Raman S.	Metallurgical and Materials Engineering
240	Harikumar K.C.	Metallurgical and Materials Engineering
241	Kamaraj M.	Metallurgical and Materials Engineering
242	Murty B.S.	Metallurgical and Materials Engineering
243	Prathap Haridoss	Metallurgical and Materials Engineering
244	Ranjit Bauri	Metallurgical and Materials Engineering
245	Ravikumar N.V.	Metallurgical and Materials Engineering
246	Sampath Kumar T.S.	Metallurgical and Materials Engineering
247	Sampath V.	Metallurgical and Materials Engineering

Sl. No.	Name	Department
248	Sankaran Shanmugam	Metallurgical and Materials Engineering
249	Subramanya Sarma V.	Metallurgical and Materials Engineering
250	Udaychandran Chakkingal	Metallurgical and Materials Engineering
251	Arshinder Kaur	Management Studies
252	Arun Kumar G.	Management Studies
253	Ganesh L.S.	Management Studies
254	Kamalanabhan T.J.	Management Studies
255	Krishna Prasanna P.	Management Studies
256	Madhumathi R.	Management Studies
257	Prakash Sai L.	Management Studies
258	Rahul Ratnakar Marathe	Management Studies
259	Rajendran C.	Management Studies
260	Saji K. Mathew	Management Studies
261	Srinivasan G.	Management Studies
262	Sundarraaj R. P.	Management Studies
263	Thenmozhi M.	Management Studies
264	Thillai Rajan A.	Management Studies
265	Usha Mohan	Management Studies
266	Ananthakrishnan P.	Ocean Engineering
267	Bhattacharyya S. K.	Ocean Engineering
268	Jitendra Shital Sangwai	Ocean Engineering
269	Krishnan Kutty P.	Ocean Engineering
270	Murali K.	Ocean Engineering
271	Nallayarasu S.	Ocean Engineering
272	Panner Selvam R.	Ocean Engineering
273	Rajiv Sharma	Ocean Engineering
274	Sannasiraj S.A.	Ocean Engineering
275	Shanmugam P.	Ocean Engineering
276	Srinivasan Chandrasekaran	Ocean Engineering
277	Sundaravadivelu R.	Ocean Engineering
278	Surendran S.	Ocean Engineering
279	Suresh Kumar G.	Ocean Engineering
280	Arul Lakshminarayan L.	Physics
281	Ganesan A.R.	Physics

Sl. No.	Name	Department
282	Harish Kumar N.	Physics
283	James Frederick Libby	Physics
284	Jatindra Kumar Rath	Physics
285	Kasiviswanathan S.	Physics
286	Lakshmi Bala S.	Physics
287	Markandeyulu G.	Physics
288	Murugavel P.	Physics
289	Neelima M. Gupte	Physics
290	Prem B. Bisht	Physics
291	Ramachandra Rao M.S.	Physics
292	Ramaprabhu S.	Physics
293	Santhosh P.N.	Physics
294	Satyanarayana M.V.	Physics
295	Sethupathi K.	Physics
296	Srinivas V.	Physics
297	Sriramkumar L.	Physics
298	Subramanian V.	Physics
299	Sunil Kumar P.B.	Physics
300	Suresh Govindarajan	Physics
301	Vijayan C.	Physics

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Mr. Rohit Goyal, Research Affairs Secretary

Mr. DVSSS Kushal Kumar Reddy,
Students' General Secretary

Appendix 2. Board of Academic Courses

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Prof. V. Jagadeesh Kumar, Dean, Academic Courses

Ex-officio

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Prof. M. S. Sivakumar, Dean, Students

Members

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Dr. Vignesh Muthuvijayan, Biotechnology

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Dr. Sundargopal Ghosh, Chemistry

