IIT MADRAS

Annual Report 2016-17

Indian Institute of Technology Madras

THE VISITOR

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1. Director's Report

Presented at the 54th Convocation of IIT Madras on 21 July 2017

Chief Guest Mr. Nandan Nilekani, 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, it gives me immense pleasure to welcome all of you to the 54th Convocation of IIT Madras. I am personally grateful to Mr. Nilekani for readily accepting our invitation to grace this convocation and address our graduands. It would be difficult to find a better role model for our students than this distinguished IITian himself, and it is their privilege to listen to his address today.

The past academic year has been very rewarding for IITM. It has not only sustained the Number 1 ranking among Engineering Institutes in the NIRF ranking for the second year running, but has also been ranked second in overall performance among all universities in India.

IIT Madras is proud that it has been recognized with the prestigious 2017 IEEE Spectrum Technology in the Service of Society Award for the Solar-DC Microgrid Technology pioneered by Prof. Ashok Jhunjhunwala. This award is presented to the company/institution voted by IEEE Editors as having developed the technology having the greatest potential to provide the most overall benefit to humankind. This recognition strengthens our institute's commitment towards translating the research work carried out in its laboratories to solutions that impact the lives of the common man.

This year we will be awarding 15 B.Tech. Honours, 421 B.Tech., 4,422 M.Tech., nine Dual Degree (B.Tech. Honours and M.Tech.), 317 Dual Degree B.Tech./M.Tech., 22 Dual Degree B.S./M.S, 16 Dual Degree M.S./Ph.D., two Dual Degree M.Tech./Ph.D., 140 M.Sc., 58 M.B.A., 36 M.A., 174 M.S. and 257 Ph.D. degrees, including one joint Ph.D. degree with the University of Passau, Germany.

This convocation will witness the award of the first set of dual Masters' and Ph.D. degrees in the institute for top performers who upgraded from Masters' programmes or got directly admitted to the Ph.D programme.

In 2016-17, the institute added 32 new faculty members, of whom three are women, and 68 staff members, of whom 21 are women. We bade farewell to seven faculty members and 34 staff members who retired after a lifetime of dedicated service to the institute.

IIT Madras has been implementing its Strategic Plan 2014-2020 vision and will continue to recruit world-class faculty members, attract top-ranking students, intensify research collaborations with industry and foreign universities, redouble alumni and CSR contributions, foster entrepreneurship among its students and draw top corporates to its campus for job placements.

I now share with you some snapshots of our achievements during the academic year 2016-17.

1.1. Degree Programmes

IIT Madras has, in order to address the needs of our country in emerging areas as well as meet the aspirations of our students, introduced an upgrade path for our undergraduates to an M.Tech. degree in the emerging inter-disciplinary areas of Data Sciences, Materials and Nanotechnology, Biomedical Engineering, Computational Engineering and Energy Systems. This upgrade path is available to students of all disciplines, and several more such new avenues will be made available to students in the coming years.

The Department of Management Studies launched a two-year part-time non-residential executive programme in Business Administration this year for the benefit of working professionals.

The online M.Tech. programme in Automotive Technology, a tailor-made programme for automotive industries, has been successfully launched and witnessed participation from five automotive companies. Six similar programmes in mathematical methods for aerospace engineers, aerodynamics and aircraft performance, computer science with specialization in information security, communications systems engineering, VLSI circuit design, and industrial metallurgy will be launched soon.

IIT Madras has introduced further flexibility in its curriculum by encouraging students to earn up to 27 credits by taking online courses offered under the Global Initiative of Academic Networks (GIAN) or the National Programme on Technology Enhanced Learning (NPTEL). GIAN, an MHRD initiative introduced in 2015, enables eminent researchers and academicians from abroad visit the institute for teaching short-duration intensive courses and for interactions on collaborative research with faculty and research students. In the year under review, 85 GIAN courses have been conducted at IIT Madras with 2,289 participants.

IITM continues to attract top students to its research programmes. In 2016-17, a total of 93 high-performing Masters' students upgraded to the Ph.D. programme, while 62 toppers were admitted to it directly after their

Bachelors' degrees. A further 29 industry professionals also enrolled for their Ph.Ds, indicating a healthy growth in our industry interaction.

Our ever-expanding transnational collaborations have resulted in the formalization of three Joint Doctoral Programs (JDP) with University of Bordeaux, France, Alto University, Finland and Michigan State University, USA, taking the total number of JDPs to 15.

1.2. Academic Research

In 2016-17, our faculty and research scholars published 1,453 papers in reputed international journals and 77 in national journals. They have also presented 640 research papers in international conferences and 183 in national conferences.

1.2.1. Snapshots of Research

As an exemplar of the high-quality research carried out by the M.S. and Ph.D. scholars graduating today, I next present a few examples of research carried out by various departments. I am sure these will enthuse the best and brightest in our country to take to research and innovation.

S. Ramgopal of Aerospace Engineering department has developed time-resolved diagnostics towards understanding the mechanism of intermittency of thermo-acoustic oscillations.

As an innovative contribution to energy harvesting from ambient sources Pradeep V. Malaji of the department of Applied Mechanics has developed vibration-based multiple harvesters to generate power over a certain range of frequencies.

Kumar Swamy Reddy N. from the department of Biotechnology has developed some efficient methods for stereo-selective assembly of biologically important spiro-oxindole scaffolds.

Addressing the issue of urban public transportation, Bachu Anilkumar of Civil Engineering Department has developed a model for bus travel time prediction using vehicle location data.

The work of Manigandan S. of Chemical Engineering on amphiphilic colloidal particles has shown that using interfacial thermodynamics and dip-coating technology, micro-particles of various shapes and their self-assembly can be achieved.

Rahul Thakur of Computer Science and Engineering has developed an efficient mechanism for power and resource allocation as well as some self-selection techniques in various cellular network environments.

The work of Krishnadas K.R. of the Chemistry department has addressed the reactivity and size control of thiolate-protected gold and silver atomically precise clusters by the combination of synthesis, inter-cluster reaction and mass spectroscopy.

Vignesh R. of Engineering Design has developed some innovative algorithms for collision avoidance of heavy commercial vehicles taking into account vehicle dynamics and heterogeneity of traffic.

Srinivas Rana of Electrical Engineering has successfully designed and developed the concept of floating wiper resistive and inductive displacement sensors which is novel in its approach by making the wiper a contactless floating type. Abhijith Punnappurath from the same department has introduced a first-of-its-kind work that integrates face recognition, super resolution and object segmentation under a unified framework for moving cameras.

The work of Padmaja M. from the department of Humanities and Social Sciences has expanded the understanding of internationalizing strategies of companies from emerging markets.

Kurian John from the department of Management Studies has developed mathematical programming models for comprehensively looking at characteristics of a class of divergent supply chains operating with backorder clearing mechanisms, multiple objectives and order policies.

Working on the problem of finding a system configuration for large heat transfer with minimal entropy, Monisha Roy from Mathematics has contributed meaningfully to the understanding related to heatlines and associated entropy generation in a mixed convection process.

Jagadesh T. of Mechanical Engineering has developed and validated a novel mechanistic model for micro-turning process widely used among various industries. Vineed Narayanan of the same department has developed an advanced mixed refrigerant Joule-Thomson refrigerator technology for temperatures below 77K.

Viswanathan R. from the department of Metallurgy and Material Sciences has designed and fabricated a novel droplet cell microscope which can be used for localised electrochemical studies on metal alloys.

Samarth Dilip Patwardhan of Ocean Engineering has studied the impact of fracture conductivity reduction on productivity of shale gas petroleum reservoirs and has made important recommendations on optimizing the parameters.

Taniya Mandal from the department of Physics has studied important issues around the uniqueness of black hole attractors in N=2 supergravity and made useful contributions to the understanding of black hole attractors in supergravity which, in turn, is important for gaining an understanding of black hole entropy.

1.2.2. Research Centres of Excellence

As part of its Strategic Plan, IIT Madras has been creating multi-disciplinary Centres of Excellence in areas where it has world-class expertise and critical mass. I am happy to report that several of these centres have reached maturity and produced high-impact results. IIT Madras is carving out a unique place for itself in the country due to the stellar efforts of its research centres.

Through its Centre for Battery Engineering and Electric Vehicles, IIT Madras is taking the lead in bringing these critically important technologies to the Indian market and enabling a strong "Make in India" programme. The Head of this Centre, Prof. Ashok Jhunjhunwala, in his capacity as Principal Advisor in the Ministry of Power, Coal, New and Renewable Energy, is charting a vision for making India a 100% electric vehicle nation by 2030. A number of key technologies to enable this vision, such as energy-efficient motors for EVs and efficient battery management solutions, are being developed at the Centre.

The Centre for Decentralised Power Systems, whose solar-DC technology won the IEEE Spectrum Award, has deployed the technology in 4,000 off-grid homes in the districts of Jodhpur and Jaisalmer in Rajasthan, and in 7,200 homes in several districts of Assam. It has also been deployed in Belagavadi in Karnataka, Alandur (Trichy) in Tamil Nadu and some villages in Odisha, Andhra Pradesh and Telangana, besides being deployed in several buildings on the IIT campus.

The Center for Computational Brain Research (CCBR), an interdisciplinary centre at IIT Madras set up with generous support from our distinguished alumnus Kris Gopalakrishnan, explores the interface between neuroscience and several engineering disciplines. Three distinguished Chair Professors, Partha Mitra, Mriganka Sur and Anand Raghunathan are providing the lead in the Centre. An understanding of the brain helps drive significant technological advances in computing, while new engineering tools help analyze and probe neural circuits in the brain.

The Centre of Propulsion Technology (CoPT), a binodal Centre for research on key areas of aircraft and spacecraft propulsion jointly at IIT Bombay and IIT Madras, was established this year with support from DRDO. In the first phase of its activities, 31 research projects in three verticals - small gas turbine engine, solid propellant combustion modelling and morphing wing aircraft technologies - have been taken up, involving many faculty colleagues across five departments at IIT Madras.

The Center for Excellence in Steel Technology (CoExiST) established at IIT Madras with financial assistance from the Ministry of Steel, Government of India is functioning since May 2017. Initial research projects and workshops are in the areas of development of advanced high-strength steels for automotive applications.

The world-class facilities of the National Centre for Combustion Research and Development, including the world's fifth longest micro-gravity drop tower, are now fully operational in a dedicated building. The Centre is engaged in the development of an Ultra-Compact Combustor, a Rotary kiln based municipal solid waste combustor (both in collaboration with industry), a lean direct injection combustor for gas turbine applications, a dual-bed indirect gasifier for steam gasification of high-ash Indian coals, GDI engine technology for low emissions under variable loads for Indian road conditions, and multisensor and deep-learning-based image-processing tools for online control of combustion.

In collaboration with industry, the National Centre for Catalysis Research has developed the process for the production of an important strategic aviation fuel in a single step using eco-friendly and low-cost catalysts. Pilot-scale quantities are being successfully produced, and after testing in the intended engine, production will be scaled up to required levels.

Following the success in Tamil Nadu of its Mobile Eye Surgical Unit (MESU) developed in collaboration with Sankara Nethralaya to perform cataract operations for aged people in remote villages, the Healthcare Technology Innovation Centre (HTIC) established a second unit of MESU in Jharkhand with support from the Tata Trust. The Chief Minister of Jharkhand inaugurated the unit on 31 July 2016 at Jamshedpur. Till date, the MESU has completed 6,000 surgeries in rural areas, demonstrating the value of such innovations for solving difficult healthcare challenges in our country.

The National Centre for Safety of Heritage Structures (NCSHS) in conjunction with UNESCO is working on a conservation project to develop the seismic retrofit scheme in the famous Bagan Archaeological Zone in Myanmar after a strong earthquake affected more than 400 monuments in August 2016. NCSHS is beginning to be recognized as the premier research centre in Asia in its domain.

The Centre of Excellence in Wireless Technology has provided the lead in a national effort to include the Low Mobility Large Cell Requirement in the 5G wireless standards that is critical for ensuring broadband connectivity

in rural India. The scientists of the centre have also made important contributions to the 5G standardization effort that will ensure that India's 5G requirements for both Smart Cities and rural areas are met. The centre is a leader in India in the creation of wireless IPR.

The Advanced Manufacturing Technology Development Centre (AMTDC), established with the support from Department of Heavy Industry, Government of India, in partnership with six machine tool industries, is developing 5-axis multi-tasking, universal and precision micro-machining centres, apart from energy-efficient and fully automated cutting, grinding and polishing machines.

After its success in West Bengal, AMRIT, the technology developed by the Thematic Unit of Excellence (TUE) on Water Purification using Nanotechnology for removing arsenic and iron affordably, has been expanded to Punjab. While AMIRT has benefitted 6 lakh people, its model fitted with solar pumping units has benefitted 1 lakh people so far. A green capacitive deionization (CDI) technology developed by the centre for brackish water desalination, with reduced water wastage, retention of useful minerals and running on solar electricity, will be available in the market through a start-up by the end of 2017.

The Centre for NEMS and Nanophotonics (CNNP) is now fully operational and has developed a dispersion-enhanced micro-ring resonator with Q-value exceeding 1,50,000, a piezoelectric resonator at 1 GHz, and microfluidics chips for blood plasma separation, sorting of cancer cells and detection of sepsis using acoustic field. It has developed a Near Field Ultrasonic Nanoscopy (NFUN) system for high frequency and sub-wavelength based imaging of MEMS and NEMS structures.

The Indo-German Center for Sustainability (IGCS) will be completing its first phase of six years by December 2017, and has been doing pioneering research in biodiesel characterization, septage management, zero-discharge solar toilets, sustainable water resources management and building resilience in peri-urban areas. A patent filed for zero-discharge toilet by Ligy Philip, K.S. Reddy and their students has won the award instituted by IIT Madras alumni for the year 2017. Funding from industry has led to an interesting solution to the problem of micro-grid islanding and renewables integration. During the recent visit of the Honorable Prime Minister of India to Germany, an agreement was signed to extend the support to the centre by both countries for another five years beginning January 1, 2018.

A new Centre for Urbanization, Buildings and Environment has been set up with generous support from the Government of Tamil Nadu to work on all aspects related to urban infrastructure, smart cities and pollution control. The centre will be a force multiplier for the excellent work being carried out by our faculty till date in their individual capacities.

1.2.3. Research Innovations

Prof. Arun Thittai and his team from the Department of Applied Mechanics have calibrated ultrasound machines with a software program that would blur out the display of certain parts of the images during scanning that prevent the identification of the gender of the foetus.

A data glove, which measures the individual joint angles of all the five fingers to understand the activity of daily living, developed by Nayan Bhatt, a research scholar from the Department of Applied Mechanics, has recently won the Budding Innovators Award given by the Delhi-based National Research Development Corporation (NRDC).

Dr. Swati Choudhary and Dr. Rama Shankar Verma, Department of Biotechnology, have put forth an alternative for diagnosing leukemia and colorectal cancer that is both reliable and cheaper by using fusion proteins that have high specificity and sensitivity.

The Civil Engineering students of IIT Madras have designed a foldable house (52ft in length and 40ft height) made of metal frames and iron panels that can be unfolded and used to accommodate 20 people during natural disasters. The toilet comes as an unfoldable 13 m long and wide box fitted with all the necessary faucets that can be attached to one end of the frame of the whole house. The approximate cost of the house is ₹ 3 lakh.

Prof. Ligy Philip and her students from the Department of Civil Engineering have developed a water analysis and treatment kit to filter water for which they are transferring technology. The kit, designed for rural areas, removes turbidity, organic matter, colour, odour and most bacteriological contamination.

A method for both waste-water treatment and electricity production using LEC/LCD (liquid crystal coated) polaroid glass component of e-waste has been developed by Gangadharan, a research scholar of the Department of Civil Engineering under the guidance of Dr. Indumathi Nambi.

A team from IIT Madras, led by Dr Kavitha Arunachalam, Department of Engineering Design, has prototyped an applicator for treating cancer using hyperthermia. This prototype applicator comprises of an array of body-contacting antennas, which can deposit energy at a depth using microwave radiation.

Dr. Soma Guhathakurta's doctoral thesis guided by Prof. Venkatesh Balasubramanian of the Engineering Design Department has resulted in the development of an indigenous tissue engineered pericardial patch that is capable of regeneration and integration in the body. A first-of-its-kind lifesaving implant for critical cardiovascular patients with anatomical and structural deficiency in the whole of Asia, it was chosen for the Biotech Product, Process Development and Commercialization Award by DBT, Government of India.

Intelliseat, a 24x7 performance monitoring solution, co-developed by the researchers of Department of Engineering Design with M/s. Harita Seating Systems Limited (HSSL) has been launched to monitor the bus or truck driver within the footprint of his regular seat, thereby reducing road accidents caused by driver fatigue.

Prof. G. Venkatratnam and his team of researchers from the Department of Mechanical Engineering have developed a novel, low-cost and high-efficiency nitrogen liquefier that produces about one litre liquid nitrogen an hour using components taken from home appliances.

Prof. Ashis Kumar Sen and Sneha Maria of the Department of Mechanical Engineering have devised a low-cost 2-cm-long microchannel device that employs capillary force to draw blood into the device and to separate plasma from whole blood and test glucose level in diabetic patients.

An integrated optical system capable of detecting and monitoring algal/phytoplankton blooms both spatially and temporally in coastal and open ocean waters has been expounded by a team of IITM researchers at the Department of Ocean Engineering. The Indian National Centre for Ocean Information Services (INCOIS) is currently in the process of making the system operational.

Sripada Raghu, Ananya Gangadharan and Prof. Ramaprabhu of the Department of Physics have been able to enhance the capacity retention of anode material in lithium ion batteries four-fold compared to commercially available lithium batteries.

IITM start-ups have enabled the translation of technologies to products. Beluga, an indigenously developed remotely operated vehicle (ROV), was launched on 18 November by IITM start-up Planys Technologies at IIT Madras. Beluga, specifically designed for oil and natural gas and shipping sectors, offers submersible robotic inspection for offshore structures. The earlier ROV Mike launched by Planys offering only visual inspection has been deployed in several ports of the country. Detect Technologies developed a product called Guided Ultrasonic Monitoring of Pipeline Systems (GuMPS). Kamal Kisan has developed a handy low-cost planter, which can plant most vegetable and fruit saplings with significantly reduced labour and increased process efficiency.

As a significant step towards enhancing and encouraging entrepreneurial thinking amongst students and faculty, IIT Madras has launched the Gopalakrishnan Deshpande Centre for Innovation & Entrepreneurship (GDCIE) along the lines of similar Deshpande Centres functioning in a few universities in North America. Supported by an annual grant of US$ 1 million from our distinguished alumnus and board member Kris Gopalakrishnan and distinguished alumni Desh and Jaishree Deshpande, the centre also benefits from their considerable personal experience and knowledge on the subject.

1.2.4. New Research and Fabrication Facilities

IIT Madras continues to focus on upgrading and enhancing the research facilities and infrastructure for its scholars.

The Applied Mechanics Department has augmented its laboratories with the Phase Doppler Particle Analyzer, Nanoindenter and a Stack Particulate Emission Instrumentation development and validation facility.

An advanced Microflow Reactor, Atomic Absorption Spectroscopy and Motorized Microscope arrangement have been set up in the Department of Chemical Engineering.

A state-of-the-art seismic testing facility with support from NCSHS and Central Water Commission's World Bank-funded Dam Rehabilitation and Improvement Project (DRIP) has been commissioned in the Structural Engineering Laboratory of the Department of Civil Engineering.

A Zero Liquid Discharge (ZLD) research laboratory has also been set up in the Civil Engineering Department with a generous grant from Sanmar Group. The laboratory has the necessary test beds for developing and evaluating various new/modified technologies related to ZLD implementation for target industries.

A National Facility for atomic-scale materials characterization using remotely-operable Atom Probe Tomography (NFAPT) has been commissioned in the Department of Metallurgy and Materials Engineering. This facility will be shared by a large number of institutions via the National Knowledge Network. A TITAN Transmission Electron Microscope with unique magnetic shielding that reduces the magnetic field to under 30 nano Tesla makes the IITM installation one of the best in India.

The Department of Mechanical Engineering has added a Transient Dynamometer for Engine Experimentation under actual road conditions.

An integrated sensor-mounting cage for underwater deployment of instruments on cruise and a Volume Scattering Meter (VSF) that enables measurement of angular scattering pattern of an underwater light field have been added in the Department of Ocean Engineering.

An electrochemical workstation and RPC detector development facility have been created in the Department of Physics.

1.3. Academic Distinctions Secured by our Faculty Members and Students

In recognition of their academic achievements, our faculty, staff and students have been bestowed several academic distinctions, honours and awards, fellowships of academies and professional societies, and memberships on editorial boards of journals. Notable among the awardees are Dr. A. Jayakrishnan who was elected as Fellow of INSA, Dr. Ligy Philip who was elected as a Fellow of The Royal Society of Chemistry, Drs. R. I. Sujith, S. Sankararaman and Sundargopal Ghosh who were elected as Fellows of the Indian Academy of Sciences, Dr. R. Sarathi who was elected as Fellow of INAE; Drs. P. Anbarasan and Santanu Sarkar who won the NASI - Young Scientist Award, Dr. Krishna Nandivada who won Cray's Dr.APJ Abdul Kalam HPC Award, Dr. V. Kamakoti who won the IBM Faculty Award, Dr. Prabhu Rajagopal who won NDRF's National Design Award and National Young NDT Scientist Award, Dr. Ethayaraja Mani who won IIChE's Amar Dye-Chem Award, and Dr. Satya Sundar Sethy who won ICPR's Young Philosopher Award.

Six of our young faculty, Dr. Vignesh Muthuvijayan, Arun Menon, Rupesh Nasre, Boddeti Kalyan Kumar, Mathangi Krishnamurthy and Manu Jaiswal, have won the Young Faculty Recognition Award of the institute for the year 2016, while Prof. A. Ramesh won the Srimathi Marti Annapurna Gurunath Award for Excellence in Teaching for the year 2016-17. Prof. R. Krishnakumar was awarded the Lifetime Achievement R&D Award of our institute; Drs. G. Sekar and Krishnamoorthy Sivalingam have been awarded the Mid-Career R&D Award; while Drs. Radhakrishna Ganti, Ashish Kumar Sen, Jitendra S. Sangwai and Niket Kaisare have been awarded the Junior-Level R&D Award.

As per the recommendations of the Peer Review Committee, seven more senior professors have been recognized as Institute Chair Professors this year, taking the total number to 22.

An exhaustive list of laurels won by our faculty and students is given as an Annexure to this report. IIT Madras is prompt, active and well connected on social media to publicise the achievements of its faculty and students. Apart from Facebook and LinkedIn, ReachIITM is also ahead of the curve with its presence across other platforms such as Instagram, Google Plus and Pinterest.

1.4. Industrial Consultancy and Sponsored Research

In 2016-17, 212 ministry-sponsored projects for a total value of ₹ 326.50 crore and 565 industrial research and consultancy assignments amounting to ₹ 113.57 crore have been sanctioned. This represents an all-time high in extra-mural research funding for the institute. This year, 88 collaborative agreements and 10 license agreements have been signed with various global and national companies.

The institute has earned ₹ 1.85 crore from technology transfer fees and royalties during the year 2016-17. The Intellectual Property Management Cell has enabled filing of around 120 patents during the year, of which 20 are international patents, representing an increase of 20% over last year. Twenty-one patents have been granted of which eight are international patents. IITM topped the IITs in the country with the higher number of patent filings.

The Research Fund of ₹ 50 crore created a few years ago has been utilized this year for seven R&D awards at ₹ 1.8 crore, 43 exploratory research projects with a 'breakthrough' idea at ₹ 3.36 crore, research initiation grant for 35 new faculty members at ₹ 1.75 crore, and to operate and maintain instruments shared across the institute at ₹ 1.57 crore.

Of the 23 projects sanctioned to IIT Madras under the Ucchatar Avishkar Yojana (UAY) programme, two major projects are for development of iQuant, a platform for affordable automated immunodiagnostics by the Department of Electrical Engineering at a cost of ₹ 14 crore, and Fuel Flex Microturbine for Clean Power by the Department of Mechanical Engineering at a cost of ₹ 10 crore.

IIT Madras was sanctioned a project for standalone electrification of 306 villages in Assam using our innovative solar-DC Inverterless System with a funding of ₹ 33 crore from APDC.

1.5. Research Park and Incubation

IIT Madras Research Park (IITMRP), the first-of-its-kind in India established in 2010, has not only set new benchmarks for industry-academia collaborations, but has also shared its experience and helped in the setting up of similar university based research parks in India. Phase-I of the Research Park is fully occupied with more than 70 companies, and 30% of the Phase-II with 0.8 million sq.ft. of built-up area that is nearly complete is already operational.

IITMRP is home to all of IITM's incubators and has emerged as India's leading technology start-up hub with innovation and impact as key differentiators/drivers.

IITM Incubation Cell (IITMIC), the nodal incubator, links and synergizes sector-specific incubators (Rural Technology and Business Incubator, Bioincubator and MedTech incubator), student pre-venture initiatives (Centre for Innovation and E-Cell), and translational research at IITM. IITMIC provides 'concept to scale-up' support to start-ups through a holistic ecosystem with access to world-class R&D infra at IITM, business support services, seed and early funding and mentoring in technology/design and market entry.

IITMIC's pioneering efforts to support India's start-up activities were recognized by the Department of Science and Technology's National Award for Best Emerging Technology Business Incubator in May 2017.

To accommodate the growing entrepreneurial footprint, one lakh square feet of space has been allocated in Phase-II of IITMRP. The new IIT Madras Incubation Cell was inaugurated by Honourable Minister Nirmala Sitharaman in the presence of Mr. Amitabh Kant on 6 March 2017.

Spearheaded by IITMIC, IITM is empowering entrepreneurs to address national challenges through successful, self-sustaining companies. Some major highlights on incubation at IITM: 130 tech start-ups incubated till date of which 37 have IITM Faculty as co-founders or minority shareholders; 28 companies have raised total investment of Rs 642 crore from angel investors/VCs. A total of 52 companies are in the market with cumulative revenue of Rs 90 crore in FY 2015-16 and 2,500 direct jobs created, while 43 companies have graduated till date.

IITM-incubated start-ups were also recognized widely in 2016-17 by prestigious awards from India and abroad. These include Entrepreneur Award 2016 by Takeda Foundation, Japan given to marine robotics and inspection start-up Planys Technologies Private Limited; Economic Times Start-up Awards 2016, where four of the five finalists under Best on Campus category were all IITMIC start-ups - Ather Energy, Planys Technologies, Hyperverge and Detect Technologies - with the eventual winner being Ather Energy Private Limited; and TIME's Top 10 Next Generation Leaders from across the globe was awarded to Uniphore. The Annexure contains the other recognitions won by our start-ups.

1.6. Continuing Education and our Contributions to the National Educational System

IIT Madras through its Centre for Continuing Education (CCE) offers extensive outreach programmes that cater to the needs of teachers, practicing engineers and researchers. This year CCE has organized 19 short term training programmes for engineering college faculty and 80 continuing education programmes for industrial and R&D establishments. These programmes have benefitted about 59,000 participants in 2016-17 and resulted in revenue of around ₹ 5.5 crore.

IITM is assisting and mentoring other engineering institutions in the country with their curriculum, laboratory upgradation, faculty career development and implementation of TEQIP programmes. Under the Quality Improvement Programme (QIP), we have a total of 38 QIP scholars – 30 pursuing Ph.D. and eight M.Tech. of which 10 Ph.D. and one M.Tech. are women.

The Teaching Learning Centre (TLC) of IIT Madras, a first-of-its-kind faculty-training centre that stepped into its fifth year, has received a funding of ₹ 4.5 crore from MHRD for training faculty of other higher learning institutes. It has also launched a programme to train final-year Ph.D. and M.Tech. students who aspire for a teaching career.

The National Programme on Technology Enhanced Learning (NPTEL) coordinated by IIT Madras provides the world's largest free-to-access repository of high-quality courses in engineering and science with more than 1,200 courses in engineering, science and technology. NPTEL, under the massive open online courses (MOOCs), has offered 234 courses in the year under review that had student enrollment of over 9 lakh and exam registration of 75,000, of which 50,000 students were certified by means of proctored examinations. These courses can be taken for credit as per AICTE/UGC norms, and NPTEL is negotiating with industry bodies for recognizing the certificates for recruitment in the IT industry.

IITM Summer Fellowship Scheme, which provides a unique opportunity for summer research internship to top-ranking engineering and science students across the country, supported 230 students this year.

IIT Madras continues to provide support to Rashtriya Aavishkar Abhiyan (RAA) and Ishan Vikas programmes launched by the Government of India, and has provided training to around 180 students and 25 teachers from 39 schools this year.

1.7. International Collaborations

IIT Madras has been active in furthering its international collaborations and during 2016-2017 signed 35 MoUs with eminent international universities worldwide to facilitate student exchanges and faculty collaborations, taking the total number of active MoUs to 215, JDPs to 15 and Joint Supervision Programs to 50.

The number of exchange students at the Indian Institute of Technology Madras has risen from 90 in 2011 to 145 in 2016, a jump of 61% and an indication that the institute is improving its international relations and gaining global impetus. IITM has seen a steady increase in students going abroad for exchange programs from 18

in 2012 to 150 in 2016. A notable summer internship opportunity available for IIT Madras students is the Purdue Undergraduate Research Experience (PURE) that witnessed participation of nine IITM students and the IITM-RWTH Indo-German programme that benefitted four students.

RWTH Aachen University and IIT Madras were awarded a joint grant from DAAD and UGC as part of the Indo-German Partnerships in Higher Education Programme (IGP), with funding of 500,000 euros over a four-year period. IITM is an active participant in consortia such as AOTULE (Asia-Oceania Top Universities League in Engineering) and WTUC (World Technology Universities Congress), and in Erasmus projects such as Heritage and Svagata.

1.8. Human Resources

IIT Madras has conducted several systematic programmes throughout the year to train our technical and administrative staff and help them upgrade and acquire new knowledge, skills and professional orientation through a variety of learning experiences. In the year under review, about 139 staff members benefitted from four in-service and 14 offsite training programmes. Apart from this, as many as 57 officers/staff have been provided Hindi training.

The awardees for the Non-Academic Staff Recognition Awards for 2016-17 are Ms. P.K. Sheba Sabari and Ms. B. Sundari under the Administrative category, and Mr. K.R. Ravindranath and Mr. S. Dhanabalan under the Technical category.

1.9. Quality and Process Improvement Initiatives

IIT Madras was ISO certified for its academic support processes as early as 1999 and for administrative support processes in 2001. The ISO certification for all the units was upgraded as per the ISO 9001:2015 standard in February 2017. The institute hospital was ISO certified this year. The Central Electronic Centre has also been NABL-accredited for its Testing and Calibration Laboratories since 2004.

1.10. Infrastructure Development

We are thankful to the Government of Tamil Nadu for allotting 163 acres of land in Thaiyur B Village, Kancheepuram district for establishing our satellite campus. At a special function in the Chief Minister's office on 27 April 2017, the Honourable Chief Minister handed over the government order for the transfer. IIT Madras is planning to establish large Centres of Excellence at its satellite campus.

The year 2016-17 witnessed the completion of a number of construction projects – National Centre for Combustion R&D; two new class room complexes, Raman and Ramanujan Blocks, for the I Year classrooms replacing the Chemistry and Physics Lecture Theatres; an additional floor over the Engineering Design building; Nilgiri, a new student dining facility with a seating capacity of 900; and an Annexe building for IC&SR.

Some projects that are nearing completion are the Bio-Technology and Centre for Sustainability buildings with G+6 floors with support from the Mehta Family Foundation; New Academic Complex with G+6 floors that will house the Departments of Metallurgical and Materials Engineering, Chemical Engineering and Mathematics along with some Research Centres; and 96 B Type quarters with G+8 floors.

The successful commissioning of the 1 MW solar PV system has resulted in the launch of an additional 2 MW solar PV system funded by a CSR grant from Rural Electrification Corporation Limited, and a 120 kW system funded by alumni. With this installation, the IITM campus will have a total of 3.2 MW of solar capacity thereby significantly reducing the peak load demand from TANGEDCO.

The 4 MLD sewage treatment plant and installation of a dual piping system for all hostels and high-rise residential buildings enable effective recycling of 1.4 MLD that not only meets the requirements in the washrooms, but also leaves surplus for gardening. IITM has been praised as a unique role model for effective water usage in a city with acute water shortage.

IITM will be hosting the Inter-IIT sports meet this year and towards this, we are augmenting the sports and recreation facilities on campus. On 2 May 2017 Mr. N. Sankar, Chairman, Sanmar Group as part of their Golden Jubilee celebration inaugurated the renovated K. S. Narayanan Centre for Cricketing Excellence. On 3 May, the synthetic track at the Manohar C. Watsa stadium was inaugurated by the donor and distinguished alumnus Mr. Prem Watsa, Chairman and Chief Executive of Fairfax Holdings.

Keeping in mind our increasing bandwidth and cyber-security requirements, the core switches and firewall have been upgraded to a performance level ten times better than before.

1.11. Student Co-Curricular and Extra-Curricular Activities

SAARANG, the annual cultural festival of IIT Madras, witnessed yet another leap in standard and scale by becoming the first cashless event on campus. This year's theme Enchanted Forest brought to life the idea of a mystical land through its large-scale ambience project. With a footfall of over 63,000, 90 competitive events, 200 informal events, 14 lecture demonstrations, seven world cultural show acts (like sand art, street dancing, etc.) and six professional shows, Saarang was invigorating. The stall for Digital Payment System awareness drive conducted as a part of VISAKA was a hit.

SHAASTRA, the annual technical festival of IIT Madras, with theme AUGMENT not only served as a platform to display talent and ingenuity, but also provided a learning experience in the world of science and technology. Accessibility Summit that held the first-ever hackathon for the visually impaired and the Formula Drone, India's first ever drone racing event, were this year's additions. SYNK, a social initiative for waste management, has developed a new technique of construction using discarded PET bottles with filled sand instead of bricks. This will help in rural sanitation. The first such 'bottle' toilet is going to come up in Bandikavanoor in Sholavaram taluk in Thiruvallur district.

The second edition of institute's literary festival SAAHITYA was a celebration of all literary forms such as oratory, word games, theatre, writing and quizzing.

The EXTRA MURAL LECTURE (EML) series, a long-standing student initiative, was vibrant as ever. Following a kick-off lecture by Dr. Kiran Bedi, EML featured distinguished speakers from varied fields: Dr. Tiziano Camporesi of CERN, Mr. Seth Dallaire of Amazon, former Union Finance Minister Mr. P. Chidambaram, HDFC Chairman Mr. Deepak Parekh, former tennis sensation Mr. Ramesh Krishnan, Telangana IT Minister Mr. K. T. Rama Rao, Bharatanatyam exponent Ms. Bala Devi Chandrashekar, to name a few. Dr. A. S. Kiran Kumar delivered the annual Abdul Kalam Memorial Lecture this year.

RESEARCH CONNECT is an initiative that aims to link industrial R&D experts, IIT Madras research scholars and faculty and acts as an enabler in translating laboratory research to industry. It was launched as part of the fifth edition of the annual Research Scholars' Day (RSD) Celebrations.

In the 32nd INTER-IIT AQUATIC MEET, IIT Madras won both the Men's and Women's Swimming Championship. In the 51st INTER-IIT SPORTS MEET, the Women's team clinched the championship, winning a gold medal each in basketball and tennis. Our Men's team did very well in athletics by winning three gold medals, while securing third position overall.

The CENTRE FOR INNOVATION (CFI) had a great year with all its 13 clubs bubbling with activity and great performance in competitions. It mentored other institutions in the country for setting up similar centres. CFI hosted multiple visitors from various backgrounds, from students and professors to the Education Minister of Tamil Nadu. The WebOps club of CFI in collaboration with the Government of Tamil Nadu conducted a nationwide hackathon to strengthen 108 ambulance services. The success of the CFI can be estimated by the accolades our projects and teams won at various events this year.

Team Sahaay that focusses on accessibility had two of its projects recognized. The toilet sanitation project won the GYTI award at the President of India's Festival of Innovation. The electrolarynx project to aid those who have lost their voice box due to illness was selected as an exhibit for an exhibition organized by ICMR.

Team Raftar, the formula racing team, that has been consistently improving and bettering their record, secured overall second position in Formula Bharath 2017 out of 55 teams while emerging first in categories such as fuel efficiency and endurance. They are representing IIT Madras in FS-Italy this month. Team Anveshak has worked relentlessly on their Mars Rover to become one of the few teams from India to clear the critical design review at the University Rover Competition at Utah in June. Team Abhiyaan has finished in the top 13 for its innovative solutions and algorithms for autonomous guidance and lane detection in the Intelligent Ground Vehicle Challenge 2017 held at Michigan. Team Nimbus came 2nd in India and 14th in the world in the SAE Aero Design Competition, the largest aero design competition in the world at university level, held at Fortworth, Texas.

Nirmaan, the pre-incubation programme, saw four incubated start-ups - Tvasta Manufacturing in the 3D printing field, Zup in the app field, and Crion Tech and GhostVR in the virtual reality domain.

IITMSAT is the student-led satellite initiative of IIT Madras to launch a Space-based Proton and Electron Energy Detector (SPEED). The payload combines scintillators, optical fibres and high-speed electronics in a compact nanosatellite form factor. The satellite has been fully built ground up by our students and is currently undergoing intensive testing at IITM and ISRO, targeting an ISRO PSLV-based launch later this year. A satellite tracking ground station has also been set up on campus by our students.

The Leisure Time Activity programme (LTAP) has provided an opportunity for students to pursue their interest outside academics. The positive impact of LTAP is discernible from the participation of 3,000 unique students in various events and the registrations of various clubs doubling this year.

1.12. Student Welfare

The wellness of students is one of the key concerns of our institute, which has a planned and dynamic Wellness Network. MITr and SAATHI, formed for the well-being of the student community, are serving as the guidance and counseling units that provide emotional support to students through professional counselors and experts who are available 24x7. While SAATHI is proactive in its activities, MITr is the reactive front. A continuous monitoring programme to follow-up with students who have had stressful and anxious moments is also in place.

YourDOST, an online emotional wellness platform, aims to increase awareness regarding mental wellness and break the prevalent social stigma attached to seeking psychological help on campus. The mechanism has been introduced for students who are more comfortable on an online forum compared to the existing face-to-face system.

In order to enable freshers to settle comfortably and feel at home away from home, various informal programmes such as treasure hunt, friendship day contest, orientation programme and academic buddy programme have been organized. Several programmes and workshops on relaxation, meditation, yoga, leadership and gender sensitization, among others are organized regularly to foster physical, social, emotional and intellectual well-being of our students.

1.13. Placement

As a result of reaching out to around 1,628 core and non-core companies this year, 250 companies visited IIT Madras for placement, of which 127 were from core engineering verticals. Focus was placed on contacting various Fortune 500 and other leading companies.

Despite disruption of placements due to cyclone this year, a total of 769 students were placed through Placement Office, of whom a large fraction (364) joined core engineering companies. This number is similar to last year's. A significant number of our graduands get placed through their guides or pursue higher studies. From the exit data collected from the graduands attending the convocation, I am happy to note that almost everyone here has either been placed or is pursuing higher studies in India and abroad.

The internship office has enabled placement of 296 third-year students into internships in 86 companies in the year under review.

1.14. Alumni Matters

The Office of Alumni Relations continues to provide a vibrant interface between the institute and its alumni. Social media platforms are being leveraged extensively for enabling this, as evidenced by the LinkedIn membership crossing 11,000. The love and regard the alumni have for their alma mater is evident from the enthusiastic and increased participation during AlumNite, alumni reunions and chapter meetings both in India and abroad.

IIT Madras has been honouring select alumni with Distinguished Alumnus Awards since 1997 in recognition of outstanding achievements in the areas of entrepreneurship, leadership and management, academia and research, social and technological innovation, and service to humanity at large. The awardees for this year are:

1. Dr. K. Virupaksha Reddy, President and Founder, PriTel Inc., Illinois, USA (1972/MSc/CY)
2. Dr. Ramayya Krishnan, Dean, H. John Heinz III College and William W. and Ruth F. Cooper Professor of Management Science and Information Systems, Carnegie Mellon University, USA (1981/BT/ME)
3. Mr. V. Shankar, Founder, CAMS Private Limited, Chennai (1981/BT/ME)
4. Dr. Vivek De, Intel Fellow and Director of Circuit Technology Research, Intel Corporation, Oregon, USA (1985/BT/EE)
5. Mr. Satish Pai, Managing Director, Hindalco Industries Limited, Mumbai (1985/BT/ME)
6. Dr. Sethuraman Panchanathan, Chair Professor and Executive Vice President, Arizona State University, Arizona, USA (1986/MT/EE)
7. Dr. Pradip Dutta, Professor, Department of Mechanical Engineering, Indian Institute of Science, Bengaluru (1987/MT/ME)
8. Dr. S. Sudarshan, Professor and Subrao M. Nilekani Chair Professor, Department of Computer Science and Engineering, IIT Bombay (1987/BT/CS)
9. Dr. P.V. Venkitakrishnan, Director, ISRO Propulsion Complex (IPRC), ISRO, Mahendragiri, Nagercoil (1989/MT/ME) and (2006/PhD/ME)
10. Dr. M.R. Madhavan, President, Institute for Policy Research Studies, New Delhi (1990/BT/ME)
11. Mr. Venkat Viswanathan, Founder and Chairman, LatentView Analytics, Chennai (1992/BT/CE)
12. Dr. Anand Raghunathan, Professor, School of Electrical and Computer Engineering, Purdue University, Indiana, USA (1992/BT/EE)

The institute's alumni play a vital role in the development of their alma mater and its outreach. In 2016-17, fundraising scaled new heights, reaching ₹ 55 crore for the first time, and the number of first-time donors rose by 70% over 2015-16, again to an all-time high of 1857. Crowd-funding for short-term projects that are placed on a social media platform has become a significant source of attraction to new donors. More than 200 new donors have been so attracted and ₹ 75 lakh pooled.

J. Mitra and Co. Private Limited sponsored ₹ 7 crore towards the activities of the Healthcare Technology Innovation Centre. Kris Gopalakrishnan, Gururaj Deshpande and Jaishree Deshpande sponsored the Gopalakrishnan Deshpande Centre for Innovation and Entrepreneurship (GDCIE) with a donation of $1 million per year over the next five years as mentioned earlier in the report; the Mehta Family Foundation has been generous in continuing to fund the construction of the second BioSciences Building with an additional contribution of ₹ 3.5 crore. Venky Harinarayanan and Anand Rajaram, our Distinguished Alumni, endowed a Visiting Chairs programme in Computer Science and Engineering with a gift of $1 million, while four Institute Chairs were endowed with grants of ₹ 50 lakh each.

CSR contributions received from Indian industries exceeded ₹ 17 crore with several companies contributing to support scholarships and incubators, as well as faculty R&D projects with social impact. The Mr. Ramanan and Khanchandani Scholarships were sponsored in the memory of Late R. Ramanan and Late Deepak Khanchandani by their families.

Twenty-seven Leadership Lectures featuring alumni have been held last year. More than 228 students and 25 faculty members were provided travel grants to support conference presentations and collaboration activities. The total payout exceeded ₹ 87 lakh. More than 1,300 students have benefited from travel grants over the years.

1.15. Acknowledgements

An endeavor 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 organizations who assist us in various capacities, and our alumni for 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. I would also like to specifically place on record our gratitude to the outgoing Registrar, Ms. V. G. Bhooma, for the stellar service she has rendered during her deputation at IIT Madras. 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. Our Chairman is constantly holding us to a goal-oriented approach aimed at exceeding our promises and Strategic Plan objectives. I take this opportunity to thank the outgoing board members Mrs. S. Madhumathi, Mr J. Ashok Kumar and Dr. K. Vijayakumar, and welcome Mr. Rajendra Ratnoo, Dr. Tariq Thomas and Dr. K. P. Indiradevi who have been nominated in their place.

I would like to once again thank our Chief Guest, Mr. Nandan Nilekani, former Chairman, UIDAI and co-founder of Infosys for gracing this convocation. To have been part of the visionary team that helped make a name for India globally in the IT space is achievement enough. To follow it up with the creation of the world's largest online identification system Aadhaar is stupendous. It is indeed a matter of pride for us as Indians and IITians that one amongst us had the guts to dream that such a state-of-the-art system could be successfully set up and function seamlessly in a large country of 1.25 billion with known infrastructural deficiencies. He has most recently been recognized with the Nikkei Asia Prize for his pioneering efforts in this regard. I am sure all our students are eager to hear him and draw inspiration from his lifetime of service to the nation.

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

Jai Hind.

1.16. Annexure

1.16.1. Faculty Awards / Honours

Dr. Sujith RI (AE)	ASI Award for Rocket and Related Technologies, Astronautical Society of India
Dr. Raghavendra Sai VV (AM)	BIRAC SRISTI GYTI 2017 Awards
Dr. Anju Chadha (BT)	Dr. S K Chatterjee Award for an outstanding Women Scientist, IISc, Bengaluru
Dr. Sanjib Senapati (BT)	National Bioscience Award, Department of Biotechnology, Government of India
Dr. Vignesh Muthuvijayan (BT)	Young Faculty Recognition Award, IITM
Dr. Arun Menon (CE)	Young Faculty Recognition Award, IITM
Dr. Radhakrishna G Pillai (CE)	Outstanding Young Concrete Engineer of Tamil Nadu, The Indian Concrete Institute Chennai
Dr. Thyagaraj T (CE)	IGS-Dr.Dinesh Mohan Prize, Indian Geotechnical Conference 2016
Dr. Ethayaraja Mani (CH)	Amar Dye-Chem Award for Excellence in R&D, IIChE
Dr. Krishnaiah K (CH)*	Life Time Achievement Award, VIT
Dr. Niket Kaisare (CH)	Early Career Institute Research and Development Award, IITM
Dr. Ravi R (CH)	Dr. Y B G Varma Award for Teaching Excellence in Chemical Engineering
Dr. Kamakoti V (CS)	2016 IBM Faculty Award
Dr. Krishna Nandivada V (CS)	Dr.APJ Abdul Kalam HPC Award
Dr. Krishnamoorthy Sivalingam (CS)	Mid Career Institute Research and Development Award, IITM
Dr. Rupesh Nasre (CS)	Young Faculty Recognition Award, IITM
Dr. Anbarasan P (CY)	The NASI - Young Scientist Award ISCB Young Scientist Award, Lucknow
Dr. Md. Mahiuddin Baidya (CY)	INSA Medal For Young Scientists *Retired Faculty
Dr. Ramesh L. Gardas (CY)	Young Scientist Award – 2017, Academy of Sciences, Chennai
	Dr. Arvind Kumar Memorial Award, Indian Council of Chemist, Pune Shri J. C. Bose Patent Award, IIT Madras
Dr. Sekar G (CY)	Mid Career Institute Research and Development Award, IITM
Dr. Boddeti Kalyan Kumar (EE)	Young Faculty Recognition Award, IITM
Dr. Radhakrishna Ganti (EE)	Early Career Institute Research and Development Award, IITM
Dr. Mathangi Krishnamurthy (HS)	Young Faculty Recognition Award, IITM
Dr. Satya Sundar Sethy (HS)	Young Philosopher Award, Indian Council of Philosophical Research (ICPR)
Dr. Santanu Sarkar (MA)	NASI Young Scientist Platinum Jubilee Award
Dr. Thamban Nair M (MA)	B.K. Master Memorial National Excellence Award 2016, Udma Educational Trust, Kerala
Dr. Ashis Kumar Sen (ME)	Early Career Institute Research and Development Award, IITM
Dr. Krishnan Balasubramaniam (ME)	2015 DRDO Academy Excellence Award
Dr. Prabhu Rajagopal (ME)	National Design Award, National Design and Research Forum National Young NDT Scientist Award, Indian Society for Non Destructive Testing
Dr. Shunmugam MS (ME)	Life Time Achievement Award, Indian Council of Philosophical Research
Dr. Sujatha Srinivasan (ME)	7th NCPEDP-Mphasis Universal Design Award
Dr. Murty BS (MM)	Honorary Doctorate, Deakin University
Dr. Ganesh LS (MS)	Distinguished Professor Award, CSI-Mumbai
Dr. Jitendra S Sangwai (OE)	Early Career Institute Research and Development Award, IITM
Dr. Manu Jaiswal (PH)	Young Faculty Recognition Award, IITM

1.16.2. Fellowships

Dr. Sujith RI (AE)	Fellow, Indian Academy of Sciences
Dr. Sarith P Sathia (AM)	Indo-Australia Early and Mid Career Research (ECMR) Fellowship Award, INSA & DST
Dr. Jayakrishnan A (BT)	Fellow, Indian National Science Academy
Dr. Ligy Philip (CE)	Fellow, The Royal Society of Chemistry
Dr. Raja Kumar B (CH)	Fellow, Andhra Pradesh Akademi of Sciences
Dr. Siva Ram Murthy C (CS)	J.C. Bose Fellowship
Dr. Sankararaman S (CY)	Fellow, Indian Academy of Sciences
Dr. Sundargopal Ghosh (CY)	Fellow, Indian Academy of Sciences
Dr. Sarathi R (EE)	Fellow, Indian National Academy of Engineering
Dr. Joe Thomas Karackattu (HS)	China India Scholar-Leader for 2017-19, India China Institute
Dr. Ganesh LS (MS)	Distinguished Fellow Award 2016, CSI-Mumbai
Dr. Jitendra Sangwai (OE)	Indo-Australia Early and Mid Career Research (ECMR) Fellowship jointly by INSA & DST
Dr. Ramachandra Rao M.S (PH)	Fellow, Andhra Pradesh Akademi of Sciences (APAS)

1.16.3. Books Published

Dr. Chidambaram M (CH) Padma Sree R	Control of unstable single and multivariable systems, Narosa Publishing House
Dr. Shanti Bhattacharaya (EE) Anand Vijayakumar	Design and Fabrication of Diffractive Optical Elements with Matlab, SPIE Press
Dr. Shanthi Pavan (EE) et.al.	Understanding Delta-Sigma Data Converters, 2nd Edition, IEEE Press
Dr. Aysha Iqbal Viswamohan (HS) Vimal Mohan John	Behind the Scenes: Contemporary Bollywood Directors and Their Cinema, SAGE
Dr. Kalpana K (HS)	Women, Microfinance and the State in Neo-liberal India, Routledge New Delhi, India
Dr. Roland Wittje (HS)	The Age of Electroacoustics: Transforming Science and Sound, MIT Press Cambridge
Dr. Satya Sundar Sethy (HS)	Meaning and Language, DK Printworld, New Delhi
Dr. Raghavan V (ME)	Combustion Technology - Essentials of Flames and Burners, Ane Books Private Limited
Dr. Srinivasan Chandrasekaran (OE)	Ocean Structures: Construction, Materials, and Operations, CRC Press

1.16.4. Editorial Board Memberships

Dr. Rajagopal K. (CE)	Member, Editorial Board, *Indian Geotechnical Journal*
Dr. Sachin Gunthe (CE)	Research Associate, MPIC
Dr. Thyagaraj T (CE)	Member, Editorial Board, *International Journal of Geotechnical Engineering*
Dr. Vinu R (CH)	Editor, *Journal of Advanced Powder Technology*
Dr. Ashok Kumar Mishra (CY)	Editor, *Scientific Reports*
Dr. Sandipan Bandyopadhyay (ED)	Associate Editor, *Sadhana*, Indian Academy of Sciences/Springer. Associate Editor, *Mechanism and Machine Theory*, Elsevier
Dr. Krishna Jagannathan (EE)	Editor, *Performance Evaluation (PEVA)*, Elsevier
Dr. Balaji Srinivasan (EE)	Associate Editor, *Optics Express*
Dr. Shanti Bhattacharya (EE)	Associate Editor, *Optical Engineering*, SPIE
Dr. Balaji C (ME)	Editor-in-Chief, *International Journal of Thermal Sciences*
Dr. Sundar V (OE)	Regional Editor, *The International Journal of Ocean and Climate Systems*, SAGE
Dr. Sangaranarayanan MV (PH)	Member, *Journal of Chemical Sciences of the Indian Academy of Sciences*, Bengaluru

1.16.5. Student Scholarships / Fellowships

Raj Arjunan (AM)	Prime Minister's Fellowship for Doctoral Research
Yerranagu Vinayathi (CE)	Aditya Birla Scholarship
Ajithkumar Narasimman (ED)	Honda Young Engineer and Scientist (YES) Award 2016
Anchitha Krishna (HS)	Fulbright-Nehru Doctoral Research Fellowship, USIEF
Anitha Iris (HS)	Charles Wallace India Trust Research Grant
Padmapriya Govindarajan (HS)	Yenching Scholarship, China Studies

1.16.6. Best Paper / Poster / Presentation Awards

Ramesh P Hun (AE) Dr. Nandan Kumar Sinha	Best Paper Award, National Conference on Large Scale Multi-disciplinary Systems of National Significance (LAMSYS), Sriharikota
Bhadra S Kumar (AM) Dr. Varadhan S.K.M	Best Paper Presentation Award, Annual Conference of the Association of Cognitive Science (ACCS 2016), IIT Gandhinagar
Abrar Ali Khan (BT) Dr. Nitish R. Mahapatra	Dr. N. S. Dhalla Award for Best Oral Presentation, 14th Annual Meeting of the International Society for Heart Research (Indian Section), New Delhi
Bhim Sen Thapa (BT) Dr. Chandra T. S	Best Poster Award, International Conference on Sustainable Energy and Environmental Challenges (SEEC-2017)
Narayani M (BT) Dr. Smita Srivastava Dr. Anju Chadha	Best Poster Award, International Conference on Current Trends in Biotechnology (ICCB-2016)
Dr. Ashwin Mahalingam (CE)	Best Paper Award, Engineering Projects Organization
Conference, Seattle Washington USA Dr. Lelitha Devi (CE)	Best Paper Award, International Conference on Intelligent Transportation Engineering (ICITE 2016)
Dr. Robinson R.G (CE)	IGS-AIMIL Biannual Award, Indian Geotechnical Society
Dr. Subhadeep Banerjee (CE)	IGS – YGE Best Paper Biennial Award – 2016, Indian Geotechnical Society
Sunitha P (CE) Dr. Rupen Goswami Dr. Murty CVR	ICI Award for Best Paper, Indian Concrete Institute, Mumbai Centre
Priyadharshini P (CE) Dr.Ramamurthy K Dr. Robinson R. G	Student Paper Award, 32nd International Conference on Solid Waste Technology and Management (ICSW-2017), Philadelphia, USA
Ganesh S (CE) Sridhar G Dr. Robinson RG	Best Paper award, Indian Geotechnical Society, New Delhi
Anu Rachel (CE) Dr. Ligy Philip	Best Post Award, BioWC-2016
Saranya Sriram (CE) Dr. Indumathi M Nambi Dr. Raghuram Chetty (CH)	Best Poster Award, 11th International Symposium on Advances in Electrochemical Science and Technology (iSAEST-11), Chennai
Mekala Chandrasekhar (CE) Dr. Indumathi Nambi	Best Poster Award, CleanUp India Conference-2016, Coimbatore
Raj Kamal Singh (CE) Dr. Ligy Philip	Best Paper Presentation Award, 18th Asian Conference on Electrical Discharges, Chennai Best Oral Presentation Award, 4th International conference on Advanced Oxidation Processes (AOP) - 2016, India
Saranya Sriram (CE) Dr. Indumathi Nambi Dr. Raghuram Chetty	Best Oral Presentation, 7th Asia-Pacific Congress on Catalysis (APCAT-7), Mumbai
Dr. M.Chidambaram (CH) Dr. Simi Santhosh	NRC Award, 3rd Best Paper in *Indian Chemical Engineer*, IIChE
Dr. Vinu R (CH) Rajasekhar Reddy B	MH Shukla 2nd Prize for Best Technical Paper, IIChE
Saurabh Tripathi (CH)	Best Paper Award, International Conference FEAST 2017, Tiruchirapalli
Ila Sarkar JR (CH) Dr. Raghuram Chetty	Best Poster Presentation Award, International Conference on Sustainable Energy Technologies for Smart and Clean Cities (SETS&CC-2016)
Abhishek Kumar Gupta (CH) Raviteja Kurapati (CH) Dr. Upendra Natarajan	Best Poster Presentation Prize, 6th International Conference on Functional Electroceramics and Polymers (ICEP-2017)
Abhishek Gupta (CH) Dr. Upendra Natarajan	Best Oral Presentation Award, International Conference on Frontiers at the Chemistry-Allied Sciences Interface (FCASI-2016)
Lakshmikumar K (CH) Dr. Upendra Natarajan	Best Poster Award, International Conference on Frontiers at the Chemistry-Allied Sciences Interface (FCASI-2016), Jaipur
Shumaila Shahid (CH) Dr. Basavaraja M. Gurappa	Best Oral Presentation, 2nd International Conference on Material Science and Technology (ICMST), Kerala
Dr. Aritra Hazra (CS)	Best Student Paper Award, 30th International Conference on VLSI Design
Adit Krishnan (CS) Deepak Padmanabhan Sameep Mehta Dr. Sayan Ranu	Best Paper Award, International Conference on Web Information Systems Engineering (WISE), Shanghai, China
Ditty Mathew (CS) Dr.Sutanu Chakraborti	Best Student Paper Award, 24th International Conference on Case Based Reasoning (ICCBR-2016), Atlanta
Anusha B (CY) Dr. Ramesh L. Gardas	Best Poster Award, 11th National Conference of Indian Thermodynamics Society
Atanu Ghosh (CY) Papri Chakraborty Dr. Pradeep T	Best Poster Award, JSPS-DST Asian Academic Seminar
Hareesha Dasary (CY) Dr. Dillip Kumar Chand	Best Poster Award, 11th International Symposium on Macrocyclic and Supramolecular Chemistry (ISMSC-2016)
Macrocyclic and Supramolecular Chemistry (ISMSC- 2016) Manthena Chaitanya (CY) Dr. Anbarasan P	Best Poster Prize, 21st International Conference on Organic Synthesis (ICOS-21), Mumbai
Satyanarayana M (CY) Dr.Varadaraju U.V	ACCMS-TM 2016 Poster Award, Asian Consortium on Computational Materials Science Theme Meeting (ACCMS-TM)
Sudip Mandal (CY) Dr. Kothandaraman R	Best Poster Award, 11th International Symposium on Advances in Electrochemical Science and Technology (iSAEST-11), Chennai
Biswajit Mondal (CY) Dr. Dillip Kumar Chand	Best Poster Award, 20th CRSI National Symposium in Chemistry, Guwahati
Monojit Ghosal Chowdhury (CY) Dr. Sundargopal Ghosh	Best Poster Award, ISACS: Challenges in Inorganic Chemistry, Manchester, United Kingdom
Prithi Jayaraj (CY) Dr. Ranga Rao G	Best Poster Award, 11th International Symposium on Advances in Electrochemical Science and Technology (iSAEST-11), Chennai
Sanjeev Gupta (CY) Dr. Selvam P	Poster Presentation Prize, RSC-NIT Symposium
Divya Baskaran (ED) Dr. Kavitha Arunachalam	First Poster Prize, 9th Biennial Conference on Hyperthermia (9BCH-2017), Ahmedabad
Pauline John (ED) Dr. Nilesh J. Vasa Dr. Sujatha N	Best Student Poster Presentation Award, International Conference on Fiber Optics and Photonics (Photonics 2016), Kanpur
Ankit Poddar (EE) Dr. Ashok Jhunjhunwala	Best Paper Award, First International Conference on Sustainable Green Buildings and Communities (SGBC), IIT Madras
Priyanka Shinde (EE) Dr. Shanti Swarup K	Best Paper Presentation Award, 5th International Conference on Electrical Energy and Networks (ICEEN2017), Singapore
Sreekanth T (EE) Dr. Lakshminarasamma N Dr. Mahesh Kumar	Best Video Presentation Award, 18th IEEE International Conference on Industrial Technology 2017 (ICIT-2017), Canada
Chaitanya Bakre (ME) Dr. Prabhu Rajagopal Dr. Krishnan Balasubramanian	Bronze Medal for Best Poster, 43rd Review of Progress in Quantitative Nondestructive Evaluation, Atlanta, USA
Peter Singh (ME) Dr. Ramesh Babu N Dr. Sivasrinivasu Devadula	Best Poster Award, 6th International and 27th All India Manufacturing Technology, Design and Research (AIMTDR), Pune
Ramesh Kannan (ME) Dr. Prasad B.V.S.S.S.	Best Paper Award, 7th International Symposium on Fluid Machinery and Fluids Engineering (ISFMFE-7) Jeju, Korea
Rajeev G. P (MM) Dr.Srinivasa Rao Bakshi Dr. Kamaraj M	Best Poster Award, 2nd International Conference on Heat Treatment and Surface Engineering (HT&SE-2016)
Deepu Mathew John (MM) Dr. Phanikumar G	Best Poster Award, 2nd International Conference on Heat Treatment and Surface Engineering (HT&SE-2016)
Sneha Sruth V (MM) Dr. Ramaprabhu S Dr. Kamaraj M	Best Poster Award, International Symposium for Research Scholars (ISRS-2016), Chennai

Sudhanshu Gupta (MS) Dr. Richa Agrawal	Arun K. Jain Best Paper Award, EMCB Annual Conference, Lucknow
Ayesha A (MS) Lata Dyaram Dr. Satyanarayana K. N	Outstanding Paper Award, National Conference on Construction Management, Mechanization and Environmental Sustainability (CMMES 2017), Ranchi
Nithesh G Kumble (OE) Dr. Bhattacharyya S. K Dr. Dhiman Chatterjee	Best Presentation Award, Program of International Platform on Ocean Energy for Young Researcher, Japan
Divya Nechiyil (PH) Sreetama Ghosh (PH) Dr. Ramaprabhu S	Best Poster Award, 15th Asian Conference on Solid State Ionics organized at IIT Patna
Geethu P. M (PH) Dr. Dillip K. Satapathy	Second Best Poster Award, 4th International Conference on Nanostructured Materials and NanoComposites (ICNM-2017), Kottayam Best Poster Award, 6th Conference on Neutron Scattering (CNS-2016) organized by the Neutron Scattering Society of India in Mumbai
Radhamani (PH) Dr. Ramachandra Rao M. S	Best Paper Award, International Symposium for Research Scholars (ISRS) on Metallurgy, Materials Science and Engineering, IIT Madras
Raj Kumar Manna (PH) Sunil Kumar P. B	Soft Matter Poster Award, Second International Conference on Soft Materials (ICSM) 2016, Jaipur
Imon Kalyan (PH) Dr. Krishnamurthy C.V	Best Oral Presentation Award, International Conference on Emerging Trends in Nanomaterials Science & Technology (ICETNMST - 2017), Nagaland

1.16.7. Student Thesis / Project Awards

Mallikarjunachari G (AM) Dr. Pijush Ghosh	GYTI Appreciation for project entitled Design of a Mechanical Device (Nanorobot) for Diagnosis and Removal of Plaque from Human Heart Artery System
Avisek Barla (BT) ; Abrar Ali Khan; Nitish Kumar Singh; Sameer Sharma (ED); Vijay Anand Dr. Vignesh Muthuvijayan	GYTI Appreciation for project entitled 'Affordable Paper Microfluidic Device for Blood Glucose and Cholesterol Detection'
Dr. Sunitha K. Nayar (CE) Dr. Ravindra Gettu	INAE Innovative Student Project Award
Sunitha K. Nayar (CE) Dr. Ravindra Gettu	Outstanding PhD Thesis in the Field of Concrete in Tamil Nadu, Indian Concrete Institute Chennai Centre
Moghul Sirajuddin (CE) Dr. Ravindra Gettu	Outstanding MS Thesis in the Field of Concrete in Tamil Nadu, Indian Concrete Institute Chennai Centre
Vikram Singh (CY) Dr. Ashok Kumar Mishra	BIRAC GYTI Award for project entitled White Light Emission from Vegetable Extracts
Yadagiri Dongari (CY) Dr. Anbarasan P	2016 Eli Lilly and Company Asia Outstanding Thesis Award
Anupam Chandra (ED) Dr. T. Pradeep (CY) et.al.	GYTI Appreciation for project entitled 'Portable Geospecific Water Filtration Bottle'
Gunjanbhai Patel (ME)	CHIME Best Student Project Award, 7th International Conference on Transforming Healthcare with IT (THIT) 2016

1.16.8. IIT Madras Smart Machines Team

T. K. Balasaravanan (ME) Dr. N. Arunachalam Dr. Sivasrinivasu Devadula Dr. L. Vijayaraghavan Dr. B. Ravindran (CS)	Best Student Project Showcase Award, Manufacturing Today Summit, Coimbatore
Arvind Pujari (MM) Tanay Garg (ED); Shashwat Jain(ME); Kushal Kumar Reddy (BS) Subham K Sahana (CE) Dr. Anil Prabhakar (EE)	GYTI Appreciation for Project entitled 'A Mechanism for Toilet Seat Sanitation'
Mannam Naga Praveen Babu (OE) Dr. Krishnankutty P	GYTI Appreciation for project entitled Fish-Inspired Propulsion for Remotely Operated Surfaces Ships and Underwater Vehicles

Student Prizes / Awards

Nayan Bhatt (AM) Dr. Varadhan S. K. M.	Budding Innovators Award, NRDC
Kiranmayi Malapak (BT) Dr. Nitish R. Mahapatra	Young Scientist Award, KV Rao Scientific Society
Devasena Sridhar (CE) Dr. Indumathi Nambi	Award for Asian Young Professionals on Water Research, 12th International Symposium on SouthEast Asian Water Environment (SEAWE 12), Vietnam
Sakhare Rahul Suryakanta (CE) Dr.R.G.Robinson	Gold Medal in the 47th All India Student Design Competition, NDRF
Abhinav Parakh (CH) Anish Patil Dr. Raghuram Chetty	First Prize, 'Design is in my DNA!' competition, Asian Paints Limited
Prasanna Karthik (CS) Patanjali SLPSK Gnanambikai Krishnakumar	First Prize, CSAW Embedded Security Challenge 2016, IITM
Saurabh Kalika (CS) Jyothi Vedurada Srikant Padala	First Place, HiPC Parallel Programming Challenge, IITM
Anoop Narayan Bhat (EE) Dr. Nagendra Krishnapura	2016 Technoinventor Award
Rini Sharon (EE) Dr. Umesh S	Second Prize, FameLab India National Competition, IISER Pune
Shruthi Gopinath (ME) Dr. Sundararajan Natarajan	Eaton Pratibha Excellence Award
Justin Joseph (HS) Nirmal AP (HS) Ashwin Kurian Philip (HS) Dr. Joe Thomas Karackattu	First Prize, Inter-College/University 'China Quiz
Team Monimakers Advaith Sridhar (EE) Anirudth N Pranjal Mehta	First Prize, Samsung E.D.G.E competition
Team Raftar, The IIT Madras Formula Racing Team	Second Place, Formula Bharat Championship

1.16.9. Awards/Recognitions won by IITM Start-Ups

Ather Energy Pvt. Ltd	Economic Times Start-up Awards 2016
ConsumeX Industries Pvt Ltd (MuConnect)	Featured in Top 50 hot startups for 2017 in Economic Times
Cygni Energy	ISBA Startup Awards 2016
DeTect Technologies	Wharton India Economic Forum Award Tops the US-India Startup Forum competition Superpreneur Award at the TiECON PitchFest 2016
Fib-Sol Life Technologies	LIFT India Ideation series organized by Swissnex India
Growtech Innovations	Silver & Bronze Medals at Seoul International Invention Fair
Nadhi Technologies	Thirty Sixth, Deloitte top 50 fastest growing Tech companies in India
Planys Technologies Pvt Ltd	Entrepreneur Award 2016, Takeda Foundation Japan 'Rising Star' Award at PetroTech 2016
Stellapps Technologies	Second Place, Deloitte top 50 fastest growing Tech companies in India ISBA Startup Awards 2016 Silver Medal, Seoul International Invention Fair
Swadha Energies	National Entrepreneurship Award 2016 from Ministry of Skill Development & Entrepreneurship, GoI
Uniphore	TIME's Top 10 Next Generation Leaders

2. ADMINISTRATION

2.1. General

The Indian Institute of Technology (IIT) Madras is an autonomous statutory organization 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 and Varanasi (BHU), as well as Chennai) are administrated centrally by the Councils of IITs, an apex body established by the Government of India (GoI) to co-ordinate 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 both 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 related to buildings and works. 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 2017, 573 faculty members and 79 Group 'A' officers were in service.

2.2.1. Number of faculty/employees in service

Faculty Members	Visiting Faculty	Group A Staff	Scientific Officer	Technical Staff	Administrative Staff
573	11	79	1	271	340

Number of faculty and employees appointed during 2016-2017

Professors	Associate Professors	Assistant Professors	Visiting Faculty	Administrative and Technical Staff (including Group A)
2	34	29	11	76

2.2.2. Faculty/employees appointed between 1 April 2016 and 31 March 2017

Sl. No.	ID. No.	Name	Designation	Department/ Section	Date of Joining
Assistant Professors					
1.	8739	M. Senthil Murugan	Assistant Professor	Aerospace Engineering	9 February 2016
2.	8746	Anubhab Roy	Assistant Professor	Applied Mechanics	6 May 2016
3.	8796	Ganesh Tamadapu	Assistant Professor	Applied Mechanics	1 September 2016
4.	8823	Aravind Kumar Chandiran	Assistant Professor	Chemical Engineering	28 October 2016
5.	8834	Bhargava Rama Chilukuri	Assistant Professor	Civil Engineering	5 December 2016
6.	8801	Shweta Agrawal	Assistant Professor	Computer Science	15 September 2016
7.	8802	Mitesh M. Khapra	Assistant Professor	Computer Science	19 September 2016
8.	8740	Saurabh Saxena	Assistant Professor	Electrical Engineering	16 March 2016
9.	8772	Qadeer Ahmad Khan	Assistant Professor	Electrical Engineering	25 July 2016
10.	8800	B. Arun Karuppaswamy	Assistant Professor	Electrical Engineering	8 September 2016
11.	8826	Janakiraman Viraraghavan	Assistant Professor	Electrical Engineering	10 November 2016
12.	8798	Uday Kiran Khankhoje	Assistant Professor	Electrical Engineering	1 September 2016
13.	8830	Puduru Viswanadha Reddy	Assistant Professor	Electrical Engineering	21 November 2016
14.	8835	Rachel Kalpana Kalaimani	Assistant Professor	Electrical Engineering	5 December 2016
15.	8754	Tuhin Subhra Santra	Assistant Professor	Engineering Design	11 July 2016
16.	8769	K. Sumesh	Assistant Professor	Mathematics	1 August 2016
17.	8771	Soumen Sarkar	Assistant Professor	Mathematics	1 August 2016
18.	8793	R. Venkatesh	Assistant Professor	Mathematics	31 August 2016
19.	8794	Dipramit Majumdar	Assistant Professor	Mathematics	1 September 2016
20.	8770	Piyush Shakya	Assistant Professor	Mechanical Engineering	1 August 2016
21.	8833	K. Hariharan	Assistant Professor	Mechanical Engineering	5 December 2016
22.	8837	Satyesh Kumar Yadav	Assistant Professor	Metallurgical and Materials	29 December 2016
23.	8824	Nargis Pervin	Assistant Professor	Management Studies	1 November 2016
24.	8731	Vijayakumar Rajagobalan	Assistant Professor	Ocean Engineering	3 February 2016
25.	8755	Panchanana Khuntia	Assistant Professor	Physics	18 July 2016
26.	8799	Vaibhav Madhok	Assistant Professor	Physics	7 September 2016
27.	8803	Chandra Kant Mishra	Assistant Professor	Physics	19 September 2016
28.	8827	Prabat Ranjan Pujahari	Assistant Professor	Physics	18 November 2016
29.	8839	Shantanu Mukherjee	Assistant Professor	Physics	17 January 2017
Associate Professors					
1.	8194	K. V. Nagendra Gopal	Associate Professor	Applied Mechanics	22 July 2016
2.	8730	Vagesh D. Narasimhamurthy	Associate Professor	Applied Mechanics	1 February 2016
3.	8484	Pijush Ghosh	Associate Professor	Applied Mechanics	22 July 2016
4.	8446	Abhijit Chaudhuri	Associate Professor	Applied Mechanics	22 July 2016
5.	8752	Himanshu Sinha	Associate Professor	Biotechnology	7 June 2016
6.	8369	T. Ranganathan	Associate Professor	Chemical Engineering	22 July 2016
7.	8476	Basavaraja Madivala Gurappa	Associate Professor	Chemical Engineering	22 July 2016
8.	8836	Rajnish Kumar	Associate Professor	Chemical Engineering	13 December 2016
9.	8478	Subhadeep Banerjee	Associate Professor	Civil Engineering	22 July 2016
10.	8502	Sachin S. Gunthe	Associate Professor	Civil Engineering	22 July 2016
11.	8347	Dali Naidu Arnepalli	Associate Professor	Civil Engineering	22 July 2016
12.	8327	Vidya Bhushan Maji	Associate Professor	Civil Engineering	22 July 2016
13.	8671	S. Mathava Kumar	Associate Professor	Civil Engineering	22 July 2016
14.	8465	Jayalal Sarma M. N.	Associate Professor	Computer Science	22 July 2016
15.	8500	John Ebenezer Augustine	Associate Professor	Computer Science	22 July 2016
16.	8477	Kothandaraman Ramanujam	Associate Professor	Chemistry	22 July 2016
16.	8511	Pazhamalai Anbarasan	Associate Professor	Chemistry	22 July 2016
17.	8804	Masilamani Jeganmohan	Associate Professor	Chemistry	27 July 2016
18.	8565	Sheetal Kalyani	Associate Professor	Electrical Engineering	22 July 2016
19.	8424	Arun Pachai Kannu	Associate Professor	Electrical Engineering	22 July 2016
20.	8426	N. Lakshmi Narasamma	Associate Professor	Electrical Engineering	22 July 2016
21.	8422	Kavitha Arunachalam	Associate Professor	Engineering Design	22 July 2016
22.	8457	Binitha V. Thampi	Associate Professor	Humanities	22 July 2016
23.	8574	Anup Kumar Bhandari	Associate Professor	Humanities	22 July 2016
24.	8338	Kalpana Mahalingam	Associate Professor	Mathematics	22 July 2016
25.	8461	Shruti Dubey	Associate Professor	Mathematics	22 July 2016
26.	8509	Ashish Kumar Sen	Associate Professor	Mechanical Engineering	22 July 2016
27.	8305	Parag Ravindran	Associate Professor	Mechanical Engineering	22 July 2016
28	8346	Amitava Ghosh	Associate Professor	Mechanical Engineering	22 July 2016

Sl. No.	ID. No.	Name	Designation	Department/ Section	Date of Joining
Associate Professors					
29.	8832	Balaji Srinivasan	Associate Professor	Mechanical Engineering	1 December 2016
30.	8309	Ravi Shankar Kottada	Associate Professor	Metallurgical and Materials	22 July 2016
31.	8470	Srinivasa Rao Bakshi	Associate Professor	Metallurgical and Materials	22 July 2016
32.	8471	R. K. Amit	Associate Professor	Management Studies	22 July 2016
33.	8437	G. Aravind	Associate Professor	Physics	22 July 2016
34.	8488	Birabar Ranjit Kumar Nanda	Associate Professor	Physics	22 July 2016
Professors					
1.	8745	G. Sundararajan	Professor	Metallurgical and Materials	1 February 2016
2.	8737	Palaniswamy Ananthakrishnan	Professor	Ocean Engineering	1 March 2016
Group A Officers					
1.	1587	B. Nagarajan	Joint Registrar	IC&SR	3 May 2016
2.	8747	G. Chitrapavai	Deputy Registrar	S&P	12 May 2016
3.	8753	V. Swaminathan (On deputation)	Deputy Registrar	Administration	4 July 2016
4.	8749	B. Vijay Shankar (On deputation)	Assistant Registrar	Administration	2 June 2016
5.	8056	R. Muralidharan	Assistant Registrar	Finance & Accounts	29 April 2016
6.	8792	H. Anantharaman, (On deputation)	Superintending Engineer	Engineering Unit	29 August 2016
7.	8359	Mahendra Namdeo Jadhav	Librarian	Central Library	31 March 2016
8.	846	T. Ramakrishnan	Assistant Librarian	Central Library	31 March 2016
9.	8497	N. Elumalai	Chief Security Officer	Security Section	31 March 2016
10.	553	P. Raju	Physical Education Officer (SS)	Gymkhana	30 November 2015
11.	8756	H. Edin Brow Pakiaraj	Physical Education Officer	Gymkhana	25 July 2016
12.		A. Pandian	Technical Officer	Chemical Engineering	1 April 2016
13.	632	M. Divakaran	Technical Officer	Applied Mechanics	1 April 2016
14.	691	K. Paranjothi	Technical Officer	SAIF	1 April 2016
15.	733	S. Srividya	Technical Officer	Chemistry	4 April 2016
16.	8748	P. K. Sudhadevi Antharjanam	Technical Officer	SAIF	13 May 2016
17.	8750	J. Siva	Medical Officer	Hospital	2 June 2016
18.	8751	A. J. Tamilmani	Medical Officer	Hospital	6 June 2016
19.	8773	R. Preethi	Medical Officer	Hospital	4 August 2016
Visiting faculty					
1.	VF-146	Jatindra Kumar Rath	Visiting Professor	Physics	2 May 2016
2.	VF-148	S. Venugopal	Visiting Professor	Metallurgical and Materials	26 May 2016
3.	VF-149	Yi Hsun (Richard) Chen	Visiting Faculty	Humanities and Social Sciences	1 June 2016
4.	VF-150	Rajagopalan Srinivasan	Visiting Professor	Chemical Engineering	11 July 2016
5.	VF-153	Johannes Wenzel	Visiting Faculty DAAD	Humanities and Social Sciences	20 October 2016
6.	VF-154	Ramya Balachandran	Ramalingaswami Re-entry Fellow	Electrical Engineering	28 December 2016
7.	VF-155	R. Pandiyan	Visiting Faculty	Applied Mechanics	2 January 2017
8.	VF-156	P. S. Lakshmi Priya	Visiting Faculty	Civil Engineering	2 March 2017
9.	POP-01	N. Raghavan	Professor of Practice	Civil Engineering	21 February 2017
10.	POP-02	Lt. Gen. P. Ravi Shankar	Professor of Practice	Applied Mechanics	22 February 2017
11.	POP-03	G. Venkatesh	Professor of Practice	Humanities and Social Sciences	21 February 2017

Sl. No.	ID. No.	Name	Designation	Department/ Section	Date of Joining
Employees					
1.	8768	Ananthi A.	Junior Assistant	Admin	25 July 2016
2.	8757	Gnanadurai S.	Junior Assistant	Engineering Unit	25 July 2016
3.	8764	Gomathy G.	Junior Assistant	Finance & Accounts	25 July 2016
4.	8763	Harish A.	Junior Assistant	Finance & Accounts	25 July 2016
5.	8760	Praveen Babu Tiriveedhi	Junior Assistant	Academic	25 July 2016
6.	8765	Raghavan S.	Junior Assistant	Finance & Accounts	25 July 2016
7.	8761	Revathi E.	Junior Assistant	IC&SR	25 July 2016
8.	8758	Sai Ganesh	Junior Assistant	RTI & LC	25 July 2016
9.	8762	Salma Parveen A.	Junior Assistant	Admin	25 July 2016
10.	8766	Silpa K. S.	Junior Assistant	Internal Audit	25 July 2016
11.	8759	Surendar D.	Junior Assistant	Finance & Accounts	25 July 2016
12.	8767	Vignesh Santhanam	Junior Assistant	IC&SR	25 July 2016
13.	8775	Balamurugan G.	Junior Technical Superintendent	Civil Engineering	17 August 2016
14.	8774	Elias Jesu Packiam D.	Junior Technical Superintendent	Chemistry	17 August 2016
15.	8778	Gopinath N. K.	Junior Technical Superintendent	SAIF	17 August 2016
16.	8776	Madhanarasan R.	Junior Technical Superintendent	Computer Centre	17 August 2016
17.	8777	Swathi C. M.	Junior Technical Superintendent	Mechanical Engineering	17 August 2016
18.	8789	Ashok R.	Junior Technician	Applied Mechanics	17 August 2016
19.	8784	Elamaran M.	Junior Technician	Physics	17 August 2016
20.	8786	Ezhil S.	Junior Technician	Engineering Design	17 August 2016
21.	8788	Govarthanan M.	Junior Technician	Horticulture	17 August 2016
22.	8781	Gunda Koushik	Junior Technician	Engineering Unit	17 August 2016
23.	8787	Jainudeen Y.	Junior Technician	Civil Engineering	17 August 2016
24.	8790	Marichamy B.	Junior Technician	Engineering Unit	17 August 2016
25.	8780	Ponnarsu Ravikumar	Junior Technician	Chemistry	17 August 2016
26.	8779	Ranjani P.	Junior Technician	Chemical Engineering	17 August 2016
27.	8782	Sujin E. M.	Junior Technician	Computer Science and Engineering	17 August 2016
28.	8785	Sureka P.	Junior Technician	Mechanical Engineering	17 August 2016
29.	8791	Sumesh Muraleedharan	Junior Assistant	Academic	25 August 2016
30.	8797	Jeyakumar P.	Junior Technician	Engineering Unit	1 September 2016
31.	8795	Manikandan M.	Junior Technician	Management Studies	1 September 2016
32.	8808	Balamurugan T.	Junior Technician	Central Workshop	14 October 2016
33.	8806	Rajesh Kanna N.	Junior Technician	Mechanical Engineering	14 October 2016
34.	8807	Vinu D.	Junior Technician	Physics	14 October 2016
35.	8817	Sakthivel S.	Security Guard	Security Section	14 October 2016
36.	8810	Sachin Kumar Sen	Security Guard	Security Section	14 October 2016
37.	8812	Birbal Kumar Yadaw	Security Guard	Security Section	14 October 2016
38.	8809	Prakash C.	Security Guard	Security Section	14 October 2016
39.	8819	Kamalesh R.	Security Guard	Security Section	14 October 2016
40.	8818	Kathiravan A.	Security Guard	Security Section	14 October 2016
41.	8815	Lokesh G. K.	Security Guard	Security Section	14 October 2016

Sl. No.	ID. No.	Name	Designation	Department/ Section	Date of Joining
42.	8816	Surya Narayanan M.	Security Guard	Security Section	14 October 2016
43.	8814	Rajaram R.	Security Guard	Security Section	14 October 2016
44.	8811	Manigandan T.	Security Guard	Security Section	14 October 2016
45.	8813	Bhagwan Jee Yadaw	Security Guard	Security Section	14 October 2016
46.	8820	Swathi S.	Security Guard	Security Section	14 October 2016
47.	8822	Janani	Junior Assistant	Finance & Accounts	27 October 2016
48.	8821	Vidhyalakshmi	Junior Superintendent	RTI and LC	27 October 2016
49.	8825	Baskar K.	Junior Technical Superintendent	Mechanical Engineering	9 November 2016
50.	8828	Karthik K. G.	Junior Assistant	Admin	21 November 2016
51.	8829	Priya S.	Junior Assistant	S&P	21 November 2016
52.	8831	Aiswarya D.	Junior Assistant	Electrical Engineering	21 November 2016
53.	8838	Chandrajith K. C.	Junior Superintendent	IC&SR	6 January 2017
54.	8842	Kumaresan P.	Junior Technician	Engineering Unit	1 March 2017
55.	8843	Chamundeeswari V.	Junior Assistant	S&P	1 March 2017
56.	8840	Daisy	Junior Attendant	Bose-Einstein Guest House	1 March 2017
57.	8845	Sreeda S.	Junior Superintendent	Admin	3 March 2017
58.	8844	Dhanamma K.	Junior Attendant	Hospital	3 March 2017

2.2.3. Internal faculty/employees appointed in higher grades during 2016-17

Sl. No.	Name	Designation	Department	Date of Joining
Faculty				
1.	K. V. Nagendra Gopal	Associate Professor	Aerospace Engineering	22 July 2016
2.	Pijush Ghosh	Associate Professor	Applied Mechanics	22 July 2016
3.	Abhijit Chaudhuri	Associate Professor	Applied Mechanics	22 July 2016
4.	T. Ranganathan	Associate Professor	Chemical Engineering	22 July 2016
5.	Basavaraja Madivala Gurappa	Associate Professor	Chemical Engineering	22 July 2016
6.	Subhadeep Banerjee	Associate Professor	Civil Engineering	22 July 2016
7.	Sachin S. Gunthe	Associate Professor	Civil Engineering	22 July 2016
8.	Dali Naidu Arnepalli	Associate Professor	Civil Engineering	22 July 2016
9.	Vidya Bhushan Maji	Associate Professor	Civil Engineering	22 July 2016
10.	S Mathava Kumar	Associate Professor	Civil Engineering	22 July 2016
11.	Jayalal Sarma M.N.	Associate Professor	Computer Science	22 July 2016
12.	John Ebenezer Augustine	Associate Professor	Computer Science	22 July 2016
13.	Kothandaraman Ramanujam	Associate Professor	Chemistry	22 July 2016
14.	Pazhamalai Anbarasan	Associate Professor	Chemistry	22 July 2016
15.	Sheetal Kalyani	Associate Professor	Electrical Engineering	22 July 2016
16.	Arun Pachai Kannu	Associate Professor	Electrical Engineering	22 July 2016
17.	N. Lakshmi Narasamma	Associate Professor	Electrical Engineering	22 July 2016
18.	Kavitha Arunachalam	Associate Professor	Engineering Design	22 July 2016
19.	Binitha V Thampi	Associate Professor	Humanities	22 July 2016
20.	Anup Kumar Bhandari	Associate Professor	Humanities	22 July 2016
21.	Kalpana Mahalingam	Associate Professor	Mathematics	22 July 2016
22.	Shruti Dubey	Associate Professor	Mathematics	22 July 2016
23.	Ashish Kumar Sen	Associate Professor	Mechanical	22 July 2016
24.	Parag Ravindran	Associate Professor	Mechanical	22 July 2016

Sl. No.	Name	Designation	Department	Date of Joining
25.	Amitava Ghosh	Associate Professor	Mechanical	22 July 2016
26.	Ravi Shankar Kottada	Associate Professor	Metallurgy	22 July 2016
27.	Srinivasa Rao Bakshi	Associate Professor	Metallurgy	22 July 2016
28.	R. K. Amit	Associate Professor	Management Studies	22 July 2016
29.	G. Aravind	Associate Professor	Physics	22 July 2016
30.	Birabar Ranjit Kumar Nanda	Associate Professor	Physics	22 July 2016
Group A Officers				
1.	B. Nagarajan	Joint Registrar	IC&SR	3 May 2016
2.	R. Muralidharan	Assistant Registrar	Finance & Accounts	29 April 2016
3.	Mahendra Namdeo Jadhav	Librarian	Central Library	31 March 2016
4.	T. Ramakrishnan	Assistant Librarian	Central Library	31 March 2016
5.	N. Elumalai	Chief Security Officer	Security Section	31 March 2016
6.	P. Raju	Physical Education Officer (SS)	Gymkhana	30 November 2015
7.	A. Pandian	Technical Officer	Chemical	1 April 2016
8.	M. Divakaran	Technical Officer	Aerospace	1 April 2016
9.	K. Paranjothi	Technical Officer	SAIF	1 April 2016
10.	S. Srividya	Technical Officer	Chemistry	4 April 2016
11.	P. K. Sudhadevi Antharjanam	Technical Officer	SAIF	13 May 2016
12.	J. Siva	Medical Officer	Hospital	2 June 2016

2.2.4. Employees promoted during the period from April 2016 to March 2017

S.No	ID No	Name	Designation	Department	Date of Joining
1.	0017	Desinghu J.	Technical Superintendent	Chemical Engineering	13 April 2016
2.	8090	Lakshmi Narayanan S.	Technical Superintendent	Mechanical Engineering	13 April 2016
3.	1272	Venkatesan D.	Superintendent	Academics	2 May 2016
4.	1691	Bhaskaran D.	Assistant Security Officer	Security Section	1 June 2016
5.	8380	Irudayaraj M.	Junior Technical Superintendent	Computer Centre	2 August 2016
6.	8092	Anburaj R.	Senior Technician	Mechanical Engineering	2 August 2016
7.	0265	Saranath P.	Senior Technician	Electrical Engineering	2 August 2016
8.	2270	Sivakumar M.	Junior Technical Superintendent	Engineering Unit	5 August 2016
9.	8619	Benny J.	Junior Superintendent	Engineering Unit	7 October 2016
10.	8651	Bhagavan Gayathri	Junior Superintendent	Admin Section	7 October 2016
11.	0888	Christuraj M.	Senior Attendant	Hospital	20 October 2016
12.	2330	Jayavel M.	Senior Attendant	Central Workshop	20 October 2016
13.	2329	Kothandan J.	Senior Attendant	Engineering Unit	20 October 2016
14.	2334	Krishnamoorthy D.	Senior Attendant	Applied Mechanics	20 October 2016
15.	2176	Mallika M.	Senior Attendant	Electrical Engineering	20 October 2016
16.	1865	Mohansiva B.	Senior Attendant	Hospital	20 October 2016
17.	1117	Murugammal C.	Senior Attendant	Physics	20 October 2016
18.	0247	Narasimhalu V. T.	Senior Attendant	Applied Mechanics	20 October 2016
19.	0912	Palani M.	Senior Attendant	Chemistry	20 October 2016
20.	0926	Ravi V.	Senior Attendant	Chemistry	20 October 2016
21.	2228	Selvi T.	Senior Attendant	Mathematics	20 October 2016
22.	0170	Sridhar T.	Senior Attendant	Electrical Engineering	20 October 2016
23.	1522	Kannan M.	Junior Superintendent	Electrical Engineering	26 October 2016

S.No	ID No	Name	Designation	Department	Date of Joining
24.	0290	Saravanan M.	Senior Assistant	Admin Section	26 October 2016
25.	8047	Arul P. (Dr.)	Superintendent	Finance & Accounts	26 October 2016
26.	8049	Ravi D.	Superintendent	Admin Section	26 October 2016
27.	0589	Shanmugam S. P.	Superintendent	Internal Audit	26 October 2016
28.	8059	Ajay Krishnan	Assistant Engineer	Engineering Unit	26 October 2016
29.	8067	Ganapathy S.	Assistant Engineer	Engineering Unit	26 October 2016
30.	0283	Manickavasagam V.	Assistant Engineer	Engineering Unit	26 October 2016
31.	8066	Narayanaperumal K.	Assistant Engineer	Engineering Unit	26 October 2016
32.	3064	Ramamurthy V.	Junior Technical Superintendent	Engineering Design	26 October 2016
33.	1015	Somasundaram U.	Junior Technical Superintendent	Physics	26 October 2016
34.	0252	Subramanian M. K.	Junior Technical Superintendent	Mechanical Engineering	26 October 2016
35.	8084	Ravikumar S.	Junior Technician	Chemistry	26 October 2016
36.	8094	Arulanandan K.	Technical Superintendent	Mechanical Engineering	26 October 2016
37.	648	Govindasamy V.	Technical Superintendent	Metallurgy	26 October 2016
38.	8054	Rajendran C.	Technical Superintendent	Electrical Engineering	26 October 2016
39.	0042	Thirunavukkarasu K.	Technical Superintendent	Chemistry	26 October 2016
40.	8088	Veeraraghavan S.	Technical Superintendent	Central Electronics Centre	26 October 2016
41.	1676	Vasu M. A.	Security Inspector Gr.I	Security Section	26 October 2016
42.	1160	Saramma Roy	Matron	Hospital	26 October 2016
43.	2860	Lilly Prasad M.	Senior Staff Nurse	Hospital	26 October 2016
44.	2283	Marimuthu S.	Security Inspector Gr.I	Security Section	27 October 2016
45.	8040	Gunaseelan R.	Junior Assistant	Central Workshop	28 October 2016
46.	8076	Parameswaran A. M.	Junior Assistant	Chemistry	28 October 2016
47.	8042	Nandakumar A.	Junior Assistant	Metallurgical and Materials Engineering	28 October 2016
48.	8143	Padmavathi P.	Junior Assistant	Hospital	31 October 2016
49.	1082	Jayachandran P.	Security Inspector Gr.I	Security Section	31 October 2016
50.	0299	Prakash I.	Junior Assistant	Humanities	4 November 2016
51.	8612	Bharathi R.	Junior Superintendent	O/o. Registrar	6 January 2017
52.	8132	Saravanakkumar G. R.	Senior Technician	Central Workshop	19 January 2017
53.	1187	Baskar K.	Security Inspector Gr.I	Security Section	17 February 2017
54.	1123	Manoharan P.	Security Inspector Gr.I	Security Section	17 February 2017
55.	1080	Thirupal K.	Senior Security Inspector	Security Section	17 February 2017
56.	1684	Subbarama Raju K.	Senior Security Inspector	Security Section	17 February 2017
57.	1099	Thirugnana Sambandam T. S.	Senior Security Inspector	Security Section	17 February 2017
58.	1056	Krishnappa Manoharan	Assistant Security Officer	Security Section	17 February 2017
59.	1085	Gunasekaran C.	Assistant Security Officer	Security Section	3 March 2017
60.	0228	Vijaya N.	Senior Attendant	Biotechnology	10 March 2017

2.2.5. Financial upgrade under MACPS

- Number of employees granted financial upgrade under MACPS : **29**

2.2.6. Faculty/employees who resigned/relieved

Sl. No.	Name	Designation	Department	Date of Resignation
1.	M. P. Ganesh	Assistant Professor	Management Studies	Relieved on 14 September 2015 (AN)
2.	M. Geetha (On Contract)	Assistant Professor	Management Studies	Relieved on 31 January 2017 (AN) (contract duration completed)
3.	Jegannathan E.	Junior Assistant	Biotechnology	4 January 2017
4.	Kalaivani D.	Junior Technician	Civil Engineering	12 January 2017
5.	Ashish Kumar Baranwal	Junior Technician	Electrical Engineering	27 January 2017

2.2.7. Faculty/employees who superannuated between 1 April 2016 and 31 March 2017

Sl. No.	Name	Designation	Department	Date of Retirement
1.	S. V. Raghavan	Professor	Computer Science	30 June 2016
2.	Pramod S. Mehta	Professor	Mechanical Engineering	30 June 2016
3.	P. Jamuna	Assistant Registrar	Admn.I	30 April 2016
4.	B. Dhamodharan	Assistant Registrar	Finance & Accounts	30 April 2016
5.	C. S. Sourirajan	System Officer Gr.I	Computer Science	31 May 2016
6.	T. S. Chandra	Professor	Biotechnology	30 September 2016
7.	V. R. K. Murthy	Professor	Physics	31 October 2016
8.	N. Chandrakumar	Professor	Chemistry	30 November 2016
9.	W. B. Vasantha	Associate Professor	Mathematics	31 December 2016
10.	B. Nagarajan	Joint Registrar	IC&SR	28 February 2017
11.	Deivasigamani B.	Senior Technician	Mechanical Engineering	30 April 2016
12.	Ponnambalam K.	Superintendent	RTI	30 April 2016
13.	Chandran N.	Attendant	Gymkhana	30 April 2016
14.	Narayanamma K.	Junior Attendant	Engineering Unit	30 April 2016
15.	Arunakumari K.	Superintendent	Aerospace Engineering	31 May 2016
16.	Subramanian S.	Junior Superintendent	Academics	31 May 2016
17.	Chinnaraj K.	Senior Security Inspector	Security Section	31 May 2016
18.	Dhanalakshmi D.	Attendant	Physics	31 May 2016
19.	Sadhu A.	Attendant	Gymkhana	31 May 2016
20.	Teresa Gomes	Staff Nurse Gr.I	Hospital	30 June 2016
21.	Pandian A.	Senior Technical Superintendent (Draughtsman)	Chemical Engineering	30 June 2016
22.	Durai A.	Senior Technician	Metallurgical	30 June 2016
23.	Thirumalai G.	Senior Technician	Physics	30 June 2016
24.	Thilagavathi Rajamani	Superintendent	Mechanical Engineering	30 June 2016
25.	Natarajan A.	Senior Assistant	Chemistry	30 June 2016
26.	Adikesavan G.	Attendant	Gymkhana	30 June 2016
27.	Chandran P.	Senior Technician	Central Glass Blowing Section	31 July 2016
28.	Elangovan M.	Senior Technician	Civil Engineering	31 July 2016
29.	Padmini S.	Senior Assistant	Civil Engineering	31 July 2016
30.	Selvam E.	Senior Attendant	Engineering Unit	31 July 2016
31.	Bhuvaneeswari T	Junior Attendant	Admin	31 July 2016
32.	Bangaru T	Junior Superintendent	Ocean Engineering	30 September 2016
33.	Sampath V	Superintendent	Metallurgy	31 October 2016
34.	Prabhakaran B	Junior Technical Superintendent	Physics	31 October 2016
35.	Jayapal S	Senior Security Inspector	Security Section	31 October 2016

Sl. No.	Name	Designation	Department	Date of Retirement
36.	Sarasu S	Attendant	S&P	30 November 2016
37.	Chandrasekaran D S	Senior Technician	Electrical Engineering	31 December 2016
38.	Gurumurthy	Conductor (SG)	Transport Cell	31 December 2016
39.	Krishnappa Manoharan	Assistant Security Officer	Security Section	28 February 2017
40.	Varadachari R	Senior Technical Superintendent	Metallurgy	31 March 2017
41.	Kailash Chandra	Senior Technician	Physics	31 March 2017

2.2.8. Faculty/employees who passed away while in service

S.No.	ID No.	Name	Designation	Department	Date
1.	1700	Rathinam M.	Attendant	Gymkhana	15 May 2016
2.	1658	Remosusai Raj S.	Deputy Security Inspector	Security Section	23 September 2016

2.2.9. Faculty/employees who were on extraordinary leave/deputation

Sl.No.	Name	Designation	Department	From	To	Details
1.	Dr. S. Ponnusamy	Professor	Mathematics	10 October 2012; 10 October 2016; 31 December 2016	9 October 2016; 30 December 2016; 9 October 2017	Assignment as Head, Indian Statistical Institute, Chennai Centre
2.	Dr. Ashutosh Suresh Gandhi	Associate Professor	Metallurgical and Materials Engineering	21 April 2015; 21 April 2016	20 April 2016; 20 April 2017	Associate Professor, IIT Bombay
3.	Dr. Nandita Madhavan	Associate Professor	Chemistry	27 July 2016	26 July 2018	Associate Professor, IIT Bombay
4.	Dr. Sarit Kumar Das	Professor	Mechanical Engineering	16 June 2015	15 June 2020	Director, IIT Ropar
5.	Dr. Deepak Khemani	Professor	Computer Science	18 July 2016	31 December 2017	Visiting Faculty, IIT Mandi
6.	Dr. S. R. Gandhi	Professor	Civil Engineering	24 October 2016	31 August 2020	Director, SVNIT, Surat, Gujarat
7.	Dr. Sayan Ranu	Assistant Professor	Computer Science	21 December 2016	20 December 2017	Assistant Professor, IIT Delhi
8.	Dr. Sankara J. Subramanian	Associate Professor	Engineering Design	9 January 2017	17 May 2017	Co-Founder and Chief Technology Officer of Challenge Media, USA
9.	Dr. K. N. Satyanarayana	Professor	Civil Engineering	18 January 2017	17 January 2022	Director, IIT Tirupati, Andhra Pradesh
10.	Dr. P. B. Sunil Kumar	Professor	Physics	18 January 2017	17 January 2022	Director, IIT Palakkad, Kerala
11.	Dr. Rajsekar Manokaran	Assistant Professor	Computer Science	23 January 2017	23 May 2017	Visit Incubation Centre at IIT Madras
12.	P. V. Suguna	Technical Superintendent	Humanities and Social Sciences	2 January 2017	31 December 2017	For domestic reason
13.	Shivasharanappa Biradar	Junior Technician	Engineering Unit	26 March 2017	23 June 2017	Higher studies at Vishweshwarayya Technological University, Belgaum, Karnataka

Faculty on sabbatical leave

Sl. No.	Name	Designation	Department	From	To	Details
1.	Dr. Binitha V. Thampi	Associate Professor	Humanities	29 August 2016	13 June 2017	Fulbright Scholarship offered by Rutgers, The State University of New Jersey, US
2.	Dr. Nitish Ranjan Mahapatra	Professor	Biotechnology	15 September 2016	15 June 2017	Fulbright--Nehru Academic and Professional Excellence Fellowship, New York Medical College Valhalla, New York, USA
3.	Dr. Arindama Singh	Professor	Mathematics	7 January 2017	17 November 2017	Book writing
4.	Dr. Ashok Jhunjhunwala	Professor	Electrical Engineering	1 February 2017	31 January 2018	Part-time Chairman, Solar Energy Corporation of India, New Delhi

2.2.10. Faculty and employees who retired voluntarily

S.No.	ID No.	Name	Designation	Department	Date of Retirement
1.	5006	S. Devaki Reddy	Professor	Humanities	2 August 2016
2.	3087	Soundararajan K.	Senior Attendant	Ocean Engineering	1 November 2016

2.2.11. Employees compulsorily retired from service

S.No.	ID No.	Name	Designation	Department	Date of Retirement
1.	0745	Jai Ganesh	Junior Attendant	Administration	28 March 2016

2.3. 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 staff members to update and upgrade their knowledge and skills so that they may perform their duties effectively. The programmes are also aimed at enhancing the sense of pride and satisfaction in them for what they do. These activities are also a part of the training requirements under the ISO dispensation.

HRD programmes

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 programme organized by other institutions/ organizations were attended by our employees. The impact of these programmes, based on the feedback received at the end of each programme, appears to be advantageous to the institute, as the employees were able to upgrade their knowledge from the programmes designed as per their needs.

Training calendar for 2016

Internal Training

S.No.	Training Programme	Number of Employees
1.	Induction and orientation for Junior Assistant, Junior Technician and Junior Technical Superintendent	50
2.	Refresher training for Junior Assistant on establishment matters	40
3.	Training on S&P process	110

External Training:

Sl. No.	No. of persons attended	Course Title	Duration	Section/Department	Organization
1.	4	Future Librarianship: Innovation for Excellence	22-24 April 2016	Central Library	Bombay Science Librarians' Association
2.	6	III Chennai Advance Wound Care Conference	4-5 July 2016	Institute Hospital	NRA Advance Wound Care Private Limited
3.	2	Contract Labour & Factories Act	22 September 2016	Administration	MMA, Chennai
4.	2	Beyond Statutory Requirements in Electrical Safety	23 September 2016	Central Electronics Centre	Chola MS Risk Services Safety Academy, Chennai
5.	1	Computer Languages	1 October-31 March 2016	Administration	Accord Info Matrix
6.	6	Five-day Hindi Basic Training Program	17-21October 2016	CH, O/o Comm. Hindi Cell, MME, F&A	Central Hindi Training Sub Institute, Chennai
7.	13	Induction and Orientation	27-29 July 2016	New recruits of Junior Assistants	IIT Madras
8.	16	Induction and Orientation	14, 17 and 18 October 2016	New recruits of Junior Technician and Security Guard	IIT Madras
9.	21	Induction and Orientation	7-9 November 2016	New recruits of Junior Assistants and Promotees under RPN	IIT Madras

2.3.2. Ongoing activities of Hindi in administrative section

a) Hindi training

In accordance with the directions of the Department of Official Language of the Home Ministry, GoI, full-time intensive Hindi language learning programmes, i.e. LILA Prabodh, LILA Praveen and LILA Pragya were conducted regularly for both technical and administrative staff members to improve their knowledge of Hindi. During 2016-17, 46 employees successfully completed Prabodh, Praveen and Pragya courses online.

b) OLIC meetings

Official Language Implementation Committee (OLIC) has been constituted to monitor the progressive use of the Official Language in the institute. The meetings are convened on quarterly basis under the chairmanship of the Registrar.

c) Hindi workshops and seminars

- A one-day Rajbhasha Technical Seminar in Hindi on Research Highlights and Official Language Implementation was organized on 25 January 2017 at IC&SR, Hall-II on the eve of World Hindi Day, wherein the OLIC members and students of IIT Madras gave power-point presentation in Hindi. Dr. N. S. Rajagopalan, Hindi Officer, Southern Railways and Dr. Rajendran, Hindi Officer, SERC-CSIR chaired the sessions. The best six of the 17 participants were felicitated by the Director of the Institute.
- Four quarterly Hindi workshops were conducted for IIT Madras employees in the year 2016-17.

d) Celebration of Hindi Day

- Hindi Day was celebrated on 7 October 2016. The Director presided over the function and distributed certificates, cash awards and personal pay to the employees who successfully passed the Hindi examination. Prizes were awarded to winners of various competitions conducted during the Hindi Fortnight. Cash incentives were also awarded to the employees who implemented Hindi in their routine official work.

e) Publication

Campus News is being released every week. It is a bilingual (Hindi and English) publication.

f) Unicode

Unicode has been activated/enabled in all the computers of the departments, sections and centres of the institute, and training is being imparted to the staff members to work in Hindi.

g) Other activities for effective use of Hindi

- The Hindi daily *Rajasthan Patrika* is being distributed to all the departments and administration section of the institute with effect from 1 January 2015 for progressive use of official language.
- "Learn a word in Hindi" is updated in trilingual (Tamil, Hindi and English) form at the entrance of the Admin block for public display.

2.3.3. Children Education Assistance

In the financial year 2016–2017, the institute reimbursed a sum of ₹ 86,93,632 to 467 faculty and staff members towards Children Education Assistance as per GoI norms.

2.3.4. Transport facilities

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

2.3.5. Advances

During the year under report, a sum of ₹ 0.89 lakh was sanctioned as advances for the following:

Sl No.	Advances	Employees Benefitted	Amount (in ₹)
1.	House building advance	0	0
2.	Car advance	0	0
3.	Two-wheeler advance	1	30,000
4.	Personal computer advance	0	0
5.	Festival advance	13	58,500
Total			**88,500**

2.3.6. Insurance

Group Mediclaim Insurance Scheme for the period from 1 February 2016 to 31 January 2017

Category	Number of Persons Covered		
	Employee and Dependents	Pensioners and Spouses	Family Pensioner
Basic Coverage	4446	1849	481
Additional Coverage	1492	950	80

- Total premium paid for Group Mediclaim Insurance Scheme: ₹ 3,32,46,436
- Total number of claims made: 709
- Total claimed amount: ₹ 3,42,86,616

Fire and General Insurance scheme for the period from 25 February 2016 to 24 February 2017

- Total premium paid for fire and general insurance: ₹ 8,58,034
- Total premium paid for burglary: ₹ 8,116
- Total claim made on fire and general and burglary: Nil

2.3.7. Faculty members and officers in the academic and general administration

I. Academic Administration	
Director	Prof. Bhaskar Ramamurthi
Deans	
Academic Courses	Dr. V. Jagadeesh Kumar
Academic Research	Dr. A. K. Mishra
Administration	Dr. Koshy Varghese

Industrial Consultancy & Sponsored Research (IC&SR)	Dr. Krishnan Balasubramaniam
Associate Dean (IC&SR)	Dr. Ravindra Gettu
Students	Dr. M. S. Sivakumar
Planning	Dr. Ravinder David Koilpillai
International and Alumni Relations	Dr. R. Nagarajan
II. Heads of Departments	
Aerospace	Dr. K. Bhaskar
Applied Mechanics	Dr. S. Vengadesan
Biotechnology	Dr. D. Karunagaran
Chemical Engineering	Dr. A. Kannan
Chemistry	Dr. Indrapal Singh Aidhen
Civil Engineering	Dr. A. Meher Prasad
Computer Science and Engineering	Dr. Krisnamoorthy Sivalingam
Electrical Engineering	Dr. Devendra Jalihal
Engineering Design	Dr. Srikanth Vedantam
Humanities and Social Sciences	Dr. Umakant Dash
Management Studies	Dr. L. Prakash Sai
Mathematics	Dr. M. Thamban Nair
Mechanical Engineering	Dr. B. V. S. S. S. Prasad
Metallurgical and Materials Engineering	Dr. B. S. Murthy
Ocean Engineering	Dr. S. A. Sannasiraj
Physics	Dr. M. S. Ramachandra Rao
III. Head of Research Centre	
Sophisticated Analytical and Instrumentation Facility	Dr. S. S. Bhattacharyya
IV. Heads of special facilities for interaction with other institutions	
Centre for Industrial Consultancy and Sponsored Research	Dr. Krishnan Balasubramanian
Chairman, Centre for Continuing Education	Dr. A. Ramesh
Centre Electronics Centre	Dr. V. Jagadeesh Kumar
Chairman, Computer Centre	Dr. C. Balaji
Chairman	
GATE	Dr. Sanjay Kumar
JEE	Dr. P. B. Bisht
V. Central Administration	
Registrar	Ms. V. G. Bhooma
Joint Registrar (Academic)	Mr. R. Esakkimuthu
Joint Registrar (Students)	Lt. Col. Jayakumar
Deputy Registrars	
Academic Section	Mr. D. Ravee
Administration	Mr. V. Swaminathan
Finance & Accounts Section	Mr. A. V. Sudarsanam
Stores & Purchase Section	Ms. G. Chitrapavai
IC&SR	Mr. S. Sundaravinayagam
Assistant Registrars	
Academic Section	Mr. V. Rajendran
Administration	Mr. R. Chandrakasu Mr. B. Vijay Shankar
Finance & Accounts Section	Mr. S. Ravi Mr. R. Muralidharan
Recruitment Section	Ms. K. Vijayalakshmi
Internal Audit Section	Mr. K. Kumarappan
Office of the Dean (Students) / T&P	Mr. V. Perumal
Engineering Unit	Mr. Y. E. L. Sudhakar Rao Pujari
IC & SR	Mr. P. Sarvaharana
Chief Security Officer	Mr. N. Elumalai
Central Library	
Librarian	Mr. Mahendra N. Jadhav
Assistant Librarian	Mr. K. Saravanan
VI. Heads of central services, facilities and section	
Chief Medical Officer-in-charge	Dr. Mahalakshmi M. Ravi
Chairman, Council of Wardens	Dr. K. Sethupathi
Central Glass Blowing Section	Dr. U. V. Varadaraju
Professor-in-charge, Central Workshop	Dr. N. Ramesh Babu
Chairman, Library Advisory Committee	Dr. K. Ramamurthy
Co-ordinator, NSS	Dr. K. C. Sivakumar
Advisor, Sports	Dr. P. N. Santhosh
Advisor, Cultural	Dr. Umakant Dash
Advisor, Co-Curricular	Dr. B. Arockiarajan
Advisor, Foreign Students	Dr. Sudarshan Padmanabhan
Chief Vigilance Officer (part time)	Dr. S. Sankararaman
Advisor, Placement and Training	Dr. Manu Santhanam
Advisor, Mentoring for Individual Transformation (MITr)	Dr. G. Ranga Rao
Advisor (Weaker Section)	Dr. G. L. Samuel
Chairperson, Women's Forum	Dr. Preeti Aghalayam
Professor-in-charge, Workflow	Dr. Rahul R. Marathe
Head, Centre for Innovation (CFI)	Dr. B. Ravindran
Professor-in-charge, IITM website	Dr. N. S. Narayanaswamy
Professor in-charge, RUTAG	Dr. Abhijit P. Deshpande
VII. Engineering Unit	
Chairman	Dr. Ligy Philip
Co-Chairman	Dr. K. Murali
Superintending Engineer	Mr. H. Anantharaman
Executive Engineers	Mr. K. Viswanath Mr. K. Dharmaraj Dr. M. Ramachandran
Senior Horticulture Officer	Mr. V. Seenivasan
Assistant Executive Engineers	Mr. M. Murali Prakash Mr. H. Anandaram Mr. K. Rizwan Ali Ms. N. R. Vineetha Mr. K. Ravichandran
VIII. IC&SR	
Chief Techno-economic Officer	Mr. R. Sundaram
Senior Techno-economic Officer	Mr. V. Suresh

3. Academic Programmes and Award of Degrees

The Indian Institute of Technology, Madras offered Ph.D. programme in all the 16 departments, M.S. programme in 12 departments, M.Tech programme in 28 streams/specialisations, M.Sc. programme in three branches, B.Tech programme in 10 branches, Dual degree (B.Tech and M.Tech) programme in 21 streams/specialisations, Dual Degree (B.S. and M.S.) in Biological Sciences and Physics, M.B.A. programme, M.A. Integrated programme in two streams and besides a preparatory course for SC/ST students during the year under report.