Dr. S.M. Shiva Nagendra, Civil Engineering

Dr. Jayalal Sarma M.N., Computer Science and Engineering

Dr. Ganapathy Krishnamurthi, Engineering Design

Dr. S. Krishna, Electrical Engineering

Dr. K. Kalpana, Humanities and Social Sciences

Dr. Manam Srinivasa Rao, Mathematics

Dr. Lata Dyaram, Management Studies

Dr. S. Sathyan, Mechanical Engineering

Dr. Parasuram Swaminathan, Metallurgical and Materials Engineering

Dr. P. Krishnankutty, Ocean Engineering

Dr. Manoj Gopalakrishnan, Physics

Time Table Committee

Dr. Srinivasan K., Chairman, Time Table Committee

Member Ex-officio

Dr. T. Thyagaraj, SC/ST/PC Students

Dr. Nilesh J. Vasa, Chief Advisor, MITr

Student Member

Shri Chinmay Agarwal, AAS

Shri DVSSS Kushal Kumar Reddy, SGS

Invitee

Shri P. Sarvaharna, DR (Research)

Appendix 3. Board of Academic Research

1	Prof. A. K. Mishra, Dean (Academic Research)	Chairman
2	Prof. V. Jagadeesh Kumar, Dean (Academic Courses)	Member - Ex-Officio
3	Prof. M. S. Sivakumar, Dean (Students)	"
4	Dr. T. M. Muruganandam, Aerospace Engineering	Member
5	Dr. Shaikh Faruque Ali, Applied Mechanics	"
6	Prof. K. Subramanian, Biotechnology	"
7	Dr. R. Ravi Krishna, Chemical Engineering	"
8	Dr. Raghu Kanth S.T.G., Civil Engineering	"
9	Dr. Sanjay Kumar, Chemistry	"
10	Dr. Sutanu Chakraborti, Computer Science and Engineering	"
11	Dr. Srikrishna Bhashyam, Electrical Engineering	"
12	Dr. Venkatesh Balasubramanian, Engineering Design	"
13	Dr. N. Sreekumar, Humanities and Social Science	"
14	Dr. A. V. Jayanthan, Mathematics	"
15	Dr. Usha Mohan, Management Studies	"
16	Dr. S. Varunkumar (in place of Dr. T.N.C. Anand), Mechanical Engineering	"
17	Dr. V. Subramanya Sarma, Metallurgical and Materials Engineering	"
18	Prof. Abdus Samad, Ocean Engineering	"
19	Dr. S. Sivaramakrishnan, Physics	"
20	Dr. G. Ranga Rao, Chief Advisor, MITr, Chemistry	"
21	Shri Rohit Goyal, Research Affairs Secretary	Student Member
22	Shri DVSSS Kushal Kumar Reddy, Students' General Secretary	"
24	Dr. Rajesh R. Nair, Ocean Engineering	Invitee
25	Shri D. Ravee, Deputy Registrar (Courses)	Invitee
26	Shri P. Sarvaharana, Deputy Registrar (Research)	
27	Smt. Jayashree Sridhar	AR (Courses)
28	Dr. Shiva Nagendra S. M. (IDRP Coordinator)	IDRP Invitee
29	Shri R. Esakkimuthu, Joint Registrar (Research)	Secretary - Ex-officio

Appendix 4. Board of Students

Chairman

Prof. M.S. Sivakumar, Dean (Students)

Members

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 Prof. Arockiarajan A., Vice Chairman, Warden Council
 Prof. Dr. Benny Raphael, Advisor (Sports)
 Prof. Nandita Das Gupta, Advisor (Cultural)
 Dr. S. Faruque Ali, Advisor (Co-curricular)
 Dr. C. S. Shankar Ram, Advisor (Placement)
 Dr. T. Thyagaraj, Advisor (Weaker Section)
 Prof. Nilesh Jayantilal Vasa, Advisor (MITr)
 Dr. Ramesh Gardas, Co-Advisor MITr
 Dr. V. Vijayalakshmi, Advisor (Saathi)
 Dr. N. V. Ravi Kumar, Advisor (Internship)
 Dr. P. Sudarsan, Advisor (SLC/SECC)
 Dr. Ashwin Mahalingam, Advisor (E-Cell)
 Dr. G. Suresh Kumar, Chief Coordinator (NCC)
 Dr. Anup Kumar Bhandari, Chief Election Officer
 Dr. Ratna Kumar Annabattula, Deputy Election Officer
 Dr. Palaniappan Ramu, Co-Advisor (S-Reach)
 Dr. Bobby George, Faculty Head (CFI)
 Dr. Satyanarayanan Seshadri, Deputy Faculty Head (CFI)
 Mr. Y. E. L. Sudhakar Rao Pujari, Deputy Registrar (Students)