3.1. Admissions 2016-17

Candidates for admission to B.Tech., Dual Degree and M.Tech. programmes were selected through JEE (Advanced) and GATE score, respectively. Quite a few candidates were also selected for the M.Tech. programme under Sponsored, Quality improvement and User Oriented Programmes through interview and/or written test. 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 the IITs. For M.B.A. programme, the selection was made through CAT and interview. For M.A. Integrated Programme, the selection was made through HSEE.

The number of students and scholars admitted to various programmes both in July 2016 and in January 2017 are given in the following table:

3.1.1. Fresh admissions

Sl. No.	Department	B.Tech.	Dual Degree	M.Tech.	PG Diploma	M.Sc.	M.B.A	M.A.	M.S.	Ph.D.	Total
1.	Aerospace Engineering	45	14	20	-	-	-	-	15	24	**144**
2.	Applied Mechanics	-	-	20	-	-	-	-	21	29	**70**
3.	Biotechnology	-	61	4	-	-	-	-	4	34	**42**
4.	Chemical Engineering	72	18	35	-	-	-	-	4	15	**192**
5.	Chemistry	-	-	-	-	54				46	**100**
6.	Civil Engineering	62	36	88	-	-	-	-	9	38	**257**
7.	Computer Science and Engineering	41	13	48	-	-	-	-	32	14	**181**
8.	Electrical Engineering	66	55	56	-	-	-	-	50	43	**288**
9.	Engineering Design	-	57	-	-	-	-	-	10	13	**23**
10.	Humanities and Social Science	-	-	-	-	-		46		26	**72**
11.	Management Studies	-	-	-	40	-	51	-	11	26	**128**
12.	Mathematics	-	-	11	-	48	-	-		25	**84**
13.	Mechanical Engineering	75	72	96	-	-	-	-	38	60	**352**
14.	Metallurgical and Materials Engineering	35	11	21	-	-	-	-	6	26	**119**
15.	Ocean Engineering	39	19	43	-	-	-	-	10	15	**135**
16.	Physics	30	11	9	-	42	-	-		24	**135**
17.	Interdisciplinary	-	-	-	-	-	-	-	7	36	**43**
	Total	**465**	**367**	**451**	**40**	**144**	**51**	**46**	**217**	**494**	**2365**

In addition to the above, four students (GE PD :1, SC PD: 1, ST PD: 2) joined the preparatory course.

3.1.2. Fresh admissions of OBC/SC/ST students

Sl. No.	Programme	OBC	SC	ST	PD	Female
1.	B.Tech.	132	69	37	5	52
2.	Dual Degree	101	54	32	3	47
3.	M.Tech.	130	49	21	9	50
4.	PG Diploma in Metro Rail					7
5.	M.B.A.	16	13	2		16
6.	M.Sc.	44	22	10	4	33
7.	M.A.	12	8	4	3	22
8.	M.S.	34	4	1		42
9.	Ph.D.	135	26	3		153
	Total	**604**	**245**	**110**	**24**	**422**

3.1.3. Total number of students admitted during the year

Foreign Nationals		11
OBC		604
Scheduled Castes		245
Scheduled Tribes		110
Physically Handicapped		24
Women Students		422
Defence Officers (M.Tech.)		24
User-oriented Programme (M.Tech.)		43
Q.I.P.	M.Tech Ph.D.	3 14
Sponsored	M.Tech.	27
Project	M.S. Ph.D.	16 7
External Registration	M.S. Ph.D.	4 17

3.2. Enrolment of Students/Scholars

The total numbers of students on roll in various programmes of the institute in the academic year 2016-17 are given below:

3.2.1. Students on roll (department-wise)

Sl. No.	Department	B.Tech.	Dual Degree	M.Tech.	PG Diploma	M.Sc.	M.B.A	M.A.	M.S.	Ph.D.	Total
1.	Aerospace Engineering	161	96	41	-	-	-	-	59	123	**480**
2.	Applied Mechanics	-	-	44	-	-	-	-	63	149	**256**
3.	Biotechnology	18	249	14	-	-	-	-	17	207	**505**
4.	Chemical Engineering	286	94	65	-	-	-	-	35	129	**609**
5.	Chemistry	-	-	-	-	109	-	-	-	265	**374**
6.	Civil Engineering	258	198	171	-	-	-	-	47	302	**976**
7.	Computer Science and Engineering	178	127	114	-	-	-	-	106	97	**622**
8.	Electrical Engineering	310	324	117	-	-	-	-	165	253	**1169**
9.	Engineering Design	-	300	-	-	-	-	-	38	82	**420**
10.	Humanities and Social Science	-	-	-	-	-	-	226	-	91	**317**
11.	Management Studies	-	-	21	40	-	113	-	41	118	**333**
12.	Mathematics	-	-	-	-	112	-	-	-	94	**206**
13.	Mechanical Engineering	336	400	173	-	-	-	-	178	382	**1469**
14.	Metallurgical and Materials Engineering	140	70	47	-	-	-	-	24	139	**420**
15.	Ocean Engineering	162	82	92	-	-	-	-	60	148	**544**
16.	Physics	133	48	21	-	90	-	-	-	188	**480**
	Total	**1982**	**1988**	**920**	**40**	**311**	**113**	**226**	**833**	**2767**	**9180**

3.2.2. Students on roll

Foreign Nationals		12
OBC		2539
Scheduled Castes		1026
Scheduled Tribes		445
Physically Handicapped		85
Women students		1839
Defence Officers (M.Tech.)		50
QIP	M.Tech Ph.D.	7 58
Sponsored	M.Tech	55
Project	M.S. Ph.D.	103 60
External Registration	M.S. Ph.D.	46 186
Registration Kept Alive	M.S. Ph.D.	25 29
Part-Time Programme (Ph.D.)	M.S. Ph.D.	56 64
User-oriented Programme (M.Tech.)		98

3.2.3. OBC/SC/ST Students on roll

Sl.No.	Course	OBC	SC	ST	Female
1.	B.Tech.	529	334	191	242
2.	Dual Degree	555	313	143	249
3.	M.Tech.	258	100	50	120
4.	M.Sc.	94	49	23	75
5.	M.B.A	25	25	2	36
6.	M.A.	66	36	20	128
7.	M.S.	199	22	3	173
8.	Ph.D.	813	147	13	816
	Total	**2539**	**1026**	**445**	**1839**

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

3.2.4. B.Tech. students on roll

Sl. No.	Branch	2016	2015	2014	2013	2012 and Earlier Batches	Total
1.	Aerospace Engineering	43	40	33	33	12	**161**
2.	Biotechnology					18	**18**
3.	Chemical Engineering	69	66	63	66	22	**286**
4.	Civil Engineering	63	57	58	48	32	**258**
5.	Computer Science and Engineering	46	45	31	32	24	**178**
6.	Electrical Engineering	70	73	73	67	27	**310**
7.	Engineering Physics	28	30	31	25	19	**133**
8.	Mechanical Engineering	77	83	82	71	23	**336**
9.	Metallurgical and Materials Engineering	31	31	31	30	17	**140**
10.	Naval Architecture	35	28	32	32	35	**162**
	Total	**462**	**453**	**434**	**404**	**229**	**1982**

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

Sl. No.	Branch	2016	2015	2014	2013	2012	2011 and Earlier Batches	Total
1.	Aerospace Engineering AE (B.Tech.) and AM (M.Tech.)	14	9	7 11	5 19	7 15	3 6	**45** **51**
2.	Biotechnology Biological Engineering Biological Sciences (B.S. and M.S.)	 30 23	 24 23	 29 13	 30 18	 26 21	 12	 **151** **98**
3.	Chemical Engineering	17	18	20	16	19	4	**94**
4.	Civil Engineering and Infrastructural Civil CE (B.Tech.) and AM (M.Tech.)	35	34	30 8	39 4	29 5	14	**181** **17**
5.	Computer Science and Engineering	15	15	28	28	29	12	**127**
6.	Electrical Engineering EE (B.Tech.) and AM (M.Tech.)	58	58	47 8	55 7	52 7	29 3	**299** **25**
7.	Engineering Design	56	54	54	55	55	26	**300**
8.	Mechanical Engineering	77	80	69	78	84	12	**400**
9.	Metallurgical and Materials Engineering	11	9	13	13	19	5	**70**
10.	Naval Architecture and Ocean Engineering NA (B.Tech.) and AM (M.Tech.)	18	13	9 5	8 9	7 8	5	**60** **22**
11.	Physics (B.S. and M.S.)	11	6	10	8	8	5	**48**
	Total	**365**	**343**	**361**	**392**	**391**	**136**	**1988**

3.2.6. M.Sc. students on roll

Sl. No.	Branch	2016	2015	Total
1.	Chemistry	54	55	109
2.	Mathematics	48	64	112
3.	Physics	43	47	90
	Total	**145**	**166**	**311**

3.2.7. M.Tech. students on roll

Sl. No.	Department\Discipline\Batch	2016	2015	Extended students	Total
1.	Aerospace Engineering	18	21	2	41
2.	Applied Mechanics	18	22	4	44
3.	Biotechnology-Clinical Engineering	4	7	3	14
4.	Chemical Engineering Catalysis Technology Nuclear Engineering	30 2 -	17 6 5	2 2 1	49 10 6
5.	Civil Engineering CE 1 – Building Technology and Construction Management CE 2 – Environmental Engineering CE 3 – Geotechnical Engineering CE 4 – Hydraulic and Water Resource Engineering CE 5 – Structural Engineering CE 6 – Transportation Engineering CE 7 – Construction Technology and Management	 8 6 7 5 14 4 33	 11 8 8 6 13 7 34	 3 - 1 1 2 - -	 22 14 16 12 29 11 67
6.	Computer Science and Engineering	48	60	6	114
7.	Electrical Engineering EE 1 – Communication Systems EE 2 – Power Systems and Power Electronics EE 3 – Micro Electronics and VLSI Design EE-4 – Control and Instrumentation System EE-5 – Photonics	 15 6 15 9 4	 16 10 16 12 5	 1 4 1 - 3	 32 20 32 21 12
8.	Industrial Maths and Scientific Computing	10	10	1	21

Sl. No.	Department\Discipline\Batch	2016	2015	Extended students	Total
9.	Mechanical Engineering:				
	ME 1 – Thermal Engineering	25	36	3	64
	ME 2 – Mechanical Design	28	31	-	59
	ME 3 – Manufacturing and Precision Engineering	19	19	1	39
	ME 4 – Automotive Engine Technology	-	10	1	11
10.	Metallurgical and Materials Engineering	21	25	1	47
11.	Ocean Engineering	15	16	1	32
	Ocean Technology	10	10	-	20
	Petroleum Engineering	7	13	-	20
	Offshore Technology	10	10	-	20
12.	Physics				
	PH – Solid State Technology	9	12	-	21
	Total	**400**	**476**	**44**	**920**

3.2.8. M.B.A. students on roll

Sl. No.	Branch	2016	2015	Total
1.	Management Studies	52	16	**113**

3.2.9. M.A. students on roll

Sl. No.	Branch	2016	2015	2014	2013	2012	Total
1.	Humanities and Social Sciences	46	42	42	42	54	**226**

3.2.10. M.S. scholars on roll

Sl. No.	Branch	Year I	Year II	Year III	Year IV	Year V and Others	Total
1.	Aerospace Engineering	17	17	14	9	1	**58**
2.	Applied Mechanics	23	20	14	7	1	**65**
3.	Biotechnology	4	4	6	3	0	**17**
4.	Chemical Engineering	4	11	13	3	0	**31**
5.	Civil Engineering	9	10	13	8	4	**44**
6.	Computer Science and Engineering	32	35	25	8	6	**106**
7.	Electrical Engineering	52	52	31	22	11	**168**
8.	Engineering Design	10	7	9	9	3	**38**
9.	Management Studies	11	11	8	10	1	**41**
10.	Mechanical Engineering	39	56	62	21	3	**181**
11.	Metallurgical and Materials Engineering	6	4	9	4	1	**24**
12.	Ocean Engineering	10	24	16	6	4	**60**
	Total	**217**	**251**	**220**	**110**	**35**	**833**

3.2.11. Ph.D. scholars on roll

Sl. No.	Branch	Year I	Year II	Year III	Year IV	Year V and Others	Total
1.	Aerospace Engineering	29	20	33	20	28	**130**
2.	Applied Mechanics	31	30	22	21	36	**140**
3.	Biotechnology	36	37	27	39	62	**201**
4.	Chemical Engineering	18	33	34	18	27	**130**
5.	Chemistry	48	50	58	37	70	**263**
6.	Civil Engineering	40	65	60	49	82	**296**
7.	Computer Science and Engineering	15	18	16	20	29	**98**
8.	Electrical Engineering	45	53	48	47	62	**255**
9.	Engineering Design	15	9	25	9	25	**83**
10.	Humanities and Social Sciences	28	28	20	10	8	**94**
11.	Management Studies	28	28	13	21	28	**118**
12.	Mathematics	28	25	16	16	13	**98**
13.	Mechanical Engineering	62	77	100	59	88	**386**
14.	Metallurgical and Materials Engineering	28	35	14	21	39	**137**
15.	Ocean Engineering	17	38	32	29	34	**150**
16.	Physics	26	33	31	44	54	**188**
	Total	**494**	**579**	**549**	**460**	**685**	**2767**

3.3. Courses Offered

In the academic year 2016-17, 1767 courses were offered of which 883 courses were offered in July–November 2016 and 824 courses in January–May 2017, were offered. The following table has the department-wise details of the courses offered:

3.3.1. Number of courses offered

Sl. No.	Department	July–November 2016			January–May 2017		
		Core	Elective	Total	Core	Elective	Total
1.	Aerospace Engineering	24	21	**45**	19	24	**43**
2.	Applied Mechanics	23	21	**44**	17	20	**37**
3.	Biotechnology	36	17	**53**	37	21	**58**
4.	Chemical Engineering	24	26	**50**	30	26	**56**
5.	Chemistry	16	6	**22**	12	14	**26**
6.	Civil Engineering	62	28	**90**	43	40	**83**
7.	Computer Science and Engineering	21	26	**47**	17	22	**39**
8.	Engineering Design	27	15	**42**	22	13	**35**
9.	Electrical Engineering	31	36	**67**	25	48	**73**
10.	Humanities and Social Sciences	43	50	**93**	37	43	**80**
11.	Management Studies	14	38	**52**	12	17	**29**
12.	Mathematics	21	15	**36**	16	30	**46**
13.	Mechanical Engineering	49	29	**78**	48	24	**72**
14.	Metallurgical and Materials Engineering	24	26	**50**	16	24	**40**
15.	Ocean Engineering	40	14	**54**	32	15	**47**
16.	Physics	42	18	**60**	37	23	**60**
	Total	**497**	**386**	**883**	**420**	**404**	**824**

3.4. Convocation

The 53rd Convocation was held on 22 July 2016. Prof. Manjul Bhargava delivered the Convocation address. A total of 2191 candidates were awarded various degrees and 1,854 candidates received degrees in person. The department-wise details of degrees awarded are given in the following table.

3.4.1. Degrees awarded

Sl. No.	Department	Dual Degree		Ph.D.	M.S.	M.Tech.	M.Sc.	M.B.A	PGD VLM	M.A	Dual Degree		Dual Degree		B.Tech. (Honours)	B.Tech.	Total
		M.S.	Ph.D.								B.Tech./ B.S. (Honours)	M.Tech./ M.S.	B.Tech./ B.S.	M.Tech./ M.S.			
1.	Aerospace Engineering	2	2	10	4	21	0	0	0	0	4	4	12	12	6	22	**99**
2.	Applied Mechnics	2	2	17	13	20	0	0	0	0	1	1	25	25	0	0	**106**
3.	Biotechnology	1	1	20	4	7	0	0	0	0	3	3	10	10	0	9	**68**
4.	Chemical Engineering	0	0	7	5	27	0	0	0	0	2	2	18	18	5	61	**145**
5.	Chemistry	0	0	29	0	0	49	0	0	0	0	0	0	0	0	0	**78**
6.	Civil Engineering	1	1	15	16	77	0	0	0	0	3	3	33	33	1	60	**243**
7.	Computer Science and Engineering	0	0	9	19	50	0	0	0	0	1	1	28	28	2	33	**171**
8.	Electrical Engineering	0	0	14	47	43	0	0	0	0	3	3	61	61	4	66	**302**
9.	Engineering Design	0	0	7	4	0	0	0	0	0	0	0	53	53	0	0	**117**
10.	Humanities and Social Sciences	0	0	0	0	0	0	0	0	41	0	0	0	0	0	0	**41**
11.	Management Studies	0	0	13	11	0	0	61	39	0	0	0	0	0	0	0	**124**
12.	Mathematics	0	0	5	0	15	36	0	0	0	0	0	0	0	0	0	**56**
13.	Mechanical Engineering	1	1	24	19	83	0	0	0	0	3	3	65	65	11	71	**346**
14.	Metallurgical and Materials Engineering	1	1	9	8	18	0	0	0	0	2	2	11	11	0	21	**84**
15.	Ocean Engineering	0	0	13	15	41	0	0	0	0	0	0	11	11	1	28	**120**
16.	Physics	0	0	18	0	5	37	0	0	0	2	2	3	3	1	20	**91**
	Total	**8**	**8**	**210**	**165**	**407**	**122**	**61**	**39**	**41**	**24**	**24**	**330**	**330**	**31**	**391**	**2191**

With this convocation, the total number of degrees awarded so far by the Indian Institute of Technology Madras is 46,943.

Sl. No.	Programme	No.
1.	Ph.D. Dual Degree M.S. Ph.D	4,380 8 8
2.	M.S.	3,245
3.	M.Tech.	14,038
4.	M.Sc.	3,293
5.	M.B.A.	833
6.	M.A.	196
7.	Dual Degree B.Tech M.Tech	2,528 2,528
8.	Dual Degree B.S M.S	78 78
9.	B.Tech.	15,233
10.	B.Tech. (Honours)	117
11.	PGDMEM	102
12.	B.Sc. (Tech.)	20
13.	DIIT	245
14.	PGDMRT	13
	Total	**46,943**

3.5. Award of Prizes to Students

3.5.1. Convocation Prizes

Prizes awarded to students at the 53rd Convocation

Sl. No	Prize	Student
1.	**President of India Prize** Bharat Ratna M. Visvesvaraya Memorial Prize Siemens Prize (Electrical Engineering)	Joseph Samuel EE12B127
2.	**Governor's Prize** C. A. Sastry Endowment Prize (Chemical Engineering)	Raghavi Rao Kodati CH11B051
3.	**Mr. V. Srinivasan Memorial Prize** **Alumni Association Prize** (Computer Science and Engineering)	S K Ramnandan CS11B061
4.	**Dr. Shankar Dayal Sharma Prize** (Electrical Engineering)	Sachin Nayak EE12B124
B.Tech.		
5.	**HAL Prize** (Aerospace Engineering)	Sukruth S. AE12B032
6.	**Reliance Heat Transfer Private Limited Prize** (Chemical Engineering)	Venkatachalam A. CH12B094
7.	**Larsen & Toubro ECC Endowment Prize** (Civil Engineering)	V. Pranav Jeyam CE12B063
8.	**B. Ravichandran Memorial Prize** (Computer Science and Engineering)	Aditi R. CS12B059
9.	**Motorola Prize** (Electrical Engineering)	S. Siddharth EE12B049
10.	**Banco Foundation Prize** (Mechanical Engineering)	Bhavik Rasyara ME12B009
11.	**Sivasailam Merit Prize** (Mechanical Engineering)	T. K. Balasaravanan ME12B150
12.	**S.R.I. Prize**	
13.	**Vaidy Krishnan Memorial Prize** (Mechanical Engineering)	Vikram Venkat ME12B155
14.	Dr. Dhandapani Memorial Prize (Metallurgical and Materials Engineering)	Sanghvi Kevin Paresh MM12B028
15.	**American Bureau of Shipping Prize** (Naval Architecture and Ocean Engineering)	Dornadula Revanth Reddy NA12B010

Sl. No	Prize	Student
16.	**Hema Balasubramanian Excellence Award** (Engineering Physics)	Kaustubh Sandeep Wagh EP12B029
Dual Degree		
17.	**Dr. V. Mohan Raman Prize** (Aerospace Engineering)	Aaditya Vijayakumar AE11B001
18.	**Mayan Prize** (Aerospace Engineering)	Aaditya Vijayakumar AE11B001 Athul P G AE11B039 (Joint winners)
19.	**Kalpathi AGS Prize** (Applied Mechanics)	Pranav Suresh P N NA11B050
20.	**Biocon Prize** (Biotechnology)	Dileep K. BT11B050
21.	**B. Ravichandran Memorial Prize** (Chemical Engineering)	Abhishek Sivaram CH11B001
22.	**Dr. N. R. Dave Prize** (Civil Engineering)	Aanchal Patel CE11B001
23.	**Prema and Nagaraja Setty Prize** (Engineering Design)	Athira Jane Jacob ED11B043
24.	**Philips India Prize** (Electrical Engineering)	Dheeraj M N EE11B091
25.	**Prof. G. V. N. Rayudu (IIT Madras) Prize** (Mechanical Engineering)	Kalidoss Sripriya Tulasi ME11B133
26.	**S. Anantharamakrishnan Memorial Prize** (Metallurgical and Materials Engineering)	Aaditya Lakshmanan MM11B001
27.	**Goodearth Shipbuilding Private Limited Prize** (Naval Architecture and Ocean Engineering)	Kusum Kumari NA11B039
28.	**Prof. J. Sobhanadri Prize** (Physics – B.S. and M.S.)	Jonnadula Lakshmi Sai Bhargavi PH11B003
M.Tech.		
29.	**Air India Prize** (Aerospace Engineering)	Mohit Garg AE14M012
30.	**Prof B. V. A. Rao Endowment Prize** (Applied Mechanics)	Sankar V. AM14M020
31.	**Sushruta Award** (Applied Mechanics-Biomedical stream)	Rohini P. AM14M035
32.	**Dr. S. S. Srikanta Prize** (Clinical Engineering)	Malini P. M. BT13M004
33.	**Dr. K. Subba Raju Memorial Prize** (Chemical Engineering)	Vasudharini S. V. CH14M031
34.	**Buti Foundation Gold Medal Award**	
35.	**Mr. S. V. Balakrishnan Prize** (Catalysis Technology)	None recommended
36.	**Valli Anantharamakrishnan Merit Prize** (Civil Engineering)	Krishna Prasad E. CE14M031
37.	**K. Devarajan Memorial Prize** (Civil Engineering-Transportation Engineering Stream)	Dokku Bhanoj CE14M093
38.	**L & T Endowment Prize** (Construction Technology and Management)	Logeshwaran V. D. CE14M114
39.	**CMC Prize** (Computer Science and Engineering)	Patel Nirav Ashokbhai CS14M036
40.	**Prof H. N. Mahabala Endowment Prize** (Computer Science and Engineering)	Surabhi Abhimitra Karthikeya CS14M048 Gorla Sreekanth CS14M018 (Joint winners)
41.	**Siemens Prize** (Electrical Engineering)	Vishnu O. C. EE14M015
42.	**Prof. Achim Bopp Endowment Prize** (Electrical Engineering)	Vijay Jalneela EE14M068 Adepu Naresh Kumar EE11B004 (Joint winners)
43.	**Prof Helmut Neunzert Endowment Prize** (Industrial Mathematics and Scientific Computing)	Kumar Saurabh MA14M004
44.	**Prof. B. Sengupto Prize** (Mechanical Engineering)	Myneni Manoj ME14M073
45.	**Prof. Ramamohana Rao Memorial Prize** (Mechanical Engineering)	
46.	**Dr. S. Vaidyanathan Memorial Prize** (Mechanical Engineering)	Avaiya Nikunjkumar Karshanbhai ME14M094
47.	**S. Anantharamakrishnan Merit Prize** (Mechanical Engineering)	
48.	**Mico-Bosch Prize** (Mechanical Engineering)	Abin Mathew ME14M003
49.	**Prof. Rama Rao Jayanti Memorial Prize** (Nuclear Engineering)	None recommended
50.	**Giri Brothers Prize** (Mechanical Engineering)	None recommended
51.	**Delphi-TVS Diesel Systems Limited Prize** (Automotive Technology)	Srikrishna A. S. AT14M009
52.	**Sudharshan Bhat Memorial Prize** (Metallurgical and Materials Engineering)	Sowmya Mishra MM14M016
53.	**American Bureau of Shipping Prize** (Ocean Engineering)	Neralkar Kuldeep Mangaldas OE14M004
54.	**Prof. K. A. V. Pandalai Prize** (Ocean Technology and Management)	None recommended
55.	**Prof. T. Govindaraj Prize** (Offshore Structural Engineering)	Rajarshi Maitra OE14M054
56.	**Mr. R.R.P. Sinha and Vimla Dewi Prize** (Petroleum Engineering)	Shashwat Sharma PE14M013
57.	**Sri Krishnamurthy Sundarambal Prize** (Solid State Technology)	Karanvir Singh PH14M003
M.Sc.		
58.	**Dr. S. R. Ramadas 60th Birthday Commemoration Award** (Chemistry)	Anindita Mahapatra CY14C003
59.	**Ratna Rao Memorial Prize** (Chemistry)	
60.	**Mira Paul Memorial Prize** (Mathematics)	Londhe Mayuresh Mahadeo MA14C024
61.	**Prof. Chilukuri Ramasastry Memorial Prize** (Physics)	Soutick Saha PH14C038
M.B.A.		
62.	**Coka Parthasarathy Prize** (Management Studies)	Vishwarath Reddy P. MS14A065
63.	**K. V. Arunkumar Memorial Prize** (Management Studies)	Himanshu Agarwal MS14A029

Sl. No	Prize	Student
PG Diploma		
64.	**ACC Ltd.'s Gold Medal**	Anurag Vaibhav Pandey MS15V007
65.	**JICA Gold Medal**	Ankur Gandorta MS15V006
66.	**IIMC Alumni Association Calcutta Chapter Gold Medal**	Karthikeyan D. MS15V014
M.A.		
67.	**Dr. Dilip Veeraraghavan Memorial Award** (Integrated M.A. programme – DS)	Aditi Aggarwal HS11H003
68.	**Prof. A. V. Krishna Rao Memorial Award** (Integrated M.A. programme – ES)	Sreenidhi Krishnan HS11H041 Aswin Vijayan HS11H013 (Joint winners)
M.S. and Ph.D.		
69.	**Prof. V. Ramamurti Award** (Applied Mechanics)	K. Senthil AM09D013
70.	**Sudharshan Bhat Memorial Prize** (Metallurgical and Materials Engineering)	M. Jagannatham MM10D009
71.	**Prof. C. N. Pillai Prize** (Chemistry – Organic and Biochemistry)	Dr. Yadagiri Dongari CY12D045
72.	**Prof. G. Sundararajan Endowment Prize** (Organic Chemistry)	Dr. Chary Mamillapali N. CY11D053
73.	**Prof. Langmuir Prize** (Chemistry – Physical and Theoretical Chemistry)	Dr. Vikram Singh CY11D091
74.	**Prof. Werner Prize** (Chemistry – Inorganic and Analytical Chemistry)	Dr. Dipak Kumar Roy CY11D056
75.	**Prof. A. L. Laskar Prize** (Physics)	B G Ganga PH09D009
76.	**GE Ecomagination Excellence Award** (Chemical Engineering)	Vaishak Nair CH11D012
77.	**Ms. Lakshmikutty Amma and Mr. A. Krishnankutty Nair Prize** (Mathematics)	Sukhendu Ghosh MA11D021 Asrifa Sultana MA11D009 (Joint winners)
78.	**Bhagyalakshmi and Krishna Ayengar Award**	Parsi Anil Kumar ME12B050 Bharath. R CH14M001 Raja Paul EE14M079 Anish Gopal CE14M018 Nuli Tejaswinadha Saikiran ME11B139 Pavana Sri Vamsi Mocherla PH10D030

3.5.2. Institute Day Prizes

Based on performance, following students were awarded merit prizes on the 57th Institute Day held on 18 April 2017 at the Student Activities Centre. Mr. Bhaskar Bhat, Managing Director, Titan Company Limited (Distinguished Alumnus of IITM) was the Chief Guest.

Silver medal and cash award of ₹ 5000

For the student with the best academic record in the first two semesters of the B.Tech./Dual Degree Programme (2015 batch)

EE15B122	Pradyumna V. Chari	Dual Degree	Mr. S. Subramanian Prize - I Prize
EE14B123	Namida Mohammed	B.Tech.	Mr. K. Krishnamurthi Prize- II Prize

For the best academic record in the third and fourth semesters put together in B.Tech./Dual Degree programme (2014 batch)

AE14B045	Purnanand Elango	Dual Degree	Prof. T. K. Varadan Prize
BE14B035	Debayan Chaudhury	Dual Degree	Dr. Anita Mehta-Damani Prize
BS14B026	Nikunj Mehta	Dual Degree	Institute Merit Prize
CE14B006 CE14B078	Aravind R. Shubham Bajaj	B.Tech. Dual Degree	Computer Age Management Services Private Limited Prize (Joint winners)
CH14B049	Praneeth Srivanth R.	B.Tech.	Dr. Anita Mehta-Damani Prize
CS14B023	Rahul Kejriwal	B.Tech.	Mr. V Ramachandran Prize
EE14B012 EE14B101	Aravind S. Rajat S. Rao	B.Tech. Dual Degree	Mr. V Rajagopalan Memorial Prize (Joint winners)
ED14B054	Shivani Guptasarma	Dual Degree	Ms. Latha and Sampath Srinath Prize
EP14B004	Amit Vikram A.	B.Tech.	Ms. Latha and Sampath Srinath Prize
ME14B062	Somayajulu D.	B.Tech.	Mrs. Jayashree Ananth Prize
MM14B048	Vishal S.	Dual Degree	Mr. Satish Pai Prize
NA14B015	Kiran Adhithya R. K.	B.Tech.	Ms. Latha and Sampath Srinath Prize
PH14B009	Tanay	Dual Degree	Institute Merit Prize

For the student with the best academic record in the fifth and sixth semesters in each branch of B.Tech./Dual Degree programme (2013 batch)

AE13B013	M. Mohamed Khalid	Dual Degree	Prof. E.G. Tulapurkara Prize
BE13B028	Saransh Umale Umale	Dual Degree	Dr. Anita Mehta-Damani Prize
BS13B008	Devanshu	Dual Degree	Institute Merit Prize
CE13B065	Keshav Bharadwaj Ravi	Dual Degree	M. S. K. Chaitanya Varma Memorial Prize
CH13B086	N. Pradeep	Dual Degree	Dr. R. K. Viswanath Memorial Prize
CS13B037	Gurneet Singh	Dual Degree	Computer Age Management Service Private Limited Prize
ED13B015	Dandekar Rajat Abhijit	Dual Degree	Srikanth Sundararajan Prize
EE13B068	Anshul Bhavesh Shah	Dual Degree	Sri Ramasarma V Kolluri Memorial Prize
EP13B025	Shagesh S.	B.Tech	Institute Merit Prize
ME13B048	Mohammad Aaquib	B.Tech	Dr. Vivekanand Kochikar Award
MM13B040	Gautham Muthusamy	Dual Degree	Ratna Award
NA13B009	Ganti Sai Sanjit	B.Tech	Institute Merit Prize
PH13B001	Aditya Mahalanabish Mahalanabish	Dual Degree	Institute Merit Prize

For the student with the best academic record in the first four semesters of the B.Tech. programme in Mechanical Engineering

ME14B062	Somayajulu D.	Sri Raghavendra Memorial Prize

For the student with the best academic record in the first six semesters of B.Tech. Mechanical Engineering

ME13B019	Chinmay Jha	Dr. S. Chandrasekharan Memorial Prize

For students with the best academic record in first seven semesters of the B.Tech. programme in Mechnical Engineering

ME13B019	Chinmay Jha	Dr. Dinesh Balagangadhar Prize (Joint winners)
AE15M030	P. Srinivas Ganesh	Institute Merit Prize
AM15M033	Balichakra Naga Sachin (M.Tech. in AM)	Institute Merit Prize
Catalysis Tech	None Recommanded*	Dr. V. Mahadevalyer Prize
CS15M021	George Joseph	Prakash Arora Prize
MA15M011	Rimpa Mondal	Institute Merit Prize
AT15M006 AT15M009	Parsa Bhargav Krishna Shrinidhi S.	Institute Merit Prize (Joint winners)
MM15M016	Rajath Alexander	Institute Merit Prize
OE15M029	Manish Kumar	Institute Merit Prize
OE15M052	Archana V.	Institute Merit Prize
CE15M064# CE15M073#	Sarode Rohit Vinayakrao Bilal T. T.	Smt. Jayalakshmi Narasimhan Memorial Prize (Joint winners)
CH15M005	Anbuchelvan Anamicca	M/S Chevron Products Company Prize
EE15M052	Gayathri S.	Prof. M. K. Achuthan Prize
ME15M047	M. C. Sanjay	Mr. Ramanan Ramamurthy Prize
OE15M003	Rajesh R.	Prof. VallamVenkataswami Prize
PE15M002 PE15M009	Anand S. Narendra Singh Shekhawat	Prof. M. S. Ananth Prize (Joint winners)
PH15M001	Anushree Tomer	Mrs. Lakshmi Ravikumar Memorial Prize
CE15M049	Najibullah M.	Prof. Gerhard Rouve Memorial Prize (Hydraulic and Water Resource Engineering stream)
NE15M002	Amritansh Arpit Frank	Prof. Rama Rao Jayanti Memorial Prize
ME15M047	M. C. Sanjay	Prof. N. Venkatarayulu Memorial Prize (Thermal stream)

For the student with the best academic record in the seventh and eighth semesters in the Dual Degree programme (2012 batch)

AE12B034	Tony John	Institute Merit Prize
AE12B052	Arun Shaly (M.Tech. in AM)	Institute Merit Prize (Applied Mechanics)
CE12B082	Narneni Satyanarayana Rao	Mr. Venkataraman Ravi Prize
CS12B039*	J. P. Sagar	Computer Age Management Services Private Limited Prize
ED12B024	Joshi Sagar Suhas	Sarada Basakara Reddy Award
ME12B122	Vankayalapati Gnana Saurya	Mr. Rajesh Achanta Prize (Product Design stream)
ME12B165	Sreedath P.	Mr. Sagar Pushpala Prize (Intelligent Manuacturing stream)
ME12B094	Penmetsa Hemanth	Institute Merit Prize (Thermal Engineering)
MM12B006	Asmita Jana	Prof. V. Sundaresan Prize
NA12B046	Vinayak S.	Mr. Poovai T.R. Srinivasan and S. Alamelu Award
PH12B007	Tirth Shah	Institute Merit Prize
BE12B031	Sidhyansh Saxena	Mr. Madan Gopal Damani Prize
BS12B052	Nandakumar R.	Institute Merit Prize
EE12B099	Nikhilesh Rajaraman	Institute Merit Prize
CH12B091	Srijith R.	Dr. Anita Mehta-Damani Prize

First to ninth semester Dual Degree in Mechanical Engineering (Intelligent Manufacturing)

ME12B165	Sreedath Panat	Prof. V. Radhakrishnan Endowment Prize

For the student with the best academic record in first and second semesters of the M.Tech. programme

CE15M116	Anjana R.	S. Sambasivan Award

For the student scoring highest marks in Mechanical Operation course (Department Level Prize)

CH14B042	Marri Krishna Chaitanya	B.Tech.	M. Ramanujam Memorial Prize

For the student with lowest parental income among those with CGPA more than 7.00 in M.Sc. Chemistry branch at the end of second semester (combined)

CY15C013	Hemkalyan Ballav	M.Sc. Chemistry	R. Padmanabhan Memorial

For the student with the best academic record in first and second semesters of the M.B.A. programme

MS15A047	Santhoshraghavan S.	Prof T. N. Govindarajan Prize

For the student with the best academic record in first and second semesters of M.Sc. programmes in Chemistry, Mathematics and Physics

CY15C021	Nisha	Mrs. Kalaimani Natarajan Prize
MA15C037	Sahiba Arora	Geetha Raghupathy Prize
PH15C022	Pooja Jethwani	Chilukuri Ramasastry Memorial Prize

For one M.A. student (2014 batch) with best academic record in first and second semesters

MS15A047	Santhoshraghavan S.	Institute Merit Prize

For one M.A. student (2014 batch) with best academic record in the third and fourth semesters

HS14H008	Anwesha Pathi	Institute Merit Prize

For the student with the best academic record in fifth and sixth semesters in each branch of M.A. programme (2013 batch)

HS13H017	Madhura Niveditha Balasubramaniam	Development Studies	Institute Merit Prize
HS13H043	Zuha Moideen	English Studies	Institute Merit Prize

For the student with the best academic record in the seventh and eighth semesters in each branch of M.A. programme (2012 batch)

HS12H018	Isha Ravi Bhallamudi	Development Studies	Institute Merit Prize
HS12H039	Shilpa Menon	English Studies	Institute Merit Prize

For the B.Tech/Dual Degree student with the best cumulative performance in minor category under English Studies in the fifth, sixth and seventh semesters

CS13B024	K. Ritwika	Rajalakshmi Krishnamurthy English Prize

For the student with the highest CGPA in Marketing specialization in the M.B.A. programme

MS15A038	Priyanshi Jain	Dr. V. Kumar Prize

For the B.Tech./Dual Degree/M.A. student with the highest CGPA in Management minor in the fifth, sixth and seventh semester

EE13B127	B. Ramsubramanian	Mr. S. Viswanathan Prize

For the B.Tech./Dual Degree student with the best cumulative performance in courses taken under HSS category and minor in HSS up to seventh semester

CS13B031	Akshay Utture	Dr. Dilip Veeraraghavan Memorial Award
CH13B086	N. Pradeep	K. Srinivasan and Indira Srinivasan Prize

For the best academic record in first, second and third semesters of M.B.A. programme

MS15A047	Santhoshraghavan S.	Prof T. S. Rajagopalan Memorial Prize

For the M.Sc. (Maths) student with the best academic record up to third semester

MA15C037	Sahiba Arora	LVKV Sarma Prize

For the M.Tech. student with the best academic record in Industrial Maths and Scientific Computing up to third semester

MA15M011	Rimpa Mondal	LVKV Sarma Prize

For the student with best academic record in first to second semester of Integrated M.A. programme

HS15H007 HS15H021	Aswathy Venugopal Melwin James	Institute Merit Prize (Joint winners)

For the student with all-round performance in cultural, co-curricular and organizational abilities during the academic year in CH, CE, ME, MT and OE departments

ME13B024	Yash Dixit	B.Tech.	K. Ramamurthi Prize

For the student with the best academic record up to second year of Civil Engineering, who also demonstrated leadership, teamwork and social service on campus and off campus

CE14B103	Chirag Gupta	Dual Degree	Kalidas Madhavpeddi Scholarship

For the girl student with the best academic record at the end of pre-final semester in B.Tech., M.Tech., Dual Degree, M.Sc., M.B.A, M.A. and M.Tech.

CS13B058	Susanna Maria Baby	B.Tech.	Swati/Jayalakshmi Memorial Award
CS12B061	Vidhya Ramaswamy	Dual Degree	Swati/Jayalakshmi Memorial Award
CY15C021	Nisha	M.Sc.	Swati/Jayalakshmi Memorial Award
MS15A006	Anubha Richa	M.B.A.	Swati/Jayalakshmi Memorial Award
HS12H026	Liza Tom	M.A.	Swati/Jayalakshmi Memorial Award
PH15M001	AnushreeTomer	M.Tech.	Swati/Jayalakshmi Memorial Award

Bhagyalakshmi and Krishna Ayengar Award is for the faculty who guided the project work of the students who won degree/prizes during Convocation 2016. A cash award of ₹ 30,000 will be shared by each Project Investigator.

Sl. No.	Roll No.	Student	Project Title	Principal Investigator
1.	CH14M001	Bharath R.	Palladium Dendrites as Catalyst for Portable Air Breating Formic Acide Fuel Cells	Dr. Raghuram Chetty
2.	PH10D030	Pavana Sri Vamsi Mocherla	Bandgap tuned $BiFeO_3$ Perovskite for Solar Energy Harvesting	Dr. Sudakar Chandran
3.	EE14M079	Raja Paul	Automatic Flipping Magnet Type Electromagnetic Energy Harvester	Dr. Boby George
4.	ME11B139	Nuli Tejaswinandha Saikiran	Remotely Operated Vehicle for Immersed Plate Inspection	Dr. Prabhu Rajagopal
5.	ME12B050	Parsi Anil Kumar	Conversion of an MPFI Engine into a GDI Engine and Implementation of Skip Fire	Dr. A. Ramesh
6.	CE14M018	Anish Gopal	*In situ* Treatment and Reuse Studies on Ammonium Perchlorate Laden Effluent from Solid Rocket Propellant Hog-Out Facility using Chemical and Electro-chemical Methods	Dr. Indumathi M. Nambi

Institute Research Award – 2017

Sl. No.	Roll No.	Student	Department
1.	AM12D028	Amrita Rath	Applied Mechanics
2.	BT12D009	Kumar Swamy Reddy N.	Biotechnology
3.	BT12D026	Venkata Reddy Chirasani	Biotechnology
4.	BT12D050	Abhishek Narayan	Biotechnology
5.	CH11D018	Anjali T. G.	Chemical Engineering
6.	CH12D010	Anil Babasaheb Vir	Chemical Engineering
7.	CH12D016	S. Manigandan	Chemical Engineering
8.	CY11D052	Bijan Mondal	Chemistry
9.	CE12D207	Bachu Anilkumar	Civil Engineering
10.	CS12D019	Vinu E. V.	Computer Science and Engineering
11.	EE10D038	Abhijith Punnappurath	Electrical Engineering
12.	EE11D037	Guru Venkat	Electrical Engineering
13.	EE12D203	Vishal Tiwari	Electrical Engineering
14.	EE13D052	Thamballa Sreekanth	Electrical Engineering
15.	EE13D210	Srinivas Rana	Electrical Engineering
16.	ED12D020	Thiyagarajan R.	Engineering Design
17.	ED12D023	Vignesh Rajaram	Engineering Design
18.	MA14D001	Ajoy Jana	Mathematics
19.	MA14D005	Projesh Nath Choudhury	Mathematics
20.	ME11D014	Sivakumar S.	Mechanical Engineering
21.	ME12D007	T. Jagadesh	Mechanical Engineering
22.	ME12D055	H. Sharon	Mechanical Engineering
23.	ME13D021	Amireddy Kiran Kumar	Mechanical Engineering
24.	MM12D005	Madhumathi K.	Metallurgical and Materials Engineering
25.	MM12D028	Viswanathan R.	Metallurgical and Materials Engineering
26.	MM12D030	Soumya S.	Metallurgical and Materials Engineering
27.	OE11D004	R. Manikandan	Ocean Engineering
28.	PH12D011	Raghu S.	Physics
29.	PH12D049	Rashmi C. Shende	Physics

NOTIONAL PRIZE WINNERS

Top 7% of the General category students admitted to B.Tech./DD programme are eligible to be given Notional Prize of ₹ 1000 (one time) and a Certificate of Merit on the basis of their rank in JEE (Advanced) and parents' income exceeding ₹ 4.5 lakh. A total of 400 General category students were admitted to B.Tech./DD in July 2016 and the following 28 students (7% of 400 = 28) are eligible for the Notional Prize:

Sl. No.	Roll No.	Student	CML Rank
1.	CS16B007	Donda Jithesh Kumar	62
2.	CS16B039	Sirpurkar Srinivas Saurab	67
3.	CS16B026	Sahukara Harsha Vardhan	90
4.	CS16B005	Digumarthi Chetan Sai	114
5.	CS16B042	Venna Sai Sujith	118

Sl. No.	Roll No.	Student	CML Rank
6.	CS16B004	Dhanireddy Naga Mithun Reddy	119
7.	CS16B037	Patel Utkarsh	130
8.	CS16B006	Dixit Soham Vijay	132
9.	CS16B025	S. Sai Jayasurya	140
10.	CS16B028	Sonthi Sai Aditya	155
11.	CS16B008	Ganta Gowtham	156
12.	CS16B038	Shivam Mittal	159
13.	CS16B011	J. Ranjith Ganesh	166
14.	CS16B010	Guduru Haasith	167
15.	CS16B030	Vishnu Veerathu	171
16.	CS16B022	Rachit Tibrewal	173
17.	EE16B025	Milind Kumar Vaddiraju	189
18.	CS16B107	E. Santhosh Kumar	214
19.	EE16B050	G. Pradeep	218
20.	CS16B113	Raghav Nauhria	236
21.	CS16B101	Ayalur Vedpuriswar Lakshmy	240
22.	CS16B106	Ryali Gayatri	260
23.	CS16B102	Balasankar R.	263
24.	EE16B040	T. Lokesh Kumar	268
25.	EE16B034	Ram Ganesh V.	271
26.	CS16B110	Navodita Sharma	278
27.	EE16B046	Akshay Anand	304
28.	EE16B008	Deshmukh Shripad Vilasrao	323

4.1. Department of Aerospace Engineering

4.1.1. Introduction

The Department of Aerospace Engineering was established in 1969. Its areas of teaching and research 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

Sl. No.	Course No.	Title
1.	AS 5012	Dynamics and Control of Rotorcraft
2.	AS 5460	Finite Volume Methods for Hyperbolic PDEs
3.	AS 5540	Space Flight Dynamics
4.	AS 5545	Dynamics and Control of Spacecraft
5.	AE 5700	Spacecraft Electric Propulsion

New laboratories established

1. Waves and Instabilities Laboratory
2. Rotorcraft Laboratory

Students on roll as of September 2016 + M.S. and Ph.D admission in January 2017

Programme	Year I	Year II	Year III	Year IV	Year V and Others	Total
B.Tech.	43	40	32	33	12	160
Dual Degree	14	9	22	24	31	100
M.Tech.	18	21	1	_	1	40
M.S.	16	19	11	8	1	55
Ph.D.	22	20	32	20	27	121
Total	**113**	**109**	**98**	**85**	**72**	**476**

Students/scholars who attended conference/seminar/symposia

Sl. No.	Student/Scholar	Roll No.	Conference/Seminar/Symposia/ Workshop	Date and Venue	Financial Assistance from
Abroad					
1.	Salini S. Nair	AE13D215	Americal Helicopter Society – Forum 72	17–19 May 2016, Florida, USA	IIT Madras
2.	Rakesh Ramakrishnan	AE11B026	The European Congress on Computational Methods in Applied Sciences and Engineering (ECCOMAS) 2016	5–10 June 2016, Crete Island, Greece	IITM Alumni Association (IITMAA)
3.	R. Vijay Ram	AE15S008	ECCOMAS 2016	5–10 June 2016, Crete Island, Greece	Self
4.	Aritra Chakraborty	AE14S017	Summer School on Combustion, 2016	6–10 June 2016, T. U. Darmstadt, Germany	Project
5.	Dheepak N. Khatri	AE12B004	22nd International Shock Interaction Symposium	4–8 July 2016 Glasgow, UK	IITMAA
6.	Anil Kumar Pasam	AE12B021	22nd International Shock Interaction Symposium	4–8 July 2016 Glasgow, UK	IITMAA
7.	A. Ramprakash	AE14S008	22nd International Shock Interaction Symposium	4–8 July 2016 Glasgow, UK	IIT Madras

Sl. No.	Student/Scholar	Roll No.	Conference/Seminar/Symposia/ Workshop	Date and Venue	Financial Assistance from
8.	S. Gurusideswar	AE09D009	First Indo-South African Research Workshop on Nanocomposites Materials and their Applications	6–8 July 2016 Durban, South Africa	Self
9.	A. Ramprakash	AE14S008	7th Internation Conference on Mechanical and Aerospace Engineering (ICMAE)	18–22 July 2016 London, UK	IIT Madras
10.	Anshul Tiwari	AE14S016	ICMAE	18-22 July 2016, London, UK	IIT Madras
11.	A. Ramprakash	AE14S008	Applied Aerodynamics Research Conference	19-21 July 2016 Bristol, UK	IIT Madras
12.	A. Ramprakash	AE14S008	52nd AIAA/SAE/ASEE Joint Propulsion Conference, AIAA Propulsion and Energy Forum and Exposition 2016	25-27 July 2016, Salt Lake City, Utah, USA	IIT Madras
13.	Hamza Nazeem	AE11D007	52nd AIAA/SAE/ASEE Joint Propulsion Conference, AIAA Propulsion and Energy Forum and Exposition 2016	25-27 July 2016, Salt Lake City, Utah, USA	IIT Madras
14.	Gaurav Rajoriya	AE14S021	The American Institute of Aeronautics and Astronautics (AIAA)	25-27 July 2016, Salt Lake City, USA	IIT Madras
15.	Vishnu R Unni	AE13D006	The American Institute of Aeronautics and Astronautics (AIAA)	25-27 July 2016, Salt Lake City, USA	IIT Madras
16.	Chaitanya A	AE12D023	AIAA Propulsion and Energy Forum and Exposition 2016	25-27 July 2016, Salt Lake City, USA	IIT Madras
17.	Nikunj Rathi	AE13D207	AIAA Propulsion and Energy Forum and Exposition 2016	25-27 July 2016 Salt Lake City, USA	IIT Madras
18.	Shanmugadas K.P.	AE12D207	The 36th International Symposium on Combustion	31 July-5 August 2016, Seoul, South Korea	IIT Madras
19.	Nikunj Agrawal	AE13B017	52nd AIAA/SAE/ASEE Joint Propulsion Conference, AIAA Propulsion and Energy Forum and Exposition 2016	8-12 August 2016, Utah, USA	Self
20.	Ashish Mishra	AE13D212	24th International congress of Theoretical and Applied Mechanics (ICTAM 2016)	21-26 August 2016, Montreal, Canada	IITMAA
21.	Salini S. Nair	AE13D215	European Rotorcraft Forum	6-8 September 2016, Lille, France	IITMAA
22.	G. K. Balajee	AE11D009	11th European Fluid Mechanics Conference	12–16 September 2016, Sevile, Spain	IIT Madras
23.	M. V. Anoop	AE12D208	11th European Fluid Mechanics Conference	12–16 September 2016, Sevile, Spain	IIT Madras
24.	M. T. Thanusha	AE14S009	Internation Colloquium Multi – Uncertainty and Multi–Scale Methods and Related Applications	14-16 September 2016, Porto, Portugal	IIT Madras
25.	Ramesh P. Hun	AE14S031	30th Congress of the International Council of The Aeronautical Sciences (ICAS)	25-30 September 2016, Daejeon, South Korea	IIT Madras
26.	Salini S. Nair	AE13D215	Detection and control of Ground Resonance Using Phase of Fuselage Attitude Rates	European Rotorcraft Forum, 6-8 September 2016	IITMAA
27.	M. Osborn Oliver	AE13S008	International Conference SPIE/ COS Photonics Asia Advanced Sensor systems and Applications VII	12-14 October 2016, Beijing, China	Alumni
28.	Vishnu R. Unni	AE13D006	Research visit	1-31 October 2016, Potsdam Institute, Germany	Alumni Fund
29.	Dheelibun Remigius W.	AE12D020	International Conference on ASME International Mechanical Engineering Congress and Exposition	11-17 November 2016, Phoenix, Arizona, USA	IITMAA
30.	Vellingiri Ramanujam	AE14D002	5th Asian–Australian rotorcraft Forum	17-18 November 2016, Singapore	IITMAA
31.	Gokul Ramanathan	AE14S023	American Institute of Aeronautics and Astronautics SciTech Conference	9-13 January 2017 Grapevine, Texas, USA	IIT Madras
32.	Anand Bharadwaj S.	AE14D212	American Institute of Aeronautics and Astronautics SciTech Conference	9-13 January 2017 Grapevine, Texas, USA	IIT Madras
India					
1.	Hariharan G.	AE13S030	Third International Conference on Nanotechnology For Better Livin Theme: Nano-Materials For Electronics, Energy, Environment and Structure	25-29 May 2016, National Institute of Srinagar, Kashmir	IIT Madras
2.	Ramesh P. Hun	AE14S031	National Conference on Large Scale Multi-Disciplinary systems of National Significance (LAMSYS) 2016	24-25 June 2016 SDSC SHAR, ISRO, Sriharikota	IIT Madras
3.	Hamza Nazeem	AE11D007	LAMSYS 2016	24-25 June 2016 SDSC SHAR, ISRO, Sriharikota	IIT Madras
4.	Vishnu P. R.	AE14S042	3rd National Workshop on Research Methodology in Fluid Mechanics	14–16 July 2016 Kollam, Kerala	IIT Madras
5.	K. Siddhardha	AE14D011	Tutorial workshop on Nonlinear, Adaptive, Optimal and Embeded Control	18–23 July 2016 IISC, Bengaluru	IIT Madras
6.	W. Dheelibun Remigius	AE12D020	Aeroelastic Issues in Gas Turbine Engine Blades	19-22 July 2016, GTRE, Bengaluru	IIT Madras
7.	R. Dheeresh	AE14D407	GIAN Course	IIT Hyderabad	IIT Madras
8.	B. T. Kannan	AE11D008	GIAN Course – Finite Elements in Fluids	1-5 August 2016	IIT Madras
9.	Pankaj Pancharia	AE16D405	GIAN Course – Combustion Flow and Diagnostics	26 September-7 October 2016, IIT Madras	IIT Madras
10.	Baraiya Nikhil Ashokbhai	AE14D001	GIAN Course – Combustion Flow and Diagnostics	26 September-7 October 2016, IIT Madras	IIT Madras
11.	V. Chaitanya	AE12D023	8th International Conference on NDT in Aerospace	3-5 November 2016, Bengaluru	IIT Madras
12.	W. Dheelibun Remigius	AE12D020	6th International Conference on Fluid Mechanics and Fluid Power	14-18 December 2016, MNNIT, Allahabad	IIT Madras
13.	Dipanjan Majumdar	AE15D200	6th International and 43rd National Conference on Fluid Mechanics and Fluid Power	14-18 December 2016, MNNIT, Allahabad	IIT Madras

Sl. No.	Student/Scholar	Roll No.	Conference/Seminar/Symposia/ Workshop	Date and Venue	Financial Assistance from
14.	Sirshendu Mondal (PDF)	AE15IPF01	Conference on Nonlinear Systems and Dynamics (CNSD) 2016	15-19 December 2016 IISER, Kolkata	IIT Madras
15.	Abin Krishnan	AE13D015	Conference on Nonlinear Systems and Dynamics (CNSD) 2016	16-18 December 2016, IISER, Kolkata	IIT Madras
16.	Pawar Samadhan Ananda	AE12D211	Conference on Nonlinear Systems and Dynamics (CNSD) 2016	16-18 December 2016, IISER, Kolkata	IIT Madras
17.	Vagish Datta Mishra	AE13D213	International Symposium For Research Scholars (ISRS 2016)	21-23 December, 2016, IIT Madras, Chennai	IIT Madras
18.	S. Ravi Teja	AE14D017	4th P. J. Paul Memorial Combustion (Lectures Series) Researchers Workshop	17-18 February 2017, HEMRL Pune	IIT Madras
19.	R. Udhayaraman	AE14D021	19th National Seminar on Aerospace Structures (NASAS – XIX)	23-25 February 2017 VIT, Vellore	IIT Madras
20.	S. Venkatachalam	AE11D004	19th National Seminar on Aerospace Structures (NASAS – XIX)	23-25 February 2017 VIT, Vellore	IIT Madras
21.	Sirshendu Mondal (PDF)	AE15IPF01	International Conference on Sustainable Energy and Environmental Challenges (SEEC 2017)	26-28 February 2017, Mohali	IIT Madras
22.	Vagish Datta Mishra	AE13D213	International Conference on Emerging trends in Materials and Manufacturing Engineeering (IMME17)	10-12 March 2017	IIT Madras
23.	P. R. Vishnu	AE14S042	National Aerospace Propulsion Conference 2017	15-17 March 2017, IIT Kanpur	IIT Madras
24.	V. Chaitanya	AE12D023	National Aerospace Propulsion Conference 2017	15-17 March 2017, IIT Kanpur	IIT Madras
25.	K. P. Shanmugadas	AE12D207	National Aerospace Propulsion Conference 2017	15-17 March 2017, IIT Kanpur	IIT Madras
26.	Prateek Kishore	AE12B047	National Aerospace Propulsion Conference 2017	15-17 March 2017, IIT Kanpur	IIT Madras
27.	Aritra Chakraborty	AE14D200	National Aerospace Propulsion Conference 2017	15-17 March 2017	IIT Madras

Students/scholars who won outside prizes and awards

Sl. No.	Student/Scholar	Roll No.	Prize	Awarded by
1.	Ramesh P. Hun	AE14S031	Best Paper Award	LAMSYS, Sriharikota, Andhra Pradesh
2.	Dr. Sirshendu Mondal	AE15IPF01	Young Scientist Award	International Society for Energy, Environmental and Sustainability, IIT Kanpur

Students/scholars who won convocation/Institute Day prizes

Sl. No.	Student/Scholar	Roll No.	Prize	Name of Donor
1.	S. Sukruth	AE12B032	HAL Prize	IIT Madras
2.	Aaditya Vijayakumar	AE11B001	Dr. V. Mohan Raman Prize	IIT Madras
3.	Aaditya Vijayakumar	AE11B001	Mayan Prize	IIT Madras
4.	P. G. Athul	AE11B039	Mayan Prize	IIT Madras
5.	Mohit Garg	AE14M012	Air India Prize	IIT Madras

4.1.3. Faculty and their activities

Faculty

Name and Qualifications	Major areas of specialization
Professors	
K. Bhaskar, Ph.D. (IIT Madras) (HoD)	Structural mechanics, plates and shells, composite structures
M. Ramakrishna, Ph.D. (University of Texas at Arlington)	Fluid mechanics, numerical methods, computer solutions
P. Sriram, Ph.D. (Georgia Institute of Technology)	Structural mechanics, fatigue and fracture, parallel computing
R.I. Sujith, Ph.D. (Georgia Institute of Technology)	Acoustics and combustion instability, optical flow diagnostics
S.R. Chakravarthy, Ph.D. (Georgia Institute of Technology)	Propulsion, combustion and fluid mechanics
R. Velmurugan, Ph.D. (IIT Delhi)	Composite structures analysis and design, impact mechanics, 3D composites
Luoyi Tao, Ph.D. (University of Pittsburgh)	Continuum mechanics and its applications (fluids, solids, multiphase flows, etc.)
H. S. N. Murthy, Ph.D. (Purdue University)	Fatigue and fracture, non-destructive evaluation, tribology, advanced materials, elasticity
Amit Kumar, Ph.D . (Case Western Reserve University)	Combustion, propulsion, fire research, CFD
P. A. Ramakrishna, Ph.D. (Indian Institute of Science)	Combustion, propulsion and fuel cells
Nandan Kumar Sinha, Ph.D. (IIT Bombay)	Non-linear dynamics, bifurcation theory and continuation methods, flight dynamics and controls
Associate Professors	
N.R. Panchapakesan, Ph.D. (Cornell University)	Fluid mechanics, stability and transition of fluid flows turbulence
Sunetra Sarkar, Ph.D. (Indian Institute of Science)	Insect aerodynamics, fluid structure interaction, uncertainty quantification
G. Rajesh, Ph.D. (Andong National University, S.Korea)	Shock wave dynamics, high speed flows, experimental aerodynamics
A. Sameen, Ph.D. (Indian Institute of Science)	Stability, transition and turbulence, computational fluid dynamics
T. M. Muruganandam, 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
Sivasambu Mahesh, Ph.D. (Cornell University)	Structure-property modeling of aerospace materials
K.V. Nagendra Gopal, Ph.D. (Indian Institute of Science)	Computational mechanics and multi-scale modeling, fracture mechanics, structural dynamics and aero elasticity
Assistant Professors	
Ranjith Mohan, Ph.D. (Florida Atlantic University)	Helicopters, rotocraft MAVs, spectral methods in fluid dynamics
Santanu Ghosh, Ph.D. (North Carolina University)	Computational fluid dynamics, turbulent flows, shock/boundary-layer interaction, immersed-boundary methods
Manikandan Mathur, Ph.D. (Massachusetts Institute of Technology)	Instabilities and mixing, stratified and rotating flows, Lagrangian coherent structures
Shankar Ghosh, Ph.D. (University of Minnesota)	Hypersonic flow simulation, non-equilibrium effects, computational fluid dynamics, turbulent flows
Shyam M. Keralavarma, Ph.D. (Texas A&M University)	Plasticity, ductile fracture, computational materials modeling, multiscale modeling
Joel George, Ph.D. (IISc.)	Navigation, guidance and control of aerospace vehicles multi-agent systems theory as applied to multiple unmanned aerial vehicle missions

Name and Qualifications	Major areas of specialization
Shantanu Shashikant Mulay, Ph.D. (Nanyang Tech. University)	Continuum mechanics, large deformation of materials, fracture mechanics and plasticity
M. Senthil Murugan, Ph.D (IISc.)	Aeromechanics, dynamics and aeroelasticity, stochastic systems
Visiting Professor	
R. Pandiyan, Ph.D. (Auburn University, USA)	Astrodynamics, spacecraft attitude dynamics and control, nonlinear dynamics and control
Professor of Practice	
Lt. Gen. (Retd.) P. Ravi Shankar	

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

Sl. No.	Coordinator(s)	Title	Period
Workshops			
1.	Dr. Manikandan Mathur	ASIRI – OMM (Air–Sea Interactions in the Northern Indian Ocean Research Initiative–Ocean Mixing and Monsoons) Workshop on Data Analysis	4-7 January 2017
2.	Dr. Manikadan Mathur	ASIRI – OMM Discussion Meeting	9-12 January 2017
Short-term courses			
1.	Dr. S. R. Chakravarthy and Dr. T. M. Muruganandam	GIAN Course – Combustion and Flow Diagnostics	26 September-7 October 2016
2.	Dr. R. Velmurugan	GIAN Course – Multi-Scale Modelling for Polymeric Nano Composites	16 January-27 January 2017

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

Sl. No.	Faculty Member	Title	Institution	Period
Workshops				
1.	Dr. R.I. Sujith	Tango Project Meeting and Training Workshop	Munich, Germany	17-19 May 2016
2.	Dr. R. Velmurugan	Indo-South Africa Research Workshop on Nanocomposite Materials and Their Applications	Durban, South Africa	5-10 July 2017
Symposia				
1.	Dr. H.S.N. Murthy	8th International Symposium on Fretting Fatigue (ISFF8) Conference	University of Brasilia, Brazil	17-20 April 2016
2.	Dr. S.R. Chakravarthy	International Symposium on Thermoacoustics In Gas Turbines and Rocket Engines	Munich, Germany	30 May-2 June 2016
3.	Dr. R. Velmurugan	International Symposium on Plasticity and Impact Mechanics	IIT Delhi	5-7 December 2016
Conferences				
1.	Dr. Santanu Ghosh	8th AIAA Flow Control Conference and Aviation and Aeronautics Forum and Exposition 2016	Washington, USA	13-17 June 2016
2.	Dr. Nandan Kumar Sinha	Space Systems in LAMSYS	SDSC, SHAR, Sriharikota	24-25 June 2016
Meetings				
1.	Dr. G. Rajesh	Technical Consultant for National Inquiry Commission on Paravur Puttingul Temple Firework Explosion	Paravur, Kollam, Kerala	31 May-1 June 2016
2.	Dr. R. Velmurugan	ARDB Review Meeting	NAL, Bengaluru	23-26 June 2016
3.	Dr. R.I. Sujith	Precursor Technique with GVL Team	Purdue University	3-8 August 2016
4.	Dr. G. Rajesh	DRDO Scientists (SB) Recruitment Board (Aerodynamic Panel) Meeting	DRDO, Bengaluru	27-29 September 2016

Special lectures delivered by faculty in other institutions

Sl. No.	Faculty Member	Topic	Institution	Date
1.	Dr. R.I. Sujith	Onset of Combustion Instability In Combustores With Turbulent Flow	Arlington, Virginia, USA	1-2 August 2016
2.	Dr. R.I. Sujith	Precursor Technique With the GVL Team	Greenville, South Carolina, USA	5 August 2016
3.	Dr. H.S.N. Murthy, Dr. Shyam Kerala Varma and Dr. Shantanu Shashikant Mulay	Lecture Series on Fracture Mechanics	VSSC, ISRO, Thiruvananthapuram	21-2 December 2016
4.	Dr. Shyam Kerala Varma	Micromechanical Modeling of Ductile Fracture	Institute of Mathematical Sciences, Taramani, Chennai	4-7 January 2017

Visits abroad by faculty

Sl. No.	Faculty Member	Country Visited	Date	Purpose of Visit	Funding from
1.	H.S.N. Murthy	Brazil	17-20 April 2016	8th International Symposium on Fretting Fatigue (ISFFF8)	IIT Madras
2.	S.R. Chakravarthy	Australia	16-17 May 2016	International Collaborative Meeting	Project
3.	R.I. Sujith	Germany	17-19 May 2016	Tango Project Meeting and Training Workshop	Project
4.	R.I. Sujith	Berlin	22-27 May 2016	A visit to Humboldt Universitat Zu Berlin and Potsdam Institute for Climate Impact Research	Project
5.	Ranjith Mohan	USA	17-19 May 2016	AHS International 72nd Annual Forum and Technology Display	IIT Madras
6.	R.I. Sujith	Germany	30 May-2 June 2016	Symposium and Talk	Project
7.	S.R. Chakravarthy	Germany	30 May-2 June 2016	International Symposium on thermoacoustics in Gas Turbines and Rocket Engines	Project
8.	Dr. Santanu Ghosh	USA	13-17 June 2016	8th AIAA flow control conference and Aviation and Aeronautics Forum and Exposition 2016	IIT Madras
9.	Dr. Luoyi Tao	China	15 June-14 July 2016	Research Purpose	China
10.	Dr. K.V. Nagendra Gopal	Southampton, UK	3-6 July 2016	13th International Conference on Motion and Vibration Control Hoint with 12th International Conference on Recent Advances in Structural Dynamics	IIT Madras
11.	Dr. R. Velmurugan	South Africa	5-10 July 2016	1st Indo-South Africa Research workshop on Nanolcomposite Materials and their Applications	Project
12.	Dr. S.R. Chakravarthy	Belgium	16-19 July 2016	Optimash Project Final Review Meeting	Project
13.	Dr. Shyam Mohan Keralavarma	Switzerland	18-23 July 2016	A visit to Laboratory for Multiscale Mechanics Modeling, EPFL	Project
14.	Dr. R.I. Sujith	USA	25-27 July 2016	AIAA (American Institute of Aeronautics and Astronautics) Conference on Propulsion and Energy 2016	Project
15.	Dr. R.I. Sujith	USA	29 July 2016	A visit to UCLA Energy and Propulsion research Laboratory	Project
16.	Dr. S.R. Chakravarthy	South Korea	31 July-5 August 2016	36th International Symposium on Combustion	Project
17.	Dr. R.I. Sujith	USA	3-4 August 2016	Purdue University visit	Project
18.	Dr. G. Rajesh	Canada	18-23 September 2016	24th Symposium on Military Aspects in Blast and Shock	IIT Madras
19.	Dr. R. Velmurugan	Japan	4-8 December 2016	13th Asia Pacific Symposium on Engineering Plasticity and its Application (AEPA 2016)	Project
20.	Dr. R.I. Sujith	Switzerland	12-17 February 2017	GE Power Thermoacoustic Summit 2017	Project

Honours and awards obtained by faculty

Sl. No.	Faculty Member	Award	Awarded by	Date
1.	Dr. R.I. Sujith	Elected a Fellow of the Indian Academy of Sciences	Indian Academy of Sciences	2017
2.	Dr. R.I. Sujith	ASI Award for Rocket and Related Technologies	Astronautical Society of India, Bengaluru	2017

Fellowships of academies and professional societies

Sl. No.	Faculty Member	Year of admission
Others: Fellow of the Indian Academy of Sciences		
1.	Dr. R.I. Sujith	2017

4.1.4. Design and Development Activities

Patents filed

Sl. No.	Faculty Member	Topic
1.	H. S. N. Murthy	Fixture to Provide Constraint During Large Strain Extrusion Machining (LSEM) With Higher Compression Ratio Using Restricted Contact Type Cool to Produce Ultra Fine Grained Ti-6A1-4V Foils
2.	T. M. Muruganandam	Nonuniform Valve-less Standing Wave Suction Pump. An Apparatus For Conveying Fluids. More Specifically This Device Can be Used as Suction Pump
3.	T. M. Muruganandam	A Swirl Mesh Lean Direct Injection Concept For Distributed Flame Holding For Low Pollutant Emissions and Mitigation of Combustion Instability
4.	R. I. Sujith	Prediciting the Amplititude of Limit Cycle Oscillations in a Class of Systems That Encounter Oscillatory Instabilities
5.	P. A. Ramakrishna	Attaining Hypersonic Flight With Aluminium Based Fuel-Rich Propellant Using An Air-Breathing Ramjet

4.1.5. Research and Consultancy

Sponsored research projects

Sl. No.	Title	Period	Funding Agency	Amount (₹ in lakhs)	Co-ordinators
1.	Development of the MultiscaleModelling Framework for the Fracture Studies of Textile Composites	Three years	VSSC, ISRO	22.2	Dr. S. S. Mulay
2.	Multiscale Modelling of Granular Materials	Three years	IC&SR	5	Dr. S. S. Mulay
3.	Development of the Coupled Field Theory For The Large Deformation of Hydrogels With Focus on the Fusion of Electromagnetics With Mechanics and Thermodynamics	Three years	DST	19.56	Dr. S.S. Mulay
4.	Rotary – Wing Unmanned Aerial Vehicle For Mars-Feasibility Studies	One year	IC&SR	9.5	Dr. Ranjith Mohan
5.	Investigation or Performance and Control of Small RotorcraftsDuring Indoor Missions	Three years	DST	25.37	Dr. Ranjith Mohan
6.	Development of Fuel Rich Propellant For Ramjet Application	Two years	MHRD	97.37	Dr. P. A. Ramakrishna
7.	Development of A Back Pak Rocket Motor For A Soldier	Three years	Apex Committee of Imprint	400	Dr. P. A. Ramakrishna
8.	Computational and Experimental Investigation of Flapping type Micro-Aerial Vehicles Under Gusty Wind Conditions	One year	IC&SR	7	Dr. Sunetra Sarkar
9.	Preliminary Studies on Unsteady Gas Dynamics	One year	IC&SR	7.2	Dr. T. M. Muruganandam
10.	Experimental Study and Numerical Modeling of Polymers Prolysis and Burning Kinetics For the Prediction of Flame Spread Behaviour Under Fire Growth	Two years	DST	136	Dr. Amit Kumar
11.	Characterization and Development of Silicone Rubber – EPDM Nano Composite as Outdoor Insulating Material For EHV Applications	Two years	CPRI	61	Dr. R. Velmurugan
12.	Dynamics and Aeroelasticity and Rotorcraft	Two years	NFIG (ICSR)	5	Dr. M. Senthil Murugan
13.	Next Generation Combustor Technology Development For Small Aircraft/Helicopter Engines	Three years	MHRD	724	Dr. S.R. Chakravarthy
14.	Sensors For Steam Quality, Pulverised Coal Loading, In-Belt Coal, and Flame Stability	Three years	MHRD	316	Dr. T.M. Muruganandam

Industrial consultancy projects

Sl. No.	Faculty Member	Title	Industry	Amount (lakh of ₹)
1.	Prof. H. S. N. Murthy	FEM Analysis of Pedestal Components	Bharat Electronics Limited	14.81

RBIC projects

Sl. No.	Faculty Member	Title	Industry	Amount (₹ in lakhs)
1.	Prof. R. I. Sujith	Assessment of PrecursorTechnique for Representative GE Combustion Test Acoustic Date	GE India Technology Centre Pvt. Limited	19.48
2.	Prof. R. I. Sujith	Combustion Instability Assessment of Vikas Engine	Liquid Propulsion Systems Centre (LPSC)	8.19
3.	Prof. P. A. Ramakrishna	Technique to Quantify The Binder Melt Layer In Composite Solid Propellant	Defence Research and Development Organisation (DRDO)	9.60
4.	Prof. R. Velmurugan	Design and Development of Epoxy/RPE Composites For Armour Applications	Reliance India Private Limited	20.71
5.	Prof. R. Velmurugan	Design and Development of Poly Propylene Compounds	Reliance Industries Limited	18.09

Research publications of faculty members and research scholars

Total number of papers published in refereed national journals: 1

Total number of papers published in refereed international journals: 45

Total number of papers presented in national and international conferences: 40

Papers published in refereed national journals

1. A. A. Sithickbasha & S. Mahesh. Mechanical and Damage Fields Ahead of a Stationary Crack in a Creeping Solid

Transactions of the Indian Institute of Metals, 2016

Papers published in refereed international journals

1. R. Sampath, M. Mathur and S.R. Chakravarthy. 2016. Lagrangian coherent structures during combustion instability in a premixed-flame backward-step combustor. *Physical Review E - Statistical, Nonlinear, and Soft Matter Physics* 94(6). doi: 10.1103/PhysRevE.94.062209
2. R. Abishera, R. Velmurugan and K. V. N. Gopal. 2016. Reversible plasticity shape memory effect in carbon nanotubes reinforced epoxy nanocomposites. *Composites Science and Technology* 137: 148-158. doi: 10.1016/j.compscitech.2016.10.030
3. S. Sarkar, S.R. Chakravarthy, V. Ramanan and A. Ray. 2016. Dynamic data-driven prediction of instability in a swirl-stabilized combustor. *International Journal of Spray and Combustion Dynamics* 8(4): 235-253. doi: 10.1177/1756827716642091
4. S. Ajith Kumar, Mathur Manikandan, A. Sameen and S. Anil Lal. 2016. Effects of Prandtl number on the laminar cross flow past a heated cylinder. *Physics of Fluids* 28 (11). doi: 10.1063/1.4966937
5. J. Singh, S. Mahesh, S. Roy, G. Kumar, D. Srivastava, G. K. Dey, N. Saibaba and I. Samajdar. 2016. A miniature physical simulator for pilgering. *Journal of Materials Processing Technology* 237: 126-138. doi: 10.1016/j.jmatprotec.2016.06.009

6. E.A. Gopalakrishnan, Y. Sharma, T. John, P.S. Dutta and R.I. Sujith. 2016. Early warning signals for critical transitions in a thermoacoustic system. *Scientific Reports* 6. doi: 10.1038/srep35310
7. S. Suresha, R. I. Sujith, B. Emerson and T. Lieuwen. 2016. Nonlinear dynamics and intermittency in a turbulent reacting wake with density ratio as bifurcation parameter. *Physical Review E - Statistical, Nonlinear, and Soft Matter Physics* 94(4). doi: 10.1103/PhysRevE.94.042206
8. R. Sampath and S. R. Chakravarthy. 2016. Investigation of intermittent oscillations in a premixed dump combustor using time-resolved particle image velocimetry. *Combustion and Flame* 172: 309-325. doi: 10.1016/j.combustflame.2016.06.018
9. S. M. Keralavarma, W. A. Curtin. 2016. Strain hardening in 2D discrete dislocation dynamics simulations: A new '2.5D' algorithm. *Journal of the Mechanics and Physics of Solids* 95: 132-146. doi: 10.1016/j.jmps.2016.05.028
10. N. Srinivasan, R. Velmurugan, R. Kumar, S. K. Singh and B. Pant. 2016. Deformation behavior of commercially pure (CP) titanium under equi-biaxial tension. *Materials Science and Engineering A* 674: 540-551. doi: 10.1016/j.msea.2016.08.018
11. H. Agarwal, V. R. Unni, K. T. Akhil, N. T. Ravi, S. M. Iqbal, R. I. Sujith and B. Pesala. 2016. Compact standing wave thermoacoustic generator for power conversion applications. *Applied Acoustics* 110: 110-118. doi: 10.1016/j.apacoust.2016.03.028
12. E.A. Gopalakrishnan, J. Tony, E. Sreelekha and R. I. Sujith. 2016. Stochastic bifurcations in a prototypical thermoacoustic system. *Physical Review E - Statistical, Nonlinear, and Soft Matter Physics* 94(2). doi: 10.1103/PhysRevE.94.022203
13. Kannan, B. Chellappan and S. Chakravarthy. 2016. Flame-acoustic coupling of combustion instability in a non-premixed backward-facing step combustor: the role of acoustic-Reynolds stress. *Combustion Theory and Modelling* 20(4): 658-682. doi: 10.1080/13647830.2016.1166522
14. S. M. Keralavarma and S. Chockalingam. 2016. A criterion for void coalescence in anisotropic ductile materials. *International Journal of Plasticity* 82: 159-176. doi: 10.1016/j.ijplas.2016.03.003
15. K. Bhaskar Pydah. 2016. An accurate discrete model for web-core sandwich plates. *Journal of Sandwich Structures and Materials* 18(4): 474-500. doi: 10.1177/1099636215603027
16. M. Mathur, G.S. Carter and T. Peacock. 2016. Internal tide generation using green function analysis: To WKB or not to WKB? *Journal of Physical Oceanography* 46(7): 2157-2168. doi: 10.1175/JPO-D-15-0145.1
17. R.I. Sujith, M.P. Juniper and P.J. Schmid. 2016. Non-normality and nonlinearity in thermoacoustic instabilities. *International Journal of Spray and Combustion Dynamics* 8(2): 119-146. doi: 10.1177/1756827716651571
18. T.M. Shaun Johnston, D. Chaudhuri, M. Mathur, D.L. Rudnick, D. Sengupta, H. L. Simmons, A. Tandon and R. Venkatesan. 2016. Decay mechanisms of near-inertial mixed layer oscillations in the Bay of Bengal. *Oceanography* 29(2): 180-191. doi: 10.5670/oceanog.2016.50
19. Seshadri, V. Nair and R. I. Sujith. 2016. A reduced-order deterministic model describing an intermittency route to combustion instability. *Combustion Theory and Modelling* 20(3): 441-456. doi:10.1080/13647830.2016.1143123
20. V.M. Lakshmi, S. R. Chakravarthy, A. G. Rajendran and C. R. Thomas. 2016. Effect of crystallization parameters and presence of surfactant on ammonium perchlorate crystal characteristics. *Particulate Science and Technology* 34(3): 308-316. doi: 10.1080/02726351.2015.1076102
21. R. Arun Kumar and G. Rajesh. 2016. Flow transients in un-started and started modes of vacuum ejector operation. *Physics of Fluids* 28(5): doi: 10.1063/1.4948959
22. M. Gaurav and P.A. Ramakrishna. 2016. Effect of mechanical activation of high specific surface area aluminium with PTFE on composite solid propellant. *Combustion and Flame* 166: 203-215. doi: 10.1016/j.combustflame.2016.01.019
23. R. I. Sujith Nair. 2016. Precursors to self-sustained oscillations in aeroacoustic systems. *International Journal of Aeroacoustics* 15(3): 312-323. doi: 10.1177/1475472X16630877
24. R. Kumar and P. A. Ramakrishna. 2016. Studies on EVA-Based Wax Fuel for Launch Vehicle Applications. *Propellants, Explosives, Pyrotechnics* 41(2): 295-303. doi: 10.1002/prep.201500172
25. I.A. Mulla, A. Dowlut, T. Hussain., Z.M. Nikolaou, S. R. Chakravarthy, N. Swaminathan and R. Balachandran. 2016. Heat release rate estimation in laminar premixed flames using laser-induced fluorescence of CH_2O and H-atom. *Combustion and Flame* 165: 373-383. doi: 10.1016/j.combustflame.2015.12.023
26. S.K. Thomas and T.M. Muruganandam. 2016. Resonant Gas Oscillations in a Linear Area Variation Cavity: Rectangular Versus Circular Cross Section. *Journal of Vibration and Acoustics, Transactions of the ASME* 138(1). doi: 10.1115/1.4031521
27. T. Gaduparthi, M. Pandey and S.R. Chakravarthy. 2016. Gas phase flame structure of solid propellant sandwiches with different reaction mechanisms. *Combustion and Flame* 164: 10-21. doi:10.1016/j.combustflame.2015.10.028
28. I.A. Mulla, S.R. Chakravarthy, N. Swaminathan and R. Balachandran. 2016. Evolution of flame-kernel in laser-induced spark ignited mixtures: A parametric study. *Combustion and Flame* 164: 303-318. doi: 10.1016/j.combustflame.2015.11.029
29. H. Devathi and S. Sarkar. 2016. Study of a stall induced dynamical system under gust using the probability density evolution technique. *Computers and Structures* 162: 38-47. doi: 10.1016/j.compstruc.2015.09.003
30. P. Dash, R. Velmurugan, M.S.R. Prasad and R.S. Sikarwar. 2016. Stability improvement of thin isotropic cylindrical shells with partially filled soft elastic core subjected to external pressure. *Thin-Walled Structures* 98: 301-311. doi: 10.1016/j.tws.2015.09.028
31. M. Murugesan and R.I. Sujith. 2016. Detecting the Onset of an Impending Thermoacoustic Instability Using Complex Networks. *Journal of Propulsion and Power* 32(3): 707-712. doi: 10.2514/1.B35914
32. K. Ishitha and P.A. Ramakrishna. 2016. Burning rate studies: Potassium-doped ammonium perchlorate with other burn-rate modifiers. *Journal of Propulsion and Power* 32(5): 1104-1109. doi: 10.2514/1.B35846
33. S.R. Chakravarthy, R. Sampath, Vikram Ramanan. 2016. Dynamics and Diagnostics of Flame-Acoustic Interactions. *Combustion Science and Technology* 189(3): 395-437. doi: 10.1080/00102202.2016.1202938
34. Sumit Sarmaa, Aritra Chakraborty, N.M. Manu, T.M. Muruganandam, Vasudevan Raghavana, S. R. Chakravarthy. 2016. Spatio-temporal structure of vertically spreading flame over non-planar PMMA surfaces. *Proceedings of the Combustion Institute* 36(2): 3027-3035. doi:10.1016/j.proci.2016.06.151
35. K.P. Shanmugadas and S.R. Chakravarthy. 2016. A canonical geometry to study wall filming and atomization in pre-filming coaxial swirl injectors. *Proceedings of the Combustion Institute* 36(2): 2467-2474. doi: 10.1016/j.proci.2016.08.082
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39. S. Gurusideswar, R. Velmurugan and N.K. Gupta. 2016. High strain rate sensitivity of epoxy/clay nanocomposites using non-contact strain measurement. *Polymer (United Kingdom)* 86: 197-207. doi: 10.1016/j.polymer.2015.12.054
40. J. Venkatramani, V. Nair, R.I. Sujith, S. Gupta and S. Sarkar. 2016. Precursors to flutter instability by an intermittency route: A model free approach. *Journal of Fluids and Structures* 61: 376-391. doi:10.1016/j.jfluidstructs.2015.11.015
41. K. Naresh, K. Shankar, B.S. Rao and R. Velmurugan. 2016. Effect of high strain rate on glass/carbon/hybrid fiber reinforced epoxy laminated composites. *Composites Part B: Engineering* 100: 125-135. doi: 10.1016/j.compositesb.2016.06.007
42. R.S. Pathania, S. R. Chakravarthy and P.S. Mehta. 2016. Time-resolved characterization of low-pressure pulsed injector. *Atomization and Sprays* 26(8): 755-773. doi: 10.1615/AtomizSpr.2015013216
43. G. Avinash, A. Kumar and V. Raghavan. 2016. Experimental analysis of diffusion flame spread along thin parallel solid fuel surfaces in a natural convective environment. *Combustion and Flame* 165: 321-333. doi: 10.1016/j.combustflame.2015.12.015
44. Seshadri and R.I. Sujith. 2016. A bifurcation giving birth to order in an impulsively driven complex system. *Chaos* 26(8). doi:10.1063/1.4958925
45. S. Ajith Kumar, S. A. Lal and A. Sameen. 2016. Flow past a moderately heated horizontal cylinder at low Reynolds number. *Proceedings of the Institution of Mechanical Engineers, Part G: Journal of Aerospace Engineering* 230(7): 1224-1239. doi: 10.1177/0954410015606166

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1. C. Bose and S. Sarkar. Flexible flapping wings can exhibit quasi-periodic motion! 2016. *Journal of Physics: Conference Series* 759 (1). doi: 10.1088/1742-6596/759/1/012082
2. R.I. Thamizh, R. Velmurugan and R. Jayagandhan. Finite element analysis of metal matrix composite blade. 2016. *IOP Conference Series: Materials Science and Engineering* 152 (1). doi: 10.1088/1757-899X/152/1/012008

3. A. Ramprakash and T.M. Muruganandam. Experimental study on internal flowfield characteristics and start-unstart behaviour in a two-dimensional variable geometry inlet. 2016. *Proceedings of 2016 7th International Conference on Mechanical and Aerospace Engineering, ICMAE 2016,* pp. 465-470. doi: 10.1109/ICMAE.2016.7549585
4. A. Tiwari, A. Vora and N.K. Sinha. Airship trim and stability analysis using bifurcation techniques. 2016. *Proceedings of 2016 7th International Conference on Mechanical and Aerospace Engineering, ICMAE 2016,* pp. 471-475. doi: 10.1109/ICMAE.2016.7549586
5. J.P.S. Sandhu, S. Subramanian, S. Ghosh and P. Sharma. Evaluation of some wedge-shaped vortex generators using swirl center tracking. 2016. *8th AIAA Flow Control Conference*
6. H.P. Lal, S.M. Godbole, J.K. Dubey, S. Sarkar and S. Gupta. Reduced order models in analysis of stochastically parametered linear dynamical systems. 2016. *Procedia Engineering* 144: 1325-1331. doi: 10.1016/j.proeng.2016.05.161
7. C. Bose, S. Badrinath, S. Gupta and S. Sarkar. Dynamical stability analysis of a fluid structure interaction system using a high fidelity Navier-Stokes solver. 2016. *Procedia Engineering* 144: 883-890. doi: 10.1016/j.proeng.2016.05.107
8. J. Venkatramani, S. Gupta and S. Sarkar. Numerical investigations on intermittency route to aeroelastic flutter. 2016. *Procedia Engineering* 144: 967-973. doi: 10.1016/j.proeng.2016.05.125
9. M. Rajaguru and S.M. Keralavarma. A discrete dislocation model of creep in single crystals. 2016. *TMS Annual Meeting CONFCODENUMBER,* pp. 351-358
10. G. Rajoriya, C. Vijay and P.A. Ramakrishna. Numerical method to estimate thermal conductivity of a model composite propellant. 2016. *52nd AIAA/SAE/ASEE Joint Propulsion Conference, 2016*
11. M.T. Thanusha and S. Sarkar. Uncertainty quantification of subcritical nonlinear aeroelastic system using integrated interpolation method and polynomial chaos expansion. 2016. *Procedia Engineering* 144: 982-989. doi: 10.1016/j.proeng.2016.05.128
12. S. Manoj Prabakar and T.M. Muruganandam. Investigation of diffusers for two stream supersonic wind-tunnels. 2016. *54th AIAA Aerospace Sciences Meeting*
13. N. Rathi and P.A. Ramakrishna. Reducing residue in aluminized fuel-rich propellant for ramjets. 2016. *52nd AIAA/SAE/ASEE Joint Propulsion Conference, 2016*
14. N. Hamza, H. Murthy and P.A. Ramakrishna. Effect of ageing on mechanical properties of composite solid propellants. 2016. *52nd AIAA/SAE/ASEE Joint Propulsion Conference, 2016*
15. A. Ramprakash and T.M. Muruganandam. Experimental study on start/unstart behavior of two-dimensional mixed compression inlet by cowl actuation. 2016. *52nd AIAA/SAE/ASEE Joint Propulsion Conference, 2016*
16. J.B. Samuel and S. Ghoshy. High-temperature effects on DNS of shock/turbulence interaction. 2016. *46th AIAA Fluid Dynamics Conference*
17. V.R. Unni and R.I. Sujith. Precursors to blowout in a turbulent combustor based on recurrence quantification. 2016. *52nd AIAA/SAE/ASEE Joint Propulsion Conference, 2016*
18. S. Safaei, A.S. Rangwala, V. Raghavan and T. M. Muruganandam. Measurement of radiative heat flux from soot emissions in the short wave infrared band. 2016. *Spring Technical Meeting of the Eastern States Section of the Combustion Institute, ESSCI 2016*
19. W.D. Remigius, H.P. Lal, J.K. Dubey, S.M. Godbole, S. Gupta and S. Sarkar. Stochastic reduced order modelling of a fluid structure interaction system. 2016. *Procedia Engineering* 144: 1213-1219. doi: 10.1016/j.proeng.2016.05.104
20. R. Ramakrishnan, A. Girdhar and S. Ghosh. Immersed boundary methods for compressible laminar flows. 2016. *ECCOMAS Congress 2016 - Proceedings of the 7th European Congress on Computational Methods in Applied Sciences and Engineering* 4:7029-7044
21. R. Hun, A. Tiwari and N.K. Sinha. Design and simulation of autopilot control system for stratospheric airship. 2016. *IFAC-PapersOnLine* 49 (1): 712-717. doi: 10.1016/j.ifacol.2016.03.140
22. D.S. Bhatt and S.R. Chakravarthy. Mechanism of pulsations of a triple flame in mixing layer arising due to thermo-diffusive instability with Lewis number greater than unity. 2016. *Spring Technical Meeting of the Western States Section of the Combustion Institute, WSSCI 2016*
23. N. Fatima and K. Gopal. Transient CFD analysis of three dimensional dynamic stall on 5MW NREL wind turbine baseline rotor. 2016. *34th AIAA Applied Aerodynamics Conference*
24. P. Sharma, D. Varma and S. Ghosh. Novel vortex generator for mitigation of shock-induced flow separation. 2016. *Journal of Propulsion and Power* 32(5): 1264-1274. doi: 10.2514/1.B35962
25. L. Kabiraj, A. Saurabh, H. Nawroth, C.O. Paschereit, R.I. Sujith and N. Karimi. Recurrence plots for the analysis of combustion dynamics. 2016. *Springer Proceedings in Physics* 180: 321-339. doi: 10.1007/978-3-319-29922-8_17
26. N. Raju, M. Prabakar, B. Medhi, M. Osborn Oliver and T.M. Muruganandam. Tomographic schlieren system for visualisation of supersonic jet. 2016. *54th AIAA Aerospace Sciences Meeting*
27. W.D. Remigius, S. Garg and S. Sarkar. Uncertainty quantification of a non-linear rotating plate behavior in compressible fluid medium. 2016. *Procedia Engineering* 144: 974-981. doi: 10.1016/j.proeng.2016.05.126
28. G.L.E. Prasad, B.S.K. Gowda and R. Velmurugan. Prediction of flexural properties of coir polyester composites by ANN. 2016. *Conference Proceedings of the Society for Experimental Mechanics Series* 7: 173-180. doi: 10.1007/978-3-319-21762-8_21
29. Salini S. Nair, Ranjith Mohan and Gopal Gaonkar (FAU, Florida). Influence of dynamic inflow states on coupled rotor fuselage modes. 2016. *AHS 72nd Annual Forum 2016* 2 (Jun-16): 1394-1404
30. Salini S. Nair and Ranjith Mohan. Detection and control of ground resonance using phase of fuselage attitude rates. 2016. *42nd European Rotorcraft Forum 2016*
31. R. Dhavaleswar Ramaswamy, Shourav Pednekar, Salini S. Nair and Ranjith Mohan. Prediction of rotor-wake interaction noise using finite-state dynamic wake inflow model. 2016. *42nd European Rotorcraft Forum 2016*
32. R. Vellingiri Ramanujam, Salini S. Nair and Ranjith Mohan. An investigation of lift augmentation in forced pitching and flapping rotors. 2016. *5th Asian/Australian Rotorcraft Forum 2016* 1 (Mar-17): 95-101
33. Shourav Pednekar, R. Dhavaleswar Ramaswamy and Ranjith Mohan. Helicopter rotor noise optimization 2016. *5th Asian/Australian Rotorcraft Forum 2016* 1(Mar-17): 102-119
34. Gaurav Marothiya and P.A. Ramakrishna. Enhancement of aluminium reactivity to achieve high burn rate for an end burning rocket motor. 2016. *International High Energy Materials Conference and Exhibit* vol. 10
35. G. Sathesh Kumar, Gaurav Marothiya, P. A. Ramakrishna, Sunitha Devi Jena and Abhishek Richhariya. Development of high burn rate composite propellant for nozzleless booster application. 2016. *International High Energy Materials Conference and Exhibit* vol. 10
36. Y. Raj Alexander, Nagendra Kumar and P. A. Ramakrishna. Study of extinction characteristics of solid rocket motor propellant using rapid depressurization. 2016. *International High Energy Materials Conference and Exhibit* vol. 10
37. Chaitanya Vijay, K. Raghuvarun, K. V. Sai Bhargav, Krishnan Balasubramaniam and P. A. Ramakrishna. Experimental validation of random packs for composite solid propellants using X-ray computed tomography. 2016. *International Symposium on NDT in Aerospace* vol.8
38. R. Perumal and P.A. Ramakrishna. Effect of ageing on burn rate of Copper chromite-Ammonium Perchlorate Pellet. 2016. *LAMSYS-2016*
39. Mahesh Shrikishan Ingole, Nikunj Rathi and P.A. Ramakrishna. Alternate air breathing engines for large thrust required for launch vehicle applications. 2016. *LAMSYS-2016*
40. N. Hamza, P. A. Ramakrishna and H. Murthy. A novel technique to measure thermal diffusivity of composite solid propellants. 2016. *LAMSYS-2016*

Distinguished Visitors to the Department

Sl. No.	Name and Designation	Date of visit	Purpose
1.	Dr. Narayanaswamy, North Carolina State University	27 May 2016	Guest Lecture: Combustion and Laser Diagnostics research at NC State: Enabling Future Clean and Efficient Energy Technology
2.	Lt. Gen. Shankar and his Team	4 June 2017	Consultations on UAV for Army's Use and Discussion with few faculty members
3.	Dr. Raja Banerjee, Associate Professor, Head of the Department, Department of Mechanical and Aerospace Engineering, IIT Hyderabad	14 June 2017	Guest Lecture: GPU-based Parallelization for CFD Solvers
4.	Dr. T.N. Venkatesh, Principal Scientist, NAL, Bengaluru	15 July 2016	Guest Lecture: CAT Encounters – Some aspects of aviation weather
5.	Dr. Kalyana Chakravarthy, Scientist 'F', DRDL, Hyderabad	27 July 2016	Guest Lecture: Vortex pairing and reverse energy cascade in 2D simulation of solid rocket motor-like flow geometry
6.	Dr. Thulasikanth, Assistant Professor, Department of Mechanical Engineering, SRM University, Chennai	30 July 2016	Visited the Composite Lab
7.	Mr. Nitin Gupta, CEO, Navstik Labs, Pune	5 August 2016	Guest Lecture: Commercial drone applications: challenges and opportunities
8.	Dr. S.P. Viswanathan, President, Empereal-KGDS Renewable Energy Private Limited, Saravanampatti, Coimbatore	8 August 2016	Guest Lecture: Solar desalination of sea water and other renewable energy based resource production

Sl. No.	Name and Designation	Date of visit	Purpose
9.	Dr. Subrahmanyam Duvvuri, Postdoctoral Scholar in Aerospace, California Institute of Technology, Pasadena	18 August 2016	Guest Lecture: Non-linear scale interactions in a forced turbulent boundary layer
10.	Dr. Kalyan Sehsadri, Assistant Professor, Mechanical Engineering, University of california, Sandiego	19 August 2016	Guest Lecture: Fundamental aspects of structure of laminar premixed flames based on rate-ratio asymptotic analysis
11.	Dr. Irfan Mulla Ahmed, Post Doctoral Fellow, CNRS, France	2 September 2016	Guest Lecture: Towards better understanding of combustion processes using advanced laser diagnostics
12.	Dr. Frank Eulitz, Vice-President for Base Technologies, Power and Gas Division, Siemens	21 September 2016	Guest Lecture: Power and gas industry challenges and opportunities
13.	Dr. Andreas Dreizler, Professor, Mechanical Engineering, Technische Universitat Darmstadt, Germany	7 October 2016	Guest Lecture: Flame-wall interactions
14.	Dr. Vrishank Raghav, American Heart Association Post doctoral Fellow at Georgia Institute of Technology	16 December 2016	Guest Lecture: The third dimension of dynamic stall
15.	Dr. A. Amine Benszerga, Professor, Aerospace Engineering, Materials Science and Engineering, Texas A&M	19 December 2016	Guest Lecture: Ductile fracture of metals: from cell models to structural analysis
16.	Dr. Mitra Thomas, Rolls-Royce Engines (UK)	9 January 2017	Guest Lecture: Optimizing turbine end wall cooling systems
17.	Dr. Lazar Chitilappily, ISRO	18 January 2017	Guest Lecture: Scramjet technology demonstrator flight testing
18.	Dr. Ashok, ISRO	18 January 2017	Guest Lecture: Numerical simulation of scramjet flight test demonstrator – end-to-end simulation with combustion and comparison with flight data – regulated and blowdown modes of fuel supply
19.	Dr. Santhosh Hemchandra, Assistant Professor, Department of Aerospace Engineering, IISC, Bengaluru	3 February 2017	Guest Lecture: Semi-open loop heat release forcing – a new route to combustion instability?
20.	Cdr Ashley Derrick (Senior Pilot-INAS 339)	21 February 2017	Guest Lecture: Hazards and challenges to operating helicopters at sea
21.	Dr. Mani Sarathy, Associate Professor of Chemical Engineering, Clean Combustion Research Centre, King Abdullah University of Science and Technology, Kingdom of Saudi Arabia	21 February 2017	Guest Lecture: Simulation driven fuel design: atoms-to-engines and wells-to-wheels
22.	Dr. Ananthkrishnan	9 March 2017	Guest Lecture: Guidance, control and dynamics of a multi-thruster kinetic warhead
23.	Dr. G.K. Suryanarayana, NAL, Bengaluru	15 March 2017	Guest Lecture: Mass-flow simulation in air-intake models at subsonic mach numbers using diffuser of wind tunnel as passive ejector
24.	Dr. Simone Eichmann, Application Engineer, Measurement and Analytical, Emerson Automations Solutions, Emerson Process Management, GmbH and Co, Hasselroth, Germany	16 March 2017	Guest Lecture: Conventional and spectroscopic techniques for fast gas analysis
Distinguished Visitors (Students)			
25.	Students of St. Peter's College of Engineering and Technology, Avadi, Chennai	9 September 2016	Visited the Gas Dynamics Lab
26.	Students of Nehru Children's Cultural Association, Thiruvanmiyur, Chennai	15 December 2016	Visited the labs
27.	Students from alamathy Village by the Divine Mother Society (DMS), Chennai	2 February 2017	Visited the labs
28.	Students from Acharya Institute of Technology, Bengaluru	10 March 2017	Visited the labs

4.1.6. Other Activities of the Department

Faculty visit

Sl. No.	Faculty Member	Purpose of Visit	Date and Venue
1.	Dr. Manikandan Mathur	Research Activities	1-3 April 2016, SPAC Applications Centre, Ahmedabad
2.	Dr. Shyam Kerala Varma	Collaborative Scientific Exchange Program	16-24 July 2016, Lausanne, Switzerland

Students' visit from abroad

Sl. No.	Student	University/Institution	Purpose of Visit
1.	Mr. Tomas Norton De Matos Cortes	Instituto Superior Technico, Portugal	Course Work
2.	Mr. Jose Eduardo Fernandes Rosa	Instituto Superior Technioco, Portugal	Course Work
3.	Mr. Gabriel Pereira Correia Cabral da Costa	Instituto Superior Technico, Portugal	Course Work
4.	Mr. Andre Manuel De Gouveia E Melo Santos	Instituto Superior Technico, Portugal	Course Work
5.	Mr. Etienne, Pascal Azema	ESTACA, France	Course Work
6.	Ms. Emeline, Aurore, Helene Deslandes	ESTACA, France	Course Work
7.	Mr. David Hornet	ESTACA, France	Course Work
8.	Ms. Cecile, Lydia, Francoise Jaworski	ESTACA, France	Course Work
9.	Mr. Simon, Baptiste, Pascal Mariault	ESTACA, France	Course Work

Major infrastructure development in the department

Waves and Instabilities Lab

Rotorcraft Lab

4.2. Department of Applied Mechanics

4.2.1. Introduction

The Department of Applied Mechanics has been in existence since 1962 and is a full-fledged interdisciplinary graduate research department over the years. The department focuses on academic activities in three broad areas: (1) Biomedical Engineering, (2) Fluid Mechanics and (3) 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), Inter Disciplinary Dual Degree: Biomedical Engineering and Computational Engineering

New courses introduced

Sl. No.	Course No.	Title
1.	AM5080	High Performance Computing for Engineering Applications
2.	AM5024	Introduction to Healthcare Technology
3.	AM5030	Linear Dynamical Systems
4.	AM5016	Numerical Methods in Biomedical Engineering
5.	AM5017	Statistics for Biomedical Engineers
6.	AM5015	Regulations and Standards in Medical Device Technology
7.	AM5014	Microhydrodynamics
8.	AM5013	Operating Theater Instrument and Medical Technology
9.	AM5019	Advanced Biomedical Laboratory
10.	AM5022	Modelling and Simulation Laboratory
11.	AM5023	Physiological Measurements and Instrumentation Laboratory
12.	AM5018	Experimental Fluid Mechanics
GIAN Courses		
13.		Mechanics and Modelling of soft materials
14.	AM6102	Mechanics of Fracture
15.		Turbulence Modelling for Engineering Fracture
16.		Finite Element Methods in Fluids
17.	AM6104	Fluid Vortices: From Vorticity to Differential Geometry
18.	AM6013	Mechanics of Nano-Electronics Packaging
19.	161003H01	Pediatric Biomechanics – Deformities, Treatment and Injury Prevention
20.		Cardio-vascular Fluid Mechanics

New laboratories established

(i) Flow Instabilities and Complete Fluids Laboratory
(ii) Energy and Emissions Laboratory
(iii) Computational Flow, Turbulence and Combustion Laboratory
(iv) Soft Matter Mechanics Laboratory

Students on roll as of September 2016+M.S. and Ph.D. admission in January 2017

Programme	Year I	Year II	Year III	Year IV	Year V and others	Total
Dual Degree	-	-	-	-	30	-
M.Tech.	22	25	-	-	-	-
M.S.	21	18	9		4	52
Ph.D.	28	26	15	12	21	102
Upgradation	2	4	1	5	10	22
DPHD	5	5	7	-	-	17

Student/scholars who attended conference/seminar/symposia abroad/India

Sl. No.	Student/Scholar	Roll No.	Conference/Seminar/Symposia/ Workshop	Date and Venue	Financial Assistance from
Abroad					
1.	R. Dhanush	AM13D021	Computational Motor Control Workshop	Motor Control Summer School, Tzuba, Israel	Alumni
2.	Ravi Dadsena	AM15D002	Computational Motor Control Workshop	Motor Control Summer School, Tzuba, Israel	Alumni
3.	Allmin Pradhap Singh	AM14S016	Perspectives in Nonlinear Dynamics	25-29 July 2016, Berlin, Germany	IIT Madras
4.	G. Nagarajan	AM15D007	Workshop on Visual Image interpretation	11-13 July 2016, Bath Spa, UK	IIT Madras
5.	G. Nagarajan	AM15D007	Discussion with Department of Medical informatics, Uniklinik, RWTH Aachen University	14-16 July 2016, Aachen, Germany	IIT Madras
6.	Sandeep Naik	AM14S025	46th AIAA Fluid Conference Flow Past Rotating Elliptic Cylinder	13-17 June 2016, Washington DC	IIT Madras
7.	Allmin Pradhap Singh	AM14S016	Perspectives in Nonlinear Dynamics	25-29 July 2016, Berlin, Germany	IIT Madras
8.	Kiran Marri	AM13D026	Perspectives in Nonlinear Dynamics	25-29 July 2016, Berlin, Germany	IIT Madras
9.	J. Venkatramani	AM12D026	11th International Conference on Flow Induced Vibrations	4-6 July 2016, Den Haag, Netherlands	IIT Madras
10.	B. Lokesh	AM14D015	IEEE International Ultrasonics Symposium	18-21 September 2016, France	IIT Madras
11.	K. Jeevananthan	AM13S025	69th Annual Meeting of the APS Division of Fluid Dynamics	20-22 November 2016, Portland, Oregon, USA	IIT Madras
12.	N. Parameswar Rao	AM11D015	ASME 2016 IMECE International Mechanical Engineering Congress and Exposition	11-17 November 2016, Phoenix, AZ, USA	IIT Madras
13.	Sathiyamoorthy Selladurai	AM15D005	15th International Tissue Elasticity Conference	16-19 October 2016, Fairlee Vermont, USA	IIT Madras
14.	Ali Arshad Kothawala	AM14D401	15th International Tissue Elasticity Conference	16-19 October 2016, Fairlee Vermont, USA	IIT Madras
15.	Anurag Pant	AM11D201	69th Annual Meeting of the APS Division of Fluid Dynamics	20-22 November 2016, Portland, Oregon, USA	IIT Madras
16.	Srinidhi	AM14S009	69th Annual Meeting of the APS Division of Fluid Dynamics	20-22 November 2016, Portland, Oregon, USA	IIT Madras
17.	Nayan Bhatt	AM14S002	Society for Neuroscience (SFN) Annual Meeting 2016	12-16 November 2016, San Diego, USA	IIT Madras
18.	Kiran Marri	AM13D026	Proceedings of the ASME 2016 Dynamic Systems and Control Conference	14-16 October 2016, Minnesota, USA	IIT Madras
19.	Anitha Alex	AM11D011	Biomedical Applications in Molecular, Structural, and Functional Imaging (SPIE Medical Imaging 2017)	11-16 February 2017, Orlando, Florida, USA	IIT Madras
20.	P. Suhail	AM14D016	54th International Rocky Mountain Biomedical Symposium	31 March-1 April 2017, Denver, Colorado, USA	IIT Madras

Sl. No.	Student/Scholar	Roll No.	Conference/Seminar/Symposia/ Workshop	Date and Venue	Financial Assistance from
21.	Diptasree Maitra-Ghosh	AM13D004	54th International Rocky Mountain Biomedical Symposium	31 March-1 April 2017, Denver, Colorado, USA	IIT Madras
22.	M. Kiran	AM13D026	54th International Rocky Mountain Biomedical Symposium	31 March-1 April 2017, Denver, Colorado, USA	IIT Madras
23.	G. Nagarajan	AM15D007	54th International Rocky Mountain Biomedical Symposium	31 March-1 April 2017, Denver, Colorado, USA	IIT Madras
India					
1.	Chandan Bose	AM14D403	6th International Congress on Computational Mechanics and Simulation	27 June-1 July 2016, IIT Bombay	IIT Madras
2.	Ravi Dadsena	AM15D002	3rd Annual Conference of the Association for Cognitive Science	3-5 October 2016, IIT Gandhinagar	IIT Madras
3.	Bhadra Kumar	AM15D040	3rd Annual Conference of the Association for Cognitive Science	3-5 October 2016, IIT Gandhinagar	IIT Madras
4.	Dhanush R.	AM13D021	3rd Annual Conference of the Association for Cognitive Science	3-5 October 2016, IIT Gandhinagar	IIT Madras
5.	Anurag Pant	AM11D201	Complex Fluids Conference	12-13 November 2016, Hyderabad	IIT Madras
6.	K. Vipin	AM16D300	Complex Fluids Conference	12-13 November 2016, Hyderabad	IIT Madras
7.	R. Vishnu	AM12D024	Complex Fluids Conference	12-13 November 2016, Hyderabad	IIT Madras
8.	Sanal K. Mohan	AM13S010	Complex Fluids Conference	12-13 November 2016, Hyderabad	IIT Madras
9.	Aravind Kumar	AM14D402	4th International Conference on Advances in Control and Optimization of Dynamical Systems (ACODS 2016)	1-5 February 2016, NIT Trichy	IIT Madras
10.	Bhakti Patel	AM12D029	11th International Symposium on Plasticity and Impact Mechanic (IMPLAST 2016)	11-14 December 2016, IIT Delhi	IIT Madras
11.	Debojyoti Pandit	AM13D003	11th International Symposium on Plasticity and Impact Mechanic (IMPLAST 2016)	11-14 December 2016, IIT Delhi	IIT Madras
12.	R. Vishnudas	AM12D024	6th International Conference on Fluid Mechanics and Fluid Power (FMFP 2016)	15-17 December 2016, MNNIT Allahabad	IIT Madras
13.	P. Suhail	AM14D016	International Conference on Advances In Scientific Computing	28-30 November 2016, IIT Madras	IIT Madras
14.	Diptasree Maitra Ghosh	AM13D004	International Conference on Advances in Scientific Computing	28-30 November 2016, IIT Madras	IIT Madras
15.	Kiran Marri	AM13D026	International Conference on Advances in Scientific Computing	28-30 November 2016, IIT Madras	IIT Madras
16.	S. Krishnakumar	AM13D027	10th Conference on Nonlinear Systems and Dynamics	16-18 December 2016, IISER Kolkata	IIT Madras
17.	Aasifa Rounak	AM15D201	10th Conference on Nonlinear Systems and Dynamics	16-18 December 2016, IISER Kolkata	IIT Madras
18.	Chandan Bose	AM14D403	10th Conference on Nonlinear Systems and Dynamics	16-18 December 2016, IISER Kolkata	IIT Madras
19.	Chandan Bose	AM14D403	6th International and 43rd National Conference on Fluid Mechanics and Fluid power (FMFP) 2016	15-17 December 2016, MNNIT Allahabad	IIT Madras
20.	Niraj Kumar Singh	AM15D301	Workshop on Brain Science and Technology	14-18 December 2016, IIT Delhi	IIT Madras
21.	R. Banuvathy	AM15D011	Workshop on Brain Science and Technology	14-18 December 2016, IIT Delhi	IIT Madras
22.	Ravi Dadsena	AM15D002	Workshop on Brain Science and Technology	14-18 December 2016, IIT Delhi	IIT Madras
23.	Bhadra S. Kumar	AM15D040	Workshop on Brain Science and Technology	14-18 December 2016, IIT Delhi	IIT Madras
24.	Satish Chandra Salam	AM15S013	Workshop on Brain Science and Technology	14-18 December 2016, IIT Delhi	IIT Madras
25.	Rahul Kumar	AM15D404	10th Conference on Nonlinear Systems and Dynamics	16-18 December 2016, IISER Kolkata	IIT Madras
26.	Aravind Kumar	AM14D402	10th Conference on Nonlinear Systems and Dynamics	16-18 December 2016, IISER Kolkata	IIT Madras
27.	Harish Lambadi	AM13D025	Seminar on MECHANICS of Nano Electronics Packaging	5-9 December 2016, IIT Madras	IIT Madras
28.	R. Vishnudas	AM12D024	43rd National Conference on Fluid Mechanics and Fluid Power (FMFP 2016)	15-17 December 2016, MNNIT Allahabad	IIT Madras
29.	S. Krishna Kumar	AM13D027	Structural Engineering Convention 2016	21-23 December 2016, CSIR-SERC Taramani, Chennai	IIT Madras
30.	Chandan Bose	AM14D403	Structural Engineering Convention 2016	21-23 December 2016, CSIR-SERC Taramani, Chennai	IIT Madras
31.	Gidituri Harindha	AM14D013	COMPFLU-2016 (Complex Fluids - 2016)	12-14 December 2016, Hyderabad	IIT Madras
32.	Hridya P. Lal	AM12D004	Structural Engineering Convention 2016	21-23 December 2016, CSIR-SERC Taramani, Chennai	IIT Madras
33.	J. Venkatramani	AM12D026	Structural Engineering Convention 2016	21-23 December 2016, CSIR-SERC Taramani, Chennai	IIT Madras
34.	Bhakti Patel	AM12D029	IMPLAST 2016	10-16 December 2016, IIT Delhi	IIT Madras
35.	Luv Verma	AM13D028	IMPLAST 2016	10-16 December 2016, IIT Delhi	IIT Madras
36.	G. Satyavratan	AM16D037	Workshop on Image and Speech Processing (WISP)	24 December 2016, IIT Hyderabad	IIT Madras
37.	G. Satyavratan	AM16D037	Indo-US Workshop on Big Data Analysis for Transportation Engineering Systems	5-6 December 2016, Department of Civil Engineering, IIT Madras	IIT Madras
38.	M. Navaneetha Krishna	AM16D001	Indo-US Workshop on Big Data Analysis for Transportation Engineering Systems	5-6 December 2016, Department of Civil Engineering, IIT Madras	IIT Madras
39.	N. Punitha	AM15D037	Indo-US Workshop on Big Data Analysis for Transportation Engineering Systems	5-6 December 2016, Department of Civil Engineering, IIT Madras	IIT Madras
40.	G. Nagrajan	AM15D007	Indo-US Workshop on Big Data Analysis for Transportation Engineering Systems	5-6 December 2016, Department of Civil Engineering, IIT Madras	IIT Madras

Sl. No.	Student/Scholar	Roll No.	Conference/Seminar/Symposia/ Workshop	Date and Venue	Financial Assistance from
41.	Diptasree Maitra Ghosh	AM13D004	Indo-US Workshop on Big Data Analysis for Transportation Engineering Systems	5-6 December 2016, Department of Civil Engineering, IIT Madras	IIT Madras
42.	P. Ghosh Suhail	AM14D016	Indo-US Workshop on Big Data Analysis for Transportation Engineering Systems	5-6 December 2016, Department of Civil Engineering, IIT Madras	IIT Madras
43.	M. Navaneetha Krishnan	AM16D001	Second Annual Workshop on Computational Brain Research	5-6 December 2016, Department of Civil Engineering, IIT Madras	IIT Madras
44.	G. Nagrajan	AM15D007	Second Annual Workshop on Computational Brain Research	5-6 December 2016, Department of Civil Engineering, IIT Madras	IIT Madras
45.	Alan Sam	AM14D010	NANOINDIA 2017	15-16 March 2017, IIT Delhi	IIT Madras
46.	P. Rohini	AM16D301	Conference on Recent Advances in MRI and MRS	21-23 March 2017, Indian National Science Academy, New Delhi	IIT Madras

Names of students/scholars who won outside prizes and awards

Sl. No.	Student/Scholar	Roll No.	Name of Prize	Awarded by
1.	Ajinkya Kulkarni	AM14S013	Research internship	Hong Kong University of Science and Technology, 1 October 2016-25 March 2017
2.	Raj Arjunan	AM15D029	Prime Minister's Fellowship for Doctoral Research	Awarded by Government of India and CII.
3.	Harish Pothukuchi	AM12D201	Research internship at RWTH AACHEN for the period 1 December 2016-31 May 2017	
4.	Bhadra S. Kumar	AM15D040	Best paper presentation award for "Force drift on Visual occlusion of multifinger force production improves on introduction of post-trial performance feedback" in the Annual Conference of the Association of Cognitive Science (ACCS 2016) IIT Gandhinagar, 3-5 October 2016	Association of Cognitive Science (ACCS 2016) IIT Gandhinagar, 3-5 October 2016
5.	J. Venkatramani	AM12D026	A model free approach to forewarning flutter instability using entropy measures. Structural Engineering Convention, SERC, 21-23 December. The award constitutes a cash prize from Elsevier for 250 euros and a citation.	Elsevier
6.	G. Mallikarjunachari		Gandhian Young Technological Innovation (GYTI) 2017 Awards for their projects	Gandhian Young Technological Innovation (GYTI) 2017 Awards
7.	Nayan Bhatt	AM14S002	NRDC "Budding Innovators award 2014"	NRDC "Budding Innovators award 2014"
8.	B. Ramakrishna	AM12D002	Selected for BIRAC-SRISTI project worth ₹ 1 lakh through Gandhian Young Technological Innovation (GYTI) 2017 for their projects	BIRAC-SRISTI
9.	Amrita Rath	AM12D028	Best Poster Award, Materials Research Society Conference, 2017, Phoenix, USA	Materials Research Society MRS

Students/Scholars who won convocation/Institute Day Prize

Sl. No.	Name of the Student/Scholar	Roll No.	Prize	Name of Donor
1.	Amrita Rath	AM12D028	Institute Research Award 2017 (₹ 20,000)	IIT Madras

4.2.3. Faculty and their Activities

Faculty

Name and Qualifications	Major Areas of Specialization
Professors	
S. Vengadesan, Ph.D. (Head)	CFD and turbulence modelling-basics, advanced topics and applications to engineering problems, FSI, biofluid flows
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
S. Ramakrishnan, Ph.D.	Biomedical instrumentation, signal analysis, brain image analysis
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
Associate Professors	
A. Arockiarajan, 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, bio-fluid dynamics
A. Baburaj Puthanveettil, 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
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
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
Assistant Professors	
Raghavendra Sai V. V., Ph.D.	Biosensor for healthcare, fibre optic sensor and instrumentation, nanotechnology
Rinku Mukherjee, Ph.D.	Applied aerodynamics-flow modelling, unsteady wake phenomenon, dynamic stall and formation flight, CFD

Name and Qualifications	Major Areas of Specialization
S. Satyanarayanan, Ph.D.	Aerosol mechanics, air quality – sensors, control equipment, renewable thermal energy – WHR/ solar
Shaikh Faruque Ali, Ph.D.	Vibration and its controls, smart structures and energy harvesting
Varadhan S.K.M., Ph.D.	Neural control of human movement, neuro mechanics and biomechanics
Saumendra Kumar Bajpai, Ph.D.	Cell mechanics, tissue mechanics, biophysics of tumours, vascular mechanics
Anubhab Roy, Ph.D.	Hydrodynamic stability, microhydrodynamics, geophysical flows, living fluids
Ganesh Tamadapu, Ph.D.	Mechanics of elastomers, encapsulated microbubles, tensegrity structures

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

Sl. No.	Coordinator(s)	Title	Period
Conference			
1.	Dr. Arun Kumar Thittai, Conference Co-ordinator	AMICON 2016 (Advanced Onco-Imaging Conference) organized by TN & PY chapter of Indian Radiological and Imaging Association	30-31 July 2016
Workshop			
1.	Prof. K Ramesh	INAE: Workshop on Digital Photoelasticity using DigiTFP™	18 September 2016
Short-term courses			
1.	Prof. B.S.V.P. Patnaik	GIAN: Fluid Vortices: From Vorticity to Differential Geometry	1-6 August 2016
2.	Dr Satyanarayanan Seshadri	CEP: Industrial Heating using Solar Thermal Technologies	19 August 2016
3.	Prof. K. Ramesh	AICTE: Short Term Training Programme on Digital Optical Measurements: Digital Photoelasticity and Digital Image Correlation.	12-17 September 2016
4.	Prof. M. Manivannan	Haptic Systems, 2nd SERB School on Robotics	14-19 November 2016
5.	Prof. C. Lakshmana Rao	GIAN Course: Mechanics of Nano-Electronic Packaging.	5-10 December 2016
6.	Prof. B.S.V.P. Patnaik	GIAN Course: Cardiovascular Fluid Mechanics	5-10 December 2016
7.	Prof. K. Arul Prakash	GIAN: Finite Elements in Fluids	1-5 August 2016
8.	Prof. S. Ramakrishnan	Pediatric Biomechanics - Deformities, Treatment and Injury Prevention	20-24 March 2017
9.	Prof. B.S.V.P. Patnaik	Cardio Vascular Solid and Fluid Mechanics	26-31 March 2017

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

Sl. No.	Faculty Member	Title	Institution	Period
Workshops				
1.	Prof. S. Ramakrishnan	Workshop on Issues and trends in Regulation Sciences at George Washington University	Washington DC, USA	11-14 July 2016
2.	Prof. S. Ramakrishnan	Workshop and Interaction with Faculty Members	University of Southern California, USA	8 July 2016
3.	Dr. V. V. Raghavendra Sai	International Workshop on photonics Polymer for Innovation	Nasu, Japan	9-15 October 2016
4.	Dr. V. V. Raghavendra Sai	Workshop on Recent Advances in Biosensors 2016 DEBEL, Bengaluru	DEBEL, Bengaluru	6-7 October 2016
5.	Prof. Mahesh V. Panchagnula	Indo-French Workshop on Phase Change Thermal Systems organized by CEFIPRA and IIT Kanpur	IIT Kanpur	29 November-1 December 2016
6.	Dr. K. Arul Prakash	Indo-UK Exploratory workshop on Cardio-vascular healthcare needs	Swansea University	21-22 December 2016
7.	Prof. Ramasubba Reddy	Workshop on Signal & Image Processing	SVU College of Engineering, Tirupati	2 March 2017
8.	Prof. M. Manivannan	Workshop on Virtual and Augmented Reality, College of Engineering	College of Engineering, Guindy, Chennai	27-28 February 2017
9.	Prof. M. Manivannan	Workshop on Biomechanics, Implants and Related Medical Devices, Indian Institute of Engineering Science and Technology	Shibpur, Kolkata	14-15 March 2017
Symposia				
1.	Prof. S. Ramakrishnan	54th International Rocky Mountain Biomedical Symposium	Denver, Colorado, USA	31 March-1 April 2017
2.	Dr. Arun Kumar Thittai	Conference in SPIE Medical Imaging Symposium	Orlando, Florida, USA	15-19 February 2017
3.	Dr. V. V. Raghavendra Sai	National Seminar on Biosensors and Wearable Devices, Sri Ramakrishna Engineering College	Coimbatore	11 March 2017
Conferences				
1.	Prof. Mahesh V. Panchagnula	Emil Hopfinger Colloquium	LEGI, Grenoble, France	11-17 May 2016
2.	Prof. S. Ramakrishnan	Interactive Meeting and attended World Congress 2016 on Biomarkers and Diagnostics	University of Drexel, Philadelphia, USA	16-18 May 2016
3.	Dr. A P Baburaj	Emil Hopfinger Colloquium	LEGI, Grenoble, France	11-17 May 2016
4.	Prof. K. Ramesh	International Conference on Processes in Combined Digital Optical and Imaging Methods applied to Mechanical Engineering	Monte Verita, Ascona, Switzerland	8-13 May 2016
5.	Dr. V. V. Raghavendra Sai	Biosensors World Congress 2016	Gothenbuirg, Sweden	25-27 May 2016
6.	Dr. Varadhan S.K.M.	A comparison of some linear methods for studying hand posture classification and reconstruction, Computational Motor Control Workshop	Ben-Gurion University of the Negev, Israel	19-21 June 2016
7.	Dr. Varadhan S.K.M.	Post-trial performance feedback based adaptations of visual occlusion effects in multi finger force production	Motor Control Summer School, Tzuba, Israel	21-25 June 2016
8.	Prof. S. Vengadesan	46th AIAA Fluid Conference Flow Past Rotating Elliptic Cylinder	Washington DC, USA	13-17 June 2016
9.	Prof. Mahesh V. Panchagnula	Pan-IIT Association of Greater New England Alumni Leadership Conference	Boston, USA	11-16 August 2016
10.	Dr. Abhijit Chaudhuri	International Conference on Geomechanics, Geoenergy and Georesources (IC3G)	Melbourne, Australia	28-29 September 2016
11.	Dr. A. Arockia Rajan	ASME/SMASIS 2016	Stowe, VT, USA	28-30 September 2016
12.	Dr. Arun Kumar Thittai	15th International Tissue Elasticity Conference	Fairlee Vermont, USA	16-19 October 2016
13.	Dr. K. Arul Prakash	15th Asian Congress of Fluid Mechanics (15th ACFM)	Kuching, Malaysia	20-24 November 2016
14.	Dr. K. Arul Prakash	ASME 2016 IMECE International Mechanical Engineering Congress and Exposition	Phoenix, AZ, USA	11-17 November 2016
15.	Dr. Baburaj Puthenveettil	69th Annual Meeting of the APS Division of Fluid Dynamics	Portland, Oregon,	20-22 November 2016
16.	Prof. Mahesh V. Panchagnula	69th APS DFD meeting	Portland, Oregon, USA,	20-22 November 2016
17.	Dr. Rinku Mukherjee	15th ACFM	Kuching, Malaysia	21-24 November 2016
18.	Dr. Varadhan S. K. M.	Society for Neuroscience (SFN) Annual Meeting 2016	San Diego, USA	12-16 November 2016
19.	Prof. S. Vengadesan	69th APS DFD Meeting	Portland, Oregon, USA	20-22 November 2016
20.	Prof. S. Ramakrishnan	Proceedings of the ASME 2016 Dynamic Systems and Control Conference	Minnesota, USA	12-14 October 2016
21.	Dr. Abhijit Chaudhuri	Melbourne-India Postgraduate Program Conference	Australia	30-31 January 2017
22.	Prof. S. Vengadesan	6th International and 43rd National Conference on Fluid Mechanics and Fluid Power (FMFP) 2016	MNNIT Allahabad	15-17 December 2016
23.	Prof. Mahesh V Panchagnula	Complex Fluid Conference	Hyderabad	12-13 November 2016

Sl. No.	Faculty Member	Title	Institution	Period
24.	Dr. A. P. Baburaj	Complex Fluid Conference	Hyderabad	12-13 November 2016
25.	Dr. Abhijit Chaudhuri	FMFP 2016	MNNIT Allahabad	15-17 December 2016
26.	Prof. S. Ramakrishnan	International Conference on Advances in Scientific Computing	IIT Madras	28-30 November 2016
27.	Prof. B.S.V.P. Patnaik	FMFP 2016	MNNIT Allahabad	15-17 December 2016
28.	Dr. Shaikh Faruque Ali	10th Conference on Nonlinear Systems and Dynamics	IISER Kolkata	16-18 December 2016
29.	Dr. A. Arockia Rajan	10th Conference on Nonlinear Systems and Dynamics	IISER Kolkata	16-18 December 2016
30.	Dr. Abhijit Chaudhuri	FMFP 2016	MNNIT Allahabad	15-17 December 2016
31.	Dr. V. D. Narasimhamurthy	CompFlu-2016	Hyderabad	12-14 December 2016
32.	Prof. K. Ramesh	INAE annual Convention at Space Applications Center	Ahmedabad	8-10 December 2016
33.	Dr. Sarith P. Sathian	NANOINDIA 2017	IIT Delhi	15-16 March 2017
34.	Prof. Ramasubba Reddy	National Conference	Chadalawada Ramanamma Engineering College, Tirupati	3 February 2017
35.	Prof. Ramasubba Reddy	National Conference on Science and Technology for Persons with Disabilities	Karunya University, Coimbatore	28 February 2017
36.	Prof. Ramasubba Reddy	National Conference on Emerging Communication Technologies Enabling Internet of Things	Audisankara College of Engineering & Technology	24 March 2017
37.	Dr. Arun K. Thittai	National Conference on Scientific Research and Development in Biomedical Engineering (SRDBME 17)	Alpha College of Engineering Thirumazhisai, Chennai	24 March 2017
38.	Prof. S. Ramakrishnan	Health Tech India 2017	Pragati Maidan, New Delhi	4 February 2017
39.	Prof. S. Ramakrishnan	Molecular Imaging session in Conference on Recent Advances in MRI and MRS, Indian National Science Academy	New Delhi	22 March 2017
40.	Dr. Sarith P. Sathian	Molecular Dynamics of Fluid flows in TEQIP-GIAN course on Microscale Fluid/Gas flows	IIT Kanpur	23 February-1 March 2017
41.	Dr. Anubhab Roy	Compflu 2016	Hyderabad	12-14 December 2016
42.	Dr. Pijush Ghosh	National Metallurgy Day - Domestic	Kanpur	10 November-14 December 2016
43.	Dr. Varadhan S. K. M.	3rd Annual Conference of the Association for Cognitive Science	IIT Gandhinagar	3-5 October 2016

Special lectures delivered by the faculty in other institutions

Sl. No.	Faculty Member	Topic	Institution	Date
1.	Dr. V. V. Raghavendra Sai	Invited talk and discussion on collaborative research	University of Southampton, UK	23 May 2016
2.	Prof. M. Ramasubba Reddy	Talk on Designing Medical Devices	Narayana Medical College Nellore, Andhra Pradesh	4 June 2016
3.	Dr. Varadhan S.K.M.	Classification and Reconstruction of hand postures – approaches to dimensionality reduction	Sagol School of Neuroscience, Tel Aviv University, Israel	June 2016
4.	Dr. N. Sujatha	Non-invasive tissue characterization: The role of optical tools	Department of Bimedical Engineering, NUS, Singapore	14 June 2016
5.	Prof. Ramasubba Reddy	Delivered an invited lecture INSPIRE Camp	SV Degree College, Kadapa, AP in the INSPIRE Camp.	24 September 2016
6.	Dr. V. V. Raghavendra Sai	Invited talk: Fiber optic chemical and biosensors with attomolar analyte detection for clinical diagnosis, Workshop on Recent Advances in Biosensors 2016	DEBEL, Bengaluru	6-7 October 2016
7.	Prof. Mahesh V. Panchagnula	Wetting phenomena in thermal systems, Indo-French Workshop on Phase Change Thermal Systems organized by CEFIPRA and IIT Kanpur	IIT Kanpur	29 November -1 December 2016
8.	Dr. Anubhab Roy	Living Fluids - Dynamics of Swimming Cells	National Institute of Technology, Surathkal, Karnataka	17-18 October 2016
9.	Prof. Ramasubba Reddy	Delivered an invited talk, Workshop on Signal and Image Processing	SVU College of Engineering,Tirupati	2 March 2017
10.	Dr. K. Arul Prakash	Large Edddy Simulation: Fundamentals and Applications	RWTH Aachen University, Nuclear Research Center, Juelich	31 January 2017
11.	Prof. M. Manivannan	Invited lecture: Workshop on Virtual and Augmented Reality	College of Engineering Guindy, Chennai	27-28 February 2017
12.	Prof. M. Manivannan	Invited lecture: Workshop on Biomechanics, Implants and Related Medical Devices	Indian Institute of Engineering Science and Technology Shibpur, Kolkata	14-15 March 2017
13.	Dr. Sarith P Sathian	Molecular Dynamics of Fluid flows in TEQIP-GIAN course on Microscale Fluid/Gas flows	IIT Kanpur	23 February -1 March 2017
14.	Dr. V. V. Raghavendra Sai	Polymeric (PMMA) Optical Fiber Probes for Chemical and Biosensing: Fabrication, Surface modification and Attomolar analyte detection	VIT University, Vellore	8 March 2017
15.	Dr. V. V. Raghavendra Sai	Design and Development of Optical Biosensors for Clinical Diagnosis and Environmental Monitoring	Sri Ramakrishna Engineering College, Coimbatore	11 March 2017
16.	Dr. Sarith P Sathian	Invited Talk: Molecular Dynamics of Fluid flows, TEQIP-GIAN course on Microscale Fluid/Gas flows	IIT Kanpur	23 February -1 March 2017

Visits abroad by faculty

Sl. No.	Faculty Member	Country Visited	Date	Purpose of Visit	Funding from
1.	Prof. Mahesh V. Panchagnula	LEGI, Grenoble, France	11-17 May 2016	Emil Hopfinger Colloquium	IIT Madras
2.	Prof. S. Ramakrishnan	University of Drexel, Philadelphia, USA	16-18 May 2016	Interactive meeting and attended World Congress 2016 on Biomarkers and Diagnostics	IIT Madras
3.	Dr. A. P. Baburaj	LEGI, Grenoble, France	11-17 May 2016	Emil Hopfinger Colloquium	IIT Madras
4.	Dr. V. V. Raghavendra Sai	University of Southampton, UK	23 May 2016	Invited talk and discussion on collaborative research	IIT Madras
5.	Prof. K. Ramesh	Monte Verita, Ascona, Switzerland	8-13 May 2016	International Conference on Processes in Combined Digital Optical and Imaging Methods applied to Mechanical Engineering	IIT Madras
6.	Dr. V. V. Raghavendra Sai	University of Southampton, UK	23 May 2016	Invited talk and discussion on collaborative research	IIT Madras
7.	Dr. V. V. Raghavendra Sai	Gothenburg, Sweden	25-27 May 2016	Biosensors World Congress 2016	
8.	Dr. V. V. Raghavendra Sai	Technical University (TU), Braunschweig Germany	30 May 2016	Discussion on collaborative research	
9.	Dr. Varadhan S.K.M.	Ben-Gurion University of the Negev, Israel	20-30 June 2016	A comparison of some linear methods for studying hand posture classification and reconstruction, Computational Motor Control Workshop	IIT Madras

Sl. No.	Faculty Member	Country Visited	Date	Purpose of Visit	Funding from
10.	Dr. Varadhan S.K.M.	Motor Control Summer School, Tzuba, Israel	20-30 June 2016	Post-trial performance feedback based adaptations of visual occlusion effects in multi finger force production	IIT Madras
11.	Prof. S. Vengadesan	Virginia Tech., Blacksburg, USA	14 June 2016	Discussion on possible collaboration	IIT Madras
12.	Prof. M. Manivannan	Imperial College, UK	4-10 July 2016	Affordable Wideband Sensor Coupled Vibrotactile Actuator Systems for Psychophysical Experiments, EuroHaptics 2016	IIT Madras
13.	Prof. S. Ramakrishnan	Los Angeles, USA	8 July 2016	Regulations of Medical Devices, University of Southern California	IIT Madras
14.	Prof. S. Ramakrishnan	Washington DC, USA	11-14 July 2016	Workshop on Issues and Trends in Regulation Sciences, George Washington University	IIT Madras
15.	Prof. S. Ramakrishnan	University of Toronto, Canada	15 July 2016	Collaborative research discussion	IIT Madras
16.	Dr. N. Sujatha	NUS and NTU, Singapore	11-18 June 2016	IITM Delegation Visit	IIT Madras
17.	Prof. S. Vengadesan	Washington DC, USA	13-17 June 2016	46th AIAA Fluid Conference Flow Past Rotating Elliptic Cylinder	IIT Madras
18.	Prof. S. Ramakrishnan	University of Southern California, USA	8 July 2016	Workshop and interaction with faculty members	IIT Madras
19.	Prof. S. Ramakrishnan	University of California, USA	10 July 2016	Workshop and interaction with faculty members	IIT Madras
20.	Dr. Varadhan S.K.M.	Sagol School of Neuroscience, Tel Aviv University, Israel	June 2016	Invited Talk: Classification and reconstruction of hand postures – approaches to dimensionality reduction	IIT Madras
21.	Dr. Abhijit Chaudhuri	Bio-an Geosciences-Agrosphere, Julich, Germany	30 July-25 September 2016	Visited – As Guest Scientist	IIT Madras
22.	Prof. Mahesh V. Panchagnula	USA	11-16 August 2016	Pan-IIT Association of Greater New England Alumni Leadership Conference	IIT Madras
23.	Prof. Mahesh V. Panchagnula	Germany	5-8 September 2016	Part of the IITM delegation to RWTH Aachen for the Sister University kick-off Meeting	IIT Madras
24.	Dr. Abhijit Chaudhuri	Melbourne, Australia	28-29 September 2016	International Conference on Geomechanics, Geoenergy and Georesources (IC3G)	IIT Madras
25.	Dr. A. Arockiarajan	Stowe, VT, USA	28-30 September 2016	ASME/SMASIS 2016	IIT Madras
26.	Dr. Arun Kumar Thittai	Fairlee Vermont, USA	16-19 October 2016	15th International Tissue Elasticity Conference	IIT Madras
27.	Dr. K. Arul Prakash	Kuching, Malaysia	20-24 November 2016	15th ACFM	IIT Madras
28.	Dr. K. Arul Prakash	Portland, Oregon, USA	20-22 November 2016	69th Annual Meeting of the APS Division of Fluid Dynamics	IIT Madras
29.	Dr. K. Arul Prakash	Phoenix, AZ, USA	11-17 November 2016	ASME 2016 IMECE International Mechanical Engineering Congress and Exposition	IIT Madras
30.	Dr. A. P. Baburaj	Portland, Oregon, USA	20-22 November 2016	69th Annual Meeting of the APS Division of Fluid Dynamics	IIT Madras
31.	Prof. Mahesh V. Panchagnula	Portland, Oregon, USA	20-22 November 2016	69th APS DFD meeting	IIT Madras
32.	Dr. Rinku Mukherjee	Kuching, Malaysia	21-24 November 2016	15th ACFM	IIT Madras
33.	Dr. V. V. Raghavendra Sai	Nasu, Japan	9-15 October 2016	International Workshop on Photonics Polymer for Innovation	IIT Madras
34.	Dr. Varadhan S. K. M.	San Diego, USA	12-16 November 2016	Society for Neuroscience Annual Meeting, SFN 2016	IIT Madras
35.	Prof. S. Vengadesan	Portland, Oregon, USA	20-22 November 2016	69th APS DFD meeting	IIT Madras
36.	Prof. S. Ramakrishnan	Minnesota, USA	12-14 October 2016	Proceedings of the ASME 2016 Dynamic Systems and Control Conference	IIT Madras
37.	Dr. Abhijit Chaudhuri		30-31 January 2017	Melbourne-India Postgraduate Program Conference	IIT Madras
38.	Prof. S. Ramakrishnan	Denver, Colorado, USA	31 January- 1 April 2017	54th International Rocky Mountain Biomedical Symposium	IIT Madras
39.	Dr. K. Arul Prakash	Germany	30 January 2017-3 February 2017	Invited Lecture at RWTH Aachen University and Nuclear Research Center Juelich	IIT Madras
40.	Dr. Arun Kumar Thittai	Orlando, Florida, USA	15-19 February 2017	Conference in SPIE Medical Imaging Symposium	IIT Madras
41.	Dr. Arun Kumar Thittai	Sydney, Australia	30-31 January 2017	IITM and University of Sydney Workshop	IIT Madras

Honours and awards obtained by faculty

Sl. No.	Faculty Member	Award	Awarded by	Awarded for	Date of award
ii. Awards					
1.	Dr. Arun Kumar Thittai	Elected to Senior Member grade in IEEE	IEEE	In recognition of significant contributions to the profession	22 November 2016
2.	Dr. V. V. Raghavendra Sai	₹ 10,000 from TCS during TCS Research Poster Presentation, Shaastra	IIT Madras	A portable, inexpensive, bench-top and hand-held U-bent plasmonic fiber optic biosensor for clinical diagnosis	1-2 January 2017
3.	Dr. V. V. Raghavendra Sai	Appreciation from BIRAC SRISTI GYTI 2017 Awards; ₹ 1 lakh has been declared to pursue a project for one year	GYTI	Affordable and portable fiber-optic based immuno-diagnostic device for point-of-care cancer (prostate) detection	March 2017
4.	Dr. Sarith P. Sathian	Indo-Australia Early and Mid-Career Research (ECMR) Fellowship Award	Indian National Science Academy (INSA) and Department of Science and Technology (DST), Government of India	A project on 'Thermo-molecular orientation in confined fluids and thermoelectric properties of ionic liquids'	November 2016

4.2.4. Design and Development Activities

New facilities added or major equipment procured

Sl. No.	Name of Equipment	Value (in lakhs of ₹)
1.	HP DL580 Generation Server - Ten Core Processor with HP 1TB 6G SAG 7.2K RPM SFF HDD	16.20
2.	Three HP DL580 Generation CTO Server	21.02
3.	Single Dot Print Servo Hydraulic Testing Machine	8.73
4.	Computerised Loading System for Optical Measurement System	10.67
5.	Experimental facility to measure the pressure and temperature measurement in high Reynolds number curved heated square duct	6

Sl. No.	Name of Equipment	Value (in lakhs of ₹)
	Experimental Facilty	
		
	Test Section	
		
6.	Hand kinematics measurement system using electromagnetic tracking sensors (funded by DST)	
7.	Visual feedback occlusion spectacles (funded by DST)	
8.	A 16-channel Electromyography (EMG) system (developed in-house)	
9.	Phase Doppler Particle Analyzer	150
10.	Nanoindenter	101
11.	FTIR	20
12.	Optical Microscopy	12

Patents filed

Sl. No.	Faculty Member	Topic of patent
1.	Dr. V. V. Raghavendra Sai	An optical fiber sensor and method of Fabricating the Sensor
2.	Dr. Arun K. Thittai	Method and Apparatus to obtain sub-pitch precision in lateral motion estimation in ultrasound elastography IITM ICSR IDF-1494, 201641043467 (Provisional-direct; 20.12.2016)
3.	Dr. Arun K. Thittai	Method and Apparatus for ultrasound beamforming using limited number of active transducer elements and diverging beams IITM ICSR IDF-1469, 201641032922 (Provisional-direct; 27.09.2016)

4.2.5. Research and Consultancy

Sponsored Research Projects

Sl. No.	Title	Period	Funding Agency	Amount (₹ in lakhs)	Co-ordinators
1.	Studies on Electrokinetic Energy Conversion in Nanofludic Channels	Three years (from June 2016 to June 2019)	CSIR	14.46	Dr. Sarith P. Sathian
2.	Numerical Analyses of Air – Blast Atomizer and Fuel Manifold and Development of Test stands for spray Patternation	12 July 2016-11 January 2018	GTRE	173.4	Prof. Mahesh V. Panchagnula
3.	Micro-injector Development for Spray Applications	2 August 2016-31 March 2018	MHRD, Ministry of Chemicals and Fertilizers and EnUrga India Private Limited	96	Prof. Mahesh V. Panchagnula
4.	Analytical and Experimental Studies on PDE Control of Structures	Three years (from September 2016 to September 2019)	ARDB	34.143	Dr. Shaikh Faruque Ali
5.	Multiplexed, Label free Fibre Optic Biosensor Array System for Waterborne Pathogen Detection (Multi-WAP)	Three years (from October 2016 to October 2019)	Indo-German Science and Technology Center	116	Dr. V. V. Raghavendra Sai
6.	Next Generation Compact Heat Exchanger using Additive Manufacturing and Optimization process	Three years (from 31 March 2017 to 30 March 2020)	DST, Department of Heavy Industries; Industry Partner: Messrs GE IMPRINT	350	Dr. K. Arul Prakash (AM) (PI), Prof. S. Vengadesan (AM), Dr. Srinivas Jayanti (CH), Dr. B.V.S.S.S. Prasad (ME), Dr. G. Saravana Kumar (ED)
7.	Development of Temperature Piezoceramic Actuators for Defence Applications	Three years	Ministry of Defence, IMPRINT	150	Dr. Kulkarani (ME-IITB), Dr. A. Arockia Rajan (AM)
8.	Development of an expander for process steam. Design of expander having volumetric control to have high turndown and high part load efficiency to handle variable thermal input from solar collector for power generation ranging from 5kWe to 100 kWe	Two years (from June 2017 to June 2019); project sanctioned: October 2016	DST SERI (Solar Energy Research Initiative) Funding	50	Dr. Satyanarayanan Seshadri
9.	Development of Intelligent Diagnostic System for Multiple Abnormalities using Radiographic Mediastinum	Three years (from January 2017 to January 2020)	DST	59.25	Prof. S. Ramakrishnan
10.	Studies on Optimized Design Configuration for Enhanced Magneto-Electric Effect of Multiferroic Composites	Three years (from March 2017 to March 2020)	DST	70.09	Dr. A. Arockiarajan
11.	Development of Cardiovascular Disease and Diabetes Risk Assessment Model for Diverse Ethnic Indian Population	Three years (from January 2017 to January 2020)	DST	30.15	Prof. S. Ramakrishnan and Dr. Malavika Ambale Subramanyam, IIT Gandhinagar
12.	Technology Demonstration of Nano Filter Media for Self Cleaning Air Filtration System (SCAFS) and Performance Prediction using CFD modeling and Simulation	Three years (from 31 March 2017 to 30 March 2020)	DRDO	99.89	Dr. K. Arul Prakash (PI), Dr. Raghuram Chetty (ChE) and Dr. G. Saravana Kumar (ED)

Industrial Consultancy projects

Sl. No.	Faculty Member	Title	Industry	Amount (₹ in lakhs)
1.	Dr. Satyanarayanan Seshadri	Development of Dust Monitoring System Using Scattering Principle for Stack Monitoring	Messrs Forbes Marshall Private Limited	5.85 + Service Tax
2.	Dr. Satyanarayanan Seshadri	Feasibility Study on Solar Integrated Biogas Generator Using Algae	Messrs Aspiration Energy	2.5 + Service Tax

RBIC projects

Sl. No.	Faculty Member	Title	Industry	Amount (₹ in lakhs)
1.	Dr. Arun K. Thittai	Sonogram Simulator for trainng novice radiologist	Messrs Merkel Haptics Private Limited	2.5 + Service Tax

4.2.6. Research publications of the faculty members and research scholars

Books/Book Chapters: 1

Total number of papers published in refereed national journals: 2

Total number of papers published in refereed international journals: 69

Total number of papers presented in national and international conferences: 33

Books/Book Chapters

1. M. Subramanyam Reddy and K. Ramesh. A new approach to calibration of polycarbonate material for photoplastic studies. 2016. *Conference Proceedings of the Society for Experimental Mechanics Series* 3: 265-269. doi: 10.1007/978-3-319-22446-6_33

Papers published in refereed international journals

1. S. A. Pawar, R. Vishnu, M. Vadivukkarasan, M. V. Panchagnula and R. I. Sujith. 2016. Intermittency route to combustion instability in a laboratory spray combustor. *Journal of Engineering for Gas Turbines and Power* 138(4). doi: 10.1115/1.4031405
2. S. Gurusideswar, R. Velmurugan and N. K. Gupta. 2016. High-strain rate sensitivity of epoxy/clay nanocomposites using non-contact strain measurement. *Polymer (United Kingdom)* 86: 197-207. doi: 10.1016/j.polymer.2015.12.054
3. J. Venkatramani, V. Nair, R. I. Sujith, S. Gupta and S. Sarkar. 2016. Precursors to flutter instability by an intermittency route: A model free approach. *Journal of Fluids and Structures* 61: 376-391. doi: 10.1016/j.jfluidstructs.2015.11.015
4. M. Vadivukkarasan and M. V. Panchagnula. 2016. Helical modes in combined Rayleigh–Taylor and Kelvin–Helmholtz instability of a cylindrical interface. *International Journal of Spray and Combustion Dynamics* 8(4): 219-234. doi: 10. 1177/1756827716642159
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11. H. Hisken, G. A. Enstad and V. D. Narasimhamurthy. 2016. Suppression of vortex shedding and its mitigation effect in gas explosions: An experimental study. *Journal of Loss Prevention in the Process Industries* 43: 242-254. doi: 10.1016/j.jlp.2016.05.017
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1. A. Mohan, S. Aparna Reddy, A. Sachan, K.V.S. Sarma, D. Prabath Kumar, M. V. Panchagnula, P.V. L.N. Srinivasa Rao, B. Siddhartha Kumar and P. Krishnaprasanthi. 2016. Derivation and validation of glycosylated haemoglobin (HbA1c) cut-off value as a diagnostic test for type 2 diabetes in South Indian population. *Indian Journal of Medical Research* 144(August) 220–228. doi: 10.4103/0971-5916.195035
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25. Bandaru Ramakrishna. Evanescent wave absorbance based U-bent fiber probe for simultaneous assay. 2016. *Biosensors 2016*
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31. S.S. Embrandiri, A.K. Vijayan and R. Piyush. Carotid artery wall tracking for ARTSENS technology. 2016. *Proceedings of the 53rd Annual Rocky Mountain Bioengineering Symposium, RMBS 2016* and *53rd International ISA Biomedical Sciences Instrumentation Symposium* pp. 224-231
32. K. Marri, R. Swaminathan and P.C. Subramaniam. Muscle fatigue analysis in transtibial amputees during isometric contraction using surface electromyography signals and multifractal techniques. 2016. *Proceedings of the 53rd Annual Rocky Mountain Bioengineering Symposium, RMBS 2016* and *53rd International ISA Biomedical Sciences Instrumentation Symposium* pp.181-188
33. C. Bose and S. Sarkar. Flexible flapping wings can exhibit quasi-periodic motion! 2016. *Journal of Physics: Conference Series* 759 (1). doi: 10.1088/1742-6596/759/1/012082

Distinguished visitors to the Department

Sl. No.	Name and Designation	Date	Purpose of visit
1.	Prof. Paul Durbin, IOWA State University	17-23 May 2016	GIAN Course: Turbulence Models for Engineering Applications
2.	A team of three from Management Agarwal Hospital	21 April 2016	Possibility of interaction on Development of Bio-Medical Devices
3.	Prof. R. Narasimhan, Department of Mechanical Engineering, IISc Bengaluru	25 April 2016	Guest Lecture: Cavitation induced failure in brittle bulk metallic glasses
4.	Prof. J. M. Chandra Kishen, Department of Civil Engineering, IISc, Bengaluru	9 May 2016	Guest Lecture: An energy based damage evolution model for quasi-brittle materials under fatigue
5.	Prof. Sriram Balasubramaniam, School of Biomedical Engineering, Drexel University, USA	12-19 June 2016	Research collaboration
6.	Prof. Rocheleau Suzanne, Dean of UG Students, Drexel, University, USA	12-19 June 2016	MoU discussion, visit IITM for long-term collaboration
7.	Prof. Steffen Leonhardt, RWTH Aachen University, Germany	30 July 2016	Joint collaboration on Image and Signal Processing
8.	Dr. Arun Chockalingam, Dalla Lana School of Public Health	28 July 2016	Discussion on Medical regulation and public health
9.	Prof. A. M. Rajendran, Department of Mechanical Engineering, University of Mississippi	25 April 2016	Meso scale modeling of shock wave propagation in fish scales
10.	Prof. Arun Srinivasa, Department of Mechanical Engineering, Texas A&M	13-19 June 2016	GIAN Course: Mechanics and Modelling of Soft Materials: From Natural Materials to Biomaterials
11.	Prof. P. Nithiarasu, Swansea University	1-5 August 2016	GIAN Course: Finite Element Methods in Fluids
12.	Prof. Andrew Gilbret University of Exeter, UK	1-6 August 2016	GIAN Course: Fluid Vortices: From Vorticity to Differential Geometry
13.	Prof. K. K. Deepak, Department of Physiology, AIIMS, New Delhi	19 August 2016	Physiological Variability
14.	Prof. Ian A. Nicholls Linnaeus, University and Uppsala, University, Sweden	8 November 2016	Functional Biomimetic Materials - From rational design to applications in *Biomaterials* and *Biosensor Technology*
15.	Prof. Swami Manohar, Microsoft Research, Bengaluru	25 October 2016	Advanced Topics in VR
16.	Prof. K. Ravi Chandar, University of Texas, Austin	19-23 December 2016	GIAN course organized
17.	Prof. Cemal Basaran, SUNY Buffalo, NY	5-10 December 2016	GIAN Course: Mechanics of Nano-Electronic Packaging

Sl. No.	Name and Designation	Date	Purpose of visit
18.	Prof. K. B. Chandran, Emeritus Professor, University of IOWA		GIAN Course: Cardiovascular Fluid Mechanics
19.	Dr. Sriram Balasubramanian, Drexel University, Philadelphia, USA	20-24 March 2017	GIAN Course: Pediatric Biomechanics - Deformities, Treatment and Injury Prevention
20.	Dr. V. K. Sundararaman, Adjunct Faculty, VIT Vellore, Independent Consultant - Medical Imaging/MRI	22 February 2017	Guest Lecture: Medical Technology: An interdisciplinary Experience

4.2.7. Other Activities of the Department

Faculty visit

Sl. No.	Faculty Member	Purpose of Visit	Date and Venue
1.	Dr. N. Sujatha	Ph.D. Viva Examination	20 May 2016, NIT Calicut
2.	Dr. Vagesh D. Narasimhamurthy	Invitee of Gexcon India Technical Advisory Board	24 May 2016, L&T Hydrocarbon Engineering, Powai, Mumbai
3.	Dr. Satyanarayanan Seshadri	CEP course on Optical Emission Measurement Technologies -Fundamentals	15-17 June 2016, Forbes Marshall Private Limited, Pune
4.	Prof. M. Ramasubba Reddy	Talk on Designing Medical Devices	4 June 2016, Narayana Medical College Nellore, Andhra Pradesh
5.	Prof. S. Ramakrishnan	Technical review meeting on 'Devices and Diagnostics'	28 June 2016, BIRAC Office, New Delhi
6.	Prof. Ramasubba Reddy	Faculty Selection Committee Meeting	3 June 2016, Adisankara College of Engineering and Technology, Gudur, Andhra Pradesh
7.	Prof. Ramasubba Reddy	Board of Governors Meeting of TEQIP	13 June 2016, JNTU College of Engineering, Pulivendla, Andhra Pradesh
8.	Prof. Ramasubba Reddy	Adhoc Faculty Selection Committee Meeting	19-20 June 2016, NIT Warangal, Andhra Pradesh
9.	Prof. Ramasubba Reddy	Board of Studies Meeting	9-10 July 2016 Pragathi Engineering College, Kakinada
10.	Prof. Ramasubba Reddy	PG Board of Studies Meeting	19 July 2016, NIT Warangal, Andhra Pradesh
11.	Prof. Ramasubba Reddy	TEQUIP Advisory Committee Meeting	20 July 2016, SV University Engineering College, Tirupati, Andhra Pradesh
12.	Prof. Ramasubba Reddy	Delivered an invited lecture, INSPIRE Camp	24 September 2016, SV Degree College, Kadapa, Andhra Pradesh
13.	Prof. Ramasubba Reddy	4th Executive Committee Meeting, National Hub for Healthcare Instrumentation Development (NHHID)	29 September 2016
14.	Prof. M. Manivannan	DBT Screening Committee Meeting	2-4 August 2016, New Delhi
15.	Prof. M. Manivannan	BIRAC DBT Review of Projects	20 August 2016, Chennai
16.	Prof. M. Manivannan	Ph.D. thesis examination	19 August 2016, NIT Surathkal
17.	Prof. M. Manivannan	Ph.D. thesis examination	22 August 2016, IISc, Bengaluru
18.	Prof. M. Manivannan	Three M.S. thesis examination	23 August 2016, CMC, Vellore
19.	Prof. M. Manivannan	Chief Guest, National Workshop on Varmam Treatment for Nervous Disease affecting Panchenthiyangal	26-27 August 2016, Chennai
20.	Dr. V. V. Raghavendra Sai	Meeting with Dr. Rajan Jha, Department of Physics, IITBBS	16 September 2016, IIT Bhubaneswar
21.	Dr. N. Sujatha	Resource person for FDP on research avenues in Bio-medical Engineering	27 September 2016, Model Engineering College, Ernakulam, Kerala
22.	Dr. N. Sujatha	Ph.D. Viva examination	19 September 2016, Department of Electrical Engineering, NIT Calicut
23.	Dr. Arun Kumar Thittai	Research opportunities in Bio-medical Imaging / Resource person for FDP on research avenues in Bio-medical Engineering	29 September 2016, Government Model Engineering College, Ernakulam, Kerala
24.	Prof. Ramasubba Reddy	Participated in Scientists' recruitment process	4 October 2016, RAC DRDO New Delhi
25.	Dr. V. V. Raghavendra Sai	Project Review Meeting	3 October 2016, Defense R&D Engineers Establishment, Pune
26.	Dr. V. V. Raghavendra Sai	Invited talk: Fiber optic chemical and biosensors with attomolar analyte detection for clinical diagnosis	6-7 October 2016, DEBEL, Bengaluru
27.	Prof. K. Ramesh	Attended INAE annual Convention at Space Applications Center	8-10 December 2016, Ahmedabad
28.	Prof. K. Ramesh	Expert member, faculty selection	26 December 2016, Department of Applied Mechanics, IIT Delhi
29.	Prof. Ramasubba Reddy	Participated in faculty selection interview	3 March 2017 SRM University Katangalattur, Chennai
30.	Prof. Ramasubba Reddy	Participate in Board of Studies meeting	18-19 February 2016, Pragati Engineering College, Kakinada, AP
31.	Prof. Ramasubba Reddy	Participate in Board of Studies meeting	10-11 March 2017, JNT University College of Engineering, Pulivendla, AP
32.	Prof. Ramasubba Reddy	Participated in faculty selection interview	17 March 2017, IIT Bombay
33.	Prof. Ramasubba Reddy	Participated in Governing Council for TEQIP-II meeting	18 March 2017, JNT University College, Pulivendla, AP
34.	Dr. Sarith P. Sathian	Invited Talk: 'Molecular Dynamics of Fluid Flows' in TEQIP - GIAN course on Microscale Fluid/Gas flows	23 February-1 March 2017, IIT Kanpur
35.	Dr. V. V. Raghavendra Sai	Polymeric (PMMA) Optical Fiber Probes for Chemical and Biosensing: Fabrication, Surface modification and Attomolar analyte detection	8 March 2017, VIT University, Vellore, TN
36.	Dr. V. V. Raghavendra Sai	Design and Development of Optical Biosensors for Clinical Diagnosis and Environmental Monitoring, National Seminar on Biosensors and Wearable Devices	11 March 2017, Sri Ramakrishna Engineering College, Coimbatore
37.	Prof. S. Ramakrishnan	Attended Health Tech India 2017	4 February 2017, Pragati Maidan, New Delhi
38.	Prof. S. Ramakrishnan	Acted as Expert member, SPARSH - BIRAC Project Evaluation, Bengaluru	28 February 2017, Bengaluru
39.	Prof. S. Ramakrishnan	Acted as Session Chair, Molecular Imaging session in 'Conference on Recent Advances in MRI and MRS,' Indian National Science Academy, New Delhi	22 March 2017, New Delhi
40.	Dr. Sayan Gupta	Visited Department of Civil Engineering, IIT Bombay as Ph.D. thesis examiner	3 March 2017, IIT Bombay
41.	Dr. Shaikh Faruque Ali	Visited Department of Civil Engineering, IISc Bengaluru as Ph.D. thesis examiner	December 2016
42.	Dr. Shaikh Faruque Ali	Expert reviewer for project on sensors design, ADRE, DRDO, Pune	10 February 2017, IISc Bengaluru

Student visit

Sl. No.	Students	Purpose of Visit	Date and Venue
1.	Christina Grace Charlet	Research visit to Advanced Club for Microfluidics Technology and Engineering Lab, Department of Mechanical Engineering, York University, Toronto, Canada	25 May-15 September 2016, York University, Toronto, Canada
2.	G. Nagarajan	Discussion with Department of Medical Informatics, Uniklinik, RWTH Aachen University	14-16 July 2016, Aachen, Germany

4.2.8. Activities initiated

Major infrastructure development made

R&D Testing facility developed

Development of Stack Particulate Emission Measurement – Instrumentation development and validation facility

Location: NCCRD, Ground Floor

- Duct diameter: 20 cm ID
- Flow velocity ranges: 1 to 15 m/s
- Dust loading capability: 10 mg/m^3 to up to 10 g/m^3 using a turntable dust feeder
- Types of dust: Dry dust including fly ash, alumina etc.
- Moisture loading capability: up to 20% of dust load
- Calibration/Sampling system: isokinetic probe with gravemetric measurement
- Flow control: with VFD, cross duct COV <10%
- Test cell:
  - Optical cell for forward scattering, back scattering and extinction measurement
  - Provision for tribo-electric probe evaluation

4.3. Department of Biotechnology

4.3.1. Introduction

The Department of Biotechnology was set up 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 and an active collaboration with industries and healthcare institutions. The department is housed in the Bhupat and Jyoti Mehta School of Biosciences. The first batch of the B.Tech. and Dual Degree courses 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. The faculty members of the department hold several patents and are involved in active industrial consultancy. Several collaborative and technology transfer projects are currently running with many industries. The department also has collaborative research projects with hospitals. We have set up a Center of Excellence in Bioprocess Engineering to develop knowledge and expertise in the domain, a DST-funded National Facility to identify potential drug targets through cellular dynamics, and a FIST facility for infrastructure facilities. The DBT had earlier funded a programme on cancer biology and now DST is supporting a National Cancer Tissue Biobank. A Bioinformatics Center has also been set up with funding from DBT. The IITM Bio-incubator, initiated by the department and funded by BIRAC, offers lab and office space, equipment, technical support and centralized utilities for process and product development.

4.3.2. Academic Programmes

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

Five-Year Degree Programme (B.S. and M.S.) in Biological Sciences

This Dual Degree in Biological Sciences (B.S. and M.S.) provides a strong foundation in biological sciences. It encompasses the study of living organisms and life processes at all levels, including individual organisms, tissues, cells, subcellular structures and molecules. Apart from the fundamental courses in biological sciences, the curriculum of the course emphasizes on areas such as chemical biology and computational biology. In addition to a few core theory and laboratory courses, a basket of elective courses are offered in each of these areas. The curriculum imparts specific skills on interfacing cellular, molecular and computational biology, trains students to undertake academic research in frontier areas in world-class universities and equips them with skills to be employed in R&D laboratories of pharmaceutical and biotechnology industries in India and abroad.

Five-Year Dual Degree Programme (B.Tech. and M.Tech.) Biological Engineering

The Dual Degree (B.Tech. and M.Tech.) course on Biological Engineering brings together engineering principles and molecular life sciences to develop and operate biology-based technologies in diversified fields such as energy, environment, bioprocesses, biomaterials, diagnostics, biopharmaceuticals and food processing. The programme includes core courses in basic sciences and biological sciences and provides a solid foundation in application of engineering principles to biological systems through courses in different areas such as bioprocess engineering, biomedical engineering, biomolecular engineering and computational biology. The course will allow students to have a wider appreciation of the biology-engineering interface and evolve interdisciplinary approaches to problem solving, research and technology development. In addition to core theory and practical courses, many elective courses will be offered in bioprocess engineering, biomedical engineering and computational biology. Each student is required to undertake an extensive research project spread over the last three semesters of the programme/study. The programme trains students to be employed as process engineers and R&D scientists in industries.

The M.Tech. (Clinical Engineering) programme is designed to train students to completely manage the technology aspects in a hospital as well as medical technology needs of the country.

New courses introduced

Sl. No.	Course No.	Title
1.	BT 6540	Cellular, Molecular Biology and Genetic Engineering
2.	BT 7001	Advanced topics in Cell Signalling

Students on roll as of September 2016+M.S. and Ph.D. admission in January 2017

Programme	Year I	Year II	Year III	Year IV	Year V and Others	Total
Dual Degree	54	48	42	43	40+5	232
M.Tech.	3	7				10
M.S.	2	4	4	3		13
Ph.D.	19	9	15	32	22+9	106
Total	**78**	**68**	**61**	**78**	**76**	**361**

Students/scholars who attended conference/seminar/symposia abroad/India

Sl. No.	Student/Scholar	Roll No.	Conference/Seminar/ Symposia/Workshop	Date and Venue	Financial Assistance from
Abroad					
1.	M. Jayadev	BT11D004	3rd International Conference on Chemical Biological Sciences, ICCBS 2016 (oral presentation: Phosphorylation dependent regulation of DNA repair function of adaptor protein KIBRA in cancer cells)	22-26 March 2016, Amsterdam, Netherlands	IIT Madras
2.	B. Swarnalatha	BT11D010	ICCBS 2016 organized by Asia-Pacific Chemical, Biological and Environmental Engineering Society (APCBEES) (oral presentation: Unraveling the roe of p21 activated kinase 1 (Pak 1) in UV-B induced premalignant skin lesions)	22-26 March, 2016, Amsterdam, Netherlands	IIT Madras
3.	Lakshmi Revathi Perumalsamy	Principal Scientist Wellcome Trust DBT India Alliance Early Career Fellow	The Keystone Symposia on Cancer Pathophysiology: Integrating the Host and Tumor Environments (C3) (poster presentation: Role of a Non-Enzymatic RAS Effector in Tumor Cell Migration)	28 March – 1 April, 2016, Beaver Run Resort, Breckenridge, Colorado, USA	DBT
4.	Amrita A. Iyer	BT14S001	13th International Congress of Human Genetics (ICHG) 2016 organised by Japanese Society of Human Genetics (presented the project titled 'Two common single nucleotide polymorphisms in the Renalase gene increase the susceptibility to essential hypertension')	3-7 April 2016, Kyoto, Japan	IIT Madras
5.	Lakshmi Revathi Perumalsamy	Principal Scientist Wellcome Trust DBT India Alliance Early Career Fellow	American Association of Cancer Research (AACR) Annual Meeting 2016, and presented poster on RAS Association (RALGDS/AF-6) Domain Family Member Integrates with Notch Signaling to Regulate Tumor Cell Migration	16-20 April 2016, New Orleans, USA	DBT
6.	Saranath	BT09D046	6th Zing Bionanomaterials Conference (presented paper titled 'Synthesis of Magnetic Nano-particles using the Dissimilatory Iron-Reducing Bacterium Shewanella putrefaciens CN-32')	8-12 May 2016, Varna, Bulgaria	
7.	Yogeshwar Chakrapani	BT11D025	10th World Biomaterial Congress, WBC 2016 (presented poster on Electrosprayed calcium phosphate nanocarriers as therapeutic agents)	17-22 May 2016, Montreal, Canada	IIT Madras
8.	Balaji R.	BT12D003	WBC 2016	17-21 May 2016, Montreal, Canada	IIT Madras
9.	Swati Choudhary	BT08D031	To do part ofPh.D. work in the Personalized Medicine Congress	18-20 May 2016, Kupferbau, Tubingen, Germany	IIT Madras
10.	Anuradha Vaidya	BE12B003	17th Tetrahedron Symposium – Challenges in Biological, Bioorganic, Organic and Medical Chemistry (presented poster titled Asymmetric Direct Vinylogous Michael Addition of Vinyl Malononitriles to Nitrostyrene mediated by Thiourea Organocatalyst derived from L-proline)	1-6 June 2016, NanoTech, France	IIT Madras
11.	Vignesh M.	BT12D207	3rd Annual Summer School on large-scale brain modeling – Nengo summer school 2016 (poster presented on A computational model of altered gait patterns in Parkinson's Disease patients negotiating narrow doorways)	5-17 June 2016, Ontario, Canada	IIT Madras
12.	Kumara Swamy Reddy	BT12D009	17th Tetrahedron Symposium (presented poster on 'Cu(II) mediated Tandem Friedel-Craft alkylation/cyclization of3-ethynyl-3-Oboc oxindole derivatives')	28 June – 1 July 2016, Sitges (near Barcelona), Spain	IIT Madras
13.	Vishwanath D. M.	BT11D007	17th Tetrahedron Symposium (presented poster on 'Asymmetric Direct Vinylogous Michael Addition of Vinyl Malononitriles to Nitrostyrene mediated by Thiourea Organocatalyst derived from L-proline')	26 June – 1 July 2016, Sitges (near Barcelona), Spain	IIT Madras
14.	Bhaskar Paidimuddala	BT13D002	International Conference ASM Microbe 2016 Lignocellulose-Derived Byproducts Inhibition on the 'Activity of Halotolerant Xylose Reductase from *Debaryomyces nepalensis*'	16-20 June 2016, Boston, Massachusetts, USA	IIT Madras
15.	Karthik Soman	BT14D005	25th Annual Computational Neuroscience Conference, CNS 2016 (poster presented on 'An oscillatory network model of Head direction and Grid cells using locomotor inputs', and 'A computational model of Hippocampus inspired by the functional architecture of Basal Ganglia')	2-7 July 2016, Jeju Island, South Korea	IIT Madras
16.	Monika Venkatachalam	BT13D046	Enzymes in the Environment Activity; Ecology and Application (poster presented on 'Enzymes from salt and sulphide tolerant bacteria application for dehairing in leather processing and for solid waste management')	24-28 July 2016, Bangor, Wales, UK	IIT Madras
17.	Sanghavi Rutvi Ravin	BT14S301	Biointerfaces International 2016 (poster presented on 'Effect of concentration of cations in Hydroxyapatite for Biomedical Applications')	22-25 August 2016, University of Zurich, Zurich, Switzerland	IIT Madras
18.	Rubaiya Y.	BT13D048	Biointerfaces International 2016 (poster presented on 'Polyvinyl alcohol/curdlan/silver nanoparticle nanofibres for wound healing')	22-25 August 2016, University of Zurich, Zurich, Switzerland	IIT Madras
19.	Vignesh M.	BT12D207	CNS 2016 (poster presented on 'A scalable cortico-basal ganglia model to understand the neural dynamics of targeted reaching', and 'A computational architecture to model the microanatomy of the striatum and its functional properties')	2-7 July 2016, Jeju Island, South Korea	IIT Madras
20.	Pavan Holla		'Decision making with long delays using networks of flip-flop neurons', International Joint Conference on Neural Networks (IJCNN 2016)	24-29 July 2016	
21.	Kanak Raj	BT12D201	24th European Biomass Conference and Exhibition	6-9 June 2016, Amsterdam, Netherlands	IIT Madras
22.	S. Archanaa	BT14D001	European Symposium on Biochemical Engineering Sciences 2016	11-14 September 2016, Dublin, Ireland	IIT Madras
23.	Anuj	BT11D001	24th Biennial Congress of the European Association for Cancer Research (EACR24) (poster presented on 'Tumor suppressor role of miR-551a by targeting Focal Adhesion Kinase in breast cancer')	9-12 July 2016, Manchester, UK	IIT Madras

Sl. No.	Student/Scholar	Roll No.	Conference/Seminar/ Symposia/Workshop	Date and Venue	Financial Assistance from
24.	Sreeja S.	BT12D046	European Symposium on Biochemical Engineering Sciences (ESBES 2016) (presented paper on 'Understanding chain termination of hyaluronic acid during batch fermentation')	11-14 September 2016, Dublin, Ireland	IIT Madras
25.	Archanaa S.	BT14D001	ESBES 2016 (presented poster on 'Better Sustainable use of Nanoparticles: Bio-oil From Bacteria through stress induced by Nano–TiO_2 in Wastewaters')	11-14 September 2016, Dublin, Ireland	IIT Madras
26.	Kirubhakaran P.	BT13D063	ESBES 2016 (presented paper on 'Enhancement of molecular weight of hyaluronic acid by metabolic flux engineering in Lactococcu Lactis')	11-14 September 2016, Dublin, Ireland	IIT Madras
27.	Chitra Srikantan	BT13D003	13th International Phytotechnology Conference Phytotech 2016 (poster presentation on 'Hairy roots of Helianthus annuus for phytoremediation of xenobiotic azo dyes')	26-29 September 2016, Hangzhou, PR China	IIT Madras
28.	Gopinath Shanmugham	BE14B009	iGEM 2016 Giant Jamboree	27-31 October 2016, Boston	
29.	Karnam Vinay Kumar	BT13D042	8th International Congress on Biocatalysis (Biocat 2016) (lightning talk and poster: Understanding the role of zinc in a carbonyl reductase from *Candida parapsilosis* ATCC 7330 (CpCR))	28 August – 1 September 2016, Hamburg, Germany	IIT Madras
30.	Sneha Sudhakara	BT11D026	Oral presentation on 'Recombinant (*S*) specific carbonyl reductase from *Candida parapsilosis* ATCC 7330: towards understanding its substrate- and stereo-specificities'	28 August – 1 September 2016, Hamburg, Germany	IIT Madras
31.	Nikunj Mehta	BS14B026	'RIBOS riboregulatory switches, efficient measurement device, and characterizing widely used RBSs for their modularity', iGEM Conference	27-31 October 2016, Boston, Massachusetts, USA	IIT Madras
32.	Gopinath S.	BE14B009	'RIBOS riboregulatory switches, efficient measurement device, and characterising widely used RBSs (Ribosome Binding Site) for their modularity', iGEM Conference	27-31 October 2016, Boston, Massachusetts, USA	
33.	Paruchuri Anoosha	BT13D008	ECCB 2016	3-7 September 2016, Netherlands	IIT Madras
34.	Paruchuri Anoosha	BT13D008	Frontiers in Cancer Immunotherapy	27-28 February 2017, New York	IIT Madras Alumni fund
35.	S. Venkatasubramaniam	BT14S006	EMBO Conference: From Functional Genomics to Systems Biology	12-15 November 2016, EMBL Heidelberg, Germany	IIT Madras
36.	S. Lakshmi	BT10D008	EMBO Conference: From Functional Genomics to Systems Biology	12-15 November 2016, EMBL Heidelberg, Germany	EMBO Travel grant and IIT Madras Alumni funded travel grant
37.	Meera Ramanan	BT13D071	Presented a paper entitled 'Natural products as PGE2 inhibitors against cancer associated inflammation' at Keystone Symposia	5-9 February 2017, Colorado, USA	
38.	Prasanna D. R.	BT14D031	Presented a paper entitled 'Role of bound phospho-lipids in structural stability and functionality of Cholesteryl ester transfer protein'	11-15 February 2017, New Orleans, Louisiana	
39.	Venkata Reddy Chirasani	BT12D026	Presented a paper titled 'Lipid transfer mechanism of CETP between HDL and LDL: A coarse-grained simulation study'	11-15 February 2017, New Orleans, Louisiana	
India					
40.	Vineeta Sharma	BT14D013	International Workshop on Experimental Approaches to Proteomics organized by Aravind Research Medical Foundation (ARMF)	2-5 March 2016, Madurai	IIT Madras
41.	Chandra Kishore	BT13D036	12th International Conference of Asian Clinical Oncology Society 2016 (presented paper on Menadione down regulates wnt signaling and reverses EMT process) organized by Asian Clinical Oncology Society (ACOS)	4-12 April 2016, Hotel Ashok, New Delhi	IIT Madras
42.	Ahamed Fazil A.	BT13D032	Biomaterials in Tissue Engineering and Regenerative Medicine (BiTERM 16) International Conference on Biomaterials, Biodiagnostics, Tissue Engineering, Drug Delivery and Regenerative Medicine (poster presented on 'Optimization of crosslinking characteristics for Dextran Dialdehyde Crosslinked hydrogels')	15-17 April 2016, IIT Delhi	IIT Madras
43.	Atul Kumar Verma	BE13B008	Summer training on 'Computational Modeling of Filament Sliding by Molecular Motors'	11 May – 10 July 2016, IIT Bombay	
44.	Kabilan C.	BT13D026	International Conference on Algal Technologies 2016 (paper presented on 'Docosahexaenoic acid (DHA); from locally screened micro algae, production and downstream processing')	14-16 July 2016, Science City, Jalandhar	
45.	Aarthi Ravikrishnan	BT13D031	Conflict and Cooperation in Cellular Populations	16-19 October 2016, Bengaluru	
46.	Shabir Zargar Ahmed	BT10D026	To do nude mice experiments	21-31 August 2016, IISc Bengaluru	
47.	Abrar Ali Khan	BT12D051	Genomeet 2017 and 14th Annual Meeting of International Society for Heart Research (Indian Section)	27-29 January 2017, CSIR-IGIB, New Delhi	IIT Madras
48.	Vikas A.	BT13D056	9th Annual Conference of International Academy of Cardiovascular Sciences (India Section): Recent Advances in Cardiovascular Research: Impact on Health and Disease	9-11 February 2017, Vallabhbhai Patel Chest Institute, University of Delhi North Campus, Delhi, India	IIT Madras
49.	M. Kiranmayi	BT11D014	9th Annual Conference of International Academy of Cardiovascular Sciences (India Section): Recent Advances in Cardiovascular Research: Impact on Health and Disease	9-11 February 2017, Vallabhbhai Patel Chest Institute, University of Delhi, North Campus, Delhi, India	IIT Madras
50.	C. Ramakrishnan	BT15IPF04	13th Conference on Vectors and Vector Borne Diseases	27 February to 1 March 2017, Chennai	IIT Madras
51.	R. Prabakaran	BT14D200	Annual Symposium of the Indian Biophysical Society, 2017	22-25 March 2017, Mohali	IIT Madras
52.	Vikas A.	BT13D056	85th Meeting of the Society of Biological Chemists (India): Innovations in Biological Research on Health and Disease	21-24 November 2016, CSIR-CFTRI, Mysore, India	IIT Madras
53.	Aparajitha S.	BT12D002	International Conference on Current trends in Biotechnology (ICCB 2016); Enhanced production of alpha tocopherol from cell suspension culture of *Helianthus annuus L.* by addition of elicitors and precursors	December 2016, VIT University, Vellore	
54.	M. Narayani	BT12D053	ICCB 2016; Identification and Characterization of cyclotides in in vitro cultures of Viola odorata	8-10 December 2016	IIT Madras
55.	M. Narayani	BT12D053	Bioprocessing India 2016, "Production of therapeutic plant cyclic peptides (cyclotides) from in vitro cultures of Viola odorata, an endangered Indian medicinal plant"	15-17 December, 2016, Center of Innovative and Applied Bioprocessing (CIAB), Mohali	IIT Madras
56.	Bhargavi Natarajan	BT12D208	Genomeet 2017 and 14th Annual Meeting of International Society for Heart Research (Indian Section)	27-29 January 2017, CSIR-IGIB, New Delhi, India	IIT Madras

Sl. No.	Student/Scholar	Roll No.	Conference/Seminar/ Symposia/Workshop	Date and Venue	Financial Assistance from
57.	Anisha A.	BT13D001	Presented a paper titled 'Importance of extra cellular domains in human APJ receptor signaling'	20-26 March 2017, IISER, Mohali	
58.	Vignesh R.	BT13D061	Presented a paper titled 'Matten globule conformation drives calnuc-membrane interaction antagonizing Gai signaling'	20-26 March 2017, IISER, Mohali	
59.	D.Infant Sagayaraj Ravhe	BT13D025	Presented a paper titled 'Investigation of molecular evolution and functional divergence of histamine receptors'	20-26 March 2017, IISER, Mohali	
60.	S. Chellam Gayathri	BT11D002	Presented a paper titled 'Exploring the conformational dynamics of a catalytic loop in recombinant archeal amino acid decarboxylase'	20-26 March 2017, IISER, Mohali	

Students/scholars who won outside prizes and awards

Sl. No.	Student/Scholar	Roll No.	Prize	Awarded by
1.	BeesettiP. S. Swarna Latha	BT11D010	Excellent Oral Presentation (APCBEES)	ICCBS 2016, Amsterdam, Netherland
2.	K. Anbarasu	BT09D024	Full Scholarship (including registration, accommodation and travel) to attend the conference	Cochin, Kerala, India, 3-5 October 2016
3.	Rehna Krishnan Neelima Boddapati and Mahalingam S.	BT12D042	Best Poster Award from Nature Publications (inclusive of one year journal subscription and cash award of USD 100)	Cochin, Kerala, India, 3-5 October 2016
4.	Lakshmi Revathi	Perumalsamy (Wellcome Trust DBT India Alliance Early Career Fellow)	Best Poster Award from Science (AAAS) Publications (inclusive of one year journal subscription and cash award of USD 100)	Cochin, Kerala, India, 3-5 October 2016
5.	Abrar Ali Khan	BT12D051	Prof. N. S. Dhalla Award for Best Oral Presentation	International Society for Heart Research (Indian Section)
6.	Vikas A.	BT13D056	Prof. Devendra Agrawal Young Investigator Award	International Academy for Cardiovascular Sciences (Indian Section)
7.	Vikas A.	BT13D056	C.C. Kartha Travel Grant	International Academy for Cardiovascular Sciences (Indian Section)
8.	M. Kiranmayi	BT11D014	Prof. Devendra Agrawal Young Investigator Award for Best Oral Presentation	International Academy for Cardiovascular Sciences (Indian Section)
9.	M. Kiranmayi	BT11D014	C.C. Kartha Travel Grant	International Academy for Cardiovascular Sciences (Indian Section)
10.	S. Lakshmi	BT10D008	EMBO Travel Grant	European Molecular Biology Laboratory
11.	Suchetana Gupta	BT13D072	Best poster and Best oral presentation at Accelerating Biology 2017 – Delivering Precision	
12.	Bhim Thapa	BT13DO34	Gift voucher of EUR 100 as felicitation for winning Best Paper in the Track, International conference on Sustainable Energy and Environmental Challenges (SEEC 2017)	
13.	Avisek Barla, Abrar Ali Khan, Sameer Sharma, Vijay Anand and Nitish Kumar Singh Guide: Vignesh Muthuvijayan	BT 11B006 BT 12D051 ED13D007 ED13D009 BT12B054	Gandhi Young Technological Innovation (GYTI) Appreciation Award 2017	Affordable Paper Microfluidic Device for Blood Glucose and Cholesterol Detection

Students/scholars who won institute convocation/institute day prize

Sl. No.	Student/Scholar	Roll No.	Prize	Name of Donor
1.	Kumar Swamy Reddy N.	BT12D009	Institute Research Award	IIT Madras
2.	Venkata Reddy Chirasani	BT12D026	Institute Research Award	IIT Madras

4.3.3. Faculty and their Activities

Faculty

Name and Qualifications	Major Areas of Specialization
Professors	
D. Karunagaran (Head)	Cancer biology, signal transduction, apoptosis
Anju Chadha	Biocatalysis, green chemistry, biosensors
T.S. Chandra	Microbiology and genetics
A. Jayakrishnan	Biomaterials science and technology
Guhan Jayarman	Metabolic engineering, synthetic biology, downstream processing
G.K. Suraishkumar	Reactive species, algal biofuels
S. Mahalingam	Molecular virology and cell biology
Rama Shanker Verma	Stem cell biology and tissue regeneration, cancer therapeutics
V. Srinivasa Chakravarthy	Computational neuroscience
Satyanarayana Gummadi	Bioprocess engineering
K. Subramaiam	Developmental biology
Amal Kanti Bera	Ion channels and signaling
Sanjib Senapati	Computational biophysics
Nitish R. Mahapatra	Cardiovascular genetics, molecular medicine
A. Gopala Krishna	Signal transduction and protein biochemistry
Associate Professors	
M. Michael Gromiha	Bioinformatics, computational biology, biophysics
K. Chandraraj	Biofuels, bioremediation, industrial enzymes
Rayala Suresh Kumar	Cancer biology
N. Manoj	Structural biology
V. Kesavan	Chemical biology
R. Baskar	Developmental genetics
Madhulika Dixit	Vascular biology
Himanshu Sinha	
Assistant Professors	
R. Murugan	Theoretical biology and biophysics
Karthik Raman	Computational systems biology
Vignesh Muthuvijayan	Biomaterials and tissue engineering
Smita Srivastava	Plant biotechnology and bioprocess engineering
Athi Narayanan	Experimental/computational protein folding
Hamsa Priya Mohana Sundaram	Protein solution thermodynamics
Vani Janakiraman	Infection biology/infectious diseases
Emeritus Professors	
K.B. Ramachandran Mukesh Doble	Bioprocess engineering and modeling, metabolic engineering Biomaterials, drug design, biochemical engineering

Name and Qualifications	Major Areas of Specialization
Adjunct Faculty	
Venil N. Sumantran	Cancer biology
Dhinakar Kompala	Biochemical engineering
V. Mohan	Diabetes
INSA Senior Scientists	
K.K. Balasubramanian	Organic chemistry

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

Sl. No.	Coordinator(s)	Title	Period
Workshops			
1.	T S Chandra	Advances in Biomonitoring and Demonstration of Automated Biomonitoring of Pollutants in Water bodies	2-3 May 2016
2.	Vignesh Muthuvijayan	Summer Workshop on Bioprocesses	June 27-July 1, 2016
3.	V. Srinivasa Chakravarthy	Modeling Cerebral Cortex and Plasticity (Global Initiative of Academic Network - GIAN) Organized at IIT Gandhi Nagar	7-16 August 2016
4.	Guhan Jayaraman	Downstream Processing in Biotechnology	23-25 February 2017
Short-term courses			
1.	Karthik Raman	Pre-school on computational biology preceding the NNMCB Second Instructional School on Mathematical and Computational Biology, Indian Institute of Science, Bengaluru	18-21 May 2016
2.	Karthik Raman	AICTE Short-term training programme on Computational Systems Biology	6-11 February 2017

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

Sl. No.	Faculty Member	Title	Institution	Period
Workshops				
1.	Guhan Jayaraman	MIT Global Start-up Workshop	Hyderabad	21-23 March 2016
2.	G. K. Suraishkumar	Workshop on Modeling and Scale-up of Bioreactors	NIT Karnataka, Surathkal	24-25 March 2017
Seminar				
1.	G. K. Suraishkumar	Seminar on Advances in Biofuels and Bioenergy	Anna University	24-25 October 2016
Symposia				
1.	Karthik Raman	Network theory: Conceptual advances and practical applications	Institute for Mathematical Sciences, Chennai	26 April 2016
2.	G. K. Suraishkumar	Keynote lecture in the Science Academies' Education program on Advances in Microalgal Research and its Relevance to Climate Change. Title: Microalga: A Promising System to Address Challenges in Climate Change and Liquid Fuels	Chennai	21 July 2016
3.	D. Karunagaran	Symposium on Genetics, Genomics and Proteomics Applications in Clinical Research Non-coding genes: Roles of miRNAs in cancer Pathogenesis	Ganga HospitalCoimbatore	22 August 2016
4.	Smita Srivastava	Invited Lecture on Effective Pedagogical Practices	Computational Systems Biology Workshop, Department of Biotechnology, IITM	9 February 2017

Sl. No.	Faculty Member	Title	Institution	Period
Conferences				
1.	Plenary Speakers: Dr. S. Mahalingam and Dr. Rama Shankar Verma, Dr. D. Karunagaran, Dr. Guhan Jayarman, Dr. Amal Kanti Bera, Dr. Sanjib Senapati, Dr. Madhulika Dixit and Dr. Smita Srivastava	1st PAN IIT Biotech Meet	Kodaikanal, Tamil Nadu	16-18 October 2016
2.	Karthik Raman	85th SBC(I) Annual Meeting at CSIR-CFTRI	CFTRI, Mysore	21-22 November 2016
3.	Invited Speaker and Session Chair	Bioprocessing India 2016 (BPI-2016)	CIAB, Mohali, Punjab	15-17 December 2016

Special lectures delivered by the faculty in other institution

Sl. No.	Faculty Member	Topic of Lecture	Institution	Date
1.	D. Karunagaran	miR-214 targets HMGA1 and inhibits growth, migration and invasion in human cervical and colon cancer cells in the session Non-coding RNA and Cancer	Hotel Ashok, New Delhi	8-10 April 2016
2.	A. Jayakrishnan	Novel Nanotechnological Approaches to the Treatment of Leishmaniasis	New Delhi	16-17 April 2016
3.	M. Michael Gromiha	Protein interactions: Integrating Computational Methods and Experimental Data for Understanding the Binding Specificity	International Center for Theoretical Physics, Trieste, Italy	June 2016
4.	K. Subramaniam	Invited talk at the Department of Molecular Reproduction, Development and Genetics	IISc, Bengaluru	22 July 2016
5.	M. Michael Gromiha	Binding Specificity of Protein-protein and Protein-ligand Interactions: Implications for Structure based Drug Design	Abdur Rahman University	July 2016
6.	M. Michael Gromiha	Binding Specificity of Protein-protein and Protein-ligand Interactions: Implications for Structure based Drug Design	Vel Tech University	July 2016
7.	K. Subramaniam	1.Invited talk at the Regional Centre for Biotechnology, Faridabad, 2. Annual progress review of Dr. Sivaram Mylavarapu, Asst. Professor, RCB as his faculty mentor	New Delhi	5 August 2016
8.	M. Michael Gromiha	Computational approaches for understanding the recognition mechanism of protein complexes and Applications to structure based drug design	Thiyagarjar College of Engineering	September 2016
9.	M. Michael Gromiha	Development of databases and algorithms for identifying aggregating peptides and their coupling with immunogenicity	Chuo University, Tokyo, Japan	October 2016
10.	M. Michael Gromiha	Development of databases and algorithms for identifying aggregating peptides and their coupling with immunogenicity	Tokyo Institute of Technology	October 2016
11.	M. Michael Gromiha	Computational approaches for understanding the recognition mechanism of protein complexes, and Applications to structure based drug design	Vellore Institute of Technology	October 2016
12.	M. Michael Gromiha	Protein interactions: Integrating computational methods and experimental data for understanding the binding specificity	Kyoto University	November 2016
13.	N Athi Narayanan	A General Mechanism for Mutation Induced Destabilization and Modulation of Allosteric Coupling in Proteins	NCBS, India	11 November 2016
14.	M. Michael Gromiha	Factors Governing the Stability of Proteins: Database Analysis, Prediction and Applications	Anna University	December 2016

Sl. No.	Faculty Member	Topic of Lecture	Institution	Date
15.	Nitish R. Mahapatra	Chromogranin A: a new player in cardiovascular and metabolic homeostasis	University of Central Florida, Orlando, Florida, USA	10 January 2017
16.	Nitish R. Mahapatra	Neuroendocrine secretory granule protein chromogranin A: a new regulator of cardiovascular and metabolic disease states.	New York Medical College, Valhalla, New York, USA	22 February 2017
17.	M. Michael Gromiha	Biology (Bioinformatics) for Engineers: Applications in Human Health and Medicine	Thiyagarjar College of Engineering	March 2017
18.	Karthik Raman	Revisiting robustness and evolvability: evolution on weighted genotype networks	Institute for Mathematical Sciences, Chennai	26 April 2016
19.	Karthik Raman	Introduction to Constraint-Based Modelling of Metabolic Networks (NNMCB Second Instructional School on Computational Biology)	Indian Institute of Science, Bengaluru	28 May 2016
20.	Karthik Raman	Metabolic Engineering of Vitamin E Biosynthesis in Sunflower Cell Cultures (invited talk, 85th SBC(I) Annual Meeting at CSIR-CFTRI)	CFTRI, Mysore	22 November 2016
21.	Karthik Raman	Introduction to Graph Teory and Network Biology	Anna University, Chennai	22 December 2016
22.	Karthik Raman	Robustness and Evolvability in Complex Systems: An Overview	Culture Machine Pvt Ltd, Mumbai	4 January 2017
23.	V. Srinivasa Chakravarthy	Modeling Neuron-Astrocyte-Vessel interactions: Do cerebral vessels compute?	Sur Lab, Simons Center for the Social Brain, MIT, USA	June 2016
24.	V. Srinivasa Chakravarthy	Simplified computational models of Neuron-Astrocyte-Vessel interactions	McGovern Center for Neuroscience, MIT, USA	July 2016
25.	V. Srinivasa Chakravarthy	The basal ganglia as an exploration engine	University of Rochester, USA	July 2016
26.	V. Srinivasa Chakravarthy	BHARATHI:One Script. Billion People	TEDx, GITAM University, India	April 2016
27.	A. Jayakrishnan	Novel Nanotechnological Approaches to the Treatment of Leishmaniasis, Key Note Lecture, BiTERM 2016: International Conference on Biomaterials, Biodiagnostics, Tissue Engineering, Drug Delivery and Regenerative Medicine, IIT Delhi	New Delhi	16-17 April 2016
28.	A. Jayakrishnan	Emerging Trends in Science Research, Inaugural Lecture, National Seminar, University College, Trivandrum, 150th Anniversary Celebrations	Trivandrum	22 March 2017
29.	A. Jayakrishnan	Novel Nanotechnological Approaches to the Treatment of Leishmaniasis, Plenary Lecture, International Workshop on Advanced Functional Materials, Centre for Nanoscience and Technology, Anna University, Chennai	Chennai	23 March 2017
30.	N. Athi Narayanan	A General Mechanism for Mutation Induced Destabilization and Modulation of Allosteric Coupling in Proteins	NCBS, India	11 November 2016

Visits abroad by faculty

Sl. No.	Faculty Member	Country Visited	Date	Purpose of visit	Funding from
1.	Amal Kanti Bera	University of California, SanDiego, USA	7-18 March 2016	Scientific Discussion and Research Collaboration	University of California
2.	M. Michael Gromiha	Tokyo Institute of Technology, Tokyo, Japan	13-19 March 2016	Research Discussions and invited talks	Tokyo Institute of Technology
3.	Sanjib Senapati	Biopolis, Singapore	14-18 March 2016	Supercomputing Frontiers 2016 International Conference	Singapore
4.	M. Michael Gromiha	Trieste, Italy	14 May-10 June 2016	The Abdus Salam International Centre for Theoretical Physics to carry out short-term research work	ICTP, Italy
5.	K. Chandraraj	Technical University of Denmark, Lyngby, Denmark	2 May to 6 June 2016	Scientist/student exchange programme	Technical University of Denmark
6.	Karthik Raman	University of Heidelberg Germany	20-24 June 2016	Meeting “Graduate Program India-Heidelberg” At Heidelberg Graduate School of Mathematical and Computational Methods for the Sciences	International and Alumni Relations Office, IITM
7.	Mukesh Doble	St. Catherine’sCollege, Oxford, UK	10-16 July 2016	To attend International Conference on RSC Bioactive Natural Products: translating promise into practice; poster presented: Ellagic acid, a component of pomegranate peels, interacts synergistically with pioglitazone and enhances glucose uptake in cells	
8.	N. Athi Narayanan	Les Diablerets, Switzerland	26 June–6 July 2016	Gordon Research Conference on Intrinsically Disordered Proteins	Wellcome Trust DBT India Alliance, CPDA
9.	M. Michael Gromiha	Lanzhou, China	2-5 August 2016	International Conference on Intelligent Computing (ICIC 2016) technically co-sponsored by IEEE Computational Intelligence Society and International Society of Neural Networks; oral presentation: Computational Analysis of similar protein-DNA complexes from different organisms to understand organism specific recognition	CPDA (IIT Madras)
10.	Srinivasa Chakravarthy V.	Vancouver, Canada	24-30 July 2016	International Joint Conference on Neural Networks (IJCNN 2016)	
11.	Vani Janakiraman	Melbourne, Australia	21-26 August 2016	To attend and present paper at the 16th International Congress of Immunology (ICI 2016)	
12.	S. Mahalingam	Maniz, Germany	19-27 September 2016	VisitedUniversity Medical Centre for the discussion regarding collaboration between National cancer tissue bio bank – IIT Madrasand Indivumed Cancer Genomics, Hamburg and Institute of Immunology	
13.	Guhan Jayaraman	Germany	6-9 September 2016	Attendedinternational conference “IITM-Aachen University StrategicPartnershipKick off Meeting” at Germany	UGC Project Fund
14.	Guhan Jayaraman	Espoo, Finland	9-14 September 2016	Collaboration between IITM and VTT Limited	UGC Project Fund
15.	K. Subramaniam	Cold Spring Harbor Laboratory, Long Island, USA	4-8 October 2016	Attended andgave oral presentationin the 10th Biennial Meeting on Germs Cells	
16.	Nitish R. Mahapatra	New York, USA	14 September- 16 June 2017	In sabbatical to avail Fulbright Nehru Academic and Professional Excellence Fellowship for Conducting Research atNew YorkMedical College	
17.	Madhulika Dixit	University Hospital Frankfurt, Germany	26-28 September 2016	Visited Germany to attend and organize a session at the perspectives in Vascular Biology InternationalMeeting	
18.	M. Michael Gromiha	Japan	24-28 October 2016	To visit Education Academy of Computational and Life Sciences (ACLS) for research discussions and delivering an invited talk in Tokyo Institute of Technology	

Sl. No.	Faculty Member	Country Visited	Date	Purpose of visit	Funding from
19.	M. Michael Gromiha	Kyoto, Japan	22-24 November 2016	Present a paper, chair a session	Mid-career IRDA Award (IIT Madras)
20.	Vignesh Muthuvijayan, Thangavel Ponrasu, Balaji Ramachandran and Lonchin Suguna	A novel L-glutamic acid loaded chitosan hydrogel as an ideal wound dressing material in Streptozotocin induced diabetic rats	7-10 December 2016	To present a paper at the 16th International Conference on Biomedical Engineering, UTown, Stephen Riady Centre, Singapore	
21.	Nitish R. Mahapatra	Division of Metabolic and Cardiovascular Sciences, Burnett School of Biomedical Sciences, College of Medicine, University of Central Florida, Orlando, Florida, USA	10 January 2017	To explore collaboration and give an invited lecture	IIT Madras Alumni Affairs

Honours and awards obtained by faculty

Sl. No.	Faculty Member	Award	Awarded by	Awarded for	Date
Awards					
1.	Rayala Suresh Kumar	Institute Research and Development Junior Level Award	IIT Madras	Extensive research and development activities	April 2016
2.	M. Michael Gromiha	Institute Research and Development Mid Career Level Award	IIT Madras	Extensive research and development activities	April 2016
3.	Anju Chadha	Prof. S. K. Chatterjee Award for an Outstanding Women Scientist, IISc, 2016 (carries a cash prize of ₹ 40,000 and certificate)	IISc Bengaluru	Outstanding research activity	September 2016
4.	Sanjib Senapati	National Bioscience Award 2015from DBT, Governmentof India (carries prize of ₹ 2 lakh and ₹ 5 lakh project grant per annum for five years)	DBT Government of India	Outstanding research activity	September 2016
5.	A. Jayakrishnan	Elected as a fellow of the Indian National Science Academy, New Delhi		Outstanding research activity	October 2016

Fellowships of academies and professional societies

Sl. No.	Faculty Member	Year of admission
1.	M. Michael Gromiha	Selected as a Member in the National Academy of Sciences, Allahabad, India, 2015-16
2.	Nitish R. Mahapatra	Fulbright-Nehru Academic and Professional Excellence Fellowship
3.	Mukesh Doble	FRSC 2010

Journal Editorial Boards

Sl. No.	Faculty Member	Position	Journal
1.	M. Michael Gromiha	Associate Editor	*BMC Bioinformatics*
2.	M. Michael Gromiha	Editorial Board Member	*Scientific Reports*
3.	M. Michael Gromiha	Editorial Board Member	*Current Computer Aided Drug Design*
4.	M. Michael Gromiha	Editorial Board Member	*Biologia*
5.	M. Michael Gromiha	Editorial Board Member	*Journal of Bioinformatics and Computational Biology*
6.	M. Michael Gromiha	Guest Editor	*IEEE-ACS Transactions on Computational Biology and Bioinformatics*
7.	M. Michael Gromiha	Associate Editor	*BMC Bioinformatics*
8.	Mukesh Doble	Editorial Board Member	*Chemical Engineering*
9.	A. Jayakrishnan	Editorial Board Member	*Regenerative Engineering and Translational Medicine* (Springer)

4.3.4. Design and Development Activities

New facilities added or major equipment procured

Sl. No.	Name of Equipment	Amount (in lakh of ₹)
1.	Dell PowerEdge R730xd Server	11.46
2.	Fujitsu CelisiusR940 Work Station	10

Patents filed:

Sl. No.	Faculty Member	Topic
1.	Sudhin Thampi, Vignesh Muthuvijayan and Ramesh Parameswaran	Non-Leaching Bacterial and Platelet Anti Adhesive Bioactive Surface; Indian Patent 201641010185, complete patent filed, 2017
2.	Maya Raman, Anju V. Nair and Mukesh Doble	Process for Producing Hydrogel from Cyclic Beta Glucan/Carrageenan for Use in Cosmetic and Food Applications, Complete Filing: 4289/CHE/2015, dated 17/8/2016

4.3.5. Research and Consultancy

Sponsored Research Projects (on going and new)

Sl. No.	Title	Period	Funding Agency	Amount (₹ in lakhs)	Co-ordinators and Principal Investigator
1.	Entrainment of rhythms for improved cancer therapy	February 2017–January 2020	DST	38.3	G. K. Suraishkumar (PI) and D. Karunagaran and Raghunathan Rengasamy, CH (co-PIs)
2.	Design of sialic acid analog inhibitors to Hemagglutinins and Neuraminidases of Influenza virus by molecular modelling and molecular dynamics simulation BIO/16-17/260/DBTX/MICH	Three years (28 July 2016 – 27 July 2019)	DBT	32.46	M. Michael Gromiha Kasinadar Veluraja (PI), Senior Professor, Physics, VIT
3.	How Molecular Interactions and Ionic Hydrations Manifest in the Physicochemical Properties of Ionic Liquid/Water Mixture: A Comprehensive Study by Experimental Measurements and Molecular Dynamics Simulations BIO/16-17/263/DSTX/SANI	Three years	DST (SERB)	24.59	Sanjib Senapati
4.	Value addition to selected food wastes by biotechnological means		Saraswathi Foundations Pvt Ltd	2.5	T. S. Chandra
5.	Prediction of Disease-relevant Mutations in Trans membrane Proteins BIO/16-17/262/DSTX/MICH	Three years	DST	71.28	M. Michael Gromiha Russian counterpart: Dr. Dmitrij Frishman, St. Petersburg Polytechnic University, Russia
6.	Geno type Pheno type Map Modulation by Genetic and Environmental Variation BIO/16-17/856/NFIG/HIMA	17 October 2016 to 16 October 2018	New Faculty Initiation Grant (IC&SR)	5	Himanshu Sinha

Sl. No.	Title	Period	Funding Agency	Amount (₹ in lakhs)	Co-ordinators and Principal Investigator
7.	Probing the conformational Heterogeneity of a Protein Molten Globule:A Combined Experimental – Modeling study	Three years	Indian National Science Academy	15	Athi Narayanan N.
8.	Development and Field Deployment of "milk sense" – a low cost, disposable, qualitative nanosensor for gauging the quality of milk	Two years	MHRD	100 (16 lakh for IITM)	Siva Rama Krishna Vanjari, Department of Electrical Engineering, IIT Hyderabad (PI); T. S. Chandra, Department of Biotechnology, IIT Madras (Co-PI)
9.	Targeting P21 Activated Kinase 1 (PAK1) in Pancreatic Stellate Cell Mediated Fibrosis: A Potential Therapeutic Approach	Three years	DST	51.06	Rayala Suresh Kumar and Kesavan V.
10.	Characterization and Functional Studies of Rv1987, a probable Chitinase from M.tuberculosis	36 months	DST (SERB)	47.77	Vani Janakiraman
11.	Development of Smartphone Integrated Generic Microfluidic Devices for Rapid, Portable, and Affordable Point-of-Care Diagnostics	Three years	MHRD	300 (76 lakh to IIT Madras duration)	Suman Chakraborty, ME Department (PI) IIT Kharagpur, Prof. Soumen Das, Prof. Chandan Chakraborty, School of Medical Science and Technology, IIT Kharagpur, Prof. Amit Agrawal, IIT Bombay, Prof. Ashish Sen, ME Department, IIT Madras, Dr.(Mrs.) T.S.Chandra, Departmentof Biotechnology, IIT Madras and Dr. Anil Tarigopula. Apollo Hospitals, Chennai was the Co-PI of the project.
12.	Design of sialic acid analog inhibitors to hemagglutinins and neuraminidases of influenza virus by molecular modelling and molecular dynamics simulation	2016-2019	DBT	17.16	Dr. M. Michael Gromiha Dr. Kasinadar Veluraja
13.	Development of three dimensional structural database for biologically and functionally important glycans and glycan-protein complexes through molecular dynamics simulations	2016-2019	DBT	15.29	M. Michael Gromiha and Kasinadar Veluraja
14.	Prediction of disease-relevant mutations in transmembrane proteins	2016-2019	DST-RSF	71.28	M. Michael Gromiha, Dmitrij Frishman
15.	IRDA-Mid carrier level	2016-2019	IIT Madras	5	M. Michael Gromiha
16.	Targeted inhibition of Bcl-2 anti-apototic proteins using *inslico* and *invitro* approches	2017-2018	IC&SR research fund	9.5	M. Michael Gromiha and Suresh Kumar Rayala
17.	Mutational effects on binding affinity of protein-protein complexes: development of database, tools and applications to diseases	2017-2020	DST	27.86	M. Michael Gromiha
18.	Investigating protein aggregation using structural analysis prediction methods and molecular dynamics study with applications to an eye disease, corneal dystrophy	2013-2017	DBT	37.53	M. Michael Gromiha D. Velmurugan
19.	Implication of structure based drug designing, high throughput screening and structure optimization techniques for designing novel RNA dependent RNA polymerase (RdRp) inhibitors for dengue infection	2014-2017	DST under Women Scientist Scheme-A (Dr. A. Anusuya)	16.25	M. Michael Gromiha
20.	Exploring the impotance of inter-residue interactions in protein structure and folding	2016-2019	DST-SERB Young Scientist (Dr.Harihar)	25.2	M. Michael Gromiha
21.	The aggregation of Huntingtin and alpha synuclein-MD simulation and docking studies	2016-2018	DST-SERB NPDF (Dr.Binny Priya.S)	19.2	M. Michael Gromiha
22.	Identification and characterization of functional polymorphisms in the physiological dysglycemic peptide pancreastatin in an indian population	2014-2017	SERB, DST	32.70	Nitish R. Mahapatra
23.	Towards Designing Tunable Nanomachines: Taking Advantage of Protein Disorder	2015-2020	Wellcome Trust DBT India Alliance	337.5	N. Athi Narayanan
24.	Probing the Conformational Heterogeneity of a Protein Molten-Globule: A Combined Experimental-Modeing Study	2017-2020	INSA	15	N. Athi Narayanan
25.	A Rapid, Ensemble and Free Energy Based Web-Tool for Engineering the Thermodynamic Stabilies of Proteins and Enzymes	2015-2018	DST	24.5	N. Athi Narayanan
26.	Entrainment of Rhythms for Improved Cancer Therapy	Three years	DST	38.05	Suraish Kumar G. K. (PI) and Karunagaran Raghunathan Rengaswamy, CH (Co-PI)
27.	Systems Biology Approach for investing the role of two-component Regulatory system (covR/covS) of Streptococcus in generating Poly dispersity during Hyaluronan Polymer Synthesis	Three years	DBT	55.36	Guhan Jayaraman
28.	Development of a novel, rapid and cost-effective method for separation of drug loaded liposomes from unencapsulated drug molecules	31 December 2015 - 30 December 2018	DBT	14.98	Vignesh Muthuvijayan
29.	Design and Development of Multifunctional Gold Nanostructures using Cell Free Extract of *Candida parapsilosis* ATCC 7330	16 April 2015 – 15 April 2018	BRNS, DAE, GoI;	24.31	Anju Chadha (PI)
30.	Towards Green Chemistry Development of a chemoenzymatic route for the synthesis of chiral vicinal aminols;	22 December 2015 – 21 December 2018	DST, GoI	40.22	Anju Chadha Principal Investigator
31.	Understanding Candida parapsilosis ATCC 7330 De-recemisation of alfa and beta - Hydroxy Esters using *In silico* methods	22 March 2011 to 21 July 2017	DST, GoI	30	Anju Chadha Co-PI
32.	Bioprocess optimization strategies for enhanced and sustainable production of camptothecin from suspension culture of the endophyte, Fusarium solani	30 December 2016 - 29 December 2019	DST (SERB)	35.42	Smita Srivastava
33.	Cocultivation of plant cells/tissues with endophytes for enhanced in vitro production of secondary metabolites	1 May 2016 - 30 July 2017	ERP-Scheme, IC&SR, IIT Madras	10	Smita Srivastava
34.	Characterization of genes that regulate self renewal / differentiation decision	7 August 2014 – 6 August 2017	DST-SERB	50.46	K. Subramaniam
35.	Nanos-mediated gene expression during primodrial germ cell development in Caenorhabditis elegans	3 February 2016 – 2 February 2019	DBT	76.22	K. Subramaniam

Retainer Consultancy (ongoing and new):

Sl. No.	Name of faculty	Title	Industry	Amount (₹ in lakhs)
1.	Karthik Raman	Systems-level modelling approaches for quantitative systems pharmacology	Vantage Research Pvt Ltd	3.59

Exchange programme with other universities including institutions/universities under MoU

Sl. No.	Scholar	Country Visited	Date	Purpose of Visit	Organising Institute
1.	Priyadharshini M. (BT15S007)	University of Stuttgart	September 2016 – March 2017	DAAD Sandwich Scholarship Program 2016	Institute of cell Biology and Immunology
2.	Harsha Ohri (BS13B012)	Technical University of Denmark	1 September 2016 - 31 January 2017	Exchange Program	DTU

Sl. No.	Scholar	Country Visited	Date	Purpose of Visit	Organising Institute
3.	Srirahav Srinivasan (BE12B027)	Singapore	8 August 2016 – 2 December 2016	Exchange Program	Nanyang Technological University (NTU)
4.	Pandeeswari J. (BT13D047)	Finland	20 May – 30 November 2016	Visiting Researcher	VTT LTD. Finland
5.	Kumar Srinivas Ketha (BS14B021)	Denmark	September 2016 – January 2017	Exchange Program	Technical University of Denmark
6.	Aditi Methi (BS13B001)	Denmark	August 2016 – January 2017	Semester Exchange Programme	Technical University of Denmark
7.	Zeeshan (BT14S007)	Germany	September 2015 – March 2016	DAAD Sandwich Scholarship Program 2016	Technical University Munich, Germany
8.	Puja Kumari	Australia	March 2016 – March 2017	Joint Ph.D. programme	Swinburne University

Faculty members participation with other institution under MoU

Sl. No.	Faculty Member	Participation details	University/Institution
1.	G. K. Suraishkumar	Guidance for a student in the Joint dual Ph.D. program	Curtin University, Australia
2.	M. Michael Gromiha	Collaborative research, exchange of students and faculty members	GSIC, Tokyo Insitute of Technology, Japan
3.	Mukesh Doble	Joint dual Ph.D. program	Swinburn University, Australia

Research publications of faculty members and research scholars:

Books: 6

Total number of papers published in refereed national journals: 2

Total number of papers published in refereed international journals: 137

Total number of papers presented in national conferences: 10

Total number of papers presented in international conferences: 6

Books/Book Chapters

1. K.B. Ramachandran and S. Ramalingam. Principles of Metabolic Engineering. 2016. *Current Developments in Biotechnology and Bioengineering: Foundations of Biotechnology and Bioengineering* 129-151. doi: 10.1016/B978-0-444-63668-3.00005-6
2. A. Badri, A. Srinivasan and K. Raman K. *In silico* Approaches to Metabolic Engineering. 2016. *Current Developments in Biotechnology and Bioengineering: Functional Genomics and Metabolic Engineering* 161-200. doi: 10.1016/B978-0-444-63667-6.00008-0
3. M. Kuma., A. Daverey, J.-D. Gu and J.-G. Lin. Anammox Processes. 2016. *Current Developments in Biotechnology and Bioengineering: Biological Treatment of Industrial Effluents* 387-407. doi: 10.1016/B978-0-444-63665-2.00015-1
4. B. Gopalan and K.K. Balasubramanian. Applications of Click Chemistry in Drug Discovery and Development. 2016. *Click Reactions in Organic Synthesis* 25-76. doi: 10.1002/9783527694174.ch2
5. M. Raman, P. Ambalam and M. Doble. Probiotics and bioactive carbohydrates in colon cancer management. 2016. *Probiotics and Bioactive Carbohydrates in Colon Cancer Management* 1-124. doi: 10.1007/978-81-322-2586-7
6. D.S. Preethidan and S. M. Prathyusha. Alkaloid therapy in Parkinsonism. 2016. *Food and Parkinson's Disease* 133-152

Papers published in refereed national journals

1. P. Ponmurugan, G. Ayyappadasan, R.S. Verma and S. Nayaka. 2016. Survey, distribution pattern and elemental composition of lichens in Yercaud hills of Eastern Ghats in southern India. *Journal of Environmental Biology* 37(3): 407-412
2. R. P. Sangameswaran, G. K. Verma, N. Raghavan, J. Joseph and M. Sivaprakasam. Cataract surgery in mobile eye surgical unit: Safe and viable alternative. *Indian Journal of Ophthalmology* 64 (11): 835-839. doi: 10.4103/0301-4738.195599

Papers published in refereed international journals

1. S. Muthusamy, N. Kumarswamyreddy, V. Kesavan and S. Chandrasekaran. 2016. Recent advances in aerobic oxidation with ruthenium catalysts. *Tetrahedron Letters* 57(50): 5551-5559. doi: 10.1016/j.tetlet.2016.11.024
2. S. Uppal, A.K. Singh, R. Arya, D. Tewari, N. Jaiswal, A. Kapoor, A.K. Bera, A. Nag and S. Kundu. 2016. Phe28^{B10} Induces Channel-Forming Cytotoxic Amyloid Fibrillation in Human Neuroglobin, the Brain-Specific Hemoglobin. *Biochemistry* 55(49): 6832-6847. doi: 10.1021/acs.biochem.6b00617
3. S. Rai, P.N. Patel and A. Chadha. 2016. Preparation, characterisation, and crystal structure analysis of (2E,2 E)-3,3 -(1,4-phenylene)bis(1-(2-aminophenyl)prop-2-en-1-one. *Crystallography Reports* 61(7): 1086-1089. doi: 10.1134/S1063774516070099
4. J.S.M. Pappu and S.N. Gummadi. 2016. Multi response optimization for enhanced xylitol production by Debaryomyces nepalensis in bioreactor. *3 Biotech* 6(2). doi: 10.1007/s13205-016-0467-x
5. I.J. Thoompumkal, K. Rehna, K. Anbarasu and S. Mahalingam. 2016. Leucine Zipper Down-regulated in Cancer-1 (LDOC1) interacts with Guanine nucleotide binding protein-like 3-like (GNL3L) to modulate Nuclear Factor-kappa B (NF- B) signaling during cell proliferation. *Cell Cycle* 15(23): 3251-3267. doi:10.1080/15384101.2016.1242534
6. S. Krishnan, S. Narayan and A. Chadha. 2016. Whole resting cells vs. cell free extracts of Candida parapsilosis ATCC 7330 for the synthesis of gold nanoparticles. *AMB Express* 6(1). doi: 10.1186/s13568-016-0268-y
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8. M. Kaur and G. Jayaraman. 2016. Hyaluronan production and molecular weight is enhanced in pathway-engineered strains of lactate dehydrogenase-deficient Lactococcus lactis. *Metabolic Engineering Communications* 3: 15-23. doi: 10.1016/j.meteno.2016.01.003
9. S.M. Nkosi, K. Anand, S. Anandakumar, S. Singh, A.A. Chuturgoon and R.M. Gengan. 2016. Design, synthesis, anticancer, antimicrobial activities and molecular docking studies of novel quinoline bearing dihydropyridines. *Journal of Photochemistry and Photobiology B: Biology.* 165: 266-276. doi: 10.1016/j.jphotobiol.2016.10.009
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Papers presented at national conferences

1. Thampi Sudhin, Vignesh Muthuvijayan and P. Ramesh. Improved haemocompatibility of surface modified polycarbonate urethane. *International conference on Polymer Science and Technology Macro 2017*
2. Govindaraj Perumal, A. Maya Nandkumar and M. Doble. Curcumin loaded Poly DL lactide and hyperbranched polyglycerol blended nanofibrous scaffold for wound dressing applications. *Front. Bioeng. Biotechnol. Conference*. 2017
3. R. Yunus Basha, T.S. Sampath Kumar and M. Doble. Poly(vinyl alcohol)/curdlan/silver nanoparticle nanofibers for wound healing. *European Cells and Materials*. 2017
4. Rutvi Sanghavi, Madhumathi Kalidoss, T.S. Sampath Kumar and Mukesh Doble. Antimicrobial Activity of Dual Ions Substituted Hydroxyapatite for Bone Regeneration. *BiTERM 2016*
5. Rutvi Sanghavi, Madhumathi Kalidoss, T.S. Sampath Kumar and Mukesh Doble. Effect of Concentration of Cations in Hydroxyapatite for Biomedical Applications. *Biointerfaces International 2016*, Zurich, Switzerland
6. Anju V. Nair, Markus R. Melzer, Christoph Kirse, Heiko Briesen and Mukesh Doble. Modeling of production of cyclic -(1,3)(1,6) glucan from Bradyrhizobium japonicum MTCC120. *3rd Indo-German Workshop on Advances in Materials, Reaction and Separation Processes*. 23-26 February 2016.
7. Chandraprasad M.S. Madihalli and Mukesh Doble. Mannosylerythritol lipid production from mutated Pseudozyma antarctica JCM10317 and its application in food and environmental remediation. *Eco-Bio 2016-Challenges in Building a Sustainable Biobased Economy*. World Trade Center, Rotterdam, Netherlands. 6-9 March 2016.
8. Zeeshan Shamshuddin*1,2, Christoph Kirse2, Heiko Briesen2 and Mukesh Doble. An experimental and modelling strategy for optimising production of AHL fromExiguobacterium Sp. 1,1 Bioengineering and Drug design Laboratory, Department of Biotechnology, Indian Institute of Technology Madras, 2 Chair of Process Systems Engineering, Technische Universität München, *Industrial Biotechnology Forum*, Universität München, Garching, Germany, Technische
9. Chandraprasad M.S. Madihalli and Mukesh Doble. Mannosylerythritol lipid production from mutated Pseudozyma antarctica JCM10317 and its application in food and environmental remediation. *Eco-Bio 2016-Challenges in Building a Sustainable Biobased Economy*. World Trade Center, Rotterdam, Netherlands. 6-9 March 2016
10. Puja Kumari, Mirnal Bhavae and M Doble. Potential application of Cyclic beta glucans from Azospirillum lipoferum MTCC 2306 in drug delivery . *International Biotechnology Symposium 2016* and *Aus Biotech 2016*.

Papers presented at international conferences

1. P. Holla and S. Chakravarthy. Decision making with long delays using networks of flip-flop neurons. 2016. *International Joint Conference on Neural Networks (IJCNN) 2016*. doi: 10.1109/IJCNN.2016.7727548. Institute of Electrical and Electronics Engineers Inc. 2767-2773
2. Karthik Soman, V. Muralidharan and V. S. Chakravarthy. A computational model of hippocampus inspired by the functional architecture of basal ganglia. *25th Annual Computational Neuroscience Meeting (CNS 2016)*. doi: 10.1186/s12868-016-0283-6. ISSN: 14712202. (54) Suppl 1-17. 188
3. Karthik Soman, V. Muralidharan and V. S. Chakravarthy. An oscillatory network model of head direction and grid cells using locomotor inputs. *25th Annual Computational Neuroscience Meeting (CNS 2016)*. doi:10.1186/s12868-016-0283-6. ISSN: 1471-2202. (54) Suppl 1-17. 187
4. V. Muralidharan, Alekhya Mandali, P.P. Balasubramani, Hima Mehta and V. S. Chakravarthy. A scalable cortico-basal ganglia model to understand the neural dynamics of targeted reaching. *25th Annual Computational Neuroscience Meeting (CNS 2016)*. doi: 10.1186/s12868-016-0283-6. ISSN: 1471-2202. (54) Suppl 1-17. 190
5. Sabyasachi Shivkumar, V. Muralidharan and V. S. Chakravarthy. A computational architecture to model the microanatomy of the striatum and its functional properties. *25th Annual Computational Neuroscience Meeting (CNS 2016)*. doi: 10.1186/s12868-016-0283-6. ISSN: 1471-2202 (54) Suppl 1-17.189
6. S. Archanaa, Amitava Mukherjee and G. K. Suraishkumar. "Better sustainable use of nanoparticles: Bio-oil from bacteria through stress induced by nano-TiO_2 in wastewaters". *European Symposium on Biochemical Engineering Sciences 2016*, Dublin, Ireland. 11-14 September 2016

Distinguished visitors to the Department

Sl. No.	Name and Designation	Date of Visit	Purpose of Visit
1.	Dr. Kedar Natarajan, Postdoctoral Fellow Wellcome Trust Sanger Institute and EMBL-European Bioinformatics Institute, UK	7 March 2016	Talk tiltled 'General cell-cycle lessons from single-cell profiling of mouse embryonic stem cells'
2.	Prof. Yves Mély, Biophotonics and Pharmacology Laboratory, Université de Strasbourg, France	24 March 2016	Talk tiltled 'Advanced fluorescence probes and microscopy techniques to monitor the lipid and nucleic acid binding properties of HIV-1 proteins'
3.	Dr.S.Selvaraj, UGC-Emeritus Fellow	13-17 April 2016	Project Discussion
4.	Prof Mark Eiteman, University of Georgia, USA	28 June - 17 July 2016	GIAN course on Bioprocesses in Metabolic Engineering with Prof T. S.Chandra and Dr. Ramalingam, Anna University
5.	Prof Viswanathan Palanisamy, Department of Oral Health Sciences, MUSC College of Dental Medicine, USA	30 June 2016	Talk tiltled 'Post-transcriptional gene regulation by RNA-binding proteins and non-coding RNAs in OSCC'
6.	Prof. Rajaram Swaminathan, Department of Bioscience and Bioengineering, Indian Institute of Technology Guwahati	14 July 2016	Talk tiltled 'Effect of Macromolecular Crowding on an Enzymatic Reaction: Experimental Results and Theoretical Model'
7.	Dr. V. Stalin Raj, Scientist, Department of Virosciencein Erasmus Medical Center, Netherlands	2 August 2016	Functional Analysis of Unique Motifs in Dimeric EcoP15I DNA Methyltransferase
8.	Dr. Madhusoodanan U.K., Post-doctoral fellow at the IFOM-The FIRC Institute of Molecular Oncology, Milan, Italy	4 August 2016	Invited to talk on 'Functional Analysis of Unique Motifs in Dimeric EcoP15I DNA Methyltransferase'
9.	Prof. Ipsita Roy, Applied Biotechnology Research Group, University of Westminster, UK	17 August 2016	Research collaboration
10.	Dr. Kavitha Subramanian, Postdoctoral Fellow, American Heart Association, Center for Environmental Genetics, National Institutes of Environmental Health Sciences	19 August 2016	Immunological signals manipulate the zinc milieu during infection
11.	Dr. Shrijay Vijayan, Head, Office of Innovation and Technology Transfer; Rush University Medical Center, Chicago	29 August 2016	IPR and Technology Transfer
12.	Prof. Ipsita Roy and team, University of Westminster	16 January 2017	Research discussion
13.	Padma Shri Prof. Dipankar Chatterji, Molecular Biophysics Unit, Indian Institute of Science, Bengaluru	30 January 2017	Deliveredthe Joseph Thomas Memoriallecture on "Regulation of gene expression under starvation in Bacteria"

Sl. No.	Name and Designation	Date of Visit	Purpose of Visit
14.	Prof. Shoba Ranganathan, Chair of Bioinformatics, Macquarie University, Sydney, Australia	2 February 2017	Talk tiltled 'Accelerating the search for the missing proteins in the human proteome'
15.	Prof Manfred Schneider, FBC – Bergische Universität Wuppertal Germany. schneid@uni-wuppertal.de	3 February 2017	Delivered a lecture on "Syntheses of(Hydroxy) Nitriles using establishedand novel enzymes"
16.	Dr. Dheepak Selvaraj, Surgeon, Department of Vascular Surgery, Christian Medical College, Vellore	8 February 2017	Delivered a lecture on "Stent engineering and vascular medicine"
17.	Prof. Dr. Dmitrij Frishman St. Petersburg Polytechnic University Russia	11-16 February 2017	Project discussion and delivered a talk
18.	Dr. Kelath Murali Manoj, Satyamjayatu: The Science and Ethics Foundation, Kulappully, Shoranur, Kerala	17 March 2017	Talk tiltled 'Why/How do we use oxygen'
19.	Prof. Utpal Bora, Biomaterials and Tissue Engineering Laboratory, Department of Biotechnology, IIT Guwahati, Assam	24 March 2017	Talk tiltled 'Learning Biology from silkworms'

4.3.6. Other Activities of the Department

Student visit

Sl. No.	Student	Purpose of Visit	Date and Venue
1.	Ambuj Srivastava	Research discussion	19 December 2016, Jawaharlal Nehru University, New Delhi
2.	Jay Panji (BE13B018)	Exchange semester programme	September 2016 to January 2017, National Chiao Tung University, Taiwan
3.	Aparajitha S. (BT12D002)	Ph.D. exchange Fellowship: Erasmus Mundus NAMASTE fellowship	Department of Plant Sciences, University of Oxford, UK, Ten months (November 2015– September 2016)
4.	Saransh Umale (BE13B028)	Charpak Research Internship Program 2016; Internship on Microbial Individuality and Infection under Dr.Giulia Manina	10 May – 31 July 2016, Paris Cedex, France
5.	Varsha Bharathi S. (BE13B032)	Introduction of Hiyoshi International Internship Program	15 June – 14 July 2016, Shiga, Japan

4.4. Department of Chemical Engineering

4.4.1. Introduction

The Department of Chemical Engineering was established in 1959. The department has permanent faculty members who carry out research in state-of-the art areas. The focus of the research is on reaction and transport, energy, materials and environment. The faculty work towards analysing these systems by understanding their behaviour at the molecular level as well as using a system approach.