Student Members

Mr. Rishi Vigneshwar, Speaker (SAC)
 Mr. DVSSS Kushal Kumar Reddy, Students' General Secretary
 Mr. Chinmay Agarwal, Secretary (Academic Affairs)
 Mr. Rohit Goyal, Secretary (Research Affairs)
 Mr. Vempati Noel Jones, Chairperson (Sub-Committee for

General Affairs)

Mr. Prem Kumar Prasad, Chairperson (Sub-Committee for Cultural Affairs)
 Mr. Rajeev Chand Nished, Chairperson (Sub-Committee for Hostel)
 Mr. Dinesh Kumar, Chairperson (Sub-Committee for Sports Affairs)
 Mr. Vinod Shankar Pathak, Chairperson (Sub-Committee for International and Alumni Relations)

Relations

Mr. Ashish Bijlani, Chairperson (Sub-Committee for Academic Affairs)
 Mr. Vijayanand, Chairperson (Sub-Committee for Research Affairs)
 Mr. Saurabh Laddha, Chairperson (Sub-Committee for Co-Curricular Affairs)
 Mr. Kuntal Som, Chairperson (Sub-Committee for Social Equity)
 Mr. Nivethithan, Chairperson (Sub-Committee for Health, Hygiene and Environment)

Environment

Ms. Kollipara Pravallika, Secretary (Co-Curricular Affairs)
 Mr. Nanimela Venkata Vamsi, Secretary (Hostel Affairs)
 Mr. Shrinath Bhat, Secretary (Sports)
 Mr. Abhinav Kankane, Secretary (Cultural Literary)
 Mr. Shashwath Sargovi Bacha, Secretary (Cultural Arts)
 Mr. Ravi Khatri, International and Alumni Relations Secretary
 Mr. Akash Nandan, Students Head, CFI
 Ms. Chaithra Navada, Chief Commissioner, Students Ethics and Constitutional Committee
 Ms. Niharika Gunturu, T5E Executive Editor

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Dr. Ravindra Gettu, Dean, IC&SR, Chairman
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 Dr. Mahesh Panchagnula, Dean, I&AR (Ex-Officio), Member
 Dr. A. K. Mishra, Dean, Academic Research (Ex-Officio), Member
 Dr. Kamakoti Veezhinathan, Associate Dean (Ex-Officio), Member
 Dr. Jane Prasad, Registrar (Ex-Officio), Member
 Dr. Ashok Jhunjunwala, (Ex-Officio), Faculty In-charge IITMRP and IITMIC
 Dr. P. A. Ramakrishna, Department of Aerospace Engineering
 Dr. S. Vengadesan, Department of Applied Mechanics
 Dr. S. Mahalingam, Department of Biotechnology
 Dr. Raghunathan Rengaswamy, Department of Chemical Engineering

Dr. G. Ranga Rao, Department of Chemistry
 Dr. K. Rajagopal, Department of Civil Engineering
 Dr. B. Nageswara Rao, Department of Civil Engineering
 Dr. Devendra Jalihal, Department of Electrical Engineering
 Dr. Shanti Pavan, Department of Electrical Engineering
 Dr. R. Jayaganthan, Department of Engineering Design
 Dr. Tuhin Subhra Santra, Department of Engineering Design
 Dr. V. R. Muraleedharan, Department of Humanities and Social Sciences
 Dr. A. Thillai Rajan, Department of Management Studies
 Dr. Sivaram Ambikasaran, Department of Mathematics
 Dr. Anand TNC, Department of Mechanical Engineering
 Dr. B.V.S.S. Prasad, Department of Mechanical Engineering
 Dr. C. Sujatha, Department of Mechanical Engineering
 Dr. Mohana Sankar Sivaprakasam, Department of

Mechanical Engineering
Dr. B.S. Murty, Department of Metallurgical and Materials Engineering
Dr. N. V. Ravi Kumar, Department of Metallurgical and Materials Engineering