4.4.2. Academic Programmes

New courses introduced

Sl. No.	Course No.	Title
1.	CH5018	Biomass Conversion Processes and Analysis
2.	CH5022	Solar Photoelectrochemistry

Students on roll as of September 2016+ research scholars admitted in January 2017

Programme	Year I	Year II	Year III	Year IV	Year V and others	Total
B.Tech.	69	66	63	09	-	**207**
Dual Degree	17	18	20	17	-	**72**
M.Tech.	32	26	01	-	-	**59**
M.S.	06	08	13	06	-	**33**
Ph.D.	17	27	32	21	45	**97**
Total	**141**	**145**	**129**	**53**	**45**	**468**

Students/scholars who attended conferences/workshops/seminars/symposia

Sl. No.	Student/Scholar	Roll No.	Conference/seminar/ symposium/workshop	Date and Venue	Financial Assistance from
Abroad					
M.S.					
1.	Akshaya	CH14S008	AICHE-2016 Spring Meeting and Global Congress on Process Safety	10-14 April 2016 Houston, USA	IITM
2.	M. Arun	CH14S011	ICCEEE 2016: 18th International Conference on Chemical, Ecological and Environmental Engineering	14-15 April 2016 Lisbon, Portugal	IITM
3.	D. M. Darsha Kumar	CH13S017	ESCAPE Conference	12-15 June 2016 Portoroz, Slovenia	IITM
4.	R. Srikanth	CH14S018	International Workshop on Computer Vision for Microscopy Image Analysis	26 June 2016, CVMI, Las Vegas, USA	IITM
5.	C. Srinesh	CH14S300	XVI Chemometrics and Analytical Chemistry	6-10 June 2016, Barcelona, Spain	IITM
6.	K. B. Iyeswaria	CH14S026	AEM2016	12-15 September 2016, University of Surrey, England	IITM
7.	Vishnu Prasad S.	CH14S021	ICCPE 2016-18th International Conference on Chemical and Process	10-11 November 2016, Kyoto, Japan	IITM
Ph.D.					
8.	Amrutha	CH13D018	229th ECS conference	29 May-2 June 2016, San Diego, California	IITM

Sl. No.	Student/Scholar	Roll No.	Conference/seminar/ symposium/workshop	Date and Venue	Financial Assistance from
9.	S. Anupriya	CH12D026	9th International Conference of Multiphase flow	22-25 May 2016 Firenze, Italy	IITM
10.	Deepak Ojha	CH13D001	21st International Symposium on Analytical and Applied Pyrolysis (Pyro 2016)	9-12 May 2016 Nancy, France	IITM
11.	Sanjay Kumar	CH14D006	International Flow Battery Forum	7-9 June 2016 Karlsruhe, Germany	IITM
12.	Varghese Kurian	CH14D412	International Conference on Modeling and Optimization: Theory and Applications	17-19 August 2016, Bethlehem PA	IITM
13.	B. G. Abraham	CH13D021	67th Annual Meeting of the International Society of Electrochemistry (ISE)	21-26 August 2016, The Hague, Netherlands	IITM
13.	Indu Chanchal Polpaya	CH14D011	SMASIS-2016 Smart Material Adaptive Structures and Intelligent System	28-30 September 2016, Stowe, VT, USA	IITM
14.	Deepak Kumar Ojha	CH13D001	AICHE 2016 Annual Meeting	13-18 November 2016, San Francisco CA, USA	IITM
15.	Babita Kumari Verma	CH14D207	AICHE 2016 Annual Meeting	10-18 November 2016, San Francisco, CA, USA	IITM
16.	N. Bhagavatula and V. S. S. R. Dinesh	CH12D025	69th Annual Meeting of the American Physical Society's Division of Fluid Dynamics (DFD 2016)	20-22 November 2016, Portland, Oregon	IITM
17.	V. K. P. Janakey Devi	CH13D022	3rd International Conference on Ionic Liquids in Separation and Purification Technology	8-11 January 2017, Kuala Lumpur, Malaysia	IITM
18.	P. Resmi Suresh	CH12D024	2017 AIChE Spring Meeting	26-30 March 2017, San Antonio, TX	IITM
PDF					
19.	T. Vidyadevi	CH16IPF01	4th International Conference on Sustainable Environment and Agriculture (ICEA 2016)	26-28 October 2016, San Francisco, USA	IITM
India					
M.S.					
1.	C. Anoop	CH14S010	CHEMCON 2016	27-30 December 2016, Anna University (AU) and IIT Madras, Chennai	IITM
2.	Kommu Moulish	CH15S002	Chemference 2016	3-4 December 2016, IIT Gandhinagar	IITM
3.	P. C. Seshasai	CH15S009	CHEMCON 2016	27-30 December 2016, AU and IITM, Chennai	IITM
4.	Anupam Abha	CH15S014	CHEMCON 2016	27-30 December 2016, AU and IIT Madras, Chennai	IITM
5.	Garima	CH15S017	CHEMCON 2016	27-30 December 2016, AU and IITM, Chennai	IITM
6.	Sreeja Narayanan	CH15S020	CHEMCON 2016	27-30 December 2016, AU and IITM, Chennai	IITM
7.	J. R. Ila Sarkar		11th International Symposium on Advances in Electrochemical Science and Technology (iSAEST-11)	8-10 December 2016, Chennai	IITM
8.	CH14S027	International Conference on Sustainable Energy Technologies for Smart and Clean Cities	27-29 July 2016, IIT Tirupati	IITM	
Ph.D.					
8.	K. Nagarajan	CH10D011	Advances in Chemical and Environmental Engineering (ACEE 2016)	22-23 April 2016, NIT Jalandhar	IITM
9.	Seelam Narasimha Reddy	CH11D005	ACEE 2016	22-23 April 2016, NIT Jalandhar	IITM
10.	Application of Process Simulators in Chemical and Bioprocess Engineering	30 May-3 June 2016, NIT Warangal	IITM		
11.	G. Swaminathan Bharadwaj	CH11D036	International Conference on Soft Materials	12-19 December 2016, Jaipur	IITM
12.	M. Volga	CH12D009	iSAEST-11	8-9 December 2016, Chennai	IITM
13.	5th International Hydrogen and Fuel Cell Conference	11-14 December 2016, Hyderabad	IITM		
14.	Debayan Das	CH12D014	International Conference on Applications of Fluid Dynamics (ICAFD)	17-24 December 2016, ISM Dhanbad	IITM
15.	CHEMCON 2016	27-30 December 2016, AU and IIT Madras, Chennai	IITM		
16.	Neethu Thomas	CH12D020	4th Soft Matter Young Investigators Meeting 2016	15-19 December 2016, International Centre, Goa	IITM
17.	M. P. Resmi Suresh	CH12D024	CHEMCON 2016	27-30 December 2016, AU and IIT Madras, Chennai	IITM
18.	R. Sundari	CH13D010	CHEMCON 2016	27-30 December 2016, AU and IIT Madras, Chennai	IITM
19.	Abhishek Kumar Gupta	CH13D016	International Conference on Frontiers at the Chemistry-Allied Sciences Interface (FCASI) 2016	25-26 April 2016, University of Rajasthan, Jaipur	IITM
20.	6th International Conference on Functional Electroceramics and Polymers (ICEP-2017)	20 February-23 March 2017, IIT Kharagpur	IITM		
21.	Ashna	CH13D019	CHEMCON 2016	27-30 December 2016, AU and IIT Madras, Chennai	IITM
22.	M.Thirumala Rao	CH13D028	2nd International Conference and Exhibition on Heat Treatment and Surface Engineering (HTSE 2016)	12-15 May 2016, Chennai Trade Centre Chennai	IITM
23.	Deepa Elizabeth	CH13D201	CHEMCON 2016	27-30 December 2016, AU and IIT Madras, Chennai	IITM
24.	P Lineesh	CH13D203	CHEMCON 2016	27-30 December 2016, Anna Univ. and IITM Chennai	IITM
25.	Chandra Shekar Besta	CH14D002	Trends in Industrial Measurements and Automation	6-8 January 2017, MIT, Chennai	IITM

Sl. No.	Student/Scholar	Roll No.	Conference/seminar/ symposium/workshop	Date and Venue	Financial Assistance from
26.	Sanjay Kumar	CH14D006	International Conference on Sustainable Energy Technologies for Smart and Clean Cities	27-29 July 2016, IIT Tirupati	IITM
27.	Rumaiya Pervin	CH14D010	CompFlu	12-16 December 2016, IIT Hyderabad	IITM
28.	Durgadevi	CH14D018	CHEMCON 2016	27-30 December 2016, AU and IIT Madras, Chennai	IITM
29.	Babita K. Verma	CH14D207	CHEMCON 2016	27-30 December 2016, AU and IIT Madras, Chennai	IITM
30.	Nikita Saxena	CH14D208	Trends in Industrial Measurements and Automation	6-8 January 2017, MIT, Chennai	IITM
31.	K. Remya Ann Mathews	CH14D216	International Complex on Fluids Conference (Compflu-2016)	12-16 December 2016, IIT Hyderabad	IITM
32.	CHEMCON 2016	27-30 December 2016, AU and IIT Madras, Chennai	IITM		
33.	K. Lakshmi Kumar	CH14D403	FCASI 2016	25-26 April 2016, University of Rajasthan, Jaipur	IITM
34.	ICEP-2017	20 February-23 March 2017, IIT Kharagpur	IITM		
35.	International Conference on Material Science and Technology	5-9 June 2016, Kerala	IITM		
36.	Ramya K A	CH14D408	Compflu-2016	12-16 December 2016, IIT Hyderabad	IITM
37.	CHEMCON 2016	27-30 December 2016, AU and IITM, Chennai	IITM		
38.	Shumaila Shahid	CH14D409	International Conference on Material Science and Technology	5-9 June 2016, Kerala	IITM
39.	Varghese Kurian	CH14D412	IWWA Annual Convention 2017	18-22 January 2017 VNIT, Nagpur	IITM
40.	Rajesh Pachimatla	CH15D004	iSAEST-11	8-10 December 2016, Chennai	IITM
41.	Ranjith P. M.	CH15D007	HTSE 2016	12-15 May 2016, Chennai	IITM
42.	CHEMCON 2016	27-30 December 2016, Chennai	IITM		
43.	Suriapparao D. V.	CH15D009	4th International Conference on Material Cycles and Waste Management (4th 3RINCs)	8-10 March 2017 New Delhi, India	IITM
44.	T. Krishnaveni	CH15D200	Compflu-2016	12-16 December, IIT Hyderabad	IITM
45.	CHEMCON 2016	27-30 December 2016, Chennai	IITM		
46.	Akash Choudhary	CH15D206	Compflu-2016	12-16 December 2016, IIT Hyderabad	IITM
47.	CHEMCON 2016	27-30 December 2016, Chennai	IITM		
48.	Sushil M. Pachpinde	CH15D304	ICEP-2017	20 February-23 March 2017, IIT Kharagpur	IITM
49.	Raviteja Kurapati	CH15D403	Fourth International Conference on Polymer Processing and Characterization (ICPPC 2016)	8-11 December 2016, Mahatma Gandhi University, Kerala	IITM
50.	ICEP-2017	20 February-23 March 2017, IIT Kharagpur	IITM		
51.	Leo Lukose	CH15D404	CHEMCON 2016	27-30 December 2016, Chennai	IITM
PDF					
52.	P. Dhaiveegan	CH16IPF03	International Union for Materials Research Society and International Conference of Young Researchers on Advanced Materials	11-15 December 2016, IISc Bengaluru	IITM
53.	Poornima Budime Santhosh	CH15IPDF02	4th Soft Matter Young Investigators Meeting 2016	15-19 December 2016, Goa	IITM
M.Tech.					
54.	Saurabh Tripathi	CH15M031	International Conference FEAST 2017	31 March–1st April 2017 NIT-Tiruchirappalli	IITM
55.	Abhijith K. Haridas	CH15M037	CHEMCON 2016	27-30 December 2016, AU and IIT Madras, Chennai	IITM
56.	Krishna Saga	CH15M038	5th International Hydrogen and Fuel Cell Conference (IHFC-2016)	11-1 December 2016, Hyderabad, India	IITM
B.Tech.					
57.	B. Saipraneet	CH13B016	4th International Conference on Material Cycles and Waste Management (4th 3RINCs)	8-10 March 2017, New Delhi, India	IITM

Students/scholars who won outside prizes and awards

Sl. No.	Student/scholar	Roll No.	Prize	Awarded by
Ph.D				
1.	Simi Santhosh	CH12D006	IIChE NRC Award 3rd Best Paper in Indian Chemical Engineers (title: Tuning of proportional integral derivative controllers for critically damped second-order plus time delay systems)	IIChE
2.	Trivikram Reddy	CH12D008	Selected for the BASF International Summer Course Programme in Ludwigshafen, Germany	BASF
3.	P. Lineesh	CH13D203	Best Paper (title: Analysis of microwave heating of food materials enclosed in susceptor)	CHEMCON 2016
4.	A. Durgadevi	CH14D018	Best Paper (title: Experimental and theoretical investigation of CO_2 absorption in NaOH in millichannel)	CHEMCON 2016
5.	Ravi Thej Pilla	CH14D024	Best Paper (title: Collective dynamics of self-propelled colloids by Brownian dynamics simulations)	CHEMCON 2016
6.	Babita Kumari Verma	CH14D207	Best Paper (title: Population interaction in the society as a result of industrial-agricultural linkage)	CHEMCON 2016
7.	Kinhal Krishna	CH14D214	Best Paper (title: Synthesis of copper nanoparticles in a droplet based continuous reactor)	CHEMCON 2016
8.	K. Remya Ann Mathews	CH14D216	Best Paper (title: Phase behaviour of bipolar patchy particles)	CHEMCON 2016
9.	Rajashekar Reddy	CH14D400	M. S. Shukla 2nd Prize, IIChE for the Best Technical Paper (title: Experimental study of microwave assisted pyrolysis of Indian and Indonesian coals)	IIChE
10.	K. A. Ramya	CH14D408	Best Paper (title: Large amplitude oscillatory shear (LAOS) rheology of hydrogels and allied materials)	CHEMCON 2016

Sl. No.	Student/scholar	Roll No.	Prize	Awarded by
11.	Shumaila Shahid	CH14D409	Best Oral Presentation (title: Nanoparticles from polymeric waste) at 2nd International Conference on Material Science and Technology (ICMST) 2016	St. Thomas College, Palai Kottayam, Kerala
12.	T. Krishnaveni	CH15D200	Best Paper (title: Induce recycle flows via electroosmosis)	CHEMCON 2016
13.	Leo Lukose	CH15D404	Best Paper (title: Heatline and entropy generation analysis of brine water in various shapes involving unit area and heat input during natural convection)	CHEMCON 2016
M.S.				
14.	Mohan Das	CH14S006	Short-listed for the next phase of the Lockheed Martin\s C130/RO/RO Payload Design Challenge	Lockheed Martin, TATA Advanced Systems, DRDO and US Air Force, TATA Advanced
15.	J. R. Ila Sarkar	CH14S027	Best poster presentation award for poster titled, Manganese oxide supported on nitrogen-doped graphene as cathode catalyst for alkaline fuel cells, International Conference on Sustainable Energy Technologies for Smart and Clean Cities	IIT Tirupati
B.Tech.				
16.	M. Sanjana	CH14B061	Best Paper (title: Thermal hydraulic analysis of sodium-sodium heat exchanger for FBR applications; recommended to *Canadian Journal of Chemical Engineering*)	CHEMCON 2016
M.Tech.				
17.	Saurabh Tripathi	CH15M031	Best Paper (title: Identification of unstable centralized control systems) at the Frontiers in Engineering, Applied Science and Technology, NIT-Tiruchirappalli, 31 March–1 April 2017	International conference, FEAST 2017

Students/scholars who won convocation/Institute Day prizes

Sl. No.	Student/Scholar	Roll No.	Prize
Convocation 2016 prizes			
1.	Venkatachalam A.	CH12B094	Reliance Heat Transfer Private Limited Prize
2.	Raghavi Rao Kodati	CH11B051	Governor's Prize C. A. Sastry Endowment Prize
3.	Abhishek Sivaram	CH11B001	B Ravichandran Memorial Prize
4.	Vasudharini S. V.	CH14M031	Dr. K. Subba Raju Memorial Prize, Buti Foundation Gold Medal Award
5.	Vaishak Nair	CH11D012	GE Ecomagination Excellence Award
6.	Bharath R.	CH14M001	Bhagyalakshmi and Krishna Ayengar Award
7.	Dugyala Venkateshwar Rao	CH11D015	Institute Research Award
Institute Day 2016 Prizes			
1.	N. Pradeep	CH13B086	Dr. Anita Mehta-Damani Prize
2.	Venkatachalam A.	CH12B094	Dr R. K. Viswanath Memorial
3.	Sahithi Gorthy	CH11B089	Dr. Anita Mehta-Damani Prize
4.	Vasudharini S. V.	CH14M031	Messrs Chevron Products Company
5.	Srijith R.	CH12B091	Dr. Dilip Veeraraghavan Memorial Award
6.	Vasudharini S. V.	CH14M031	Swati/Jayalakshmi Memorial Award
7.	Ravindra Dhirhi	CH11B086	Prof. M. Ramanujam Memorial Award
Alumni Day 2016 Prizes			
1.	R. Mounica	CH12B052	48th Indian Pharmaceutical Congress Prize
2.	Ravindra Dhirhi	CH11B086	Prof. M. Ramanujam Memorial Award
3.	Gattum Sowjanya Rani	CH11B077	Smt. D. L. Saraswati Memorial Prize

4.4.3. Faculty Members and Their Activities

Faculty

Name	Major Areas of Specialization
Professors	
A. Kannan (Head)	Mathematical modeling, simulation and optimization of chemical processes
Abhijit Deshpande	Rheology of complex fluids, polymers and polymeric composites, processing flow visualization
Arun K. Tangirala	Process systems engineering; control, identification and monitoring, applied signal processing
A. R. Balakrishnan	Thermodynamics of azeotropic mixtures, two-phase flow and boiling in narrow tubes
T. Panda	Bioprocess optimization, enzyme design, bionanotechnology
Preeti Aghalayam	Chemical reaction engineering
S. Pushpavanam	Modeling and simulation, non linear dynamics, flow visualization
Raghunathan Rengasamy	Process systems engineering, fuel cells, computational discrete microfluidics
S. Ramanathan	Electrochemistry, chemical mechanical planarization for semiconductor processing
R. Ravi	Applied statistical mechanics, foundations of thermodynamics and mechanics, process dynamics and control
P.S.T. Sai	Chemical reactor analysis and design
Shankar Narasimhan	Process design, data mining, fault diagnosis
Sreenivas Jayanti	Fuel cells, combustion, energy systems
Susy Varughese	Physics and mechanics of polymeric materials, polymeric nano composites
Tanmay Basak	Microware application, mathematical modeling and simulation
Upendra Natarajan	Polymer science and engineering, molecular simulation, statistical thermodynamics of complex fluids, nanostructured hybrid composite materials
Associate Professors	
M.G. Basavaraja	Directed assembly of colloids, microstructure and rheology of colloids, surfactants, polymer and their mixtures, Interfacial rheology, Ionic liquids, particulate gels
Niket S. Kaisare	Catalytic combustion, micro-reactors, advanced process control, energy and fuel processing
Raghuram Chetty	Electrocatalysis, fuel cells, wastewater treatment
R. Ravikrishna	Contaminated Sediment remediation, contaminant fate and transport, air pollution process and control
Rajnish Kumar	Gas hydrates (formation, inhibition andrecovery) carbon dioxide capture, storage and utilization methane and hydrogen storage hydrothermal liquefaction at sub-critical and supercritical conditions
T. Renganathan	Multiphase systems, gasification, capture of CO_2
Sridharakumar Narasimhan	Process system engineering, optimization, process control, fault diagnosis
Assistant Professors	
Arvind Kumar Chandiran	Solar cells, solar water splitting, carbon dioxide reduction, photoconductivity, oxide semiconductors and solar energy research
Ethayaraja Mani	Molecular simulations, self-assembly, mathematical modeling
R. Ramnarayanan	Applying physical chemistry concepts to biology, light and state of matter interaction, solid state materials
Sumesh P. Thampi	Hydrodynamics of complex fluids, interfacial flows, active matter
R. Vinu	Thermo-catalytic conversion of biomass to useful intermediates, Photocatalysis for environmental decontamination, microkinetic modeling of complex reactions
Professors Emeriti	
K. Krishnaiah	Chemical reactor analysis and design fluidization
Visiting Faculty	
Rajagopalan Srinivasan	Safe and environmentally benign process design and operations, supply chain management and enterprise optimization, computational systems biology
Hosted Fellows (Ramalingaswami Fellows)	
K. Vijaya Raghavan	Environmental biotechnology, water quality and waste water treatment
INSPIRE Fellows	
Nirav P. Bhatt	Data analysis, process systems engineering, kinetic modeling

Name	Major Areas of Specialization
Swagatika Sahoo	System biology, constraint-based metabolic modeling, human metabolism, metabolic disorders, and inherited metabolic disorders

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

Sl. No.	Coordinators	Title	Period
Short-term courses			
1.	Ethayaraja Mani and Sumesh Thampi	Applications of Emulsions, Foams and Colloidal Dispersions	23-28 January 2017
2.	Shankar Narasimhan	Data Analysis for Model Identification using Time Series	7 January 2017
3.	R. Nagarajan	Contamination Control in High-Purity Manufacturing (Singapore)	27-28 June 2016
Workshops			
1.	Arun K. Tangirala	CEP workshop on Sparse Optimization for Signals and Systems	22-23 October 2016
2.	R. Ramnarayanan Aravind Kumar	Ishan-Vikas Programme for North East School Children	16 December 2016

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

Sl. No.	Faculty Member	Title	Institution	Period
Workshops				
1.	Arun K. Tangirala	Swayam Workshop	Ministry of Human Resource Development, New Delhi	2 March 2017
2.	Introduction to research: Preparation research proposal and journal articles	KPR Institute of Engineering and Technology, Coimbatore	24 June 2016	
3.	Systems identification	PSG College of Engineering, Coimbatore	27-28 August 2016	
4.	R. Nagarajan	Transition from joint-supervision to joint-degree program	University of Melbourne Australia	30-31 January 2017
5.	Preeti Aghalayam	Challenges and opportunities for development of UCG in India	CMPDI-Coal lndia Limited (Cll), New Delhi	27 March 2017
6.	T. Renganathan	Process simulation using Aspen Plus	Chemical Engineering Department, SRM University, Chennai	10 March 2011
7.	R. Vinu	Catalytic fast pyrolysis of microalgae for the production of fine chemicals and intermediates, UK--India Newton Researchers Link Workshop on Rational Designing of Catalysts for the Sustainable Production of Fuels and Chemicals	IIT Madras, Chennai	1-4 November 2016
8.	R. Vinu	Bioenergy Challenges	PSG College of Technology, Coimbatore	12 August 2016
9.	Swagatika Sahoo	Integration and analysis of multi-omics data within metabolic network context	IIT Madras, Chennai	4 March 2016
Seminar				
1.	Sreenivas Jayanti	Challenges and issues in New and Renewable Energy	RVR and JC College of Engineering, Guntur	3 March 2017
Symposium				
1.	Tanmay Basak	Delivered a Plenary talk at Computational Science Symposium 2017	Department of Computational and Data Sciences (CDS) at IISc, Bengaluru	16-18 March 2017
Conferences				
1.	Aravind Kumar Chandiran	2nd International Conference on Solar Energy Photovoltaics	Bhubaneswar	17-19 December 2016
2.	Arun K. Tangirala	2017 Indian Control Conference	Indian Institute of Technology, Guwahati	5 January 2017
3.	M. Chidambaram	CHEMCON 2016	AC Tech, Anna University and IIT Madras	27-30 December 2016
4.	Ethayaraja Mani	Talk in the Colloids/Nanoparticles session, International meeting CompFlu 2016	IIT Hyderabad	12-14 December 2016
5.	Ethyaraja Mani	CHEMCON 2016	AC Tech, Anna University and IIT Madras	27-30 December 2016
6.	R. Nagarajan	Materials synthesis and characterization using acoustic fields, national conference on Advanced Materials: Processing and Characterization	TEQIP – II	28 February 2017
7.	Shankar Narasimhan	CHEMCON 2016	AC Tech, Anna University and IIT Madras	27-30 December 2016
8.	Upendra Natarajan	6th International Conference	IIT Kharagpur	20-22 February 2017
9.	R. Vinu	CHEMCON 2016	AC Tech, Anna University and IIT Madras	27-30 December 2016
10.	Swagatika Sahoo	Predictive modeling for diagnosis and treatment of metabolic disorders, National Conference on Environment, Food Safety, and Predictive Modeling	VELS University, Chennai	4 October 2016
11.	Swagatika Sahoo	Metabolic modeling of inherited metabolic disorders at the Avidadham - International Conference on Recent Advances in Diagnostics and Treatment of Metabolic Disorders	Anna University, Chennai	19 March 2016
Short-term courses				
1.	Sumesh P. Thampi	Academic Research Opportunities, Challenges and Present Scenario	Government Engineering College, Trichur	7 October 2017
2.	Swagatika Sahoo	Computational Systems Biology	Department of Biotechnology, IIT Madras	11 February 2017
Others				
1.	Abhijit P. Deshpande	Invited for the committee of Ph.D. defence for Mr Sagar Srinivas of IISc Bengaluru on 11 July 2016		
2.	RuTAG Central Project Evaluation Committee (CPEC) meeting on 14 February 2017 coordinated by office of the Principal Scientific Adviser to the Government of India, New Delhi			
3.	M. Chidambaram	Nominated by Manipal Institute of Technology, Manipal, for an academic audit of the programmes organised by the Department of Chemical Engineering during February/March 2017		
4.	Ethayaraja Mani	Presentation about research findings and subsequent discussion at NASI, Allahabad on 21 July 2016		
5.	R. Nagarajan	Department of Heavy Industry, New Delhi to review plans for CAAR (Centre for Advanced Automotive Research) on 7 July 2016		
6.	Board of Directors Meeting of Indian Additives Limited on 24 March			
7.	Synopsis Meeting at VIT Vellore on 17 February			
8.	T. Panda	Expert Member in selection of Professor under CAS in Pondicherry University on 20 March 2017		

Sl. No.	Faculty Member	Title	Institution	Period
9.	S. Pushpavanam	Chief Guest Address at the Inaugural Ceremony of the programme on Theory and Applications of Absorption Processes (TAAP 2016) organised by the KSCSTE and MHRD-TEQIP II at NIT Calicut on 27 June 2016		
10.	S. Ramanathan	Expert resource faculty for the Training Programme on Corrosion Types and its Prevention Techniques at Department of Chemical Engineering, AC Tech, Chennai on 30 August 2016		
		Ramanathan was appointed as a member of the Syllabus Sub-Committee for framing the curricula and syllabi for in UG courses like Chemical Engineering, Petroleum Engineering, Chemical and Electro Chemical Engineering, Petro-chemical Technology, and Petro-chemical Engineering to be offered in 2017 by the constituent colleges and affiliated institutions of Anna University, Chennai under the Faculty of Technology, in accordance with the choice based credit system (CBCS).		
11.	P. S. T. Sai	Member in Expert Team for accreditation of following UG/PG Engineering programs in NIT Durgapur by the National Board of Accreditation		
12.	Shankar Narasimhan	External expert for defense of Ph.D. scholar Mr Nitin Minocha, Homi Bhabha National Institute, Mumbai on 2 September 2016		
13.	Selection Committee member by IIT Ropar for faculty positions at the meeting held on 20 January 2017			
14.	Expert member for evaluating nominations relating to Rakesh Mathur Awards for excellence in research in IIT Bombay on 2 March 2017			
15.	member for shaping up of course curriculum for BS-MS programme organised by IISER, Bhopal on 11 February 2017			
16.	Sreenivas Jayanti	Board Nominee in the faculty selection committee at Centre for Energy Studies, IIT Delhi on 1 July 2016		
17.	Tanmay Basak	External expert for Ph.D. Synopsis Evaluation in respect of Ph.D. candidate Mr Rohit Kumar Sngla by IIT Ropar on 7 July 2016		
18.	External expert for Ph.D. Evaluation of thesis in respect of candidate Mr Rahul Antony, NIT, Calicut			

Awards initiated by the department

Prof. Dr. Y. B. G. Varma Award for Teaching Excellence in Chemical Engineering Department Endowment (Donor: Ms. Usha Y. Ramakrishna) for an amount of ₹ 6,00,000 was introduced. The award is given to a faculty who follows an academic process by which students are motivated to learn; have a positive influence on how they think, see and feel; guides students successfully through exploration of the creative, critical thinking and problem-solving process; and encourages students to think and empowers them to find their own creativity.

The award consists of a silver medal with gold plating, cash award of ₹ 30,000 and certificate.

Special lectures delivered by the faculty members at other institutions

Sl. No.	Faculty Member	Title of Lecture	Institution	Date
1.	Abhijit P. Deshpande	Carbon nano-fillers in epoxy adhesives for metal joining: influence of the interfacial effects and moisture diffusion on adhesive strength and hygrothermal aging	J.N. Tata Auditorium, Advanced Research School of Technology and Product Simulation and supported by Ministry of Chemicals and Fertilizers, GoI, Bengaluru	11-13 February 2017
2.	Arun Tangirala	Compressive sensing	College of Engineering, Pune	23-24 March 2017
3.	Basavaraj M. Gurappa	Oppositely charged colloids at planar and curved interfaces	IIT Kanpur	17 October 2016
4.	Kannan A.	Making Indian Food Clean and Safe	Madras Veterinary College, Chennai	20 January 2017
5.	Krishnaiah K.	Chemical Engineering in 21 Century	B. V. Raju Institute of Technology, Narsapur, Greater Hyderabad	10 September 2016
6.	R. Nagarajan	Acoustically-enhanced synthesis and dispersion of nano-particles	VIT Vellore	July 29-30 2016
7.	Niket S. Kaisare	Model Predictive Control (MPC) – History	NIT Trichy	October 2016
8.	Niket S. Kaisare	GIAN Course on Advanced Process Control	NIT Warangal	14-16 December 2016
9.	Niket S. Kaisare	Bridging low complexity models with detailed simulations for design and control	Ford India Private Limited	October 2016
10.	Raghuram Chetty	Recent advancement in energy harvesting and water treatment technologies	Jadhavpur University	13-17 June 2016
11.	Safety in chemical process industries	Anna University	20-27 June 2016	
12.	Rajagopalan Srinivasan	Extracting value from your PHA investment	Indian Chemical Council workshop on Process Hazards Analysis, Chennai	17-18 March 2017
13.	T. Renganathan	Recent advancements in alternative, renewable energy technology and management	Department of Chemical Engineering, Coimbatore Institute of Technology	20-26 March 2017
14.	Sumesh P. Thampi	Active liquid crystals	National Institute of Technology, Karnataka	18 October 2016
15.	Upendra Natarajan	Electroactive ceramics and polymers	6th International Conference, IIT Kharagpur	20-22 February 2017
16.	Swagatika Sahoo	Human metabolic reconstruction and biomedical applications at BT5240 course on computational systems biology	IIT Madras, Chennai	18 and 21 March 2016
17.	Predictive modeling for diagnosis and treatment of metabolic disorders	Sathyabama University	28 February 2017	
18.	Constraint-based modeling of metabolic disorders and Modeling human metabolism	Department of Biotechnology, IIT Madras	6-11 February 2017	

Visit abroad by faculty members

Sl. No.	Faculty Member	Place Visited	Date	Purpose of Visit	Funding from
1.	Arun K. Tangirala	Harvard University, Boston and Newton, Massachusetts, USA	31 May-16 June 2016	Mathworks Curriculum Conference 2016	---
2.	Arun K. Tangirala	Michigan State University, USA	31 March 2017	Expert talk: From Data to Directionality; Reconstructing Causal Networks from Measurements	IIT Madras

Sl. No.	Faculty Member	Place Visited	Date	Purpose of Visit	Funding from
3.	Ethayaraja Mani	Rome, Italy	4-9 September 2016	30th Conference of the Europe Colloid and Interface Society	Partial financial assistance
4.	Ethayaraja Mani	Department of Physics, Changshu Institute of Technology, Changshu, China	1-15 June 2016	Initiate research collaborations	IIT Madras
5.	R. Nagarajan	Malaysia and Singapore	13-19 June 2016	Research collaboration on IIT Madras	IIT Madras
6.	R. Nagarajan	USA and Canada	20-26 June 2016	Research collaboration on IIT Madras	IIT Madras
7.	R. Nagarajan	NUS, Singapore	14 June 2016	Presented a talk	IIT Madras
8.	R. Nagarajan	Germany	06-09 September 2016	Workshop RWTH Aachen University	
9.	R. Nagarajan	University of Bradford, UK	08-09 September 2016	World University leaders Congress	
10.	R. Nagarajan	Shibaura Institute of Technology	17 November 2017	Discuss research collaborations and student exchanges	
11.	R. Nagarajan	University of Tokyo, Japan	21 November 2016	Discuss research collaborations and student exchanges	
12.	R. Nagarajan	Tokyo Institute of Technology, Japan	21 November 2016	Discuss research collaborations and student exchanges	
13.	R. Nagarajan	Nagaoka University of Technology, Japan	22 November 2016	Discuss research collaborations and student exchanges	
14.	R. Nagarajan	Alumni luncheon in Tokyo, Japan	19 November 2016	Discuss research collaborations and student exchanges	
15.	R. Nagarajan	Participated in Annual Meeting of AOTULE (Asia Oceania Top Universities League in Engineering), Hong Kong	24-25 November 2016	Discuss research collaborations and student exchanges	
16.	R. Nagarajan	Visited City University of Hong Kong	25 November 2016	Discuss research collaborations and student exchanges	
17.	R. Nagarajan	Swinburne University	1 February 2017	Discussion regarding a proposed scale-up to our JDP leveraging the Touchstone program	
18.	R. Nagarajan	University of Australia, Melbourne	30-31 January 2017	Faculty Administrators' Workshop to transition from joint-supervision to joint-degree program	
19.	R. Nagarajan	University of Sydney	2 February 2017	Faculty and administrators' workshop to transition from joint-supervision to a proposed joint-degree programme	
20.	R. Nagarajan	University of Technology Sydney (UTS) and Deakin University	3 February 2017	Current JDP and mechanisms for scale-up	
21.	Niket Kaisare	Politecnico Di Milani, Italy	8 May-16 June 2016	Collaboration in ERC-StG-Grant Project SHAPE	Politecnico di Milano
22.	S. Pushpavanam	San Francisco, California, USA	13-18 November 2016	69th AIChE Annual Meeting	Partial from institute
23.	S. Pushpavanam	Portland, USA	20-22 November 2016	Annual Meeting of the American Physical Society Division of Fluid Dynamics	Partial from institute
24.	S. Pushpavanam	Max Planck Institute for the Dynamics of Complex Technical Systems Magdeburg	17-25 August 2016	Colloquium on Trends in Process Engineering, MPI Magdeburg, Germany and discussion on initiatives for collaboration between MPI and IIT Madras	IIT Madras
25.	S. Pushpavanam	Sheraton Silver Spring in Maryland Coupled Autocatalytic	4-6 January 2017	Poster presentation	IIT Madras
26.	P. S. T. Sai	University of South Florida, Tampa, USA	17 August 2016	Lecture: Fast Fluidization versus Flash Distillation	
27.	Shankar Narasimhan	EPFL, Switzerland	8-12 November 2016	Ph.D. viva panel member of Mr. Sriniketh Srinivasan lecture on Monitoring, Management and Control of Water Distribution Networks	
28.	Sridharakumar Narasimhan	Las Vegas, USA	26 June-1 July 2016	2016 IEEE/CVF Conference	Partial
29.	Sridharakumar Narasimhan	Philadelphia, PA, USA	14-15 July 2016	2nd Digital Pathology Congress	Partial
30.	Sridharakumar Narasimhan	Germany	5-12 September 2016	Kick-off workshop as part of the strategic partnership of the Sister Universities, RWTH Aachen and University of Lyon	No
31.	Sridharakumar Narasimhan	University of Melbourne, Australia,	30-31 January 2017	Invited as co-supervisor of a MIPP student to take part in the Melbourne India Postgraduate Program (MIPP) Conference	No
32.	Vijayaraghavan K	Chonbuk National University, South Korea	2 May-15 June 2016	Collaborative research works and to deliver a series of lectures	South Korea
33.	Vijayaraghavan K	University of Exeter, UK	30 July-5 August 2016	UK-India Workshop on Integrated Renewables for Autonomous Power Supply and Fuel Generation	Organizers
34.	R. Vinu	Giardini Naxos-Taormina, Sicily, Italy	19-22 June 2016	2nd International Conference on Biomass 2016	DST
35.	R. Vinu	Politecnico di Milano, University of Milan, Italy	17 June 2016	To deliver a talk	DST
36.	R. Vinu	TU Berlin, Germany	17 July 2016	IGCS Summer School on Biomass and Coal: Carbon fuels of different ages: Indian and German Perspectives	Indo-German Centre for Sustainability

Honours and awards obtained by faculty members

Sl. No.	Faculty Member	Award	Awarded by	Awarded for	Date
Awards					
1.	M. Chidambaram	IIChE NRC Award	CHEMCON 2016 AC Tech, Anna University and IIT Madras	3rd Best Paper in Indian Chemical Engineer	27-30 December 2016
2.	Ethyaraja Mani	Amar Dye Chem Award	CHEMCON 2016 AC Tech, Anna University and IIT Madras	Excellence in Research 2016	27-30 December 2016

Sl. No.	Faculty Member	Award	Awarded by	Awarded for	Date
3.	K. Krishnaiah	Life Time Achievement Award	VIT	Lifetime Achievement Award in recognition of his outstanding life-long contributions to the Profession of Chemical Engineering	21-22 October 2016
4.	R. Ravi	Prof. Dr. Y. B. G. Varma Award for Teaching Excellence for 2016	IIT Madras	Excellence in Teaching	23 July 2016
5.	Shankar Narasimhan	CHEMCON NEERI Distinguished Speaker Award	CHEMCON 2016 AC Tech, Anna University and IIT Madras	Distinguished Speaker Award	27-30 December 2016
6.	R. Vinu	M. H. Shukla 2nd Prize IIChE	CHEMCON 2016 AC Tech, Anna University and IIT Madras	Best technical paper	27-30 December 2016
7.	Shankar Narasimhan	Prof. M. S. Ananth Institute Chair	IIT Madras	Selected for the position of Professor	March 2016
Books					
1.	K. Vijayaraghavan. 2016. *Biosorption of Metals: A Complete Handbook,* Vinanie Publishers, ISBN: 978-81-932494-0-6.				
2.	M. Chidambaram and R. Padma Sree. 2017. *Control of Unstable Single and Multivariable Systems,* Narosa Publishing House, New Delhi, ISBN 978-81-8487-582-9, pp 284 and figs 96				

Fellowships of academies and professional societies

Sl. No.	Faculty Member	Year of admission
INAE:		
1.	Shankar Narasimhan	2013
2.	A. R. Balakrishnan	2003
TNASc		
1.	A. R. Balakrishnan	1996
Institute of Engineers		
1.	A. R. Balakrishnan	2013
CSIR-Central Institute of Mining and Fuel Research, Dhanbad		
1.	Sreenivas Jayanti	2013-16

Editorial boards of journals

Sl. No.	Faculty Member	Position (Editor/Member)	Journal
1.	A. R. Balakrishnan	Editor	*International Journal of Heat and Mass Transfer*
2.	A. R. Balakrishnan	*International Communications in Heat and Mass Transfer*	
3.	A. R. Balakrishnan	*Journal of Energy, Heat and Mass Transfer*	
4.	A. R. Balakrishnan	Editor-in-Chief	*Journal of The Institution of Engineers (India): Series E (Chemical and Textile Engineering)*
5.	T. Panda	Member	*Advances in Science, Engineering and Medicine* (American Scientific Publishers, USA)
6.	Raghuram Chetty	Member	*Nano Hybrids*
7.	Shankar Narasimhan	Member	*Indian Chemical Engineer: international Journal of Advances in Engineering Sciences and Applied Mathematics*
8.	Tanmay Basak	Associate Editor	*International Journal of Heat and Mass Transfer*
9.	Tanmay Basak	*International Communications in Heat and Mass Transfer*	

4.4.4. Design and Development Activities

New facilities added or major equipment procured

1.	Advanced Microflow Reactor Supplied by Corning for UAY project • Purchased from Toshvin Analytical Private Limited with the help of grant from Cheveron. • New gas pipelines, vent and exhaust facilities were built to install the AAS. (The instrument is being used by the research scholars in the department. The department plans to schedule it for the use of students institute wide.)
2.	Atomic Absorption Spectroscopy
3.	Motorized Microscope Arrangement
4.	Evoqua water purifying system

Patents filed

Sl. No.	Faculty Member	Title of Patent
1.	Abhijit P. Deshpande	Carbon Dioxide Separator Membrane Structure, Method of Manufacturing Same, and Carbon Dioxide Separator including same
2.	R. Nagarajan	A Formulation Comprising Nano-scale Anti-cancer Compound
3.	S. Pushpavanam	Continuous Passive Foam Separator in Microfluidic Systems
4.	Recycle in lab on Chip Devices using Electro-kinetics	
5.	Sridharakumar Narasimhan	Methods and Apparatus for Analysing Cytological Specimens

Patents obtained

Sl. No.	Faculty Member	Title of Patent
1.	Sreenivas Jayanti	A Method of Oxy-Fuel Combustion

4.4.5. Research and Consultancy

Sponsored research projects

Sl. No.	Title	Period	Funding Agency	Amount (in lakhs of ₹)	Co-ordinators
1.	Novel Natural Polymer Based Blends for Adhesive Applications	2016-2020	ABB Limited	29.35	Abhijit P. Deshpande and Susy Varughese
2.	Magnetic Field Assisted Alignment of Proton Conductive Channels for Polymer Electrolyte Membrane	2016-2018	Department of Science and Technology (DST)	14.40	Abhijit P. Deshpande
3.	Large Amplitude Oscillatory Shear of Physically Aggregating Complex Fluids	2014-2017	DST	54.26	Abhijit P. Deshpande and Basavaraja Madivala Gurappa

Sl. No.	Title	Period	Funding Agency	Amount (in lakhs of ₹)	Co-ordinators
4.	New Generation Heat Exchanger Design Using Additive Manufacturing and Shape Optimization	**2017-2020**	Department of Heavy Industries (IMPRINT)	342	Arul Prakash (AM), Sreenivas Jayanti, B. V. S. S. S. Prasad (ME), S. Vengadesan S (AM), G. Saravana Kumar (ED), Partho Kayal (GE), Jayesh Jain (GE), Subramani Adhiachari (GE) and D. Umamaheshwari (GE)
5.	Development of Unsupervised Detection and Classification Methods in Seismic Data Analysis	2016-2019	Board of Research in Nuclear Sciences	22.15	Arun K. Tangirala
6.	3-D Printing of Tablets Customized for Specific Target Profiles	2016-2017	Gyan Data Private Limited	8.05	Basavaraja Madivala Gurappa
7.	Oppositely Charged Particles at Interface: Microstructure, Mechanical Properties and their Application in Emulsion and Foam Stabilization	2015-2018	DST	61.10	Basavaraja Madivala Gurappa and Ethayaraja Mani
8.	Strengthening Research Infrastructure	2017	DST FIST II	385	Department of Chemical Engineering
9.	Collective Dynamics of Active Colloids in Bulk and Interfaces	2016-2018	DST	19.20	Ethayaraja Mani
10.	Collective Dynamics of Self-Propelling Colloids: Role of Interactions, Hydrodynamics and Activity	2017-2020	DST	45.19	Ethayaraja Mani and Sumesh Thampi
11.	Materials and Processing for Enhanced Solar Cell Performance - FIST 2016	2017-2022	DST	385	Head of the Department Ramanathan S., Basavaraja M. G., R. Vinu and Raghuram Chetty
12.	Role of Indian Spice Nanoemulsions in Enhancing Antibacterial Antifungal and Anticancer Efficacy	2015-2018	DST	33.20	R. Nagarajan
13.	Chemical Reaction Mechanisms - Analysis and Reduction	2016 – 2018	Applied Materials India Private Limited	6.31	Niket S. Kaisare
14.	Model Order Reduction for Convection Diffusion Process with Applications to Reformer	2015-2017	Nissan Research Support Program	10.73	Niket S. Kaisare and Sridharakumar Narasimhan
15.	Identification of Heterogeneous Reaction Systems Based in Multi-sensor Data - INSPIRE Faculty Award	2013-2018	DST	86.27	Nirav Pravinbhai Bhatt
16.	Svagata.eu - Experience Europe as an Indian	2013-2017	European Commission	4	S. Pushpavanam
17.	Development of Dry Slag, Granulation Technology and Energy Recovery System for Blast Furnace Slag for Producing Clinker Compatible Product	2016-2020	Ministry of Steel	40	S. Pushpavanam, Ajay Kumar Shukla, Sabita Sarkar and T. Renganathan
18.	Analysis of the Fate and Transport of Non-aqueous Phase Liquids (NAPLs) in Porous Media Under Drying and Rewetting Conditions using MRI	2016-2019	DST	54	R. Ravikrishna
19.	Retainer Consultancy for Corporate Manpower Development	2016-2018	Gyan Data Private Limited	3.45	Raghunathan Rengaswamy
20.	Understanding Dynamic Drop Formation in 2D Cannels and Development of a Rational Design Framework	2014-2017	DST	39.62	Raghunathan Rengaswamy
21.	Data Analytics/Optimization Approach to Reduce Power Utilization in Aluminium Smelting Process	2016		**20.33**	Raghunathan Rengaswamy and Shankar Narasimhan
22.	Data Analytics for Aluminum Smelters	2016-2019		**48**	Raghunathan Rengaswamy, Ravindran Balaraman (CSE) and Shankar Narasimhan
23.	Nano-materials-RO antifouling Membrane Formulations for Water Desalination	2016-2018	DST	6.30	Raghuram Chetty and S. Mathava Kumar
24.	Development of Alternate Electrodes and Electrolyte Materials for Ameliorating the Performance of Vanadium Redox Flow Battery (National Post-Doctoral Fellowship)	2017-2019	DST	19.20	Raghuram Chetty
25.	Titania Nanotubes as an Alternative Catalyst Support for Direct Methanol Fuel Cells	2015-2018	Ministry of New and Renewable Energy	52.12	Raghuram Chetty and Ramaprabhu S.
26.	Development of Electrochemical Impedance Spectroscopy as a Tool for Malaria, Chikungunya and Dengue	2016-2019	DBT	24	S. Ramanathan and Sujatha Sunil, ICGEB
27.	Development of Electrochemical Impedance Spectroscopy as a Tool for Malaria, Chikungunya and Dengue Diagnosis	2016-2019	Department of Biotechnology	23.99	S. Ramanathan
28.	Mechanistic Investigations of Electrochemical Reactions Using Nonlinear Electrochemical Impedance Spectroscopic Experiments	2015-2018	DST	45.75	S. Ramanathan and M. Kamaraj
29.	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)	2016-2019	DST	50.34	R. Ravikrishna, Chandrakumar and Abhijit P. Deshpande
30.	Technical Advice for Data Analytics Projects	2016-2018	Gyan Data Private Limited	9	Shankar Narasimhan
31.	GTWG Proposal on Advance Coal Technology	2014-2017	DST	63.63	Sreenivas Jayanti and Preeti Aghalayam
32.	Development of 10KW/50KWh Redox Flow Battery System for Solar PV Applications	2017-2020	Impacting Research Innovation and Technology - IMPRINT	399.84	Sreenivas Jayanti, U. V. Varadaraju (CY), K. S. Swarup (EE), R. Rengasamy (CH), Raghuram Chetty (CH), R. Kodandaraman (CY), D. S. Monder (IITB), P. V. Suresh (NITW), Vasu Gollangi (BHEL, Hyderabad) and L. N. Satpathy (BHEL, Bengaluru)
33.	Retainer Consultancy with Gyan Data Private Limited	2016-2018	Gyan Data Private Limited	1.73	Sridharakumar Narasimhan
34.	Control and Operation of Urban Water Distribution Networks	2014-2017	DST	32.91	Sridharakumar Narasimhan, Shankar Narasimhan and B. S. Murty
35.	Continuous Manufacturing of dl-2-amino-l-butanol	--	Uchhatar Avishkar Yojana - IIT Madras	130	Sridharakumar Narasimhan, Shankar Narasimhan, Nirav Pravinbhai Bhatt, K. K. Balasubramanian
36.	Lattice Boltzmann Simulations of Sloshing Dynamics	2016-2019	Indian Space Research Organisation	35.16	Sumesh Thampi and A. Sameen
37.	Systems Biology for Enumeration of Clinical Heterogeneity of Metabolic Disorders - INSPIRE	2016-2021	DST	86.27	Swagatika Sahoo

Sl. No.	Title	Period	Funding Agency	Amount (in lakhs of ₹)	Co-ordinators
38.	Green roofs: An Extensive Study to Assess the Role of Substrate, Plants and Soil Microbes to Improve Runoff Quality (Ramalingaswami Fellowship)	2012-2017	Department of Biotechnology	85.97	K. Vijayaraghavan
39.	Analysis of Samples of Petrol, Diesel, Naphtha and Kerosene to Quantify/Detect Presence of Naphtha and Kerosene in case of Adulteration of Petrol and Diesel on Trial Basis	2016	Ministry of Petroleum and Natural Gas, New Delhi	4.68	R. Vinu
40.	Renault Nissan Technology and Business Centre India Private limited	2016	Testing Agreement (Technical Services Project)	50.16	R. Vinu
41.	Waste Heat Recovery Boiler Using Municipal Solid Waste: Analysis, Model Testing and Pilot Plant Design Commissioning and Testing	--	Uchhatar Avishkar Yojana - IIT Madras	557	R. Vinu, S. R. Chakravarthy, B. V. S. S. S. Prasad and T. Sundararajan

Industrial Consultancy Projects

Sl. No.	Faculty Members	Title	Industry	Amount (₹ in lakhs)
1.	Abhijit P. Deshpande and Susy Varughese	Novel Natural Polymer Based Blends for Adhesive Applications	ABB Limited	29.35
2.	Preeti Aghalayam	Analysis of Coal Using Various Characterization Techniques	Common Code	--
3.	Raghuram Chetty	HR - SEM Analysis CH	Common Code	5
4.	S. Ramanathan (ChE) and Kamaraj M. (MME)	Zinc-coating Solution Optimization	Messrs Sundram Fasteners Limited	--
5.	Sreenivas Jayanti	Assessment of Flow Regimes in Horizontal Boiling Tube	Common Code	--
6.	R. Vinu	Analysis of PEG decomposition using Py-GC/MS	Common Code	--

RBIC projects

Sl. No.	Faculty Members	Title	Industry	Amount (₹ in lakhs)
1.	R. Nagarajan and Pradeep T.	Stain-free Glass and Building Materials	Saint - Gobain Research India Limited	41.04
2.	Niket S. Kaisare	Chemical Reaction Mechanism: Analysis and Reduction	Applied Materials India Private Limited	6.21
3.	S. Pushpavanam and Ajay Kumar Shukla	Development of Technology for Clinker Production through Dry Granulation of BF Slag and Energy Recovery	JSW Steel Limited	15
4.	Raghunathan Rengaswamy and Shankar Narasimhan	Data Analytics/Optimization Approach to Reduce Power Utilization in Aluminium Smelting Process	GE India Technology Centre Private Limited	20.332
5.	Raghunathan Rengaswamy and B. Ravindran, CS	Data Analytics for Aluminum Smelters	GE India Technology Centre Private Limited	48
6.	S. Ramanathan and M. Kamaraj	Zinc-coating Solution Optimization	Sundram Fasteners Limited	17.4
7.	Shankar Narasimhan	Data Reconciliation in Thermal Power Plants	ABB Limited	10.70
8.	Tanmay Basak	Numerical Simulations on Microwave Heating of Metals Attached with Various Susceptors	Siemens Technology and Services Private Limited	5.10
9.	R. Vinu	EB Oxidation - Improving EBHP Selectivity (Phase 2)	Shell India Markets Private Limited	16.56
10.	R. Vinu	Microwave-assisted Pyrolysis of Coking and Non-Coking Coals and Product Characterization	Tata Steel, Jamshedpur	13.94
11.	R. Vinu	Testing of Combustion Catalysts and Analysis of Emissions	Renault Nissan Technology and Business Centre India Private Limited (RNTBCL)	50.17
12.	R. Vinu and P. Selvam	Kinetic Studies of Biomass Devolatilization and Catalytic Hydrodeoxygenation	Shell India Markets Private Limited	35.46
13.	R. Vinu	Detailed Characterization in Terms of the Hydrocarbon Components in Petrol, Diesel, Kerosene and Naphtha	Ministry of Petroleum and Natural Gas	4.68
14.	R. Vinu	Synthesizing Liquid Biofuels from Indian Agro Residues and Waste Plastics via Microwave Assisted Co-pyrolysis combined with Microwave Catalytic Upgradation Process	Gail India Limited	86.24

Retainer Consultancy

Sl. No.	Faculty Member	Title	Industry	Amount (₹ in lakhs)
1.	Arun K. Tangirala	Retainer Consultancy with Gyan Data Private Limited	Gyan Data Private Limited	2.76
2.	Basavaraja Madivala Gurappa	3-D Printing of Tablets Customized for Specific Target Profiles	Gyan Data Private Limited	8.05
3.	Nirav Pravinbhai Bhatt	Consultant in Training of Manpower in the Areas of Data Analysis and Process Systems	Gyan Data Private Limited	2.30
4.	Raghunathan Rengaswamy	Retainer Consultancy for Corporate Manpower Development	Gyan Data Private Limited	3.45
5.	Raghunathan Rengaswamy	3D Printing of Pharmaceutical Drugs	Gyan Data Private Limited	8.05
6.	Shankar Narasimhan	Technical Advice for data Analytics Projects	Gyan Data Private Limited	9.00
7.	Sridharakumar Narasimhan	Retainer Consultancy with GyanData Private Limited	Gyan Data Private Limited	1.73

Research publications of the faculty members and research scholars

Papers published in refereed international journals: 119

Papers published in refereed national journals: 6

Papers presented in international conferences: 24

Papers presented in national conferences: 25

Papers published in refereed international journals

1. A. Kumar and S. Narasimhan. 2016. Optimal Input Signal Design for Identification of Interactive and Ill-Conditioned Systems. *Industrial and Engineering Chemistry Research* 55(14): 4000-4010. doi: 10. 1021/acs. iecr. 5b02283
2. S. Kathari and A. K. Tangirala. 2016. Estimation of network connectivity strengths in linear causal dynamic systems. *IFAC-PapersOnLine* 49(1): 77-82. doi: 10. 1016/j. ifacol. 2016. 03. 032
3. S. K. Perepu and A. K. Tangirala. 2016. Reconstruction of missing data using compressed sensing techniques with adaptive dictionary. *Journal of Process Control* 47: 175-190. doi: 10. 1016/j. jprocont. 2016. 08. 008
4. Jerome P. Ortmann and Niket S. Kaisare. 2016. Modeling of cryo-adsorption of hydrogen on MOF-5 pellets: Effect of pellet properties on moderate pressure refueling. *International Journal of Hydrogen Energy* 41(1): 342-354. doi:10.1016/j.ijhydene.2015.10.138
5. R. Savitha, R. Raghunathan and R. Chetty. 2016. Rutile nanotubes by electrochemical anodization. *RSC Advances* 6(78): 74510-74514. doi: 10.1039/c6ra16708j
6. B. G. Abraham, K. K. Maniam, A. Kuniyil and R. Chetty. 2016. Electrocatalytic performance of palladium dendrites deposited on titania nanotubes for formic acid oxidation. *Fuel Cells* 16(5): 656-661. doi: 10.1002/fuce.201600023
7. K. K. Maniam, V. Muthukumar and R. Chetty. 2016. Electrodeposition of dendritic palladium nanostructures on carbon support for direct formic acid fuel cells. *International Journal of Hydrogen Energy* 41(41): 18602-18609. doi: 10.1016/j.ijhydene.2016.08.064
8. Nithin Sebastian Kuncheria, Kirann Abraham Jacob, Raghuram Chetty and A. Fazil. 2016. Electrochemical study of PT deposited pyrolysed glucose and sucrose. *Imperial Journal of Interdisciplinary Research* 2(11)

9. B. Ashraf Ali, Raghuram Chetty and S. Pushpavana. 2016. Electrolytic degradation of uric acid using nickel electrodes in an unpartitioned and partitioned batch cell. *International Journal of Chemical Engineering and Processing* 2(1): 1-10
10. R. Ravi Krishna, T. Swaminathan and K. Sivagami. 2016. Optimization studies on degradation of monocrotophos in an immobilized bead photo reactor using design of experiment. *Desalination and Water Treatment* 57(59): 28822-28830. doi: 10.1080/19443994.2016.1195288
11. B. Vikraman, R. R. Krishna, T. Swaminathan and K. Sivagami. 2016. Chlorpyrifos and Endosulfan degradation studies in an annular slurry photo reactor. *Ecotoxicology and Environmental Safety* 134: 327-331. doi: 10.1016/j.ecoenv.2015.08.015
12. J. R. Picardo, T. G. Radhakrishna and S. Pushpavanam. 2016. Solutal Marangoni instability in layered two-phase flows. *Journal of Fluid Mechanics* 793: 280-315. doi: 10.1017/jfm.2016.135
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117. Venkateshwar Rao Dugyala, Hirsay Lama, Dillip K. Satapathy and M. G. Basavaraj. 2016. Role of particle shape anisotropy on crack formation in drying of colloidal suspension. *Scientific Reports* 6. doi: 10. 1038/srep30708
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Papers published in refereed national journals

1. G. M. S. Nandagopal, R. Antony, A. K. Rakesh and N. Selvaraju. 2016. Conservative level set simulation of droplet formation in a circular T and Y junction microchannel. *Journal of Scientific and Industrial Research* 75(12): 730-734
2. V.D. Ram, A. Karlmarx and M. Chidambaram. 2016. Identification of unstable second-order transfer function model with a zero by optimization method. *Indian Chemical Engineer* 58(1): 29-39
3. N. Thanga Mani and M. Chidambaram. 2016. Discrimination of models for autocatalytic polymerization reactions by periodic operation. *Indian Chemical Engineer* 58(2): 95-105
4. S. Hazarika and M. Chidambaram. 2016. Static decouplers with P-PI dual loop controllers for unstable system. *Indian Chemical Engineer* 58(2): 172-185
5. V. Dhanya Ram and M. Chidambaram. 2016. Identification of centralised controlled multivariable systems. *Indian Chemical Engineer* 58(3): 240-254
6. M. Gopinath, R. Chetty and K. S. Rajmohan. 2016. Review on challenges and opportunities in the removal of nitrate from wastewater using electrochemical method. *Journal of Environmental Biology*37 (6): 1519-1528

Papers presented at international conferences

1. S. Jayanti and P. Purnima. 2016. A high-efficiency, auto-thermal system for on-board hydrogen production for low-temperature PEM fuel cells using dual reforming of ethanol. *International Journal of Hydrogen Energy*. doi: 10.1016/j.ijhydene.2016.01.147
2. R. Vinu, D.K. Ojha, S. Shukla and R. S. Sachin. 2016. Understanding the interactions between cellulose and polypropylene during fast co-pyrolysis via experiments and DFT calculations. *2nd International Conference on Biomass (ICONBM 2016)*. doi: 10.3303/CET1650012
3. S. Narasimhan, S. Srinivasan, D.M.D. Kumar and J. Billeter. 2016. On the use of shape constraints for state estimation in reaction systems. *IFAC Papersonline*. doi: 10.1016/j.ifacol.2016.07.219
4. A.K. Tangirala and D. Maurya. 2016. Identification of linear dynamic systems using dynamic iterative principal component analysis. *IFAC Papersonline*. doi: 10.1016/j.ifacol.2016.07.335
5. A.K. Tangirala and S. Kathari. 2016. Estimation of network connectivity strengths in linear causal dynamic systems. *IFAC Papersonline*. doi: 10.1016/j.facol.2016.03.032

6. M. Chidambaram and S. Nikita. 2016. Improved relay auto-tuning method for unstable TITO systems. *21st IEEE International Conference on Emerging Technologies and Factory Automation (ETFA 2016)*. doi: 10.1109/ETFA.2016.7733714
7. M. Chidambaram and C. S. Besta. 2016. Decentralized PID controllers by synthesis method for multivariable unstable systems. doi: 10.1016/j.ifacol.2016.03.104.
8. A.K. Tangirala and S. Yerramilli. 2016. Detection and diagnosis of model-plant mismatch in MIMO systems using plant-model ratio. doi: 10.1016/j.ifacol.2016.03.064
9. R. Vinu, X. Zhou and L. J. Broadbelt. 2016. Mechanistic understanding of thermochemical conversion of polymers and lignocellulosic biomass. *Thermochemical Process Engineering, 2016*. doi: 10.1016/bs.ache.2016.09.002
10. A. Kannan and A. Sundar. 2016. Analysis of energy consumption in industrial distillation columns. *19th Topical Conference on Refinery Processing 2016 - Topical Conference at the 2016. AIChE Spring Meeting and 12th Global Congress on Process Safety*.
11. M. Chidambaram, K. Ghousiya Begum, T.K. Radhakrishnan and A. Seshagiri Rao. 2016. IMC based PID controller tuning of series cascade unstable systems. 10.1016/j.ifacol.2016.03.154
12. R. Rangaswamy, K. B. Iyeswaria and Sridharakumar Narasimhan. 2016. Water-induced pore blockage and its effects on low-temperature PEM fuel cells-A simulation study. AEM 2016, University of Surrey.
13. Susy Varughese, Indu Chanchal Polpaya and C. Lakshmana Rao. 2016. Electrochemical behavior and microstructure of highly sensitive polyaniline ethylene vinyl acetate composite piezo-resistive materials. *ASME 2016 Conference on Smart Materials, Adaptive Structures and Intelligent Systems*. doi: 10.1115/SMASIS2016-9163
14. Shankar Narasimhan, Varghese Kurian and Sridharakumar Narasimhan. 2016. A novel technique for scheduling of pumps in water distribution system. *International Conference on Modeling and Optimization: Theory and Applications*. Lehigh University, Bethlehem.
15. Nirav Bhatt, Darsha Kumar Dhurvas and Shankar Narasimhan. 2016. On-line approach for diagnosis and rectification of model-plant mismatch in open reaction systems using incremental framework. *European Symposium on Computer Aided Process Engineering Conference* with EFCE in Portoroz Solvenia.
16. R. Vinu, D.K. Ojha, S. Shukla and R. S. Sachin. 2016. High-quality bio-oil production via fast copyrolysis (FCP) of cellulose and polypropylene. *2nd International Conference on Biomass 2016 (IConBM 2016)*.
17. Sridharakumar Narasimhan and R. Srikanth. 2016. Unsupervised segmentation of cervical cell images using Gaussian Mixture Model. International workshop on computer vision for microscopy image analysis, *Computer Vision for Microscopy Image Analysis (CVMI)*.
18. S. Jayanti and Sanjay Kumar. 2016. Optimization of electrode-flow field interaction in an all-vanadium redox flow batter. *International Flow Battery Forum*.
19. R. Vinu and Deepak Ojha. 2016. Product distribution and kinetics of hydropyrolysis of agro residues via Py-GC/MS and Py-FT-IR. *AICHE Annual Meeting*, San Francisco.
20. S. Pushpavanam and Babita Kumari Verma. 2016. Modeling plasma gasification of biomass with thermodynamic and kinetic approach in series. *AICHE Annual Meeting*.
21. Preeti Aghalyam, Vishnu S. Prasad and Preeti Aghalyam. 2016. Experiments and modelling of NO reduction on Pt catalyst. *International Conference on Chemical and Process*.
22. A. Kannan and T. Vidyadevi. 2016. Single and multi-component adsorption studies of heavy metal ions and dyes over commercial activated carbon. *4th International Conference on Sustainable Environment and Agriculture (ICEA 2016)*.
23. S. Pushpavanam and B.V.N.S.S.R. Dinesh. 2016. Biofluid dynamics of two-phase stratified flow through flexible membranes. *69th Annual Meeting of the American Physical Society's Division of Fluid Dynamics (DFD 2016)*. doi: 10.1103/BAPS.2016.DFD.M20.3
24. A. R. Balakrishnan, V.K.P. Janakey Devi and P. S. T. Sai. 2016. Ionic liquids as entrainers for the separation of 1-proponol + water and 2-propanol +water mixtures: quantum chemical approach using COSM-RS. *3rd International Conference on Ionic Liquids in Separation and Purification Technology*.

Paper presented in national conferences

1. S. Jayanti and Sanjay Kumar. 2016. Vanadium redox flow battery as future energy shortage technology in India. *SETS and CC-2016*.
2. R. Rangasami, Venkata Reddy Palleti and Shankar Narasimhan. 2016. Exploiting sensor response times to design sensor networks for monitoring water distribution networks. *4th International Conference on Advances in Control and Optimization of Dynamical Systems*.
3. M. Chidambaram and Nikita Saxena. 2016. Tuning of PID controllers for unstable system with two unstable poles. *Advances in Control and Optimization of Dynamical Systems*
4. S. Ramanathan, M. S. Amrutha and Srini Raghavan. 2016. Characterization of effect of dissolved oxygen on Cu-BTA interaction by electrochemical impedance spectroscopy. *Asian Pacific Corrosion Control Conference (APCCC17)*.
5. S. Ramanathan and M. S. Amrutha. 2016. Zirconium dissolution in HF medium-effect of mass transfer. *18th National Conference on Corrosion Control*
6. M. Chidambaram and Chandra Shekar Besta. 2016. Timing of centralized PID controllers by BLT method for unstable TITO systems. *International Conference on Advances in Dynamics, Vibration and Control (ICADVC-2016)*.
7. M. Chidambaram and Chandra Shekar Besta. 2016. Decentralized PID controller by synthesis method for multivariable systems. *Advances in Control and Optimization of Dynamical Systems*
8. Arun K. Tangirala and Sudhakar Kathari. 2016. Estimation of networks connectivity strengths in linear causal dynamic systems. *Advances in Control and Optimization of Dynamical Systems (ACODS 2016)*
9. S. Pushpavanam and Babita Kumari Verma. 2016. ALLEE effect in population interaction based on occupation: agriculturists and industrialists. *Complex System Approach to Self-Organization*
10. Raghuram Chetty, Ila Sarkar and Jogesh Ramala. 2016. Pt anchored on functionalized graphene nanosheets for methanol oxidation in fuel cells. *ESSI's 2nd National Conference on Materials for Energy Conversion and Storage (MECS 2016)*
11. R. Ragunathan and Mahendra K. Gupta. 2016. Observer design for rectangular descriptor systems with Lipschitz nonlinearities. *Conference on Computational and Theoretical Partial Differential Equations*.
12. R. Vinu and D.K. Ojha. 2016. Production of biofuel via fast pyrolysis of agro wastes. *International Conference on Energy Innovations - Today and Tomorrow*.
13. R. Vinu and Gautam.2016. Catalytic and non-catalytic fast pyrolysis of microalgae, Nannochloropsis sp. *International Conference on Energy Innovations - Today and Tomorrow*.
14. S. Ramanthan and P.M. Ranjith. 2016. Investigation on dissolution rate of tantalum in HF Acid. *Eleventh International Symposium (Poster) on Advances in Electrochemical Science and Technology (ISAEST-11)*
15. S. Ramanthan and M.S. Amrutha. 2016. Titanium dissolution studies in acidic fluoride medium using quartz crystal microbalance. *Eleventh International Symposium (Poster) on Advances in Electrochemical Science and Technology (ISAEST-11)*
16. S. Ramanthan and P. Rajesh. 2016. Mechanistic analysis of electrochemical reactions using non-linear electrochemical impedance spectroscopy. *Eleventh International Symposium (Poster) on Advances in Electrochemical Science and Technology (ISAEST-11)*.
17. S. Ramanthan, Ankitha George and Sujatha Sunil. 2016. Detection of sulphur-containing amino acids using electrochemical techniques. *Eleventh International Symposium on Advances in Electrochemical Science and Technology (ISAEST-11)*.
18. S. Ramanthan and Tirumala Rao. 2016. Corrosion studies of molybdenum in sulphuric acid. *Eleventh International Symposium on Advances in Electrochemical Science and Technology (ISAEST-11)*.
19. S. Ramanthan and Fathima Fasmin. 2016. Corrosion studies of Zr in acid chloride medium. *18th National Conference on Corrosion Control*.
20. S. Ramanthan, M.S. Amrutha, F. Fasmin, P. Illayaraja and S. Chandran. 2016. Anodic dissolution of Ti in acidic fluoride media. *ECS Conference*.
21. S. Ramanthan and Tirumala Rao. 2016. Anodic dissolution of Nb in HF. *Heat Treatment and Surface Engineering (HTSE) 2016 conference*.
22. S. Ramanthan and P.M. Ranjith. 2016. Studies of Ta dissolution in HF acid. *CHEMCON 2016*.
23. S. Ramanthan and P. M. Ranjith. 2016. Electrochemical studies on Ta dissolution in HF acid. *HTSE 2016*.
24. S. Ramanthan, Abhijith K. Haridas and M. Kamaraj. 2016. An experimental measurement of erosion with application to natural gas industry. *Chemcon 2016*.
25. S. Ramanthan, K. A. Ramya and Abhijit P. Deshpande. 2016. Modeling non-linear rheological response of crosslinked hydrogels. *Complex Fluids –CompFlu*

Distinguished visitors to the Department

Sl. No.	Name and Designation	Date of visit	Purpose of visit (Title of Seminar)
1.	Prof. Rajagopalan Srinivasan, IIT Gandhinagar	10 May 2016	Cognitive Engineering for Process safety
2.	Dr. Guruswamy Kumaraswamy, Scientist, Polymer and Advanced Materials Laboratory, National Chemical Laboratory, Dr. Homi Bhabha Road, Pune	18 May 2016	Cubic phases and cubosomes from ternary systems containing glycerol mono-oleate

Sl. No.	Name and Designation	Date of visit	Purpose of visit (Title of Seminar)
3.	Dr. Ramaraja P. Ramasamy, Chair and Associate Professor, Biochemical and Biological Engineering, University of Georgia	27 June 16	Electrochemical engineering at the interface of Biology, Material Science and Nanotechnology
4.	Dr. Nakamura Kazuho, Associate Professor, Faculty of Engineering, Division of Materials Science and Chemical Engineering, Yokohama National University, Japan	18 October 2016	Fouling phenomena in membrane filtration process
5.	Dr. Suresh Dhaniyala, Bayard D. Clarkson Distinguished Professor, Co-Director Centre for Air, Resources Engineering and Sciences Mechanical and Aeronautical Engineering	26 October 2016	New sensors for large-scale air quality monitoring
6.	Dr. Kevin Ward, Department of Chemical Engineering, University of Florida, USA	2 November 2016	Faraday instability in mechanically forced systems
7.	Dr Vibhor Jajoo, University of Bordeaux, France	2 November 2016	Faraday instability in binary fluids
8.	Steve Granick, Director, IBS Centre for Soft and Living Matter, South Korea and Professor Emeritus, University of Illinois, USA	7 November 2016	Some surprises and open questions in soft matter
9.	Dipin S. Pillai, PDF, Department of Chemical Engineering, University of Florida	9 November 2016	Evaporative instabilities in pure and binary mixtures
10.	Dr. Karthikeyan Kaliyappan, University of Waterloo, Canada	5 December 2016	High-performance nano-structural materials for electrochemical energy storage applications
11.	Dr Prabhakar Ranganthan, Senior Lecturer, Mechanical and Aerospace Department, Monash University, Australia	16 December 2016	Mechanobiology: a new frontier for chemical engineers
12.	Dr. Venkat Venkatasubramanian, Samuel Ruben-Peter G. Viele, Professor of Engineering, Center for the Management of Systemic Risk, Department of Chemical Engineering, Columbia University, New York	22 December 2016	Beauty in mathematics and physics
13.	Dr. Srinivasa R. Raghavan, Patrick and Marguerite Sung Professor, Department of Chemical and Biomolecular Engineering, University of Maryland, College Park	5 January 2017	Nature-inspired “smart” materials: ability to move, destroy or change shape
14.	Dr. Arvind Uppili, Senior Principal Researcher, Mitsubishi Electric Research Laboratories, Cambridge, Massachusetts, USA	13 January 2017	Embedded optimization for model predictive control (MPC)
15.	Dharik S. Mallapragada, ExxonMobil Research and Engineering Company, Annandle, NJ	19 January 2017	Overview of environmental assessment activities at ExxonMobil Corporate Strategic Research
16.	Kaustav Niyogi, Doctoral Researcher, Ghent University, Laboratory for Chemical Technology Technologiepark, Ghent, Belgium	23 January 2017	Single and two phase cold flow hydrodynamics study in Vortex unit technology
17.	Dr. Nitin Kaistha, Professor, IIT Kanpur	30 January 2017	Robust plantwide control structures for recycle systems
18.	Dr. Manikandan Mathur, Department of Aerospace Engineering, IIT Madras	2 February 2017	Laboratory modelling of internal gravity waves
19.	Dr. Sreenivasulu Peta, Postdoctoral Associate, Rutgers University, USA	17 March 2017	Facile and green methods for synthesis of nano porous nano materials for catalytic applications
20.	Dr. Abhinav Raut, Centre for Interdisciplinary Research, D. Y. Patil University, Maharashtra	20 March 2017	Cell laden building blocks by microfluidics for developing ‘organ factory’
21.	Dr. Kazuho Nakamura, Yokohama National University, Japan	24 March 2017	IITM-YNU collaboration
22.	Dr. Deshdeep Sahdev, IIT Kanpur	27 March 2017	Resolving atoms and a lot more at QuazarTech
23.	Dr. Anubhab Roy, Department of Applied Mechanics, IIT Madras	29 March 2017	Particle pair interactions in viscous flows
24.	Dr. Sadhan C. Jana, Department of Polymer Engineering University of Akron, OH, USA	6 January 2017	Multifunctional materials based on nanofibers and open and closed cell aerogel foams for sustainability
25.	Dr Rangarajan Radhakrishnan, Postdoctoral Research Associate, Department of Physics, Durham University, Durham	11 January 2017	Shear banding in large amplitude shear of soft glassy materials

4.4.6. Other Activities of the Department

Faculty and staff members

Sl. No.	Description
1.	Raghuram Chetty has been nominated as Warden, Jamuna Hostel for the period of three years from September 2016.
2.	Dr. Rajnish Kumar, Associate Professor, joined the Department of Chemical Engineering w.e.f. 13 December 2016.
3.	Dr. K. Krishnaiah was given extension of the terms as Emeritus Professor w.e.f. 1 July 2016.
4.	Dr. Rajagopalan Srinivasan was appointed as Visiting Professor in the Department of Chemical Engineering w.e.f. 11 July 2016 for the period of one year.
5.	Dr. Basavaraja Madivala Gurappa was appointed as Associate Professor w.e.f. 22 July 2016, AN, in the Department of Chemical Engineering.
6.	Dr. T. Renganathan was appointed as Associate Professor w.e.f. 22 July 2016, AN, in the Department of Chemical Engineering.
7.	Dr. Aravind Kumar Chandiran was appointed as Assistant Professor w.e.f. 28 August 2016.
8.	Mr. J. Desinghu was promoted as Technical Superintendent w.e.f. 13 April 2016.
9.	Mr. A. Pandian was appointed as Technical Officer w.e.f. 1 April 2015.
10.	Ms. Ranjani P. Junior Technician joined the department on 24 August 2016.
11.	Fabrication of Constant Temperature Bath by Mr. R. Palanivelu, JTS, Chemical Engineering Workshop.
12.	CNN News 18 conferred Mr. Selva Ganapathy, Junior Technical Superitendent, Department of Chemical Engineering, IIT Madras with The Indian of the Year 2015 (Public Services Category and also the overall category for the services rendered during Chennai floods in December 2015) on 9 June 2016. These awards were given by Union Ministers Mr. Nitin Gadkari and Mr. Arun Jaitley. The awards were for The People of Chennai.
13.	Mr. Selva Ganapathy, JTS, was selected for the New Zealand Excellence Award and will get $5000 as a grant towards tuition fee from New Zealand Government for his MBA programme. He has availed 15 months EOL from the institute.
14.	Mr. K. Thirunavukkarasu developed a Double Pipe Heat EXC Hanger Module for a third-year course CH3051 Process Heat Transfer.
15.	Ms. M. Saraswathi, Senior Assistant, has received a cash prize of ₹ 2000 as first prize, for writing 10,000 or more Hindi words per year, on 7 October 2016 on the Hindi Day Celebration at the institute.
16.	Mr. K. Thirunvaukkarasu (JTS) was promoted to Technical Superintendent on 26 October 2016.
17.	Mr. S. Ravikumar, Junior Attendant, was promoted to Junior Technician on 26 October 2016.

Inter-disciplinary group achievements of the departments

Sl. No.	Description
1.	Department of Chemical Engineering, IIT Madras, co-hosted 69th Annual Session of IIChE, CHEMCON 2016 (along with Anna University, CLRI, FICCI). The concluding day’s programme was held at IIT Madras on 30 December 2016. IICT-Avon Padmashri Dr. G. S. Sidhu CHEMCON Distinguished Speaker Award Dr. K. Vijayamohanan, Director, CECRI, Karaikudi gave the plenary lecture in the morning. Papers were presented in the technical sessions. Prof. Bhaskar Ramamurthi, Director, IIT Madras presided over the Valedictory Function in the evening and delivered the Presidential Address (Getting Value Out of Industrial Waste, Energy Consumption in Processes and Lifecycle Management).
2.	The research scholars of Chemical Engineering Department, IIT Madras conducted Research Scholars Symposium on 26 February 2017 at IC&SR Auditorium. The scholars presented their research publications and had discussions on research.
3.	CHEMCLAVE ‘17 was conducted by Chemical Engineering Society (ChES), Department of Chemical Engineering, IIT Madras during 3-5 March 2017, where various interesting events were held.
4.	AIChE IITM Reception in San Francisco, California (15 November, Continental 7, 19:00) v The main aim was to project the department and attract good faculty. v Over 120 guests attended the reception (young graduate students and graduated students, IIT and IISc faculty, senior alumni and others). v Around 10-12 closer to finishing Ph.D. and post doctorates inquired about the process, start-up grant and funding situation. Their other questions were on whether their area of research is what we are looking for. Several had an ID background and wanted to know if they had a chance. Lot of questions were answered and fears allayed by this direct contact. The assistance from IAR Office and IITM Foundation Office in USA for the event is gratefully acknowledged.

Sl. No.	Description
5.	A brainstorming session was conducted on 24 February 2017 at IIT Alumni Industry Interaction Centre. The topics discussed included faculty hiring, promoting interfacing with alumni, promoting faculty research scholars interaction, quarterly research e-newsletter, Open House, and collaborative effort on water and sanitation.

Socially relevant activities carried out by the department

Sl. No.	Description
1.	Ms. M. Saraswathi, Senior Assistant, received the following prizes in the Women Staff Sports Meet held during 25 November–5 December 2016, the prize was distributed on 30 March 2016: First prize in badminton doubles and Team Game - Winners in Tug of War.
2.	Ms. P. Ranjani, Junior Technician, participated in various events conducted In Intra Sports held at IIT Madras on 25 November 2016 and won the following prizes: Slow cycling – Individual event - First prize; 100 m running - Individual event - First prize; and 4x100 m relay - Team event - Second prize
3.	70th Anniversary of India's Independence: Azadi 70 – Yaad Karo Kurbani (Freedom Fortnight) celebrated from 9-23 August 2016.
4.	Mass singing of National Anthem performed by students of the department at 11 a.m. on 23 August 2016 in MSB241 Chemical Auditorium

Results obtained in research work

Sl. No.	Scholar/Faculty Member
Ph.D.	
1.	Dipin S. Pillai, S. Pushpavanam and T. S. Sundararajan: Instability of Jets: Effects of Curvature, Heat Transfer and External Flow Fields
2.	Fathima Fasmin and S. Ramanathan: Characterization of Electrochemical Systems using Electrochemical Impedance Spectroscopy (EIS) and Mechanistic Analysis
3.	Seelam Narasimha Reddy and P. S. T. Sai: Studies on Segregation of Binary Mixtures of Solids by Continuous Liquid Fluidization
4.	Dugyala Venkateshwar Rao and M. G. Basavaraja: Controlled Evaporation Driven Self-Assembly of Anisotropic Particles
5.	K. Nagarajan, K. Krishnaiah and T. Renganathan: Continuous Countercurrent Liquid-Solid System: Hydrodynamics and Mass Transfer
6.	K. Deepa and T. Panda: Synthesis and Characterization of Gold Nanoparticles from *Fusarium oxysporum* and its Application in Fluorescence Quenching
7.	Vaishak Nair and R. Vinu: Valorization of Lignin and Bioresidues via Different Techniques including Catalytic Fast Pyrolysis, Photocatalysis, Functionalization and Thermochemical Activation.
M.S.	
1.	Rahul P. R. and A. Kannan: Effect of Ultrasound on Adsorption Process
2.	Pooja Bansal, M. G. Basavaraja and Abhijit P. Deshpande: Heteroaggregation of Oppositely Charged Nanoparticles
3.	Akankshya Majhi and Abhijit P. Deshpande: Squeeze Flow Analysis for Improved Permeability Description in Composite Process Simulation
4.	Vinodh Kumar and P. Sesha Talpa Sai: A Study on Petroleum Coke De-volatilization and Combustion Characteristics of Petroleum Coke Char in an Oxy-steam Atmosphere
5.	D. Anand and R. Vinu: Resource Recovery from Algae Species (Anthrospira Platensis and Schizochytrium) via Non-catalytic and Catalytic Fast Pyrolysis

International collaboration achievements

Sl. No.	Description
1.	Joint IIT Madras – University of Manchester Catalysis Workshop Participation from v School of Chemical Engineering and Analytical Science, University of Manchester v NCCR v Departments of Chemistry and Chemical Engineering Chemical Engineering Faculty Prof. Preeti Aghalayam, Dr. Niket Kaisare and Dr. R. Vinu gave talks in this workshop.
2.	On March 2017, an educational programme proposal from Yokohama National University on development of education programme for sustainable energy and water infrastructure technologies by industry--academic--government cooperation in CBIC (Chennai--Bengaluru Industrial Corridor) and Yokohama was discussed.

Student visit

Sl. No.	Student	Purpose of Visit	Date and Venue	Financial Assistance
1.	Devyani Sharma	Awarded DAAD IIT Master Sandwich Programme 2016-17, Technical University Munich	1 September 2016-31 March 2017, Germany	DAAD
2.	C. Srinesh	Research Internship at Ecole Polytechnique Federal de Lausanne (EPFL)	1 October-20 November 2016, Switzerland	No
3.	R. Srikanth	Student observer at Dr Rajan's Lab, University of Michigan, Ann Arbor	1 October-31 December 2016, USA	No
4.	Babita Kumari Verma	Visiting Scholar, Jefferson University (the work is on interaction between agriculturists and industrialists)	1 March 2017-28 February 2018, Thomas Jefferson University, USA	No

Major infrastructure development in the department

1. Faculty rooms were built for the newly joined faculty members

4.5. Department of Chemistry

4.5.1. Introduction

The Department of Chemistry was a part of the Department of Chemical Engineering during 1959–1961. It was established as 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 and 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. Srinivasan as the Associate Head).

The department offers M.Sc. and Ph.D. programmes in chemistry. 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 very well equipped with modern instrumentation facilities and actively engaged in performing quality teaching and research in frontier areas.

4.5.2. Academic Programmes

New courses introduced

Sl. No.	Course No.	Title
1.	CY2010	Kinetics and Catalysis

Students on roll as of September 2016+ M.S. and Ph.D. admission in January 2017

Programme	Year I	Year II	Year III	Year IV	Year V and Others	Total
M.Sc.	54	54				108
Ph.D.	45	56	56	37	83	277
Total	**99**	**110**	**56**	**37**	**83**	**385**

Endowment prize instituted

Keshav-Rangnath Excellence in Research Award for two research scholars and the respective guides.
Cash award for PG scholar: ₹ 25,000, and
Faculty guide: ₹ 25,000 will be credited to the PCF A/c

Students/scholars who attended conference/seminar/symposia abroad/India

Sl. No.	Student/Scholar	Roll No.	Conference/Seminar/Symposia/Workshop	Date and Venue
Abroad				
1.	S. Kaviya	CY11D064	International Conference – EMN Meeting on Nanoparticles	9-13 May 2016, Singapore
2.	S. Kaviya	CY11D064	Invited talk in EMN Meeting on Nanoparticles	9-13 May 2016, Singapore
3.	A. Chandra Shekar Reddy	CY13D006	15th RSC-SCI Joint Meeting on Heterocyclic Chemistry	12-15 May 2016, Italy
4.	Jayanta Ghorai	CY14D060	15th RSC-SCI Joint Meeting on Hetero Cyclic Chemistry	12-15 May 2016, Teormina, Italy
5.	Hansnath Tiwari	CY12D013	Luminescence of Eu in a Mullite-tyspe Host Materials $Bi_2ga_2ai_2o_9$	29 May-2 June 2016, San Diego, CA, USA
6.	M. Veerababu	CY12D042	Poster presentation at 229th ECS meeting	29 May-2 June 2016, San Diego, CA, USA
7.	N. Rahul	CY12D022	64th ASMS Conference	5-9 June 2016, San Antonio, Texas, USA
8.	M. Satyanarayana	CY11D031	IMLB 2016 Conference	19-24 June 2016, Chicago, USA
9.	Bijan Mondal	CY11D052	International Conference 2016 Boron in the Americas Meeting (Boran XV)	25-29 June 2016, Queen's University, Kingston, Ontario
10.	K. Yuvaraj	CY12D079	Boran XV	25-29 June 2016, Queen's University, Kingston, Ontario
11.	C. Arivazhagan	CY13D003	Boran XV	25-29 June 2016, Queen's University, Kingston, Ontario
12.	Moulika Bhattacharyya	CY14D012	Boran XV	25-29 June 2016, Queen's University, Kingston, Ontario
13.	Sv Raghava	CY11D028	Poster Presentation in 17th Tetrahedron Symposium	28 June- 1 July 2016, Sitges, Spain
14.	Bhartendu K. Srivastava	CY12D007	Poster Presentation in 17th Tetrahedron Symposium	28 June- 1 July 2016, Sitges, Spain
15.	Manthena Chaitanya	CY13D019	17th Tetrahedron Symposium	28 June- 1 July 2016, Sitges, Spain
16.	S. Chandrasekar	CY13D007	17th Tetrahydron Symposium – Challenges in Biological, Bio-organic, Organic and Medical Chemistry	28 June- 1 July 2016, Spain
17.	Akhil Pratap Singh	CY11D039	26th EUCHEM 2016	3-8 July 2016, Vienna, Austria
18.	Chennrui Bharath Kumar	CY13D009	26th EUCHEM 2016	3-8 July 2016, Vienna, Austria
19.	Ch. Bharath Kumar	CY13D009	Poster presentation on "A comprehensive study of thermophysical properties hydroxyethyl ammonium based ionic liquids	3-8 July 2016, Vienna, Austria
20.	C. B. Ramya	CY14D075	International Symposium on Gas Kinetics and Related Phenomena	17-21 July 2016, New York, UK
21.	Siripina Vijaya Kumar	CY13D029	International Conference on GeoKinetics and Related Phenomena	17-21 July 2016, New York, UK
22.	Yashwant Pratap Kharwar	CY15D112	Workshop on Electrochemical Energy Storage and Conversion: Materials, Process and Applications	19-23 August 2016, Hotel Sheveroys, Yercaud, Tamil Nadu
India				
1.	Sumana Brahma	CY15D038	Workshop on Electrochemical Energy Storage and Conversion: Materials, Process and Applications	19-23 August 2016, Hotel Sheveroys, Yercaud, T.N.
2.	Rakesh	CY12D023	Asian Consortium on Computational Materials Science (ACCMS-2016)	22-24 September 2016, SRM University, Chennai
3.	Sruthi Guru	CY15D099	20th CRSI National Symposium in Chemistry	2-5 February 2017, Gauhati University, Guwahati, Assam
4.	Madhuri Jash	CY14D068	20th CRSI National Symposium in Chemistry	2-5 February 2017, Gauhati University, Guwahati, Assam

Students/scholars who won outside prizes and awards

Sl. No.	Student/Scholar	Roll No.	Name of Prize	Prize awarded by
1.	Ramya Kannan	CY13D063	Merit Award for Poster entitled 'Self-assembled glucose-cored poly (aryl ether) dendron gel for efficient encapsulation and controlled release of guest molecules'	10th World Biomaterials Congress, Montreal, Canada
2.	Hareesha Dasary	CY12D014	Best Poster award of ISMSC-2016 Conference	Seoul, South Korea
3.	M. Satyanarayana	CY11D031	ACCMS-TM 2016 Poster award	SRM University, Kattangulathur, Chennai
4.	Dr. Yadagiri Dongari	CY11D045	2016 Eli Lilly and Company Asia Outstanding Thesis award	IIT Kanpur

Sl. No.	Student/Scholar	Roll No.	Name of Prize	Prize awarded by
5.	Sanjeev Gupta	CY13D028	RSC Advances Poster Presentation Prize	RSC-NIT Symposium on Heterogenous Catalysis and Sustainable Chemistry, NIT-Trichy
6.	Anusha B.	CY14D044	Best Poster Award for her poster entitled "Phase equilibrium studies of aqueous biphasic systems containing tetra alkyl ammonium based ionic liquids"	11th National Conference of the Indian Thermodynamics Society, Department of Chemistry, University of Jammu
7.	Prithi Jayaraj	CY14D029	First prize for her best oral presentation. The prize carries a Certificate of Merit and cash of ₹ 3000	11th International Symposium on Advances in Electrochemical Science and Technology (iSAEST-11), Hotel Kohinoor Asiana, Chennai
8.	Sudip Mandal	CY14D084	First prize for his best poster presentation	11th International Symposium on Advances in Electrochemical Science and Technology (iSAEST-11), Hotel Kohinoor Asiana, Chennai
9.	Manthena Chaitanya	CY13D019	Organic and Biomolecular Chemistry Poster Prize	21st International Conference on Organic Synthesis (ICOS 21), Mumbai, India
10.	Atanu Ghosh	CY11D048	Best poster award	Asian Academic Seminar 2016 held at The University of Tokyo and sponsored by JSPS and DST
11.	Papri Chakraborty	CY15D054	Best poster award	Asian Academic Seminar 2016, University of Tokyo; sponsored by JSPS and DST
12.	Biswajit Mondal	CY13D203	Best poster prize	20th CRSI National Symposium in Chemistry 2017, American Chemical Society, Gauhati University
13.	Dr. Vikram Singh	NPDF (SERB)	Gandhian Young Technological Innovation Award	Rastrapati Bhawan, New Delhi
14.	Bijan Mondal	CY11D052	Institute Research Award	IIT Madras
15.	Nisha	CY15C021	Kalaimani Natarajan Prize and Swathi/Jayalakshmi Memorial Award	IIT Madras
16.	Hemakalyan Ballav	CY15C013	R. Padmanabhan Memorial Prize	IIT Madras
17.	Monojit Ghosal Chowdhury	CY13D021	Best Poster award in ISACS: Challenges in Inorganic Chemistry	Royal Society of Chemistry, Manchester, United Kingdom

Students/scholars who won institute convocation/Institute Day Prize

Sl. No.	Student/Scholar	Roll No.	Name of Prizes
1.	Dr. Yadagiri Dongari	CY12D045	Prof. C.N. Pillai
2.	Dr. Vikram Singh	CY11D091	Prof. Langmuir
3.	Dipak Kumar Roy	CY11D056	Prof. Werner
4.	Dr. N. Chary Mamillapalli	CY11D053	Prof. G.Sundararajan
5.	Jeetika Yadav	CY14C023	Prof. Ramamurthy (Department Prize)
6.	Anirban Som	CY10D022	Keshav-Rengnath Excellency In Research Award
7.	Bijan Mondal	CY11D052	

4.5.3. Faculty and their Activities

Professors

Name and Qualifications	Major Areas of Specialization
N. Chandrakumar, Ph.D. (IIT Kanpur)	Magnetic resonance imaging and spectroscopy
S. Sankararaman, Ph.D. (Victoria, Canada)	Synthetic and mechanistic organic chemistry
R. Dhamodharan, Ph.D. (U. Mass, USA)	Chemistry of macromolecules
A.K. Mishra, Ph.D. (IIT Kanpur)	Physical photochemistry, fluorescence spectroscopy
T. Pradeep, Ph.D. (IISc, Bengaluru)	Solid state chemistry, materials science
M.V. Sangaranarayanan, Ph.D. (IISc, Bengaluru)	Electrochemistry
U.V. Varadaraju, Ph.D. (IISc, Bengaluru)	Solid state chemistry, materials science
P. Selvam, Ph.D. (IIT Madras)	Catalysis, solid state chemistry
Archita Patnaik, Ph.D. (BHU)	Physical chemistry, colloid and interface science, nanoscience and nanotechnology
S. Baskaran, Ph.D. (IIT Kanpur)	Organic synthesis and asymmetric synthesis
Indrapal Singh Aidhen, Ph.D. (University of Pune)	Synthetic organic chemistry
K. Mangala Sunder, Ph.D. (McGill, Canada)	Theoretical spectroscopy
K. Vidyasagar, Ph.D. (IISc, Bengaluru)	Solid state chemistry
P. Bhyrappa, Ph.D. (IISc, Bengaluru	Bioinorganic, supramolecular and materials chemistry of porphyrinoids
G. Ranga Rao, Ph.D. (IISc, Bengaluru)	Materials chemistry, solid state eectrochemistry, surface chemistry and heterogeneous catalysis
Sanjay Kumar, Ph.D. (IIT Kanpur)	Theoretical chemistry, quantum chemistry
N. Narasimha Murthy, Ph.D. (IISc, Bengaluru)	Bio-inorganic chemistry, inorganic chemistry, spectroscopy
Dillip Kumar Chand, Ph.D. (IIT Kanpur)	Supramolecular chemistry, inorganic chemistry
G. Sekar, Ph.D. (IIT Kanpur)	Enantioselective organic synthesis

Associate Professors

Sundaragopal Ghosh, Ph.D. (IIT Bombay)	Organometallic and metalloborane chemistry
B. Rajakumar, Ph.D. (IISc, Bengaluru)	Atmospheric chemistry, gas-phase kinetic and high-resolution cavity ring down spectroscopy, computational chemistry
K.M. Muraleedharan, Ph.D. (RRL, Trivandrum)	Bioorganic chemistry, medicinal chemistry
Edamana Prasad, Ph.D. (RRL,Trivandrum)	Divalent lanthanide and dendrimer chemistry
Arti Dua, Ph.D. (IISc, Bengaluru)	Statistical mechanics, polymer theory, stochastic processes
Amrendra Vijay, Ph.D. (IISc, Bengaluru)	Theoretical physical chemistry
Ramesh Gardas, Ph.D. (South Gujarat University)	Solution thermodynamics, ionic liquids
Debashis Chakraborty, Ph.D. (University of Gottingen, Germany)	Organo metallic chemistry
Pazhamalai Anbarasan, Ph.D. (IISc, Bengaluru)	Design and development of new synthetic methodologies based on carbenes, trifluoromethylation and trifluoromethylthiolation, synthesis of therapeutically important natural products
R Kothandaraman, Ph.D. (IISc, Bengaluru)	Electrochemical systems and electrocatalysis
M. Jeganmohan, Ph.D. (NTHU, Taiwan)	Metal-catalyzed organic reactions, total synthesis and asymmetric synthesis

Assistant Professors

Beeraiah Baire, Ph.D. (IISc, Bengaluru)	Organic synthesis
P.Venkatakrishnan, Ph.D. (IIT Kanpur)	Organic functional materials
Md Mahinddin Baidya, Ph.D. (CLMU, Munich, Germany)	Design and development of new synthetic methodologies, asymmetric organic synthesis, synthesis of therapeutically important natural products
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 organized by faculty members

Sl. No.	Coordinator(s)	Title	Period
Symposium: Chemistry In-house Symposium (CiHS) 2016			
	Dr. P. Anbarasan and Dr. Beeraiah Baire		17 August 2016

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
Meeting:				
1.	Dr. Sundargopal Ghosh	Ph.D. Viva Voce Exam	NISER, Bhubaneswar	7-9 June 2016
2.	Dr. Edamana Prasad	Ph.D. Viva Voce Exam	NIIST Trivandrum	10 June 2016
3.	Dr. R. Kothandaraman	Conference Organising Committee meeting	Society for Advancement of Electrochemical Science and Technology (SAEST), Karaikudi	23 June 2016
4.	Prof. M.V. Sangaranarayanan	Interview	CECRI Karaikudi	8 July 2016
5.	Dr. Debashis Chakraborty	Ph.D. Viva	IIT Patna	19-22 July 2016
6.	Prof. R. Dhamodharan	DC Meeting	VIT University, Vellore	2 September 2016
7.	Prof. K. Mangala Sunder	Domain Expert Committee	MHRD, New Delhi	7 September 2016
8.	Prof. M. V. Sangaranarayanan	Chairing Selection Committee meeting	CECRI, Karaikudi	9 September 2016
9.	Dr. R. Kothandaraman	Programme Advisory Committee meeting on Solar Energy Research Initiative	National Institute of Advanced Science (NIAS), IISc, Bengaluru	19 September 2016
10.	Prof. K. Mangala Sunder	Annual ministerial conference, Asian Summit on Education and Skills (ASES)	Department of Education, Government of Karnataka, Bengaluru	27-28 September 2016
11.	Prof. M. V. Sangaranarayanan	Selection of Scientists	CECRI, Karaikudi	25-26 October 2016
12.	Prof. P. Selvam	Meeting	CECRI, Karaikudi	25 October 2016
13.	Prof. M. V. Sangaranarayanan	Ph.D. Viva Voce	IISc, Bengaluru	10 November 2016
14.	Prof. R. Dhamodharan	Board of Academic Studies Meeting	VIT Vellore	25 November 2016
15.	Dr. Md. Mahiuddin Baidya	Attending Conference ICOS 2016	IIT Bombay	12-14 December 2016
16.	Dr. Sundargopal Ghosh	Thesis viva	IIT Bombay	15 November 2016
17.	Dr. R. Kothandaraman	Thesis Examiner	IIT Bombay	16 November 2016
18.	Prof. U.V.Varadaraju	Viva voce exam	JNCASR, Jakkur, Bangalore	23 January 2017
19.	Prof. R. Dhamodharan	DC Meeting	IGCAR, Kalpakkam	31 January 2017
20.	Prof. U.V.Varadaraju	Ph.D. Viva	Indira Gandhi Centre for Atomic Research, Kalpakkam	4 April 2017
21.	Dr. Edamana Prasad	DC meeting	VIT University, Vellore	18 April 2017
22.	Prof. K. Mangala Sunder	Selection Committee meeting for Scientist F to G – SCL	DRDO Hyderbad	1 March 2017
23.	Prof. Indrapal Singh Aidhen	Viva-voce Examination	National Chemical Laboratory, Pune	1-3 March 2017
24.	Prof. Indrapal Singh Aidhen	Viva-voce Examination		17 March 2017
25.	Prof. M. V. Sangaranarayanan	Research Council Meeting	CECRI, Karaikudi	20 March 2017
26.	Prof. K. Mangala Sunder	PRSG Meeting	IIT Karaghpur	12-13 April 2017
27.	Dr. Edamana Prasad	Faculty Development Program (FDP)	Trivandrum, Kerala	21 April 2017
Workshop				
1.	M. Jegamohan	FDP	IIT Madras	4-6 January 2017
Conference: 21st International Conference on Organic Synthesis (ICOS 21) 2016				
1.	Dr. M. Baidya	Mukaiyama Aldol Reaction of Nitroso Compound	IIT Bombay	11-16 December 2016
2.	M. Jegamohan	Ruthenium-Catalyzed C-H Bond Functionalization of Organic Molecules	National Conference on Emerging Trends in Chemistry, St. Joseph's Collage, Cuddlore	2-3 March 2017
3.	M. Jegamohan	Redox-Neutral Ruthenium(II) Catalyzed C-H Bond Functionalization Reaction	Advances in Organic Synthesis Department of Chemistry, National Chemical Laboratory, Pune	14 February 2017
4.	M. Jeganmohan	Ruthenium Catalyzed Hydroarylation of Substituted Aromatics with Alkynes: An Efficient Route to Trisubstituted Alkenes	53RD ACC 2016, GITAMC University, Visakhapatnam	28-29 December 2016

Special lectures delivered by the faculty in other institutions

Sl. No.	Faculty Member	Topic of Lecture	Institution	Date
1.	Prof. T. Pradeep	Affordable clean water using advanced materials, Inaugural lecture at the international symposium	VIT University, Vellore	2 May 2016
2.	Dr. Edamana Prasad	Invited lecture: Developing teaching skills in faculty	Sree Venkateswara Engineering College, Chennai	4 May 2016
3.	Prof. G. Sekar	Synthesis of chiral alcohols through enantioselective oxidation and reduction, Recent Trends in Organic Chemistry (RTOG-2016)	Department of Organic Chemistry, University of Madras, Chennai	10 May 2016
4.	Dr. R. Kothandaraman	Workshop on Energy Conversion and Storage (ECS-2016)	IIT Hyderabad	13 May 2016
5.	Dr. Edamana Prasad	Conducting a refresher course for chemistry teachers (plus two level)	Kendriya Vidyalaya School, Avadi	18 May 2016
6.	Prof. T. Pradeep	Innovations to address groundwater contamination	South Asia Groundwater Forum, Jaipur	1-3 June 2016
7.	Prof. T. Pradeep	Atomically precise clusters of noble metals: From basic science to applications	School of Materials Science and Engineering, Nanyang Technological University	17 June 2016
8.	Prof. T. Pradeep	Nanotechnology: Prospects for tomorrow	Hindu Senior Secondary School, Triplicane, Chennai	5 July 2016
9.	Prof. T. Pradeep	Affordable point-of-use water purification using nanomaterials, Indo-UK Workshop on Clean Water through Advanced and Affordable Materials	Chennai	8-10 August 2016

Sl. No.	Faculty Member	Topic of Lecture	Institution	Date
10.	Prof. T. Pradeep	Inter-cluster reactions between atomically precise noble metal clusters, ISCAN 2016	IIST Thiruvananthapuram	14 July 2016
11.	Prof. T. Pradeep	Clean water using advanced materials	Science, incubation and industry, Ahmedabad University	24 August 2016
12.	Prof. T. Pradeep	Clean water using advanced materials: Science, incubation and industry Journey, from foundational research in nanotechnology to innovation led entrepreneurship, NANOBIOTECK - 2016	All India Institute of Medical Science	24-26 November 2016
13.	Prof. G. Sekar	Asymmetric synthesis, Science City Chennai sponsored workshop for M.Sc. students	School of chemical sciences, University of Madras, Chennai	30 June 2016
14.	Prof. G. Sekar	Chiral nano-catalysts, Science City Chennai sponsored workshop for M.Sc. students	School of Chemical Sciences, University of Madras, Chennai	30 June 2016
15.	Dr. B. Rajakumar	Visit	University of Bristol, UK	26 June-16 July 2016
16.	Dr. B. Rajakumar	Poster presentation, International Symposium on Gas Kinetic	University of York, UK	16-22 July 2016
17.	Dr. Sundargopal Ghosh	Invited lecture	CSIR-IICT	4-5 August 2016
18.	P. Bhyrappa	Porphyrins with tunable physicochemical properties	Industrial Chemistry Department, Mangalore University, Konaje, Karnataka	1 September 2016
19.	P. Bhyrappa	Modulation of physicochemical properties of porphyrins	St. Agnes for PG studies and Research, Mangalore	1 September 2016
20.	Dr. R. Kothandaraman	Workshop on Advanced Battery Technology for India	Niti Aayog, New Delhi	8 September 2016
21.	Prof. P. Selvam	Invited talk	Mahamaya Technical University, Noida	22-23 September 2016
22.	Dr. P. Anbarasan	New avenues in functionalization of metallocarbenes derived from -diazocarbonyl derivatives	IIT Guwahati	8-10 December 2016
23.	Prof. Indrapal Singh Aidhen	Invited lecture in a conference	Syngenta Biosciences, GOA	21-23 November 2016
24.	Prof. U.V. Varadaraju	International Symposium on Solid State Chemistry	JNCASR, Bengaluru	1-3 December 2016
25.	Dr.Ramesh Gardas	Invited talk: Thermal stability and thermophysical properties of protic and aprotic ionic liquids	11th National Conference of the Indian Thermodynamics Society on Advances in Chemical Sciences and Thermodynamics organized by University of Jammu, Jammu	2-3 December 2016
26.	Dr.Ramesh Gardas	Invited talk: Recent progress in ionic liquids as environmentally benign green solvents for the extraction, absorption and dissolution processes	National Conference on Recent Innovations in Chemistry for Environment (RICE-16) organized by K.L. University, Andhra Pradesh	9-10 December 2016
27.	Dr. Ramesh Gardas	Dr. Arvind Kumar Memorial Award 2016 of ICC: Award lecture (30 min) on Design and Applications of Ionic Liquids as Green Solvents for the Extraction, Absorption and Dissolution Processes	XXXV Annual Conference of Indian Council of Chemists (ICC), organized by H. V. Desai College, Pune in association with College of Engineering, Pune	22-24 December 2016
28.	Dr. Ramesh L. Gardas	Lecture on Entrepreneurship for Chemists	Sir P.T. Sarvajanik College of Science, Athwalines, Surat, Gujarat	6 January 2017
29.	Dr. Ramesh L. Gardas	Seminar on Chemistry: Meets Technological Development	V.S. Patel College of Arts and Science, Bilimora	7 January 2017
30.	Prof. S. Sankararaman	Pfizer Endowment Lecture	Department of Organic Chemistry, IISc, Bengaluru	22 March 2017
31.	Prof. K.Mangala Sunder	Faculty Selection Committee	IIT Hyderabad	16-17 March 2017
32.	Prof. K. Mangala Sunder	E-learning carried out in states in India by NPTEL	Vigyan Bhavan, New Delhi	23-24 March 2017
33.	Dr. Ramesh L. Gardas	National Conference on Green Chemical Process and Sustainable Technologies (GCPST 2017)	SSN College of Engineering, Chennai	17 March 2017

Visits abroad by faculty

Sl. No.	Faculty Member	Country Visited	Date	Purpose of visit
1.	Prof. P. Selvam	Zaragoza, Spain	13-17 June 2016	Oral Presentation
2.	Dr. Sundargopal Ghosh	Canada	24 June-1 July 2016	Oral Presentation
3.	Prof. K. Mangala Sunder	Sri Lanka	16-18 June 2016	Oral Presentation, Adobe Education Leaders Seminar
4.	Dr. Nandita Madhavan	Potsdam, Germany	18-23 May 2016	Poster Presentation: Small Peptides for Robust Biomimetic Functionalized Pores
5.	Prof. M. V. Sangaranarayanan	Belgium	16-20 August	Conference
6.	Prof. P. Selvam	Hsinchu, Taiwan	5-9 September 2016	Oral Presentation
7.	Prof. P. Selvam	Mauritius	10-11 September 2016	2nd International Conference on Nanomaterials
8.	Dr. Ramesh L. Gardas	Australian Nuclear Science and Technology Organization (ANSTO), Australia	4-9 October 2016	Brief Visit to Carry out SANS and SAXS Experiments at the Bragg Institute Neutron Beam Facility
9.	Prof. T. Pradeep	University of Tokyo	14-20 December 2016	Intercluster Reactions between Atomically Precise Noble Metal Clusters, Asian Academic Seminar 2016
10.	Prof. T. Pradeep	Pan Africa Chemistry Network, Nairobi	30 November-2 December	Affordable Clean Water Using Advanced Materials: Science, Incubation and Industry
11.	Prof. P. Selvam	Japan	10-13 October 2016	International Symposium 2016 on Global/Local Innovations for Next Generation Automobiles
12.	Prof. A. K. Mishra	Germany	10-14 October 2016	Indo-German Science and Technology Cooperation, project Consortium Meeting
13.	Prof. T. Pradeep	University of Nairobi, Kenya	30 November-2 December 2016	Pan Africa Chemistry Congress 2016 – Sustainable Water Resources for Africa
14.	Prof. Archita Patnaik	National Institute for Materials Science, Tsukuba, Japan	21-25 November 2016	DST-JSPS collaborative project meeting in the International Centre for Materials NanoArchitectonics
15.	Dr. Sundargopal Ghosh	University of Tokyo, Japan	14-21 December 2016	Oral presentation at the Asian Academic Seminar, 'Advanced Materials, Processes and Systems for Sustainable Development'
16.	Prof. K. Mangala Sunder	Kuala Lumpur, Malaysia	27-30 November 2016	8th Pan-Commonwealth Forum on Open Learning (PCFB): Open, Online and Flexible Learning: the Key to Sustainable Development
17.	Prof. K. Mangala Sunder	Kuala Lumpur, Malaysia	1-2 December 2016	Asia Regional Consultation on Open Educational Resources (OER)
18.	Prof. T. Pradeep	University of Tokyo, Japan	17-22 December 2016	Asian Academic Seminar 2016: Advanced Materials, Processes and Systems for Sustainable Development
19.	Dr. Ramesh L. Gardas	Australian Nuclear Science and Technology Organisation (ANSTO), Bragg Institute, Neutron Beam Facility, Australia	20-26 February 2017	To carryout SANS and SAXS

Sl. No.	Faculty Member	Country Visited	Date	Purpose of visit
20.	Prof. P. Selvam	University of Lille, Lille, France	15-17 March 2017	Indo-French Seminar on Catalysis Design using NMR
21.	Dr. Sundargopal Ghosh	University of Manchester, UK	10-13 April 2017	To present a plenary research lecture at the International Conference on Advancing the Chemical Sciences (ISACS)
22.	Prof. T. Pradeep	San Francisco, USA	1-13 April 2017	Editorial meetings at the Spring ACS National Meeting

Honours and awards obtained by faculty

Sl. No.	Faculty Member	Award	Awarded by	Awarded for
i. Honours:				
1.	Prof. M. V. Sangaranarayanan	President, Society	Advancement of Electrochemical Science and Technology (SAEST)	
2.	Dr. Arti Dua	Member of the newly constituted Subject Expert Committee (SEC)	Chemical Sciences under Women Scientists Scheme-A (WOS-A), Department of Science and Technology (DST)	
3.	Dr. B. Rajakumar	Elected as an Associate Fellow	Andhra Pradesh Academy of Sciences (APAS)	
4.	Prof. S. Sankararaman and Dr. Sundargopal Ghosh	Elected as fellowship	Indian Academy of Sciences	2017
5.	Prof. M. V. Sangaranarayanan	Editorial board of the *Journal of Chemical Sciences*	Indian Academy of Sciences, Bengaluru	2017
6.	Dr. Ramesh L. Gardas	Editorial board member	Nicolette van Dijk, Publisher TCA, Elsevier	Three years w.e.f. January 2017
7.	Prof. G. Sekar	Elected as a member	CRSI (Chemical Research Society of India) Council	Three-year term from 1 April 2017
ii. Awards				
1.	Dr. Ramesh Gardas	Shri J.C. Bose Patent Award	Alumnus, IIT Madras	
2.	Dr. P. Anbarasan	NASI-Young Scientist Platinum Jubliee Award-2016	The National Academy of Sciences, India	Excellence in research
3.	Dr. Ramesh Gardas	Dr. Arvind Kumar Memorial Award of ICC (Indian Council of Chemist)	XXXV Annual Conference at H.V. Desai College of Engineering, Pune	2016
4.	Dr. P. Anbarasan	ISCB-Young Scientist Award 2017	Indian Society of Chemists and Biologists, India	Excellence in research
5.	Dr. Ramesh L. Gardas	Young Scientist Award 2017 (Saraswathy Srinivasan Prize) for Chemical Sciences	The Academy of Sciences, Chennai	
6.	Prof. G. Sekar	Mid-Career Research and Development Award	IIT Madras	2016-2017
7.	Dr. Md. Mahiuddin Baidya	2017 INSA Medal for Young Scientists	Indian National Science Academy	2017

Fellowships of academies and professional societies

Sl. No.	Faculty Member	Year of admission
Humboldt Fellowship		
1.	M. Jegamohan	2009

Editorial boards of journals

Sl. No.	Faculty Member	Position (Editor/Member)	Journal Name
1.	Ashok Kumar Mishra	Editor	*Scientific Reports*

4.5.4. Design and Development Activities

New facilities added or major equipment procured

Sl. No.	Equipment	Amount (in lakhs of ₹)
1.	Chiral HPLC	15
2.	Gas Chromotography and Mass Spectrometer (GC-MS)	32

Patents applied for

1. Cellulose Nanocrystal Templated Iron Oxyhydroxide based Adsorbent for Arsenic Removal from Water and a Device Thereof, T. Pradeep, Avijit Baidya, Bibhuti Bhusan Rath and A. Anil Kumar, 201641027660, filed on 12 August 2016
2. Method of Synthesis of Atomically Precise Metal Cluster-Cellulose Nanocrystal Composite for Diffusion Controlled Simultaneous Sensing and Scavenging of Heavy Metal Ions in Water, T. Pradeep, Nishil Muhammed, Avijit Baidya, A. Anil Kumar and Michael K. C. Tam, 201641031815, 19 September 2016
3. Structure and Topology Conserving Transformations between two Archetypal Nanoparticles, T. Pradeep, K. R. Krishnadas, Atanu Ghosh, Ananya Baksi and Gana Natarajan, 201641034921, 13 October 2016
4. Method to Produce Unprotected Naked Clusters of Metals of Precise Composition in Air without Mass Selection, 201641035574, 18 October 2016
5. Inbuilt Water Purification Device for Storage Containers. Design patent. 287785, 18 October 2016
6. Domestic Water Purification Unit, design patent 288810, 24 November 2016
7. Chitosan-reinforced Mixed Oxide Nanocomposite for Fluoride Removal from Water and a Device Thereof, T. Pradeep, A. Anil Kumar, Bibhuti Bhusan Rath, filed on 29 December 2016
8. Patterned Metallic Nanobrushes for Capture of Atmospheric Humidity, T. Pradeep, Depanjan Sarkar, Anindita Mahapatra, Anirban Som, Avijit Baidya, filed on 29 December 2016
9. Cellulose Microstructures Templated Nanocomposites with Enhanced Arsenic Removal Capacity and a Purifier thereof, T. Pradeep, Sritama Mukherjee, A. Anil Kumar, filed on 30 December 2016.

Patents filed

Sl. No.	Faculty Member	Topic of patent
1.	K. M. Muraleedharan, U. Chandrasekhar Reddy, Soumya Saroj, Devi Sirisha Janni (*Indian patent application no. 201641037950 dated 7 November 2016)*: Role - Principal investigator	Drug Delivery Applications of Oxanorbornane-Based Amphiphiles

Patents awarded

Sl. No.	Faculty Member	Topic of patent
1.	P. Bhyrappa	A Chromatographic Method for Separation of -dibromo- and tribromo-meso-tetraphenylporphyrins, Indian patent application no. 2015CH00373 A 20160729
2.	Prof. T. Pradeep	On-line Water Purifier for Hand Pumps, Design application, patent number 271059, filed on 6 April 2015, granted on 12 July 2016
3.	Prof. T. Pradeep	A Method to Produce Supported Noble Metal Nanoparticles in Commercial Quantities for Drinking Water Purification, T. Pradeep filed along with Aquamall Water Solutions Limited, patent number 277112, on 22 August 2007 and granted on 10 November 2016
4.	Prof. T. Pradeep	Coated Mesoflowers for Molecular Detection and Smart Barcode Materials, P. R. Sajanlal and T. Pradeep, patent number US20160077010 A1, filed on 30 April 2014, granted on 17 March 2016
5.	Prof. T. Pradeep	Multielement and Multiproperty Tagging, P. R. Sajanlal and T. Pradeep, patent number JP5931725 (B2), filed on August 2010, granted on 8 June 2016

4.5.5. Research and Consultancy

Sponsored research projects

Sl. No.	Title	Period	Funding Agency	Amount (₹ in lakhs)	Co-ordinators
1.	Study of the response of ESPT fluorescence probes towards composition methodology and associated physical properties of lipid bilayer memberanes	10 October 2013-9 April 2017	DST	55	Prof. A.K. Mishra
2.	Online-indication of pathogen-like pollution in water by fecal pigment (FP) analysis	8 August 2016-7 August 2019	IGSTC	96 (total value: 165)	Prof. A.K. Mishra, Dr. Wido Schmidt, Mr. Christian Moldaenke, Spectro Analyti cal Labs Limited, New Delhi
3.	Analysis of Chemically modified electrodes for sensing applications	1 March 2015-28 February 2018	CSIR	3	Prof. M. V. Sangaranarayanan
4.	Electrochemical polymerization using liquid/liquid interfaces	14 July 2016-13 July 2019	DST	33.79	Prof. M. V. Sangaranarayanan
5.	Investigation of stereoselective transition metal catalyzed carbenylative cross coupling: Synthesis...	36 months	DST-SERB	71.7	Dr. P. Anbarasan
6.	Peptide-based Mutual Pro-drugs for Dual Inhibition of Key Protein Components in Cancer Cell Signaling	2017-2020	DST	85.09 (project has been sanctioned but the final approved budget is not intimated)	Dr. K. M. Muraleedharan
7.	Microfluidic platform for continuous monitoring of gasotransmitters for early level management of Systemic Inflammatory Response Syndrome (SIRS) in Trauma patients	2017-2020	DST IMPRINT Proposal	374.92	Dr. Muraleedharan KM (Co-PI); Dr. Ashis Kumar Sen (PI)
8.	Ruthenium-Catalyzed Regio and Stereoselective Oxidative Coupling of ϖ-Components	3	Indian National Science Academy	15	Dr. M. Jeganmohan
9.	Ruthenium-Catalyzed ϖ-Bond Assisted C-H Bond Functionalization of Organic Molecules	3	IC&SR, IIT Madras	45	Dr. M. Jeganmohan
10.	New Faculty Initiative Grant	3	IC&SR, IIT Madras	5	IC&SR, IIT Madras

Faculty members' participation with other institutions under MoU

Sl. No.	Faculty Member	Participation details	University/Institution
1.	Dr. Meera Soundararajan, Department of Applied Sciences, Faculty of Health and Life Sciences, University of Northumbria (NU) at Newcastle, United Kingdom	As a part of this, different types of chemical entities designed and synthesized at IIT Madras as potential therapeutic agents against diseases like cancer, diabetes and infectious diseases will be subjected to biological evaluation at NU	NU, Newcastle
2.	Dr. C. Lakshmi, NIT Calicut	This collaborative effort aims to develop chemical probes to detect and quantify biologically relevant small molecules like hydrogen sulfide, carbon monoxide and nitric oxide. These probes are designed in such a way as to show specific changes in its photo-physical or other properties on reaction with these species. Since these chemical species are associated with biological process like infection and inflammation, their detection and quantification is expected to help to monitor the status of patients in hospitals settings	NIT Calicut

Research publications of the faculty members and research scholars

Books/Book Chapters: 1

Total number of papers published in refereed national journals: 12

Total number of papers published in refereed international journals: 213

Book/Book Chapter

B. Viswanathan. 2016. *Energy Sources: Fundamentals of Chemical Conversion Processes and Applications* pp 1-394

Papers published in refereed international journals

1. R. Borthakur, R. Prakash, P. Nandi and S. Ghosh. 2016. Metal rich metallaboranes of group 9 transition metals. *Journal of Organometallic Chemistry* 825-826: 1-7. doi: 10.1016/j.jorganchem.2016.10.008
2. J. Santhi and B. Baire. 2016. N-iodosuccinimide-promoted rapid access to Indeno[1,2-c]pyrroles via [3+2] annulation of enamine-alkynes. *Advanced Synthesis and Catalysis* 358(23): 3817-3823. doi: 10.1002/adsc.201600711
3. M.C. Naranthatta, S. Bandi, R. Jagan and D.K. Chand. 2016. Double-stranded binuclear helicates and helicity modulation. *Crystal Growth and Design* 16(12): 6722-6728. doi: 10.1021/acs.cgd.6b01445
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5. S. Chakraborty and A. Vijay. 2016. Spin–orbit interactions and magnetic phase transitions. *Journal of Magnetism and Magnetic Materials* 419: 412-419. doi: 10.1016/j.jmmm.2016.06.044
6. V. Singh, P.K. Chhotaray, N. Islam and R.L. Gardas. 2016. Implicit and explicit solvent models to understand the D(+)-glucose solvation in aqueous protic ionic liquid solution: Volumetric and computational approach. *Journal of Chemical Thermodynamics* 103: 7-16. doi: 10.1016/j.jct.2016.07.051
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10. A. Banerjee, A. Dey and N. Chandrakumar. 2016. Slow molecular motions in ionic liquids probed by cross-relaxation of nuclear spins during overhauser dynamic nuclear polarization. *Angewandte Chemie - International Edition* 55(47): 14756-14761. doi: 10.1002/anie.201607308
11. F. Benyettou, J.A. Ocadiz Flores, F. Ravaux, R. Rezgui, M. Jouiad, Nehme S.I., R.K. Parsapur, J.-C. Olsen, P. Selvam and A. Trabolsi. 2016. Mesoporous -iron oxide nanoparticles for magnetically triggered release of doxorubicin and hyperthermia treatment. *Chemistry - A European Journal* 22(47): 17020-17028. doi: 10.1002/chem.201602956
12. K.R. Krishnadas, A. Baksi, A. Ghosh, G. Natarajan and T. Pradeep. 2016. Structure-conserving spontaneous transformations between nanoparticles. *Nature Communications* 7. doi: 10.1038/ncomms13447
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2. S. Chandravathanam and B. Viswanathan. Influence of sulphonic acid groups on enhanced anchoring of Pt to carbon black support and hence enhanced methanol oxidation activity. 2016. *Indian Journal of Chemistry Section A-Inorganic Bio-Inorganic Physical Theoretical and Analytical Chemistry* 55(9)1045-1051.
3. M.K. Singh, B. Rajakumar and E. Arunan. Measuring temperature of reflected shock wave using a standard chemical reaction. 2016. *Journal of the Indian Institute of Science* 96(1)53-62
4. R. Ramalakshmi, K. Saha, A. Paul and S. Ghosh. Reactivity of [Cp*Mo$(CO)_3$Me] with chalcogenated borohydrides Li[BH_2E_3] and Li[BH_3EFc] (Cp* = (^{5}-C_5Me_5); E = S, Se or Te; Fc = (C_5H_5-Fe-C_5H_4)). 2016. *Journal of Chemical Sciences* 128(7)1025-1032. doi:10.1007/s12039-016-1102-4
5. A. Ariharan, B. Viswanathan and V. Nandhakumar. Phosphorous-doped porous carbon derived from paste of newly growing Ficus benghalensis as hydrogen storage material. 2016. *Indian Journal of Chemistry - Section A Inorganic, Physical, Theoretical and Analytical Chemistry* 55A(6)649-656
6. P. Bhyrappa and K. Karunanithi. Crystal structures of meso-tetrakis(2 ‘,6 ‘/3 ‘,5 ‘-difluorophenyl)porphyrins and their metal complexes: Influence of position of the fluoro groups on their structural properties. 2016. *Journal of Chemical Sciences* 128(4)501-509. doi:10.1007/s12039-016-1053-9
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11. P. Bhyrappa, V. Veerapandian and S.U. Kumar. Crystal structures of unsymmetrically mixed -pyrrole substituted nickel(II)-meso-tetraphenylporphyrins. 2016. *Journal of Chemical Sciences* 128(7)1047-1055. doi:10.1007/s12039-016-1112-2
12. S. Mondal, P. Bhanja and M.V. Sangaranarayanan. Non-enzymatic sensing of D-sorbitol using polyaniline-coated stainless steel electrodes. 2016. *Journal of the Indian Institute of Science* 96(4)273-283

Distinguished visitors to the Department

Sl. No.	Name and Designation	Date	Purpose
1.	Dr. Santanu Mukherjee, Department of Organic Chemistry, Indian Institute of Science (IISc), Bengaluru	18 May 2016	Guest Lecture
2.	Prof. Tushar Kanti Chakraborty, Department of Organic Chemistry, IISc, Bengaluru	27 May 2016	Guest Lecture
3.	Dr. Keshav Kumar, Post-Doc Researcher, Department of Molecular Biology, Laboratory for Molecular Infection, Medicine Sweden, Umea University, Sweden	1 June 2016	Guest Lecture
4.	Dr. P. Saravanan, Discovery Chemistry Research and Technology, Eli Lilly and Company, Indianapolis, Indiana, USA	1 June 2016	Guest Lecture
5.	Dr. Jayathirtha Rao, Chief Scientist and Head, Crop Protection Chemicals Division, Indian Institute of Chemical Technology (CSIR), Hyderabad	17 June 2016	Guest Lecture
6.	Dr. Jayanta Choudhury, Assistant Professor, Department of Chemistry, Indian Institute of Science Education and Research Bhopal, Bhauri, Bhopal	20 June 2016	Guest Lecture
7.	Dr. Partha Sarathi Dastidar, Professor, Department of Organic Chemistry, Indian Association for the Cultivation of Science	4 July 2016	Guest Lecture
8.	Prof. P. Vishnu Kamath, Department of Chemistry, Bangalore University	5 July 2016	Guest Lecture
9.	Prof. Scott C. Barton, Associate Professor of Chemical Engineering, Michigan State University	19 July 2016	Guest Lecture
10.	Prof. Arumugam Manthiram, University of Texas, Austin, USA	16 August 2016	Guest Lecture
11.	Dr. Murali K. Cherukuri, Ph.D. (IIT Madras), Head, Biophysics Section, National Cancer Institute, NIH, Bethesda, USA	26 August 2016	Guest Lecture
12.	Prof. Tarasankar Pal, Department of Chemistry, IIT Kharagpur	2 September 2016	Guest Lecture
13.	Dr. Ujjal K. Gautam, Assistant Professor (Chemistry), IISER Mohali	2 September 2016	Guest Lecture
14.	Prof. Rama Kant, Complex Systems Group in Electrochemistry and Materials, Department of Chemistry, University of Delhi	16 September 2016	Guest Lecture
15.	Prof. Parbati Biswas, Department of Chemistry, University of Delhi	16 September 2016	Guest Lecture
16.	Prof. S. Ramasesha, JC Bose National Fellow and Professor, Solid State and Structural Chemistry Unit, Indian Institute of Science, Bengaluru	5 October 2016	Guest Lecture
17.	Prof. Dr. Sunil Kumar Talapatra, Formerly UGC Professor and Head,Department of Chemistry, Calcutta University, President, Indian Chemical Society (2002 and 2003) Vice-President, Indian Science News Association, Kolkata	6 October 2016	Guest Lecture
18.	Prof. Balasubramanian Sundaram, Chemistry and Physics of Materials Unit, Jawaharlal Nehru Centre for Advanced Scientific Research, Jakkur, Bengaluru	7 October 2016	Guest Lecture
19.	Dr. C.V. Ramana, Scientist, Division of Organic Chemistry, CSIR-National Chemical Laboratory, Pune	19 October 2016	Guest Lecture
20.	Dr. Arindam Banerjee, Senior Professor, Department of Biological Chemistry, Indian Association for the Cultivation of Science, Jadavpur, Kolkata	3 November 2016	Guest Lecture
21.	Prof. Ian A. Nicholls, Dean of the Faculty of Health and Life Sciences, Linnaeus University, Sweden and Deputy Vice Chancellor, Linnaeus University	7 November 2016	Guest Lecture
22.	Dr. Yasunori Tsuchiya, Dai Nippon Printing Co. Limited, Japan	19 November 2016	Guest Lecture
23.	Prof.Emil Rounder, Chemistry Department University of Pretoria, South Africa and Institute of Physical Chemistry, University of Stuttgart, Germany	21 November 2016	Guest Lecture
24.	Prof. Praveen Kumar Vemula, Institute for Stem Cell Biology and Regenerative Medicine (inStem), National Centre for Biological Sciences	2 December 2016	Guest Lecture
25.	Dr. Sakkarapalayam M. Mahalingam, Ph.D., Assistant Research Scientist, Prof. Philip S. Low’s Lab., Purdue Center for Drug Discovery and Department of Chemistry, Purdue University, West Lafayette, US	6 December 2016	Guest Lecture
26.	Dr. Manas K. Ghorai, Professor, Department of Chemistry, IIT Kanpur	15 December 2016	Guest Lecture

Sl. No.	Name and Designation	Date	Purpose
27.	Dr. Ramesh Shunmugasundaram, Dalhousie University, Halifax, Canada	6 January 2017	Guest Lecture: High capacity Li-rich Ni-Mn-Co cathode materials for Li-ion batteries
28.	Rinaldo Poli, CNRS, UPS, INPT, 205 route de Narbonne, France	13 January 2017	Guest Lecture: A new approach to biphasic catalysis using a polymeric nanoreactor platform
29.	Dr. Bhisma K. Patel, IIT Guwahati, Guwahati	17 January 2017	Guest Lecture: Catalytic cascade strategies in organic synthesis
30.	Dr. P. K. Bharadwaj, IIT Kanpur	23 January 2017	Guest Lecture: A journey through supramolecular chemistry of cryptands
31.	Dr. Takashi Nakanishi, National Institute for Materials Science, Tsukuba, Japan	24 January 2017	Guest Lecture: Novel liquid architectonics: alkylated-ϖ functional molecular liquids
32.	Prof.Manfred P. Schneider, FB C – Bergische Universität Wuppertal, Germany	1 February 2017	Guest Lecture: Microbial lipases in organic syntheses: enzyme assisted approaches to bio-active molecules
33.	Dr. Neeraj Sane, Dow AgroSciences LLC., Indianapolis, USA	10 February 2017	Guest Lecture: An Overview of Dow AgroSciences and its Auxin Herbicides Portfolio
34.	Prof. Sridhar Varadarajan, University of North Carolina, Wilmington	13 February 2017	Guest Lecture: Site-Specific DNA Methylating Agents Targeted to Cancer Cells
35.	Dr. Taizo Mori, National Institute for Materials Science, Tsukuba, Japan	15 February 2017	Guest Lecture: Controlling a Molecular Machine at the Air-Water Interface
36.	Prof. Sanjay J. Wategaonkar, Tata Institute of Fundamental Research	20 February 2017	Guest Lecture: Sulfur: A Mistaken Identity Hydrogen Bond Perspective
37.	Prof. Richard N. Zare, Stanford University, Stanford, California	23 February 2017	Guest Lecture: Mass Spectrometry, Drop by Drop
38.	Prof. Debabrata Maiti, IIT Bombay	28 February 2017	Guest Lecture: Template assisted distal C–H functionalizations of arenes
39.	Dr. Surendra K. Martha, Assistant Professor, Department of Chemistry, Indian Institute of Technology, Hyderabad	15 March 2017	Guest Lecture

4.6. Department of Civil Engineering

4.6.1. Introduction

An important department of Indian Institute of Technology Madras since its foundation in 1959, the Department of Civil Engineering has contributed to India's infrastructure development and human resource development remarkably. The department offers B. Tech, Dual Degree, M. Tech., M.S. and Ph.D. programmes that are some of the best in the country, and perhaps, in the world. Its faculty members hold advanced degrees and training from reputed institutions in India and abroad. The faculty members, along with research scholars in the department, carry out innovative and challenging high-end research and industrial projects.

The Department of Civil Engineering is known for its teaching, research, consultancy and training. Its alumni hold prestigious positions in leading academic institutes, industries and government organizations worldwide. The activities of the Department 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 these divisions. Environmental and Water Resources Engineering and Structural Engineering Laboratories have received substantial initial funding from the Federal Republic of Germany.

4.6.2. Academic Programmes

The department provides training to students in both theoretical and practical aspects of Civil Engineering. The students are trained in the latest state-of-the-art technologies to enable them to adapt to fast-changing technological developments in the world. The department has postgraduate programmes leading to Dual Degree, M.Tech., M.S., and Ph.D. degrees in various disciplines of civil engineering, apart from an undergraduate B.Tech. programme in civil engineering.

New courses introduced

Sl. No.	Course No.	Title
1.	CE4901	Undergraduate Research I
2.	CE4902	Undergraduate Research II
3.	CE4903	Undergraduate Research III
4.	CE6012	Sustainability Engineering Concepts and Applications
5.	CE6730	Structural Optimization
GIAN Courses		
6.	CE5021	Mega Project Leadership and Governance: Capabilities for New Infrastructure Development
7.	CE5022	Stakeholder Management for Large Engineering Projects
8.	CE5023	Building Resilient and Sustainable Roadway Infrastructure
9.	CE5024	Urban Air Quality and Climate Modelling
10.	CE6031	Hydroinformatics for Integrated Water Resources Management
11.	CE6032	Non-Destructive Testing of Pavements from Cradle to Grave
12.	CE7018	Advances in Seismic Hazard Analysis and Soil Structure Interaction
13.	CE7019	Conceptual and Structural Design: Lightweight Structures
14.	CE7021	Advanced Bridge Design and Construction
15.	CE7022	Seismic Analysis and Design of Masonry Structure
16.	CE7023	Computations for Historical Masonry
17.	CE7024	Rehabilitation of Heritage Structures
18.	CE7025	Seismic Risk Assessment at Urban Scale

Students on roll as of September 2016 + M.S. and Ph.D admission in January 2017

Programme	Year I	Year II	Year III	Year IV	Year V and Others	Total
B.Tech.	63	58	54	48	33	256
Dual Degree	35	34	42	43	49	203
M.Tech.	77	87	7 (more than 2 years)	-	-	171
M.S.	10	12	13 (more than 2 years)	12	-	47
Ph.D.	40	72	60	49	82 (more than 4 years)	303
Total	225	263				980

Students/scholars who attended conference/seminar/symposia abroad/India

Sl. No.	Student/Scholar	Roll No.	Conference/Seminar/Symposia/Workshop	Date and Venue	Financial Assistance from
Abroad					
1.	Jayachandran.K	CE10D022	Concrete Service Life Extension Conference	21-23 May 2016, USA	IITM
2.	Sooraj Kumar A. O.	CE14S022	Concrete Service Life Extension Conference	21-23 May 2016, Florida, USA	IITM
3.	Arya V.	CE12D034	Non-target Screening of Organic Chemicals for a Comprehensive Environmental Risk Assessment	29 May-3 June 2016, Switzerland	IITM
4.	Swamy Undi G. S. N. V. K. S N.	CE14D065	AWMA Visibility Conference 2016	27-30 September 2016, USA	IITM
5.	Dhanya J.	CE13D028	5th International Conference on Civil Engineering and Urban Planning (CEUP 2016)	23-26 August 2016, China	IITM
6.	Raghavan R.	CE10D039	International Conference on Structural Engineering, New Technology and Methods (ICSENM 16)	30-31 May 2016, Prague	IITM
7.	Nagesh H.E.	CE13D003	9th International Conference on Fracture Mechanics of Concrete and Concrete Structures (FraMCoS-9)	29 May-1 June 2016, USA	IITM
8.	Madhumitha Senthilvel	CE14S301	American Society of Civil Engineers Construction Research Congress	31 May 2016- 2 June 2016, San Juan, Puerto Rico	IITM
9.	Kancharla Surendra Reddy	CE13D201	INFORMS Annual Conference 2016	13-16 November 2016, Omni Nashville Hotel, Nashville	IITM
10.	Bijily B.	CE12D036	11th FIB International Ph.D. Symposium in Civil Engineering	29-31 August 2016, Tokyo	IITM
11.	Indu Geevar	CE13D035	11th FIB International Ph.D. Symposium in Civil Engineering Secretariat	29-31 August 2016, Tokyo	IITM
12.	Jyothi S. Menon	CE13D041	Atmospheric Optics: Aerosols Visibility and the Radiative Balance	27-30 September 2016, USA	IITM
13.	Anju Elizbath Peter	CE13D014	Atmospheric Optics: Aerosols Visibility and the Radiative Balance	27-30 September 2016, USA	IITM
14.	Madumathi G.	CE10D025	IAP 2016	4-7 June 2016, Lleida, Spain	IITM
15.	Daphne R.	CE13D024	Engineering Project Organization Conference	28-30 June 2016, Seattle, WA, USA	IITM
16.	Kavitha Madhu	CE13D042	6th Transportation Research Board Conference on Innovations in Travel Modeling (ITM)	1-4 May 2016, Denver, Colarado	IITM
17.	Athira P. K.	CE14D007	4th International Chinese European Workshop on Functional Pavement Design	29 June-1 July 2016, Netherlands	IITM
18.	Deepa S.	CE13D026	4th International Chinese European Workshop on Functional Pavement Design	29 June-1 July 2016, Netherlands	IITM
19.	Vineetha K.	CE12D066	13th International Conference, Underground Construction Prague 2016	23-25 May 2016, Prague, Czech Republic	IITM
20.	Divya Rani S.	CE14D010	Historic Mortars Conference 2016	10-12 October 2016, Greece	IITM
21.	Sanoop Prakasan	CE14S018	Sustainability Construction Materials and Technologies	7-11 August 2016, USA	IITM
22.	Murugan M.	CE12D045	4th International Conference on Sustainability Construction Materials and Technologies	7-11 August 2016, USA	IITM
23.	Raj Kamal Singh	CE12D069	International Workshop on Plasma for Energy and Environmental Applications (IWPEEA 2016)	21-24 August 2016, UK	IITM
24.	Sivakumar R.	CE13D054	2016 AGU Fall Meeting	12-16 December 2016, USA	IITM
25.	Yuvaraj D.	CE14D207	3rd International Conference on Microstructure Related Durability of Cement Microdurability 2016	20-24 September 2016, China	IITM

Students/scholars who won outside prizes and awards

Sl. No.	Student/Scholar	Roll No.	Name	Prize awarded by
1.	Aswathy E. V.	CE13D018	Best Paper Award (a certificate and ₹ 10,000 cash), 19th National Space Science Symposium (paper: Effect of meteorological parameters on concentrations of fluorescent biological aerosol particles measured at high-altitude site in southern tropical India)	Vikram Sarabhai Space Centre (VSCC), Thiruvananthapuram, February 2016
2.	Sunitha K. Nayar	CE09D016	Outstanding Thesis in the Field of Concrete in Tamil Nadu	Indian Concrete Institute, Chennai Centre
3.	Moghul Sirajuddin	CE12S009	Outstanding Thesis in the Field of Concrete in Tamil Nadu	Indian Concrete Institute, Chennai Centre
4.	Sunitha P.	CE12D023	ICI Award 2016 under the Best Paper published in ICI Journal category (paper: Importance of plinth beams in mitigating negative effects of flexible column bases in seismic behaviour of rc moment frame buildings)	Indian Concrete Institute, Mumbai Centre
5.	Vineeth Pothanamkandathil, Raj Kamal Singh and Sarathi Ramanujam	CE12D069	Best Paper Presentation Award: Water treatment adopting pulsed power technique: effect of recycling ROS on dye degradation	18th Asian Conference on Electrical Discharges, 8-10 December 2016, IIT Madras
6.	Raj Kamal Singh, Ligy Philip and Sarathi Ramanujam	CE12D069 (Raj Kamal Singh)	Best Oral Presentation Award: Rapid degradation and mineralization of 2-4-D in pulsed corona discharge treatment: effect of system matrices and degradation pathway	4th International Conference on Advanced Oxidation Processes (AOP) 2016, 17-20 December 2016, BITS Pilani, Goa
7.	S. Ganesh and G. Sridhar	CE09D028 and CE10D035	Best Paper Award	Indian Geotechnical Society, New Delhi
8.	Sunitha K. Nair	CE09D016	Innovative Student Project Award at the Doctoral Level	Indian National Academy of Engineering (INAE) Engineering Excellence Awards, INAE Annual Convention, Ahmedabad, December 2016
9.	Anu Rachel Thomas	CE14D004	Poster award and a cash prize of 500 HKD (paper: Sustainable septage management through in-vessel co-composting)	Asia-Pacific Conference on Biotechnology for Waste Conversion (BioWC), 5-8 December 2016, Hong Kong
10.	Saranya Sriram, Dr. Indumathi Nambi	CE14D030 Interdisciplinary Ph.D. scholar	Best Poster Presentation Award (paper: Electrochemical reduction of chromium-contaminated wastewater and soil using titania electrodes)	11th International Symposium on Advances in Electrochemical Science and Technology (iSAEST-11), 8-10 December 2016, Chennai

Students/scholars who won institute convocation/Institute Day prize

Sl. No.	Student/Scholar	Roll No.	Prize	Name of Donor
1.	Daniel Gedefa Moti	CE14M064	Prof. Juergen Plaehn Prize	Alumni Day
2.	L. Suresh Kumar	CE14M071		
3.	E. Krishna Prasad	CE14M031	Rajnikant Gandhi Memorial Award	
4.	R. Aravind	CE14B006	Computer AGE Management Services Private Limited Prize	Institute Day
5.	Shubham Bajaj	CE14B078		
6.	Narneni Satyanarayana Rao	CE12B082	Mr. Venkataraman Ravi Prize	
7.	Keshav Bharadwaj Ravi	CE13B065	M. S. K. Chaitanya Varma Memorial Prize	
8.	Sarode Rohit Vinayak Rao	CE15M064	Ms. Jayalakshmi Narasimhan Memorial Prize	
9.	Bilal T. T.	CE15M073		
10.	Najibullah M.	CE15M049	Prof. Gerhard Rouve Memorial Prize	
11.	V. Pranav Jeyam	CE12B063	Larsen & Turbo ECC Endowment Prize	Convocation
12.	Aanchal Patel	CE11B001	Dr. N. R. Dave Prize	
13.	E. Krishna Prasad	CE14M031	Valli Anantharamakrishnan Merit Prize	
14.	Dokku Bhanoj	CE14M093	K. Devarajan Memorial Prize	
15.	V. D. Logeshwaran	CE14M114	Larsen & Turbo Endowment Prize	
16.	Anish Gopal	CE14M018	Bhagyalakshmi and Krishna Ayengar Award	

4.6.3. Faculty and their Activities

Faculty

Name and Qualifications	Major Areas of Specialization
Professors	
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. 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., Bengaluru)	Water Resources Engineering
Dr. B.S. Murty, Ph.D. (Washington State University)	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., Bengaluru)	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 ,Bengaluru)	Structural Engineering
Dr. G.R. Dodagoudar Ph.D. (IIT Bombay)	Geotechnical Engineering
Dr. Karthik K. Srinivasan Ph.D. (Texas, Austin)	Transportation Engineering
Associate Professors	
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. Balaji Narasimhan, Ph.D. (Texas A&M University)	Water Resources Engineering
Dr. Lelitha Devi, Ph.D. (Texas A&M)	Transportation Engineering
Dr. S. T. G. Raghukanth, Ph.D. (IISc Bengaluru)	Structural Engineering
Dr. U. Saravanan, Ph.D. (Texas A&M)	Structural Engineering
Dr. S.M. Shiva Nagendra, Ph.D. (IIT Delhi)	Environmental Engineering
Dr. Ashwin Mahalingam, Ph. D. (Stanford University)	Building Technology and Construction Management
Dr. T. Thyagaraj, Ph.D. (IISc Bengaluru)	Geotechnical Engineering
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 Bengaluru)	Geotechnical Engineering
Dr. Mathava Kumar, Ph.D. (IIT Madras)	Environmental Engineering
Assistant Professors	
Dr. Arun Menon, Ph.D. (University of Pavia, Italy)	Structural Engineering
Dr. Gitakrishnan Ramadurai, Ph.D. (University of Rensselaer)	Transportation 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
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	Transportation Engineering
Professor of Practice	
Prof. N. Raghavan, Ph.D.	Building Technology and Construction Management
Adjunct Faculty	
Prof. Mohan M. Kumaraswamy, Ph.D	T. N. Subba Rao Brigade Group Adjunct Chair Professor
Prof. Kumar Pitchumani, Ph.D.	Geotechnical Engineering
Visiting Faculty	
Dr. Lakshmi Priya, Ph.D. (Georgia Institute of Technology)	Structural Engineering

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

Sl. No.	Coordinator(s)	Title	Institution	Period
Conference				
1.	Prof. Amlan K. Sengupta	*Advances in Bridge Design and Construction* under the Global Initiative of Academic Network (GIAN) programme	Indian Institute of Technology Madras	11-23 July 2016
2.	Prof. S. Mohan	Environmental Systems Modeling	Indian Institute of Technology Madras	3-8 August 2016
3.	Prof. R. G. Robinson	Indian Geotechnical Conference, IGC2016	Indian Institute of Technology Madras	15-17 December 2016
4.	Prof. Amlan K. Sengupta	10th Structural Engineering Convention	Indian Institute of Technology Madras	21-23 December 2016
Workshop				
1.	Prof. A. Veeraraghavan and Prof. J. Murali Krishnan	DST-IIT Madras Dissemination workshop on "Modified Binder"	Indian Institute of Technology Madras	24-25 October 2016
Short-term courses				
	Prof. S. Mohan	Environmental Systems Modeling	Indian Institute of Technology Madras	3-8 August 2016
	Dr. Soumendra Nath Kuiry Dr. Balaji Narasimhan	AICTE sponsored Short Term Training Programme course "Introduction to two-dimensional flow modelling using GIS"	Indian Institute of Technology Madras	13-18 Feb. 2017
	Dr. Vidya Bhushan Maji	Investigation in Soil and Rock for Optimal Geotechnical Designs	Indian Institute of Technology Madras	20-25 Feb. 2017
	Dr. S. Mathava Kumar Dr. Indumathi M Nambi	Advanced Wastewater Treatment (AWT-2017)	Indian Institute of Technology Madras	6-11 March 2017
5.	Dr. S. M. Shiva Nagendra	Quality Enhancement in Engineering Education (QEEE) Course on Air Pollution Control Engineering	Indian Institute of Technology Madras	23-27 March 2017

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

Sl. No.	Coordinator(s)	Title	Institution	Period
Workshops				
1.	Dr. Shiva Nagendra	National Workshop on Automotive Pollution and Emission Control	Sathyabama University, Chennai	7 April 2016
2.	Dr. Shiva Nagendra	Air Quality Monitoring: Next Generation Instrumentation and Techniques	Indian Institute of Technology Delhi on 4 May 2016	4 May 2016
3.	Prof. A. Boominathan	Recent Advances in Geotechnics for Infrastructure	Sri Jayachamarajendra College of Engineering, Mysore	7 May 2016
4.	Dr. Indumathi M. Nambi	Municipal Solid Waste Management in Tamil Nadu – Emerging Technolgies and Trends	Chennai Corporation	1 September 2016
5.	Prof. Ligy Philip	Indo-UK Workshop on Clean Water	M.G. University, Kottayam	12-16 December 2016
6.	Dr. Shiva Nagendra	Workshop on "Core Science and Technical Framework for City Clean Air Coalition"	New Delhi	18 January 2017
7.	Dr. Bhargava Rama Chilukuri	National Dissemination Workshop on "Development of Indian Highway Capacity Manual (Indo-HCM)"	CSIR - IGIB, South Campus, New Delhi	20 February 2017
8.	Dr. A. Veeraragavan	Workshop on "Urban Transport Management"	Hotel Asoka, Bangalore.	11 March 2017
9.	Dr. Radhakrishna G Pillai	Workshop on Housing Technology	Port Blair. by BMTPC under JNNURM scheme.	23 February 2017
10.	Dr. Gitakrishnan Ramadurai	Brainstorming Workshop	Indian School of Business, Hyderabad	21 March 2017

Sl. No.	Coordinator(s)	Title	Institution	Period
Seminars				
1.	Prof. S. R. Gandhi	Geotechnical Challenges in Developing Coastal Cities	Andhra University, Visakhapatnam	5-6 April 2016
2.	Dr. S. M. Shiva Nagendra	Two-day National Seminar on Environment Management System and Solutions	Vellore Institute of Technology, Chennai	19 November 2016
3.	Prof. Amlan K Sengupta	One day seminar of Precast software, Machinery and Technologies	Hotel Le Meridian, Pune	15 March 2017
Conferences				
2.	Dr. S. Mathava Kumar	International Conference on Emerging and Sustainable Technologies for Infrastructure Systems (ESTIS 2016)	AMRITA University, Coimbatore	21-22 April 2016
3.	Prof. K. Rajagopal, Dr. Sunil Mahapatra and Muneeb Ul Huq	2nd Global Geosynthetics Summit on Enhancing Application in Infrastructure Sector	Confederation of Indian Industry, New Delhi	19-20 May 2016
4.	Dr. S. M. Shiva Nagendra	National Conference on Environment and its Protection-"Neogeogenesis"	Rajalakshmi Engineering College, Chennai	2-3 September 2016
5.	Dr. Sachin S. Gunthe	National Conference on Impact of Climate Change on Air Quality, Biodiversity and Agriculture	AMITY University, Jaipur	13-15 October 2016
Training Programme				
1.	Dr. S. M. Shiva Nagendra	General Management Training Programme for NTECL, Chennai	Indian Institute of Technology, Madras	19 November 2016
2.	Dr. S. Mathava Kumar	International Technical Training Programme	SRM University, Chennai.	31 January 2017
Short Term Courses				
1.	Dr. Sachin S Gunthe	Short Term Training Program on Materials Characterization	Rajiv Gandhi Institute of Technology, Kottayam	08 February 2017
2.	Dr.Dali Naidu Arnepalli	QIP short term course on Advances in Geo-Environmental Engineering	Indian Institute of Scienc,e Bangalore.	30 March 2017

Special lectures delivered by the faculty in other institutions

Sl. No.	Faculty Member	Topic	Institution	Date
1.	Dr. Sachin S. Gunthe	Construction and Climate Change	B. S. Abdur Rahman University, Chennai	21 April 2016
2.	Dr. Sachin S. Gunthe	Aerosol-Climate-Biosphere Interaction	SRM University, Chennai	5 May 2016
3.	Dr. S. Mathava Kumar	Sustainable Wastewater Management Strategies for Smart Cities	AMRITA University, Coimbatore	21-22 April 2016
4.	Prof. G.R. Dodagoudar	Advancements in Combined Piled Raft Foundation Systems	RAEREST 2016, Kochi	22 April 2016
5.	Dr. Benny Raphael	Energy Efficiency in Buildings	St. Joseph's College of Engineering and Technology, Pala, Kerala	22 April 2016
6.	Dr. Benny Raphael	Smart Buildings	Saint Petersberg Polytechnic University, Russia	15-31 May 2016
7.	Prof. Amlan K. Sengupta	Seismic Retrofit of Buildings	Military Engineering Services, Siliguri Zone	27 May 2016
8.	Dr. S.M. Shiva Nagendra	Personal Air Pollution Exposure Monitoring and Assessment at Selected Urban Hot Spots in India	Risks of Urban Heat and Air Pollution UFZ, Leipzig	22 June 2016
9.	Prof. K. Rajagopal	Use of Geosynthetics for Construction of Steep Retaining Walls in Hilly Areas	National Seminar on Application of Geosynthetics for Infrastructure Projects in N-E Region	22 June 2016
10.	Prof. K. Rajagopal	Geosynthetics in Civil Engineering Infrastructure Projects	Rajalakshmi Engineering College, Chennai	29 June 2016

Sl. No.	Faculty Member	Topic	Institution	Date
11.	Prof. J. Murali Krishnan	Constitutive Modeling of Bituminous Materials, and Viscoelastic Solid–Fluid Transition in Bitumen using Rheology and FTIR Spectroscopy	4th International Chinese European Workshop, The Netherlands	27 June-4 July 2016
12.	Prof. S. Mohan	Lean Construction Ideal: Maximize Value for Customer and Minimize Waste	Association of Consulting Civil Engineers (India), Coimbatore	22 July 2016
13.	Prof. S. Mohan	Introduction to Modelling: Systems Concepts, and Reservoir Operation Policies derivation using Data Mining	Water and Land Management Institute, Aurangabad, Maharashtra	26 July 2016
14.	Prof. S. Mohan	Data Mining Application for Water System Control at University of Illinois Urbana Champaign	International Conference on Environmental Science and Technology 2016, USA	6-10 June 2016
15.	Benny Raphael	Smart Buildings and Automation	Amal Jyothi Engineering College, Kottayam	30 July 2016
16.	Dr. S. M. Shiva Nagendra	Air Pollution Control Technologies for Industries	Madras Medical College	17 August 2016
17.	Dr. S. M. Shiva Nagendra	Air Quality Management System to Study the Vulnerability and Health Risk in Urban Hotspots	Rajalakshmi Engineering College	2-9 September 2016
18.	Dr. Mathava Kumar	Advanced Oxidation Processes for Removal of Emerging Contaminants	National Institute of Technology, Trichy	1 September 2016
19.	Dr. Mathava Kumar	Biological Nutrient Removal from Wastewater by Anammox and SNAD Systems	National Institute of Technology, Trichy	1 September 2016
20.	Dr. S. Mathava Kumar	Adsorption: Isotherm and Modelling	Indian Institute of Technology Madras	4 October 2016
21.	Dr. S. Mathava Kumar	1. Water Supply Challenges and Technology 2. Water Conservation – Demand, Managing and Pricing 3. Wastewater Management - Treatment, Technology and Reuse 4. Business Models and Case Studies in Wastewater Treatment and Management	Government Engineering College, Trivandrum (Six hours of lecture for the TPLC Students)	4-5 November 2016
22.	Dr. S. Mathava Kumar	Strategies for Upgrading Conventional WWTPs into Sustainable WWTPs	Indian Institute of Technology Madras	8 November 2016
23.	Prof. K. P. Sudheer	Climate Change Impact Assessment	Engineering College, Calicut	19 October 2016
24.	Prof. K. P. Sudheer	Introduction to Soft Computing Techniques	KCET, Virudhunagar	15 November 2016
25.	Dr. S. M. Shiva Nagendra	Air Quality Monitoring And Management - Case Study	VIT, Chennai	19 November 2016
26.	Dr. S. M. Shiva Nagendra	Environment Management and Compliance	Indian Institute of Technology Madras	19 November 2016
27.	Prof. K. Rajagopal	The Geosynthetics for Sustainable Construction of Infrastructure Projects	Indian Geotechnical Conference, Chennai	15-17 December 2016
28.	Dr. S. Mathava Kumar	Importance of Water Quality Parameters	SRM University, Chennai.	31 January 2017
29.	Dr. A. Boominathan	Geotechnical aspects of seismic resistant structures	SSN College of Engineering, Chennai	03 February 2017
30.	Dr. A. Boominathan	Geotechnical aspects of Earthquake Engineering	SRM Valliammai Engineering College, Chennai	16 February 2017
31.	Dr. A. Boominathan	Substructure based numerical analysis of seismic soil structure interaction	Indian Institute of Technology, Roorkee	03 March 2017
32.	Dr. A. Boominathan	Ground Improvement Techniques	Sathyabama University, Chennai	15 March 2017
33.	Prof. Manu Santhanam	Making concrete structures durable and sustainable	Ultratech Hyderabad	10 February 2017
34.	Prof. Manu Santhanam	Durability performance of ternary cementitious systems involving limestone powder	SRM University	03 March 2017
35.	Prof. Manu Santhanam	Use of characterization techniques for linking concrete microstructure to performance	Purdue University, USA	31 March 2017
36.	Dr. Arun Menon	Stabilization & Seismic Strengthening of Bagan Monuments - Draft Stabilization Guidelines & Seismic Improvement Issues	International Conference on the Proposed Programme of Bagan Pagoda Post-quake Restoration & Preservation Project	15-16 February 2017
37.	Prof. G. R. Dodagoudar	"R&D works on sustainable Built forms using GFRG Panels"	Basaveshwar Engineering College, Bagalkot Karnataka	27 February 2017
38.	Prof. G. R. Dodagoudar	Dynamic Finite Element Analysis: Theory And Applications	Plaxis Workshop on National Institute of Technology, Trichy	09-10 March 2017
39.	Prof. G. R. Dodagoudar	Fundamentals of FEM Dynamic Soil Properties Numerical analysis of pile-raft foundations	National Institute of Technology, Warangal Dept of Civil Engg.	25 March 2017
40.	Dr. Amlan Kumar Sengupta	Professional Development and Creativity in Structural Engineering	PANIIT Alumni Association, along with National Institute of Technology Tiruchchirapalli,	25 February 2017
41.	Dr. Amlan Kumar Sengupta	Basics of Bridge Engineering	Vellore Institute of Technology, Chennai, for the Engineers of Larsen and Toubro Construction	03 March 2017
42.	Dr. Amlan Kumar Sengupta	Handbook on Precast Concrete for Buildings – A Primer, and Precast Concrete Building Systems	StruEngineers (India) Private Limited, Pune	15 March 2017
43.	Dr. S M Shiva Nagendra	Environment Impact Assessment	Training Programme on "Environmental Impact Assessment on WSS, UGSS & Desalination Plant" to Staff of TWAD Board Tamil Nadu Water Supply and Drainage Board	15 February 2017
44.	Dr. S M Shiva Nagendra	Personal Exposure Monitoring Using Low Cost Sensors For Exposure Assessment	International Conference on Recent Advances in Bioresource Technology (RABT 2017), Thiruvalluvar University, Vellore,	16 February 2017
45.	Dr. S M Shiva Nagendra	Impact Of Urbanization On Environment	ISRO Sponsored SEMINAR in Jaya Sakthi Engineering Colleges, Chennai	25 February 2017
46.	Dr. S M Shiva Nagendra	(i) Basics of vehicular air pollution (ii) Measurement techniques (iii) Modelling of vehicle exhaust emission (iv) Real time exhaust emission modelling-case study	One day Workshop on Vehicular Exhaust Emission Monitoring and Modelling inRajiv Gandhi Institute of Technology, Kottayam.	04 March 2017
47.	Dr. S M Shiva Nagendra	Air Quality Management in Industries	National Conference on Pollution Control Strategies in Chemical and Related Industries SV University College of Engineering, Tirupati.	11 March 2017
48.	Dr.Sivakumar Palaniappan	"Resource Planning in Construction Projects"	National Institute of Technical Teachers Training and Research, Taramani	22 February 2017
49.	Dr. Mathavakumar	Ideas for Converting Conventional WWTPs into Sustainable WWTPs in the context of Smart City	National conference on "Emerging Trends in Civil Engg" to be held in GCE, Salem	2 March 2017
50.	Dr. Lelitha Devi	Transportation Engineering Systems - Interdisciplinary Research Possibilities	Rajiv Gandhi Institute of Technology, Kottayam	24 March 2017

Visits abroad by faculty

Sl. No.	Faculty Member	Country Visited	Date	Purpose of visit	Funding from
1.	Prof. K. Ananthanarayanan	USA	02-04 April 2016	6th International Conference on the Constructed Environment	CPDA/Proj//PCF CPDA/Proj//PCF
2.	Prof. K. Rajagopal	USA	8-14 April 2016	Attend council meetings of International Geosynthetics Society Geo Americas 2016 conference and meet Dr. Venkatesh Kodur at Lansing for research interaction	
3.	Dr. Balaji Narasimhan	Netherlands	6-13 May 2016	ISRIC-World Soil Information, Training Course at ISRIC Spring School 2016	
4.	Benny Raphael	Russia	15-31 May 2016	Guest lectures, collaboration Saint Petersberg Polytechnic University, Russia	
5.	Prof. Manu Santhanam	Switzerland	16-20 May 2016	Low Carbon Cement – Phase I Meeting	CPDA/Proj//PCF
6.	Dr. Radhakrishnan G. Pillai	Switzerland	16-20 May 2016	Low Carbon Cement – Phase I Meeting	
7.	Prof. Ravindra Gettu	Switzerland	16-20 May 2016	Low Carbon Cement – Phase I Meeting	
8.	Prof. Appa Rao	USA	28 May-1 June 2016	9th International Conference on Fracture Mechanics of Concrete and Concrete Structures	
9.	Dr. Ashwin Mahalingam	Italy	19-20 May 2016	4th International Mega Projects Workshop	
10.	Prof. S. Mohan	USA	23 May 2016-16 June 2016	International Conference on Environmental Science and Technology, Houston, Texas, 2-6 June 2016, and collaborative research at University of Illinois, Chicago	
11.	Prof. K. N Satyanarayana	USA	31 May-2 June 2016	2016 Construction Research Congress, USA	
12.	Prof. K. P. Sudheer	USA	1 June-31 July 2016	Visit Purdue University, USA	
13.	Dr. S.M. Shiva Nagendra	Germany	28 May-22 June 2016	Research visit, UFZ, Leipzig	
14.	Prof. Ligy Philip	Australia	5-8 June 2016	Australia-India Joint Workshop	
15.	Prof. Manu Santhanam	UK	15-17 June 2016	Visit Vardiff University for UKIERI UGC Thematic Award Discussion	
16.	Prof. Manu Santhanam	Switzerland	18-26 June 2016	1st International Conference on Calcined Clay for Sustainable Concrete	
17.	Dr. Sachin S. Gunthe	Germany	25 June-13 July 2016	Attend research collaboration work under Max Plank Partner Group	
18.	Prof. B. S. Murty	Germany	9-12 July 2016	IGCS Steering Committee Meeting followed by Summer School 2016 Biomass and Coal – Two Carbon Fuels of Different Ages: German and Indian Perspectives	
19.	Prof. A. Veeraragavan	Singapore	27-29 July 2016	Chair a Technical Session on Sustainable Pavement Systems and 8th International Conference on Maintenance and Rehabilitation of Pavements	
20.	Dr. Benny Raphael	USA	18-22 July 2016	ISARC Conference	
21.	Dr. Benny Raphael	Singapore	13-18 June 2016	International relations: Exploring collaborations with NU and NTU, Singapore	
22.	Atul Narayan S. P.	Netherlands	27 June-4 July 2016	4th International Chinese European Workshop, Netherland	CPDA/Proj//PCF
23.	Dr. Lelitha Devi	Singapore	20-22 August 2016	2016 International Conference on Intelligent Transportation Engineering (ICITE 2016)	
24.	Prof. Manu Santhanam	Denmark	21-25 August 2016	International Conference on Materials, Systems and Structures in Civil Engineering	
25.	Prof. Ravindra Gettu	Denmark	21-25 August 2016	International Conference on Materials, Systems and Structures in Civil Engineering	
26.	Prof. Ravindra Gettu	Canada	19-23 September 2016	9th RILEM International Symposium on Fiber Reinforced Concrete	
27.	Dr. S. T. G. Raghukanth	China	23-25 August 2016	5th International Conference on Civil Engineering and Urban Planning - CEUP 2016	
28.	Prof. P. Alagusundaramoorthy	USA	29 August-2 September 2016	ASNT's NDE/NDT for Highway and Bridges: Structural Materials Technology 2016	
29.	Prof. B. S. Murty	Germany	5-9 September 2016	Kick-off meeting for strategic partnership with Aachen	
30.	Dr. Arun Menon	Belgium	13-15 September 2016	International Conference on Structural Analysis of Historical Construction	
31.	Dr. S. Mathavakumar	Greece	14-17 September 2016	13th IWA conference on Small Water and Wastewater Treatment Systems	
32.	Prof. K. Rajagopal	Slovenia	23-27 September 2016	Council meetings of International Geosynthetics Society	
33.	Prof. S. R. Satish Kumar	Thailand	25-26 September 2016	5th International Conference on Advances in Civil, Structural and Mechanical Engineering – ACSM 2016	
34.	Dr. S. M Shiva Nagendra	USA	27-30 September 2016	Conference on Atmospheric Optics: Aerosols, Visibility and the Radiative Balance	
35.	Prof. S. R. Satish Kumar	Malaysia	31 October-4 November 2016	Third Australasia and South-East Asia Structural Engineering and Construction Conference ASEA-SEC-03	
36.	Dr. Venu Chandra	Malaysia	2-3 November 2016	2nd International Conference on Applied Physics and Engineering ICAPE 2016	
37.	Dr. Arun Menon	Portugal	3-6 November 2016	International Conference on Cultural Heritage Disaster Preparedness, Response and Recovery	CPDA/Proj//PCF
38.	Dr. Arun Menon	Myanmar	25 November- 5 December 2016	UNESCO's Earthquake Emergency Response and Rehabilitation Programme	
39.	Dr. Balaji Narasimhan	Thailand	7-9 November 2016	2nd World Irrigation Forum	
40.	Prof. Ravindra Gettu	Morocco	14-18 November 2016	22nd session of the Conference of the Parties (COP 22)	
41.	Prof. Manu Santhanam	South Africa	18-22 November 2016	FIB Symposium 2016	
42.	Dr. S. Mathava Kumar	Vietnam	28-30 November 2016	12th International Symposium on South East Asian Water Environment (SEAWE12)	
43.	Dr. S. Mathava Kumar	Australia	2-18 December 2016	KTP-UTS Fellowship visit to UTS, Sydney	
44.	Prof. Ravindra Gettu	France	14-18 December 2016	RILEM Presidency Meeting	
45.	Prof. P. Alagusundaramoorthy	USA	09-13 January 2017	Transportation Research Board 96th Annual Meeting	
46.	Dr. Arun Menon	Chile	09-13 January 2017	16th World Conference on Earthquake Engineering	
47.	Dr. J. Murali Krishnan	Milan, Italy	21-24 February 2017	Asphaltica International Asphalt Industry Exhibition/Equipment Technologies and Road Safety Conference	
48.	Prof. Manu Santhanam	USA	29-30 March 2017	RILEM 2017 Spring Meetings	
49.	Prof. Ravindra Gettu	USA	29-30 March 2017	RILEM 2017 Spring Meetings	

Honours and awards obtained by faculty

Sl. No.	Faculty Member	Name of Award	Awarded by	Awarded for	Date
Honours					
1.	Prof. Ravindra Gettu	Honorary Chairman	Workshop on Creep Behaviour in Cracked Sections of Fibre Reinforced Concrete, Valencia, Spain	-	9-10 March 2016
2.	Prof. K. Rajagopal	Elected Council Member and Chairperson of the Asian Activities Committee	The Council Meetings of International Geosynthetics Society at Ljubljana	-	24 September 2016
3.	Prof. S. R. Gandhi	Director	-	Sardar Vallabhbhai National Institute of Technolgy (SVNIT), Surat	Five years from 2016
Awards					
1.	Dr. Lelitha Devi	Best Paper Award	International Conference On Intelligent Transportation Engineering (ICITE 2016)	Real-time bus arrival time prediction system under Indian traffic condition	20 August 2016
2.	Dr. Ashwin Mahalingam	Best Paper Award	Engineering Projects Organization Conference held at Seattle Washington, USA	Research methodology for his paper titled, Enabling BIM Adoption Through Design Thinking	
3.	Dr. Arun Menon	Young Faculty Recognition Award (YFRA) 2016	IIT Madras	Young Faculty Recognition Award	April 2016
4.	Dr. Sachin S. Gunthe	Fulbright-Nehru Academic and Professional Excellence Fellowship	Harvard University, Cambridge, MA, USA - Climate System	The research carried out in collaboration with Harvard University on the topic of Secondary Organic Aerosol Formation: Biogenic and Anthropogenic Interaction in Indian Climate System	December 2016
5.	Dr. Radhakrishna G. Pillai	Outstanding Young Concrete Engineer of Tamil Nadu	Indian Concrete Institute Chennai Centre	Indian Concrete Institute Chennai Centre	7 September2016
6.	Dr. T. Thyagaraj	Prof. Dinesh Mohan Price Award 2016 includes a cash prize of ₹ 5000 and a plaque	Indian Geotechnical Conference 2016	"Excellence in Geotechnical Practices"	15 December 2016
7.	Prof. R. G. Robinson	The IGS-Warrangal Chapter Biannual Award	Indian Geotechnical Society	Best paper published in *Indian Geotechnical Journal*	December 2016
8.	Prof. R. G. Robinson	IGS-AIMIL Biannual Award	Indian Geotechnical Society	Best paper published in *Indian Geotechnical Journal*	December 2016
9.	Dr. Subhadeep Baneerjee	IGS-YGE Best Paper Biennial Award 2016 for the best paper on soil dynamics	Indian Geotechnical Society	Best paper on Soil dynamics in any journal or conference proceedings published by Indian Geotechnical Society during 2015-16	16 December 2016
10.	Prof. K. Rajagopal	Best Editorial Board Member	Springer International	Being the best Editorial Board member of Indian Geotechnical Society for the years 2015 and 2016	December 2016

Fellowships of academies and professional societies

Faculty Member	Name of the Academy/Professional Society	Level - Year of admission
Dr. Lelitha	American Society of Civil Engineers	Associate Member - 2006
Institution of Electrical and Electronics Engineers	Member - 2006	
Indian Roads Congress	Member - 2006	
Institution of Civil Engineers India	Member - 2012	

Editorial boards of journals

Sl. No.	Faculty Member	Position (Editor/Member)	Journal
1.	Dr. T. Thyagaraj	Editorial Board Member	*International Journal of Geotechnical Engineering*
2.	K. Rajagopal	Editorial Board Member	*Geotextiles & Geomembranes*, Elsevier
3.	K. Rajagopal	Editorial Board Member	*Indian Geotechnical Journal*, Springer
4.	K. Rajagopal	Editorial Board Member	*Indian Journal of Geosynthetics and Ground Improvement*, Central Board of Irrigation and Power
5.	K. Rajagopal	Editorial Board Member	*International Journal of Geosynthetics and Ground Engineering*, Springer

4.6.4. Design and Development Activities

Prof. R. G. Robinson: Developed an automated volume change device for measuring volume change during triaxial tests.

Dr. Dali Naidu Arnepalli: Development of Geoenvironmental Research Laboratory that houses state-of-the-art equipments such as atomic absorption spectrophotometer, UV-vis spectrophotometer, UV-weatherometer, gas chromatography, flexible wall permeameter, ultra-sieve shaker, gas permeability and diffusion test setups, geotechnical centrifuge, melt-indexer, environmental stress crack resistance apparatus, ultra gas pycnometer, time domain reflectometer, auto clave, laminar air flow chamber, BOD incubator, temperature and humidity control chamber.

New facilities added or major equipment procured

Sl. No.	Name of Equipment	Value (₹ in lakhs)
1.	Compliant Data Acquisition	2,04
2.	Fogging/Misting System	5.1
3.	Accelerometer, Impact Hammer	2.39
4.	ABC Lathe	5.93
5.	Milling Machine	7.01
6.	Vibration Monitoring and Sesmic Characterization System	5.59
7.	Dynamic simple shear apparatus with accessories	55.36
8.	HPU Components	3.93
9.	Trible H1 Kenma with Accessories	11.63
10.	SKC Personal Sampling Pump	2.38
11.	SMPS with Long DMA	67.97
12.	Microplate Detection System	16.12
13.	Mobile Moisture Measurement Meter (TDR Probes) with accessories	4.14
14.	Thermo Dioner Integrion Ion Chromotographer	28.22
15.	Online Multi-Parameter Analyser and Controller	5.74

4.6.5. Research and Consultancy

Sponsored Research Projects

Sl. No.	Title	Period	Funding Agency	Amount (lakhs of ₹)	Co-ordinators
1.	Pharmaceutical and personal care products removal and their bio-toxicity assessment in membrane-bioreactor with immobilized -biomass (iMBR) and carrier-supported-biomass (casMBR)	19 April 2016-18 April 2019	Department of Science and Technology	34.75	Mathava Kumar S.
2.	Automated assembly of modular building structures: Control strategies and sensor placement	19 April 2016-18 April 2019	Department of Science and Technology	47.84	Benny Raphael

Sl. No.	Title	Period	Funding Agency	Amount (lakhs of ₹)	Co-ordinators
3.	CPCB Continuous Ambient Air Quality Monitoring Station at IIT Madras-Phase II	7 January 2016-11 June 2017	Central Pollution Control Board	8.3	S. M. Shiva Nagendra
4.	Accelerated treatment of petroleum chemical sludge using coupled physicochemical, photochemical, electrochemical and biological processes	January 2016-January 2017	Uchhatar Avishkar Yojana - IIT Madras	97	Indumathi M. Nambi
5.	Recovery and removal of oil from petroleum-contaminated wastewater/sludge using advanced oxidation processes	16 August 2016-15 August 2019	Department of Science and Technology	26.45	Indumathi M. Nambi
6.	Computational methods for the post-buckling analysis of imperfect laminated composite plates/shells using secant matrix techniques	27 January 2017-26 January 2019	Aeronautics Research and Development Board	9.15	S. Arul Jayachandran
7.	Experimental investigation of dissipation associated with fatigue cracking in bituminous mixtures	30 September 2016-29 September 2019	Department of Science and Technology	36.70	Atul Narayan S. P.
8.	Low-Cost Semiconductor and Optical Sensors based Urban Air Quality Monitoring Network System (SENSurAIR)	4.5 years from 28 September 2016	Uchhatar Avishkar Yojana - IIT Madras	53.01	S. M. Shiva Nagendra
9.	Wastewater and flood management modeling for Chennai City	9 January-28 February 2017	United Nations University	17.60	S. Mohan
10.	Development of near-real-time hydrological modelling system for India based on ensemble of SWAT simulations	12 September 2016-31 March 2019	National Remote Sensing Centre	18.60	Balaji Narasimhan
11.	Design of an expert system for flood forecasting and management for the city of Chennai	3 October 2016-4 February 2018	Office of the Principal Scientific Adviser	100	Balaji Narasimhan
12.	Source apportionment of ambient particulate matter during winter season in Delhi City	21 December 2016-20 December 2017	Government of National Capital Territory of Delhi	51.89	S. M. Shiva Nagendra
13.	Design and development of algae based reactor for air pollution control at waste management site	2 January 2017-31 January 2019	Department of Science and Technology	19.20	S. M. Shiva Nagendra
14.	Sustainable solar-powered wastewater treatment systems to improve hygiene and sanitation in schools by adopting water recycling and online quality monitoring	16 February 2017-15 February 2019	Impacting Research Innovation and Technology - IMPRINT	132	Ligy Philip
15.	Institutional strengthening on analysis of dams, foundation, retrofitting, flood forecasting and related issues		Central Water Commission	592	K. Rajagopal
16.	Waves generated due to synoptic scale and mesoscale convective events and their propagation characteristics-DST National Post Doctoral Fellowship	3 February 2017-2 February 2019	Department of Science and Technology	19.2	Sachin S. Gunthe
17.	Development of pre-packaged, high performance grout (HPG) using locally available cementitious materials for the Indian post-tensioned (PT) concrete industry	31 March 2017-30 March 2019	Impacting Research Innovation and Technology - IMPRINT	36.36	Radhakrishna G. Pillai
18.	Uncertain static and dynamic analysis of imprecisely defined structures using fuzzy and interval based approach		Department of Science and Technology	19.20	B. Nageswara Rao

Industrial consultancy projects

Sl. No.	Faculty Member	Title	Industry	Amount (₹ In lakhs)
1.	P. Alagusundaramoorthy	Analyzing and testing of elastomeric bearing pads for bridge applications	Hevea Rubber Technologies Private Limited	1.15
2.	P. Alagusundaramoorthy	Review of analysis and design of truck in motion weigh bridge	Essae Digitronics Private Limited	2.01
3.	G. Appa Rao	NDT of various structural elements Navodaya school building at Krishnapuram, Nellore	Hindustan Steelworks Construction Limited	2.3
4.	P. Alagusundaramoorthy	Analysis and design of Type-II quarters multi-storeyed building in ICF colony at Chennai for Ministry of Railways	Integral Coach Factory	9.03
5.	P. Alagusundaramoorthy	Review of structural calculations for 145, 245 and 420 kV circuit breaker for technical specification of 05.g seismic requirement from PGCIL for Alstom T&D India Limited	Alstom T & D India Limited	5.18
6.	P. Alagusundaramoorthy	Review of analysis and design of FRP water tanks	ESVEE Constructions	1.15
7.	R. G. Robinson and Subhadeep Banerjee	Proof checking of ground improvement using vibro-stone columns to support LPG mounted bullets at Puthuvype Kochi	Keller Ground Engineering India Private Limited	12
8.	P. Alagusundaramoorthy	Review of the analysis and design of over-head water tank and pile foundation for Public Works Department under Government of Puducherry	Public Works Department	5.75
9.	B. Nageswara Rao	Proof checking of design of multi storey building for R&B Head Office at Vijayawada	KMV Projects Limited	8.25
10.	B. Nageswara Rao	Testing of Elastomeric Bearing	Common Code	2.06
11.	Devdas Menon	Testing of Fatigue (test) on Stay Cable	S.P. Singla Constructions Private Limited	2.28
12.	K. Rajagopal	Proof checking of the Geosynthetic-based coastal erosion protection works between Visakhapatnam and Bheemunipatnam	Nagabhushanam & Co.	1.73
13.	R. G. Robinson and T. Thyagaraj	Evaluation of suitability of soil as a fill material	Employee's State Insurance Corporation	1.5
14.	B. Nageswara Rao	Ultimate strength test of FRP Manhole Cover	Common Code	3.2
15.	Devdas Menon	Proof checking of ROB and RUB - Hospet - Chitradurga road project	Larsen and Toubro Limited	6.41
16.	P. Alagusundaramoorthy	Condition assessment of LED Building in Central Power Research Institute at Bengaluru	Central Power Research Institute	4.87
17.	Indumathi M. Nambi	Vetting of DPR and design adequacy check	Tamil Nadu Water Investment Company Limited	2.29
18.	Devdas Menon	Proof checking of construction of ROB at railway km. 465.7-10 between stations Manput Junction to Gaya Junction at CH.100	IRCON International Limited	4.01
19.	Devdas Menon	Structural design and preparation of structural and cutting drawings for G+2 GFRG women's hostel building	Pallavada Technical Textiles Park Private Limited	6.64
20.	Arun Menon	Structural assessment of IIM-A buildings	Somaya and Kalappa Consultants Private Limited	1.73
21.	Rajagopal K	Technical evaluation and proof checking of the designs of reinforced soil retaining walls for railway embankments	L&T Construction, Buildings and Factories	6.9
22.	S. R. Satish Kumar	Proof checking design of OTM accommodation for IGCS at Karaikal	Helios Consulting Engineers	1.38
23.	Sreenivasa Murthy B. and Balaji Narasimhan	Proof checking of channel-related designs of Amanishah Nallah, Jaipur	TPL - Sucg Consortium	8.05
24.	B. Nageswara Rao	Testing of prestressing strands	Common Code	4.89
25.	G. Appa Rao	Proof checking of design and drawings of construction of three pump houses near Muchumarri village	Water Resources Department	2.88
26.	Raghu Kanth S. T. G.	Site-specific spectra for Bihar New Ganga bridge	Larsen and Toubro Limited	5

Sl. No.	Faculty Member	Title	Industry	Amount (₹ In lakhs)
27.	Sreenivasa Murthy B.	Scour calculation at the proposed location of ECRF dam during floods	Common Code	2.31
28.	B. Nageswara Rao	Design of 108 M Guyed mast for AIR Brahmavar after assessing condition and structural adequacy of tower, materials available at AIR HPT Avadi, Chennai	All India Radio	6.9
29.	S. Mohan	Design checking of 2x250 MW power plant at Bhavnagar	MARG Constructions Limited	2.88
30.	Arun Menon	Structural safety verification of fire- damaged LIC City Branch- VI, Chennai	Common Code	1.73
31.	S. R. Satish Kumar	Proof checking of design of MLCP for Sir Gangaram Hospital	Capacit'e Infraprojects	6.3
32.	S. R. Gandhi	Design of Ash Dyke at Nellore	Meenakshi Energy Private Limited	2.13
33.	S. Mohan	Flood assessment study for infrastructure project in Tamil Nadu	ABC Techno Labs India Private Limited	2.29
34.	Devdas Menon	Proof checking of a major bridge at Ch.240+769 and ROB at Ch.232+270	Boyants Solutions Private Limited	4.26
35.	Venu Chandra	Consultancy services for five individual rural piped water supply schemes pertaining to Balasore, Bhadrak, Keonjhar, Puri, Bolangir districts, Odisha, India	Larsen and Toubro Limited	3.44
36.	S. Mohan and R. G. Robinson	Design checking and monitoring of secured landfill - cell6 of Gummidipoondi	Tamil Nadu Waste Management Limited	6.9
37.	B. Nageswara Rao	Proof checking of structural design and drawings for works at JIPMER, Puducherry	HLL Life Care Limited	4.6
38.	B. Nageswara Rao	Proof checking of structural designs for the upgradation of medical colleges under PMSSY scheme	HLL Life Care Limited	19.85
39.	Devdas Menon	Proof checking of sub structure and foundation for Iritty Bridge, Kannur	Common Code	1.04
40.	Devdas Menon	Proof checking of Base Isolated Building at our Ireo SEZ-II site near Sector-58, Gurgaon, Haryana, named as Ireo SEZ-II	G.P. Realtors Private Limited	39.96
41.	B. Nageswara Rao	Structural soundness, load carrying capacity and structural stability for Srilekha Main Building at No.49, Anna Salai, Chennai of Messrs Sriram Educational Trust at Anna Salai, Chennai	Sriram Educational Trust	6.9
42.	Devdas Menon	Proof checking for vetting of structural design for the construction of GEnx.GE90 Engine Overhaul workshop at Air India MRO, Mihan SEZ, Nagpur	Kitco Limited	8.29
43.	A. Meher Prasad	Construction of 5.00 LL overhead tank; structural design and drawings prepared by TWAD Board and construction of 3.00 LL overhead tank at site Number 7	TWAD Board	4.01
44.	Devdas Menon	Proof checking of new six-lane RoB on NH-5 at Chainage:1341+947 between Kavali and Nellore	Simhapuri Expressway Limited	5.41
45.	Raghu Kanth S. T. G.	Site specific seismic study of 2 x 66 MW BIFPCL Maitree Khulna STPP, Bangladesh	Bharat Heavy Electricals Limited	13.8
46.	S. Arul Jayachandran	Design checking of multistorey office complex for TNSCB at Nandanam	Tamil Nadu Slum Clearance Board	14.72
47.	S. Arul Jayachandran	Developing column curves for cold formed steel rack uprights-Phase I	Metal Storage Systems Private Limited	3.57
48.	K. Rajagopal	Recommendations for different types of geosynthetic-reinforced soil structures	Common Code	2.01
49.	Indumathi M. Nambi	Design adequacy check and performance evaluation of STP	Ampa Housing Development Private Limited	1.73
50.	Devdas Menon	Proof checking of design calculation of PSC sleeper for 25T axle load	GPT Infra Projects Limited	1.15
51.	G. Appa Rao	Proof checking of structural design calculations for construction of pipe carrying across Gadilam River	Tamil Nadu Water Supply and Drainage Board	5.73
52.	G. Appa Rao	Proof checking of design of overhead water tanks at Assifabad, Khammam and Hyderabad	Larsen and Toubro Limited	4.58
53.	P. Alagusundaramoorthy	Condition assessment and repair and rehabilitation of Sri Murugan Stores' fire damaged building at Tambaram, Chennai	Sri Murugan Stores	14.71
54.	P. Alagusundaramoorthy	Characterization and application of materials for repair and rehabilitation of dams	MC-Bauchemie India Private Limited	6.01
55.	P. Alagusundaramoorthy	Analysis and design of steel temporary supports for structural modification of EMC building in GARC	L&C Telesolutions Private Limited	1.43
56.	B. Nageswara Rao	Checking and vetting of design and drawings of proposed construction of road over-bridge on Renigunta--Guntakal section @ km 315.4-5 in lieu of l.C No.145 (Manned) at km 315.3-4 between Muddanuru--Mangapatnam stations of ROB at Km 524.400 on NH-67	NSPR Constructions (India) Private Limited	2.3
57.	B. Nageswara Rao	Hydraulic Jack Calibration	Common Code	2.47
58.	Indumathi M. Nambi	Design adequacy check 100 KLD FBR	A G Clothing Limited	1.15
59.	B. Nageswara Rao	Checking and vetting of design and drawings of Slip-Form design and drawings	Slipcon Engineering Private Limited	1.73
60.	Devdas Menon	Proof checking of ROB design and drawings-development and up-gradation of four-laning of NH 52A from Gohpur (km 264.10 on NH 52) to Holongi (km 20.370 on NH 52A), Assam	OMS Infra Consultants Private Limited	2.69
61.	Devdas Menon	Proof checking of proposed construction of residential apartment Savyasachi Sarayu at Jayamahal Extension, Bengaluru	Savyasachi Projects	4.01
62.	B. Nageswara Rao	Conducting non destructive/partially destructive tests (NDT/PDT) on RCC Abutments of Khaltse Bridge (336.743 km) on Zozila—Kargil—Leh Road under Project Vijayak in Jammu and Kashmir	BRO Project Vijayak	9.2
63.	B. Nageswara Rao	Testing of HT Strands and HDPE Pipe	Common Code	4.8
64.	Devdas Menon	Relaxation for 1000 hours	Common Code	1.07
65.	G. Appa Rao	Nondestructive testing of structural elements for structural stability of AP Transco Nilayam at Vijayawada	Transmission Corporation of Andhra Pradesh Limited	2
66.	Indumathi M. Nambi	Design Adequacy Check of STP (150 KLD)	Brigade Enterprises Limited	1.15
67.	B. Nageswara Rao	Proof checking of structural design of multi-storied building	Asas Muscat International Projects LLC	7.92
68.	B. Nageswara Rao	Proof checking of design for the multi-level car parking at Jammu	Consolidated Construction Consortium Limited	1.72
69.	B. Nageswara Rao	Structural soundness/condition assessment of concrete in RC structural elements of various blocks of residential quarters (Building P268-P277) at NAD, Visakhapatnam	Military Engineering Services	5.75
70.	G. Appa Rao	Proof checking of designs and drawings of PEB at Sriperumbudur	Ruhrpumpen India Private Limited	2.52
71.	G. Appa Rao	Testing of Two Scaffolding Towers	CEO Turbo Industries Private Limited	4.01
72.	G. Appa Rao	Vetting of designs and drawings of RC Deck slab	Rites Limited	1.43
73.	Indumathi M. Nambi	Development of pretreatment of dyeing effluents in Kancheepuram	Kanchipuram Silk and Cotton Dyeing Waste Management Association	6.45
74.	A. Boominathan	Geotechnical Investigation at K.P. Park (Chennai) Scheme under Housing for All	Tamil Nadu Slum Clearance Board	17.06
75.	R. G. Robinson and K. Rajagopal	Proof checking of PVD design and testing of PVD and geotextiles related to railway doubling work	Geo Enviro Engineers Private Limited	1.43
76.	Indumathi M. Nambi	Development of pretreatment of dying effluents in Kancheepuram	T. Sundaravelu Mudaliar & Sons	1.5

Sl. No.	Faculty Member	Title	Industry	Amount (₹ In lakhs)
77.	Saravanan U.	Design check of GRP liner pipes for Sewer Rehabilitation project for UP Jal Nigam, Varanasi	Shriram SEPL Composites Private Limited	4.12
78.	T. Thyagaraj	Geotechnical analysis and foundation recommendations for MIG flats at Kodambakkam, Chennai	Tamil Nadu Housing Board	2.29
79.	T. Thyagaraj and Balaji Narasimhan	Hydrological and geotechnical analysis for Royal Enfield Industrial Site at Vallam Vadagal	Royal Enfield Limited	6.41
80.	A. Meher Prasad	Proof checking of IIPM and AAM	Teemage Precast IN	2.29
81.	B. Nageswara Rao	Testing of HTS Strand	Common Code	2.78
82.	A. Meher Prasad	Proof checking of construction of new hanger for parking/ maintenance and operation of aircraft at Cabs Bengaluru, Building 3&4	Vishal Infrastructure Limited	1.28
83.	P. Alagusundaramoorthy	Mix design and verification of flexural capacity of fiber-reinforced beams	Precision Drawell Private Limited	2.03
84.	Devdas Menon	Structural design for 45 m height RCC lighthouse tower at Arnala lighthouse Station, near Virar, district Thane, Maharashtra	Ministry of Shipping	2.86
85.	Devdas Menon	Structural design for 45 m height RCC lighthouse tower at Valsad Khadi Lighthouse Station, P.O. Kosamba, district Valsad, Gujarat	Ministry of Shipping	2.86
86.	Devdas Menon	Structural design and drawings of three-storeyed GFRG Office Building	Kerala State Electricity Board	1.62
87.	Devdas Menon	Proof checking of proposed new line between Obulavaripalli-Venkatachalam 35-93 km package of new major bridges and RUB's	Rail Vikas Nigam Limited	3.21
88.	P. Alagusundaramoorthy.	Analyzing and testing of bearing pads for bridge applications	Hevea Rubber Technologies Private Limited	1.43
89.	S. R. Satish Kumar	P195 Foundation Chilka Drill Shed and Tower	Helios Consulting Engineers	1.51
90.	Devdas Menon	Proof checking of minor bridge 123.550 km to Coimbatore at 150.400 km in Tamil Nadu	KNR Construction Limited	3.45
91.	A. Boominathan	Geotechnical investigation for reconstruction of 10 blocks at Vyasarpadi Sathyamoorthy Nagar T.T. Block Scheme	Tamil Nadu Slum Clearance Board	20.7
92.	Devdas Menon	Proof checking of ROB between Pollachi and Kinathukadavu station four-laning project Km. 134.10-11	KNR Construction Limited	4.26
93.	Subhadeep Banerjee	Ramagundam Geotechnical recommendations	Heurtey Petrochem	2.3
94.	Devdas Menon	Proof checking of the structural design for the proposed 2 lakh sq.ft. IT Building in Technocity Campus, Trivandrum	Techno Park	8.05
95.	G. Appa Rao	Concrete mix designs for construction of non-residential underground complex at Port Blair	Bharat Electronics Limited	3.57
96.	G. Appa Rao	Proof checking of design of encasing portal bridge at Port Trust, Tuticorin	Common Code	3.22
97.	S. R. Satish Kumar	Peer review of structural design of Flipkart Block A	B.L. Kashyap & Sons Limited	7.48
98.	P. Alagusundaramoorthy	Extension of fire water pumphouse and foundation of additional fire pump at BPCL Jetty, JNPT, Mumbai	Bharat Petroleum Corporation Limited	6.33
99.	A. Meher Prasad	Proof checking and vetting of designs and drawings of New Dry Dock	Cochin Shipyard Limited	57.5
100.	A. Boominathan	Geotechnical investigation for reconstruction of Block No. A to L (12 blocks) at Gowthamapuram (Corp. Dn. 69), Chennai	Tamil Nadu Slum Clearance Board	22.43
101.	Ligy Philip and Sreenivasa Murthy B.	Test of soil samples for contamination of hexavalent chromium around Lohianagar, Ghaziabad	Shriram Pistons & Rings Limited	5
102.	G. Appa Rao	Proof checking of design and drawings of major bridge across NH-42 in Ananthapuram Town Limits	RMN-SRK Joint Venture	13.75
103.	Devdas Menon	Proof checking for vetting of structural design and drawing for Innovation Zone	Kerala State IT Infrastructure Limited	8.05
104.	Subhadeep Banerjee and S. R. Gandhi	Geotechnical services to Messrs BHEL	Common Code	2.1
105.	G. Appa Rao	Proof checking of bridges along NH42 near Ananthapuramu	RMN-SRK Joint Venture	13.75
106.	B. Nageswara Rao	Consultancy for assessing condition and structural adequacy of TV towers at Doordarshan HPT, Tirupati	All India Radio	10
107.	T. Thyagaraj and R. G. Robinson	Stability analysis and recommendations for erosion protection works for approach embankments of high-level bridge near Shabashpally	Public Works Department	6.33
108.	P. Alagusundaramoorthy	Structural design in respect of the construction of Office of PMG, WR at Sanganur in Coimbatore	Siva Parameswari Engineering Construction & Co	3.97
109.	P. Alagusundaramoorthy	Inspection of damaged old residential quarters for conditional assessment in township in BHEL Trichy	Bharat Heavy Electricals Limited	4.31
110.	P. Alagusundaramoorthy	Extension of fire water pumphouse and foundation of additional fire pump at BPCL Jetty, JNPT, Mumbai	Bharat Petroleum Corporation Limited	6.33
111.	R. G. Robinson	Evaluation of soil parameters through CU triaxial test for Cochin Shipyard Dry Dock Project	Keller Ground Engineering India Private Limited	3.11
112.	T. Thyagaraj and S. R. Gandhi	Foundation recommendations for the proposed residential tower at Madhavaram, Chennai	Lokaa Developer (P) Limited	2.3
113.	T. Thyagaraj and R. G. Robinson	Recommendations for construction of road embankment from Western Boundary (near Dondapadu), AP	Common Code	1.38
114.	T. Thyagaraj and K. P. Sudheer	Report on slope stability and recommendations for compound wall and flood protection measures for BEL Campus at Nandambakkam	Bharat Electronics Limited	4.6
115.	A. Boominathan	Geotechnical investigation for construction of eight high-rise buildings in Moolakothalam Scheme (Chennai) - Phase I	Tamil Nadu Slum Clearance Board	34.5
116.	Ravindra Gettu	Characterization of creep and shrinkage of concrete used in the Statue of Unity	L&T Construction, Buildings & Factories	28.52
117.	Devdas Menon	Fatigue test for cementitious grouts (two: BB92IN and BB72IN)	FOSROC Chemicals (India) Limited	10.35
118.	S. R. Satish Kumar	Proof checking of PEBs for Force Motors and LM Wind	Tata Blue Scope Steel	11.6
119.	G. Appa Rao	Proof checking of structural drawings of residential apartment Confident Aspire (Block A)	Geostructurals (P) Limited	5.18
120.	B. Nageswara Rao	Checking and vetting of design and drawings of proposed construction at Bharat Petroleum Corporation Limited, Kochi Refinery - school, management staff quarters, non-management staff quarters, auditorium, covered swimming pool and infra buildings	Wadia Techno Engineering Services Limited	11.5
121.	Koshy Varghese and Benny Raphael	Proof checking design and drawings of erection of Steel Girder and Formwork for multiple road projects	Larsen & Toubro Limited	4.6
122.	Saravanan U.	Design check of MWSL Liner Pipes for UP Jal Nigam	Shriram EPC Limited	2.07
123.	B. Nageswara Rao	Assessing condition and structural adequacy of TV towers at Doordarshan HPT Dharwad and Shimoga	All India Radio	20
124.	Devdas Menon	Proof checking of additional post-tensioned slabs and beams for Kannur International Airport Limited	Utracon Structural System Private Limited	3.51
125.	A. Boominathan	Recommendation on suitability of soils for earth formation and blanket	Common Code	1.18
126.	G. Appa Rao	Proof checking of design and drawings of residential apartment at Panampilly Nagar, Kochi	Geostructurals (P) Limited	4.03
127.	Ravindra Gettu and S. R. Gandhi	Review of strengthening of the tunnel in CP of UAA06 package of CMRL	Chennai Metro Rail Limited	4.6
128.	P. Alagusundaramoorthy	Review of the analysis and design of new corporate office for NLC India Limited at Chennai	Neyveli Lignite Corporation Limited	6.9
129.	P. Alagusundaramoorthy	Mix Design for My Fortune Guntur Hotel Project, Guntur	URC Constrcution Private Limited	2.88
130.	Arun Menon	Structural assessment of IIM-A Library Building	Somaya and Kalappa Consultants Private Limited	2.5

Sl. No.	Faculty Member	Title	Industry	Amount (₹ In lakhs)
131.	G. Appa Rao	Proof checking of design of residential apartment Confident Aspire (Block B)	Geostructurals (P) Limited	5.18
132.	S. Arul Jayachandran	Design and checking of 12 steel fuel storage tanks for Messrs BPCL designed by M.C ANCL as per API650	Adarsh Noble Corporation Limited	3.45
133.	Devdas Menon	Proof checking for two railway over bridges (ROB @ RLY km 55.3-4 and ROB at km 57.14-15) at km 410+170 and km 412+830 of National Highway	Public Works Department	5.29
134.	Devdas Menon	Proof checking for NHAI-PIU Coimbatore-Rehabilitation and Up-gradation of NH-209 from Km, 123.550. 150.400 of Dindigul-Bengaluru (Pollachi to Coimbatore Section)- Grade Separator and Minor Bridges and Bearings	KNR Construction Limited	4.49
135.	G. Appa Rao.	Proof checking of structural designs and drawings of water treatment plant at Beharmpuram	Larsen & Toubro Limited	15.25
136.	G. Appa Rao.	Vetting of designs and drawings of water treatment plant structures in Balasore	Larsen & Toubro Limited	18.4
137.	Indumathi M. Nambi	Proof checking of network, pumping stations and process design of two STPs'	L & T Construction, Water and Effluent Treatment IC	4.6
138.	Indumathi M. Nambi	Vetting of design, monitoring and performance evaluation of 15.55 MLD plant in Guntur	Public Health and Municipal Engineering Department	16.68
139.	Devdas Menon	Proof checking for design of ballastless track in tunnel area and transition area for new broad gauge railway line from Obulavaripalli to Venkatachalam, Andhra Pradesh	Sew Infrastructure Limited	5.75
140.	Devdas Menon	Proposed to establish a new lighthouse at Vazhiyazhikkal in Alappuzha district, Kerala	Directorate of Lighthouses and Lightships	4.6
141.	Subhadeep Banerjee and R. G. Robinson	Kaleshwaram Lift Irrigation Project, Annaram Barrage, Telangana	Afcons Infrastructure Limited	5.75
142.	P. Alagusundaramoorthy.	Condition assessment of the Administrative Building of IOCL Chennai	Indian Oil Corporation Limited	19.84
143.	B. Nageswara Rao.	Structural soundness of human habitation for all ESI/ESIC Buildings at Chennai, Vellore and Ranipet	Employees State Insurance Corporation	37.79
144.	Rupen Goswami	GB and RT Towers and Monopole Structures	Common Code	0.92
145.	Ravindra Gettu	Assessment of cracking in floor of Mosdorfer Plant, Gonde Industrial Area, Nashik, Maharashtra	Mosdorfer India Private Limited	2.71
146.	Ravindra Gettu	Assessment of shotcrete used in the TFI project, Visakhapatnam	L&T Construction, Buildings and Factories	10.35
147.	S. Arul Jayachandran.	Design checking and advice for steel flyover at Marthandam and Parvatipuram	SPL Infrastructure Private Limited	28.75
148.	A. Meher Prasad	Proof checking of foundation design documents and drawings, Cognizant Pune Phase-2 IT project campus, Hinjewadi, Pune	L&T Construction, Buildings and Factories	4.03
149.	Devdas Menon	Proof checking of construction of ROB at railway - Mithapur Flyover railway crossing near Patna station	Larsen and Toubro Limited	6.33
150.	B. Nageswara Rao.	Testing of HT Strands to determine mechanical and relaxation properties	Common Code	3.45
151.	G. Appa Rao.	Proof checking of design and drawings of bridge across Salt Creek at Srikakulam	BVSR Constructions Private Limited	7.48
152.	G. Appa Rao.	Proof checking of structural design calculation and drawings for construction of sewage pumping station at Allahabad	L&T Construction, Buildings and Factories	3.68
153.	B. Nageswara Rao.	Proof checking of structural design of bridge no 80 at CH 47529.70 span 7 X 24.4 (steel composite girder)	Sarguja Rail Corridor Private Limited	2
154.	Devdas Menon	Proof checking of proposed doubling between Thanjavur Jn and Ponamali Jn	Rail Vikas Nigam Limited	1.55
155.	Devdas Menon	Testing of props 3.0 and 3.5 (total 28)	PERI (India) Private Limited	4.83
156.	S. R. Satish Kumar	Steel for Mahadev Profiles PEB at NIT, Trichy	Central Public Works Department	3.36
157.	S. R. Satish Kumar	Checking design of ELCOT Buld at Chennai	Narayana Rao C. R.	1.38
158.	Manu Santhanam	Investigation of GP2 in Chennai Metro	Chennai Metro Rail Limited	4.31
159.	B. Nageswara Rao	Checking and vetting of design and drawings of tower and foundation -3- Leg Tubulur (24 m and 30 m)	Common Code	1.15
160.	B. Nageswara Rao	Checking and Vetting of design and drawings of proposed construction of four-lane RoB between Cuddapah--Krishnapuram stations, Andhra Pradesh	NSPR Constructions (India) Private Limited	1.5
161.	B. Nageswara Rao	Proof checking of designs and drawings of seven priority roads, including bridges and box-culvert, and design of flexible pavement and plan of profile of the roads	Capital City Development and Management Corporation	23
162.	B. Nageswara Rao	Proof checking of ROB design documents and drawings	Punj Lloyd Limited	1.73
163.	Amlan K. Sengupta	Testing of Mechanical and Relaxation test	Common Code	1.26
164.	R. G. Robinson and Subhadeep Banerjee	Vetting and approval of vibro stone column work in LPG Bottling Plant Project, Gorakhpur, UP	Keller Ground Engineering India Private Limited	3.16
165.	A. Meher Prasad	Proof checking of design and construction of residential quarters at CTC-II, CRPF, Coimbatore and compound wall	Teemage Precast IN	2.3
166.	Ligy Philip and Sreenivasa Murthy B.	Suitable technology and design for sewage treatment plant (STP) for 6.5 MLD for Kodaikanal Municipality in Dindigul district of Tamil Nadu	TWAD Board	17.25
167.	Indumathi M. Nambi	Proof checking of network, pumping stations and process design of five STPs in Nellore	L & T Construction, Water and Effluent Treatment IC	8.05
168.	Devdas Menon	Proof checking of four-laning of NH 209 from Pollachi at KM 123.550 to Coimbatore at KM 150.400 in the State of Tamil Nadu on EPC	KNR Construction Limited	4.26
169.	P. Alagusundaramoorthy	Analyzing and testing of strands, bearing pads and structural elements for civil infrastructure applications	Common Code	0.39
170.	K. N. Satyanarayana	Preparation of DPR for C&D Waste Management for Tirupati	Municipal Corporation	4.95
171.	S. R. Gandhi	Proof checking of foundation design	Afcons Infrastructure Limited	2.3
172.	Muralikrishnan J.	Testing of bitumen core samples and modified binders	Military Engineering Services	2.3
173.	K. Rajagopal	Design of reinforced soil retaining walls in Amman, Jordan	Philadelphia Post-Tensioning Company LLC	3.82
174.	G. Appa Rao	Proof checking of structural designs and drawings and materials characterization	Common Code	1.25
175.	B. Nageswara Rao	Preparation of structural design and drawings of RCC retaining wall cum compound wall with pile foundation for CONCOR multi-modal logistic park at Nellore	Rites Limited	1.73
176.	B. Nageswara Rao	Testing of FRP manhole cover (20 MT capacity)	Common Code	1.15
177.	S. R. Satish Kumar	Proof checking of PEB for JOTE-NIT, Arunachal Pradesh	Kirby Building Systems	1.15
178.	Indumathi M. Nambi	Performance evaluation, design adequacy check and certification (2 STPs)	Express Infrastructure Private Limited	1.73
179.	Devdas Menon	Dynamic fatigue testing of composite sleeper -2 million cycles	Patil Rail Infrastructure Private Limited	3.45
180.	Devdas Menon	Mechanical Test for rod (8 in number)	JSW Steel Limited	1.38
181.	Devdas Menon	Proof checking of design and construction for widening and strengthening of the road from km. 15.0 to 24.660 of Visakhapatnam--Bheemunipatnam beach road in Visakhapatnam district	Government of Andhra Pradesh	1.84
182.	S. R. Satish Kumar	Proof checking design of PEB for Messrs Alstom Transport at Sricity, Tada	Nikitha Build Tech Private Limited	1.96
183.	Devdas Menon	Structural design and preparation of structural and cutting drawings for single-storey GFRG dormitory and dining halll buildings at IGCAR, Kalpakkam	Common Code	0.69
184.	Indumathi M. Nambi	Monitoring of remediation project at Tondiarpet site	Bharat Petroleum Corporation Limited	28.75

Sl. No.	Faculty Member	Title	Industry	Amount (₹ In lakhs)
185.	B. Nageswara Rao	Third party inspection of buildings	Common Code	3.85
186.	S. Arul Jayachandran	Design checking of steel structural systems for stability and strength	Common Code	0.46
187.	B. Nageswara Rao	Preparation of structural design for pile cap and RCC trough for Bridge No 5 (RUB)	Ministry of Railways	3.75
188.	B. Nageswara Rao	Peer review of as built foundation stability for the construction of electrification project between Jabalpur to Satna	Cobra Instalaciones Servicios, S.A.	5
189.	B. Nageswara Rao	Checking and vetting of design and drawings of additional hangers with PEB system for BSF at NAS Arakkonam	Meenakshi Construction	1.5
190.	Ligy Philip	Water, wastewater and soil sample analysis	Common Code	0.58
191.	Devdas Menon	Proof checking of construction of road overbridge (ROB) at Vallarpadam	Cochin Port Trust	2.19
192.	G. Appa Rao	Proof checking of structural designs and drawings of substructure for ROB near Podanur junction	Rawatsons Engineers Private Limited	2.53
193.	Devdas Menon	Proof checking of proposed Sanjeevanam Hospital project at EKM	AVA Products & Services	3.02
194.	B. Nageswara Rao	Proof checking and vetting of design calculations and structural drawings of pipe way bridge at CPCL's Manali Refinery, Chennai	Chennai Petroleum Corporation Limited	1.15
195.	Devdas Menon	Proof checking of four laning of Kazhakkoottam to Mukkola section from km.0.000 to km.26.500 of NH-47 in Kerala under NHDP Phase III	KNR Construction Limited	1.84
196.	B. Nageswara Rao	As built documentation and health assessment tests for urea silos at Ramagundam Fertilizers and Chemicals Limited, Ramagundam	Ramagundam Fertilizers and Chemicals Limited	31.4

RBIC projects

Sl. No.	Faculty Member	Title	Industry	Amount (₹ in lakhs)
1.	A. Boominathan and Subhadeep Banerjee	Development of methodology of seismic SSI analysis of combined pile-raft foundation system for nuclear building of GHAVP-1 and 2	Nuclear Power Corporation of India Limited	66.98
2.	Gitakrishnan Ramadurai and Shiva Nagendra S. M.	Towards developing a comprehensive planning framework for urban freight	Shakti Sustainable Energy Foundation	56.87
3.	S. Mohan	Hydro-geological study of Adankurichi Limestone Mine	India Cements Limited	11.5
4.	K. Rajagopal	Investigations on developing design guidelines for Geocell Reinforced Flexible Pavements	Messrs Strata Geosystems (India) Private Limited	9.92
5.	G. Appa Rao.	Characterisation of grout for various structural applications	Cera Chem Private Limited	2.65
6.	Sivakumar Palaniappan	Construction Industry Improvement Initiative (Ci3) India	Institute for Lean Construction Excellence	9.12
7.	S. Mohan	Assessment of effects of oilspoil on marine environment	Tamil Nadu Pollution Control Board	9.49
8.	B. Nageswara Rao.	Feasibility study on re-utilization of un-used SS Tower at AIR Avadi, Chennai	All India Radio	2.36
9.	B. Nageswara Rao.	Experimental and analytical research on two-way hollow core slab system	Post Tension Services India Private Limited	5.18
10.	Arun Menon	Safety assessment of Old Lighthouse, Puducherry	Commissioner of Central Excise	9.16
11.	G. R. Dodagoudar and Raghu Kanth S. T. G.	Site-specific seismic study at Meghanaghat, Bangladesh	imaGIS Engineering Solutions Private Limited	4.86
12.	Balaji Narasimhan and K. P. Sudheer	A comprehensive scientific study to suggest improvements to the storm water drainage systems inside and outside the airport premises of the Chennai Airport	Airports Authority of India	84.93
13.	Shiva Nagendra S. M.	Measurement of PM number concentrations and traffic flow in mega Delhi city	Central Pollution Control Board	3.3
14.	G. R. Dodagoudar	Seismic site characterization of selected sites in South India for wind farms	Velciti Consulting Engineers (P) Limited	5
15.	K. P. Sudheer and K. Srinivasan	Morphological studies for rivers Krishna and Tungabhadra using remote sensing technique	Central Water Commission	96.46
16.	Arun Menon and Radhakrishna G. Pillai	Condition and structural assessment of Rashtrapati Bhavan, New Delhi	Central Public Works Department	40.3
17.	Lelitha Devi V. and Shankar Ram C. S.	Development of a dynamic traffic congestion prediction system for Indian Cities	Tata Consultancy Services	98.33
18.	Benny Raphael	Consultation work for the Koothambalam Project	Kalakshetra Foundation	4.89
19.	Radhakrishna G. Pillai	Perfomance evaluation of bi-polar corrosion inhibitors for reinforced concrete applications	Sika India Private Limited	3.45
20.	B. Nageswara Rao	Fatigue Testing (2 million cycles) on "Rail + Inox + CMS Flush Butt welded rail piece"	VAE VKN India Private Limited	3.45
21.	P. Alagusundaramoorthy	Modification of overhead railway bridge number 6 of Cyrogenic Pipeline at BPCL Uran, Mumbai	Bharat Petroleum Corporation Limited	9.95
22.	P. Alagusundaramoorthy	Stability check of Feed Mill building at C.P. Aquaculture	C.P. Aquaculture India Private Limited	26.8
23.	B. Nageswara Rao	Feasibility study on re-utilization of dismantled 100m Guyed mast (from DDK Gulbarga) at Adilabad	All India Radio	3.22
24.	Shiva Nagendra S. M.	Emission inventory and source apportionment in the vicinity of Chennai Port and adjoining residential area	Chennai Port Trust	53.97
25.	Raghu Kanth S. T. G.	Cyclone vulnerability of hospital buildings in Odisha	TARU Leading Edge Private Limited	3
26.	B. Nageswara Rao	Conduction of design qualification tests or turnouts sleepers for Type 1 in 12 and line 8.5 of WDFC CTP 1 and 2 Project	Larsen and Toubro Limited	17.74
27.	Ligy Philip	Evaluation of DRDO onsite wastewater treatment system	Bill & Melinda Gates Foundation	138.75
28.	G. R. Dodagoudar	Analysis and design of ash dykes for disposal of fly ash	Andhra Pradesh Power Development Company Limited	12.65
29.	Indumathi M. Nambi	Environmental site characterization at HPCL Tondiarpet Terminal and Lube Plant	Hindustan Petroleum Corporation Limited	27.43
30.	Indumathi M. Nambi	Monitoring of remediation project at Tondiarpet site	Bharat Petroleum Corporation Limited	28.75
31.	Indumathi M. Nambi	Environmental site characterization at the Indian Oil Corporation lube plant and Tondiarpet Terminal	Indian Oil Corporation Limited	42.38

Retainer Consultancy

Sl. No.	Faculty Member	Title	Industry	Amount (lakhs of ₹)
1.	Ravindra Gettu	Consultancy in Science, Technology, Processes for Cement and Concrete	Aditya Birla Science and Technology	8.59
2.	Ravindra Gettu	Consultancy on Science, Technology, Processes for Cement and Concrete	Lafarge India Limited	6.9

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

MoU signed between Charles University in Prague, Czech Republic and Indian Institute of Technology Madras.