Dr. K. Murali, Department of Ocean Engineering
Dr. R. Sundaravadivelu, Department of Ocean Engineering
Dr. S. Sivarama Krishnan, Department of Physics
Dr. V. Suresh, S.T.E.O, IC&SR (Ex-Officio), Secretary

Appendix 6. Library Advisory Committee

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Members

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Dr. Arun Kumar Thittai Applied Mechanics
Dr. Nitish R. Mahapatra, Biotechnology
Dr. Sridharakumar Narasimhan, Chemical Engineering
Dr. Rajakumar Balla, Chemistry
Dr. Soumendra Nath Kuiry, Civil Engineering
Dr. B. V. Raghavendra Rao, Computer Science and Engineering
Dr. Kavitha Arunachalam, Engineering Design
Dr. P. Viswanadha Reddy, Electrical Engineering

Dr. Anindita Sahoo, Humanities and Social Sciences
Dr. P. Krishna Prasanna, Management Studies
Dr. Sounaka Mishra, Mathematics
Dr. Pallab Sinha Mahapatra, Mechanical Engineering
Dr. Sabita Sarkar, Metallurgical and Materials Engineering
Dr. Tarun K. Chandrayadula, Ocean Engineering
Dr. Prabhat Ranjan Pujahari. Physics

Student Member

Mr. Chinmay Agarwal, Secretary (Academic Affairs) (SAA)
Mr. Rohit Jhunjunwala, Research Affairs Secretary

Library and Member Secretary

Dr. Mahendra N. Jadhav

Appendix 7. The Finance Committee

Dr. Pawan Goenka - Chairman Executive Director, Mahindra & Mahindra Mahindra Towers, Mumbai	Chairman
Prof. Bhaskar Ramamurthi Director, Indian Institute of Technology Madras, Chennai - 600 036	Member
Shri Rakesh Sarwal (from 23 October 2019) Additional Secretary (TE), Ministry of HRD, Shastri Bhawan, New Delhi	(Ex-officio)* Member
Shri Sukhbir Singh Sandhu, Additional Secretary (TE), Ministry of HRD Shastri Bhawan, New Delhi	
Shri Anil Kumar, Director (Finance) Integrated Finance Division, Department of Higher Education, Ministry of Human Resource Development, Government of India, Shastri Bhawan, New Delhi - 110 115	(Ex-officio)* Member
Shri K. Vivekanandan, I.A.S. Director, Directorate of Technical Education Government of Tamil Nadu, Chennai - 600 025	Member
Dr K.P. Indiradevi Director, Directorate of Technical Education, Government of Kerala, Padmavilasom, Fort, Thiruvananthapuram - 695 023	Member
Prof. Koshy Varghese Dean (Admn.), IIT Madras	Invitee
Prof. Ligy Philip, Dean (Planning), IIT Madras	Invitee
Deputy Registrar (F&A)/Deputy Registrar (Audit), IIT Madras	Invitees
Dr Jane Prasad, IP&TAFS, Registrar, Indian Institute of Technology Madras, Chennai - 600 036	Secretary

Appendix 8. Building and Works Committee

Prof. Bhaskar Ramamurthi, Director, IIT Madras	Chairman
Shri K. Muthu Chief Engineer (Distribution), Chennai Region (South) Tamil Nadu Electricity Board Electricity Avenue, 5-A, Block, First Floor, No.802, Anna Salai, Chennai - 600 002	Member
Shri Er.R. Manivannan, B.E., Chief Engineer/Distribution Chennai South Region 144, Anna Salai, Chennai - 600 002	
Shri Vivek Bansal, Superintending Engineer, Chennai Central Circle - II Central Public Works Department, Shastri Bhavan, Chennai - 600 006	Member
Shri W. Chidambaram, Superintending Engineer and Project Director, IITM Project CPWD Chennai - 600 006	
Prof. Ligy Philip, Dean (Planning), IIT Madras	Member
Prof. K. Murali, Chairman (Engineering Unit), IIT Madras	Member
Prof. R. G. Robinson (From 1 November 2019), Chairman (Engineering Unit), IIT Madras	
Dr Jane Prasad, IP&TAFS, Registrar, IIT Madras	Member - Secretary
Shri Viswanath K., Executive Engineer (Electrical), Superintending Engineer - In-charge Engineering Unit, IIT Madras	Member