Faculty members' participation with other institutions under MoU

Sl. No.	Faculty Member	Participation details	University/Institution
1.	K. Rajagopal	Joint Ph.D. degree programme being pursued by Ph.D. scholar S. Nithin (Roll no. CE13D004) from February 2016 to February 2017	Swinburne University, Melbourne, Australia
2.	Prof. K. P. Sudheer	Adjunct Faculty	Purdue University, USA
3.	Prof. S. Mohan	Collaborative Research	University of Illinois, Chicago
4.	Dr. Sachin S. Gunthe	Collaborative Research	Max Plank Partner Group, Germany
5.	Benny Raphael	Guest lectures	Saint Petersburg Polytechnic University, Russia
6.	Dr. S. Mathava Kumar	KTP-UTS Fellowship	UTS, Sydney

Research publications of the faculty members and research scholars

Books/Book Chapters: 4

Total number of papers published in referred international journals: 113

Total number of papers presented in national conferences: 16

Total number of papers presented in national/international conferences: 51

Books/Book Chapters

1. A.S. Balu and B.N. Rao. Fuzzy structural analysis using surrogate models. 2016. *Modeling and Simulation Techniques in Structural Engineering* pp. 239-265 doi: 10.4018/978-1-5225-0588-4.ch008
2. K.S. Kasiviswanathan, K.P. Sudheer and J. He. Quantification of prediction uncertainty in artificial neural network models. 2016. *Studies in Computational Intelligence* 628: 145-159 doi: 10.1007/978-3-319-28495-8_8
3. C.K. Ramanna and G.R. Dodagoudar. Effect of epicenter data inconsistency in determining bandwidth and its subsequent use in hazard analysis for Chennai using kernel smoothing approach.2016. *Civil and Environmental Engineering: Concepts, Methodologies, Tools, and Applications* 3: 1439-1453. doi: 10.4018/978-1-4666-9619-8.ch065
4. V. Arya and L. Philip. Removal of pharmaceuticals from water using adsorption. 2016. *Trends in Asian Water Environmental Science and Technology* pp. 105-114 doi: 10.1007/978-3-319-39259-2_9

Papers published in international conferences

1. JFröhlich-Nowoisky, C. J. Kampf, B. Weber, J. A. Huffman, C. Pöhlker, M. O. Andreae, N. Lang-Yona, S. M. Burrows, S. S. Gunthe, W. Elbert, H. Su, P. Hoor, E. Thines, T. Hoffmann, V. R. Després and U. Pöschl. 2016. Bioaerosols in the Earth system: Climate, health, and ecosystem interactions. *Atmospheric Research* 182: 346-376. doi: 10.1016/j.atmosres.2016.07.018
2. G. Fulari, L. Lanajakshi and S. C. Subramanian. 2016. Addressing errors in automated sensor data for real-time traffic state estimation using dynamical systems approach. *IET Intelligent Transport Systems* 10(10): 683-690. doi: 10.1049/iet-its.2016.0041
3. PVayalamkuzhi and V. Amirthalingam. 2016. Safety performance evaluation of multilane highways under heterogeneous traffic. *European Transport - Trasporti Europei* (62)
4. SBanerjee, M. Joy and D. Sarkar. 2016. Parametric study and centrifuge-test verification for amplification and bending moment of clay–pile system subject to earthquakes. *Geotechnical and Geological Engineering* 34(6): 1899-1908. doi: 10.1007/s10706-016-9999-4
5. AChatterjee, M. Manohar and G. Ramadurai. 2016. Statistical analysis of bus networks in India. *PLoS ONE* 11(12). doi: 10.1371/journal.pone.0168478
6. U. Ansari, N. Ojha, R. Chandrasekar, C. Balaji, N. Singh and S. S. Gunthe. 2016. Competing impact of anthropogenic emissions and meteorology on the distribution of trace gases over Indian region. *Journal of Atmospheric Chemistry* 73(4): 363-380. doi: 10.1007/s10874-016-9331-y
7. AChatterjee, G. Ramadurai and K. Jagannathan. 2016. Contagion processes on urban bus networks in Indian cities. *Complexity* 21: 451-458. doi: 10.1002/cplx.21825
8. BBalakrishnan, S. Hussain and D. Menon. 2016. Assessment of shear strength of circular reinforced concrete beams. *ACI Structural Journal* 113(6): 1209-1221. doi: 10.14359/51689145
9. RSrivastav, K. Srinivasan and K. P. Sudheer. 2016. Simulation-optimization framework for multi-site multi-season hybrid stochastic streamflow modeling. *Journal of Hydrology* 542: 506-531. doi: 10.1016/j.jhydrol.2016.09.025
10. PP. Subramaniam, M. M. Sreenadh and S. Banerjee. 2016. Critical state parameters of dredged Chennai marine clay treated with low cement content. *Marine Georesources and Geotechnology* 34(7): 603-616. doi: 10.1080/1064119X.2015.1053641
11. SS. M. Shiva Nagendra, M. Diya, V. S. Chithra, J. S. Menon and A. E. Peter. 2016. Characteristics of air pollutants at near and far field regions of a national highway located at an industrial complex. *Transportation Research Part D: Transport and Environment* 48: 1-13. doi: 10.1016/j.trd.2016.07.006
12. SS. Jayalakshmi and S. T. G. Raghukanth. 2016. Intra plate stresses using finite element modelling. *Acta Geophysica* 64(5): 1370-1390. doi: 10.1515/acgeo-2016-0050
13. SS. Ambika and I. M. Nambi. 2016. Optimized synthesis of methanol-assisted nZVI for assessing reactivity by systematic chemical speciation approach at neutral and alkaline conditions. *Journal of Water Process Engineering* 13: 107-116. doi: 10.1016/j.jwpe.2016.08.011
14. GG. Divyapriya, I. M. Nambi and J. Senthilnathan. 2016. Nanocatalysts in Fenton based advanced oxidation process for water and wastewater treatment. *Journal of Bionanoscience* 10(5): 356-368. doi: 10. 1166/jbns.2016. 1387
15. KK. V. K. Ansaf, S. Ambika and I. M. Nambi. 2016. Performance enhancement of zero valent iron based systems using depassivators: Optimization and kinetic mechanisms. *Water Research* 102: 436-444. doi: 10.1016/j.watres.2016.06.064
16. SS. Ambika, M. Devasena and I. M. Nambi. 2016. Synthesis, characterization and performance of high energy ball milled meso-scale zero valent iron in Fenton reaction. *Journal of Environmental Management* 181: 847-855. doi: 10. 1016/j.jenvman.2016.06.054
17. AA. S. Oberoi and L. Philip. 2016. Biological degradation of heterocyclic aromatic hydrocarbons with naphthalene-enriched consortium: substrate interaction studies and fate of metabolites. *Applied Biochemistry and Biotechnology* 180(3): 400-425. doi: 10.1007/s12010-016-2106-8
18. OO. Ranjan, J. S. Menon and S. M. S. Nagendra. 2016. Assessment of air quality impacts on human health and vegetation at an industrial area. *Journal of Hazardous, Toxic, and Radioactive Waste* 20(4). doi: 10.1061/(ASCE)HZ. 2153-5515.0000316
19. AA. K. Nayak, S. Sahoo, M. K. Jha and S. M. Pingale. 2016. Hydrologic and hydrogeologic analyses of an alluvial aquifer underlying Kushabhadra-Bhargavi river basin, Odisha, India. *Arabian Journal of Geosciences* 9(15). doi: 10.1007/s12517-016-2690-5
20. MM. A. Vishnuganth, N. Remya, M. Kumar and N. Selvaraju. 2016. Photocatalytic degradation of carbofuran by TiO_2-coated activated carbon: Model for kinetic, electrical energy per order and economic analysis. *Journal of Environmental Management* 181: 201-207. doi: 10.1016/j.jenvman.2016.06.016
21. KK. Lakshmi Roja, N. Roy and J. M. Krishnan. 2016. Influence of aging on the rheological behavior of warm mix asphalt binders. *RILEM Bookseries* 11: 497-508. doi: 10.1007/978-94-017-7342-3_40
22. VP. Arya and L. Philip. 2016. Adsorption of pharmaceuticals in water using Fe_3O_4 coated polymer clay composite. *Microporous and Mesoporous Materials* 232: 273-280. doi: 10.1016/j.micromeso.2016.06.033
23. RR. Ramalingam and S. Arul Jayachandran. 2016. Computational framework for mimicking prototype failure testing of transmission line towers. *Engineering Structures* 123: 181-191. doi: 10.1016/j.engstruct.2016.05.021
24. SS. Ghosh and K. Srinivasan. 2016. Analysis of spatio-temporal characteristics and regional frequency of droughts in the southern peninsula of India. *Water Resources Management* 30(11): 3879-3898. doi: 10.1007/s11269-016-1396-5
25. YY. K. Ramu, I. Akhtar and M. Santhanam. 2016. Use of adiabatic calorimetry for performance assessment of concretes. *Advances in Cement Research* 28(8): 485-493. doi: 10.1680/jadcr.15.00097
26. BB. Kavitha and S. T. G. Raghukanth. 2016. Regional-level forecasting of seismic energy release. *Acta Geodaetica et Geophysica* 51(3): 359-391. doi: 10. 1007/s40328-015-0131-7
27. SS. S. Ajeesh and S. Arul Jayachandran. 2016. Simplified semi-analytical model for elastic distortional buckling prediction of cold-formed steel flexural members. *Thin-Walled Structures* 106: 420-427. doi: 10.1016/j.tws.2016.05.015
28. AA. Chatterjee. 2016. Thermodynamics of action and organization in a system. *Complexity* 21: 307-317. doi: 10.1002/cplx.21744
29. RR. M. Subramanian and A. Boominathan. 2016. Dynamic experimental studies on lateral behaviour of batter piles in soft clay. *International Journal of Geotechnical Engineering* 10(4): 317-327. doi: 10.1080/19386362.2016.1150006

30. SS. Gangaputhiran, R. G. Robinson and R. Karpurapu. 2016. Properties of soil after surcharge or vacuum preloading. *Proceedings of the Institution of Civil Engineers: Ground Improvement* 169(3): 217-230. doi: 10.1680/jgrim.15.00028
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11. B. Raphael, K.S.C. Rao and K. Varghese. Automation of modular assembly of structural frames for buildings. *ISARC 2016 - 33rd International Symposium on Automation and Robotics in Construction* pp. 412-420
12. R.K. Anjana and D.N. Arnepalli. Role of diffusion on the transport of volatile organic contaminants through geomembranes in composite liner systems. *GA 2016 - 6th Asian Regional Conference on Geosynthetics: Geosynthetics for Infrastructure Development, Proceedings* pp. 626-639
13. J.A. Kollerathu, S. Krishnachandran and A. Menon. Modelling and seismic analysis of existing masonry structures. *Structural Analysis of Historical Constructions: Anamnesis, Diagnosis, Therapy, Controls - Proceedings of the 10th International Conference on Structural Analysis of Historical Constructions, SAHC 2016* pp. 257-264
14. K. Rajagopal and S.R. Mohapatra. Behaviour of geosynthetic encased granular columns under vertical and lateral loading. *GA 2016 - 6th Asian Regional Conference on Geosynthetics: Geosynthetics for Infrastructure Development, Proceedings* KN83-KN99
15. S.R. Mishra, S. Nithin, S.R. Mohapatra and K. Rajagopal. Application of image processing technique in wide width tensile testing of nonwoven geotextile. *GA 2016 - 6th Asian Regional Conference on Geosynthetics: Geosynthetics for Infrastructure Development, Proceedings* pp. 795-803
16. N. Raghavan, V.S.K. Delhi, A. Mahalingam and K. Varghese. Introducing lean construction philosophy in E-P-C phases of a large industrial project. *IGLC 2016 - 24th Annual Conference of the International Group for Lean Construction* pp. 13-22
17. M. Korulla, D. Kumar, P. Rimoldi and K. Rajagopal. Selection of suitable Geotextile materials for Geotextile containment systems - onshore and offshore structures. *GA 2016 - 6th Asian Regional Conference on Geosynthetics: Geosynthetics for Infrastructure Development, Proceedings* pp. 1000-1007
18. S.M. Kodeboyina and K. Varghese. Low-cost augmented reality framework for construction applications. *ISARC 2016 - 33rd International Symposium on Automation and Robotics in Construction* pp. 659-668
19. C. Sivathanu Pillai, A.R. Santhakumar and R. Murugan. 2016. Innovative method of shielding the SS pipe carrying industrial wastes by using self-compacting concrete for sustainable construction. *Key Engineering Materials* 692: 110-118. doi: 10.4028/www.scientific.net/KEM.692.110
20. K. Rajagopal, T. Sundeep and P.K. Choudhury. 2016. Comparison of transmissivity capacity of jute geotextiles and polymeric geotextiles. *GA 2016 - 6th Asian Regional Conference on Geosynthetics: Geosynthetics for Infrastructure Development, Proceedings* pp. 696-705

21. R.K. Anjana, D.N. Arnepalli, S. Jain, P. Cherishma, S.R. Gandhi and K.D. Rao. 2016. Case study on the reservoir seepage at concentrated solar thermal power plant, Rajasthan, India. *GA 2016 - 6th Asian Regional Conference on Geosynthetics: Geosynthetics for Infrastructure Development, Proceedings* pp. 579-590
22. A.S. Kiran and K. Rajagopal. 2016. Laboratory tests for index and performance properties of geosynthetics for coastal protection. *GA 2016 - 6th Asian Regional Conference on Geosynthetics: Geosynthetics for Infrastructure Development, Proceedings* pp. 950-957
23. G.L.E. Prasad, B.S.K. Gowda and R. Velmurugan. 2016. Prediction of flexural properties of coir polyester composites by ANN. *Conference Proceedings of the Society for Experimental Mechanics Series* 7: 173-180. doi: 10.1007/978-3-319-21762-8_21
24. S.B. Praveen, V. Sunitha, A. Veeraragavan and S. Mathew. Pavement performance model for PMGSY roads in India. *8th International Conference on Maintenance and Rehabilitation of Pavements, MAIREPAV 2016* pp. 515-524. doi: 10.3850/978-981-11-0449-7-091-cd
25. K.R. Karthik, V.U. Rejani, V. Sunitha, A. Veeraragavan and S. Mathew. Urban pavement maintenance management system for Tiruchirapalli city. *8th International Conference on Maintenance and Rehabilitation of Pavements, MAIREPAV 2016* pp. 630-639 doi: 10.3850/978-981-11-0449-7-109-cd
26. H.K. Doloi, S. Loganathan, S.N. Kalidindi and A. Mahalingam. Assessment of stakeholders' management practice in infrastructure projects - an Indian case project. *Construction Research Congress 2016: Old and New Construction Technologies Converge in Historic San Juan - Proceedings of the 2016 Construction Research Congress, CRC 2016* pp. 1465-1474. doi: 10.1061/9780784479827.147
27. L.S. Shankar, S. Rajthilak and U. Saravanan. 2016. Numerical technique for solving truss and plane problems for a new class of elastic bodies. *Acta Mechanica* 227(11): 3147-3176. doi: 10.1007/s00707-015-1529-6
28. G. Sivakumar and V.B. Maji. Simulation of crack propagation in rocks by XFEM. *Proceedings of the Conference on Recent Advances in Rock Engineering* 91: 291-296, RARE 2016, 16-18 November 2016
29. H.K. Doloi, S. Loganathan, S.N. Kalidindi and A. Mahalingam. Assessment of stakeholders' management practice in infrastructure projects-an Indian case project. *Construction Research Congress 2016: Old and New Construction Technologies Converge in Historic San Juan*, 31 May-2 June 2016, pp. 1465-1474
30. A.S. Balu and B.N. Rao. Confidence bounds on probability of failure using MHDMR. *IRF2016: 5*th International Conference Integrity-Reliability-Failure, 24-28 July 2016, pp. 27-34
31. S. Muthulingam and B. N. Rao. Prediction of corrosion-free service life of concrete structures along coastal regions: a numerical framework. *IRF2016: 5*th International Conference Integrity-Reliability-Failure, 24-28 July 2016, pp. 533-550
32. B. Kuriakose, B.N. Rao and G.R. Dodagoudar. Early-age temperature distribution in a massive concrete foundation. *1*st Global Colloquium on Recent Advancements and Effectual Researches in Engineering, Science and Technology - RAEREST 2016 25: 107-114. doi: 10.1016/j.protcy.2016.08.087
33. C. Mekala and I.M. Nambi. Experimental and simulation studies on nitrogen dynamics in unsaturated and saturated soil using HYDRUS-2D. *1*st Global Colloquium on Recent Advancements and Effectual Researches in Engineering, Science and Technology - RAEREST 2016 25: 122-129. doi: 10.1016/j.protcy.2016.08.089
34. D.K. Ojha, S. Shukla, R.S. Sachin and R. Vinu. Understanding the Interactions between cellulose and polypropylene during fast co-pyrolysis via experiments and DFT calculations. 2nd International Conference on Biomass (ICONBM 2016) 50: 67-72. doi: 10.3303/CET1650012
35. K.L. Roja, N. Roy and J.M. Krishnan. Influence of aging on the rheological behavior of warm mix asphalt binders. *8*th RILEM International Symposium on Testing and Characterization of Sustainable and Innovative Bituminous Materials 11: 497-508. doi: 10.1007/978-94-017-7342-3_40
36. D. Krithika, H. Sharon, Philip Varghese, Ligy Philip and K.S. Reddy. Preliminary studies on treatment of black water by sustainable technology - a zero liquid discharge toilet. *Proceedings of Indo-German Conference on Sustainability 2016 – Exploring Planetary Boundaries and their Challenges and Opportunities* pp. 179-184, 27-28 February 2016
37. G. Madumathi, Ligy Philip and S. Murty Bhallamudi. Transport of multiple colloids in saturated porous media. *International Conference on Soil and Environment*, Bengaluru, India, 22-23 July 2016
38. Raj Kamal Singh, Ligy Philip and R. Sarathi. Disinfection of water using atmospheric pulse corona discharge: Effect of system parameters and mechanistic study. *IWPEEA -2016,* Liverpool, UK, 21-24 August 2016
39. Akashdeep Singh Oberoi and Ligy Philip. Acute toxicity assessment during the biodegradation of heterogeneous phenolic compounds using E.coli based bacterial bioassay. *Society for Environmental Toxicology and Chemistry (SETAC) Asia Pacific 2016 Conference*, NUS Singapore, 16-19 September 2016
40. Anu Rachel Thomas, Praveen Rosario A, Ligy Philip and Martin Kranert. Performance evaluation of in-vessel system for co-composting of Septage. *6th International Conference on Solid Waste Management* (6th IconSWM 2016), Jadavpur University, Kolkata, West Bengal, India, 24-26 November 2016
41. Anu Rachel Thomas, A. Praveen Rosario, Ligy Philip and Martin Kranert. Sustainable septage management through in-vessel co-composting. *Asia- Pacific Conference on Biotechnology for Waste Conversion 2016* (BioWC 16), Hong Kong Baptist University, Kowloon Tong, Hong Kong SAR, China, 6-8 December 2016
42. V. Arya, Ligy Philip and S. Murty Bhallamudi. Natural attenuation of pharmaceuticals in river bank filtration-pilot scale study. *Non-target Screening of Organic Chemicals for a Comprehensive Environmental Risk Assessment*, Congressi Stefano Franscini, Monte Verità, Ascona, Switzerland, 2016
43. Vineeth Pothanamkandathil, Raj Kamal Singh, Ligy Philip and Sarathi Ramanujam. Water treatment adopting pulsed power technique: effect of recycling ROS on dye degradation. *18*th Asian Conference on Electrical Discharges, IIT Madras, Chennai, India, 8-10 December 2016
44. C. Ramprasad and Ligy Philip. Greywater treatment and reuse using a baffled constructed wetland. *Seventh International Conference on Sustainable Built Environment*, Earl's Regency Hotel, Kandy, Sri Lanka, 16-18 December 2016
45. Anupama Surenjan, Ligy Philip and T. Pradeep. Low-cost treatment of PhaCs using visible light induced photocatalysis in a LED-based reactor. *Fourth International Conference on Advanced Oxidation Processes*, BITS Pilani, Goa, India, 17-20 December 2016
46. Raj Kamal Singh, Ligy Philip and R. Sarathi. Rapid removal and mineralization of 2-4- D in pulsed corona discharge treatment: effect of system matrices and degradation pathway. *Fourth International Conference on Advanced Oxidation Process,* AOP-2016, Goa, India, 17-20 December 2016
47. P. Vayalamkuzhi and V. Amirthalingam. Analysis on the level of safety of multi-lane rural highway under heterogeneous traffic condition. *95th Annual Meeting Transportation Research Board*, Washington D.C., United States, 10-14 January 2016
48. M.K. Nivedya, A. Veeraragavan and J.M. Krishnan. How to characterize the mechanical response of bitumen stabilized material? 4th International Conference Chinese European Workshop Event on Functional Pavement Design, Delft, 29 June-1 July 2016
49. Pankaj Rawat, M.K. Nivedya, Rajib B. Mallick and A. Veeraragavan. Relating quality of construction to performance of foamed asphalt mixes for maintenance and rehabilitation of pavements. *Eighth International Conference on Maintenance and Rehabilitation of Pavements*, 27-29 July 2016, Singapore
50. Rajneesh Gupta and S.P. Atul Narayan. Estimation of viscous and fatigue dissipation of bituminous concrete in repeated loading tests. *Proceedings of the 4th Chinese-European Workshop on Functional Pavement Design*, Delft, The Netherlands. CRC Press, 2016.
51. Agmodhu Mathruswamy, P.K. Athira and S.P. Atul Narayan. Compressible behavior of bituminous mixtures in creep recovery test in confinement. *Proceedings of the 4th Chinese-European Workshop on Functional Pavement Design*, Delft, The Netherlands. CRC Press, 2016

Distinguished visitors to the Department

Sl. No.	Name and Designations	Date	Purpose of visit
1.	Prof. Antonia Pacios, Technical University of Madrid, Spain	31 March 2016	Research on structural glass
2.	Prof. Peter Orris, Professor and Chief, Occupational and Environmental Medicine, University of Illinios Hospital and Health Sciences System, Chicago	13 September 2016	Research collaboration on Air Pollution and Human Exposure
3.	Dr. Sundar Manoharan, Vice Chancellor, Karunya University and five other officials	10 October 2016	Visited Civil Engineering Department laboratories in BSB to see the features of the existing MTS High Force Test System of 1200 KN capacity for better understanding of the equipment
4.	Bouygues Group, France	20 October 2016	Visited Civil Engineering Department and laboratories and had meetings with the HOD and faculty members
5.	Dean Prof. Kevin Truman, Assistant Dean Prof. Thomas and Director of Continuing Education Ms. Christina Davis of School of Computing and Engineering, University of Missouri, Kansas City	18 November 2016	Visited the Civil Engineering Department and had a meeting with faculty members
6.	Prof. Sai K. Vanapalli, Professor, Department of Civil Engineering, University of Ottawa, Canada	19 December 2016	Delivered a lecture to GT Group and had interactions with GT faculty members and students

Other Activities

- A programme, Civil Engineering Research Expo was organised from 3-4 March 2016. It was inaugurated by Prof. R. Nagarajan, Dean (IAR). A total of 38 students from 10 engineering colleges participated in the research expo.
- CEA Fest 2017 was organised by the department from 10-12 March 2017.

Inter-disciplinary group achievements of the Department

Sl. No.	Coordinator(s)	Title	Period
Conferences			
1.	Prof. S. Mohan	Environmental Systems Modeling	3-8 August 2016
2.	Prof. R. G. Robinson	Indian Geotechnical Conference, IGC2016	15-17 December 2016
3.	Dr. Lelitha Devi	Indo-US Workshop on Big Data Analysis for Transportation Engineering Systems	5-6 December 2016

Socially relevant activities

The Centre for Urbanisation, Buildings and Environment (CUBE) has been set up by the Department of Civil Engineering. It has been founded as a society and is not constrained by the rules of the institute with respect to hiring and other matters. Tamil Nadu Pollution Control Board and some other government agencies will be providing the seed money to get the centre started.

International collaboration update

Prof. Ligy Philip and Prof. B.S. Murthy have been coordinating the activities of the Indo-German Centre for Sustainability (IGCS) in the areas of water and waste management. The centre has facilitated exchange of faculty and students and promoted collaborative research between IIT Madras and Germany.

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 at the Indian Institute of Technology Madras in 1983. It currently offers B.Tech., Dual Degree, M.Tech., M.S. and Ph.D. programmes.

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.

New discipline/branch introduced

User Oriented Program (UoP) M.Tech. (CSE) with specialisation in Information Security for industry participants

New courses introduced

Sl. No.	Course No.	Title
1.	CS5820	Probability and Computing
2.	CS6044	Advanced Networking with Lab
3.	CS6115	Computational Number Theory for Cryptography
4.	CS6464	Concepts in Statistical Learning Theory
5.	CS6530	Applied Cryptography
6.	CS6570	Secure Systems Engineering
7.	CS6620	Advanced Computer Organisation and Architecture with Lab
8.	CS6595 GIAN 151003D06	Mobile and Cloud Security
9.	CS6596 GIAN 151003K04	High-Performance Parallel Computing
10.	CS6597 GIAN 151003K05	Foundations of Memory and Consistency Models
11.	CS6583 GIAN 161003K01	Distributed Network Algorithms: Foundations and Future Directions
12.	CS6839 GIAN 151003K02	Randomised Algorithms
13.	CS7011	Topics in Reinforcement Learning
14.	CS4900	Undergraduate Research Credits I
15.	CS4910	Undergraduate Research Credits II
16.	CS5102	Topics in Semantic Web Technology
17.	CS5705	Dual Degree Project I
18.	CS5715	Dual Degree Project II
19.	CS5815	Dual Degree Project III
20.	CS7015	Deep Learning
21.	CS7111	Topics in Cryptography
22.	CS6251	Computational Models of Cognition
23.	CS6023	GPU Programming

Students on roll as of September 2016+M.S. and Ph.D admission in January 2017

Programme	Year I	Year II	Year III	Year IV	Year V and Others	Total
B.Tech.	46	43	29	31	8 + 2	159
Dual Degree	15	15	28	28	26 + 2	114
M.Tech.	50	57	4	1	-	112
M.S.	19	16	5	5	3	48
Ph.D.	7	10	12	17	12 + 1	59
Total	**137**	**141**	**78**	**82**	**54**	**492**

Endowment prize instituted

1. Prof. C. Siva Ram Murthy Best B.Tech. Project Award: Endowment from Pradeep Madhavarapu of an amount of ₹ 2 lakh.
2. Institute Chair Award (for CSE Department): Established with the endowment amount of ₹ 50 lakh from Mr. Kris Gopalakrishnan.
3. YFRA Research Support Award (for CSE Department): Established with an endowment of ₹ 50 lakh from Mr. Kris Gopalakrishnan.
4. Student International Travel Award (for CSE Department): Established with an endowment of ₹ 50 lakh from Mr. Kris Gopalakrishnan.
5. Venky Harinarayan and Anand Rajaraman Visiting Chair Program: Set up with an endowment amount of USD 1 million

Students/scholars who attended conferences/seminars and symposia abroad/India

Sl. No.	Student/Scholar	Roll No.	Conference/Seminar/Symposia/ Workshop	Date and Venue	Financial Assistance from
Abroad					
1.	Jeena Prakash	CS13D003	ISCA Speech Prosody	31 May–3 June 2016, Boston University, Boston, USA	IITM
2.	Shashidhar G.	CS14S022	Languages and Compilers for Parallel Computing (LCPC)	28–30 September, 2016, Rochester, New York, USA	IITM
3.	Nauman Dawalatabad	CS14D210	Interspeech 2016	8–12 September, 2016, San Francisco, USA	IITM
4.	Arun Baby	CS15S016	19th International Conference on Text, Speech and Dialogue	12–16 September 2016, Brno, Czech Republic	IITM
5.	Arulkumar S.	CS15S023	European Conference on Computer Vision 2016	8–16 October 2016, Amsterdam, Netherlands	Prize money from winning contest
6.	Ditty Mathew	CS13D018	International Conference on Case Based Reasoning	31 October–2 November 2016 Atlanta, Georgia, USA	TCS Fellowship
7.	Saad Y. Sait	CS10D015	Annual IEEE Conference on Local Computer Networks (LCN)	7–10 November 2016, Dubai, UAE	Project
8.	Sudarsun Santhiappan	CS13D030	Asia-Oceania Top University League on Engineering (AOTULE) 2016 Conference	23–25 November 2016, Clear Water Bay, Kowloon Hong Kong	IAR Office
9.	Saurabh Kalikar	CS14D211	Google Ph.D. Student Summit on Compiler and Programming Technology	1 December 2016, Munich, Germany	Google
10.	Ganesh Chennimalai Sankaran	CS12D008	IEEE International Performance Computing and Communications Conference (IPCCC)	9–11 December 2016, Las Vegas, NV, USA	HCL Technologies
11.	Arulkumar S.	CS15S023	Neural Information Processing Systems-2016	5–10 December 2016, Barcelona, Spain	Grant from google
12.	Sahil Sharma	CS12B060	Association for the Advancement of Artificial Intelligence (AAAI) Conference on Artificial Intelligence	4–9 February 2017, San Francisco, USA	Google
13.	Jilt Sebastian	CS13D020	International Conference on Signal Processing and Communications 2016, International Conference on Acoustics, Speech and Signal Processing 2017	5–9 March 2017 (ICASSP) New Orleans, United States	IITM
India					
1.	Jilt Sebastian	CS13D020	IEEE SPCOM	12–15 June 2016, IISc, Bengaluru	IITM
2.	Karthik Pandia	CS14D001	IEEE SPCOM	12–15 June 2016, IISc Bengaluru	IITM
3.	Samik Banerjee	CS12D016	GPU Technology Conference (GTCs India)	6 December 2016, Renaissance Convention Center, Mumbai	IITM
4.	Madanagopal Ramachandran	CS14D009	International Conference on Communication Systems and Networks (COMSNETS)	6–8 January 2017, Bengaluru	Project
5.	Suvradip Chakraborty	CS14D012	Perspectives on Complexity Theory and Cryptography	10–13 January 2017, Bengaluru	IITM
6.	Monosij Maitra	CS15D010	Perspectives on Complexity Theory and Cryptography	10–13 January 2017, Bengaluru	IITM
7.	Samik Banerjee	CS12D016	Indian Conference on Computer Vision, Graphics and Image Processing	18–22 December 2016, Guwahati	IITM
8.	Arul Kumar S.	CS15S023	The Indian Conference on Computer Vision, Graphics and Image Processing-2016	18–22 December 2016, Guwahati	IITM
9.	Saurabh Kalikar	CS14D211	The IEEE International conference on High Performance Computing, Data and Analytics	19–22 December 2016, Hyderabad	IITM
10.	Ramya C.	CS13D025	Foundations of Software Technology and Theoretical Computer Science	11–16 December, Chennai	IITM
11.	Gnanambikai Krishnakumar	CS15S008	Cyber Security Awareness Week	November 2016, IIT Kanpur	IITM
12.	Karthik Pandia	CS14D001	International Conference on Signal Processing and Communications	June 2016, Bengaluru	IITM
13.	Sareena K. P.	CS15D400	ISEA Asia Security and Privacy Conference 2017	29 January-1 February 2017, Surat	IITM
14.	Gargi Mitra	CS15D303	Asia Security and Privacy conference 2017	29 January-1 February 2017, Surat	IITM
15.	Arjun Menon	CS14S005	International Conference on VLSI Design (VLSID)	7–11 January 2017, Hyderabad	IITM
16.	Vinod Ganesan	CS16S028	30th International Conference on VLSI Design (VLSID 2017)	7–11 January 2017, Hyderabad	IITM
17.	R. Madanagopal	CS14D009	9th International Conference on Communication Systems and Networks	4–8 January 2017, Bengaluru	Project
18.	Krishnaraj Sekhar P.V.	CS15S048	National Conference on Communications	2–4 March 2017, Chennai	IITM
19.	Lalitha K. S.	CS14S300	8th International Conference on Intelligent Human Computer Interaction, 2016	12–13 December 2016, Pilani	IITM
20.	Lalitha K. S.	CS14S300	10th Indian Conference on Computer Vision, Graphics and Image Processing	18–22 December 2016 Guwahati	IITM
21.	Gargi Mitra	CS15D303	6th International Conference on Security, Privacy and Applied Cryptographic Engineering	16–18 Dec 2016, Hyderabad	IITM
22.	Kevin Alex Mathews	CS14S030	Very Large Data Bases	5–9 September 2016, New Delhi	IIT Madras
23.	Rajeev Irny	CS15S005	Very Large Data Bases	5–9 September 2016, New Delhi	IIT Madras
24.	Gnanambikai Krishnakumar	CS15S008	6th International Conference on Security, Privacy and Applied Cryptographic Engineering	16–18 December 2016 Hyderabad	IITM
25.	Himanshi Jain	CS15S014	6th International Conference on Security, Privacy and Applied Cryptographic Engineering	14–18 December 2016, Hyderabad	IITM

Sl. No.	Student/Scholar	Roll No.	Conference/Seminar/Symposia/ Workshop	Date and Venue	Financial Assistance from
26.	Indrani Roy	CS15S020	6th International Conference on Security, Privacy and Applied Cryptographic Engineering	14–18 December 2016, Hyderabad	IITM
27.	Antony Balaraju	CS15D008	6th International Conference on Security, Privacy and Applied Cryptographic Engineering	14–18 December 2016, Hyderabad	IITM
28.	Prasanna Karthik V.	CS14D010	6th International Conference on Security, Privacy and Applied Cryptographic Engineering	14–18 December 2016, Hyderabad	IITM
29.	Vipin N. S.	CS16D010	23rd National Conference in Communications (NCC) 2017	2–4 March 2017, IIT Madras, Chennai	IIT Madras
30.	Akash Jain	CS15S037	42nd International Conference on Very Large Data Bases	5–9 September 2016, New Delhi	Project Funds

Students/scholars who won outside prizes and awards

Sl. No.	Student/Scholar	Roll No.	Prize	Awarded by
1.	Saurabh Kalikar	CS14D211	To attend Summit on Compiler and Programming Technology, Munich, Germany	Google
2.	Saurabh Kalikar, Jyothi Vedurada and Srikant Padala	CS14D211, CS13D201 and CS14S015	First Prize in HiPC Parallel Programming Challenge: Intel Track	HiPC
3.	V. Prasanna Karthik, S. L. P. S. K. Patanjali and Krishnakumar Gnanambikai	CS14D010, CS12D024 and CS15S008	First place in the CSAW Embedded Security Challenge 2016	CSAW, IIT Kanpur
4.	Adit Krishnan (DD/ CSE/2015), Sayan Ranu, Deepak Padmanabhan and Sameep Mehta	CS11B063	Best Paper Award, International Conference on Web Information Systems Engineering (WISE), 2016, Shanghai, China	WISE
5.	Ditty Mathew and Sutanu Chakraborti	CS13D018	Best Student Paper Award at International Conference on Case Based Reasoning (ICCBR), Atlanta, USA	ICCBR, Atlanta, USA
6.	Shouvick Mondal	CS16D004	Silver Medal for topping M.Tech. (CSE)	IIEST Shibpur

Student/scholars who won convocation/Institute Day prize

Sl. No.	Student/Scholar	Roll No.	Prize	Name of Donor
Convocation Day				
1.	S. K. Ramnandan	CS11B061	Mr. V. Srinivasan Memorial Prize Alumni Association Prize	
2.	Aditi R.	CS12B059	B. Ravichandran Memorial Prize	
3.	Patel Nirav Ashokbhai	CS14M036	CMC Prize	Computer Age Management Services Pvt Ltd
4.	Surabhi Abhimitra Karthikeya	CS14M048	Prof. H. N. Mahabala Endowment Prize	Late Prof.T. Radhakrishnan
5.	Gorla Sreekanth	CS14M018	Prof. H. N. Mahabala Endowment Prize	Late Prof. T. Radhakrishnan
Institute Day				
1.	G. Tejaswini	CS12B038	Duvvuru Sarada Award	
2.	Sarath Chandar A.P.	CS12S043	Sri Biswajit Sain Endowment Prize	

4.7.3. Faculty and their Activities

Faculty

Name and Qualifications	Major areas of specialisation
Professors	
C. Chandra Sekhar PhD. (IIT Madras)	Speech recognition, artificial neural networks, kernel methods
Deepak Khemani, Ph.D. (IIT Bombay)	Artificial intelligence, knowledge-based systems, natural language processing and neural networks
T.A. Gonsalves, Ph.D. (Stanford)	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
D. Janakiram, 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
V. Kamakoti, Ph.D. (IIT Madras)	Software for VLSI design, computational geometry, high performance computing
Krishna Moorthy Sivalingam, Ph.D. (SUNY Buffalo) (Head of the Department)	Wireless networks, optical networks, computer networks
C. Pandu Rangan, Ph.D. (IISc, Bengaluru)	Algorithms, parallel and VLSI algorithms, graph theory, computational geometry, randomized algorithms, computational learning theory, crypto-analysis
S.V. Raghavan, Ph.D. (IIT Madras)	E-banking, e-learning, intelligent search engines, multicasting, multimedia presentation systems, mobile agents, mobile wireless networks, next-generation web browsers, secure WAN design in heterogeneous systems
C. Siva Ram Murthy, Ph.D. (IISc, Bengaluru)	Parallel and distributed computing, real-time systems, wireless networks
P. Sreenivasa Kumar, 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
N.S. Narayanaswamy, Ph.D. (IISc, Bengaluru)	Algorithms, complexity theory, artificial intelligence
Associate Professors	
Anurag Mittal, Ph.D. (University of Maryland)	Computer vision, pattern recognition and image understanding
B. Ravindran, Ph.D. (University of Massachusetts, Amherst)	Machine learning, reinforcement learning, network analytics, deep learning
V. Krishna Nandivada, Ph.D. (University of California, Los Angeles)	Compilers, program analysis, programming languages, multicore systems
Sutanu Chakraborti, Ph.D. (The Robert Gordon University, UK)	Information retrieval, memory-based reasoning, machine learning
M.N. Jayalal Sarma, Ph.D. (Institute of Mathematical Sciences, Chennai)	Computational complexity theory, circuit complexity, algebra and computation
John Augustine, Ph.D. (University of California, Irvine)	Distributed algorithms, randomised algorithms
Assistant Professors	
B.V. Raghavendra Rao, Ph.D. (Institute of Mathematical Sciences, Chennai)	Computational complexity theory, algebraic complexity, combinatorial commutative algebra, descriptional complexity theory
Rupesh Nasre, Ph.D., (IISc, Bengaluru)	Compilers, parallelization, program analysis
Meghana Nasre, Ph.D, (IISc, Bengaluru)	Algorithms, graph theory, matching algorithms
Sayan Ranu, Ph.D., (University of California, Santa Barbara)	Graph indexing and mining, social network analysis, querying and mining spatio-temporal data, bioinformatics
Rajsekar Manokaran, Ph.D., (Princeton University, USA)	Complexity theory, algorithms, cryptography
Chester Rebeiro, Ph.D., (IIT Kharagpur)	Hardware and system security, side-channel analysis, cryptography, computer architecture, operating systems, VLSI
Aritra Hazra, Ph.D., (IIT Kharagpur)	Formal methods, VLSI CAD, design verification, reliability, fault-tolerant systems, embedded control scheduling, security verification
Mitesh Khapra, Ph.D, (IIT Bombay)	Statistical machine translation, text analytics, deep learning and crowdsourcing

Name and Qualifications	Major areas of specialisation
Shweta Agrawal, Ph.D (University of Texas, Austin)	Cryptography, Information theory
L. A. Prashanth, Ph.D (IISc, Bengaluru)	Reinforcement learning, stochastic optimization, multi-armed bandits

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

Sl. No.	Coordinator(s)	Title	Period
Conferences			
1.	Dr. B. Ravindran	Conference on Data Science (IKDD CoDS)	9–11 March 2017, IIT Madras
2.	Prof. P. Sreenivasa Kumar	Conference on Management of Data (COMAD)	8–10 March 2017, IIT Madras
Symposium			
1.	Dr. B. Ravindran	Data Science in India, SIGKDD 2016	15 August 2016, San Francisco, CA, USA
Workshop			
1.	Dr. B. Ravindran	Workshop on Deep Reinforcement Learning at IJCAI 2016	12 July 2016, New York, USA

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

Sl. No.	Faculty Member	Title	Institution	Period
Workshop				
1.	Dr. Shweta Agrawal	Workshop on Perspectives on Complexity Theory and Cryptography	IISc, Bengaluru	10–11 January 2017
Conference:				
1.	Prof. N. S. Narayanaswamy	International Conference on Algorithms and Discrete Applied Mathematics, CALDAM 2017	BITS Pilani, Goa Campus	16–18 February 2017
2.	Prof. Krishna Sivalingam	COMSNETS 2017 Conference	Bengaluru	5–7 January 2017

Special lectures delivered by faculty in other institutions

Sl. No.	Faculty Member	Topic	Institution	Date
1.	Prof. Krishna Sivalingam	Process Synchronization	QEEE Class on Operating Systems, IIT Madras	8–9 March 2016
2.	Dr. John Augustine	Algorithms	Karunya University, Coimbatore	10–11 March 2016
3.	Dr. John Augustine	Balls in Bins	PSG College of Technology, Coimbatore	11 March 2016
4.	Dr.John Augustine	Algorithms for Big Data + Inexact Computing	HP Enterprise, Bengaluru	23–24 March 2016
5.	Prof. C. Chandra Sekhar	Pattern Recognition Models	FDP on Machine Learning at JNTU Hyderabad	14 April 2016
6.	Prof. C. Chandra Sekhar	Pattern Recognition Models for Deep Learning	Workshop at SOA University, Bhubaneswar	11–12 May 2016
7.	Dr. Sayan Ranu	Indexing and matching noisy trajectories	Model Engineering College, Kochi	23 May 2016
8.	Prof. C. Chandra Sekhar	Computer Organization and Architecture	Faculty Development Program at GITAM University, Hyderabad	30 May-4 June 2016
9.	Dr. Chester Rebeiro	Bitcoins (under the hood)	NIT Trichy	3 June 2016
10.	Dr. Aritra Hazra	Formal Methods for Power Intent Validation of Integrated Circuits	ISI Kolkata	15 June 2016
11.	Prof. Hema A. Murthy	Building ASR and TTS Systems for Indian languages	Apple, Cupertino	17 June 2016
12.	Prof. C. Chandra Sekhar	Pattern Recognition Models for Deep Learning	Workshop at IIT Hyderabad	20 June 2016
13.	Dr. Sayan Ranu	Spatio-temporal data analytics	Indo-Norway workshop, IIIT Hyderabad	21 June 2016
14.	Dr. B. Ravindran	Hierarchical Reinforcement Learning using Spatio-Temporal Abstractions and Deep Neural Networks	IBM T. J. Watson Labs, New York	27 June 2016
15.	Dr. B. Ravindran	(Bridge) Correlational Neural Networks	Purdue University, Indiana, USA	29 June 2016
16.	Dr. Sayan Ranu	MANTRA: A Scalable Approach to Mining Temporally Anomalous Sub-trajectories	Amazon Research, Bengaluru	29 June 2016
17.	Prof. C. Chandra Sekhar	Deep Learning Models	Guest Lecture at VIT, Vellore	18 July 2016
18.	Prof. C. Chandra Sekhar	Statistical Models and Support Vector Machines for Pattern Recognition	Faculty Development Program on “Pattern Recognition” at Kolkata organized by NIT, Patna	26–27 July 2016
19.	Dr. Rupesh Nasre	Object Oriented Programming – Streams	QEEE, IIT Madras	3–5 August 2016
20.	Dr. Rupesh Nasre	Compilers - Introduction	QEEE, IIT Madras	10–12 August 2016
21.	Dr. V. Krishna Nandivada	Writing Efficient Parallel Programs	IndoSys 2016, IITM	20 August 2016
22.	Dr. B. Ravindran	Correlational Neural Networks	KLA Tencor, Milpitas, CA, USA	16 August 2016
23.	Dr. B. Ravindran	Summary of the Deep Reinforcement Learning Workshop	Deep AI workshop, IJCAI, New York City, USA	10 July 2016
24.	Dr. B. Ravindran	Combining Planning and Learning for Mobile Robots	Robotics Society of India Workshop, IIT Madras	19 July 2016
25.	Dr. B. Ravindran	Introduction to the Interdisciplinary Laboratory on Data Sciences	Microsoft Academic meeting on Machine Learning and Data Science, Bengaluru	8 August 2016
26.	Prof. Sukhendu Das	Mathematical Operations in Image Processing	KPRIET, Coimbatore	16 September 2016
27.	Prof. Krishna Sivalingam	Software Defined Networks: Applications to Wireless Networks	SRM University, Chennai	18 October 2016
28.	Dr. Chester Rebeiro	A Tutorial on Information Leaks in Systems	DRDO RIC, Chennai	23 September 2016
29.	Dr. Chester Rebeiro	Automatic Detection of Side Channel Vulnerabilities in System Software	TCS Research Interaction Day, IIT Madras	1 October 2016
30.	Dr. V. Krishna Nandivada	Writing Efficient Programs for Multicore Systems	Thiruvananthapuram, Invited lecture - HP-CAST	30 September 2016
31.	Dr. Sayan Ranu	Trajectory Analytics	TCS Research Interaction Day, IIT Madras	1 October 2016
32.	Dr. John Augustine	Robust and Efficient Computation in Dynamic Networks with Heavy Churn	1) MPII Paderborn 2) Workshop on Advances in Distributed Graph Algorithms (in conjunction with DISC 2016) 3) KTH, Sweden	20–23 September 2016 25 September 2016 3 October 2016
33.	Prof. C. Chandra Sekhar	Deep Learning Models	Invited talk at Workshop on Machine Learning in Intelligent Image Processing, SSN College of Engineering, Chennai	1 October 2016
34.	Prof. C. Chandra Sekhar	Support Vector Machines	Guest lecture in Department of ECE, SSN College of Engineering, Chennai	24 September 2016
35.	Dr. Sayan Ranu	Mining temporally anomalous sub-trajectories	Big Data Analysis for Transportation Engineering Systems, IIT Madras	6 December 2016

Sl. No.	Faculty Member	Topic	Institution	Date
36.	Dr. Sayan Ranu	Mining temporally anomalous sub-trajectories	Scalable Knowledge Bases, DRDO, Bengaluru	7 December 2016
37.	Dr. V. Krishna Nandivada	Writing Efficient Parallel Programs for Multicore Systems	Lecture organised by PALS team, IIT Madras	25 November 2016
38.	Prof. C. Chandra Sekhar	Support Vector Machines and Deep Learning Models	Workshop on Biological Databases and Machine Learning, VNIT, Nagpur	9 December 2016
39.	Dr. John Augustine	Design and Analysis of Distributed Algorithms	BMS College, Bengaluru	6 January 2017
40.	Dr. B. Ravindran	Learning Structured Policies using Deep Reinforcement Learning	CBR workshop, IISc, Bengaluru	11 January 2017
41.	Dr. B. Ravindran	Some studies using Hypergraphs	COMSNETS Workshop on Social Network Analysis, Bengaluru	8 January 2017
42.	Dr. Shweta Agrawal	Can you keep a secret? The art and science of cryptography	IMSc, Chennai	11 February 2017
43.	Dr. Jayalal Sarma	From Automata Theory to Computability and Complexity	Organized by IHRD, Kochi, Kerala	6 March 2017
44.	Dr. Jayalal Sarma	Solving Problems in Small Space: Space Complexity Theory	Organized by IHRD, in Kochi, Kerala	10 March 2017
45.	Dr. Jayalal Sarma	Connecting the Dots: Algorithms vs Automata Theory Courses	Model Engineering College, Thrikakara, Kochi	13 March 2017
46.	Dr. B. Ravindran	Learning Structured Policies in Deep Reinforcement Learning	IIT Guwahati	19 March 2017
47.	Dr. B. V. Raghavendra Rao	Coping with NP hardness: Approximation and Parameterized Algorithms	Model Finishing School, Ernakulam, Kerala	10 March 2017
48.	Prof. Krishna M. Sivalingam	Invited speaker at International Conference on Recent Trends in Computing and Information Technology (ICRTCIT-2017)	SRM University, Chennai	30 March 2017
49.	Prof. Krishna M. Sivalingam	Invited Speaker at one-day Workshop on Next-Generation Networks	Adhiparasakthi College of Engg, Vellore	11 March 2017
50.	Dr. B. Ravindran	Introduction to Reinforcement Learning The Second CCBR Workshop	IIT Madras	4 January 2017

Visits abroad by faculty

Sl. No.	Faculty Member	Country Visited	Date	Purpose of visit	Funding from
1.	S. V. Raghavan	California, USA	20–24 March 2016	OFC 2016 Participation in the Interactive Session	CPDA
2.	V. Krishna Nandivada	Barcelona	13–19 March 2016	Attend CGO+CC 2016	CPDA + Project funds
3.	C. Siva Ram Murthy	Doha, Qatar	3–6 April 2016	Attend 14th IEEE WCNC	CPDA
4.	Hema A. Murthy	Cambridge, Boston	14 May–11 Jun 2016	Simon Center for Brain Research, MIT, Speech Prosody	IIT Madras
5.	Krishna Sivalingam	Kuala Lumpur, Malaysia	23–27 May 2016	Attend IEEE ICC 2016 Conference, as Optical Networks Symposium Technical Program Co-Chair	CPDA
6.	B. Ravindran	New York City, USA	18 June–1 Jul 2016	Attending ICML 2016, IJCAI 2016, Visiting Purdue, MIT, CMU, and IBM TJ Watson.	Project funds, CCBR funds etc.
7.	Sukhendu Das	Las Vegas, USA	24 June–1 July 2016	International Conference on Computer Vision and Pattern Recognition (CVPR-16)	CPDA
8.	Anurag Mittal	Las Vegas, USA	24 June–1 July 2016	IEEE International Conference on Computer Vision and Pattern Recognition (CVPR-16)	CPDA
9.	John Ebenezer Augustine	Singapore	11–18 June 2016	International Research Workshops in Singapore	IAR Office
10.	P. Sreenivasa Kumar	Seattle, USA	12–27 July 2016	Microsoft Faculty Summit 2016	Microsoft and Project Funds
11.	Rupesh Nasre	Saarbrucken, Germany	18–20 July 2016	ISSTA 2016 Conference	CPDA
12.	B. Ravindran	San Francisco, USA	12–20 August 2016	Organized Session at ACM SIGKDD Conference	India Chapter of ACM SIGKDD
13.	Sayan Ranu	San Francisco, USA	13–17 August 2016	ACM SIGKDD conference	CPDA
14.	N. S. Narayanaswamy	Arhus, Denmark	20–28 August 2016	Algo 2016 - Workshop on Approximation and Online Algorithms	CPDA
15.	John Augustine	Paris, France Germany Sweden Berlin, Germany	26–30 September 2016 17–25 September 2016 1–4 October 2016 23–24 November 2016	DISC 2016 Visited MPII, Paderborn KTH Bridging the Continents conference conducted by DAAD	Alumni Funds Alumni Funds Alumni Funds DAAD
16.	B. Ravindran	San Francisco, USA	5–9 February 2017	Presenting a poster at AAAI 2017	Project Funds
17.	B. Ravindran	Toulon, France	4–26 April 2016	International Conference on Learning Representations (ICLR 2017)	Project Funds
18.	Hema A. Murthy	USA	8–15 September 2016	Interspeech 2018 (organised by IIT Madras) Papers accepted: 1) Acoustic Analysis of Syllables across Indian Languages 2) Two-Pass IB based Speaker Diarization System using Meeting-Specific ANN based Features	CPDA
19.	Hema A. Murthy	USA	13 September 2016	Improvement of Continuous Dysarthric Speech	CPDA
20.	B. Ravindran	Barcelona, Spain	4–11 December 2016	NIPS 2016	Project Funds
21.	Sayan Ranu	Spain	11–16 December 2016	A Scalable and Generic framework to Mine Top-k Representative Subgraph Patterns	CPDA
22.	M. N. Jayalal Sarma	Russia	14 May–4 June 2016	Professional Development	CPDA
23.	Pandu Rangan C.	Singapore	19–23 September 2016	Professional Development	Outside Source
24.	Pandu Rangan C.	Japan	3–9 December 2016	Professional Development	Outside Source
25.	Pandu Rangan C.	Japan	19–22 December 2016	Professional Development	Outside Source
26.	Pandu Rangan C.	USA	4–6 January 2016	Professional Development	Outside Source

Honours and awards obtained by faculty

Sl. No.	Faculty	Award	Awarded by	Awarded for	Date
i. Awards					
1.	V. Krishna Nandivada	Senior Member ACM, Senior Member IEEE	ACM and IEEE respectively	Professional body recognition for research contributions	2017
2.	V. Krishna Nandivada	Dr. A.P.J Abdul Kalam HPC Award - 2017	Cray	Efforts and outstanding contributions towards HPC	8 April 2017
3.	Prof. C. Siva Ram Murthy	J.C. Bose Fellowship	SERB, DST		July 2016
4.	Prof. V. Kamakoti	IBM Faculty Award	IBM		2016

Sl. No.	Faculty	Award	Awarded by	Awarded for	Date
5.	Dr. Rupesh Nasre	IITM's Young Faculty Recognition Award	IITM, with donation from Shri P Balasubramanian	excellence in teaching with high quality research	2016
6.	Aritra Hazra (IIT Madras) along with co-authors from IIT Kharagpur and Intel	Best Student Paper Award at 30th International Conference on VLSI Design, 2017, Hyderabad	VLSID 2017		2017
7.	Sutanu Chakraborti	Best Student Paper Award	ICCBR 2016		2016
8.	Sayan Ranu	Best Paper Award	WISE		2016

Fellowships of academies and professional societies

Sl. No.	Faculty Member	Year of admission
INAE		
1.	C. Siva Ram Murthy	2002
2.	C. Pandu Rangan	2006
3.	Krishna Sivalingam	2015
INSA		
1.	C. Siva Ram Murthy	2013
Others		
i. IEEE Fellow		
1.	C. Siva Ram Murthy	2012
2.	Krishna Sivalingam	2014
ii. ACM Distinguished Scientist		
1.	Krishna Sivalingam	2014

Editorial boards of journals

Sl. No.	Faculty Member	Position	Journal
1.	Krishna Sivalingam	Editor-in-Chief	*Photonic Network Communications* (Springer)
2.	V. Krishna Nandivada	Associate Editor	*Sadhana*
3.	Anurag Mittal	Associate Editor	*Computer Vision and Image Understanding* (Elsevier)
4.	Krishna Sivalingam	Member of editorial board	*Communications in Computer and Information Science* (CCIS) proceedings series (Springer)
5.	B. Ravindran	Associate Editor	*Sadhana*
6.	Aritra Hazra	Associate Editor	*IET Computers and Digital Techniques (IET-CDT)*

4.7.4. Design and Development Activities

New facilities added or major equipment procured

Sl. No.	Name of Equipment	Amount (in lakhs of ₹)
1.	HP Xeon Gen 9 Servers (six)	11

4.7.5. Research and Consultancy

Sponsored research projects

Sl. No.	Title	Period	Funding Agency	Amount (in lakh of ₹)	Co-ordinators
1.	J.C. Bose Fellowship	15 August 2016–14 August 2021	Department of Science and Technology (DST)	95	C. Siva Ram Murthy
2.	Distributed Algorithms for Dynamic Networks	27 March 2017–26 March 2020	DST	43.92	John Ebenezer Augustine and S. Krishna Moorthy
3.	Deploying Meghdoot open stack cloud suite on BOOS-MOOL at government scientific and research organisation	1 April 2017–31 March 2018	Ministry of Electronics and Information Technology	10	D. Janaki Ram
4.	Irregular Parallel Programs and Performance Determinacy - an Oxymoron?	29 December 2014–28 December 2017	IBM Corporation, USA	6.92	Nandivada Venkata Krishna
5.	Development of text to speech system in Indian Languages phase II	24 January 2012–30 June 2017	Department of Information Technology	209.16	Hema A. Murthy
6.	Provision of services in the performance of the tasks described within the framework of the compmusic European project for the analysis of the traditional carnatic style of music from India	1 April 2012–31 March 2017	University of P Fabra, Spain	83	Hema A. Murthy
7.	Development of an intelligent adaptive video monitoring and recording system	23 December 2013–28 April 2017	Department of Information Technology	149.04	Anurag Mittal Kamakoti V.
8.	Algebraic and parameterized complexities	27 March 2013–26 March 2018	DST	7	N. S. Narayanaswamy, John Ebenezer Augustine, M. N. Jayalal Sarma
9.	Optimizing parallel programs for multicore systems	14 May 2013–31 March 2017	Board of Research in Nuclear Sciences	23.28	Nandivada Venkata Krishna
10.	Analyzing parallel programs for performance	8 July 2013–7 July 2017	DST	13.46	Nandivada Venkata Krishna
11.	Indigenous 64-bit processor design	7 November 2013–6 November 2018	Defence Research and Development Organisation	353	V. Kamakoti
12.	Exploring techniques to optimize main memory of multi-core systems	28 January 2014–27 July 2017	DST	34.61	Madhu Mutyam
13.	Distributed Algorithms for Dynamic Networks	27 March 2017–26 March 2020	DST	43.92	John Augustine and Krishna Sivalingam

Industrial consultancy projects

Sl. No.	Faculty Member	Title	Industry	Amount (in lakh of ₹)
1.	V. Kamakoti	CSR: Development of open source platforms and capability creation initiative	City Union Bank Limited	100
2.	Sutanu Chakraborti and Rupesh Nasre	Towards Prescriptive Analytics: Adaptive Planning, Reasoning, Optimization and Decision-making Algorithms for the Accenture Cognitive Engine(ACE)	Accenture	16.5

RBIC projects

Sl. No.	Faculty Member	Title	Industry	Amount (in lakh of ₹)
1.	D. Janaki Ram	CARS project Minimalistic Object Oriented Linux Integration with Anurag's Hardened Linux (AHL)	DRDO	8.32
2.	B. Ravindran	Document Question Answering using Deep Learning	Amazon Development Centre (India) Private Limited	11.6403
3.	B. Ravindran	IIT Deep Learning Exploration	Buddi Health	10
4.	B. Ravindran and Rupesh Nasre	Business Rule Extraction from source code	Hitachi India Private Limited	11.5
5.	B. Ravindran	Use of Attention for Motion Prediction in Videos using Deep Learning	Intel Technology India Private Limited	36.8

Retainer Consultancy

Sl. No.	Faculty Member	Title	Industry	Amount (in lakh of ₹)
1.	B. Ravindran	Delivering Lecture on Big Data	Gyan Data Private Limited	1.2
2.	V. Kamakoti	Analysis of Patents in Modern Mobile Devices	Teleecare Network India Private Limited	2.5
3.	V. Kamakoti	Guidance for IT infrastructure improvement	STAR Health and Allied Insurance	27.6
4.	B. Ravindran	Consulting on Telecom Data Analytics	Xoanon Analytics Private Limited	20
5.	Krishna Moorthy S.	Software defined wide area network gateway	COSGrid Networks	4.41
6.	Kamakoti V.	Guidance for IT infrastructure improvement	STAR Health and Allied Insurance	27.6

Research publications of the faculty members and research scholars

Books/Book chapters: 3

Total number of papers published in referred national journals: 1

Total number of papers published in referred international journals: 38

Total number of papers presentation in national conferences: 8

Total number of papers presentation in international conferences: 47

Books/Books Chapters

1. D. Hutchison, T. Kanad, J. Kittler, J.M. Kleinberg, F. Mattern, J. C. Mitchell, M. Naor, C. Pandu Rangan, B. Steffen, D. Terzopoulos, D. Tygar, G. Weikum and M. Skrzypczak. Index problems for game automata. 2016. *Lecture Notes in Computer Science* (including subseries *Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics*). 9802. 71-89. doi:10.1007/978-3-662-52947-8_5
2. Rupesh Nasre. Scaling Context-Sensitive Points-to Analysis. Lambert Academic Publishing, 2016. ISBN: 978-3-659-97718-3
3. Arijit Khan and Sayan Ranu. Big Graphs: Querying, Mining and Beyond in *Springer Handbook on Big Data Technologies*. 2016

Paper published in refereed national journal

1. N. Gupta, S. Das, P. R. Chowdhury, L. K. Sinha, S. Banerjee. 2016. Detecting aircrafts from satellite images using saliency and conical pyramid based template representation. *Sadhana - Academy Proceedings in Engineering Sciences*. 41(10): 1155-1171. doi: 10.1007/s12046-016-0540-5

Papers published in refereed international journals

1. P. Dasgupta, P. P. Chakrabarti and Suvradip Chakraborty. 2016. Formal assessment of reliability specifications in embedded cyber-physical systems. *Journal of Applied Logic* 18: 71-104. doi: 10.1016/j.jal.2016.09.001
2. C. Siva Ram Murthy and M. Patra. 2016. Piggybacking assisted many-to-Many communication with efficient vehicle selection for improved performance in vehicular ad hoc networks. *Computer Networks* 108: 223-232. doi: 10.1016/j.comnet.2016.08.013
3. S. Bhattacharya, T. H. Dixit, C. Rebeiro, D. Mukhopadhyay and A. Chakraborty. 2016. Template attack on SPA and FA resistant implementation of Montgomery ladder. *IET Information Security* 10(5): 245-251. doi: 10.1049/iet-ifs.2015.0399
4. R. Thakur, S. Mishra, C. S. R. Murthy and V. J. Kotagi. 2016. Breathe to Save Energy: Assigning Downlink Transmit Power and Resource Blocks to LTE Enabled IoT Networks. *IEEE Communications Letters* 20(8): 1607-1610. doi: 10.1109/LCOMM.2016.2570224
5. K. M. Sivalingam, K. Krithivasan and V. Chellappan. 2016. A Centrality Entropy Maximization Problem in Shortest Path Routing Networks. *Computer Networks.* 104: 1-15. doi: 10.1016/j.comnet.2016.04.015
6. A. Sengupta, C. S. R. Murthy and M. Patra. 2016. On minimizing the system information age in vehicular ad-hoc networks via efficient scheduling and piggybacking. *Wireless Networks* 22(5): 1625-1639. doi: 10.1007/s11276-015-1056-3
7. K. M. Sivalingam and G. C. Sankaran. 2016. Optical Traffic Grooming-Based Data Center Networks: Node Architecture and Comparison. *IEEE Journal on Selected Areas in Communications* 34(5): 1618-1630. doi: 10.1109/JSAC.2016.2520214
8. S. Raghuraman, C.P. Rangan and Suvradip Chakraborty. 2016. A pairing-free, one round identity based authenticated key exchange protocol secure against memory-scrapers. *Journal of Wireless Mobile Networks, Ubiquitous Computing, and Dependable Applications* 7(1): 1-22
9. C. P. Rangan, A. K. Banerjee and K. Singh. 2016. Lattice-based identity-based resplittable threshold public key encryption scheme. *International Journal of Computer Mathematics* 93(2): 289-307. doi: 10.1080/00207160.2014.928286
10. C.S.R. Murthy and S. Mishra. 2016. An efficient location aware distributed physical resource block assignment for dense closed access femtocell networks. *Computer Networks* 94: 164-175. doi: 10.1016/j.comnet.2015.11.013
11. J. Dharanipragada and H. Haridas 2016. CAPS: A cloud-assisted approach to handle spikes in peer-to-peer web search. *Peer-to-Peer Networking and Applications* 9(1): 193-208. doi: 10.1007/s12083-014-0322-y
12. J. Sarma, K. S. Sunil and B. Komarath. 2016. On the complexity of l-reachability. *Fundamenta Informaticae* 145(4):471-483. doi: 10.3233/FI-2016-1371
13. R. Singh, C.S.R. Murthy and R. Thakur. 2016. An energy efficient framework for user association and power allocation in HetNets with interference and rate-loss constraints. *Computer Communications* 94:57-71. doi: 10.1016/j.comcom.2016.08.008
14. S. Balachandran and B. Panda. 2016. Expert prefetch prediction: An expert predicting the usefulness of hardware prefetchers. *IEEE Computer Architecture Letters* 15(1):13-16. doi: 10.1109/LCA.2015.2428703
15. A.N. Tentu, V. C. Venkaiah, A. A. Rao and D. K. Pattipati. 2016. Sequential secret sharing scheme based on level ordered access structure. *International Journal of Network Security* 18(5):874-881.
16. B. Panda, M. Mutyam and K. Raghavendra. 2016. PBC: Prefetched Blocks Compaction. *IEEE Transactions on Computers* 65(8):2534-2547. doi: 10.1109/TC.2015.2493533
17. M. Patra, C.S.R.Murthy and S. Babu. 2016. An efficient TDMA-based variable interval multichannel MAC protocol for vehicular networks. *Wireless Networks* 22(4):1365-1380. doi: 10.1007/s11276-015-1018-9
18. B. Li, R. Nasre and F. Liu. 2016. Efficient online cycle detection technique combining with Steensgaard points-to information. *Software-Practice and Experience* 46(5):601-623. doi: 10.1002/spe.2329
19. V. K. Nandivada and K. Gupta. 2016. Lexical state analyzer for JavaCC grammars. *Software-Practice and Experience* 46(6):751-765. doi: 10.1002/spe.2322
20. Rupesh Nasre, Y. N. Srikant and C. Unnikrishnan. 2016. Falcon: A Graph Manipulation Language for Heterogeneous Systems. *ACM Transactions on Architecture and Code Optimization* 12(4):1-27. doi: 10.1145/2842618
21. Sharmila Selvaraj, Selvi Deva, Akshayaram Srinivasan, Pandu Rangan Chandrasekaran and Sivanandam Sree Vivek. 2016. Stronger public key encryption system withstanding RAM scraper like attacks. *Security and Communication Networks* 9(12):1650-1662. doi: 10.1002/sec.1454
22. Manoj P.A.B. Kumar, Hema A. Murthy and Jilt Sebastian. 2016. An analysis of the high-resolution property of group delay function with applications to audio signal processing. *Speech Communication* 81:42-53. doi: 10.1016/j.specom.2015.12.008
23. Kavin kadhirselvan Angappan, Krishna M. Sivalingam, Dhananjay Bhor. 2016. Network and power-grid co-simulation framework for Smart Grid wide-area monitoring networks. *Journal of Network and Computer Applications* 59:274-284. doi: 10.1016/j.jnca.2015.06.016
24. Aditya Hegde, Krishna M. Sivalingam and Sakshi Patni. 2016. Load Balancing Techniques for Dynamic Gateway Selection in LTE Wireless Networks. *EAI Transactions on Mobile Communications and Applications* 16(7). doi: 10.4108/eai.20-6-2016.151518
25. Krishna M. Sivalingam and C. S. Ganesh. 2016. A Survey of Hybrid Optical Data Center Network Architectures. *Springer Photonic Network Communications Journal* 1-15. doi: 10.1007/s11107-016-0643-2
26. Sukhendu Das and Chiranjoy Chattopadhyay. 2016. Supervised Framework for Automatic Recognition and Retrieval of Interaction: A Framework for Classification and Retrieving Videos with Similar Human Interactions. *IET Computer Vision* 10(3):220-227. doi: 10.1049/iet-cvi.2015.0189
27. P. Sreenivasa Kumar and E. V. Vinu. 2016. Automated Generation of Assessment Tests from Domain Ontologies. *Semantic Web Journal.*
28. Sukhendu Das and Suranjana Samanta. 2016. Minimising Disparity in Distribution for Unsupervised Domain Adaptation by Preserving the Local Spatial Arrangement of Data. *IET Computer Vision* 10(5):443-449. doi: 10.1049/iet-cvi.2015.0322
29. Sukhendu Das and Chiranjoy Chattopadhyay. 2016. Use of Trajectory and Spatiotemporal Features for Retrieval of Videos with a Prominent Moving Foreground Object. *Signal Image and Video Processing (SIViP)* 10(2):319-326. doi: 10.1007/s11760-014-0744-2

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33. J. Augustine, T. Kulkarni, S. Sivasubramaniam. 2016. Leader Election in Sparse Dynamic Networks with Churn. November 2016. *Internet Mathematics* 12(6):402-418. doi: 10.1080/15427951.2016.1199391
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38. S. Burman, S. Potluri, D. Mukhopadhyay and K. Veezhinathan. 2016. Power consumption versus hardware security: Feasibility study of differential power attack on linear feedback shift register based stream ciphers and its countermeasures. *Journal of Low Power Electronics* 12(2):99-106. doi: 10.1166/jolpe.2016.1434

Papers presented in national conferences

1. Renu Sharma, Sukhendu Das and Padmaja Joshi. Rank Level Fusion in Multibiometric Systems. *Computer Vision, Pattern Recognition, Image Processing and Graphics (NCVPRIPG) 2015*
2. K. S. Lalitha, Sukhendu Das, Arun Menon and Koshy Varghese. Graph-based Clustering for Apictorial Jigsaw Puzzles of Hand Shredded Content-less Pages. 8th International Conference on Intelligent Human Computer Interaction (IHCI-2016), CSIR-CEERI, BITS Pilani, December 12-13, 2016
3. Samik Banerjee and Sukhendu Das. Eigen-Domain Transformation for Soft-Margin Multiple Feature-Kernel learning for Surveillance Face Recognition. *2nd Workshop on Computer Vision Applications, 10th Indian Conference on Computer Vision, Graphics and Image Processing (ICVGIP)*, IIT Guwahati, 18-22 December 2016.
4. Geethu Miriam Jacob and Sukhendu Das. Video Stabilization by Procrustes Analysis of Trajectories. *10th Indian Conference on Computer Vision, Graphics and Image Processing (ICVGIP-2016)*, IIT Guwahati, 18-22 December 2016
5. Samik Banerjee, Prateep Bhattacherjee and Sukhendu Das. GPU based face verification under Surveillance Scenario. GPU Technology Conference (GTCs India), Renaissance Convention Center, Mumbai, 6 December 2016.
6. K. S. Lalitha, Sukhendu Das, Arun Menon and Koshy Varghese. Simultaneous Reconstruction of Multiple Hand Shredded Content-less Pages using Graph-based Global Reassembly. *2nd Workshop on Computer Vision Applications, 10th Indian Conference on Computer Vision, Graphics and Image Processing (ICVGIP)*, IIT Guwahati, 18-22 December 2016.
7. C. Ramya and B. V. Raghavendra Rao. Sum of products of Read Once Polynomials. *36th IARCS Annual Conference on Foundations of Software Technology and Theoretical Computer Science (FSTTCS),* Chennai, December 2016.
8. *Geethu Miriam Jacob and Sukhendu Das. Video Stabilization by Procrustes Analysis of Trajectories. Indian Conference on Computer Vision, Graphics and Image Processing (ICVGIP-2016)*

Papers presented in international conferences

1. S.Y. Sait, H.A. Murthy and K. M. Sivalingam. Organization-Level Control of Excessive Internet Downloads. *41st IEEE Conference on Local Computer Networks, LCN 2016*. doi: 10.1109/LCN.2016.38
2. J. Sebastian and H. A. Murthy. Group delay based music source separation using deep recurrent neural networks. *11th International Conference on Signal Processing and Communications, SPCOM 2016*. doi: 10.1109/SPCOM.2016.7746672
3. D.S. Karthik Pandia, M.S. Saranya and H.A. Murthy. A fast query-by-example spoken term detection for zero resource languages. *11th International Conference on Signal Processing and Communications, SPCOM 2016*. doi: 10.1109/SPCOM.2016.7746600
4. S.A. Karthikeya, J.K. Vijeth and C.S.R. Murthy. Leveraging Solution-Specific Gateways for cost-effective and fault-Tolerant IoT networking 2016. *IEEE Wireless Communications and Networking Conference, WCNC 2016*. doi:10.1109/WCNC.2016.7564811
5. F. Singh, J.K. Vijeth and C.S.R. Murthy. Parallel opportunistic routing in IoT networks. *IEEE Wireless Communications and Networking Conference, WCNC 2016*. doi:10.1109/WCNC.2016.7564825
6. P. Banerjee, P. Yawalkar and S. Ranu. MANTRA: A scalable approach to mining temporally anomalous sub-trajectories. *22nd ACM SIGKDD International Conference on Knowledge Discovery and Data Mining, KDD 2016*. doi: 10.1145/2939672.2939846
7. S. Bhattacharya, C. Rebeiro and D. Mukhopadhyay. A formal security analysis of even-odd sequential prefetching in profiled cache-timing attacks. *5th International Workshop on Hardware and Architectural Support for Security and Privacy, HASP 2016*. 10. doi: 1145/2948618.2948624
8. V. Chauhan, N. Gala and V. Kamakoti. ChADD: An ADD Based Chisel Compiler with Reduced Syntactic Variance. *29th International Conference on VLSI Design, VLSID 2016.* doi: 10.1109/VLSID.2016.44
9. A. Subramaniam, V.Patel, A. Mishra, P. Balasubramanian and A. Mittal. Bi-modal first impressions recognition using temporally ordered deep audio and stochastic visual features. *14th European Conference on Computer Vision, ECCV 2016.* doi: 10.1007/978-3-319-49409-8_27
10. Shankar Balachandran and S. Koroth. Subclasses of baxter permutations based on pattern avoidance. *11th International Computer Science Symposium in Russia, CSR 2016.* doi: 10.1007/978-3-319-34171-2_14
11. K.V.S. Dileep and S. Chakraborti. Eager to be lazy: Towards a complexity-guided textual case-based reasoning system. *24th International Conference on Case-Based Reasoning Research and Development, ICCBR 2016.* doi: 10.1007/978-3-319-47096-2_6
12. D. Bhor, K. Angappan and K. M. Sivalingam. Network and power-grid co-simulation framework for Smart Grid wide-area monitoring networks. 2016. doi: 10.1016/j.jnca.2015.06.016
13. D. Mathew and S. Chakraborti. Competence guided casebase maintenance for compositional adaptation applications. *24th International Conference on Case-Based Reasoning Research and Development, ICCBR 2016.* doi: 10.1007/978-3-319-47096-2_18
14. G. Devi, C. Chauhan and S. Chakraborti. Conceptualizing curse of dimensionality with parallel coordinates. *30th AAAI Conference on Artificial Intelligence, AAAI 2016*
15. A. Sharma, D. Deodhare, S. Chakraborti, P. Sreenivasa Kumar and P. Partha Mitra. Case representation and retrieval techniques for neuroanatomical connectivity extraction from pubmed. *24th International Conference on Case-Based Reasoning Research and Development, ICCBR 2016.*doi: 10.1007/978-3-319-47096-2_25
16. J. Augustine, Jr. W.K. Moses, A. Redlich and E. Upfal. Balanced allocation: Patience is not a virtue. *27th Annual ACM-SIAM Symposium on Discrete Algorithms, SODA 2016*
17. V. Gangal, B. Ravindran and R. Narayanam. HEMI: Hyperedge majority influence maximization. *2nd International Workshop on Social Influence Analysis (SocInf) 2016*
18. A. Sankar, S. Chakraborty and V.K. Nandivada. Improved MHP analyses. *25th International Conference on Compiler Construction, CC 2016.* doi: 10.1145/2892208.2897144
19. A. Baby, N.L. Nishanthi, A.L. Thomas and H.A. Murthy. A Unified Parser for Developing Indian Language Text to Speech Synthesizers. *19th International Conference on Text, Speech, and Dialogue (TSD).* 2016. doi:10.1007/978-3-319-45510-5_59
20. N. Gala, A. Menon, R. Bodduna, G.S Madhusudan and V. Kamakoti. Tutorial: SHAKTI Processors: An Open-Source Hardware Initiative. *29th International Conference on VLSI DESIGN / 15th International Conference on Embedded Systems (VLSID).* 2016 doi: 10.1109/VLSID.2016.130
21. Saurav Kumar Ghosh, Akash Mondal, Souradeep Dutta, Aritra Hazra and Soumyajit Dey. Synthesis of Scheduler Automata Guaranteeing Stability and Reliability of Embedded Control Systems. *20th International Symposium on VLSI Design and Test.* 2016

22. Jeena Prakash and Hema A. Murthy. An analysis of the distribution of syllables in prosodic phrases of stress-timed and syllable-timed languages. *ISCA Speech Prosody*. doi: 10.21437/SpeechProsody.2016-11
23. Nauman Dawalatabad, Srikanth Madikeri, C. Chandra Sekhar and Hema A. Murthy. Two-Pass IB based Speaker Diarization System using Meeting-Specific ANN based Features. *InterSpeech*. 2016. doi: 10.21437/Interspeech.2016-714
24. Swarna Kamlam Ravindran and Anurag Mittal. CoMaL: Good Features to Match on Object Boundaries. *IEEE International Conference on Computer Vision and Pattern Recognition (CVPR)*. 2016. doi: 10.1109/CVPR.2016.43
25. Samik Banerjee and Sukhendu Das. Soft-Margin Learning for Multiple Feature-Kernel Combinations with Domain Adaptation, for Recognition in Surveillance Face Dataset. *IEEE International Conference on Computer Vision and Pattern Recognition*. 2016. Doi: 10.1109/CVPRW.2016.36
26. Manikantan Srinivasan, Vijeth J. Kotagi and C. Siva Ram Murthy. A Q-Learning Framework for User QoE Enhanced Self-Organizing Spectrally Efficient Network Using a Novel Inter-Operator Proximal Spectrum Sharing. *IEEE Journal on Selected Areas in Communications*. doi: 10.1109/JSAC.2016.2614952
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28. Sudhir Samrit and Rupesh Nasre. EagerMerge: An Optimistic Technique for Efficient Points-to Analysis. *International Symposium on Software Testing and Analysis (ISSTA) 2016*. doi: 10.1145/2931037.2931045
29. Venu V. Gopal, Girraj Pahariya, Daniel D. Ferrante, J. Jaikishan, Sukhendu Das and Partha P. Mitra. Automated Detection of GFP Labelled Nuclei in Whole-Brain Light-Microscopic Data sets for Mouse with High Precision and Recall. *Society for Neuroscience Workshop*, San Diego, USA, 12-16 November 2016
30. Ganesh Chennimalai Sankaran and Krishna M. Sivalingam. Time synchronization mechanisms for an Optically Groomed Data Center Network. *IEEE International Performance Computing and Communications Conference (IPCCC)*, Las Vegas, NV, USA, December 2016. doi: 10.1109/PCCC.2016.7820652
31. Dheepikaa Natarajan and Sayan Ranu. A scalable and generic framework to mine top-k representative subgraph patterns. *IEEE International Conference on Data Mining (ICDM)*, December 2016. doi: 10.1109/ICDM.2016.0048
32. Ditty Mathew and Sutanu Chakraborti. Competence Guided Casebase Maintenance for Compositional Adaptation Applications. *24th International Conference on Case Based Reasoning*, Atlanta, Georgia, USA, October 2016. 10.1007/978-3-319-47096-2_18
33. Arulkumar Subramaniam, Vismay Patel, Ashish Mishra, Prashanth Balasubramaniam and Anurag Mittal. Bi-modal First Impressions Recognition using Temporally Ordered Deep Audio and Stochastic Visual Features. *14th European Conference on Computer Vision (ECCV). ChaLearn Looking at People Workshop*, Amsterdam, Netherlands, October 2016. doi: 10.1007/978-3-319-49409-8_27
34. Adit Krishnan, P. Deepak, Sayan Ranu and Sameep Mehta. Select, Link and Rank: Diversified Query Expansion and Entity Ranking using Wikipedia. *Web Information Systems Engineering (WISE)*, Shanghai, China, November. 2016. doi: 10.1007/978-3-319-48740-3_11
35. Abhinav Jangda and Rupesh Nasre. FastCollect: Offloading Generational Garbage Collection to Integrated GPUs. *Compilers, Architecture, and Synthesis for Embedded Systems (CASES)*. Pittsburgh, PA, USA, 2-7 October 2016. doi: 10.1145/2968455.2968520
36. Saad Y. Sait, Hema A. Murthy, S. Krishna and M. Sivalingam. Organization-Level Control of Excessive Internet Downloads. *IEEE Intl Conference on Local Computer Networks (LCN) 2016*. Dubai. doi: 10.1109/LCN.2016.38
37. K. V. S. Dileep and Sutanu Chakraborti. Eager to be lazy: Towards a Complexity-guided Textual Case-Based Reasoning System. *24th International Conference on Case Based Reasoning*. Atlanta, Georgia, November 2016. doi: 10.1007/978-3-319-47096-2_6
38. John Augustine, Chen Avin, Mehraneh Liaee, Gopal Pandurangan, Rajmohan and Rajaraman. Information Spreading in Dynamic Networks under Oblivious Adversaries. *International Symposium on DIStributed Computing (DISC)*, Paris, France, September 2016. doi: 10.1007/978-3-662-53426-7_29
39. T. Arulkumar, Moitreya Chatterjee and Anurag Mittal. Deep Neural Networks with Inexact Matching for Person Re-Identification. *Thirtieth Annual Conference on Neural Information Processing Systems (NIPS)*, Barcelona, Spain, December 2016.
40. G. Shashidhar and Rupesh Nasre. Automatic Code Generation for Graph Algorithms on GPUs. *The 29th International Workshop on Languages and Compilers for Parallel Computing*, Rochester NY, USA, 28-30 September 2016. doi:10.1007/978-3-319-52709-3_18
41. Dheepikaa Natarajan and Sayan Ranu. A scalable and generic framework to mine top-k representative subgraph patterns. *IEEE International Conference on Data Mining (ICDM)*, 13-15 December 2016, Barcelona, Spain. doi: 10.1109/ICDM.2016.0048
42. Arulkumar Subramaniam, Moitreya Chatterjee and Anurag Mittal. Deep Neural Networks with Inexact Matching for Person Re-Identification. *30th Annual Conference on Neural Information Processing Systems (NIPS)*, Barcelona, Spain, December 2016
43. B. V. Raghavendr Rao and Christian Engles. On Hard Instances of Non-Commutative Permanent. *Thang N. Dinh, My T. Thai: Computing and Combinatorics - 22nd International Conference, COCOON 2016*. doi: 10.1007/978-3-319-42634-1_14
44. Jithin Vachery and Aritra Ghosh. Inferring borrower network in a microfinancing framework (KIVA). *International Conference on Data Science and Engineering (ICDSE), 2016*. doi: 10.1109/ICDSE.2016.7823960
45. V. Gangal, B. Ravindran and R. Narayanam. HEMI: Hyperedge Majority Influence Maximization. In the proceedings of the *Second IJCAI Workshop on Social Influence Analysis (SocInf 2016)*, New York City, July 2016. doi: arXiv:1606.05065
46. J. Rajendran, M. M. Khapra, S. Chandar and B. Ravindran. Bridge Correlational Neural Networks for Multilingual Multimodal Representation Learning. *In the Proceedings of the Fifteenth Annual Conference of the North American Chapter of the Association for Computational Linguistics: Human Language Technologies*.
47. P. Nahas, F. James, B. Ravindra and S. V. Shah. RRT-HX: RRT with Heuristic Extend Operations for Motion Planning in Non-Holonomic Systems. *ASME IDETC/CIE Mechanisms and Robotics Conference*. doi: 10.1115/DETC2016-60547

Distinguished visitors to the Department

Sl. No.	Name and Designation	Date of Visit	Purpose of Visit
1.	Prof. Brett Kirk and Prof. Andrew Rohl, Curtin University, Perth, Australia	2 March 2016	Research Collaboration Discussion
2.	Professors Sara Eriksen Hans-Jürgen Zepernick and Markus Fiedler, Blekinge Institute of Technology (BTH), Sweden	8 March 2016	Research Collaboration Discussion
3.	Prof. Joseph Davis, Dr. Martin Mackey and Dr Claire Hiller, University of Sydney, Australia	29 March 2016	Research Collaboration Discussion
4.	Dr. Manas Khatua, Singapore University of Technology and Design, Singapore	8 June 2016	Research seminar
5.	Prof. K. Thulasiraman, University of Oklahoma, USA	13 June 2016	Research seminar
6.	Aravind Srinivasan	17–31 July 2016	Co-teach GIAN Course; Accept DAA Award
7.	Anisur Rahaman Molla, Freiburg University, Germany	28 July to 15 August 2016	Talk and interaction with faculty and scholars
8.	Gopal Pandurangan, University of Houston, USA	31 July–13 August 2016	GIAN course, talk and interaction with faculty members, scholars/students
9.	Mriganka Sur, Simon Center for Brain Research MIT (CCBR Chair)	17–18 August 2016	Interaction with people working with Brain Research; review of work done by IIT Madras
10.	Uday Khedker, IIT Bombay	30 August 2016	Give a research seminar and interaction with faculty and students
11.	Pritam Gharat, Ph.D. student, IIT Bombay	30 August 2016	Give a research seminar

Sl. No.	Name and Designation	Date of Visit	Purpose of Visit
12.	Partha Mitra (CCBR Chair)	19–29 July 2016	Interact with faculty, research staff and students
13.	Prof. Jeff Ullman, Stanford University	5–7 October 2016	Lectures and a seminar as part of Venky Harinarayan and Anand Rajaraman Visiting Chairs program
14.	Mr. Lennart Edblom, Senior Lecturer, Computing Science, Umea University, Sweden	29 September 2016	Faculty Interaction
15.	Dr. Swaprava Nath, CMU	7 October 2016	Seminar
16.	Dr. P. Balamurugan, INRIA, France	21 October 2016	Seminar
17.	Mr. Venkat Narayanan, Ph.D. scholar, CMU, USA	25 October 2016	Seminar
18.	Pradeep Ravikumar, CMU, USA	22 December 2016	Seminar
19.	Ananth Kalyanaraman, Washington State University, USA	16 December 2016	Seminar
20.	Yadu Vasudev, TU Dortmund, Germany	14 December 2016	Seminar
21.	Jayant Haritsa, Indian Institute of Science, Bengaluru	2 December 2016	Seminar
22.	Arun Rajkumar, Xerox Research Centre India, Bengaluru	2 December 2016	Seminar
23.	Dirk Pleiter and Wouter Klijn, University of Regensburg, Germany	1 December 2016	Seminar
24.	A.P. Prathosh, Xerox Research Center India, Bengaluru	30 November 2016	Seminar
25.	Vijay Sivaraman, University of New South Wales, Australia	11 November 2016	Seminar
26.	K. C. Sivaramakrishnan, University of Cambridge, UK	10 November 2016	Seminar
27.	Suresh Jagannathan, Purdue University, USA	19–23 December 2016	GIAN course
28.	Mr. Kuldeep Meel, Rice University	4 January 2017	Seminar
29.	Mr. Kris Gopalakrishnan (DAA)	5 January 2017	Faculty/student interaction
30.	Dr. Tanmoy Chakraborty, University of Maryland	17 January 2017	Seminar
31.	Dr. Srikanta Bedathur, IBM IRL	30 January 2017	Seminar
32.	Dr. Harish Guruprasad, IBM IRL	31 January 2017	Seminar
33.	Dr. Maya Ramanath, IIT Delhi	3 February 2017	Seminar
34.	Dr. Vyas Sekar, CMU	10 January 2017	Seminar
35.	Dr. Arvind Krishnamurthy, University of Washington	10 January 2017	Seminar
36.	Dr. Sriram Chellappan, University of South Florida	11 January 2017	Seminar
37.	Mr. Ramakrishna Padmanabhan, University of Maryland	13 January 2017	Seminar
38.	Dr. A.V. Sreejith, University of Warsaw, Poland	14 February 2017	Seminar
39.	Dr. Sairam Gujrada, MPI Saarbrucken	13 February 2017	Seminar
40.	Tanmai Gopal, Founder, Hasura	17 January 2017	Seminar
41.	Hari Subramoni (OSU)	24 January 2017	Seminar
42.	Praveen Jayachandran (IBM IRL)	7 February 2017	Seminar
43.	C. S. Ganesh (HCL)	14 February 2017	Seminar
44.	Karthik Sankaranarayanan	7 March 2017	CS4880 lecture
45.	Mohan Parthasarathy	14 March 2017	CS4880 lecture
46.	Radhika Hegde	21 March 2017	CS4880 lecture
47.	Dr. Bharat Rawal, Pennsylvania State University, USA	9 March 2017	Interaction with the Department
48.	Mr. Ayon Chakraborty, SUNY Stony Brook, USA	24 March 2017	Seminar

4.7.6. Other Activities of the Department

International collaboration achievements

Faculty visit

Sl. No.	Faculty Member	Purpose of Visit	Date and Venue
1.	S. V. Raghavan	High Level Committee, National Knowledge Network (NKN)	2 March 2016, NKN HQ, New Delhi
2.	P. Sreenivasa Kumar	Faculty Selection Committee	2–3 March 2016, Indian Institute of Space Technology, Trivandrum
3.	John E. Augustine	External Member in the DC Meetings	10–11 March 2016, Karunya University Coimbatore
4.	P. Sreenivasa Kumar	Conferences on Mgmt. of Data (COMAD) and Data Sciences (CoDS)	11–15 March 2016, Pune
5.	S. V. Raghavan	Visitor's Award Function	14 March 2016, Rashtrapati Bhavan, New Delhi
6.	Krishna Sivalingam	Board of Studies Meeting	8 April 2016, NIT Trichy
7.	Krishna Sivalingam	Faculty Selection Committee Meeting	18 April 2016, IIITDM, Kancheepuram
8.	John E Augustine	Project Review and Supervisory Group (PRSG) Meetings for NMEICT Projects	26–28 April 2016 (online meetings)
9.	Sukhendu Das	RAC - DRDO DELHI	27 April 2016, RAC Timarpur, New Delhi
10.	Krishna Sivalingam	Ph.D. Viva Voce Exam	4 May, 2016, SRM University Main Campus, Chennai
11.	C. Chandra Sekhar	Faculty Selection Committee Meeting for IIT Tirupathi and IIT Palakkad	9 May, 2016, IIT Madras, Chennai
12.	Krishna Sivalingam	Faculty Selection Committee Meeting for IIT Tirupathi and IIT Palakkad	9–10 May, 2016, IIT Madras, Chennai
13.	Chester Rebeiro	Milestone 1 meeting for CARS project from DRDO	10 June 2016, CAIR, Bengaluru
14.	C. Chandra Sekhar	Faculty Selection Committee Meeting	6–7 June, 2016 GITAM University, Hyderabad
15.	Sutanu Chakraborti and Rupesh Nasre	Project Meeting on Natural Language Generation	15 June, 2016, Accenture Labs, Bengaluru
16.	Sayan Ranu	Indo-Norway Workshop	21–22 June, 2016, IIIT Hyderabad
17.	Hema A. Murthy	Summer School on Speech Signal Processing	4–8 July 2016, DAIICT, Gandhinagar
18.	Rupesh Nasre	National Supercomputing Mission	14 July 2016, IISc, Bengaluru
19.	V. Krishna Nandivada	NSM R&D extended group meeting.	14 July 2016, Bengaluru
20.	Jayalal Sarma	MHRD PRSG Meeting	18 July 2016, Agra
21.	John Augustine	5th Annual Mysore Park workshop in Theoretical Computer Science	14–17 August 2016, Mysore
22.	B. Ravindran	Session on "Data Science in India", co-located with ACM SIGKDD Conference	15 August 2016, San Francisco
23.	Sayan Ranu	Session on "Data Science in India", co-located with ACM SIGKDD conference	15 August 2016, San Francisco
24.	Prof. Krishna M. Sivalingam	ISI Faculty Promotion Review Committee	13 September 2016, ISI Kolkata
25.	Prof. Krishna M. Sivalingam	Ph.D. Comprehensive Exam Committee	17 October 2016, NIT Trichy
26.	Dr. Rupesh Nasre	IBM Day at IITM	3 October 2016, IIT Madras
27.	Dr. Aritra Hazra	VLSI Design Conference 2017 TPC Meeting	1 October 2016, Bengaluru

Sl. No.	Faculty Member	Purpose of Visit	Date and Venue
28.	V. Krishna Nandivada	SERB project review meeting	2 December 2016
29.	Krishna M. Sivalingam	Conducted Ph.D. Viva Voce Exam	27 December 2016, IISc, Bengaluru
30.	Rupesh Nasre	National Supercomputing Mission -- HR group (meeting about HPC courses)	7 February 2017 CDAC, Pune
31.	Hema A. Murthy	Board of studies meeting, Christ University, Kengeri Bengaluru	21 January 2017, Christ University, Bengaluru
32.	Hema A. Murthy	Promotion interviews served as an expert	30 January 2017 CDAC, Chennai
33.	Krishna Sivalingam	ACM India Academic Research Summit	24–25 January 2017, IISc, Bengaluru
34.	Krishna Sivalingam	IIITD&M Kanchipuram Senate Meeting	20 January 2017 Chennai
35.	Krishna Sivalingam	DST INSPIRE Faculty Monitoring and Interaction Meeting	22–23 January 2017, SSN College, Chennai
36.	V. Krishna Nandivada	Sadhana EB meeting	28–29 January 2017, Bengaluru
37.	V. Krishna Nandivada	ACM Council meeting	20–21 January 2017, Kolkata
38.	Anurag Mittal	PRSG Meeting for NMEICT project	22 February 2017, Bengaluru
39.	Shweta Agrawal	DST INSPIRE Monitoring-Interaction Meeting	22–23 January 2017 SSN College, Chennai
40.	Shweta Agrawal	Indo-Israel grant review	24 January 2017 IISc, Bengaluru
41.	P. Sreenivasa Kumar	Sectoral Monitoring Committee (SMC) for CSIR	31 January to 1 February 2017, CSIR-National Chemical Laboratory
42.	V. Krishna Nandivada	IIT Palakkad, Faculty screening	25–26 March 2017, IIT Palakkad
43.	V. Krishna Nandivada	NIT Trichy, Compre meeting, Department of CA	27–28 April 2017, NIT Trichy
44.	B. Ravindran	IIT Palakkad, Faculty screening	25–26 March 2017 IIT Palakkad
45.	B. Ravindran	IISc, PhD Viva Voce	28 March 2017, IISc, Bengaluru
46.	B. Ravindran	IITG, PhD Viva Voce	18–19 March 2016, IITG
47.	C. Chandra Sekhar	SRM University, Amaravati, A.P., Faculty selection	1–2 March 2016, Chennai
48.	C. Chandra Sekhar	IIIT Kottayam, Faculty selection	25 March 2016, Trivandrum
49.	Krishna M. Sivalingam	Advisory Board Meeting, Dept. of IT, Thiagarajar College of Engg.	4 March 2017, Madurai
50.	Krishna M. Sivalingam	PhD Comprehensive Exam Committee, Dept. of CSE, NIT Trichy	10 March 2017, Trichy
51.	Sukhendu Das	Faculty Screening committee; ISI Kolkata	14 March 2017, ISI Kolkata
52.	Sukhendu Das	Project proposal presentation, DeiTy, MCIT, New Delhi	10 March 2017 MCIT, New Delhi
53.	V. Kamakoti	Faculty Selection, IIT Hyderabad	31 March 2017, IIT Hyderabad
54.	V. Kamakoti	Standing Finance Committee for Microprocessor Development Program, MiEty, New Delhi	28 March 2017, MiEty, New Delhi

Student visit

Sl. No.	Students	Purpose of Visit	Date and Venue
1.	Savitha Sam Abraham	Proceedings of the 29th International Florida Artificial Intelligence Research Society Conference (FLAIRS)	16–18 May 2016, Florida
2.	Jeena J. Prakash	Speech Prosody 2016	31 May–3 June 2016 Boston, USA
3.	Swapnil Gupta	International Conference on Computational and Theoretical Computer Science	6–7 June 2016, New York, USA
4.	Prashanth. B	Robust Features for Computer Vision Workshop, IEEE Conference on Computer Vision and Pattern Recognition	26 June–1 July 2016, Caesars Palace, Las Vegas, USA
5.	Nauman Abdul Razzak Dawlatabad	Interspeech 2016	8–12 September 2016 Hyatt Regency, San Francisco, USA
6.	Arun	19th International Conference on Text Speech and Dialogue	12–16 September 2016, Brno, Czech Republic
7.	Shashidhar G.	29th International Workshop on Languages and Compilers for Parallel Computing	28–30 September 2016, Rochester, New York, USA
8.	Anbarasu S.	24th International Conference on Case- Based Reasoning (ICCBR 2016)	31 October to 2 September 2016, Atlanta, Georgia, USA
9.	Arul Kumar S.	Neural Information Processing Systems (NIPS) 2016	5–10 December 2016, Barcelona, Spain
10.	Akshay Gadre	Research internship	15 May–30 July 2016, University of Massachusetts, Amherst MA, USA

4.8. Department of Electrical Engineering

4.8.1. Introduction

The Department of Electrical Engineering comprises several laboratories categorized into five major areas:

EE1 – Communications, Signal Processing and Communication Networks EE2 – Power Systems, Power Electronics and High Voltage EE3 –Microelectronics, MEMS and Analog and Digital VLSI EE4 – Control Systems, Measurements and Instrumentation

EE5 – Photonics, Optical Communications and RF EE6 – Integrated Circuits and Systems

All the faculty members in the department hold Ph.D. degrees from reputed universities.

EE1 - Communications, Signal Processing and Communication Networks

Facilities:

- Vector network analyzer
- Circuit simulation and layout tools
- RF frequency generator and spectrum analysers
- Wide-band noise generator
- Logic analysers
- DSP emulators
- FPGA and SDR Platforms for rapid prototyping
- Digital communication trainer
- HP ADS system

EE2 - Power Systems, Power Electronics and High Voltage

Facilities:

Machines and Drives Laboratory

- Motor generator sets
- Cradle-type DC dynamometer
- Regulating transformer
- Torque transducer
- Data acquisition systems
- Vector visualiser
- Special-purpose AC supply generators
- 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
- Multilevel inverters

High Voltage and Power System Laboratory

- HV testing transformer (800 Kv, 400 kva)
- Lightning impulse generator (1.5 MV, 37.5kj)
- 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, MEMS and Analog and Digital VLSI Facilities

Microelectronics and MEMS Lab

- Class 100 /Class 1000 Clean Rooms
- Laser writer for mask making
- E-beam writer
- E-beam metallisation unit
- Sputtering units
- Furnaces for oxidation and diffusion
- Rapid thermal processing
- Double-sided mask aligner and exposure systems
- PECVD systems
- LPCVD system
- Reactive ion etching systems
- DRIE
- Substrate Bonder
- Wire bonder
- Dicing machine
- Glove box for organic electronics

Characterisation

- Spectroscopic ellipsometer
- Interferometric 3D surface profiler
- Four-point probe
- Confocal microscope
- Tabletop SEM
- Wafer probe stations
- Semiconductor parametric analyser
- Multifrequency LCR meters
- Cantisens
- Doppler vibrometer
- Solar simulator
- Device and MEMS simulation tools

EE4 – Control Systems, Measurements and Instrumentation Facilities

Control Laboratory

- Twin Rotor MIMO System
- Furuta Pendulum
- Mobile Inverted Pendulum Robot
- Quadcopters
- FPGA-based Mobile Robot
- LEGO Starter and Expansion Kits
- Optitrack Motion capture System
- Private Cloud Setup
- Simulation Software (MATLAB, SPICE, Keil Microvision)
- FGPA Boards, LPC 2378-based Microcontroller Boards

Measurements and Instrumentation Laboratory

- Precision indicating instruments
- Standard R, L and C components
- Virtual instrumentation laboratory with ELVIS
- Meter calibrator
- Pressure calibrator
- Energy meter testing desk
- Instrument transformer calibrator
- High current AC and DC supply units

- Biomedical instrumentation (ultrasonic and optical)

EE5 – PHOTONICS, OPTICAL COMMUNICATIONS AND RF Facilities

- Fibre optic educational kit/laboratory
- Experimental optics laboratory with lightwave measurement unit, BER tester, optical spectrum analyzer
- Fibre grating fabrication
- Fibre laser laboratory
- Integrated optoelectronics laboratory
- Class 100,000 clean room for development of space applications
- Ground station for nano-satellite communication and control

EE6: INTEGRATED CIRCUITS AND SYSTEMS Facilities

- FPGAs and hardware accelerators
- Hardware accelerators for simulations and computation
- Tools for rapid evaluation of DSP implementations

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

EE6: Integrated Circuits and Systems

Students on roll as of September 2016 + M.S. and Ph.D. admission in January 2017

Programme	Year I	Year II	Year III	Year IV	Year V	Year V and others	Total
B.Tech.	70	73	73	67	-	-	283
Dual Degree	58	58	55	62	60	-	293
M.Tech.	49	58	--	--	--	--	107
M.S.	56	43	31	18	9	--	157
Ph.D.	65	55	45	43	28	12	248
Total	**298**	**287**	**204**	**190**	**97**	**12**	**1088**

Student/scholar who attended conference/seminar/symposia/workshop in abroad/India

Sl. No.	Name	Title	Date and Venue
1.	Pradeep Sarvepalli, Student: Arun B. Aloshious, Manoj G. Gowda, R. KaushikSenthoor	2nd IMSc School on Quantum Information	5-17 December 2016, Chennai
2.	Shanthi Pavan	XXV Workshop on Advances in Analog Circuit and Design (AACD 2016)	26-28 April 2016
3.	Centre for NEMS and Nanophotonics (CNNP)	NEMS and Nanophotonics	28 April 2016
4.	Ashok Jhunjhunwala	Green Homes, Green Building and Green Transport E-health experiments driven by IITM over last decade and a half	Blekinge Institute of Technology, Sweden, 16-17 June 2016
		A Novel Technology for Financial Inclusion	IT University, Sweden, 20 June 2016
5.	Amit Vikram, Varun Kelkar, Rewanth Ravindran and Harishankar Ramachandran	Space-based Proton Electron Energy Detector (SPEED) to study precipitations from the Van Allen Radiation Belts caused due to Seismo-Electromagnetic Emissions	CSES 2nd International Workshop, Beijing, 24-25 June 2016

Sl. No.	Name	Title	Date and Venue
Talks			
1.	Dr. Krishna Shenai, Fellow of IEEE, NMAM Institute of Technology	Power Electronics for 21st Century Energy Economy?	EE Department, 29 April 2016
2.	Dr. Deepak Divan, Georgia Institute of Technology	Distributed Grid Control - A Leap- Frog Opportunity for Emerging Markets?	EE Department, 31 March 2016
3.	Prof. Susmita Sur-Kolay, ISI Kolkata	Physical Design-aware Fault-tolerant Quantum Circuit Synthesis	CSE Department, 31 March 2016
4.	Dr. Kiran Kuchi, IIT Hyderabad	Waveforms and multiple access for 5 G	EE Department, 5 April 2016
5.	Prof. Rana Adhikari, Caltech	The LIGO Gravity Wave Detector	EE Department, 14 April 2016
6.	Mr. Dayal Math, Founder and CEO, ENERGYLY	Energy Analytics for Small and Medium-sized Enterprises (SME) and Homes	EE Department, 23 April 2016
7.	Prof. Krishna Shennai	Power Electronics for 21st Century Energy Economy	EE Department, 29 April 2016
8.	Mr. Giorgia Zucchelli, MathWorks	Design of Wireless MIMO Systems: From RF Specifications to Architecture Exploration	EE Department,29 April 2016

Short-term courses/workshops/seminars/symposia/conferences organised by facultymembers

Sl. No.	Coordinator(s)	Title / Activities	Place / Date
1.	Anjan Chakravorthy	Microelectronics: From Fundamentals to Devices	11 July 2016, Department of EE, IITM

Short-termcourses/workshops/seminars/symposia/conferences/training/teaching improvement attended by faculty members in academic institutions and public sector undertakings

Sl. No.	Name	Title of Paper Presentation	Date and Venue
Workshops			
1.	Shanthi Pavan	XXV Workshop on Advances in Analog Circuit and Design (AACD 2016)	26-28 April 2016
2.	The Centre for NEMS and Nanophotonics (CNNP)	NEMS and Nanophotonics	28 April 2016
3.	Ashok Jhunjhunwala	Green Homes, Green Building and Green Transport E-health experiments driven by IITM over last decade and a half	Blekinge Institute of Technology, Copenhagen, Sweden 16-17 June 2016
		A Novel Technology for Financial Inclusion	IT University, Sweden, 20 June 2016

Sl.No.	Faculty Member	Name of the Meeting	Organised by/Place	Date
Meetings				
1.	Ashok Jhunjhunwala	2ndMeeting of the Committee of Joint Secretaries	Ministry of New and Renewable Energy (MNRE), New Delhi	4 May 2016
2.		First meeting of working group to suggest appropriate voltage for DC application	Ministry of Power (MoP), New Delhi	6 May 2016
3.		Jamnalal Bajaj Awards 2016	Bajaj Bhavan, Nariman Point, Mumbai	7 May 2016
4.		SEBI Technical Advisory Committee Meeting	SEBI Bhavan, Mumbai	11 May 2016
5.		Launch of IIT Mandi Catalyst and Press Conference	Conference room, IIT Mandi	14-16 May 2016
6.		44thMeeting of Kendriya Vidyalaya Sangathan Academic Advisory Committee	VS Head Quarters, Dronacharya Hall, New Delhi 110016	27 May 2016
7.		BIRAC Audit Committee Meeting	Biotechnology Industry Research Assistant Council (BIRAC), New Delhi	7 June 2016
8.		BIRAC Board Meeting		

Sl.No.	Faculty Member	Name of the Meeting	Organised by/Place	Date
9.	Ashok Jhunjhunwala	Meeting of Committee of Joint Secretaries Automobiles on Electric Power and Alternate Fuels	Ministry of New and Renewable Energy (MNRE), New Delhi	8 June 2016
10.		QEEE – AICTE MHRD Meeting	Ministry of Human Resource Development (MHRD),New Delhi	9June 2016
11.		UGC- meeting of Empowered Committee	University of Grants Commission (UGC), New Delhi	30June 2016
12.		SEBI Technical Advisory Committee	Securities and Exchange Board of India (SEBI), New Delhi	7 July 2016
13.		One-Day Workshop on Electric Mobility at Indian Oil R&D Faridabad	Indian Oil Corporation Limited, Research and Development Centre, Faridabad	11 July 2016
14.		2nd Meeting of the IIIT Council –MHRD	MHRD, New Delhi	12 July 2016
15.		SEBI - Technical Advisory Committee (TAC) meeting	SEBI, Mumbai	11 August 2016
16.		BIRAC Audit Committee Meeting	BIRAC, Delhi	18 August 2016
17.		BIRAC Board Meeting	BIRAC, Delhi	18 August 2016
18.		50th meeting of the Council of IITs under the Chairpersonship of Union Minister for Human Resource Development	IIT Delhi	23August 2016
19.		Solar Energy Research Institute for India and the United States (SERIIUS) Fifth Project Monitoring Committee Meeting	Indo-U.S. Joint Clean Energy Research and Development Centre (JCERDC), Bengaluru	1 September 2016
20.		Living Science Presentation	International Centre For Genetic Engineering And Biotechnology (ICGEB), New Delhi.	13 September 2016
21.		Meeting of the Advisory Committee for the Shanti Swarup Bhatnagar Prize for Science and Technology 2016	Council Of Scientific And Industrial Research(CSIR), New Delhi	
22.		Technology Information Forecasting and Assessment Council (TIFAC) Technology Vision 2035, Launch of Technology Roadmap Document on ICT	TIFAC, Bengaluru	17 September 2016
23.		SEBI - Technical Advisory Committee (TAC) meeting	SEBI, Mumbai	26 September 2016
24.		5th Convocation at IIT Varanasi	Banaras Hindu University (BHU), Varanasi	17 October 2016
25.		CET (College of Engineering Trivandrum) Board Meeting	Department of Electronics and Communication Engineering, College of Engineering Trivandrum, Kerala	24 October 2016
26.		Geo-Information and Communication Technology (ICT) Project Advisory and Monitoring Committee (PAMC) Meeting	Interdisciplinary Cyber Physical Systems Division (ICPS),Department of Science and Technology (DST), New Delhi	1 November 2016
27.		77th Meeting of the University Grants Commission (UGC) Empowered Committee	UGC, New Delhi	9 November 2016
28.		Low Voltage Direct Current (LVDC) Panel Meeting	Bureau of Indian Standards HQs, New Delhi	17 November 2016
29.		Screening and PISC / DHI (Department of Heavy Industry) Meeting	Ministry of Heavy Industries and Public Enterprises, New Delhi	21 November 2016
30.		Review of Standalone project of Assam	Rural Electrification Corporation Limited, New Delhi	13 December 2016
31.		Audit and Board Meeting of BIRAC	BIRAC, New Delhi	
32.		Federation of Indian Chambers of Commerce and Industry (FICCI) Higher Education Summit 2016	All India Council for Technical Education (AICTE) Office, New Delhi	14 December 2016
33.	Ashok Jhunjhunwala	Minutes of the meeting of the Empowered Committee –UGC	UGC, New Delhi	10 January 2017
34.		Sub-group on Higher and Technical Education and Skill Development of Chief Ministers Advisory Council Meeting - CMAC	Dr.S.Radhakrishnan Shiksha Sankul, Jaipur	11 January 2017
35.		TAC Meeting	SEBI, Mumbai	17 January 2017
36.		Meeting - WHITE Space Technology	At Centre for Development of Telematics (C-DOT) Campus, New Delhi	25 January 2017
37.		6thProject Review Committee Meeting of Technology Development and Demonstration Program (TDDP) with S.K. Dynamics - Department of Scientific and Industrial Research (DSIR)	Technology Bhavan, New Delhi	13 February 2017
38.		JCERDC - Smart Grids and Energy Storage Invite for Presentation	Indo-US Science and Technology Forum, New Delhi	20 February 2017
39.		4thSteering Committee Meeting of Uninterrupted Direct Current (UDC) Project	Ministry of Power, New Delhi	23 February 2017
40.		The High-Level Working Session on Transformative Mobility Solutions	National Institution for Transforming India (NITI Aayog), New Delhi	27-28 February 2017

Visits abroad by faculty

Sl. No.	Faculty Member	Country Visited	Date	Purpose of visit	Funding from
1.	Balaji Srinivasan	New Mexico, USA	5-13 March 2016	Director, Energy Annual Symposium	--
2.	Shanthi Pavan	California, USA	21-25 March 2016	Delivered lecturers	--
3.	Ashok Jhunjhunwala	Pennsylvania, USA	7-9 April 2016	Business of Humanity Conference	--
4.	A.N. Rajagopalan	Germany	1 May-30 June 2016	Research stay at Technische Universitat Munchen	--
5.	Mohanasankar Sivaprakasam	Finland	14-22 May 2016	Meeting in Finland regarding ongoing project and a new collaboration held at VTT, Finland	--
6.		Italy	15-18 May 2016	IEEE Symposium on Medical Measurements and Applications 2016	
7.	Nagendra Krishnapura	Montreal, Canada	22-25 May 2016	2016 International Symposium on Circuits and Systems	--
8.		Columbia University, New York, USA	26 May 2016	Expansion and Compression of Analog Pulses Using Bandwidth Scaling of Continuous-Time Filters	
9.	Enakshi Bhattacharya	IC-IMPACTS Summer Institute, University of Alberta, Canada	29 May-3 June 2016	Presented a talk on Silicon Nanoporous membranes as a resource person	--
10.	Bijoy Krishna Das	APRI, Gwangju Institute of Science and Technology Gwangju, South Korea	5-12 June 2016	Discussion about an international collaboration	--
11.	Shanthi Pavan	EPFL, Switzerland	20-24 June 2016	Delivering lecturers for a course organized by MEAD Electronics	--
12.	Ashok Jhunjhunwala	Sweden, Munch and Copenhagen	21-23 June 2016	Attend exhibitions and solar project on storage technologies	--
		Sweden	16-17 June 2016	Visit to Blekinge Institute of Technology	--

Sl. No.	Faculty Member	Country Visited	Date	Purpose of visit	Funding from
13.	Anil Prabhakar	Sweden	20 June 2016	ICT for Disadvantaged Communities workshop, IT University	--
14.	V. Jagadeesh Kumar	Germany	21June 2016	LION Smart GmbH	--
15.	Ashok Jhunjhunwala	Germany	22 June 2016	Conference on Inter Solar Europe 25	---
16.	Andrew Thangaraj	Spain	10-15 July 2016	2016 IEEE International Symposium on information Theory	Partial Financial Assistance from CPDA
17.	Krishna Vasudevan	Germany	10-19 July 2016	IGCS Summer School 2016 on Biomass and Coal	---
18.	Ravinder David Koilpillai	United Kingdom	14-15 July 2016	Second International UK-India Bilateral Workshop on Sustainable Energy and Smart Grid	---
19.	Anil Prabhakar	USA	20-30 July 2016	Research collaboration on neural imaging with Professor Mriganka Sur, MIT under the Centre for Brain Research at IIT Madras	---
20.	Harishankar Ramachandran	China	23-25 August 2016	Second International Workshop at China Selsmo-Electromagnetic Satellite (CSES) Mission	Partial Financial Assistance from CPDA
21.	Mohanasankar Sivaprakasam	USA	16-19 August 2016	Attend and to give oral presentation at the joint US-India Meeting on Blood Pressure Measurement Technologies for Low-Resource Settings/visit Universities	---
22.	Anil Prabhakar	USA	20-30 July 2016	International Visit: Picower Institute at MIT	--
23.	Ramkrishna Pasumarthy	USA	--	22nd International Symposium on Mathematical Theory of Networks and Systems	--
24.	Krishna Vasudevan	Germany	6-9 September 2016	Kick off meeting for strategic partnership with Aachen	--
25.	Ashok Jhunjhunwala	Cambridge, United Kingdom	7-9 September 2016	27thEuropean Regional International Telecommunication Society Conference	--
26.	Deepa Venkitesh	Sydney, Australia	5-8 September 2016	Poster presentation at the Photonics and Fiber Technology Conference	CPDA
27.	S. Umesh	San Francisco, USA	8-14 September 2016	Interspeech 2016 and project discussion	--
28.	N. Lakshminara samma	Aachen, Germany	6-8 September 2016	Kickoff workshop as part of the strategic partnership of the sister Universities RWTH Aachen	--
29.	Andrew Thangaraj	Cambridge, United Kingdom	11-14 September 2016	2016 IEEE Information Theory Workshop to held at Cambridge	CPDA
30.	Uday Khankhoji	Cairns, Australia	19-23 September 2016	International Conference on Electromagnetic Advanced Applications 2016	--
31.	Nagendra Krishnapura	University of Texas, Dallas	22 September 2016	A Model-Agnostic Technique for Simulating Per-Element Distortion Contributions	--
32.	Anjan Chakravorthy	New Jersey, USA	25-27 September 2016	2016 Bipolar/BiCMOS Circuits and Technology Meeting (BCTM 2016)	CPDA
33.	Andrew Thangaraj	Cambridge, United Kingdom	11-14 September 2016	2016 IEEE Information Theory Workshop	CPDA
34.	R. Sarathi	Nagaoka University of Technology, Japan	5-8 October 2016	5thInternational GIGAKU Conference	--
35.	S. Anirudhan	Abu Dhabi, UAE	16-19 October 2016	2016 IEEE 59 Midwest Symposium on circuits and systems (MWSCAS)	--
36.	A.N. Rajagopalan	University of Amsterdam, Netherland	10-14 October 2016	14thEuropean conference on Computer Vision ECCV 2016	--
37.	V. Pramitha	Stuttgart, Germany	25 August-15 October 2016	MPI for Intelligent System	--
38.	Krishna Vasudevan	Nuremberg, Germany	22-24 November 2016	SPS IPC Drives Exhibition	--
39.	Srirama Srinivas	Singapore	22-25 November 2016	IEEE TENCON-2016	--
40.	Mohanasankar Sivaprakasam	New York, USA	3-10 December 2016	Evolution and Revolution in Anatomic Pathology Automation, Machine-Assisted Diagnostics, Molecular Prognostics and Theranostics	--
41.	Nagendra Krishnapura	San Diego, USA	11-13 January 2017	Technical Program Committee Meeting of the 2017 Custom integrated Circuits Conference	--
42.	San Franciso, USA	5-9 February 2017	2017 International Solid State Circuits Conference	--	
43.	Shanthi Bhattacharya	California, USA	28 January-4 February 2017	SPIE Photonics West Conference	--
44.	Shanthi Pavan	USA	5-9 February 2017	Technical Program Committee Meeting of the 2017 Custom Integrated Circuits Conference	--
45.	Balaji Srinivasan	United Kingdom	14 February-4 March 2017	United Kingdom for research collaboration with University of Southampton	
46.	Radhakrishna Ganti	Geneva, Switzerland	14-22 February 2017	ITU-R Working Group 5D meeting	
47.	Anil Prabhakar	New South Wales, Australia	27 February-10 March 2017	IITM-UTS Knowledge Technology Partnership	

Visits abroad by students

Sl. No.	Roll No.	Name of Student	Place visited	Duration	Purpose
1.	EE10D038	Abhijith Punnapurath	Amsterdam	8-16 October 2016	European Conference on Computer Vision (ECCV 2016)
2.	EE12D024	Ravi Kumar Kolla	Monticello, IL, USA	26 September-2 October 2016	Allerton Conference 2016
3.	EE12D033	M. Gopal Krishna Kamath	Buenos Aires, Argentina	15-27 September 2016	IEEE Multi-conference on Systems and Control 2016
4.	EE12D008	P. Venkata Siva Sai Prasad	Buenos Aires, Argentina	15-27 September 2016	IEEE Multi-conference on Systems and Control 2016
5.	EE15S050	M. S. Sharath	Athens, Greece	17-21 October 2016	International Conference on Medical Image Computing and Computer-Assisted Intervention (MICCAI 2016)
6.	EE12D034	Shon Yadav	New Jersey, USA	25-27September 2016	Bipolar/BiCMOS Circuits and Technology Meeting (BCTM) 2016

Sl. No.	Roll No.	Name of Student	Place visited	Duration	Purpose
7.	EE12D007	Suresh Balanethiram	New Jersey, USA	25-27September 2016	BCTM 2016
8.	EE12D034	Shon Yadav	New Jersey, USA	25-27September 2016	BCTM 2016
9.	EE13D202	Antony Mampilly	Montery CA, USA	8 October- 5 November 2016	Presentation of paper at ISITA 2016

Books and monographs authored/co-authored

Books		
1.	"Understanding Delta-Sigma Data Converters, 2nd Edition"	Shanthi Pavan, Richard Schreier, Gabor Temes Wiley and IEEE Press
2.	"Design and Fabrication of Diffractive Optical Elements with Matlab"	Shanti Bhattacharaya Anand Vijayakumar, SPIE Press

Editorial boards of journals

Sl. No.	Faculty Member	Position	Journal Name
1.	**Dr. Krishna Jagannathan**	Member	***Performance Evaluation*** (PEVA), Elsevier

Presentation and talk

Sl. No.	Faculty Member	Title	Organiser and Place	Date
1.	Ashok Jhunjhunwala	Electric Vehicles, an Opportunity for India	Indian Oil Corporation Limited, Research and Development Centre, Faridabad	July 2016
2.	Presentations: Mobile driving energy efficiency in Managing Power in off-grid homes	Cambridge campus of Anglia Ruskin University, Cambridge	7-9 September 2016	
3.	Green Homes for India enabling India get 50% of its power from solar by 2030	Smart Villages and AC/DC conference at International Crops Research Institute for the Semi-Arid Tropics, Hyderabad	23 September 2016	
4.	Arun D. Mahindrakar	Position and Reduced Attitude Stabilization of Spherical Robot, as part of a course on Nonlinear Control Design	IIST, Thiruvananthapuram	24 June 2016
5.	Deleep R. Nair	Microelectronics Industry in India, International Conference of Forum for Global Knowledge	IIT Madras	Dec 2016
6.	B. Arun Karuppaswamy	AC Micro Grids	ABB Global Industries and Services Private Limited, Chennai,	Feb 2017

Faculty/students/scholars who won outside/Institute prizes and awards

Sl. No.	Faculty Member/Student/ Scholar	Roll No.	Award and Title	Awarded by	Date
1.	Anoop Narayan Bhat (former M.S. student) and Nagendra Krishnapura (Guide)	-	2016 Techno-inventor Award, Masters category	India Electronics &Semiconductor Association, Vision Summit 2017	2017
2.	Dr. Prabhjot Kaur and Ankit Poddar (research scholar); Guide: Prof. Ashok Jhunjhunwala	EE14S007	Best Paper Award for 'Green Building Air Conditioning System with Variable Frequency Drive and Variable Air Flow Controller'	IIT Madras Research Park	18-20 December 2016
3.	Anoop Narayan Bhat (former M.S. student); Guide: Nagendra Krishnapura	--	2016 Techno-inventor Award, Masters category	India Electronics and Semiconductor Association	2017
4.	**Priyanka Shinde** (research scholar) and **Prof. K. Shanti Swarup**	EE15S035	**Best Paper Presentation** for paper, **'Stackelberg – Game Based Scheduling of Electric Vehicles'**	5th International Conference on Electrical Energy and Networks (ICEEN 2017),	25-27 March 2017

Sponsored Research Projects

Sl. No.	Title	Period	Funding Agency	Amount (₹ in lakhs)	Coordinators
1.	Implementation of Full-Sized Pilots of Uninterrupted Direct Current (UDC) Supply to Households	8 June 2015-7 June 16	Ministry of Power	8035	Ashok Jhunjhunwala
2.	5G Research and Building Next Gen Solutions for Indian Market	19 November 2015-18 November 2018	Department of Electronics and Information Technology	954.66	S.Aniruddhan
3.	Quantum Key Distribution	10 February 2016-9 February 2017	Office of the Principal Scientific Adviser	351	Anil Prabhakar
4.	Special Manpower Development Program for CHIPS to System Designs		Department of Electronics and Information Technology	147.51	Nagendra Krishnapura
5.	Modeling, Analysis and Implementation of 10kWStep-up Converter	17 February 2016-16 February 2018	Defence Research and Development Organisation	95.48	N. Lakshminarasamma
6.	Algorithms for Smart Grids- INSPIRE		Department of Science and Technology	86.27	Naveen Kolar Purushothama
7.	Statistical Estimation of Electromagnetic Radiation Using Large Data Analysis of Cellphone Signal Levels	8 July 2015-7 January 2017	Department of Science and Technology	81.01	Bhaskar Ramamurthi
8.	Experimental Investigation and Modeling of SOI based p-i-n/p-n Phase-shifters and Variable Optical Attenuators with Submicron Waveguides	30 December 2015-29 December 2018	Department of Science and Technology	60.70	Bijoy Krishna Das
9.	Load Commutated Inverter-fed Active-Reactive Induction Motor (ARIM) Drive for Medium Voltage Drive Application	30 December 2015-29 December 2018	Department of Science and Technology	59.68	Kamalesh Hatua
10.	Demonstration of Phase Sensitive Amplification for Advanced Modulation Formats	25 January 2016-24 January 2019	Department of Science and Technology	54.94	Deepa Venkitesh
11.	Control and Coordination of Microgrid System with Multiple Renewable Resources and Storage Systems	14 May 2015-13 May 2017	Department of Science and Technology	48.82	Mahesh Kumar
12.	16 Bit 5MS/s Analog to Digital Converter	12 October 2015-11 October 2018	Indian Space Research Organisation	46.92	Nagendra Krishnapura
13.	The Physics of Transverse Mode Instability-Induces Nonlinear Phase Distortions in Large Area Optical Fiber Amplifiers and Their Mitigation for Scaling of Pulsed and CW High Energy Lasers	15 October 2015-14 October 2016	AFOSR International Grant	46.56	Balaji Srinivasan
14.	SITARA: Smart Grid that Harness Satellite Based Virtual Power Plants for Energy Sustenance	31 March 2015-31 March 2017	Global Innovation Initiative	22	K. Shanthi Swarup
15.	Design and Development of a Low-Cost, Portable Gait Motion Analysis System	28 August 2015-27 August 2018	Department of Science and Technology	12.63	Ramkrishna Pasumarthy
16.	SMS Compression Techniques in Indian Languages (Hindi, Tamil and Gujarati)	5 June 2015-4 June 2017	Department of Electronics and Information Technology	9.50	Devendra Jalihal
17.	Direct Patterning of Vortex Generating Diffractive Optical Elements on Fibre Tip Using a Focused Ion Beam	15 April 2015-14 April 2019	Indo-German Science and Technology Centre	3	V.Pramitha
Sponsored Research Projects: (Internal - New)					
1.	Vapor Deposited Multiple Junction Organic Solar Cells and Novel Devices	15 July 2015-14 July 2018	New Faculty Scheme	30	Debdutta Ray
2.	Development of Photosensitive Ambipolar Organic Thin Film Transistors as a Benchmark for Organic Solar Cells	28 August 2015-27-August 2017	New Faculty Scheme	25.90	Soumya Dutta

Sl. No.	Title	Period	Funding Agency	Amount (₹ in lakhs)	Coordinators
3.	Institute Research and Development Junior Level Award	15 April 2015-14-April 2018	Institute Research and Development Award	20	Mohanasankar Sivaprakasam
4.	Accelerometer Using Bond Wires as Sensors	7 September 2015-6 July 2016	Research Scholars Innovative Project	6.10	Shanthi Pavan
5.	Computational Imaging and Computer Vision	12 May 2015-11 May 2017	New Faculty Initiation Grant	5	Kaushik Mitra
6.	Grating Fabrications Facility	16 February 2016-15 February 2016	Maintenance of Capital Equipment	3.90	Balaji Srinivasan
7.	Investigations on Use of Feature Guided Acoustic Waves for Partial Discharge Detection	21 December 2015-20 October 2016	Research Scholars Innovative Project	3	Balaji Srinivasan
Research Projects: (Ongoing) Spons External					
1.	JC Bose Fellowship	15 October 2010-14 October 2020	Department of Science and Technology	136.00	Ashok Jhunjhunwala
2.	Centre for Nano-electromechanical Systems (NEMS) and Nanophotonics	27 April 2011-29 March 2017	Department of Information Technology	4946.50	Enakshi Bhattacharya
3.	Sustainable Communication Infrastructure (Information Network for Natural Disaster Mitigation and Recovery, DISANET)	1 July 2011-30 June 2016	Japan International Co-operation Agency	486	David Koilpillai
4.	Development of Aakash Platform	16 May 2012-31 May 2016	Telecom Centre of Excellence	10	Ashok Jhunjhunwala
5.	Development of Automated SPICE Parameter Extraction Tool for SiGe HBTs Using Scalable Approach	14 May 2012-13 May 2016	Department of Science and Technology	31.82	Anjan Chakravorty
6.	Council of Science and Technology for Rural India Centre at Indian Institute of Technology (CSTRI) - Core Grant	1 October 2012-30 September 2016	Department of Science and Technology	83.40	Ashok Jhunjhunwala
7.	Decentralized Solar PV Generation and DC usage (Under CSTRI core grant - sub project - I)	1 October 2012-30 November 2016	Department of Science and Technology	142.41	Ashok Jhunjhunwala
8.	Investigations into Underwater Imaging	30 November 2012-31 October 2017	Board of Research in Nuclear Sciences	99.25	A. N. Rajagopalan
9.	Decentralized solar PV power for commercial buildings	23 January 2013-22 January 2018	Indo-US Science and Technology Forum	135.00	Ashok Jhunjhunwala
10.	Fabrication of Spiral-phase Diffractive Optical Elements by Focused Ion Beam Milling - INSPIRE Faculty Award	25 April 2013-24 April 2018	Department of Science and Technology	86.27	V.Pramitha
11.	Centre of Excellence for Decentralized Power Systems	8 July 2013-31 March 2018	Ministry of Human Resource and Development	2000	Ashok Jhunjhunwala
12.	De-congesting India's Transport Networks Using Mobile Devices	13 December 2013-12 December 2016	Information Technology Research Academy	150.41	Krishna Jagannathan
13.	Proof of Concept for Project UDC	20 September 2013-19 June 2016	Ministry of Human Resource and Development	400	Ashok Jhunjhunwala
14.	Simulation of Semiconductor Devices	7 November 2013-6 November 2016	Defence Research and Development Organisation	49.30	S. Karmalkar
15.	Development of Novel Organic Semiconductor based Solar Harvesting Devices to Probe Plasmonic Effects	17 September 2013-16 September 2016	Department of Science and Technology	456.10	Soumya Dutta
16.	Obstacle Avoidance and Formation Control of Mobile Inverted Pendulum Robots	28 January 2014-27 January2017	Department of Science and Technology	32.67	Arun D. Mahindrakar
17.	Design, Fabrication and Testing of Programmable High Voltage Power Supply for Space Applications	23 February 2015-22 February2018	Indian Space Research Organisation	41.08	N. Lakshminarasamma
18.	Transforming Healthcare Delivery-Innovative mHealth Technologies for Health Promotion and Better Health Outcomes	24 March 2014-23 March 2017	Department of Biotechnology	56.00	Ashok Jhunjhunwala
19.	Design and Development of Thulium-Doped Fiber Lasers for the mid-IR	8 July 2014-7 July 2016	Defence Research and Development Organisation	50.56	Deepa Venkitesh
20.	The Interaction of ICT Networks Structure and Downstream Trade Flows: Two case studies form India (Iruralnet)	1 March 2014-28 February 2017	University Grants Commission	9.28	Ashok Jhunjhunwala
21.	Study and Analysis of the Electrical,Thermal and Mechanical Properties of Irradiated Epoxy Nanocomposites	18 June 2014-17 June 2016	Board of Research in Nuclear Sciences	24.01	Sarathi R
22.	Bluetooth Transceiver RFIC	22 July 2014-21 July 2017	Department of Information Technology	315.55	Aniruddhan
23.	Speech-based Access of Agricultural Commodity Prices and Weather Information in 12 Indian Languages/Dialects (Automatic Speech Recognition (ASR) Consortium- Phase II)	3 September 2014-2 September 2016	Department of Electronics and Information Technology	147.91	S. Umesh
24.	Electro-optic and Magneto-Optic Interaction Based High-Speed Quantum Key Distribution	26 August 2014-25 August 2017	Department of Science and Technology	23.94	Anil Prabhakar
25.	Development of Numerical Simulation Tool for Three Dimensional Silicon Nanowire- MOSFETs	13 October 2014-12 October 2017	Department of Science and Technology	30.58	Anjan Chakravorty
26.	QEEE-Phase II	21 August2014-30 August2016	Ministry of Human Resource and Development	100	Ashok Jhunjhunwala
27.	Understanding Accelerated Ageing Performance of Polymeric Nanocomposite Insulators	12 December 2014-11 December 2016	Department of Science and Technology	54.60	R. Sarathi
28.	Development of Multi-Channel Dynamic Interrogator based on Fabry-Perot Fiber Bragg Gratings for Elastic Wave Sensing	8 January 2015-7 January 2018	Board of Research in Nuclear Sciences	22.79	Balaji Srinivasan
29.	Visvesvaraya Ph.D. Scheme for Electronics and IT - a scheme from DEITY	21 January 2015-20 January 2020	Media Lab Asia	248.76	Bijoy Krishna Das
30.	Integrated Fibre Based Fourier Domain OCT with Spectrometer	19 March 2015-18 March 2018	Biotechnology Industry Research Assistance Council	47.20	Shanti Bhattacharya
31.	Identification of Incipient Discharges in Transformer Insulation by Elastic Wave Sensing based on Fiber Bragg Gratings	23 March 2015-22 March 2017	Central Power Research Institute	35.20	Balaji Srinivasan
32.	A Simulation Framework for Modeling Real Wi-Fi Deployments	19 March 2015-18 March 2018	Department of Science and Technology	21.71	Venkatesh Ramaiyan
33.	Implementation of Dirty Paper Coding for the Gaussian MIMO Broadcast Channel	30 March 2015-29 March 2018	Department of Science and Technology	52.62	Andrew Thangaraj
34.	Active Gate Driver Design for SiC MOSFET based Inverter for Induction Motor Drive Application	13 April 2015-12 October 2016	Centre for Development of Advance Computing	33.07	Kamalesh Hatua
35.	Safe and Efficient Driving via Human Cyber Physical Systems and Cloud Computing	30 March 2015-29 March 2017	Nissan Research Support Program	7.80	Ramkrishna Pasumarthy
36.	Growth of Organic Semiconductor Films by Chemical Vapor Deposition (CVD) for Photovoltaic Applications	30 March 2015-29 March 2017	Nissan Research Support Program	9.13	Debdutta Ray
37.	16 Bit 5MS/s Analog to Digital Converter	12 October 2015-11 October2018	Indian Space Research Organisation	46.92	Nagendra Krishnapura

Sl. No.	Title	Period	Funding Agency	Amount (₹ in lakhs)	Coordinators
38.	Direct Patterning of Vortex Generating Diffractive Optical Elements on Fibre Tip using a Focused Ion Beam	15 April 2015-14 April 2019	Indo-German Science and Technology Centre	3	V. Pramitha
39.	Control and Coordination of Microgrid System with Multiple Renewable Resources and Storage Systems	14 May 2015-13 May 2017	Department of Science and Technology	48.82	Mahesh Kumar
40.	SMS Compression Techniques in Indian Languages (Hindi, Tamil and Gujarati)	5 June 2015-4 June 2017	Department of Electronics and Information Technology	9.50	Devendra Jalihal
41.	Design and Development of a Low-Cost, Portable Gait Motion Analysis System	28 August 2015-27 August2018	Department of Science and Technology	12.63	Ramkrishna Pasumarthy
42.	Implementation of Full-sized Pilots of Uninterrupted Direct Current (UDC) Supply to Households	8 June 2015-7 June 2016	Ministry of Power	8035	Ashok Jhunjhunwala
43.	SITARA: Smart grid that Harness Satellite Based Virutal Power Plants for Energy Sustenance	31 March 2015-31 March 2017	Global Innovation Initiative	22.00	Shanthi Swarup K.
44.	Statistical Estimation of Electromagnetic Radiation using Large Data Analysis of Cellphone Signal Levels	8 July 2015-7 January 2017	Department of Science and Technology	81.01	Bhaskar Ramamurthi
45.	5G Research and Building Next Gen Solutions for Indian Market	19 November 2015-18 November 2018	Department of Electronics and Information Technology	954.66	S. Aniruddhan
46.	The Physics of Transverse Mode Instability-Induces Nonlinear Phase Distortions in Large Area Optical Fiber Amplifiers and their Mitigation for Scaling of Pulsed and CW High Energy Lasers	15 October 2015-14 October 2016	AFOSR International Grant	46.56	Balaji Srinivasan
47.	Load Commutated Inverter fed Active-Reactive Induction Motor (ARIM) Drive for Medium Voltage Drive Application	30 December 2015-29 December 2018	Department of Science and Technology	59.68	Kamalesh Hatua
48.	Experimental Investigation and Modeling of SOI based p-i-n/p-n Phase-Shifters and Variable Optical Attenuators with Submicron Waveguides	30December 2015-29 December 2018	Department of Science and Technology	60.70	Bijoy Krishna Das
49.	Demonstration of Phase Sensitive Amplification for Advanced Modulation Formats	25 January 2016-24 January2019	Department of Science and Technology	54.94	Deepa Venkitesh
50.	Modeling, Analysis and Implementation of 10kW step up Converter	17 February 2016-16 February 2018	Defence Research and Development Organisation	95.48	N. Lakshminarasamma
51.	Quantum Key distribution	10 February 2016-9 February 2017	Office of the Principal Scientific Adviser	351	Anil Prabhakar
Projects: (Ongoing) (Spon-Internal)					
1.	National Mission for Virtual Laboratories - (ELE)	8 May 2010-2 August 2017	Indian Institute of Technology Madras	26	Nagendra Krishnapura
2.	National Mission for Virtual Laboratories - ELE 2	17 June 2010-2 August 2017	Indian Institute of Technology Madras	53	Krishna Vasudevan
3.	Mobile Eye Surgical Units	21 September 2011-20 September 2016	Socially Relevant Projects	10	Mohanasankar Sivaprakasam
4.	Distributed Optimization and Control of Complex Networks	14 June 2012-13 June 2016	New Faculty Scheme	5	Krishna Jagannathan
5.	Queue Management for the Internet	5 November 2012-4 November 2016	New Faculty Scheme	5	Gaurav Raina
6.	Topological Quantum Codes: Constructions and Architectures for Fault Tolerance	17 January 2013-16 January 2017	New Faculty Scheme	5	Pradeep Kiran Sarvepalli
7.	Receivers for non-Gaussian Interference and Noise	22 October 2013-21 October 2016	New Faculty Scheme	5	Sheetal Kalyani
8.	High Efficient Silicon Carbide MOSFET based Induction Motor Drive with Sinusoidal Motor Voltage and Grid Friendly Input Current	22 October 2013-21 October 2016	New Faculty Scheme	25	Kamalesh Hatua
9.	Characterization and Simulation of Gate Induced Drain Leakage (GIDL) Current in High kMetal Gate PMOSFETs	20 November 2013-19 November 2016	New Faculty Scheme	15	Deleep R.Nair
10.	IIT Madras Student Satellite (iitmsat)-Phase II	24 September 2014-30 June 2016	Alumni Association	40	David Koilpillai
11.	CMOS Analog and Wireless RF Front End for Biological Signal Acquisition	12 May 2014-11 May 2017	New Faculty Scheme	20.06	S. Aniruddhan
12.	MyDrive: AWheelchair Accessible Electric Vehicle	11 February 2015-10 August 2016	Exploratory Research Project	10	Anil Prabhakar
13.	Vapor Deposited Multiple Junction Organic Solar Cells and Novel Devices	15 July 2015-14 July 2018	New Faculty Scheme	30	Debdutta Ray
14.	Development of Photosensitive Ambipolar Organic Thin Film Transistors as a Benchmark for Organic Solar Cells	28 August 2015-27 August 2017	New Faculty Scheme	25.90	Soumya Dutta
15.	Institute Research and Development Junior Level Award	15 April 2015-14 April 2018	Institute Research and Development Award	20	Mohanasankar Sivaprakasam
16.	Computational Imaging and Computer Vision	12 May 2015-11 May 2017	New Faculty Initiation Grant	5	Kaushik Mitra
17.	Accelerometer Using Bond Wires as Sensors	7 September 2015-6 July 2016	Research Scholars Innovative Project	6.10	Shanthi Pavan
18.	Investigations on the Use of Feature Guided Acoustic Waves for Partial Discharge Detection	21 February 2015-20 October 2016	Research Scholars Innovative Project	3	Balaji Srinivasan
19.	Grating Fabrications Facility	16 February 2016-15 February 2017	Maintenance of Capital Equipment	3.90	Balaji Srinivasan

Industrial Consultancy projects

Sl. No.	Title	Period	Industry	Amount (₹ in lakhs)	Faculty Member
1.	Study of Tamil Nadu Police Communication System	1 July 2015-30 July 2015	Tamil Nadu Police Department	25	Devendra Jalihal IC1516ELE006TNPDDEVE
2.	Proof checking of Electrical Design Documents	1 July 2015-30 September 2015	Larsen & Toubro Limited	1.71	Krishna Vasudevan IC1516ELE002L&TLKRIH
3.	Proof checking of Electrical Design Documents	1 July 2015-30 September 2015	Larsen & Toubro Limited	1.71	Krishna Vasudevan IC1516ELE003L&TLKRIH
4.	Loss Measurement of Power Transformers	8 September 2015-7 September 2018	Common Code	1.08	Boby George IC1516ELE004AAAABOBY
5.	Loss Measurement of Power Transformers	6 April 2015-5 April 2018	Common Code	0.90	Boby George IC1516ELE001AAAABOBY
6.	Impulse Voltage Test on Power Apparatus	31 August 2015-30 August 2018	Common Code	0.14	R. Sarathi IC1516ELE005AAAARSAR
7.	Power-loss Measurement of Power Transformers	18 March 2016-17 March 2019	Common Code		Boby George IC1516ELE007AAAABOBY

RBIC projects

Sl. No.	Title	Period	Industry	Amount (lakhs of ₹)	Faculty Member
1.	Investigations into Resolution Enhancement and No-reference Assessment of SEM Images	1 November 2015-31 October 2017	KLA Tencor	48.00	A. N. Rajagopalan RB1516ELE007KLATANRA
2.	Design and Development of Control, Protection and Monitoring System for Series Capacitors in EHV Transmission System	1 June 2015-1 September 2016	Asa Bhanu Technical Services Limited	46.74	K. Shanthi Swarup RB1516ELE008ABTSKSHA
3.	CMOS RFIC Fabrication	16 July 2015-15 July 2016	Qualcomm Technologies, Inc.	38.40	S. Aniruddhan RB1516ELE004QUATANIR
4.	Cell Sort	28 September 2015-27 September 2016	Jiva Sciences	25.00	Anil Prabhakar RB1516ELE006JIVAANIL
5.	Block Modulated Strategic Communications System	9 February 2015-8 February 2018	Bharat Electronics Limited	22.25	K. Giridhar RB1516ELE002BELXKGIR
6.	Design and Development of IGBT-based Variable Frequency Drive for 350kW Permanent Magnet Technology based Synchronous Motor(PMSM)	4 February 2016-3 February 2017	Bharat Heavy Electricals Limited	20.61	Kamalesh Hatua RB1516ELE012BHELKAML
7.	Development of Piezo Patterning Technology Suitable for MEMS Devices	26 October 2015-25 October 2016	Defence Research and Development Organisation	20.46	Amitava Das Gupta RB1516ELE009DRDOAMIT
8.	Design and Field-trial of Rotating Polarization Wave based Wireless Modem	1 September 2015-30 November 2016	Hitachi India Private Limited	16	Devendra Jalihal RB1516ELE005HITADEVE
9.	Enhancement and Restoration of Underwater Image	11 January 2016-11 July 2017	National Institute of Ocean Technology	15.64	A. N. Rajagopalan RB1516ELE011NIOTANRA
10.	Performance improvement for OFDM based wideband modem	19 March 2015-30 April 2016	Weapons and Electronics Systems Engineering Establishment	9.35	K. Giridhar RB1516ELE003WESEKGIR
11.	Evanescent Wave Sensing of Trace Gas Species Using Tapered Optical Fibers	2 November 2015-31 December 2016	GE India Technology Centre Private Limited	8.96	Balaji Srinivasan RB1516ELE010GEITBALA
12.	Simulation and Design of Multiphase Induction Machine	1 May 2015-31 January 2016	Caterpillar India Private Limited	4.65	Krishna Vasudevan RB1516ELE001CATRKRIH

Research publications of the faculty members and research scholars

Total number of papers published in refereed national/international journals: 99

Total number of papers presented at national/international conferences: 181

Papers published in refereed national/ international journals

1. Sreejith T. Veetil, Kiran Kuchi and Radha Krishna Ganti. 2016. Coverage analysis of cloud radio networks with finite clustering. IEEE Trans on Wireless Communications, 16(1):594-606. doi: 10.1109/TWC.2016.2626366
2. Rahul Trivedi, Uday K. Khankhoje and Arka Majumdar. 2016. Cavity-enhanced second-order nonlinear photonic logic circuits. *Physical Review Applied* 5(5)
3. Mariko S. Burgin, Uday K. Khankhoje, Xueyang Duan and Mahta Moghaddam. 2016. Generalized terrain topography in radar scattering models. IEEE Transactions on Geoscience and Remote Sensing 54(7):3944-3952. doi: 10.1109/TGRS.2016.2532123
4. Pratik Shah, Uday K. Khankhoje and Mahta Moghaddam. 2016. Inverse scattering using a joint L1-L2 norm-based regularization. IEEE TRANSACTIONS ON ANTENNAS AND PROPAGATION, VOL. 64, NO. 4, APRIL 2016 64(4):1373-1384. doi: 10.1109/TAP.2016.2529641
5. Pranjal Vyas, Leena Vachhani, K. Sridharan and Vikramkumar Pudi. 2016. CORDIC-based azimuth calculation and obstacle tracing via optimal sensor placement on a mobile robot. *IEEE/ASME Transactions on Mechatronics* 21(5):2317-2329. doi: 10.1109/TMECH. 2015.2502622
6. B. Srinivasu and K. Sridharan. 2016. Low-complexity multiternary digit multiplier design in CNTFET technology. IEEE TRANSACTIONS ON CIRCUITS AND SYSTEMS—II: EXPRESS BRIEFS, VOL. 63, NO. 8, AUGUST 2016, 63(8):753-757. doi: 10.1109/TCSII.2016.2531100
7. Tahiyah Nou Shene, K. Sridharan and N. Sudha. 2016. Real-time SURF-based video stabilization system for an FPGA-driven mobile robot. EEE TRANSACTIONS ON INDUSTRIAL ELECTRONICS, VOL. 63, NO. 8, AUGUST 2016, 63(8):5012-5021. doi: 10.1109/TIE. 2016.2551684
8. S. S. Damodhar and S. Krishna. 2016. A novel load shedding scheme for voltage stability. *International Journal of Emerging Electric Power Systems* 17(6):649-661. doi: 10.1515/ijeeps-2015-0159
9. E. Dhiravidachelvi, V. Rajamani and P. A. Janakiraman. 2016. Speedy location of optic disc in retinal images. *Journal of Medical Imaging and Health Informatics* 6(8):1906-1912. doi: 10.1166/jmihi.2016.1946
10. C. Dorronsoro, A. Radhakrishnan, P. De Gracia, L. Sawides and S. Marcos. 2016. Perceived image quality with simulated segmented bifocal corrections. *Biomedical Optics Express* 7(11):4388-4399. doi: 10.1364/BOE.7.004388
11. C. Dorronsoro, A. Radhakrishnan, P. De Gracia, L. Sawides and S. Marcos. 2016. Perceived image quality with simulated segmented bifocal corrections: Publisher's note. *Biomedical Optics Express* 7(11):4620-. doi: 10.1364/BOE.7.004620
12. R. Raussendorf, P. Sarvepalli, T.-C. Wei and P. Haghnegahdar. 2016. Symmetry constraints on temporal order in measurement-based quantum computation. *Information and Computation* 250:115-138. doi: 10.1016/j.ic.2016.02.010
13. J. Nair, K. Jagannathan and A. Wierman. 2016. When heavy-tailed and light-tailed flows compete: The response time tail under generalized max-weight scheduling. *IEEE/ACM Transactions on Networking* 24(2):982-995. doi: 10.1109/TNET.2015.2415874
14. K. Thekumparampil, A. Thangaraj and R. Vaze. 2016. Combinatorial resource allocation using submodularity of waterfilling. *IEEE Transactions on Wireless Communications* 15(1):206-216. doi: 10.1109/TWC.2015.2469291
15. A. K. Pradhan, A. Thangaraj and A. Subramanian. 2016. Construction of near-capacity protograph LDPC code sequences with block-error thresholds. *IEEE Transactions on Communications* 64(1):27-37. doi: 10.1109/TCOMM.2015.2500234
16. A. Babu and B. George. 2016. A linear and high sensitive interfacing scheme for wireless passive LC sensors. *IEEE Sensors Journal* 16(23):8608-8616. doi: 10. 1109/JSEN. 2016. 2614816
17. G. Sridharan and S. Bhattacharya. 2016. Simplified analysis of sub-wavelength triangular gratings by simplified modal method. *Applied Optics* 55(34):9712-9717. doi: 10. 1364/AO. 55. 009712
18. G. Dutta, N. Dasgupta and A. Dasgupta. 2016. Low-temperature ICP-CVD SiNx as gate dielectric for GaN-based MIS-HEMTs. *IEEE Transactions on Electron Devices* 63(12):4693-4701. doi: 10.1109/TED.2016.2618421
19. P. S. Saikrishna and R. Pasumarthy. 2016. Multi-objective switching controller for cloud computing systems. *Control Engineering Practice* 57:72-83. doi: 10.1016/j.conengprac.2016.09.001
20. K. Mandadi and B. Kalyan Kumar. 2016. Identification of inter-area oscillations using zolotarev polynomial based filter bank with eigen realization algorithm. *IEEE Transactions on Power Systems* 31(6):4650-4659. doi: 10.1109/TPWRS.2016.2517656
21. S. Gopalakrishnan, A. Dasgupta and D. R. Nair. 2016. Study of the effect of surface roughness on the performance of RF MEMS capacitive switches through 3-D geometric modeling. *IEEE Journal of the Electron Devices Society* 4(6):451-458. doi: 10.1109/JEDS. 2016.2582833
22. D. Pradeep, M. Amit and S. Karmalkar. 2016. DC extraction of gate bias-dependent parasitic resistances and channel mobility in an HEMT. *IEEE Electron Device Letters* 37(11):1403-1406. doi: 10.1109/LED.2016.2611597
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24. S. Rangachari, J. Balakrishnan and N. Chandrachoodan. 2016. Scenario-aware dynamic power reduction using bias addition. *IEEE Transactions on Very Large Scale Integration (VLSI) Systems* PP(99). doi: 10. 1109/TVLSI.2016.2601030
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26. S. Hazra, S. Madhusoodhanan, G. K. Moghaddam, K. Hatua and S. Bhattacharya. 2016. Design considerations and performance evaluation of 1200-V 100-A SiC MOSFET-based two-level voltage source converter. *IEEE Transactions on Industry Applications*. 52(5):4257-4268. doi: 10. 1109/TIA. 2016. 2587098
27. S. Balanethiram, R. D'Esposito, A. Chakravorty, S. Fregonese, D. Céli, T. Zimmer. 2016. Efficient modeling of distributed dynamic self-heating and thermal coupling in multifinger SiGe HBTs. *IEEE Transactions on Electron Devices* 63(9):3393-3398. doi: 10.1109/TED.2016.2586539

28. C. Mukherjee, T. Jacquet, A. Chakravorty, T. Zimmer, J. Bock, K. Aufinger and C. Maneux. 2016. Low-frequency noise in advanced SiGe:C HBTs-Part I: Analysis. *IEEE Transactions on Electron Devices* 63(9):3649-3656. doi: 10.1109/TED.2016.2589159
29. C. Mukherjee, T. Jacquet, A. Chakravorty, T. Zimmer, J. Bock, K. Aufinger and C. Maneux. 2016. Low-frequency noise in advanced SiGe:C HBTs-Part II: Correlation and modeling. *IEEE Transactions on Electron Devices* 63(9):3657-3662. doi: 10.1109/TED.2016.2588318
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31. R. Paul and B. George. 2016. Automatic flipping magnet type electromagnetic energy harvester. *Electronics Letters* 52(17):1476-1478. doi: 10.1049/el.2016.1103
32. S. Kallummil and S. Kalyani. 2016. High SNR consistent linear model order selection and subset selection. *IEEE Transactions on Signal Processing* 64(16):4307-4322. doi: 10.1109/TSP.2016.2563396
33. K. Sarojkumar and S. Krishna. 2016. Application of energy function, as a measure of error in the numerical solution for online transient stability assessment. *International Journal of Emerging Electric Power Systems* 17(4):471-484. doi: 10.1515/ijeeps-2015-0188
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35. S. Kumar, S. Kalyani and K. Giridhar. 2016. Impact of sub-band correlation on SFR and comparison of FFR and SFR. *IEEE Transactions on Wireless Communications* 15(8):5156-5166. doi: 10.1109/TWC.2016.2553660
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40. R. D'Esposito, S. Frégonèse, A. Chakravorty, P. Chevalier, D. Céli and T. Zimmer. 2016. Innovative SiGe HBT topologies with improved electrothermal behavior. *IEEE Transactions on Electron Devices* 63(7):2677-2683. doi: 10.1109/TED.2016.2570601
41. T. Sreekanth, N. Lakshminarasamma and M. K. Mishra. 2016. Coupled inductor-based single-stage high gain DC-AC buck-boost inverter. *IET Power Electronics* 9(8):1590-1599. doi: 10.1049/iet-pel.2015.0739
42. J. Hussain and M. K. Mishra. 2016. Adaptive maximum power point tracking control algorithm for wind energy conversion systems. *IEEE Transactions on Energy Conversion* 31(2):697-705. doi: 10. 1109/TEC. 2016. 2520460
43. S. Ramprasath, M. Vijaykumar and V. Vasudevan. 2016. A skew-normal canonical model for statistical static timing analysis. *IEEE Transactions on Very Large Scale Integration (VLSI) Systems* 24(6):2359-2368. doi: 10.1109/TVLSI.2015.2501370
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4.9. Department of Engineering Design

4.9.1. Introduction

Set up in the year 2006, the Department of Engineering Design was the 16th department to come up at 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 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 M.Tech. and Ph.D. dual-degree programme has been introduced.

New courses introduced

Sl. No.	Course No.	Title
1.	ED1033	Design of Form and Aesthetics I
2.	ED1034	Design of Form and Aesthetics in Deisgn II
3.	ED5321	Science of Musical Instruments
4.	ED2130	Analog and Digital Electronics
5.	ED5017	Digital Signal Processing for Engineering Design
6.	ED5052	EMC for Product Design
7.	ED2012	Manufacturing Processes
8.	ED4020	Design of Surgical and Implantable Devices
9.	ED4040	Design of Thermal and Fluid Systems
10.	ED4060	Design of Mechanical Systems 2
11.	ED5013	Analytical and Experimental Techniques in Vibration
12.	ED5014	Energy Storage Devices and Systems
13.	ED5015	Computational Methods in Design
14.	ED5016	Bio-MEMS

Students on roll as of September 2016 + M.S. and Ph.D admission in January 2017

Programme	Year I	Year II	Year III	Year IV	Year V and others	Total
Dual Degree	56	54	54	55	55 + 26	300
M.S.	10	6	6	9	-	31
Ph.D.	9	6	11	13	14 + 15	68
Direct Ph.D.	4	2	-	-	-	6
M.Tech. + Ph.D.	1	1	5	1	-	8
Total	**80**	**69**	**76**	**78**	**69 + 41**	**413**

Students/scholars who attended conferences/seminars/symposia

Sl. No.	Student/Scholar	Roll No.	Conference/Seminar/Symposium/Workshop	Date and Venue	Financial Assistance from
Abroad					
1.	Kumar Mridul	ED16S012	Laval Virtual, International Conference and Exhibition on Virtual Technologies and Uses	23–27 March 2016, France	-
2.	Shivani Tiwari	EE14S015	SPIE Photonics Europe 2016	4–7 April 2016, Square Brussels Meeting Center, Brussels, Belgium	-
3.	Pragyan Patnaik	ED13S027	21st International Conference on Microwaves, Radar and Wireless Communications	9–11 May 2016, Krakow, Poland	-
4.	Amal Dev P.	ED14D014	International Geometry Summit 2016 and IGS Summer School, Freie Universitat Berlin	18–24 June 2016, Germany	-
5.	Srinagalakshmi Nammi	ED11D014	44th SME North American Manufacturing Research Conference (NAMRC)	27 June–1 July 2016, Virgina Tech, Virginia, USA	DST
6.	Nithila Kumaran	ED13S022	Conference	19–23 September 2016, Cairns, Australia	IITM
7.	Vignesh Rajaram	ED12D023	ASME 2016 International Mechanical Engineering Congress and Exposition	November 2016, Phoenix, USA	-
8.	Swagata Borthakur	ED13S017	ASME 2016 International Mechanical Engineering Congress and Exposition	November 2016, Phoenix, USA	-
9.	C. S. Nanda Kumar	ED09D008	ASME 2016 International Mechanical Engineering Congress and Exposition	November 2016, Phoenix, USA	-
India					
1.	Jiyo S. Athertya	ED12D014	Segmentation of Vertebral Bodies Using Active Shape Model	28–30 November 2016, IIT Madras	-
2.	Parvathy Anitha Sukkurji	ED14S011	13th International Conference on Fiber Optics and Photonics (Photonics 2016)	4–8 December 2016, IIT Kanpur	-
	Vani Damodaran	ED11D013	Photonics 2016	4–8 December 2016, IIT Kanpur	-
	Ramya Selvaraj	ED14D008	Photonics 2016	4–8 December 2016, IIT Kanpur	-
	Pauline John	ED13D005	Photonics 2016	4–8 December 2016, IIT Kanpur	-
	Abdul Nasir	ED14S005	Photonics 2016	4–8 December 2016, IIT Kanpur	Abdul Nasir
	N. Aparna	ED11D020	Photonics 2016	4–8 December 2016, IIT Kanpur	N. Aparna
	N. Aparna	ED11D020	18th Asian Conference on Electrical Discharge	8–10 December 2016, IIT Madras	-
	Srinagalakshmi Nammi	ED11D014	6th International and 27th All India Manufacturing Technology, Design and Research (AIMTDR) 2016	16-18 December 2016, Pune College of Engineering, Pune	-
10.	Sooraj Shiby	ED14D200	AIMTDR 2016	16-18 December, 2016, Pune College of Engineering, Pune	-
11.	Emmanuel Paneerselvamn	ED13D017	AIMTDR 2016	16-18 December 2016, Pune College of Engineering, Pune	-
12.	M. Nagendran	ED12S002	Symposium on International Automotive Technology	January 2017, Pune	-

Names of students/scholars who won outside prizes and awards

Sl. No.	Student/Scholar	Roll No.	Prize	Awarded by
1.	Pauline John	ED13D005	Best Student Poster Presentation Award	International Conference on Fiber Optics and Photonics (Photonics 2016), Kanpur, India
2.	S. Pradeeba	ED12D006	Best Thesis Prize	University of Sydney at the 8th Annual Sydney Faculty of Engineering and IT Student Research Conference
3.	Divya Baskaran	ED16D002	Best Student Poster Presentation Award	9th Biennial Conference on Hyperthermia held in the Department of Radiotherapy, Gujarat Cancer Research Institute, Ahmedabad
4.	Tharrini Rajendran	ED13S018	Best Student Poster Presentation Award	9th Biennial Conference on Hyperthermia held in the Department of Radiotherapy, Gujarat Cancer Research Institute, Ahmedabad
5.	K. V. Praveen Prasath	ED13S011	Best Paper Award	Computational Science Symposium 2017, IISc, Bengaluru

Name of students/scholars who won convocation/Institute Day Prize

Sl. No.	Student/Scholar	Roll No.	Prize
1.	Rajat Abhijit Dandekar	ED13B015	Srikanth Sundararajan Prize
2.	Sagar Suhas Joshi	ED12B024	Sarada Basakara Reddy Award
3.	Shivani Guptasarma	ED14B054	Latha and Sampath Srinath Prize

4.9.3. Faculty and their Activities

Faculty

Name and Qualifications	Major Areas of Specialization
Professor	
T. Asokan	Robotics, mechatronics, control, electro-hydraulic servo systems
R. Krishna Kumar	Nonlinear finite elements, vehicle dynamics and tyre mechanics
Nilesh J. Vasa	Opto-mechatronics, laser-based sensing and micro-manufacturing
Srikanth Vedantam (Head)	Design with novel materials, mechanical behaviour of materials, wetting, microstructure evolution
Venkatesh Balasubramanian	Human factors and ergonomics, biomedical devices and implants, and innovation in manufacturing
Associate Professor	
M. Ramanathan	Geometric and solid modelling, CAD, computer vision, computational geometry, computer graphics, computational biology, shape search
Sankara J. Subramanian	Digital image correlation, nano-indentation, mechanics of materials, finite element analysis
G. Saravana Kumar	CAD, computational geometry, reverse engineering, shape optimization, biomechanical modeling, biomedical imaging and reconstruction, biomimetic prosthetic and scaffold design, layered manufacturing and soft computing
C. S. Shankar Ram	Model-based control and diagnostics, automotive systems, vehicle dynamics, analysis of transportation systems
Kavitha Arunachalam	Biomedical instrumentation, radio frequency and microwave antenna design, hyperthermia physics, non-destructive material evaluation
Assistant Professor	
Balkrishna C. Rao	Sustainable manufacturing, sustainable design, nano-manufacturing, manufacturing for bio-medical applications, simulation of manufacturing processes
Ganapathy Krishnamurthi	X-ray computed tomography physics, ultrasound image processing, and biological imaging using optical microscopy
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
Tuhin Subhra Santra	Bio-nano/micro electro mechanical systems (bio-NEMS/MEMS), biomedical micro/nano devices, bio-micro/nano fabrication, single cell technology, nanomedicine, biophysics
Visiting Faculty	
R. Jayaganthan, Visiting Professor	Materials science and engineering, nanomaterials and design, biomaterials, energy storage devices

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

Sl. No.	Coordinator(s)	Title	Period
Short-term courses			
1.	C. S. Shankar Ram	Vehicle Dynamics for Daimler India Commercial Vehicles Private Limited	21–22 April 2016
2.	C. S. Shankar Ram	Vehicle Dynamics Simulation for Daimler India Commercial Vehicles Private Limited	29 April 2016
3.	C. S. Shankar Ram	Fundamentals of Automotive Systems for Mahindra (CCE/CEP/26/CSSR/ED/16-17) (CCE/CEP/43/CSSR/ED/16-17) CCE/CEP/77/CSSR/ED/16-17	14–15 July 2016
4.	C. S. Shankar Ram	Fundamentals of Automotive Systems for Mahindra (CCE/CEP/26/CSSR/ED/16-17) (CCE/CEP/43/CSSR/ED/16-17) CCE/CEP/77/CSSR/ED/16-17	8–9 September 2016
5.	Saravana Kumar and Palaniappan Ramu	Optimization for Engineering Design CCE/QIP/01/PR&GSK/ED/16-17	26 September–1 October 2016
6.	C. S. Shankar Ram	Fundamentals of Automotive Systems for Mahindra (CCE/CEP/26/CSSR/ED/16-17) (CCE/CEP/43/CSSR/ED/16-17) CCE/CEP/77/CSSR/ED/16-17	24–25 November 2016
7.	Venkatesh Balasubramanian	Excellence in Process Engineering for Messrs Anand Automotive Limited (four modules)	1 June–14 March 2017
8.	R. Jayaganthan	Cardiovascular Solid and Fluid Mechanics CCE/QIP/19/BSVPP&RJ/AM& ED/16-17	26 March–1 April 2017
9.	R. Jayaganthan	Cardiovascular Solid and Fluid Mechanics CCE/QIP/19/BSVPP&RJ/AM& ED/16-17	26 March–1 April 2017

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

Sl. No.	Coordinator(s)	Title	Institution	Period
Conferences				
1.	Palaniappan Ramu	Medical Information and Communication Technology	Boston, USA	20–23 March 2016
2.	R. Krishna Kumar	Conference	American Society of Artificial Internal Organs, San Francisco	15–18 June 2016
3.	Nilesh J. Vasa	44th SME North American Manufacturing Research Conference (NAMRC), Virgina Tech	Blackburg, Virginia, USA	27 June–1 July 2016
4.	Asokan Thondiyath	Informatics in Control, Automation and Robotics (ICINCO)	INSTICC, Portugal	29–31 July 2016
5.	G. Saravana Kumar	Congress	International Mechanical Engineering Congress and Exposition, Phoenix, Arizona, USA	11–17 November 2016
6.	M. Ramanathan	Melbourne India Postgraduate Program (MIPP)	University of Melbourne	30 January–2 February 2017
Workshops				
1.	Asokan Thondiyath	Research collaboration workshop	NUS, NTU Singapore	13–21 June 2016
2.	M. Ramanathan	International Geometry Summit 2016 and IGS Summer School	Freie Universitat Berlin, Germany	18–24 June 2016
3.	Nilesh J. Vasa	Advances in Pulsed Laser Deposition of Functional Thin Films	Jadavpur University, Kolkata	27 September 2016
4.	C. S. Shankar Ram	Fault Diagnosis of Automotive Systems	Pondicherry Engineering College	22 October 2016
5.	R. Krishna Kumar	Research Workshop	Sydney University, Australia	2–3 February 2017
6.	Head, Standards Policy & Planning Department, BIS	Training Program for Technical Committee Members of BIS	NITS, Noida	22–23 February, 2017
Symposium				
6.	Asokan Thondiyath	First International Symposium on Intelligent Equipment and Robotics	Liaoning Technical University, Huludao, China	3–5 August 2016

Special lectures delivered by the faculty in other institutions

Sl. No.	Faculty Member	Topic	Institution	Date
1.	Venkatesh Balasubramanian	Intelligent Vehicles in Pursuit of Road Safety	FDP in IHRD, Trivandrum	27 April 2016
2.	Nilesh J. Vasa	Optical Sensors And Biomedical Applications	IIT Kanpur	9–13 May 2016
3.	Venkatesh Balasubramanian	Challenging the Frontiers – Research @ RBG, IIT Madras	TCS Innovation Lab, Kolkata	2 June 2016
4.	Venkatesh Balasubramanian	Human Factors in Product Development and Off Highway Vehicle Design	Messrs TAFE Limited, Chennai	24 June 2016
5.	Venkatesh Balasubramanian	Assistive Devices as Educational Tools	Centre for Disability Studies, Trivandrum	8 July 2016
6.	M. Ramanathan	Topics in Computational Geometry	Rajiv Gandhi Institute of Technology, Kottayam, Kerala	14–16 July 2016
7.	Venkatesh Balasubramanian	Human Factors in Transportation – Getting to Know the Driver While Driving	Messrs Rivigo Services Private Limited, New Delhi	9 August 2016
8.	G. Saravana Kumar	Finite element modelling of Cervical Spine	PSG College of Technology, Coimbatore	26–27 August 2016
9.	G. Saravana Kumar	Advances in Additive Manufacturing and its Applications	KLN College of Engineering, Madurai	2 September 2016
10.	G. Saravana Kumar	Direct layered manufacturing of multi-resolution models from point clouds	Coimbatore Institute of Technology (CIT)	16 September 2016
11.	C. S. Shankar Ram	Motivation to the Theory of Control Systems	VIT Chennai	27 September 2016
12.	Nilesh J. Vasa	Advances in pulsed laser deposition of functional thin films	Jadavpur University, Kolkata	27 September 2016
13.	C. S. Shankar Ram	Model-Based Control Systems	VIT Chennai	15 October 2016
14.	C. S. Shankar Ram	Fault Diagnosis of Automotive Systems	Pondicherry Engineering College	22 October 2016
15.	R. Krishna Kumar	Tyre as a Vehicle Component	ITTAC	3–4 November 2016
16.	Nilesh J. Vasa	Application Of Laser Based Sensing In Electric Power Sector Omnibus Lecture Program (invited lecturer)	Fukuoka University, Japan	23–27 November 2016
17.	C. S. Shankar Ram	Vehicle Dynamics	Bannari Amman Institute of Technology, Sathyamangalam	5–6 January 2017
18.	C. S. Shankar Ram	Optimization of Hybrid Electric Powertrains	PSG College of Technology, Coimbatore	7 January 2017
19.	C. S. Shankar Ram	Dynamic Systems, Models and Automotive Control	Valeo India Private Limited	12 January 2017
20.	C. S. Shankar Ram	Application of Dynamic Systems Theory towards Modeling, Estimation and Control of Traffic Systems	Rajiv Gandhi Institute of Technology, Kottayam	24 March 2017

Visits abroad by faculty members

Sl. No.	Faculty member	Country Visited	Date	Purpose of Visit	Funding from	Title
1.	Palaniappan Ramu	Boston, USA	20–23 March 2016	Symposium	CPDA	Medical Information and Communication Technology (ISMICT 2016)
2.	R. Krishna Kumar	San Francisco, USA	15–18 June 2016	Conference	-	
3.	Asokan Thondiyath	Singapore	13–21 June 2016	Research collaboration workshop	-	Research collaboration opportunities at IIT Madras
4.	M. Ramanathan	Berlin, Germany	18–24 June 2016	Research visit	IITM (Partial)	International Geometry Summit 2016 and IGS Summer School
5.	M. Ramanathan	Berlin, Germany	18–25 June2016	Oral presentation	-	Crawl through neighbors: a simple curve reconstruction algorithm

Sl. No.	Faculty member	Country Visited	Date	Purpose of Visit	Funding from	Title
6.	Nilesh J. Vasa	Blackburg, Virginia, USA	27 June–1 July 2016	Conference	-	44th SME North American Manufacturing Research Conference (NAMRC), Virgina Tech.
7.	Nilesh J. Vasa	Blacksburg, Virginia, USA	25 June–3 July 2016	Oral presentation	-	Enhancement in photoconductivity of a-Si thin films by annealing and texturing technique with the third harmonic output from a pulsed Nd^{3+}:YAG Laser
8.	Asokan Thondiyath	Lisbon, Portugal	29–31 July 2016	Oral presentation	-	Grasp quality enhancement using particle swarm optimisation for a robotic hand holding 3D objects
9.	Asokan Thondiyath	INSTICC, Portugal	29–31 July 2016	Symposium	IITM	Informatics in Control, Automation and Robotics (ICINCO)
10.	Asokan Thondiyath	China	3–5 August 2016	Oral presentation	-	Design and Development of Autonomous Underwater Robots
11.	Asokan Thondiyath	China	3–5 August 2016	Present paper	-	Autonomy for Robots: Design Challenges
12.	G. Saravana Kumar	USA	11–17 November 2016	Oral presentation	IITM	International Mechanical Engineering Congress and Exposition, Phoenix, Arizona, USA
13.	Nilesh J. Vasa	Fukuoka University, Japan	23–27 November 2016	Invited lecture	-	Application of Laser Based Sensing In Electric Power Sector Omnibus Lecture Program
14.	M. Ramanathan	University of Melbourne, Australia	30 January–2 February 2017	Conference		Melbourne-India Postgraduate Program (MIPP)
15.	M. Ramanathan	University of Melbourne, Australia	30–2 February 2017	Conference	-	Melbourne-India Postgraduate Program (MIPP)
16.	R. Krishna Kumar	Sydney University, Australia	2–3 February 2017	Research workshop	IITM	-

Honours and awards obtained by faculty members

Sl. No.	Faculty Member	Award	Awarded by	Awarded for	Date
i. Honours:					
1.	Prof. R. Krishna Kumar	Lifetime Achievement Research Award of IIT Madras, Institute Research and Development Awards (IRDA)	IITM	Excellence in research, a scheme of Research and Development	18 April 2017
2.	Dr. Soma Guhathakurta	Biotech Product, Process Development and Commercialization Award for the year 2017	DBT, GOI	Recognition of the outstanding contributions of scientists/innovators/ entrepreneurs/institutions and companies for a new process, product development and commercialisation of technology in the areas of biotechnology and biological sciences	19 April 2017
3.	Prof. Venkatesh Balasubramanian	Appointed as Advisor	National Health Mission, Tamil Nadu	-	3 March 2017

Editorial boards of journals

Sl. No.	Faculty member	Position	Journal
1.	Sandipan Bandyopadhyay	Member, Editorial Board	*Sadhana: Academy Proceedings in Engineering Sciences*
2.	Sandipan Bandyopadhyay	Member, Editorial Board	*Mechanism and Machine Theory*
3.	C. S. Shankar Ram	Associate Editor (since 2012)	*ASME Journal of Dynamic Systems, Measurement and Control*
4.	Member, Editorial Board (since 2012)	*International Journal of Vehicular Technology*	

4.9.4. Design and Development Activities

New facilities added or major equipment procured

Sl. No.	Name of Equipment	Amount (lakhs of Rs)
1.	1 Near Infrared Spectrometer (Bentham Instruments, UK)	21.4

Patents filed

Sl. No.	Name of faculty	Topic of patent
1.	M. Ramanathan	Method for Identification of Epileptic and Non-Epileptic Seizures
2.	Method for Extracting Volumetric Features in a Mesh Representation of CAD Model using Random Cutting Planes and and Graph Traversals	
3.	Nilesh Jayantilal Vasa (ED) and R. Sarathi (EE)	Quadratic Electro-Optics Based Deflection-Free Wide Path-Length Modulation and Later Scanning Device for Time Domain Optical Coherence Tomography
4.	Ganapathy Krishnamurthi	Dual-Modality Camera for X-Ray and Fluorescence Imaging System

4.9.5. Research and Consultancy

Sponsored research projects

Sl. No.	Title	Period	Funding Agency	Amount (lakhs of Rs)	Co-ordinators
1.	Developing a commercially viable real time driver behaviour and fatigue monitoring system	1 August 2016–31 March 2018	Uchhatar Avishkar Yojana (MHRD, MoRTH and Harita Seating Systems Limited)	110.50	Venkatesh Balasubramanian
2.	Design for Environmental Excellence: Life cycle assessment of hybrid composite structures	1 August 2016–31 March 2018	Uchhatar Avishkar Yojana - IIT Madras	57.98	Palaniappan Ramu
3.	Experimental and Numerical Studies on Cold Swaging of Zr Alloy Bars for End Cap Manufacturing in PHWR Fuel Assemblies	10 November 2016–9 November 2019	BRNS	53.08	Jayaganthan
4.	Pulsed Laser Deposited Lead-Free Perovskite Films for Photovoltaic Cell Applications	14 September 2016–13 September 2018	DST	19.20	Nilesh Jayantilal Vasa, L. Vinoth Kumar (Post-Doctoral Fellow)
5.	Erosion-Corrosion studies on Thermal Sprayed Conventional and Nanostructured Coatings	18 August 2016–17 August 2018	CPRI	68	Jayaganthan and Nilesh J. Vasa
6.	Design and development of a novel six degree of freedom robotic motion platform for medical rehabilitation	18 March 2017–17 March 2020	DST	66.99	Sandipan Bandyopadhyay
7.	Massively Parallel Single Cell Nano-electroporation, Photoporation and Mechanoporation Chip	2 January 2017–1 January 2020	New Faculty Scheme	32	Tuhin Subhra Santra

Sl. No.	Title	Period	Funding Agency	Amount (lakhs of Rs)	Co-ordinators
8.	Scale-up Process Development of Highly Efficient Innovative Core-Shell structured Electrode Materials and Investigate their Electrochemical Performance by Fabricating Lithium Batteries for Clean Energy Storage (Clean Energy Initiative-DST, New Delhi)	2017–2019	DST, New Delhi	20.16	Jayaganthan
9.	Massively Parallel High Throughput Single Cell Photoporation and Mechanoporation	29 August 2016–28 August 2018	New Faculty Scheme	5.00	Tuhin Subhra Santra
10.	Design and Development of a Robot Dog	3 March 2017–2 March 2018	Exploratory Research Project	9.85	Sandipan Bandyopadhyay
11.	Development of an electro-optically tunable optical coherence tomography technique for detection of tooth decay	July 2014–July 2016	DST	54.85	Nilesh J. Vasa (ED), R. Sarathi (EE)
12.	Development of a laser assisted scribing technique to generate strips of a parabolic antenna	March 2014–March 2016	ISRO	17.06	Nilesh J. Vasa (ED), G. Balaganesan (IITM), A. C. Mathur (ISRO)
13.	Understanding the formation of copper sulphide in transformer insulation due to mustress ageing	March 2015–March 2017	CPRI (Central Research Power Institute)	30	Nilesh J. Vasa (ED), R. Sarathi (EE)

RBIC projects

Sl. No.	Faculty Member	Title	Industry	Amount (in lakhs)
1.	C. S. Shankar Ram	Development of an Antilock Brake System for Heavy Commercial Road Vehicles	Madras Engineering Industries Private Limited	59.86
2.	R. Krishna Kumar	Raghupathi Singhania Centre of Excellence for Tyre and Vehicle Mechanics Phase - IV	Hari Shankar Singhania Elastomer and Tyre Research Institute	82.88
3.	R. Krishna Kumar	Retainer Consultancy Services Phase- II	Hari Shankar Singhania Elastomer and Tyre Research Institute	9
4.	M. Ramanathan	Geometric segmentation for partial search	Sconce Solutions Private Limited	12
5.	Palaniappan Ramu	An investigation of using L-moments for efficient robust design	Siemens Technology and Services Private Limited	9.49
6.	R. Krishna Kumar	Advice to a tribunal on wheel rim failure	Tuli & Co. Solicitors and Advocates	1.15
7.	Nilesh Jayantilal Vasa	Testing of optical fibre cable	Common Code	Nil
8.	Venkatesh Balasubramanian	Advisor for Strategy and Innovation	SocView Solutions Private Limited	1.38
9.	R. Krishna Kumar	Advice for FEM of a wheel rim	Common Code	Nil
10.	Palaniappan Ramu	Meta modeling for automotive FEM/CFD/Crash use cases	ICUBE Consulting Services India Private Limited	3.92
11.	Nilesh J. Vasa (ED) Satyanaryanan Seshadri (AM, PI)	Development of dust monitoring system using optical scattering principle for stack monitoring	Forbes Marshall Private Limited, Pune	6.69
12.	Venkatesh Balasubramanian	Development of instrumented seat for driver performance monitoring	Messrs Harita Seating Systems Limited	68.4

Research publications of the faculty members and research scholars

Total number of papers published in refereed international journals: 53

Total number of papers published in refereed national journals: 1

Total number of papers presented at national conferences: 10

Total number of papers presented at international conferences: 39

Papers published in referred international journals

1. Balaji Srinivasan, M. S. Ramachandra Rao and Balkrishna C. Rao. 2016. On the development of a dual-layered diamond-coated tool for the effective machining of titanium Ti-6Al-4V alloy. *Applied Physics* 50(1): 1-11. doi: 10.1088/1361-6463/50/1/015302
2. Vani Damodaran, Suresh Ranga Rao and N. J. Vasa. 2016. Optical coherence tomography based imaging of dental demineralisation and cavity restoration in 840 nm and 1310 nm wavelength regions. *Optics and Lasers in Engineering* 83: 59-65. doi: 10.1016/j.optlaseng.2016.03.005
3. V. Ezhilmaran, L. Vijayaraghavan, S. Ganesan, N. K. Cherian and N. J. Vasa. 2016. Pulsed Nd^{3+}:YAG laser assisted micro-dimple formation in chromium films under different ambient conditions. *JLMN-Journal of Laser Micro/Nanoengineering* 11(2): 179-184. doi: 10.2961/jlmn.2016.02.0007
4. R. Sarathi, V. Sri Harsha, H. Griffiths, A. Haddad and N. J. Vasa. 2016. Water droplet initiated discharges on epoxy nanocomposites under DC voltages. *IEEE Transactions on Dielectrics and Electrical Insulation* 23(3): 1743-1752. doi: 10.1109/TDEI.2016.005387
5. Venkataramesh Bhimasingu, Emmanuel Pannirselvam, I. A. Palani and N. J. Vasa. 2016. Influence of target grit count and sintering temperature on pulsed laser deposition of SiC thin films. *The International Journal of Advanced Manufacturing Technology* 84(42863): 769-776. doi: 10.1007/s00170-014-5622-0
6. Srinagalakshmi Nammi, Ankit K. Jain, G. Balaganesan, Anil C. Mathur and N. J. Vasa. 2016. Micro scribing of copper and aluminum thin films in air and water using pulsed Nd^{3+}:YAG laser. *Journal of Laser Micro Nanoengineering* 11(1): 46. doi: 10.2961/jlmn.2016.01.0009
7. S. Edward Jero and P. Ramu. 2016. Curvelets-based ECG steganography for data security. *Electronics Letters.* 52(4): 283-285. doi: 10.1049/el.2015.3218
8. A. Voinov, N. Kolagani, M. K. Mc Call, P.D. Glynn, M.E. Kragt M.E., F.O. Ostermann, S.A. Pierce and P. Ramu. 2016. Modelling with stakeholders - Next generation. *Environmental Modelling and Software* 77: 196-220. doi: 10.1016/j.envsoft.2015.11.016
9. P. Ramu and S. Arul. 2016. Estimating probabilistic fatigue of Nitinol with scarce samples. *International Journal of Fatigue* 85: 31-39. doi: 10.1016/j.ijfatigue.2015.11.022
10. N. Kolagani and P. Ramu. 2016. A participatory framework for developing public participation GIS solutions to improve resource management systems. *International Journal of Geographical Information Science* 31(3): 463-480. doi: 10.1080/13658816.2016.1206202
11. K. Mohan, J. A. Suresh, P. Ramu and R. Jayaganthan. 2016. Microstructure and mechanical behavior of Al 7075-T6 subjected to shallow cryogenic treatment. *Journal of Materials Engineering and Performance* 25(6): 1-10. doi: 10.1007/s11665-016-2052-1
12. Jiju Peethambaran and Amal Dev Parakkat. 2016. An empirical study on randomized optimal area polygonization of planar point sets. *ACM Journal of Experimental Algorithmics* 21(1): 1.10:1-1.10:24. doi: 10.1145/2896849
13. Jiyo S. Athertya and G. Saravana Kumar. 2016. Fuzzy clustering based segmentation of vertebrae in T1-weighted spinal MR images. 6(2). doi: 10.5121/ijfls.2016.6202
14. J. S. Athertya and G. Saravana Kumar. 2016. Automatic segmentation of vertebral contours from CT images using fuzzy corners. doi: 10.1016/j.compbiomed.2016.03.009
15. Vignesh Rajaram and Shankar C. Subramanian. 2016. Design and hardware-in-loop implementation of collision avoidance algorithms for heavy commercial road vehicles. *Vehicle System Dynamics* 54(7): 871-901. doi: 10.1080/00423114.2016.1170166
16. Suthirth Vaidya, Abhijit Chunduru, Ramanathan Muthuganapathy and Ganapathy Krishnamurthi. 2017. Longitudinal multiple sclerosis lesion segmentation: Resource and challenge. *Neuoimage* 148: 77-102.
17. Kuldeep Verma, Shravan Hanasoge, Jishnu Bhattacharya, H.M. Antia and Ganapathy Krishnamurthi. 2016. Asteroseismic determination of fundamental parameters of Sun-like stars using multilayered neural networks. *Monthly Notices of the Royal Astronomical Society* 416(4): 4206-4214.
18. Venkatesh Balasubramanian and Susila Anand. 2016. Correlation of elution and sensitivity of cell lines to dental composites. *Dental Materials* 32(3): e63-e72. doi: 10.1016/j.dental.2015.11.011
19. A. Vuppuluri and S. Vedantam. 2016. Grain growth rate for coupled grain boundary migration and grain rotation in nanocrystalline materials. *Philosophical Magazine Letters* 96(9): 339-346. doi: 10.1080/09500839.2016.1220683
20. Saurav Agarwal, Rangaprasad Arun Srivatsan and Sandipan Bandyopadhyay. 2016. Analytical determination of the proximity of two right-circular cylinders in space. *Journal of Mechanisms and Robotics* 8(4): 41010-1–41010-10. doi: 10.1115/1.4032211

21. Abhishek Agarwal, Chaman Nasa and Sandipan Bandyopadhyay. 2016. Dynamic singularity avoidance for parallel manipulators using a task-priority based control scheme. *Mechanism and Machine Theory* 96 (1): 107-126. doi: 10.1016/j.mechmachtheory.2015.07.013
22. K. Vikranth Reddy, Madhu Kodati, Kishen Chatra and Sandipan Bandyopadhyay. 2016. A comprehensive kinematic analysis of the double wishbone and MacPherson strut suspension systems. *Mechanism and Machine Theory* 105: 441-470. doi: 10.1016/j.mechmachtheory.2016.06.001
23. M. Hayashibe, A. Thondiyath, M. Ramalingam and S. Chandra. 2016. Differential analysis of muscle fatigue induced elbow and wrist tremor in controlled laparoscopic maneuvering. *Int J Med Robotics Comput Assist Surg.* doi: 0.1002/rcs.1772 (IF 1.511)
24. M. Hayashibe, A. Thondiyath and S. Chandra. 2017. Empirical mode decomposition-based filtering for fatigue induced hand tremor in laparoscopic manipulation. *Journal of Biomedical Signal Processing and Control* 31: 339-349. doi: 10.1016/j.bspc.2016.08.025
25. Vijendra Singh, Ranjith Nair, Asokan Thondiyath and Thiyagarajan Ranganathan. 2017. Design of a controllable variable buoyancy module and its performance analysis as cascaded system for selective underwater deployment. *IMechE Journal of Engineering for the Maritime Environment.* doi: 10.1177/1475090216688819
26. Asokan Thondiyath and Karthik Chandrasekaran. 2017. Design of a 2 DOF compliant tool tip for a handheld powered surgical tool. *Journal of Medical Devices* 11(1): 14502. doi: 10.1115/1.4034879
27. Anand Suresh Kumar and Ramarathnam Krishna Kumar. 2016. Force and moment characteristics of a rhombi tessellated non-pneumatic tire. *Tire Science and Technology* 44(2): 130-148. doi: 10.2346/tire.16.440205
28. Sameer Sharma, S. Vinuchakravarthy and Shankar J. Subramanian. 2016. Estimation of surface curvature from full-field shape data using principal component analysis. *Measurement Science and Technology* 28(1): 15003-1-15003-19. doi: 10.1088/0957-0233/28/1/015003
29. Kavitha Arunachalam and Geetha Chakaravarthi. 2016. Influence of dissolved gases in coupling waterbolus on superficial hyperthermia and evaluation of a water conditioning system with inline degassing. *Biomedical Physics and Engineering Express* 2(5): 1-11. doi: 10.1088/2057-1976/2/5/055003
30. V. Bhardwaj, R. Chowdhury and R. Jayaganthan. 2016. Nanomechanical and microstructural characterization of sputter-deposited ZnO thin films. *Applied Surface Science* 389: 1023-1032. doi: 10.1016/j.apsusc.2016.08.028
31. P. Trivedi, K. C. Nune, R. D. K. Misra, A. K. Patel, K. Balani and R. Jayganthan. 2016. Cellular response of Escherichia coli to Mg-2Zn-2Gd alloy with different grain structure: mechanism of disruption of colonisation. *Materials Technology* 31(13): 836-844. doi: 10.1080/10667857.2016.1239798
32. A. Rahman and R. Jayaganthan. 2016. Study of nanostructured CeO_2 coatings on superalloy. *Surface Engineering* 32(10): 771-778. doi: 10.1080/02670844.2016.1148381
33. D. Fuloria, N. Kumar, S. Goel, R. Jayaganthan, S. Jha and D. Srivastava. 2016. Tensile properties and microstructural evolution of Zircaloy-4 processed through rolling at different temperatures. *Materials and Design* 103: 40-51. doi: 10.1016/j.matdes.2016.04.052
34. A. D. Parakkat and R. Muthuganapathy. 2016. Crawl through neighbors: a simple curve reconstruction algorithm. *Computer Graphics Forum* 35(5): 177-186. doi: 10.1111/cgf.12974
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36. P. Trivedi, K. C. Nune, R. D. K. Misra, S. Goel, R. Jayganthan and A. Srinivasan. 2016. Grain refinement to submicron regime in multiaxial forged Mg-2Zn-2Gd alloy and relationship to mechanical properties. *Materials Science and Engineering A* 668: 59-65. doi: 10.1016/j.msea.2016.05.050
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38. Y. E. B. Vidhya and N. J. Vasa. 2016. Underwater annealing and texturing for enhancing electrical characteristics of n-aSi/p-cSi using Nd^{3+}:YAG laser beam-overlap technique with a wavelength of 532 nm. *Journal of Photonics for Energy* 6(1). doi: 10.1117/1.JPE.6.014001
39. C. S. N. Kumar and S. C. Subramanian. 2016. Cooperative control of regenerative braking and friction braking for a hybrid electric vehicle. *Proceedings of the Institution of Mechanical Engineers, Part D: Journal of Automobile Engineering* 230(1): 103-116. doi: 10.1177/0954407015581082
40. S. Goel, N. Kumar, D. Fuloria, R. Jayaganthan, I. V. Singh, D. Srivastava, G.K. Dey and N. Saibaba. 2016. Evaluating fracture toughness of rolled Zircaloy-2 at different temperatures using XFEM. *Journal of Materials Engineering and Performance* 25(9): 4046-4058. doi: 10.1007/s11665-016-2241-y
41. M. M. Shanmugam and T. S. Santra. 2016. Microfluidic devices in advanced caenorhabditis elegans research. *Molecules* 21(8): doi: 10.3390/molecules21081006
42. Y. E. B. Vidhya and N. J. Vasa. 2016. Enhancement in photoconductivity of a-Si thin films by annealing and texturing technique with the third harmonic output from a pulsed Nd^{3+}:YAG laser. *Procedia Manufacturing* 5: 734-746. doi: 10.1016/j.promfg.2016.08.060
43. S. Nammi, N. J. Vasa, G. Balaganesan and A. C. Mathur. 2016. Pulsed laser assisted micro-scribing of metal thin films in air and underwater using UV, visible and near-IR wavelengths. *Procedia Manufacturing* 5: 684-695. doi: 10.1016/j.promfg.2016.08.056
44. D. Fuloria, P. Nageswararao, R. Jayaganthan, S. Jha and D. Srivastava. 2016. An investigation of deformed microstructure and mechanical properties of Zircaloy-4 processed through multiaxial forging. *Materials Chemistry and Physics* 173: 12-25. doi: 10.1016/j.matchemphys.2015.09.025
45. S. Edward Jero, P. Ramu and R. Swaminathan. 2016. Imperceptibility-robustness tradeoff studies for ECG steganography using continuous ant colony optimization. *Expert Systems with Applications* 49: 123-135. doi: 10.1016/j.eswa.2015.12.010
46. Rao Nakkina, K. Parul Prakash and Saravana Kumar. 2016. Numerical studies on fluid flow characteristics through different configurations of spiral casing. 10(1): 297-311. doi: 10.1080/19942060.2016.1149103
47. D.V. Anand, S. Vedantam and B. S.V. Patnaik. 2016. Dissipative particle dynamics simulation of shear flow in a microchannel with a deformable membrane. *Microfluidics and Nanofluidics* 20(12). doi: 10.1007/s10404-016-1819-x
48. P. S. Mahapatra, S. Mathew, M. V. Panchagnula and S. Vedantam. 2016. Effect of size distribution on mixing of a polydisperse wet granular material in a belt-driven enclosure. *Granular Matter* 18(2). doi: 10.1007/s10035-016-0633-1
49. V. Varghese, P. Ramu, V. Krishnan and G. Saravana Kumar. 2016. Pull out strength calculator for pedicle screws using a surrogate ensemble approach. *Computer Methods and Programs in Biomedicine* 137: 11-22. doi: 10.1016/j.cmpb.2016.08.023
50. S. Balakrishnan, V. Midhun Reddy, A. Mehta, R. Nagarajan and N. J. Vasa. 2016. Suitability of laser-induced breakdown spectroscopy in screening potential additives to mitigate fouling deposits. *Applied Physics A* 122(4): 1-7. doi: 10.1007/s00339-016-9964-3
51. Shubhashisa Sahoo, Suresh Srivastava and Shankar C. Subramanian. 2016. Evaluation of transient response and implementation of a heading-angle controller for an autonomous ground vehicle. *Proceedings of the Institution of Mechanical Engineers, Part D: Journal of Automobile Engineering* 230(8): 1040-1056. doi: 10.1177/0954407015598242
52. Emmanuel Paneerselvam, M.S. Ramachandra Rao and N. J. Vasa. 2016. SiC thin film growth on different substrates using pulsed Nd^{3+}:YAG laser deposition. *Journal of Laser Micro Nanoengineering* 11(1): 71. doi: 10.2961/jlmn.2016.01.0013
53. C.V. Krishna Murthy, Shaumik Ray, Bala Pesala and Kavitha Arunachalam. 2016. A tri-band frequency selective surface (FSS) to diplex widely separated bands for millimeter wave remote sensing. *Journal of Infrared, Millimeter, and Terahertz Waves* 37(10): 944-952. doi: 10.1007/s10762-016-0292-7

Papers published in national journals

1. S. Guhathakurta, B. V. R. Tata and S. Ponraju and Venkatesh Balasubramanian. 2016. Is gamma irradiation as a secondary sterilization procedure required for decellularized xenogenic tissue material? *Current Science* 110(3): 337-344. doi: 10.18520/cs/v110/i3/337-344

Papers presented in national conferences

1. G. Saravana Kumar, A. Sivakumar and Sandipan Bandyopadhyay. HuMotor: A humane way to utilize human efforts at a workplace. *IPRoMM 2016*, VNIT Nagpur, 22-23 December 2016
2. G. Saravana Kumar, A. Sivakumar, P. Ramu and Sandipan Bandyopadhyay. Design of a four-bar mechanism to guide the motion of a falling tube. *IPRoMM 2016*, VNIT Nagpur, 22-23 December 2016.
3. J.A. Suresh, G. Saravana Kumar, R. Palaniappan and R. Jayaganthan. Fatigue life characterization of additively manufactured acrylic like poly-jet printed parts. *First Structural Integrity Conference and Exhibition (SICE-2016)*, Bengaluru
4. Sandipan Bandyopadhyay, A. Sivakumar, Gurunathan Saravana Kumar and Palaniappan Ramu. HuMotor: A humane way to utilize human efforts at a workplace. *National Workshop on Industrial Problems on Machines and Mechanisms*, 2016

5. Sandipan Bandyopadhyay, A. Sivakumar, Gurunathan Saravana Kumar and Palaniappan Ramu. Design of a four-bar mechanism to guide the motion of a falling tube. *National Workshop on Industrial Problems on Machines and Mechanisms,* 2016
6. V. Bhanu Chander, T. Asokan and B. Ravindran. 2016. A new multi-bug path planning for robot navigation in known environments. *IEEE TENCON (Technologies for Smart Cities)*. doi: 10.1109/TENCON.2016.7848676. ISSN: 7848676
7. T. Ranganathan and T. Asokan. Design and analysis of cascaded variable buoyancy systems for selective underwater deployment. *International Conference on Informatics in Control, Automation and Robotics*. 2016. doi: 10.5220/0005979903190326
8. Ramanathan Muthuganapathy, Shitanshu Kusmakar, Bernard Yan, Terence O'Brien and Marimuthu Palaniswami. Gaussian mixture model for the identification of psychogenic non-epileptic seizures using a wearable accelerometer sensor. *38th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC),* 2016. doi: 10.1109/EMBC.2016.7590872. ISSN: 1558-4615
9. Ramanathan Muthuganapathy and Amal Dev Parakkat. Crawl through neighbors: a simple curve reconstruction algorithm. *Symposium on Geometry Processing – 2016*. doi: 10.1111/cgf.12974
10. Ramanathan Muthuganapathy and Kumar Mridul. Design and development of a portable virtual reality headset. *Virtual Reality International Conference 2016*. doi: 10.1145/2927929.2927943

Papers presented in international conferences

1. B.C. Rao, V. D. Mishra and H. Murthy. 2016. Effect of artificial peak-ageing on the microstructure of Al6061 in the bulk form and machined chip. *International Symposium for Research Scholars (ISRS – 2016) on Metallurgy, Materials Science & Engineering*, Indian Institute of Technology Madras
2. B.C. Rao and M. M. Gurusamy. 2016. Evaluation of a new material model and its application to the simulation of large strain extrusion machining. *ISRS – 2016 on Metallurgy, Materials Science & Engineering*, Indian Institute of Technology Madras
3. B.C. Rao, K. Palaniappan and H. Murthy. 2016. Severe plastic deformation of Ti-6Al-4V by large strain extrusion machining. *ISRS – 2016 on Metallurgy, Materials Science & Engineering*, Indian Institute of Technology Madras
4. B.C. Rao, K. Palaniappan and H. Murthy. 2016. Production of ultra-fine-grained Ti-6Al-4V from large strain extrusion machining while suppressing shear localization. *MRS Fall Meeting*, Boston, Massachusetts, USA
5. B.C. Rao and M. M. Gurusamy. 2016. Application of a new constitutive model in the finite element analysis of large strain extrusion machining of Inconel 718. *MRS Fall Meeting*, Boston, Massachusetts, USA
6. N. J. Vasa and Y. Esther Blesso Vidhya. 2016. Enhancement in photoconductivity of a-Si thin films by annealing and texturing technique with the third harmonic output from a pulsed Nd^{3+}:YAG laser. *44th North American Manufacturing Research Conference.* doi: 10.1016/j.promfg.2016.08.060
7. N. J. Vasa, S. Nammi, G. Balaganesan and A. C. Mathur. 2016. Pulsed laser assisted micro-scribing of metal thin films in air and underwater using UV, Visible and Near-IR wavelengths. *44th North American Manufacturing Research Conference*. doi: 10.1016/j.promfg.2016.08.056
8. N. J. Vasa, Shivani Tiwari and Balaji Srinivasan. 2016. Fiber Bragg grating-based wavelength modulation spectroscopy technique for trace gas sensing. SPIE Photonics Europe. doi: 10.1117/12.2227749
9. S.E. Jero and P. Ramu. 2016. A robust ECG steganography method. *10th International Symposium on Medical Information and Communication Technology, ISMICT 2016*. doi: 10.1109/ISMICT.2016.7498893
10. P. Ramu, S. Arul and E.J. Sam Jeeva Raj. 2016. ECG steganography using Contourlet Transform for transmission of secured patient identity. *1st Singapore-Cybersecurity R and D Conference, SG-CRC 2016*. doi: 10.3233/978-1-61499-617-0-131
11. P. Ramu, N. Kolagani, R. Gorripati and A. Voinov. 2016. A probabilistic approach for participatory evaluation of resource management systems. *8th International Congress on Environmental Modelling and Software* in Toulouse, France, 10-14 July 2016.
12. G. Saravana Kumar, V. Varghese and V. Krishnan. 2016. Simulation of axial pull out of pedicle screw in synthetic bone models. *International Conference on Biomedical Systems, Signals and Images*, IIT Madras, Chennai, India.
13. G. Saravana Kumar, Jiyo. S. Athertya, R. Thiyagarajan and G. Saravana Kumar. 2016. Segmentation of lumbar vertebrae from MRI using expectation maximization and hidden Markov random fields. *International Conference on Biomedical Systems, Signals and Images*, IIT Madras, Chennai, India.
14. G. Saravana Kumar and Jiyo. S. Athertya. 2016. Segmentation and labelling of human spine MR images using fuzzy clustering. *The Second International Conference on Computer Science, Engineering and Information Technology (CSITY 2016)*, Chennai, India.
15. G. Saravana Kumar. 2016. Affine fractal interpolation functions for multi-valued data. *3rd International Conference on Developments in Science, Management and Engineering*, Trichy, India.
16. G. Saravana Kumar. 2016. Fatigue life characterization of additively manufactured acrylic like poly-jet printed parts. *First Structural Integrity Conference and Exhibition (SICE-2016)*, Bengaluru, 4-6 July 2016
17. G. Saravana Kumar and Vivek Velivela. 2016. A finite element model to predict the part strength of fused deposition modeling printed parts. *ASME 2016 International Mechanical Engineering Congress & Exposition*, Phoenix, USA, 11-17 November 2016. doi: 10.1115/IMECE2016-66810
18. K. Arul Prakash, N. Parameswara Rao and G. Saravana Kumar. 2016. Analysis of total head loss in various configurations of spiral casing: a numerical study. *ASME 2016 International Mechanical Engineering Congress & Exposition*, Phoenix, USA, 11-17 November 2016. doi: 10.1115/IMECE2016-66358
19. G. Saravana Kumar and Jiyo. S. Athertya. 2016. Segmentation of vertebral bodies using active shape model. *International Conference on Scientific Computing (ICASC2016)*, Department of Mathematics, IIT-Madras, 28-30 November 2016.
20. G. Saravana Kumar, V. Varghese and V. Krishnan. 2016. A finite element analysis based sensitivity studies on pullout strength of pedicle screw in synthetic osteoporotic bone models. *IEEE EMBS Conference of Biomedical, Engineering and Sciences*, Kuala Lumpur, Malaysia, 4-8 December 2016. doi: 10.1109/IECBES.2016.7843478
21. G. Saravana Kumar, Jiyo. S. Athertya, G. Saravana Kumar. 2016. Sensitivity analysis on effect of biomechanical factors for classifying vertebral deformities. *8th International Conference on Soft Computing and Pattern Recognition (SoCPaR2016)*, VIT University, Vellore, 19-21 December 2016.
22. Lelitha Vanajakshi, Shrikant Gurunath Fulari and Shankar C. Subramanian. 2016. Traffic state estimation under uncertain automated sensor data. *95th Transportation Research Board Annual Meeting*
23. Ganapathy Krishnamurthi, Athira J Jacob and Varghese Alex. 2016. Segmentation and tracking of myocardial boundaries using dynamic programming. *International Workshop on Statistical Atlases and Computational Models of the Heart*. doi: 10.1007/978-3-319-52718-5_13
24. Ganapathy Krishnamurthi, Varghese Alex, Mohammed Safwan K.P., Sai Saketh Chennamsetty. 2017. Generative adversarial networks for brain lesion detection. *SPIE Medical Imaging*. doi:10.1117/12.2254487
25. Srikanth Vedantam, Harinadha Gidituri, Vijay Anand and Mahesh Panchagnula. 2016. Parametric study on phase separation of binary mixtures in a lid driven cavity: a DPD study. *APS Division of Fluid Dynamics (Fall)*. doi: 10.1103/BAPS.2016.DFD.M25.7
26. Srikanth Vedantam, Luv Verma and Srinivasan M. Sivakumar. 2016. Homogenization and improvement in energy dissipation of nonlinear composites. *International Society for Optics and Photonics.* doi: 10.1117/12.2229485
27. Sandipan Bandyopadhyay, Halil Tetik, Rohit Kalla and Gokhan Kiper. 2016. Position kinematics of a 3-RRS parallel manipulator. *Proceedings of 21st CICSM IFToMM Symposium on Robot Design, Dynamics and Control, ROMANSY*. doi: 10.1007/978-3-319-33714-2_8
28. Sandipan Bandyopadhyay, Anirban Nag, Vikranth Reddy and Saurav Agarwal. 2016. Identifying singularity-free spheres in the position workspace of semi-regular Stewart platform manipulators. *Proceedings of the 15th International conference on Advances in Robot Kinematics.*
29. Sandipan Bandyopadhyay, Anirban Nag and Santhakumar Mohan. 2016. Forward kinematic analysis of the 3-RPRS parallel manipulator. *Proceedings of the 6th European Conference on Mechanism Science*, 20-23 September (EUCOMES). doi: 10.1007/978-3-319-44156-6_11
30. Krishna Kumar Ramarathnam, Ashnil Kumar, Pradeeba Sridar, Ann Quinton, Dagan Feng, Ralph Nanan, Jinman Kim. 2016. Plane identification in fetal ultrasound images using saliency maps and convolutional neural networks. *International Symposium on Biomedical Imaging*. doi: 10.1109/ISBI.2016.7493385
31. P. P. Patnaik, C. V. Krishnamurthy and K. Arunachalam. 2016. Design and validation of slot spiral antenna for stepped frequency ground penetrating radar. *IRS symposium 2016*. doi: 10.1109/IRS.2016.7497334
32. Nithila Kumaran and Kavitha Arunachalam. 2016. A wideband non-resonant FSS with finite number of unit cells for mobile phone SAR reduction. *International Conference on Electromagnetics in Advanced Applications (ICEAA), 2016*. doi: 10.1109/ICEAA.2016.7731548
33. Shankar C. Subramanian and Vignesh Rajaram. 2016. Collision avoidance algorithm for a heavy commercial road vehicle under heterogeneous traffic. *ASME 2016 International Mechanical Engineering Congress and Exposition*.
34. Shankar C. Subramanian and Swagata Borthakur. 2016. Parameter matching and optimization of a series hybrid electric vehicle powertrain system. *ASME 2016 International Mechanical Engineering Congress and Exposition*.
35. Shankar C. Subramanian and C. S. Nanda Kumar. 2016. Analysis of vehicle lateral response during regenerative braking in a turn. *ASME 2016 International Mechanical Engineering Congress and Exposition*

36. Shankar J. Subramanian and S. J. Dharbaneshwer. 2016. Bias-variance analysis of EVFM estimates. *Processes in Combined Digital Optical and Imaging Methods Applied to Mechanical Engineering*, EPFL, Switzerland
37. Shankar J. Subramanian and Sameer Sharma. 2016. Computation of strains from 3D-DIC data using principal component analysis. *Processes in Combined Digital Optical and Imaging Methods applied to Mechanical Engineering, EPFL, Switzerland*
38. Shankar J. Subramanian and "Sameer Sharma, S. Vinuchakravarthy". 2016. Computation of full-field curvature from 3D shape data. *Processes in Combined Digital Optical and Imaging Methods applied to Mechanical Engineering, EPFL, Switzerland*
39. J. Shankar and Iniyan Thiruselvam Subramanian. 2016. Measurement of grain-level low cycle fatigue behaviour of aluminium oligocrystals using three-dimensional digital image correlation. *Processes in Combined Digital Optical and Imaging Methods Applied to Mechanical Engineering*, EPFL, Switzerland

Distinguished visitors to the Department

Sl. No.	Name and Designation	Date of Visit	Purpose of Visit
1.	Mr. Abhiyan Humane, Srishti School of Design	4 April 2016	Design for Form and Aesthetics
2.	Dr. E. Bhaskaran, Deputy Director (Industries and Commerce)	6 June 2016	Workshop for Motivating ITI Graduates for Incubation and Entrepreneurship in Industrial Automation and Automation Engineering
3.	R. Balasubramanian, AGM, SME Centre, SBI	9 June 2016	Workshop for Motivating ITI Graduates for Incubation and Entrepreneurship in Industrial Automation and Automation Engineering
4.	Dr. Sreeram T. R., Ather Energy, Bengaluru	17 August 2016	Product Design and DFSS–An Industry Perspective
5.	Amit Sharma, Head Procurement, Daimler India Commercial Vehicle	30 August 2016	Human Factors in Vehicle Design
6.	Dr. V. Susila Anand, Professor & Head, Department of Conservative Dentistry and Endodontics, Madha Dental College and Hospital	28 September 2016	Jaw Bio-mechanics
7.	Dr. Suresh Rao, Sri Ramachandra University	30 September 2016	Dental Diagnostics and Imaging
8.	Dr. Shanthi Vijayaragavan, Sri Ramachandra University	30 September 2016	Endoscopy
9.	Prof. Venkatesham Balide, IIT Hyderabad	6 October 2016	Science of Veena
10.	Dr. Arun Kumar, GE Global Research Centre, Bengaluru	7 October 2016	Science of Guitar
11.	Dr. K R Guruprasad, Assistant Professor, NITIC	27 October 2016	Science of Musical Instruments
12.	Prof David Barton, Professor, University of Leeds, School of Mechanical Engineering	10 November 2016	Visited Laboratories of the Department of Engineering Design
13.	Dr. Pankaj Wahi, IIT Kanpur	10 November 2016	Science of Musical Instruments
14.	Dr Ambarish Kulkarni, Swineburne University of Technology	16 February 2017	To discuss on Collaborative Projects

4.9.6. Other Activities of the Department

M.S. Thesis:

i) G. Ranjith, Thesis Title: Computational Fluid Dynamics Modeling of Flow through a Tilting Disc Heart Valve Prosthesis: This thesis modeled the flow dynamics in the presence of a TTK-Chitra tilting disc aortic heart valve. The shear stresses and flow profiles were studied in order to ensure sufficient factor of safety against platelet activation.

ii) Anand Suresh Kumar, Thesis Title: Design of Non-Pneumatic Tyres: A non-pneumatic tyre (NPT) is one which performs all the operations of a pneumatic tyre devoid of inflation pressure. In the present work, an NPT is designed to perform the functions of a pneumatic tyre. The NPT is designed with an aperiodic rhombi tessellated spoke acting as the load bearing member, where the 'unit cell' design is based on the vertical, circumferential and lateral stiffness offered by the structure.

iii) Yugandhara Rao Yadam, Thesis Title: Noncontact Measurement of Liquid Level using SFCW Radar Technique: Microwave sensors are designed and characterized at room and high temperature environment for non-contact level measurement. Real time signal acquisition is implemented in mono-static mode and the SFCW radar signals are processed for surface level measurements.

iv) Surya Rajan, Thesis Title: Orientation scores for developing an automated screening system for diabetic retinopathy: Diabetic retinopathy (DR) is an eye-related complication of diabetes caused due to damage to the retinal blood vessels, resulting in micro-aneurysms, hemorrhages and exudates on the retina. The aim of this work is to develop an analytical method for the segmentation of lesions on the retina.

v) M. Jeevan, Thesis Title: In-Vitro Validation of Image Guided Surgery System for Atrial Transseptal Puncture: For a safe TS puncture, one requires a delivery system and medical imaging software. The ablation catheters, stent, septal occlude and balloon catheters are referred to as delivery system. We propose an efficient method for target localization pre-operatively and three-dimensional visualization with respect to catheter tip of the scene during the procedure.

vi) Priyanshu, Thesis Title: Study of Optical Scattering and Extinction Techniques for Measuring Concentration of Flyash Particles in a Controlled Flow: A green-laser based light scattering and extinction techniques to measure the concentration of flyash particles with a size distribution ranging from few mu to few hundreds of mu are proposed and demonstrated.

vii) Sindhoor Bhat, Thesis Title: Fluid Structure Interaction Studies for Clinical Strategies: Fluid–Structure interaction, combined with patient specific model, can be a powerful tool for surgical planning and assessing clinical outcomes. This thesis develops models for two important surgical procedures to demonstrate the efficacy of this technique.

viii) S. Balaji, Thesis Title: On the development of a Low Cost Dual Layered Diamond coated Tool for the Effective Machining of Titanium Ti-6A1-4V Alloy: A boron-doped diamond interlayer was added to a microcrystalline diamond layer in an attempt to improve the interface adhesion strength. The resulting dual-layered-diamond tool showed significant improvement in tool life and finish in the high-speed-machining of Ti-6Al-4V parts when compared with machining by its uncoated counterpart.

ix) Pragyan Prasu Patnaik, Thesis Title: Design and Demonstration of UWB Antenna For SFCW Radar Application: Design, fabrication and characterisation of an ultra wide band (UWB) slot spiral antenna in the frequency range of 0.6 GHz to 4 GHz is reported for SFCW operation in mono-static and bi-static modes for non-contact and non-destructive detection of objects buried in the ground and concealed in buildings.

Ph.D. Theses:

i) J. Manecius Selvakumar, Thesis Title: Design and Analysis of Station Keeping Control for underwater Robotics using Disturbance Force Measurement: Designed and developed a station keeping controller and algorithm for remotely operated underwater robotic vehicles. This controller helps to reduce the position errors during station keeping of remote vehicles in the presence of underwater currents.

ii) P. Sakthivel, Thesis Title: Determination of rolling tyre characteristics and Structure Borne Vehicle Interior Noise: The pneumatic tyres are one of the important sources of noise and vibration in a vehicle. Two procedures have been established and presented in this thesis. First one is FEA-OMA technique used for determining the modal parameters of a rolling tyre which essentially depicts the belt vibration that forms the basis for an important mechanism of noise transfer to the vehicle. A second procedure is established based on component based TPA techniques with a relatively easier method compared to the classical matrix inverse method in order to predict the structure borne vehicle interior noise due to belt vibration during tyre/road interaction. A significant reduction in the product development cycle time and cost can be achieved by applying these procedures.

iii) C. Geetha, Thesis Title: A compact Microwave Applicator for Hyperthermia Treatment of Cancer – System Development and Assessment on Phantoms: A compact 434 MHz microwave applicator and a single channel hyperthermia treatment delivery system have been developed for cancer treatment. The prototype is validated on tissue phantoms and pilot study on volunteers was carried out to select potential sites for applicator array design.

iv) Nagesh Kolagani, Thesis Title: Model Calibration and Evaluation for Participatory Planning of Resource Management Systems: A Public Participation GIS based approach was adopted to develop a decision support system that will help manage watersheds in rural India. The proposed work allowed villagers to participate in planning the watersheds.

v) S. Edward Jero, Thesis Title: ECG Steganography using Discrete Wavelet Transform and Singular Value Decomposition: Patient diagnosis information was embedded in their ECG signal using wavelets. The challenges of minimal signal deterioration and robustness against hacking was addressed in this work

vi) Sourav Chandra, Thesis Title: Fatigue Induced Hand Tremor Classification and Compensation for Robot Assisted Surgical Systems: Developed a novel method for identifying and classifying fatigue induced hand tremor during robot assisted surgeries. He has also proposed a methodology to compensate the effects of such tremor in robot assisted surgical systems. One of the main characteristics of this work is that the method can predict the onset of tremor and then take action to compensate for the tremor.

Student visit

Sl. No.	Students	Purpose of Visit	Date and Venue
1.	School children from the North-Eastern states visited the department under the Ishan Vikas Program	To open up young minds and bring them in close contact with the IITs and IISERs during their vacation	15 December 2016, Department of Engineering Design

International collaboration achievements

Student visit

Sl. No.	Students	Purpose of Visit	Date and Venue
1.	Students from Shibaura Institute of Technology Tokyo (SIT)	Study tour and lab visits	12–25 March 2017, Department of Engineering Design

Activities initiated: Ishan Vikas Programme

4.10. Department of Humanities and Social Sciences

4.10.1. Introduction

Founded in 1959, the Department of Humanities and Social Sciences (HSS) is one of the oldest departments of Indian Institute of Technology Madras. Its distinguishing factor essentially is its inter-disciplinary nature, which allows students to develop an appreciation for a very diverse set of fields, including 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 of HSS boasts of a highly diverse and experienced faculty. It has an excellent student-teacher ratio and state-of-the-art facilities, offering an enriching academic environment.

4.10.2. Academic Programmes

Integrated M.A. (five-year programme)

New courses introduced

Sl. No.	Course No.	Title
1	HS3270	Ethnography
2	HS3280	Introduction to Cultural Anthropology
3	HS4006	Science and Technology in the 20th Century
4	HS5021	Conflict and Economic Interdependence
5	HS6017	History of Science and the Public
6	HS6020	Uncertainty, Asset Pricing and Empirical Aspects of Financial Markets
7	HS6022	GIAN: China Wired: Culture and Politics of New Media in China
8	HS6023	GIAN 161003G05: Science, Politics and Values

Students on roll as of September 2016+M.S. and Ph.D. admission in January 2017

Programme	Year I	Year II	Year III	Year IV	Year V and others	Total
M.A.	45	42	42	42	36	207
Ph.D.	25	28	14	11	11	89
Total	**70**	**70**	**36**	**53**	**47**	**296**

Student/scholar who attended conference/seminar/symposia abroad/India

Sl. No.	Student/Scholar	Roll No.	Conference/Seminar/Symposia/Workshop	Date and Venue
Abroad				
1.	Vipin V.	HS14D024	Australia-Middle East Conference on Business and Social Sciences	17-18 April 2016, Dubai
2.	Sreejith Varma	HS13D021	ASLE-UKI Postgraduate Conference 2016 (presented a paper)	31 August-2 September 2016, United Kingdom
3.	Mayuri Dilip	HS14D013	Austroasiatic workshop (presented a paper)	4-9 September 2016, Thailand
4.	Samik Malla	HS13D020	A workshop organised by the Università Cattolica del Sacro Cuore, Milan	18-22 July 2016, Italy
5.	Anchitha Krishna	HS14D010	International Conference on Eco-poetics (presented a paper)	22-25 June 2016, France
6.	Sivaja K. Nair	HS12D006	4th Global Symposium on Health System Research (presented a poster)	14-18 November 2016, Canada
7.	Manoranjan Sahoo	HS13D004	7th International Conference on Economics, Trade and Development (ICETD 2017) (presented a paper)	10-12 March 2017, France
8.	Sruthi Vinayan	HS14D020	International Seminar on New Feminist Writings: Emancipation to Representation (presented a paper)	16-17 March 2017, Pondicherry

Sl. No.	Student/Scholar	Roll No.	Conference/Seminar/Symposia/Workshop	Date and Venue
9.	Aswathy	HS13D002	Attended the symposium, Oxford Women's Leadership	20-22 March 2017, UK
10.	Veenapani Verma and Sumirtha Gandhi	HS14D023 and HS14D021	International Conference on Health Economics, Management and Policy (presented a paper)	24-25 March 2017, Istanbul
India				
1.	Manoranjan Sahoo	HS13D004	9th Doctoral Thesis Conference, Indira Gandhi Institute of Development Research	21-22 April 2016, Mumbai
2.	Aswathy	HS13D002	'Academic and Popular Writing and Publishing,' IRTC campus, Mudoor	8-10 April 2016, Palakkad
3.	Sruthi Vinayan	HS14D020	Fourth Feminist Methodology Workshop on Genealogies of Feminist Enquiry: Exploring the Politics of Knowledge	16-20 August 2016, Kottayam
4.	Swathi Sudhakaran	HS15D016	Film Studies workshop	21-24 June 2016, Kerala
5.	Manoranjan Sahoo	HS13D004	2016 Asia-Pacific Conference (presented a paper)	15 July 2016, Kolkata
6.	Devleena Chakravarthy	HS14D001	3rd International Research Scholars' Workshop (presented a paper)	27-28 July 2016, Kolkata
6.	Samik Malla	HS13D020	Radical General Semantics workshop	15-17 December 2016, Dehradun
			XIX International Conference of the Forum of Contemporary Theory	18-21 December 2016, Dehradun
			De-Centring English Studies: Studying Literature in the Global South (presented a paper)	19-21 January 2017, Bhubaneswar
7.	Sreejith Varma	HS13D021	UGC International Conference (presented a paper)	28-30 December 2016, Odisha
8.	Sivaja K. Nair	HS12D006	Achutha Menon Centre for Health Science Studies, SCTIMST	12-16 December 2016, Bengaluru
9.	Sindhu sekar	HS15D015	National Seminar on Writing India: Revisiting Historiographies, ideology and Genre (presented papers)	16-17 January 2017, New Delhi
10.	Aswathy	HS13D002	IAWS XV National Conference on Women's Studies (presented a paper)	22-25 January 2017, Chennai
11.	Deepak Kumar Behera	HS15D001	6th Dr. Raja J. Chelliah Memorial Conference on Public Economics and Policy (presented a paper)	23-24 March 2017, New Delhi

Students/scholars who won outside prizes and awards

Sl. No.	Student/Scholar	Roll No.	Name of Prize	Prize awarded by
1.	Justin Joseph	HS15D018	China Quiz (comprising cash award of ₹ 15,000 and certificates)	Chennai Centre for China Studies
2.	Nirmal A. P.	HS15D034		
3.	Ashwin Kurian Philip	HS15D033		
4.	Anitha Iris	HS14D012	CWIT (Charles Wallace India Trust) Grant	British Council, UK
5.	Padmapriya Govindrajan	HS12H031	Prestigious Yenching Scholarship	Peking University's China
6.	Anchitha Krishna	HS14D010	Fullbright Scholarship 2017-18	USA
7.	Unnimaya	HS14D009		
8.	Veena R.	HS11D009		

Students/scholars who won institute convocation/Institute Day prize

Sl. No.	Student/Scholar	Roll No.	Name	Name of Donor
1.	Aswathy Venugopal	HS15H007	Best academic record in first and second semester	Institute Merit Prize Joint Winners
2.	Melwin James	HS15H021		
3.	Anwesha Pathi (M.A. student, 2014 batch)	HS14H008	Best academic record in the third and fourth semesters	Institute Merit Prize
4.	Madhura Niveditha Balasubramaniam	HS13H017	Best academic record in the fifth and sixth semesters in each branch of M.A. (2013 batch)	Institute Merit Prize
5.	Zuha Moideen	HS13H043		
6.	Isha Ravi Bhallamudi	HS12H018	Best academic record in the seventh and eighth semesters in each branch of M.A. (2012 batch)	
7.	Liza Tom	HS12H026	Girl student with best academic record at the end of pre-final semester	Swati/ Jayalakshmi Memorial Award

4.10.3.Faculty and their Activities

Faculty

Sl. No.	Name and Qualifications	Designation	Major Areas of Specialization
1.	Umakant Dash, Ph.D. **(Head)** (IIT Kanpur)	Professor	Financial economics, health policy analysis, economic evaluation of healthcare programmes and inter-industry analysis
2.	Malathy Duraisamy, Ph.D. (Madras University)	Professor	Labour economics/econometrics, economics of education, industrial economics
3.	Evangeline Manickam, Ph.D. (Madras University)	Professor	American literature, South Asian diaspora studies (literature and film), feminist writing and humour studies
4.	V.R. Muraleedharan, Ph.D. (IIT Madras)	Professor	Healthcare policy, environmental health, technology and development, history of healthcare in South India
5.	Sudhir Chella Rajan, Ph. D. (University of California)	Professor	Automobility, sustainability and political theory, social studies of corruption
6.	K. Srilata, Ph.D. (University of Hyderabad)	Professor	Creative writing studies, women's writing, Indian writing in English and translation
7.	Aysha Iqbal Viswamohan, Ph.D. (Vikram University)	Professor	American literature, film studies and popular culture
8.	N. Sreekumar, Ph.D. (University of Hyderabad)	Professor	Philosophical and phenomenological hermeneutics, philosophies of Wittgenstein and Gadamer, bioethics
9.	S.P. Dhanavel, Ph.D. (Tripura University)	Professor	Indian drama, English language teaching, communication and soft skills
10.	JyotirmayaTripathy, Ph.D. (IIT, Kharagpur)	Professor	Culture studies, postcolonial theory, gender studies
11.	R. Swarnalatha, Ph.D. (Madras University)	Professor	Ecocriticism, American literature
12.	Rajesh Kumar, Ph.D. (University of Illinois)	Associate Professor	Language in education, sociolinguistics, linguistic theory
13.	Satya Sundar Sethy, Ph.D. (University of Hyderabad)	Associate Professor	Philosophy of language, analytical philosophy and Indian philosophy
14.	Sonika Gupta, Ph. D. (JNU New Delhi)	Associate Professor	Chinese domestic politics, foreign policy, International relations theory
15.	S. Subash, Ph. D. (IIT Bombay)	Associate Professor	Applied industrial economics, macroeconomics
16.	Roland Wittje, Ph.D. (NTNU Trondheim)	Associate Professor	History of science and technology, science and technology studies, history of science education and technical training
17.	John Bosco Lourdusamy, D. Phil. (Oxford University)	Associate Professor	Plantation studies, history of science and technology and medicine in modern India
18.	Milind Brahme, Ph.D. (JNU, New Delhi)	Associate Professor	German language and literature, comparative literature and literary theory; education
19.	Prema Rajagopalan, Ph.D. (IIT Kanpur)	Associate Professor	Sociology of science and technology, sociology of development
20.	**Solomon J. Benjamin,** Ph.D. (Massachusetts Institute of Technology)	Associate Professor	Urban studies, world development

Sl. No.	Name and Qualifications	Designation	Major Areas of Specialization
21.	Sudarsan Padmanabhan, Ph.D. (University of South Florida and Pondicherry University)	Associate Professor	Social and political thought, Indian philosophy and culture, philosophy of law
22.	M. Suresh Babu, Ph.D (JNU, New Delhi)	Associate Professor	Applied macroeconomics, industrial economics and trade and development
23.	Anup Kumar Bhandari, Ph.D. (Indian Statistical Institute)	Associate Professor	Industrial economics, applied econometrics, Indian banking and financial economics
24.	Binitha V.Thampi, Ph. D. (ISEC, Bengaluru)	Associate Professor	Gender and development, decentralisation and governance reforms, welfare state, poverty reduction policies and programs
25.	Joe Thomas Karackattu, Ph.D. (Jawaharlal Nehru University)	Assistant Professor	Economic interdependence and conflict, international relations
26.	K. Kalpana, Ph. D. (MIDS)	Assistant Professor	Gender and development, women's studies and microfinance
27.	Mathangi Krishnamurthy, Ph.D. (University of Texas, Austin)	Assistant Professor	Anthropology of work, medical anthropology, gender studies
28.	Merin Simi Raj, Ph. D. (IIT Bombay)	Assistant Professor	Postcolonial studies, Indian fiction in English and literary historiography studies
29.	Sabuj Kumar Mandal, Ph. D. (ISEC, University of Mysore)	Assistant Professor	Energy and environmental economics, applied econometrics, industrial economics
30.	Santhosh Abraham, Ph.D. (University of Hyderabad)	Assistant Professor	Mental asylums in colonial India, Muslims, history, education, social mobility
31.	R. Santhosh, Ph.D. (ISEC, University of Mysore)	Assistant Professor	Sociology, globalization and change
32.	S. S. Tabraz, Ph. D. (JNU, New Delhi)	Assistant Professor	International relations theory, conflict resolution, international mediation and politics of west and south Asian regions
33.	Hemachandran, Ph. D. (Cambridge University)	Assistant Professor	Literary criticism and rhetoric, disability studies and comparative musicology
34.	Yi-Hsun Richard Chen	Visiting Faculty	Chinese language
35.	Johannes Wenzel	DAAD Faculty	German language

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

Sl. No.	Coordinator(s)	Title	Period
Workshop:			
1	Roland Wittje	Co-organizing and teaching in the Universeum training workshop, Revealing University Objects: From the Attics to the Public, University of Strasbourg	23-27 May 2016
2	Joe Thomas Karachuttu	Workshop/Guest Lecture: State-society relations in China	8 September 2016
3	Aysha Iqbal	Module on Theatre/Performance workshop	19-23 September 2016
4	V. R. Muraleedharan and Umakant Dash	Equity in Healthcare Financing workshop (organized in collaboration with PHFI, New Delhi)	12-16 July 2016
5	Roland Wittje	Recent Heritage of Science workshop, XVII Universeum Network Meeting	10 June 2016
6	Aysha Iqbal	Film Adaptations and Literature workshop	10 January 2017
7	Mathangi Krishnamurthy	Medical Technologies in Society workshop (organized by the Centre for Technology and Policy)	3-4 March 2017
8	Jyotirmaya Tripathy	Contemporary Cultural Studies workshop conducted by Prof. Radhakrishnan (one of the foremost cultural critics of contemporary times), University of California, Irvine	6 March 2017
Conference			
1	D. Malathy, Subash S. and Anup Kumar Bhandari	11th Annual International Conference of Forum for Global Knowledge Sharing	3-5 December 2016

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

Sl. No.	Faculty Member	Title	Institution	Period
Workshops				
1.	S. P. Dhanavel	Applied Linguistics	Department of HSS, IIT Madras	12 April 2016
2.	S.P. Dhanavel	English for Writing Ph.D. Thesis and Journal Papers (organized by the Department of English; delivered two lectures: How to write a Ph.D. thesis, and How to write a research paper)	Shri Vishnu Engineering College for Women, Bhimavaram	21–22 October 2016
3.	Anup Kumar Bhandari	Advance Panel Data and Time Series Models	IFMR, Andhra Pradesh	9-12 January 2017
4.	S. Subash	Art of Writing Research Article, session handle on Importance of Publication in Academic Life and Research Problem	Pondicherry University	27-28 March 2017
Seminar				
1.	Umakant Dash	Implementation and Operational Research Proposal Development (delivered a lecture on Cost Effective Analysis)	National Institute for Research in Tuberculosis, Chennai	1 June 2016
2.	S. P. Dhanavel	Faculty Development Programme (delivered two lectures: Language Use in Engineering Classrooms and Task-Based Instruction)	Government College of Technology, Coimbatore	1 November 2016
		Outcome-Based Education and Accreditation for Programme Evaluators (PEVs)	IIT Madras	12 November 2016
3.	Roland Wittje	Interrogating Democracy: Indian and Global Perspectives Seminar (presented a paper on Science, Democracy and the Public: German and Indian Perspectives)	University of Pune	23-24 November 2016
4.	N. Sreekumar	Multiple Narratives of Swaraj (in connection with the Indian Council of Philosophical Research, New Delhi sponsored World Philosophy Day Celebration, 2016	Amrita Darshanam International Centre for Spiritual Studies, Amrita University, Kerala	14 November 2016
5.	Sonika Gupta	Presented a paper: Internet and Nationalism in China: A Foreign Policy Analysis	Tibet Policy Institute	1 February 2017
6.	Malathy D.	International Seminar on Innovations in Financing of Higher Education jointly organised by Centre for Policy Research in Higher Education (CPRHE) (presented a paper, Private Higher Education in India: Expansion, Costs and Financing)	NUEPA, New Delhi	16-17 February 2017
7.	S. P. Dhanavel	National Seminar (delivered the valedictory address on From Technical to Human Communication)	Valliammai Engineering College, Kattankulathur	15 March 2017
		National Seminar (delivered the valedictory address on An Indigenous Approach to Indian English Literature)	Satyabama University, Chennai	17 March 2017
Symposium				
	Sabuj Kumar Mandal	Symposium Knowledge conclave	Centre for Science and Environment, Delhi	5-7 March 2017
Conference				
	Umakant Dash and Deepak Kumar Behera (research scholar)	12th Annual Conference of the Asia-Pacific Economic Association (delivered lecture: Determinants of Health Financing Transition: Empirical Evidence from South-East Asia)	International Management Institute, Kolkata	13-15 July 2016
	S. P. Dhanavel	National Conference (delivered the keynote address on Strategies for ELT in the Classroom)	M. Kumarasamy College of Engineering (Autonomous), Karur	8 February 2017
	National Conference (delivered a plenary lecture: A Mnemonic Approach to Learning English)	Ramakrishna Mission, Coimbatore	25 March 2017	

Special lectures delivered by the faculty in other institutions

Sl. No.	Faculty Member	Topic of Lecture	Institution	Date
1	S. P. Dhanavel	Writing a Research Paper for Impact Factor Journals	VIT Chennai Campus	13 February 2017
		Using Technology in Teaching Report Writing	Institute of Technology and Science, Andhra Pradesh	23 December 2016
		An Agricultural Model for English Language Teaching in India, International Conference	Bharathiar University, Coimbatore	3 March 2017
		Learning English with Abdul Kalam, National Conference	Periyar University Constituent College, Mettur Dam	18 March 2017
		The Importance of Listening Skills for Employment	Quaide Millath Government College for Women	1 December 2016
2	S. P. Dhanavel	Living Visions and Values	Hindustan University, Chennai	12 April 2016
3	Aysha Iqbal	Semiotics, Media and Representation, UGC-Refresher course	University of Madras	28 September 2016
4	S. P. Dhanavel	Emotional Intelligence, Self-Awareness and Higher Goals in Education	Centre for Continuing Education and Teaching Learning Centre	1 June 2016
		Emotional Intelligence and Critical Thinking	PSG College of Technology, Coimbatore	10 June 2016
	Using Technology in Teaching Report Writing	Institute of Technology and Science, Andhra Pradesh	23 December 2016	
5	S. P. Dhanavel	Writing a Research Paper for Impact Factor Journals	VIT Chennai Campus	13 February 2017

Visits abroad by faculty

Sl. No.	Faculty Member	Country Visited	Date	Purpose of visit	Funding from
1.	Aysha Iqbal	London	27 April 2016	Contemporary Hindi Film Directors: From Behind the Scenes to Being Scene Stealers" Invited talk	Institute funding
2.	Aysha Iqbal	London	29 April 2016	When Shakespeare Meets Bollywood: But Where Are the Comedies?" . Conference paper presented "Indian Shakespeare's on Screen" Asia House	Institute funding
3.	Sreekumar	European	7-12 May 2016	Presentation: Philosophical Ideas in Indian Architecture with Special Reference to Kerala Temple Architecture	Institute funding
4.	Roland Wittje	France	23-27 May 2016	Workshops / conferences organized: Co-organizing and teaching in the Universeum training workshop "Revealing University Objects: From the Attics to the Public"	Institute funding
		Germany	15 May - 15 July 2016	Visiting researcher	Institute funding
5.	Aysha Iqbal	UK	23 August 2016	Invited by BBC-Culture for participating in their poll on 21st century's greatest films.	Institute funding
6.	Malathy D.	USA	7-9 September 2016	The Macroeconomics of Uncertainty and Volatility workshop, Stanford Institute for Theoretical Economics (SITE)	Institute funding
7.	Roland Wittje	Turkey	26-30 September 2016	Presented a paper, How to make the arc speak? Experimenting in electroacoustic	Institute funding
8.	Malathy D.	USA	15-17 June 2016	Project meeting and talk	Institute funding
9.	Evangeline Manickam	Ireland	27 June-1 July 2016	ISHS International Society for Humour Studies Conference (presented a paper)	Institute funding
10.	Devaki Reddy	Indonesia	18-20 July 2016	Bicole Conference on Language Education (presented a paper: The impact of an ICT-enabled vocabulary course on learners' vocabulary)	Institute funding
11.	Roland Wittje	Netherlands	9-11 June 2016	Member, Program Committee of the XVII Universeum Network Meeting	Institute funding
		Berlin	15 June 2016	Sound Modernities: Histories of Architecture, Design, and Space (commentator at the workshop)	Institute funding
		Italy	4-8 July 2016	Italy to carry out experiments on the singing and speaking arc with historical experiments and shoot a short film	Institute funding
		Germany	15 May-15 July 2016	Visiting research fellow at the Max Planck	Institute funding
12.	Santhosh Abraham	United Kingdom	27-30 July 2016	International Conference (presented paper: Making of Madras Coolies: Labour Migrations, Legislations and Resistances in Colonial South India)	Institute funding
13.	Roland Wittje	Berlin	21-22 October 2016	Transmission, Reflection: Testing Materials in the Laboratory, at the workshop Testing Hearing	Institute funding
14.	Umakant Dash and Sivaja K. Nair (research scholar)	Canada	14-18 November 2016	Mapping the Financial Vulnerabilities Associated with Re-emerging Infectious Diseases: A case of Kerala, India, Fourth Global Symposium on Health Systems Research	Institute funding
15.	Mathangi Krishnamurthy	Canada	16-19 March 2017	The Program Committee for the Association for Asian Studies (AAS) 2017 Annual Conference Embodied Interventions: Body, Gender, and Technology in South Asia	Institute funding
16.	John Bosco Lourdusamy	Berlin	13-17 March 2017	Book writing workshop on Moving Crops, Max Plank Institute for the History of Science	Institute funding

Honours and awards obtained by faculty

Sl. No.	Faculty Member	Name of Award	Awarded by	Awarded for	Date of award
Awards					
1.	Mathangi Krishnamurthy	Young Faculty Recognition Award	IIT Madras	The Nightly Lives of Transnational Customer Service Workers in Pune, India (encapsulated in a soon-to-be published book, manuscript titled, 1-800-Worlds)	6 September 2016
2.	Satya Sundar Sethy	Young Philosopher Award	Indian Council of Philosophical Research	In recognition of outstanding performances during the last five years	26 April 2016

Editorial boards of journals

Sl. No.	Faculty Member	Position (Editor/Member)	Journal Name
1.	Dr. Santhosh Abraham	Nominated as the editorial committee member	*South Asia Research*
2.	Dr. Joe Thomas Karackattu	Editor with *H-Asia*, based at Michigan State University	*H-Asia* covers Asian Studies
3.	Dr. Rajesh Kumar	Member, Editorial Board	*Language and Language Teaching*

4.10.4. Research and Consultancy

Sponsored Research Projects

Sl. No.	Title	Period (in months)	Funding Agency	Amount (₹ in lakhs)	Co-ordinators
1.	SICI Curriculum, Development Project with Ottawa University, Canada	18	Shastri Indo-Canadian Institute	2.44	-
2.	SUBURBIN: Subaltern Urbanization in India	14	Centre for Social Sciences and Humanities	3.39	-
3.	An Assessment of Performance of Indian Textiles Industry	18	Indian Council of Social Science & Research	9	-
4.	Interdisciplinary Bridges in Indo-European Studies (IBIES)- ERASMUS MUNDUS Partnership	43	European Commission	25.29	Jyotirmaya Tripathy
5.	Building an International Research Network on Sustainability to Enhance Strategic Knowledge for Climate Change	39	Department of Science and Technology	533.74	Murty B. S.
6.	Centre for Technology and Policy (CTaP)	60	Ministry of Human Resource & Development	500	Ashok Jhunjhunwala

Sl. No.	Title	Period (in months)	Funding Agency	Amount (₹ in lakhs)	Co-ordinators
7.	Medicine and British Empire in South India: A Study of Psychiatry and Mental Asylums in Colonial Kerala	27	Indian National Science Academy	4.37	-
8.	Contextualising Solidarity Economy in a Feminist Perspective in Tamil Nadu	15	French Institute of Pondicherry	3.4	-

Industrial Consultancy projects

Sl. No.	Faculty Member	Title	Industry	Amount (₹ in lakhs)
1	Rajesh Kumar	Bringing Proficiency in English into Slum and Rural School Children	Tamil Nadu Newsprint and Papers Limited	45
2	Sudhir Chella Rajan	Cities Fit for Climate Change -Review of Climate-Proofing	German Agency for Technical Cooperation	6.5
3	Sudhir Chella Rajan	Climate-proof Urban Development in India	German Agency for Technical Cooperation	6.5
4	V. R. Muraleedharan	Universal Health Coverage (UHC)	Director of Public Health and Preventive Medicine	10
5	Mathangi Krishnamurthy	Future Bodies: The Politics and Ethics of Diagnostic Testing and Genetic Engineering in India	Wellcome Trust UK	5.09
6	Sudhir Chella Rajan	Value for Sustainable Aviation	Airbus Engineering Centre India Private Limited	85.9
7	N. Sreekumar	A Study of the Philosophy of Architecture with Special Reference to Kerala Architecture	Vedika	1.15
8	M. Suresh Babu	What are the Effects of Various Interventions and Approaches used for Enhancing Poverty Reduction and Development Benefits of 'Within Country Migration'? - A systematic Review	Department for International Development	49.2
9	Sudhir Chella Rajan	Future Sea Level Rise: Assessment of Loss and Damage in Chennai in 2050	Tamil Nadu State Land Use Research Board	19.41
10	Umakant Dash	Analysis of Claims Data to Inform Strategic purchasing in the Indian context	World Health Organization	15
11	Sonika Gupta	Liminal Spaces of Citizenship: A Case Study of Tibetan Exile Community	Chiang Ching-Kuo Foundation for International Scholarly Exchange	17.2
12	Sudhir Chella Rajan	Indo-German Dialogue on Urban Green Practices	Heinrich Boll Stifung	16.88

Faculty members' participation with other institution under MoU:

Sl. No.	Faculty Member	Participation details	University/Institution
1.	R. Santhosh	Faculty Training and Internationalization (2016-17) Grant	Shastri Indo-Canadian Institute

Research publications of the faculty members and research scholars

Books/Book Chapters: 5
Total number of papers published in refereed national journals: 9
Total number of papers published in refereed international journals: 14
Total number of papers presented in national conferences: 7
Total number of papers presented in international conferences: 2

Books/Book chapters:

1. J.B. Lourdusamy. 2016. Betwixt science and religion - east and west: Jesuits in seventeenth- and eighteenth-century Southern India. *Science and Religion: East and West* pp 158-173. doi: 10.4324/9781315659831
2. Aysha Iqbal Viswamohan and Vimal Mohan John. 2016. *Behind the Scenes: Contemporary Bollywood Directors and Their Cinema* pp 1-392
3. Roland Wittje. 2016. *The Age of Electroacoustics: Transforming Science and Sound* pp. 1-297
4. Roland Wittje. 2016. Ferdinand Trendelenburg. *Neue Deutsche Biographie, Sechsundzwanzigster Band* pp. 399-400
5. S.S. Sethy. 2016. *Meaning and Language* pp. 1-225

Papers published in refereed national journals

1. S. Babu, N. Krishnamurthy and T. Parthasarathy. 2016. The creative genius: John Nash. *Resonance* 21(9): 769-772. doi: 10.1007/s12045-016-0382-9
2. R. Santhosh. 2016. Voluntarism and civil society in the neoliberal era: a study on palliative care movement in Kerala. *Journal of Social and Economic Development* 18(1): 1-16.
3. T. Sundararaman, V. R. Muraleedharan and I. Mukhopadhyay. 2016. NSSO 71st round data on health and beyond: Questioning frameworks of analysis. *Economic and Political Weekly* 51(3): 85-88
4. V. Gajendran. 2016. Chennai's Peri-urban: Accumulation of capital and environmental exploitation. *Environment and Urbanization Asia* 7(1): 113-131. doi: 10.1177/0975425315619049
5. S. Rajasulochana, E. Nyarko, U. Dash and V. R. Muraleedharan. 2016. Expectant mother's preferences for services in public hospitals of Tamil Nadu, India. *Journal of Health Management* 18(2): 305-317. doi: 10.1177/0972063416637745
6. M. Vijayabaskar and M. Suresh Babu. 2016. The politics of urban mega-projects in India. *Economic and Political Weekly* 51(17): 85-92.
7. T. Sundararaman, I. Mukhopadhyay and V. R. Muraleedharan. 2016. No respite for public health. *Economic and Political Weekly* 51(16): 39-42.
8. P. Shivam. 2016. The space of street-side religiosity: Miniature shrines in Chennai. *Economic and Political Weekly* 51(4): 56-62.
9. S. Gupta and R. Veena. 2016. Bilingual education in Xinjiang in the post-2009 period. *China Report* 52(4): 306-323. doi: 10.1177/0009445516661885

Papers published in refereed international journals

1. M. Suresh Babu, V. Bhaskaran and M. Venkatesh. 2016. Does inequality hamper long run growth? Evidence from emerging economies. *Economic Analysis and Policy* 52(): 99-113. doi: 10.1016/j.eap.2016.08.005
2. A. K. Bhandari and A. Sudarsan. 2016. Institutionalist versus distortionist views of labor market reforms: An investigation into the post-liberalized manufacturing sector in India [Visión institucionalista versus distorsionista de las reformas del mercado laboral: una investigación del sector manufacturero post-liberalizado en la India]. *Journal of Economics, Finance and Administrative Science* 21(41): 63-72. doi: 10.1016/j.jefas.2016.06.002
3. M. Duraisamy and P. Duraisamy. 2016. Gender wage gap across the wage distribution in different segments of the Indian labour market, 1983–2012: exploring the glass ceiling or sticky floor phenomenon. *Applied Economics* 48(43): 4098-4111. doi: 10.1080/00036846.2016.1150955
4. D. K. Behera and U. Dash. 2016. Nexus between public health expenditure and income: Empirical evidence from Indian states. *Journal of Applied Economic Sciences* 11(6): 1067-1076.
5. K. Kalpana. 2016. Feminizing responsibility? Women's 'invisible' labor and sub-contracted production in South India. *Journal of International Women's Studies* 18(1): 33-51
6. S. Vasu and S. P. Dhanavel. 2016. Exploring the vocabulary learning strategy use of teachers in their vocabulary instruction [Kako se nastavnici koriste strategijama za usvajanje vokabulara kada poučavaju vokabular]. *Croatian Journal of Education* 18(1): 103-135. doi: 10.15516/cje.v18i1.1547
7. S. S. Sethy. 2016. Undergraduate engineering students' attitudes and perceptions towards "professional ethics" course: a case study of India. *European Journal of Engineering Education* 1-13. doi: 10.1080/03043797.2016.1243656
8. S. S. Sethy. 2016. Communicating *artha* (meaning): A journey through oriental philosophy. *Humanities and Social Sciences Review* 5(1): 245-250. doi: http://universitypublications.net/hssr/0501/html/S6R132.xml
9. Anup Kumar Bhandari and V. Vipin. 2016. Efficiency and related technological aspects of the indian food processing industry: a non-parametric analysis. *Journal of Developing Areas* 50(6): 227-243
10. Roland Wittje. 2016. Concepts and significance of noise in acoustics: Before and after the Great War. *Perspectives on Science* 24(1): 7-28. doi: 10.1162/POSC_a_00189
11. Roland Wittje. 2016. Paired book review: Silke Fengler and Carola Sachse (eds). Kernforschung in Österreich. Wandlungen eines interdisziplinären Forschungsfeldes 1900–1978, and Silke Fengler. Kerne, Kooperation und Konkurrenz. Kernforschung in Österreich im internationalen Kontext (1900–1950). *ISIS* 107(3): 666-668
12. Umakant Dash, M. Suresh Babu and Manoranjan Sahoo. 2016. Current account sustainability in SAARC economics: Evidence from combined cointegration approach. *Theoretical and Applied Economics* 13(4(609)): 281-298. doi: 10.1016/j.intele.2017.02.002

13. Umakant Dash and Deepak Kumar Behera. 2016. Nexus between public health expenditure and income: Empirical evidence from Indian states. *Journal of Applied Economic Sciences*. 11(6(44)): 1067-1076
14. Umakant Dash and Asish Saha. 2016. Consolidation in Indian banking: Does size matter?. *Decision* 43(3): 223-238. doi: 10.1007/s40622-016-0133-5

Papers presented in national conferences/proceedings

1. Deepak Kumar Behera and Umakant Dash. Effects of alternative revenue in financing healthcare in India: Evidence from panel quintile regression. *53rd Annual Conference of the Indian Econometric Society*
2. Deepak Kumar Behera and Umakant Dash. Impact of fiscal capacity in financing healthcare in India: Implication for universal health coverage. *37th Annual Conference on Population and Sustainable Development*
3. Deepak Kumar Behera and Umakant Dash. Examining the nexus between public health expenditure and income: Evidence from Indian states. *National Seminar on Role of Public policy and in development process (Emerging economic or social scenario in Indian economy)*
4. Deepak Kumar Behera and Umakant Dash. 2016. Impact of macro fiscal determinants in realizing fiscal health: Empirical evidence from low and middle income countries. *9th International Research Conference on Sustainable Development and Macroeconomic Policies in a Challenging Global and Domestic Environment, 2016.*
5. Deepak Kumar Behera and Umakant Dash. 2016. Health financing transition: An empirical evidence from South East Asian region. *12th Annual International Conference of the Asia Pacific Economic Association.*
6. Manoranjan Sahoo, Umakant Dash and M. Suresh Babu. International capital flows and Fieldstien Horoika puzzle evidence from emerging Asian economies. *Asia Pacific Economic Association Conference*, 2016.
7. Manoranjan Sahoo, Umakant Dash and M. Suresh Babu. Export, import and sustainability of current account: An analysis of India and China. *East Asia Institute of Management*, Singapore, 2016

Papers presented in international conferences/proceedings

1. Roland Wittje. Kriterien für das Sammeln aus der Zeitgeschichte – Die Auswahlkriterien der Universeum Working Group on Recent Heritage of Science. *Zwischen Kellerdepot und Forschungsolymp: 7.* Sammlungstagung vom 17. bis 19. September 2015 an der TU Bergakademie Freiberg und der TU Dresden, None, 2016 pp. 14-16
2. Roland Wittje. Selection criteria for recent material heritage of science at universities. *Enhancing University Heritage-Based Research*, XV Universeum Hamburg 12-14 June 2014. None, 2016. ISBN: 978-3-7345-2751-7 pp. 273-276

Distinguished visitors to the Department

Sl. No.	Name and Designation	Date of visit	Purpose of visit
1.	Prof. Sukhadeo Thorat (Chairman, ICSSR)	2nd-5th February 2017	Inaugural Lecture in HSS Department Conference 2017
2.	Professor Julie Mostov, Senior Vice Provost for Global Initiatives and Professor of Political Science, Drexel University	23 February 2017, Department of HSS, Seminar Room (HSB 333)	Explore possible collaborations on joint project/student and faculty exchanges in Development Studies, Histories of Science and Technology, Environmental Studies
	1.Prof. Sun Ge 2. Prof. Liang Zhiping 3. Chen Yun 4. Prof. Jiang Mei 5. Prof.Liu Zhiwei 6. Prof. Wu Chongqing 7. Prof. Wu Xiaoli 8. Prof. Yang Chunyu 9. Prof. Zhang Zhiqiang	24 March 2017, China Studies Centre, IIT Madras	Discussion with HSS faculty, research scholars, MA and other IIT students, and also from Chennai's scholarly community
	Dr. Arvind Subramanian Chief Economic Adviser (GoI)	31 March 2017, IIT Madras	Economic Survey 2016-17

4.10.5.Other Activities of the Department

DoHSS: Academic Conference 2017 on Traversing the Margins organised by MA students and research scholars.

Inaugural lecture by Prof. Sukhadeo Thorat, Chairman, ICSSR

Date: 2-5 February 2017

4.11. Department of Management Studies

4.11.1. Introduction:

The Department of Management Studies (DoMS) was formed in April 2004. The department offers a 2-year fulltime M.B.A. programme (started in July 2001) and research programmes leading to M.S. and Ph.D. degrees. DoMS also offers an M.S. (Entrepreneurship) programme. Besides, the department offers the Visionary Leadership in Manufacturing (VLM) programme and the Postgraduate Diploma for Executives (PGPEX-VLM), jointly with IIM Calcutta and IIT Kanpur.

The contributions of the faculty and research scholars have been highly acclaimed in academic circles and peer groups. The growing number of well-qualified applicants for the M.B.A. programme, with many having significant professional experience, both from the industry and academia, is a good indication of the academic reputation of the department.

The summer and 555 placement offered to the students by globally and nationally reputed companies provide strong evidence of the growing stature of the M.B.A. programme and the attention it is receiving.

The department presently has the largest number of management research scholars in India. Its research programmes attract a very large number of applicants, including a high proportion of working professionals. Research scholars' work is regularly published in reputed international and national journals and is presented at prestigious international and national conferences. In the recent past, research scholars have received international awards for their doctoral theses. The research papers of several research scholars have consistently received 'best paper' awards, and are cited frequently in the literature.

The alumni of the department have had scholastic achievements in different disciplines and continue to make significant contributions to the organizations and institutions they work for. Some of the qualities that characterize our graduating students include high levels of initiative and energy, capacity for hard work, strong task orientation, willingness to learn and a temperament suitable for teamwork. Many M.B.A. alumni have won prizes, awards, honours and promotions in their organizations even in their first year of work. They have also played a central role in making their organizations earn laurels.

The full-time and visiting faculty members have excellent academic and professional backgrounds, and they collectively work towards realizing the department's vision 'to be a globally unique and most valuable source of knowledge, insight, creativity and expertise in management thought and practice'.

Over the years of its existence, the department has thoroughly revised its M.B.A. 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 organizations. The following sections present an outline of the department's work.

Some major areas of research at the department are listed here:

- Applied statistics
- Models in supply chain management
- Combinatorial optimization
- Production and operations management
- Finance
- Project management
- Human resource management
- Quality management
- Information systems
- Quantitative strategy
- Knowledge management
- Services management
- Marketing
- Technology management

4.11.2. Academic Programmes:

M.B.A., M.S., Ph.D., PGPEX (VLM)

New courses introduced:

Sl. No.	Course No.	Title
1.	161003J02 – offered for GIAN	Increasing Efficiency and Reducing Cost within a Supply Chain
2.		GIAN Course on "Emerging Market Finance Research: Future Directions" to be hosted by IIT Madras offered by Prof. M. Thenmozhi and Dr. Krishna Prasanna

Students on roll (as of September 2016 and M.S. & Ph.D admission in January 2017)

Programme	I year	II Year	III Year	IV Year	V Year & others	Total
B.Tech.	-	-	-	-	-	-
Dual Degree	-	-	-	-	-	-
M.A.	-	-	-	-	-	-
M.Sc.	-	-	-	-	-	-
M.Tech.	-	-	-	-	-	-
M.B.A.	52	59	-	-	-	111
M.S.	12	11	10	7	1	41
Ph.D.	28	29	13	19	12+13	114
Total	**92**	**99**	**23**	**26**	**26**	**266**

Students/scholars who attended conference/seminar/symposia

Sl. No.	Student/Scholar	Roll No.	Conference/Seminar/ Symposia/Workshop	Date and Venue	Financial Assistance from
Abroad					
1.	Amruta Gholba	MS13S016	4th International Conference on Management, Leadership and Governance (ICMLG) 2016	8-18 April 2016, Russia	IIT Madras
2.	Yamini S.	MS13D018	27th Annual International conference on Production and Operation Management Finance – host conference	6-9 May 2016, Orlando, USA	IIT Madras
3.	Sudhanshu Gupta	MS12D208	44th Annual Conference of the Academy	18-21 May 2016, Florida, USA	IIT Madras
4.	Sowmya R.	MS10D027	44th Annual Conference of the Academy	18-21 May 2016, Florida, USA	IIT Madras
5.	Varuna Newatiya	MS12D016	LVMH – SMU Luxury Research Conference 2016	20-21 June 2016, Singapore	IIT Madras
6.	Deepa R.	MS12D001	14th International Conference Human Resource Management (IHRM)	21-23 June 2016, Victoria, BC, Canada	IIT Madras
7.	Hemamalini A.	MS13D019	Special Issue conference of the *Journal of Financial Markets, Institutions and Money* and Forum of Economic Transition and innovation in Shanxi Province on Cross Country Issues on Credit, Banking, Asset Pricing and Market Liquidity	23-25 June 2016, China	IIT Madras
8.	Kayalvizhi P. N.	MS13D212			
9.	Sowmya S.	MS12D015			
10.	Saranya K.	MS14D003			
11.	Kanishka Priyadarshini	MS14S011	America's Conference on Information Systems (AMCIS-2016)	10-14 August 2016, San Diego, USA	IIT Madras
12.	Mahesh Balan U.	MS14D206	Presented in the America's Conference on Information Systems (AMCIS-2016)	10-14 August 2016, San Diego, USA	IIT Madras
13.	Kanishka Priyadarshini	MS14S011	Presented in IEEE International Conference on Management of Innovation and Technology (ICMIT-2016)	19-22 September 2016, Bangkok	IIT Madras
14.	Mahesh Balan U.	MS14D206	Presented in the America's Conference on Information Systems (AMCIS-2016), San Diego, USA	10-14 August 2016, San Diego, USA	
15.	P. Lakshmi	MS15IPF01	4th European Conference on Banking and Economy (ECOBATE 2016)	12 October 2016, Winchester, UK	IIT Madras
16.	Surya Karunagaran	MS13D022	International Conference on Information Systems 2016	11-14 December 2016, Dublin, Ireland	IIT Madras
17.	R. Shyaam Prasadh	MS14D004	4th Indonesian Financial Management Association (IFMA) International Conference	14-17 December 2016 Yogyakarta, Indonesia	IIT Madras
18.	Ananthalakshmi	MS14S006	International Academy of Business & Public Administration Disciplines	2-5 January 2017, Orlando, Florida	IIT Madras
India					
1.	Sujatha Manohar	MS14D012	Brand Management (CBM2016) The role of brand credibility in influencing the health conscious consumers' intention to purchage convenience food	16-17 April 2016, IIT Delhi	IIT Madras
2.	Hemamalini	MS13D019	*International Financial Markets, Institutions and Money (JIFMIM)* Special Issue Conference, Pu'er,	16-17 December 2016, Yunnan, China	IIT Madras
3.	P. Lakshmi	MS15IPF01	International Conference on Financial Markets and Corporate Finance	12-13 August, 2016, DoMS, IIT Madras	NA
4.	Kayalvizhi P.N.	MS13D212			
5.	Shyaam Prasadh	MS14D004			
6.	Madhuri Malhotra	MS04D004			
7.	Lalita Anand	MS09D021			
8.	Hemamalini A.	MS13D019			
9.	Narend S.	MS12D018			
10.	Shashank Bansal	MS14D010			
11.	Vijayagopal V.				
12.	Ananthalakshmi	MS14S006	COSMAR 2016 conference – 16th International Consortium of Students in Management Research	11-12 November 2016, IISc Bangalore	IIT Madras
13.	Deepa R.	MS12D001	4th PAN IIM World Management Conference	13-15 December 2016, IIM Ahmedabad	IIT Madras
14.	Pavithra S.	MS13S026	IIT Madras		
15.	Deepak B.	MS11D013	IIIE-POMS 4th International Conference, BPSCM 2016	22-23 December 2016, Trivandrum	IIT Madras
16.	S. Parthasarathy	MS15S017	XX Annual International Conference of Society of Operations Management	22-24 December 2016, ABV-IIITM Gwalior	IIT Madras
17.	Balaji M.	MS10D010	IIT Madras		
18.	Nilanjan Dutta	MS15D201	IIT Madras		
19.	Varun Praveen Kumar Jain	MS11D020	IIT Madras		
20.	Jaimini Bhattacharyya	MS14D008	IIT Madras		
21.	Santhosh M.		26th Annual Conference of the National Academy of Management (NAOP)	29- 31 December 2016, IIT Madras	NA
22.	Deepa R.	MS12D001	NA		
23.	Varuna Newatiya	MS12D016	National conference Welingkar Institute of Management Development and Research	6-8 January 2017, Bombay	IIT Madras
24.	Sowmya Raja	MS10D027	Academy of Indian Marketing – American Marketing Association – Doctoral Consortium (presented research work Perceived Brand Greenness)	6-8 January 2017, Welingkar Institute of Management Development and Research, Bombay	IIT Madras
25.	Santhosh M.		CSR communication – A Study on scale development - ITBI15	21-23 January 2017, Goa	IIT Madras

Names of students/scholars who won outside prizes and awards:

Sl. No.	Name of the Student/Scholar	Roll No.	Name of Prize	Prize awarded by
1.	Yamini S.	MS13D018	Emerging economies doctoral student award	EEDSA
2.	Vishwarath Reddy	MS14A065	Dr. T.S. Rajagopalan Memorial Prize Prof.T.N. Govindarajan Memorial Prize	Institute Award for Academic Excellence
3.	S. Santhoshraghavan	MS15A047	IIT AWARD Prof T. N. Govindarajan Prize Rajagopalan Memorial Prize	Meritorious performance in first and second semesters of MBA programme
4.	Manimegalai S.	MS11D006	First prize in the Student Paper Presentation category	ITBI15
5.	Sudhanshu Gupta	MS12D208	Arun K. Jain Best Paper in Conference Award (cash prize of Rs 50,000)	IIM Lucknow -Annual conference of Emerging Markets Conference Board, Noida (5-7 January 2017)

Students/scholars who won IIT Madras convocation or Institute Day prize:

Sl. No.	Name of the Student/Scholar	Roll No.	Name of Prizes	Name of Donor
1.	Vishwarath Reddy P.	MS14A065	Coka Parthasarathy	IITM
2.	Himanshu Agarwal	MS14A029	KV Arunkumar Memorial	IITM
3.	Anurag Vaibhav Pandey	MS15V007	ACC Ltd.'s Gold Medal	ACC Ltd
4.	Ankur Gandorta	MS15V006	JICA Gold Medal	
5.	Karthikeyan D	MS15V014	IIMC Alumni Association Calcutta Chapter Gold Medal	IIMC

4.11.3. Faculty and their activities:

Name and Qualifications	Major area of specialisation (only three areas)
Professor:	
PRAKASH SAI L. (HEAD) B.Tech, M. Tech, Ph. D	Strategic Management, IT Outsourcing and IT Strategic Planning Business Models, Technology Management, Entrepreneurship
ARUN KUMAR G. M. Com, Ph. D	Market Microstructure, IPOs, Mergers and Acquisitions, Joint Ventures and Multinational Business
GANESH L S B.E.(Hons.), M. Tech, Ph. D	Systems Thinking and Applications, Project Management, Technology Management, Data and Decision Analysis, Forecasting
KAMALANABHAN T J M.A., M. Phil., Ph. D	Organizational Behaviour, Human Resource Management and Training & Development.
MADHUMATHI R M. Com., Ph. D	Financial Management and Accounting, Forex Research, Bank Management, Capital Market Studies
RAJENDRAN C B.E.(Hons), M.E., Ph. D	Operations Management, Production and Materials Management, Supply Chain Management, Scheduling.
SRINIVASAN G B.E. (Hons), M.S., Ph. D.	Fundamentals of Operations Research, Advanced Operations Research, Operations Management, Supply Chain Management, Manufacturing Systems Management, O. R. Applications, Services Operations Management
R.P. SUNDARRAJ B.E. (Hons), M.S. (USA),Ph.D. (USA)	Information Systems, Supply Chain Management, e-Business, Computational Optimization, Decision Support System.
THENMOZHI M M. Com., M. Phil, Ph. D.	Financial Management, Strategic Management, Computational Finance
THILLAI RAJAN A B.E., M.Sc, Fellow IIM Bangalore	Venture capital and Private, Equity Project and Infrastructure Finance, Public Private Participation, Corporate Finance
ASSOCIATE PROFESSORS	
AMIT R K M. Tech., Ph. D	Game Theory, Operations Research, Decision Theory, Natural Resources Management
ARSHINDER KAUR M. Tech, Ph. D.	Operations Research, Supply Chain Management, Total Quality Management, Services Operations Management
KRISHNA PRASANNA P B. Com., M. Com., M. Phil., Ph. D.	Corporate Governance, Fixed Income securities, Financial Risk Management and Market Micro structure
RAHUL R. MARATHE B.E., M.S. (USA), Ph.D. **(USA)**	Simulation, Industrial Engineering, TQM, Operations Research, Operations Management
SAJI K. MATHEW B. Tech., Ph. D.	Management Information Systems, IT Strategy, Data Mining and Business Intelligence, IT Services & Outsourcing, Information Systems Development
USHA MOHAN M. Sc., M. Phil., Ph. D.	Quantitative Models in Operations Management, Probability and Statistics, combinatorial Optimization
ASSISTANT PROFESSORS	
LATA DYARAM M.A, PhD	Leadership Development, Corporate Sustainability, Cognition in organizations, Organizational Behaviour, Organizational Development, Industrial and Organization Psychology
NANDAN SUDARSANAM M.S. Ph. D.	Experimentation, Data mining, Applied Statistics, Algorithmic and Heuristic approaches to problem solving
NARGIS PERVIN **M.Sc.M.Tech. Ph.D**	Social Network Mining, Recommender Systems, Mobile app analytics
RICHA AGRAWAL B.A. (Econ), MBA, Ph. D.	Customer Relationship Marketing, Consumer Behaviour & Insight Advantage
RUPASHREE BARAL B.Sc., M.A. (IR & PM), Ph. D.	Strategic Human Resources Management, Organizational Behaviour, Work-Life Balance, Employee Engagement, Diversity and Inclusiveness, Career Exit and Re-entry of Women
V. VIJAYALAKSHMI M.Sc,, Ph.D	Positive Organizational Behavior: Happiness and Performance, Mindfulness, Discovering Calling, Humor in the Workplace; Workplace Emotions, Creativity and Innovative Capability of Firms, Knowledge Management, Unlearning, Indian Wisdom and Management, Innovative Teaching and Learning Practices, Integral Holistic Education, Women Empowerment through Entrepreneurship
VARISHA REHMAN B. Com (Hons), MBA, Ph. D	Marketing Management & Research, Advertising & Publicity, Experiential Marketing
UPENDRA KUMAR MAURYA B. Tech.Ph.D	Brand Management, Entrepreneurship and Marketing Interface, Identity Issues in Organisations
VAIBHAV CHAWLA B.Tech (Hons.), Fellow, IIM Kozhikode,	Mindfulness & Sales Call Reluctance, Spirituality in Sales Organizations, Salesperson Performance
MHRD IPR CHAIR PROFESSOR	
FEROZ ALI KHADER B.A., LL.M., S.J.D., Ph. D.	Patent Law and Policy, Intellectual Property Law, International Trade Law, Law and Technology

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

Sl. No.	Name of the Co-ordinators	Title	Period
1.	Dr. Thenmozhi and Dr. T.J. Kamalanabhan	Executive Programme for Business Administration	7-15 May 2016 and 21-29 May 2016
2.	Dr. M. Thenmozhi	Executive Programme for Business Administration	19-27 November 2016 and 3-11 December 2016
3.	Dr.T.J. Kamalanabhan and Dr. Thenmozhi Professor	Executive Programme for Business Administration	19-26 March 2017
4.	Dr. Saji K. Mathew	Selected as Treasurer, AIS India Chapter	2017
Management Development Programme:			
1.	Dr. Arun Kumar Dr. Saji K. Mathew	Students from Management Centre Innsbruck, Austria	28 March-11 April 2016
2.	Dr. Lata Dyaram	Verizon	15-16 April 2016
3.	Dr. Arshinder and Dr. Kannan Govindan, Denmark	CSEOM, University of Southern Denmark - Department of Management Studies, IIT Madras Joint Training Programme on Recent Trends in Sustainability & Sustainable Supply Chain Management	18 April 2016
4.	Dr. Saji K Mathew Dr. Arun Kumar	India Immersion Program – Victoria Business School, New Zealand	29 April 2016
5.	Dr. Arshinder Kaur	Invited session on "Best practices in Supply Chain Management"	5-6 May 2016, HAL Nashik division

Sl. No.	Name of the Co-ordinators	Title	Period
6.	Dr. Vijayalakshmi and CE faculty	Self-Awareness and Higher Goals in Education (SAHGE) 2016	30 May-3 June 2016
7.	Dr. Arshinder Kaur	2 days' CEP training programme on sourcing strategy, supply chain risk management, outsourcing, supplier development and supplier selection	1-2 June 2016, HAL Management Academy Bangalore
8.	Dr. Usha Mohan	International workshop and conference on Game Theory and Optimization	6-10, June 2016 HSB 357
9.	Dr. Usha Mohan	GIAN - Improving Sustainability	13-17 June 2016
10.	Dr. Rahul Marathe	Training programme for McKinsey Knowledge Centre	15-17 June 2016
11.	Saji Mathew L. Prakash Sai	First international doctoral seminar Collaboration with the University of Passau Collaboration with University of Duisburg-Essen Advances in Research on Operations, Logistics and Information Systems	5 July 2016
12.	Dr. M. Thenmozhi	International Conference on Financial Markets and Corporate Finance (ICFMCF-2016)	12-13 August 2016
13.	Dr. Lata Dyaram	HAL Management Academy Bangalore CEP Program on "Conflict and Nagotiation Management Skills"	19-21 September 2016
14.	Dr. R.P. Sundarraj	VERIZON – Training Program	27-29 September 2016
15.	Dr. Richa Agrawal	Scale Development Program	28 September-2 October 2016
16.	Dr. M. Thenmozhi	NTPC - Leadership and Management Development Programme	15-23 November, 2016, DoMS, IIT Madras
17.	Prof. Richa Agrawal, Prof. Vaibhav Chawla, Prof. Upendra Kumar Maurya	Workshop on Developing Measuring Instruments for Social Sciences	7-12 September, 2016
18.	Dr. M.Thenmozhi and T.J. Kamalanabhan	NTPC - Leadership and Management Development Programme	15-23 November, 2016, DoMS, IIT Madras
19.	Dr. R.P. Sundararaj	Verizon – Dealership Training Programme	22-23 November 2016, DoMS, IIT Madras
20.	Dr. R.K. Amit	Workshop on "Status and Future of End-of-life Vehicle (ELV) Recycling in India"	November 25, 2016, IIT Madras Research Park
21.	Dr. Richa Agrawal Dr. Vaibhav Chawla Dr. Upendra Kumar Maurya	Workshop on Developing Psychometric Scales (Measures) in Management	7-12 September 2016
22.	Richa Agrawal, Vaibhav Chawla and Upendra K Maurya	1st Scale Development Workshop organised a short-term training program sponsored by AICTE	7-12 September 2016
23.	Richa Agrawal	2nd Scale Development Workshop organised a continuing education program	28 September-2 October, 2016
24.	Dr.T.J. Kamalanabhan Dr. Rupashree Baral Dr. V.Vijayalakshmi Dr. Lata Dyaram	International Conference on National Academy of Psychology 2016	29-31 December 2016, DoMS, IIT Madras
25.	Dr. T.J. Kamalanabhan Dr. Rupashree Baral Dr. V. Vijayalakshmi Dr. Lata Dyaram	26th Annual International Conference of National Academy of Psychology 2016 on "Psychology and Future of Work"	29-31 December 2016, IIT Madras
26.	Dr. Rupashree Baral and Prof. T.J. Kamalanabhan	"Disha – Dealer Training Programme" for Indian Oil (IOCL) dealers; multiple batches (12 programmes)	8-9, 15-16 and 22-23 September 2016; 6-7, 9-10, 20-21 October 2016, 10-11 November 2016, 17-18, 23-24 January 2017, 9-10, 22-23 February 2017, 15-16, 22-23 March 2017
27.	Dr. M. Geetha Dr. Upendra Kumar Maurya	Workshop on Research Methodology in Social Sciences	2-7 January 2017
28.	Dr. R.P. Sundararaj Dr. C. Rajendran	Data Analytics – GIAN Programme	15-22 January 2017
29.	Prof. L.S. Ganesh Sriram Ayer, Ashoka Fellow, Founder - Nalandaway Dr. V. Vijayalakshmi	A two-day experiential workshop on finding fulfilling and meaningful work	4-11 March 2017
30.	Dr.T.J. Kamalanabhan Dr.M. Thenmozhi	Workshop on Fundamentals of Research in Management and Engineering Name of the Client: Flsmidth	19-26 March 2017
Sl. No.	**Coordinator(s)**	Title	Period
Conference			
1.	Dr. T.J. Kamalanabhan and Dr. Lata Dyaram	International conference on "Excellence in School Education: Teachers transforming children"	6-8 May 2016
Seminar			
1.	Dr. Vijayalakshmi	"How Emotionally Socially Competent Are We?" for United India Insurance Company Limited	24 January 2017
2.	Dr. Vijayalakshmi	"Effective Decision Making" for United India Insurance Company Limited	24 January 2017
3.	Dr. Vijayalakshmi	Resource person: Continuing Education Programme	
4.	Dr. Vijayalakshmi	Larson & Toubro Management Trainees	
Workshop			
1.	Dr.Usha Mohan	International Workshop and Conference on Game Theory and Optimisation	6-10, June 2016 HSB 357

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

Sl. No.	Name of faculty	Title	Institution	Period
Conference:				
1.	Upendra Kumar Maurya	Corporate Identity and Performance: Does innovativeness mediate the relationship	Great Lakes Institute of Management	23-24 December 2016
Training:				
1.	Dr. R.K. Amit	Invited tutorial on game theory at CSI Annual Convention	Coimbatore	22 January 2017
2.	Dr. Vaibhav Chawla	Digital Marketing - Progress and problems	DRBCCC Hindu College, Chennai	10 Februay 2017

Special lectures delivered by the faculty in other institutions:

Sl. No.	Name of faculty	Topic of Lecture	Institution	Date
1.	Dr. Vijayalakshmi	Excellence in Work	Padma Seshadri Bala Bhavan School, Chennai	June 2016
2.	Dr. Vijayalakshmi	Research Empowerment Programme	Dr. MGR Research and Deemed University, Chennai	June 2016
3.	Dr. Vijayalakshmi	Faculty and Learner Motivation	Teaching Learning Centre, IIT Madras	June 2016
4.	Dr. Vijayalakshmi	Outcome Based Education	Stella Maris College, Chennai	June 2016
5.	Dr. Vijayalakshmi	Resource Person: Session on "Bloom's Taxonomy: Fundamentals and Applications"	Athanasius College, Kerala	July 2016
6.	Dr. Vijayalakshmi	Effecting Writing and Publishing in Quality Journals.	MNM Jain College, Chennai	27 September 2016

Sl. No.	Name of faculty	Topic of Lecture	Institution	Date
7.	Dr. Vijayalakshmi	Impact of Emotional Intelligence on Thriving: Insights from an Empirical Study	University of Passau, Germany	December 2016
8.	Dr. Vaibhav Chawla	Digital Marketing - Progress and problems	DRBCCC Hindu College, Chennai	10 February 2017

Visits abroad by the faculty:

Sl. No.	Name of faculty	Country Visited	Date	Purpose of visit	Funding from
1.	Dr. R.P. Sundararaj	USA	22 February-13 May 2016	Visiting Professor at University of Widsconsin	
2.	Dr.T.J. Kamalanabhan	South Africa	15 May-15 June 2016	Visiting Professor	
3.	Prof. A. Thillairajan	Cambridge, US	7-14 June 2016	Case Method Teaching Seminar, Part II	IIT Madras
4.	Dr. L. Prakash Sai and Dr. C. Rajendran	Singapore	13-17 June 2016	Research collaborations with NUS, SMU, NTU and INSEAD (Dean, I & AR and delegation)	Project
5.	Dr. Saji K. Mathew	University Passau, Germany	June 16-26, 2016	Visiting Professor	Germany
6.	Dr. T.J. Kamalanabhan	Netherlands	19-21 September 2016	To attend 6th edition of Meet the University of Groningen Programme	IIT Madras
7.	Dr. Thenmozhi	Nigeria	20 September-30 October 2016	ICCR Visiting Professor at Indian Studies at Lagos Business School	Nigeria
8.	Dr. T.J. Kamalanabhan	Mauritius	10-12 October 2016	To attend workshop on “Talent Acquisition and Management in the Hospitality Sector”	Mauritius
9.	Dr. Arshinder Kaur	Germany	9-13 November 2016	Visit Hof University of Applied Sciences	Germany
10.	Dr. T.J. Kamalanabhan	Germany	25 November-2 December 2016	Discussions and Workshop on “Managing Cultural Diversity” at RheinAhr Campus Remagen.	Germany
11.	Dr. R.P. Sundarraj	Brazil	26 November–24 December 2016	Visit to Universidade Federal De Pernambuco	Institute
12.	Dr. C. Rajendran	USA	9-20 November 2016	Visit to Universities	Host Institution
13.	Dr. C.Rajendran	Germany	28 November-18 December 2016	Visiting Professor, University of Passau, Germany	Germany
14.	Dr. Vijayalakshmi	Germany	28 November– 16 December 2016	Visiting Professor, University of Passau, Germany	Germany
15.	Dr. Saji K Mathew	ICIS 2016, Dublin, Ireland	9-10 December 2016	AIS India Chapter formation meeting	IIT Madras
16.	Dr. T.J. Kamalanabhan	Texas, USA	28 February-10 March 2017	Academy of Human Resource Development Conference (AHRD)	IIT Madras
17.	Dr. T.J. Kamalanabhan	Texas, USA	28 February-10 March 2017	Editorial Board Meeting at San Antonia	IIT Madras
18.	Dr. Rahul Ratnakar Marathe	Nagoya, Japan	26 February- 9 March 2017	VLM Program	VLM

Honours and awards obtained by faculty:

Sl. No.	Name of faculty	Name of Award	Awarded by	Awarded for	Date of award
Honours					
1.	Dr. Saji K. Mathew	Conference Best paper Award	Americas Conference on Information Systems (AMCIS 2016)”	Best paper runner up award	10-14 August 2016
2.	Dr. R.K.Amit	Best doctoral research paper award	PAN-IIM World Management Conference.	Best paper	13-15 December 2016
3.	Prof. L. S. Ganesh	Distinguished Professor Award	Computer Society of India, Mumbai Chapter.	Achievements in academic excellence	January 2017
4.	Prof. L. S. Ganesh	Distinguished Fellow Award 2016	Project Management Institute (PMI), India	Academic contributions to the theory, methodologies and practices of project management	February 2017
5.	Dr.Richa Agrawal	Arun K. Jain Best paper in Conference Award	EMCB, IIM Lucknow Annual Conference	Best in Conference Research paper	5-7 January 2017
6.	Lata Dyaram and Prof. K. N. Satyanarayana	Outstanding Paper Award	(CMMES 2017)	National Conference on Construction Management,	21-22 February 2017
7.	Lata Dyaram	Outstanding Paper Award”.	Birla Institute of Technology, Mesra, Ranchi	National Conference on Construction Management	21-22 Feb 2017
8.	Prof.L.S.Ganesh	Distinguished Fellow Award 2016	By Project Management Institute (PMI), India	This is the highest research award given to teacher-researchers for their significant academic contributions to the theory, methodologies and practices of project management	February 2017

Fellowships of academies and professional societies

Sl. No.	Name of faculty	Year of admission
1.	Dr. Arshinder Kaur	Hof University of Applied Sciences, Germany, Staff mobility for Teaching under Erasmus+Mobility project, 9-13 November 2016

Journal Editorial Boards:

Sl. No.	Name of faculty	Position (Editor/Member)	Journal Name
1.	Dr Usha Mohan	Associate Editor	*Sadhana, Proceedings of the Indian Academy of Sciences*, 2013-Present
2.	Dr Usha Mohan	Special Issue Editor	*Annals of Operations Research: Special Issue on Game Theory and Optimization*

Sponsored Research Projects: (ongoing and new)

Sl. No.	Name of faculty	Project	Sponsor
1.	Dr. Vijayalakshmi	Empowerment of Women Entrepreneurs Research into	TNPL (as part of their CSR initiative)
2.	Dr. Vijayalakshmi	Creating a Ripple Effect in the Youth’s Development: Through Holistic Education	Rajiv Gandhi National Youth Development
3.	Dr. Vijayalakshmi	A Study of the Impact of Socio-Political Factors on the Growth of Social Enterprises	Rajiv Gandhi National Youth Development
4.	Dr. Vijayalakshmi	Empowerment and Social Enterprise (Sponsor: British Council). Holistic Education	Banca Sella (as part of their CSR initiative)
5.	Rupashree Baral	Social Enterprise and Women’s Empowerment; Multi-country (UK, USA, Brazil, Pakistan and India)	Research project (funding from British Council, ongoing, 2016-2017)
6.	Rupashree Baral Co-PI: Dr. V. Vijayalakshmi	Empowering and Developing Women Entrepreneurs: Exploring the Avenues (CSR funding from TNPL, Chennai)	Funding of ₹ 20 lakh (ongoing, 2016-2019)

New Faculty Grant

Sl. No.	Title	Period	Funding Agency	Amount (₹ in lakhs)	Co-ordinators
1.	New Faculty Initiation Grant-Research on consumer behaviour, retailing and social marketing	February 2015 - February 2017	Indian Institute of Technology Madras	5	Geetha M
2.	New Faculty Initiation Grant-Role of CSR in influencing food choice in India	February 2015 - February 2017	Indian Institute of Technology Madras	5	Varisha Rehman

Sl. No.	Title	Period	Funding Agency	Amount (₹ in lakhs)	Co-ordinators
3.	Branding in new ventures: Exploring start-up's brand practices	October 2015-October 2017	Indian Institute of Technology Madras	5	Upendra Kumar Maurya
4.	Analyzing Developer Strategies in Hypercompetitive Mobile app Market place	2 years (November 30, 2016 - November 29, 2018)	New Faculty Initiation Grant (IC&SR)	5	Dr. Nargis Pervin
5.	New Faculty Initiation Grant-The impact of mindfulness practices on sales call reluctance	May 2016-May 2018	Indian Institute of Technology Madras	5	Vaibhav Chawla

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

- Number of students who visited the universities abroad:

MBA Students:	University of Mannheim, Germany	= 03
	University of Passau, Germany	= 10
	EBS, Germany	= 02
	Lally School of Management, USA	= 02
	HOF University, Germany	= 06
	University of Duisburg	= 04
	Koblenz Univ of Appl. Sci., Germany	= 02
	Deggendrof University, Germany	= 05
	Management Centre Innsburk, Austria	= 04
	Univ of British Columbia, Canada	= 02
M.S. / Ph.D. research scholars		= 06
Total students		= 47

- Number of casual/foreign students visited DoMS, IIT Madras = 29

Faculty members participation with other institutions under MoUs

Sl. No.	Name of faculty	Participation details	Name of University/Institution which has MoU
1.	Dr Vijayalakshmi	Faculty exchange and a seminar	University of Passau, Germany

Research Publications:

Total number of papers published in referred national journals: 2
Total number of papers published in referred international journals: 37
Total number of papers presented in national conferences: 6
Total number of papers presented in international conferences: 23

In referred national journals:

Sl. No.	Name of the Faculty	Title of the paper	Name of the Journal
1.	Mathew, H. E and V. Vijayalakshmi	(2017). Changing definitions of work and play: Importance of Workplace Humor	*P Psychological Studies,* **62**(1), 12-20.
2.	U Uma Narayanan, V. Arul Dev and V. Vijayalakshmi	Fractals of Integral Change	*Journal of Integral Theory and Practice.* (In press)

In referred international journals:

Sl. No.	Name of the Faculty	Title of the paper	Name of the Journal
1.	Varisha Rehman.	Identification of Gaps in Antecedents and Consequences of Consumer Behavior: An Indian Consumer Perspective (A Structured Abstract) in *Marketing at the Confluence between Entertainment and Analytics.*	*Proceedings of the 2016 Academy of Marketing Science (AMS) World Marketing Congress*, Springer
2.	Balaji M. and Arshinder Kaur.	"Modeling the causes of food wastage in Indian perishable food supply chain".	*Resources, Conservation & Recycling*, 114,4, 153-16, doi:10.1016/j.reconrec.2016.07.016 (Impact Factor: 3.280; Elsevier) 2016 - International Journal.
3.	C. Girija Navaneedhan, MS15ITF0 T.J. Kamalanabhan Mentor.	Is metaphorical thinking related to development of cognitive structures among learners? Lesson plan on teaching Chemistry implementing metaphorical thinking.	*Global Educational Research Journal*: ISSN-2360-7693: Vol.4(3):pp 480-489, September 2016. World Scientific News, WSN 52(2016)1-13, EISSN 2392-2192.
4.	Dr. Vaibhav Chawla.	Case study titled "AASU Mallesham: Scaling Blues".	ET Cases, India's first-ever case clearing house 2017
5.	Dr. R.K. Amit B. Vipin. Ph.D.	"Loss Aversion and Rationality in the Newsvendor Problem under Recourse Option" has been accepted for publication.	*European Journal of Operational Research* (EJOR). EJOR is an A* 2016
6.	Krishna Prasanna and Sowmya.	Yield curve in India and its interactions with the US bond Market.	*International Economics and Economic Policy* B Cat. Journal In Press; 2016; DOI 10.1007/s10368-016-0340-8
7.	Krishna Prasanna and Sowmya.	Linkages in the term structure of interest rates across sovereign bond markets.	*Emerging Markets Review* A Cat Journal In Press; 2016, doi:10.1016/j.ememar.2016.05.001
8.	Krishna Prasanna and Geeta.	Governance and risk interdependencies among family owned firms.	*Corporate Ownership & Control Journal* B Cat. Journal 2016, Vol. 13, No. 2, pp.390-407
9.	Krishna Prasanna and Geeta.	Impact of family ownership on idiosyncratic risk.	*International Journal of Corporate Governance* B Cat. Journal 2016, Vol. 7, No. 4, pp.325-349
10.	Vinodh K., Mathew S. K. and Sugumaran V.	Web personalisation for user acceptance of technology: An empirical investigation of eGovernment services.	*Information Systems Frontiers.* Vol. 18, No. 3, pp. 579-595
11.	Dahiya D. and Mathew S. K.	IT assets, IT infrastructure performance and IT capability: A framework for eGovernment.	*Transforming Government: People, Process and Policy.* Vol. 10, No. 3, pp. 411-433
12.	Rajagopalan R. and Mathew S. K.	Choice of agile methodologies in software development: A vendor perspective.	*Journal of International technology and Information Management*, Vol. 25, No. 1, pp. 39-54
13.	Dr. Vaibhav Chawla.	Teaching note for the case study titled "AASU Mallesham: Scaling Blues".	ET Cases, India's first-ever case clearing house
14.	Dr. Vaibhav Chawla.	Salesperson's Spirituality: Impact on Customer Orientation and Adaptability.	*Marketing Intelligence and Planning*, Vol. 35, Issue 3, Emerald Publishers, Rank A Journal
15.	Rehman V. (2017).	"Looking the glass of Indian Culture: Consumer behavior in modern and post modern era"	*Global Business Review* (May-June)
16.	Shenoi V. V., Dath T. S., and Rajendran C.	Supply chain risk management in the Indian manufacturing context: a conceptual framework".	*International Journal of Logistics Systems and Management*, Vol.25, No.3, 313-335 (2016).
17.	Ramya R., Rajendran C., and Ziegler H.	Capacitated lot-sizing problem with production carry-over and set-up splitting: mathematical models".	*International Journal of Production Research*, Vol.54, No.8, 2332-2344 (2016).
18.	Sabitha D., Rajendran C., Kalpakam S. and Ziegler H.	"The value of information sharing in a serial supply chain with AR (1) demand and non-zero replenishment lead times".	*European Journal of Operational Research*, Vol.255, No.3, 758-777 (2016).
19.	John, K., Rajendran, C. and Ziegler H. (2016).	Investigation of Order-Up-To-Policy and Allocation-Rationing Mechanism for Divergent Supply Chains with Multiple Objectives. In *Multiple Criteria Decision Making in Supply Chain Management*	(Ed. A Ravi Ravindran), pp. 341-379, CRC Press, USA.
20.	Rajkanth, R., Rajendran, C. and Ziegler H.	"Heuristics to minimize the completion time variance of jobs on a single machine and on identical parallel machines". *The International*	*Journal of Advanced Manufacturing Technology*, Vol.88, No.5, 1923-1936(2017).
21.	Rajendran S., Rajendran C., and Leisten R.	"Heuristic rules for tie-breaking in the implementation of the NEH heuristic for permutation flow-shop scheduling"	*International Journal of Operational Research*, Vol.28, No.1, 87-97 (2017).
22.	Vaijayanthee Kumar, T. J. Kamalanabhan	Moderating Role of Work Support in Stressor–Burnout Relationship: An Empirical Investigation Among Police Personnel in India	*Psychological Studies* - Springer International Publishing March 2017, Volume 62, Issue 1, pp 85–97

Sl. No.	Name of the Faculty	Title of the paper	Name of the Journal
23.	Sumathi Annamalai and T.J. Kamalanabhan	A study on occupational stress and job satisfaction	Int. J. Business Innovation and Research, Vol. 11, No. 3, pp 417-430, Inderscience Publishers (2016)
24.	Viraiyan Teeroovengadum and T.J. Kamalanabhan	"Measuring service quality in higher education", Quality Assurance in Education	Ashley Keshwar Seebaluck, (2016) Vol. 24 Iss 2 pp. 244 – 258, Emerald Publishers
25.	Girija Navaneedhan and T.J. Kamalanabhan	"Lesson plan on teaching Chemistry implementing Metaphorical Thinking"	*Global Educational Research Journal*: ISSN-2360-7963: Vol. 4(3): pp 480-489, September 2016
26.	Girija Navaneedhan and T.J. Kamalanabhan	Is metaphorical thinking related to development of Cognitive structures among learners?	www.worldscientificnews.com (2016)
27.	Girija Navaneedhan and T.J. Kamalanabhan	"Metaphorical Thinking: Its Link to Neurochemistry of Learning"	Psychology, 7, 286-291 Published Online March 2016 in SciRes. http://www.scirp.org/journal/psych http://dx.doi.org/10.4236/psych.2016.730 (2016)
28.	Kothandaraman, K. and T.J. Kamalanabhan	People Process Excellence and Business Outcomes – A Structural Equation Modeling based analysis	International Journal of Business Excellence (Accepted for publication). ISSN: 1756-0055. Inderscience Publishers (2017)
29.	Venkata Prasad Palakiti, Usha Mohan and Viswanath Ganesan	Order Acceptance and Scheduling: Overview and Complexity Results	Accepted for publication in *International Journal of Operational Research*
30.	Usha Mohan, Sivaramakrishnan Ramani and Sounaka Mishra	Constant factor approximation algorithm for TSP satisfying a biased triangle inequality,	Theoretical Computer Science Volume 657, Part B, Pages 111-126, 2017
31.	Sujatha Babu and Usha Mohan	An Integrated Approach to Evaluating Sustainability In Supply Chains Using Evolutionary Game Theory, Computers and Operations Research	http://dx.doi.org/10.1016/j.cor.2017.01.008 2017.
32.	Srinivasan Suresh, Thenmozhi M., and P. Vijayaraghavan	Product Diversification Deciphered, Global Business and Management Research	An International Journal, 8(2), 38-52(2016)
33.	Thenmozhi M and Narayanan P.C.	Rule of Law or Country Level Corporate Governance: What Matters More in Emerging Market Acquisitions? Research in International Business and Finance	doi:10.1016/j.ribaf.2016.01.008, Available online 11 January 2016, ABDC ranking – B- H index 17,SJR - 0.5, Cites per doc – 1.31 (2016)
34.	Narend S. and Thenmozhi M.	Do Country ETFs Influence Foreign Stock Market Index?: Evidence from India ETFs Journal of Emerging Market Finance	(Forthcoming) ABDC ranking – B2016
35.	Narend S. and Thenmozhi M	What Drives Fund flows to Index ETFs and Mutual Funds?: A Panel analysis of Funds in India, Decision	43(1):17–30, Springer Journal, published by IIM Kolkata. March 2016)
36.	Thenmozhi M and Srinivasan N	Co-movement of oil price, exchange rate and stock index of major oil importing countries: a wavelet coherence approach,	*Journal of Developing Areas*, 50(5), 2016 (Special Issue), 85-102 | 10.1353/jda.2016.0036, ABDC ranking – B

In proceedings of national conferences:

Sl. No.	Name of Faculty	Title of the Paper	Institution	Period
1.	Prof. G. Srinivasan	O.R. model for balanced IPL teams	Indian Institute of Information Technology and Management, Gwalior,India	22-24 December 2016
2.	Dyaram, L and Satyanarayana Kalidindi. Ayesha A, MS Scholar	"Labour Absenteeism in Indian Construction Industry- Conceptual Model Proposal" received the **"Outstanding Paper Award"**	Birla Institute of Technology, Mesra, Ranchi	21-22 February 2017
3.	Sujatha M. and Rehman V. (2016)	"Controversies of Dairy brand in India"	New Delhi, Emerald Publishing.	16-17 April 2016
4.	Sujatha M. and Rehman V. (2016)	"The role of brand credibility in influencing the health-conscious consumers' intention to purchase convenience food"	New Delhi, Emerald Publishing.	16-17 April 2016
5.	V. Vijayalakshmi, Abha Bhartia and Anitha Shri	"I Impact of Emotional Intelligence on Thriving of College Students".	26th National Academy of Psychology Conference, IIT Madras, Chennai	2016
6.	U Uma Narayanan, V. Arul Dev and V. Vijayalakshmi (2016)	"In Inner Presence, Strengths and Experiencing Meaning in Work – An Integral Model and Reflective Process".	26th National Academy of Psychology Conference, IIT Madras, Chennai	

In proceedings of international conferences:

Sl. No.	Name of Faculty	Title of the Paper	Institution	Period
1.	Dr.G. Arun Kumar	A Dynamic Panel Analysis of Ownership Structure and Firm Performance: Evidence from India Foreign Direct Investment, Domestic Investment and 2008 Financial Crisis: The Rise of Emerging Nations	Australia-Middle East Conference on Business and Social Sciences 2016 Dubai, UAE	17-18 April 2016
2.	Richa Agrawal	"Cross-Cultural Validity Assessment of Perceived Brand Greenness Scale" Proceeding	Academy of Marketing Science Annual Conference, Orlando, USA	18-21 May 2016
3.	Prof.A.Thillairajan	Real Options in Desalination sectors	20th Annual International Conference Real Options Oslo, Norway	15-18 June 2016
4.	V. Vijayalakshmi	Thriving at Work through Emotional Social Competence	*Australian New Zealand Academy of Management Conference* (ANZAM), Brisbane	6-9 December 2016
5.	Dr. Lata Dyaram	Rationality and Reflective Mind – A Case for Typical Performance Measure	International Conference on Cognition & Thinking 2016 Rhode Island, USA	4-12 August 2016
6.	Dr. Saji K. Mathew	Impact of personalised review summaries on buying decisions: An experimental study	Americas Conference on Information Systems (AMCIS 2016)" San Diego, USA	10-14 August 2016
7.	Rajagopalan R. and Mathew S. K. and Sugumarana V.	Choice of Agile Methodologies in Software Development: A Vendor Perspective	*Proceedings of the22*nd Americas Conference on Information Systems (AMCIS), San Diego, ISBN: 978-0-9966831-2-8	11-14 August 2016
8.	Mathew S. K. and Balan U. M.	Impact of Web Personalisation of Online Word Of Mouth on Buyers' Decision Process: An experimental study	*Proceedings of the IEEE International Conference on Management of Innovation and Technology (ICMIT)*, Bangkok, ISBN: 978-1-5090-1500-9	19-22 September 2016
9.	Mathew S. K. and Priyadharshini A. K.	The Impact of Individual Privacy and Personalisation on Online Buying Behaviour: An experimental study		
10.	Karunagaran S., Mathew, S. K. and Lehner F.	Differential adoption of cloud technology: A multiple case study of large firms and SMEs	*Proceedings of the* 37th *International Conference on Information Systems (ICIS)*, Dublin	11-14 December 2016
11.	Sriram Venkiteswaran and R. P. Sundarraj	Anger Intensity Elicitation	Group Decision and Negotiation Conference (GDN conference), Bellingham, USA	20-24 June 2016
12.	Sriram Venkiteswaran and R. P. Sundarraj	On Using Sentiment-Analysis Approach for Designing Anger Aware Negotiation Agents	Group Decision and Negotiation conference, Bellingham, USA	20-24 June 2016
13.	Raja Sowmya and Richa Agrawal	Cross-Cultural Validity Assessment of Perceived Brand Greenness Scale	Proceedings, Academy of Marketing Science Annual Conference	18-21 May 2016, Orlando, USA
14.	Mukherjee Anik, R. P. Sundarraj and Kaushik Dutta	Architecture of in-app ad recommender system." Breakthroughs and Emerging Insights from Ongoing Design Science	Projects: Research-in-progress papers and poster presentations from the 11th International Conference on Design Science Research in Information Systems and Technology (DESRIST) 2016. St. John, Canada	23-25 May 2016

Sl. No.	Name of Faculty	Title of the Paper	Institution	Period
15.	Venkatraman Sathyanarayanan, Rangaraja P. Sundarraj, and Mukherjee Anik	"Prototype Design of a Healthcare-Analytics Pre-adoption Readiness Assessment (HAPRA) Instrument." Tackling Society's Grand Challenges with Design Science	11th International Conference, DESRIST 2016, St. John's, NL, Canada,	May 23-25, 2016, *Proceedings 11*. Springer International Publishing, 2016
16.	Mukherjee Anik and Sundarraj, Rangaraja P and Dutta Kaushik	"On Considering Customer's Short-term Preferences for Resource Allocation in Cloud Computing Spot Markets"	Proceedings of the Workshop of Information Technology and Systems	Dublin, Ireland, December 2016
17.	S. Prithviraj, R. P. Sundarraj and T. Ravichandran	"Influence of Decision-maker Role on Analytics-systems Selection: A Construal-level Theory Approach"	Presented at the Decision Sciences Meeting	November 2016
18.	Rehman V.	"Identification of Gaps in Antecedents and Consequences of Consumer Behavior: An Indian Consumer Perspective (A Structured Abstract) in *Marketing at the Confluence between Entertainment and Analytics*	Proceedings of the 2016 Academy of Marketing Science (AMS) World Marketing Congress, Springer., FL, USA	May 18-21, 2016
19.	Rehman V.	(2016). "Increasing Advertising Value through media – mix and content decisions: Development of a Conceptual Model"	*14*thInternational Conference of Global Business and Economic Development (SGBED), New Jersey	June 21-24, 2016
20.	Rehman V.	(2016). "I am too Busy !!!! Come Back some other time – Exploring the ability of Entertainment Marketing to change this		
21.	Kayalvizhi P.N. and Thenmozhi M.	Does Quality of Innovation, Culture and Governance Drive FDI? Evidence from Emerging Markets	*Journal of International Financial Markets, Institutions and Money* (JIFMIM) Special Issue Symposium on "Cross Country Issues on Credit, Banking, Asset Pricing, and Market Liquidity	June 23-25, 2016 at Shanxi, China
22.	Hemamalini A. and Thenmozhi M. (2016)	Co-movement of banking stress across emerging and advanced economies: A dynamic factor model and wavelet coherence approach		
23.	Rehman V.	(2016). Exploring the relationship between Need to Evaluate and Media Channels: An insight from India	*Applied Human Factors and Ergonomics (AHFE),* Orlando	27-31 July 2016

Research publications of the faculty members and research scholars:

Books : 4 (Total)
Total number of papers published in referred national journal : 2
Total number of papers published in referred international journals : 37
Total number of papers presentation in national conferences
(i) In proceedings as full paper : Students 26 + Faculty 6 = 32
(ii) As abstract : —
Total number of papers presentation in international conferences
(i) In proceedings as full paper : Students 18 + Faculty 23 = 41
(ii) As abstract : —

Distinguished visitors to the Department:

Sl. No.	Name of the visitor and Designation	Date of visit	Purpose of visit
1	B.R. Sengupta and Dr Manas K Mandal, Director General - Life Sciences, Defence Research & Development Organisation (DRDO)	4 April 2016	Delivered a talk on "To lead a change and the changed way of leading"
2	Dr. Puduru Viswanatha Reddy, Group for Research in Decision Analysis (GERAD), HEC Montréal, Canada	5 April 2016	Research talk on "Non-cooperative dynamic games with inequality constraints"
3	Dr. Prateep Philip, Additional Director General of Police, Government of Tamil Nadu	21 April 2016	Delivered a talk on "Innovations in Economic Offences and Policing in the State"
4	Kirk Botula, CEO, Software Process Improvement Network (SPIN)	22 April 2016	Delivered a talk on "Future direction, relevance in modern day products and services"
5	Prof. V. Ravi Anshuman, Canara Bank Chair in Banking & Finance, IIM Bangalore	4 May 2016	Talk on "Equivalence of Valuation Approaches"
6	Prof. V Ravi Anshuman, Canara Bank Chair in Banking & Finance, IIM Bangalore	10 May 2016	Talk on Asymptotic Arbitrage Pricing Theory of Ross
7	Researchers from Sabre Airline Solutions	13 May 2016	Talk on "Challenging problems in pricing and revenue management leveraging simulation"
8	Dr. Aravind Chandrasekaran, Associate Professor, Management Sciences at Ohio State University	17 May 2016	Talk on his latest paper titled "The Electronic Medical Record Adoption Process: Impact on Patient Experience and Cost" and informal interaction with scholars
9	Ramasubramanian (Ramsu) Sundararajan, Principal Operations Research-Data Analytics, Sabre Airline Solutions in Bangalore, India	13 May 2015	Talk on Segmentation and its applications in the airline industry
10	Goda Ramkumar, Principal Operations Research for Pricing & Revenue Management at Sabre Airline Solutions, Bangalore, India	13 May 2015	Talk on Challenging problems in pricing and revenue management leveraging simulation
11	Prof. V Ravi Anshuman, Canara Bank Chair in Banking & Finance, IIM Bangalore	8 June 2016	*Foreign Fund Flows and their Impact of Stock Returns in India* - a joint work of Prof Ravi with Prof Viral V. Acharya (New York University Stern School of Business) and K Kiran Kumar (IIM Indore)
12	Prof. Morton Lane, University of Illionois, Director of Master of Science (Financial Engineering) program and expert in derivatives and has been engaged by top consulting clients including World Bank, AIG etc.,	10 June 2016	"Insurance Portfolio"
13	Professor N. Hemachandra, Professor at IEOR, IIT Bombay	14 June 2016	Research talk "On conservation laws and related aspects in some queues"
14	Dr. Saravanan Venkatachalam, Wayne State University	28 July 2016	A talk on his current research on stochastic programming and will also discuss research opportunities at Wayne State University
15	Prof. Radhakrishnan Gopalan, Associate Professor Olin School of Business at Washington University in St. Louis	4 August 2016	Interaction with scholars
16	Ambi Parameswaran	19 August 2016	Management Invitation Lecture Series (MILS) "A talk on "Nawabs, Nudes, Noodles – A Yen for Branding"
17	Dr. Usha Ramanathan, Nottingham Trent University	11 August 2016	"Supply chain collaboration for sustainability"
18	Raja Krishnamoorthy, Inspirational Speaker, Life Connoisseur & Leadership CoachOD Consultant and Director Talent Maximus India Pvt. Ltd	11 August 2016	A Talk on "Transformational Leadership"
19	Dr. Ashok Jhunjhunwala	25 August 2016	MBA Invitational Lecture Series (MILS) A Talk on"Sustainability: Green Home, Green Building, Green Transport"
20	Ms. DeepikaGoyal, a certified facilitator	27 August 2016	Half-a-Day session on "Magic of Believing in Yourself"
21	Mr. Rajesh, Head HR,	7 November 2016	Challenges and Opportunities with Mergers & Acquisitions - A Practitioner's Perspective"
22	Dr. Lakshmi Iyer, Associate Professor and Director of Graduate Programs, University of North Carolina at Greensboro	21 November 2016	interact with our research scholars at the DoMS Seminar Hall (Room No. 110)
23	Prof. Lakshmi Iyer, Faculty of IS at Universirty of North Carollina	23 November 2016	interacting with research scholars
24	Prof. Chinmoy Ghosh, Gladstein Professor of Business and Innovation Finance,Head of the Department of Finance at School of Business, University of Connecticut, USA	21-22 December 2016	One-day workshop on Research methods in Finance and how to write papers for international high-quality journals
25	Venkatanathan, Citicorp	16 December 2016	Talk on Career in banking
26	Yakov Amihud, Ira Rennert Professor of Entrepreneurial Finance, Leonard N. Stern School of Business (New York University)	19 December 2016	Talk on Liquidity and Asset prices

Sl. No.	Name of the visitor and Designation	Date of visit	Purpose of visit
27	Prof. K. Sudhir, Yale School of Management	13 January 2017 DoMS, IIT Madras	"Selecting and Conceptualising Research Problems" and "Talk on Marketing Analytics"
28	Professor Harminder Singh, Director of International Engagement, Department of Finance, Deakin Business School, Melbourne	18 January 2017	Seminar talk on "Marketing capability and Stock returns"
29	Shriram Sanjeevi, Founder of Smiling baby and Oyethere.com	19 January 2017	MBA Invitational Lecture Series (MILS)
30	Professor Soundar Kumara from Pennsylvania State University, USA	23 January 2017 to 3 February 2017	GAIN course on Data Analytics with application to healthcare coordinated by Prof. R. P. Sundarraj and Prof. C Rajendran
31	Dr Jose Francis (Head-Talent Development, Verizon India)	15 February 2017	OD Perspectives in contemporary times
32	Dr. Elangovan, University of Victoria, 3M Fellow &UVic Distinguished Professor	2 February 2017	Talk on " What's the point! Erosion of meaning in work"
33	Vikas Chawla, Founder of Social Beat and Influencer	(MILS) 9 February 2017	Talk on "How Brands are Leveraging Digital Marketing to Drive their Business"
34	Lalit Jagtiani, Digital Transformation thought leader in SAP and author	MBA Invitational Lecture Series (MILS) 16 February 2017	Talk on his book *When Change Happens*
35	Shanker Gopalkrishnan, MBA from IIM Calcutta and President of Madras Consultancy Group	17 February 2017	"Insights in to Business Consulting"
36	Dr. SapnaIsotupa, Wilfridlaurier University, Canada	20 February 2017	"Inventory and Queueing Systems with Multiple Classes of Customers"
37	Prof Lakshman Krishnamurthi	20 & 21, February 2017.	Topic: "Marketing Strategies for Growth"
38	Sumanth C Raman, Television Anchor and Political Analyst	Lecture Series (MILS) 23rd Feb 2017	Talk on "Authenticity in Communication"
39	Kiruba Shankar, CEO of Business Blogging and Founder Director of F5ive Technologies	16 March 2017	MBA Invitational Lecture Series (MILS)

Other activities of the Department/Centre:

1.	Dr.Thenmozhi and Dr. T.J. Kamalanabhan, Executive Programme for Business Administration 7-15 May 2016 and 21-29 May 2016
2.	Dr. M. Thenmozhi, EPBA – Executive Programme in Business Administration, 19-27 November 2016 and 3-11 December 2016
3.	Dr. A.Thillai Rajan, Professor, Serves as an Associate of the Mossavar Rahmani Centre for Business & Government, Harvard Kennedy University School, Harvard University, January 2017
4.	Dr.T.J. Kamalanabhan and Dr. M.Thenmozhi, Professor, EPBA, DoMS, 19-26 March 2017
5.	Dr. Saji K Mathew, Selected as **Treasurer, AIS India Chapter** By Association of Information Systems (AIS), Atlanta, USA

Books, Monographs authored / co-authored:

Sl. No.	Name of faculty	Title	Publisher	Author/ Co-author
Books :				
1.	Dr.Thillairajan University Ventures at IIT Madras	*The Venture Findings*	Publication of Tel Aviv University	Prof. Ashok
2.	Dr. Feroz Ali	A book entitled *The Access Regime – Patent Law Reforms for Affordable Medicines* by Prof. Feroz Ali, Department of Management Studies	Published by Oxford University Press	
3.	Dr. Saji K. Mathew	"Risk assessment in IT outsourcing," a chapter in *Global Sourcing of Services*, Ed: Palvia S. C. J. and Palvia P. C.	World Scientific	
4.	Dr. Saji K. Mathew	"Identifying vendor risks in remote infrastructure management services," a chapter in *Global Sourcing of Services*, Ed: Palvia S. C. J. and Palvia P. C.	World Scientific	Dr. Madhuchhanda Das Aundhe

4.12. Department of Mathematics

4.12.1. Introduction

Established in 1959, the Department of Mathematics is one of oldest departments of Indian Institute of Technology, Madras. Today, the department offers M.Sc. programme in Mathematics, M.Tech. programme in Industrial Mathematics and Scientific Computing (IMSC) and Ph.D. programme. In addition, the department has taken the responsibility of teaching mathematics to B.Tech., M.Tech. (other than IMSC), M.Sc. and Ph.D. students of the institute.

The major research areas of the department are:

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
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 equations
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

New courses introduced

Sl. No.	Course No	Title
1.	MA 7654	Algebraic Combinatorics
2.	MA5440	Combinatorics and Number Theory
3.	MA6420	Algebraic Theory of Codes and Automata
4.	MA7040	Advanced Probability Theory

Students on roll as of September 2016+ Ph.D admission in January 2017

Programme	Number of Students
M.Sc.	99
M.Tech.	20
Ph.D.	100
Total	219

Endowment prize instituted:

Sl. No.	Endowment Prize	Purpose	To be awarded from
1.	Mrs. Lakshmikutty Amma and Mr. A. Krishnankutty Nair Prize, instituted by Retired Professor Dr. P. Achuthan; Dr. Sukhendhu Ghosh, a Ph.D. scholar under the supervision of Prof. R. Usha, and Dr. Asrifa Sultana, a Ph.D. scholar under the supervision of Prof. V. Vetrivel, received the award for 2016	Best Ph.D. thesis in mathematics	2013 Convocation

Student/scholars who attended conferences/seminars/symposia

Sl. No.	Student/scholar	Roll No.	Conference/Seminar/Symposia/Workshop and Venue	Date	Financial Assistance
Abroad					
1.	Amit Kumar	MA13D015	International Conference on Computational Physics, Mathematics and its Application, Tokyo, Japan (presented a paper, Pseudo binomial approximation to (L1)-Runs)	6-9 November 2016	IIT Madras
2.	Sukhla Adak	MA11D022	11th AIMS Conference on Dynamical Systems, differential Equations and Applications, Orlando, Florida, USA (presented a paper titled 'Tikhonov regularization of a singularly perturbed two-point boundary value problem')	30 June-8 July 2016	IIT Madras
India					
1.	Ajoy Jana	MA14D001	Inverse and Control Problems, IISER, Thiruvananthapuram	14-29 May 2016	--
			International Conference on Mathematical Analysis and its Applications, IIT Roorkee (presented a paper titled 'Truncated spectral regularization method for source identification in an abstract cauchy problem')	25 November -7 December 2016	--
2.	Amit Kumar Singh	MA14D008	K-theory and its Applications, ISI, Bengaluru	26 December 2016-7 January 2017	--
3.	Arati Shashi	MA14D009	International Conference on Fourier Analysis and Wavelets, Ramanujan Institute, Chennai	21-25 March 2017	--
4.	Arvind Kumar	MA16D012	IST-2016 Cumulative Algebra, Bhaskaracharya Pratishthana, Pune	26 November -12 December 2016	--
5.	K. Ashok Kumar	MA15D027	Training programme on NPDE, BITS-PILANI, Hyderabad	23 May-15 June 2016	--
6.	Bivas Khan	MA14D010	K-theory and its Applications, ISI, Bengaluru	26 December 2016-6 January 2017	--
			Seshadri Constants, CMI, Chennai	30 January-10 February 2017	--
7.	Debabrata De	MA15D001	Recent advances in operator theory and operator algebra, ISI, Bengaluru	12-23 December 2016	--
8.	Devindra Pratap Singh	MA15D018	Advanced summer school on Hyperbolic Conservation Lows, IIFR-CAM, Bengaluru	15 May-5 June 2016	--
9.	Geetanjali Chattopadhyay	MA13D017	Research collaboration with Prof. K.C. Sahu, Department of Chemical Engineering, IIT Hyderabad	27-30 July 2016	--
			Research collaboration with Dr. K.C. Sahu, IIT Hyderabad	5-13 November 2016	--
			Applications of mathematics in topological dynamics, physical, biological and chemical systems, Calcutta Mathematical Society (presented a paper titled 'Inviscid instability of a shear flow in presence of a wall')	7-14 December 2016	--
10.	Gopal Dutta	MA14D011	82nd Annual conference of the Indian Mathematical Society, University of Kalyani, West Bengal (presented a paper titled 'Proximal normal structure')	26 December 2016-2 January 2017	--
11.	Hingu Dharini Ramesh	MA13D002	Symposium on Mathematical Programming and Game Theory, ISI, Delhi (presented a paper titled 'On superiority and weak stability of population states')	8-12 January 2017	--
12.	Jyoti Dasgupta	MA14D012	K-Theory and its Applications, ISI, Bengaluru	26 December 2016-6 January 2017	--
13.	Komandla Mahipal Reddy	MA13D003	International Conference on Mathematical Analysis and its applications, IIT Roorkee (presented a paper, Data visualization by rational fractal function based on function values)	28 November-5 December 2016	--
			International Conference on Mathematics and Computing at Haldia Institute of Technology, Haldia (presented a paper titled 'Constrained data visualization using rational Bi-cubic fractal functions')	16-21 January 2017	--
14.	Kuntal Som	MA15D019	Advanced summer school on Hyperbolic Conservation Lows, IIFR-CAM, Bengaluru	15 May-5 June 2016	--
			Advanced International School of Mathematical Programming, Central University of Tamil Nadu, Tiruvarur	4-8 July 2016	--
15.	Nirjan Biswas	MA15D017	NPDE training programme, BITS-PILANI, Hyderabad	23 May-15 June 2016	--
16.	Palpandi	MA14D015	Matrix Analysis, Shiv Nadar University, Noida	30 April-22 May 2016	--
17.	Poorna Pushkala	MA13D008	Seshadri Constants, CMI, Chennai	30 January-10 February 2017	--
18.	Pradyut Karmakar	MA16D005	Recent Advances in Operator Theory and Operator Algebra, ISI Bengaluru	12-23 December 2016	--
19.	Priyabrata Mandal	MA16D011	Algebraic Structures of Manifold, Kolkata	11-24 December 2016	--
			K-theory and its Applications, ISI, Bengaluru	25 December 2016-18 January 2017	--
20.	Rahul Kumar	MA15D015	Recent Advances in Operator Theory and Operator Algebras, ISI, Bengaluru	12-23 December 2016	--
21.	Raisa Dsouza	MA13D005	K-theory and its Applications, ISI, Bengaluru	24 December 2016-8 January 2017	--
22.	Samir Kar	MA15D004	82nd Annual Conference of the Indian Mathematical Society, University of Kalyani, West Bengal	26 December 2016-3 January 2017	--
23.	Sangita Jha	MA14D017	3rd International Conference on Mathematics and Computing, Haldia Institute of Technology (presented a paper titled 'Parameter identification of constrained data by a new class of rational fractal function')	18-23 January 2017	--
24.	Sanjeev Singh	MA12D004	International Conference on Mathematical Analysis and its applications, IIT Roorkee (presented a paper titled 'Turan type inequalities for some special functions')	25 November-3 December 2016	--
25.	Santi Ranjan Das	MA14D202	International conference on Fourier Analysis and Wavelets, Ramanujan Institute, Chennai	21-25 March 2017	--

Sl. No.	Student/scholar	Roll No.	Conference/Seminar/Symposia/Workshop and Venue	Date	Financial Assistance
26.	Sarvesh Kumar	MA13D023	International Conference on Fourier Analysis and Wavelets, Ramanujan Institute, Chennai	21-25 March 2017	--
27.	S. Selvaraja	MA13D024	International Conference of the Indian Mathematics Consortium, Banaras Hindu University (presented a paper titled 'Characterization of Cohen-Macaulay edge ideals whose height is half of the number of vertices')	13-18 December 2016	--
28.	Soumitra Dey	MA15D020	Advanced International School of Mathematical Programming, Central University of Tamil Nadu, Tiruvarur	4-8 July 2016	--
29.	Subhajit Chanda	MA15D022	K-theory and its Applications, ISI, Bengaluru	25 December 2016-8 January 2017	--
			Seshadri Constants, CMI, Chennai	30 January-10 February 2017	--
30.	Subhasis Panda	MA15D028	Advanced Topics on Discrete Logarithms on Finite Fields and Elliptic Curves, ISI, Delhi	22-24 July 2016	--
31.	P. Susmitha	MA16D007	Annual Foundation School-I, Thiruvananthapuram	3 December 2016-1 January 2017	--
32.	Tapabrata Roy	MA15D025	Algebra and Coding Theory (INSACT 2017), St. Berchmans College, Kerala	8-11 February 2017	--
33.	Vijaya Kumar	MA16D031	Functional Analysis and its Applications, BDU, Trichy	9-10 March 2017	--

Students/scholars who won convocation/Institute Day Prize

Sl. No.	Student/Scholar	Roll No.	Prizes	Name of Donor
1.	Ajoy Jana	MA14D001	Institute Research Award	IIT Madras
2.	Projesh Nath Choudhury	MA14D005	Institute Research Award	IIT Madras
3.	Rimpa Mondal	MA15M011	Dr. N. Seshagiri-NIC Prize	IIT Madras
			L.V.K.V. Sarma Prize	IIT Madras
5.	Sahiba Arora	MA15C037	Geetha Raghupathy Prize	IIT Madras
			L.V.K.V. Sarma Prize	IIT Madras

4.12.3. Faculty and their Activities

Faculty

Name and Qualifications	Major areas of specialization
Professors	
Prof. Arindama Singh, Ph.D. (IIT Kanpur)	Logic, numerical analysis
Prof. S. H. Kulkarni, Ph.D. (IIT Bombay)	Functional analysis, 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, Bengaluru)	Convective heat and mass transfer, computational fluid dynamics
Prof. K. C. Sivakumar, Ph.D. (IIT Madras)	Functional analysis, mathematical programming
Prof. S. Sundar, Ph.D. (IIT Madras)	Computational fluid dynamics, numerical analysis for partial differential equations, mathematical modelling
Prof. M. Thamban Nair, Ph.D. (IIT Bombay)	Applicable functional analysis: spectral approximation, operator equations, inverse and ill-posed problems
Prof. R. Usha, Ph.D. (IIT Madras)	Fluid dynamics
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
Associate Professors	
Dr. A.K.B. Chand, Ph.D. (IIT Kanpur)	Fractals, approximation theory and wavelets
Dr. Ch. Srinivasa Rao, Ph.D. (IISc. Bengaluru)	Non-linear differential equations
Dr. A.V. Jayanthan, Ph.D. (IIT Bombay)	Commutative algebra and algebraic combinatorics
Dr. Kalpana Mahalingam, Ph.D. (University of South Florida, Tampa)	Theory of codes, DNA computing, Combinatorics of words
Dr. S.R. Manam, Ph.D. (IISc, Bengaluru)	Applied mathematics
Dr. A.J. Shaiju, Ph.D. (IISc, Bengaluru)	Game theory, systems and control theory
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
Assistant Professors	
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. R. Balaji, Ph.D. (IIT Madras)	Linear algebra and optimization
Dr. Dipramit Majumdar Ph.D. (Brandeis University)	Algebraic number Theory, p-adic aspects of modular forms and Galois representations
Dr. Kunal Krishna Mukherjee, Ph.D. (Texas, A&M)	Operator algebras
Dr. N. Narayanan, Ph.D. (IMSC, Chennai)	Graph Theory: graph colouring, structural and extremal graph theory probabilistic combinatorics, discrete mathematics
Dr. Neelesh S. Upadhye, Ph.D. (IIT Bombay)	Probability theory and applications
Dr. Priyanka Shukla, Ph.D. (JNCASR, Bengaluru)	Fluid mechanics: hydrodynamic instability, nonlinear dynamics, numerical PDE, granular flows, pattern formation
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. 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, Bengaluru)	Geometric group theory and low-dimensional topology
Dr. Sumesh K., Ph.D. (ISI, Bengaluru)	Operator algebra
Dr. V. Uma, Ph.D. (IMSC Chennai)	Topology and geometry of toric varieties and related spaces
Dr. T.E. Venkata Balaji, Ph.D. (CMI, Chennai)	Algebraic geometry and commutative algebra
Dr. Venkatesh R.	Representation theory of Lie algebras
INSPIRE Faculty:	
Dr. J. Jaikrishnan, Ph.D. (IISc, Bengaluru)	Complex analysis
Visiting Professor	
Dr. S. Kesavan (1 February 2016 to 31 January 2017)	Partial differential equation: homogenization, isoperimetric inequality
Adjunct Professor	
Dr. S. Kesavan (1 February 2017 to date)	Partial differential equation: homogenization, isoperimetric inequality
Institute PDFs	
Dr. Pabitra Barik (16 September 2014 to date)	Algebraic geometry
Dr. Manasi Kulkarni (1 February 2016 to date)	Combinatorics on KIORDS, formal language and automata theory DNA computing
Dr. Pranav Haridas (1 July 2016 to date)	Several complex variables
Dr. J. Kokila (10 February 2017 to date)	Fractional differential equation

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

Sl. No.	Coordinator(s)	Title	Period
Conference:			
1.	Dr. A. K. B. Chand	GIAN course coordinator for 'Splines and Fractals in Approximation and Interpolation Theory'	14-29 July 2016
2.	Dr. Santanu Sarkar and Dr. Soumen Sarkar	Forays 2017	28-29 January 2017
3.	Prof. K.C. Sivakumar	International Conference on Game Theory and Optimization	6-10 June 2016
		Management Science and Practice (MSP 2016)	9-19 September 2016
4.	Prof. S. Sundar	International Conference on Advances in Scientific Computing	28-30 November 2016
Symposia:			
1.	Dr. A.V. Jayanthan	National Symposium on Mathematics and Applications (NSMA)	22 December 2016
Workshop:			
1.	Dr. A.V. Jayanthan	MTTS 2016	23 May-18 June 2016
2.	Prof. K. C. Sivakumar	Linear Complementarity Problem (LCP) and Generalizations	24-25 September 2016
Short term Course:			
1.	Dr. Neelesh S. Upadhye and Dr. A. J. Shaiju	"Mathematical Finance: Theory and Practice"	16-21 July 2017
Video Course			
1.	Dr. T. E. Venkata Balaji	NPTEL Video Course on Advanced Complex Analysis - Part 2 (43 lectures)	On the NPTEL website July 2016
		NPTEL Video Course on Algebraic Geometry (42 lectures)	On the NPTEL website in August 2016

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.	Prof. R. Usha	Workshop on DE modelling	IIT Ropar	1-4 June 2016
2.	Dr. R. Venkatesh	National workshop on Functional Analysis	Bharathidasan University, Trichy	9-10 March 2017
Conference				
1.	Dr. K. Sumesh	Conference on TSSRK Fest	ISI, Bengaluru	22-24 September 2016
		Conference on Recent advances in operator theory and operator algebras (OTOA) 2016	ISI, Bengaluru	13-22 December 2016

Special lectures delivered by the faculty in other institutions

Sl. No.	Faculty Member	Topic	Institution Venue	Date
1.	Dr. T. V. Anoop	Generalized-Hardy Sobolev inequalities and its application	NISER, Bhubaneswar	26 July 2016
2.	Prof. Arindama Singh	Reiterated Sum	MS University, Tirunelvelli	4-5 April 2016
		'Why can't we prove all that is true?' under S.S. Pillai Endowment Lecture		
3.	Dr. Dipramit Majumdar	Selmer companion modular forms	IISER Pune	14 October 2016
4.	Dr. Neelesh S. Upadhye	Stein method and perturbations	Anna University, Chennai	11 March 2017
5.	Prof. Satyajit Roy	Applications of vector calculus in fluid mechanics	VIT University, Vellore	21 January 2017
6.	Prof. Satyajit Roy	Linear systems: Thomas and Varga Algorithms	Karnataka University, Dharwad, Karnataka	27 March 2017
7.	Prof. S. Sundar	Solving Gas-Kinetic equation through the PBE solver sectional quadrature method of moments	NIT, Patna	8 April 2016
		A mathematical approach for material modeling: Glass fiber insulation	IIT Patna	9 April 2016
		Mathematics teaching: Technology driven approach for teaching engineers	NIT, Trichy	13 April 2016
		Image compression as big data through PDE models	MGR, University	20 June 2016
		Thinking with mathematical Models –Problem solving through school mathematics	Inaugural of Math Olympiad for Inter Schools, Velammal Bothi Campus, Chennai	6 August 2016
		Mathematics t eaching: Expectations and challenges today	Stella Maris College, Chennai	2 September 2016
		On higher order non-linear diffusion filters	Kathmandu University, Nepal	4 October 2016
		Mathematical challenges through industrial problems	Mahindra Ecole Institute, Hyderabad	6 October 2016
		Thinking with mathematical models at FDP under TEQIP	College of Engineering, Cherthala, Kerala	19 October 2016
		Mathematical methods in data science	NIT, Trichy	17 December 2016
		Thinking with mathematical models – problem solving	Sri Satya Sai University of Higher Learning, Puttaparthi	28 December 2016
		Traffic flow mathematical models	GRD College of Arts and Science, Coimbatore	21 December 2016
		Industrial mathematics and scientific computing	S.B. Jain College, Chennai	18 January 2017
		GPU acceleration for flow problems	SRM University, Chennai	28 January 2017
		Nonlinear diffusion filters for imaging	PSG College, Coimbatore	08 February 2017
		Introduction to mathematics of shape optimization	Madura College, Madurai	11 February 2017
		Mathematical methods in data science	SSN College, Chennai	10 February 2017
		1. Finite pointset method for incompressible flow 2. GPU acceleration of FPM	IIT Roorke	17-18 February 2017
		Mathematics – A Key Technology	Sairam Engineering College, Chennai	16 February 2017
		GPU acceleration and H-Matrix analysis for flow problems using FPM	IISc, Bengaluru	17 March 2017
8.	Prof. M. Thamban Nair	Ill-posedness of compact operator equation	Jean Monnet University, St-Etienne, France	13 June 2016
		A discretization method for integral equations of the first kind	Jean Monnet University, St-Etienne, France	20 June 2016
		Role of mathematics in engineering education	Indian Naval Academy, Ezhimala, Kerala	25 March 2017
9.	Dr. T. E. Venkata Balaji	What is the Calculus, Geometry and Physics in the path of a mountain river?	Sri Sankara Senior Secy School, Adyar	30 August 2016
10.	Dr. R. Venkatesh	Bases for root spaces of Borcherds-Kac-Moody algebras	Institute of Mathematical Sciences, Chennai	4 October 2016
		Hilbert series of partially commutative lie algebras	Institute of Mathematical Sciences, Chennai	1 November 2016
		Graph counting using group actions I and II	Periyar University, Salem	7-8 March 2017

Sl. No.	Faculty Member	Topic	Institution Venue	Date
11.	Prof. P. Veeramani	Normal structure, proximal normal structure and their applications	St. Joseph's College, Trichy	16 December 2016
		On LUB axion and its applications	Ayya Nadar Janaki Ammal College, Sivakasi	25 December 2016
12.	Prof. V. Vetrivel	Variational inequality problems and applications	Anna University, Chennai	4 March 2017

Invited talks/paper presentation at conferences/symposia/workshop

Sl. No.	Faculty Member	Programme	Paper/Talk/Lectures	Date
1.	Dr. Anoop T. V.	TCIMS – AMS International conference at BHU, Varanasi	**Invited talk:** The monotonicity of the first eigenvalue of p-Laplacian on annuli	16 December 2016
		International Conference on Applications of Mathematics to Nonlinear Sciences (AMNS-2016) in Kathmandu, Nepal	**Invited talk:** On the structure of the second Eigen functions of p-Laplacian	26-29 May 2016
2.	Prof. Arindama Singh	Training programme in Mathematics at NISER, Bhubaneswar	**Lectures (6):** Foundation of Mathematics	23-28 May 2016
		Training programme in mathematics at NISER, Bhubaneswar	**Lectures (6):** Foundation of Mathematics	1-5 June 2016
3.	Dr. A.K.B. Chand	National conference on Analysis and its Applications, Karnataka University, Dharward	**Invited talk:** Fractal interpolation and approximation	15 March 2017
		UGC-DRS programme, Utkal University, Odisha	**Invited talks (2):** 1. Introduction to fractal interpolation 2. Rational fractal interpolation and shape preservation	27 March 2017
			Invited talk: Fractal Approximation	28 March 2017
4.	Dr. A.V. Jayanthan	Workshop and conference organized on local cohomology at St. Joseph's College, Irinjalakuda	**Invited talk:** Binomial edge ideals of finite simple graphs	30 June 2016
		TCIMS – AMS International conference at BHU, Varanasi	**Invited talk:** Castelnuovo-Mumford regularity of binomial edge ideals of certain block graphs and trees	16 December 2016
		Faculty development programme on mathematics, Govt. College of Engineering, Thiruvanandapuram	**Invited talk:** Group Theory	4 January 2017
5.	Prof. S.H.Kulkarni	11th ARP endowment talk at Government college, Chittur, Kerala	**Endowment talk:** Singular value decomposition and its applications	22 November 2016
6.	Prof. R. Radha	National workshop on Computational Mathematics, Anna University	**Invited talks (2):** Computational Harmonic Analysis	2-3 March 2017
		International conference on Fourier Analysis and Wavelets, RIASM, Chennai	**Invited talks (4):** Wavelets and Frames	21-25 March 2017
7.	Dr. Santanu Sarkar	Workshop on cryptography at NIT, Trichy	**Invited talk:** RSA and stream ciphers	3-4 June 2016
8.	Prof. Y.V.S.S. Sanyasiraju	Faculty development programme on engineering mathematics through applications been conducted at PSG College of Technology, Coimbatore	**Lectures (02):** Numerical methods for PDE originated from the incompressible flows	4-11 July 2016
		National conference on Nonlinear Dynamics, NIT Warangal	**Invited talk:** True upwinding using RBF based meshless schemes	21-23 December 2016
		Latest Advances in Computational and Applied Mathematics, Mahindra-Ecole-Central (MEC), Hyderabad	**Invite talk:** Finite difference type computations using radial basis functions	14 December 2016
		National seminar on Emerging Trends in Mathematics conducted by Department of Mathematics (UG & PG), Sir C. R. Reddy Autonomous College, Eluru	**Invited talk:** Numerical computations using meshless schemes	8-9 December 2016
		Conference NCMTA-2017, SRM University, Chennai	**Invited talk:** Shape parameter optimization for solving the partial differential equations using radial basis functions	27 January 2017
		National conference, Anna University, Chennai	**Invited talk:** An introduction to the radial basis function (RBF) based meshless schemes	7 March 2017
		National Workshop on Applications of Advanced Mathematics in Engineering's and Sciences (AAAMES_2017), Andhra University, Visakhapatnam	**Invited talk:** RBF based solvers for the PDE	1 March 2017
9.	Prof. Satyajit Roy	The 31st Annual conference of RMS at National College, Tiruchirappalli	**Invited talk:** Analysis of natural and mixed convection flows within square cavity using heatlines concept	18 June 2016
		National Workshop on Computational Mechanics (NWCM), Anna University, Chennai	**Invited talk:** Linearization techniques and it's applications to BVPs	6 March 2017
10.	Dr. Shruti Dubey	International Conference on Recent advances in theoretical and computational partial differential equations and applications, Panjab University	**Invited talk:** Controllability of fractional order differential equations with nonlocal initial condition	5-9 December 2016
11.	Prof. K.C. Sivakumar	International Conference on Game Theory and Optimization, Department of Mathematics, IIT Madras	**Invited talk:** Inverse nonpositivity of operators and semidefinite linear complementarity problems	7 June 2016
		Faculty development programme on engineering mathematics through applications-EMTA 2016 at PSG College of Technology, Coimbatore	**Invited talk:** Applications of linear algebra in engineering	9 July 2016
		Advanced instructional school on mathematical programming held at the Central University of Tamil Nadu, Thiruvarur	**Lectures (03):** Farkas' lemma and its applications	21-24 July 2016
		Management Science and Practice (MSP 2016)	**Invited talk:** Semipositive Matrices and their Semipositive Cones	24 September 2016
		ISI Chennai	**Invited talk:** Characterizations of P – matrices	24-25 September 2016
12.	Dr. Sriram B.	International Conference of Mathematical Analysis and its Applications (ICMAA) at IIT Roorkee	**Invited talk:** On the gruss inequality for unital 2-positive linear maps	29 November 2016
13.	Dr. K. Sumesh	National seminar on functional and harmonic analysis, Government Mokeri College, Kerala	**Invited talk:** Positive definite matrices	9 December 2016
14.	Prof. S. Sundar	MPS 2016, Indian Institute of Technology Madras	**Invited talk:** Image denoising using shape optimization	9 September 2016
		National Level Workshop on Emerging Trends in Mathematics at KG College of Arts and Science, Bharathiar University, Coimbatore	**Invited talk:** PDE Computation	8 October 2016
		Data Science Research Workshop at National Institute of Technology, Trichy	**Invited talk:** Mathematical methods for datascience	3 November 2016
		ISTAM conference, VIT, Vellore	**Invited talk:** Understanding the porosity dependence of glass fiber insulation	11 December 2016

Sl. No.	Faculty Member	Programme	Paper/Talk/Lectures	Date
		Conference on Latest development in PDE	**Invited talk:** Speedup issues on the simulations through finite pointset method	16 December 2016
		82nd Indian Mathematical Society Conference (IMS 2016), University of Kalyani, Kolkata	**Invited talk:** Scalar conservation law models for network supply chain	29 December 2016
		National Workshop on Computational Mathematics, Anna University, Chennai	**Invited talk:** Numerical methods for solving population balance equation	8 March 2017
15.	Prof. M. Thamban Nair	INSPIRE – talk at SSN college of Engineering	**Invited talk:** Some questions in mathematics	10 August 2016
		International Conference on Mathematical Analysis and its applications at IIT Roorkee	**Invited talk:** An operator theoretic treatment of an inverse problem in PDE	28 November-1 December 2016
		Colloquium on Research Opportunities in Functional Analysis	**Invited talk:** Ill-posedness and regularization of backward heat conduction problem	25 February 2017
		Workshop on Engineering Mathematics, Indian Naval Academy, Ezhimala, Kerala	**Invited talks (2)** 1. Heat conduction problem-some mathematical issues (for mathematics teachers) 2. Convergence and iteration (for students)	24-25 March 2017
16.	Prof. R.Usha	82nd Indian Mathematical Society Conference (IMS 2016), University of Kalyani, Kolkata	**Invited talk:** Film flows down inclined substrates: models, dynamics and stability	26-29 December 2016
17.	Prof. P. Veeramani	82nd Indian Mathematical Society Conference (IMS 2016), University of Kalyani, Kolkata	**Invited talk:** Nonlinear analysis optimization and approximation	27-30 December 2016
		International conference on Mathematical Applications in Engineering and Technology, Sacred Heart College, Thirupattur	**Invited talk:** Fixed point theorems, best proximity point theorems and their applications	27-28 January 2017
18.	Prof. V. Vetrivel	DST Inspire programme at PS College of Engineering and Technology	**Invited talk:** Contributions of Euler	22 July 2016
		International Conference on Mathematical Analysis and its applications at IIT Roorkee	**Invited talk:** Quasi optimization	28 November-2 December 2016

Visit to other institutions

Sl. No.	Faculty Member	Programme	Venue	Date
1.	Prof. Arindama Singh	Comprehensive viva cum DC meeting as a member	Tamil Nadu Central University, Tiruvarur	9 May 2016
2.	Dr. A.K.B. Chand	M.Phil. Thesis meeting as a examiner	VIT University, Chennai	21 February 2017
3.	Dr. Ch. Srinivasa Rao	M.Phil synopsis meeting as a member	VIT, Vellore	28 July 2016
4.	Dr. Dipramit Majumdar	Research collaboration meeting	IISER, Pune	8-16 October 2016
5.	Prof. R. Radha	DST-purse evaluation committee meeting as a member	Ramanujan Institute for Advanced Study in Mathematics, Chennai	21 February 2017
5.	Prof. Y. V. S. S. Sanyasiraju	Visited as a chairman of the Peer review committee member for the purpose of reviewing the department activities	NIT, Warangal	27 April 2016
		Comprehensive viva cum DC meeting as a member	SRM University, Chennai	7 May 2016
		Board of studies meeting as a member	JNTU, Hyderabad	3-4 June 2016
		NIT, Warangal	18 July 2016	
		Ph.D. viva-voce meeting as an examiner	GITAM University, Visakhapatnam	9 June 2016
			IIT Mandi	22 July 2016
			IIT Delhi	24 October 2016
			JNTU Hyderabad	26 October 2016
			Bharathidasan University, Trichy	9 November 2016
		Comprehensive examination meeting as a member	VIT University, Vellore	21 November 2016
		Faculty recruitment meeting as a member	VIT University, Vellore	22 January 2017
		Comprehensive viva examination as an expert member	SRM University, Chennai	04 March 2017
		Faculty up-graduation meeting as a member		24 February 2017
6.	Prof. Satyajit Roy Prof. Satyajit Roy	Ph.D. viva as a member	BMS College of Engineering	22 April 2016
			NIT Agartala, Tripura	9 May 2016
			IIT Hyderabad	10 June 2016
		Faculty recruitment meeting as a member	GITAM University, Visakhapatnam	10 July 2016
		DC meeting as a member	SRM University, Chennai	13 July 2016
			VIT University, Chennai	18 July 2016
			SRM University, Chennai	27 July 2016
		Comprehensive Viva as a member	VIT University, Vellore	2 August 2016
		DC meeting as a member	SRM University, Chennai.	23 September 2016
		Ph.D. viva-voce meeting as an examiner	IIT Karagpur	11 November 2016
		Synopsis meeting as a member	VIT University, Vellore	7 October 2016
		Ph.D. viva-voce meeting as a member	Malnad College of Engineering, Hassan for VTU, Karnataka	28 January 2017
		Faculty recruitment meeting as a member	VIT University, Vellore	22 January 2017
			DC meeting as a member	21 January 2017
7.	Dr. Shruti Dubey	Ph.D. review meeting as a member	SRM University, Chennai	3 October 2016
8.	Prof. K.C. Sivakumar	Ph.D. viva-voce as an examiner	IISER, Trivandrum	30 June 2016
9.	Dr. Sounaka Mishra	DC meeting as a member	IIITDM, Kanchipuram	12 April 2016
		Workshop as an organizer	CMI, Chennai	28 April 2016
		Ph.D viva-voce as an internal examiner	IIITDM, Kanchipuram	23 June 2016
		Synopsis meeting as a member	IIITDM, Kanchipuram	12 January 2017
		Ph.D. DC meeting as a member	VIT, Vellore	10 March 2017
10.	Dr. K. Sumesh	Attended the conference	ISI, Bengaluru	22-23 October 2016
		Attended the discussion meeting "Advances in Non-commutative mathematics"	ISI, Bengaluru	11-13 January 2017
11.	Prof. S. Sundar Prof. S. Sundar	DST PAC meeting as a member	Hamdard University, New Delhi	26 April 2016
		Faculty interview as a member	IIITDM, Kanchipuram	18 April 2016
		Faculty Review Meeting as a member	IISER, Thiruvananthapuram	6 May 2016
		Ph.D. viva-voce as a member	IIT Kharagpur	15 June 2016
			Mysore University	27 June 2016
		Selection committee meeting as a member	SRM Research Centre	21 June 2016
		Ph.D. review meeting as a member	Central University Tamil Nadu, Tiruvarur	24 June 2016
			Sastra University	7 July 2016
		Selection Committee Member as a member	DRDO, RAC, New Delhi	1-3 August 2016
		BoS meeting as a member	G.H. Raisoni College of Engineering, Nagpur	20 August 2016
		Ph.D. viva-voce as an examiner	IIT BHU	12 August 2016

Sl. No.	Faculty Member	Programme	Venue	Date
			IIT Ropar	16 September 2016
		DST-PAC (MS) review meeting as a member	IIT Madras	23-24 August 2016
		Given General Talk on project proposal submission for Math Faculty	SRM University, Chennai	25 October 2016
		Ph.D. viva-voce meeting as external examiner	DIAT, Pune	5 December 2016
		DST-PAC meeting as a member	DST, Delhi	27 December 2016
		Ph.D. viva-voce meeting as Indian examiner	Sastra University	14 February 2017
		DST-SERB PAC Meeting as Member of National PDF Selection	Pondicherry University, Pondicherry	9-11 March 2017
		Ph.D. viva-voce meeting as Indian Examiner	Madurai Kamaraj University, Madurai	28 February 2017
		Inauguration of Mathfest as a Chief Guest	RMK College, Chennai	1 March 2017
		Research meeting as a member	Sastra University	18 March 2017
		Ph.D viva-voce meeting as Indian examiner	JNTU, Hyderabad	21 March 2017
		Ph.D viva-voce meeting as Indian examiner	IISc Bengaluru	29 March 2017
12.	Prof. M.Thamban Nair	Ph.D viva-voce meeting as a member	Camile Jordan Institute, St-Etienne, France	20 June 2016
		An interactive session with teachers and students from school	Green Woods Public School, Palakkunnu, Kerala	24 October 2016
		Committee member to evaluate profile of Mathematical science faculty members	Ramanujan Institute, Madras University	26 December 2016
13.	Prof. R. Usha	Jury at the paper presentation in Technology day event	Ashok Leylands, Chennai	24-25 January 2017
14.	Dr.T.E.Venkata Balaji	KVPY selection committee meeting as a panel member	MIT Chromepet, Chennai	27-29 February 2017
		RSIC selection committee meeting as a panel member	PSBB school, KK Nagar, Chennai	5 March 2017
15.	Dr. R. Venkatesh	Participated in National workshop on Functional Analysis	Bharathidasan University, Trichy	9-10 March 2017
16.	Prof. V. Vetrivel	Ph.D. review committee meeting as a member	IIT Delhi	3 October 2016
			KIIT, Bhubaneswar	7 November 2016
			IIT Bombay	16 November 2016
			Anna University, Chennai	7 October 2016
			SRM University, Chennai	30 September2016
			SRM University, Chennai	19 December 2016
		Attended Undergraduation Admission committee meeting as a member	KIIT, Bhubaneswar	18 February 2017

Visits abroad by faculty

Sl. No.	Faculty Member	Country visited	Date	Purpose of visit	Funding from
1.	Dr. R. Balaji	China	17-19 May 2016	Attended the International conference on “Complementary Problems and related Topics” at China	IIT Madras
2.	Dr. A. V. Jayanthan	USA	6-12 July 2016	Attended the International Conference on Commutative Algebra and presented a poster in “Algebraic Geometry” (in honor of Craig Huneke’s birthday)	IIT Madras
3.	Dr. N. Narayanan	Japan	21-25 May 2016	Attended the International conference on “Combinatories and its Applications” at Japan	IIT Madras
4.	Dr. Priyanka Shukla	Germany	5-9 September 2016	Attended the Kick-off meeting at RWTH Aachen, Germany	
5.	Dr. K .Sumesh	Malaysia	22-26 August 2016	Presented a paper titled ‘Regular representations of completely bounded maps’ at 37th QP Conference	Association of IDAQP
6.	Prof. S. Sundar	Germany	10 May-9 June 2016	Went as Visiting professor to AG Technomathematik, TU Kaiserslautern, Germany	Germany
		Nepal	4 October 2016	Attended the workshop on ‘Mathematical Modeling and Industrial Mathematics’ at Kathmandu University, Kathmandu, Nepal	IIT Madras
7.	Prof. M. Thamban Nair	France	5-30 June 2016	As Visiting Professor at Jean Monnet University, Saint-Etienne	
8.	Prof. P. Veeramani	Turkey	12-15 July 2016	Participated and gave an invited talk in ‘Chebyshev centers, fixed point theorems and best proximity theorems’ at the International conference on “Analysis and its Applications”	

Honours and Awards obtained by faculty:

Sl. No.	Faculty Member	Award	Awarded by	Date
Awards:				
1.	Prof. M. Thamban Nair	B.K. Master Memorial National Excellence Award 2016	Udma Educational Trust in a public meeting at Green Woods Public School and Junior College at Palakunnu, Kasaragod district, Kerala	24 October 2016
2.	Dr. Santanu Sarkar	NASI-Young Scientist Platinum Jubilee Award (2016)	National Academy of Sciences, India	4 December 2016

Sl. No.	Faculty Member	Name of Honor	Name	Duration
Honor				
1.	Prof. V. Vetrivel	Life Member	Forum for Interdisciplinary Mathematics	Since 27 March 2017

Journal Editorial Boards

Sl. No.	Faculty Member	Position (Editor/Member)	Journal
1.	Prof. S. Ponnusamy	Editor-In-Chief	*Mathematics Newsletter*
		Managing Editor	*Journal of Analysis*
		Associate Editor	*Bulletin of Malaysian Mathematical Sciences Society*
		Member of the editorial board	*Journal of Classical Analysis*
		Vice-President and Editorial member	*Indian Academy of Mathematics*
		Member of the editorial board	*Mathematical Analysis* (*The Scientific World Journal*, Hindawi)
		Member of the editorial board	Conference papers in Mathematics (Hindawi)
		Member of the editorial board	*Issues of Analysis* (Russian)
		Member of the editorial board	*Ilorin Journal of Science* (Nigeria)
2.	Prof. Satyajit Roy	Advisory Committee Member	*Journal of Indian Academy of Mathematics*
3.	Prof. S. Sundar	Member of the editorial board	*Journal of Indian Academy of Mathematics*
		Associate Editor	*Advances in Engineering Sciences and Applied Mathematics*
4.	Prof. M. Thamban Nair	Member of the editorial board	*Journal of Analysis and Number Theory*

4.12.4.Research and Consultancy

Sl. No.	Title	Period	Funding Agency	Amount (₹ in lakhs)	Co-ordinators
1.	Linear and nonlinear partial differential equations	2015-2017	ICSR-NFIG	5	Dr. T.V. Anoop
2.	Equivalent bundles on toric variety	2017-2020	NBHM	3.32	Dr. Arjit Dey and Dr. V. Uma
3.	Reactive fingering Instabilities	2015-2017	ICSR-NFIG	5	Dr. Priyanka Shukla

Sl. No.	Title	Period	Funding Agency	Amount (₹ in lakhs)	Co-ordinators
4.	Finite Element Methods for Parameter Identification Problems in Elliptic Partial Differential Equations		DST	12.13	Prof. M. Thamban Nair
5.	Cryptanalysis of Symmetric and Asymmetric key ciphers	2017 -2020	NFSC	26	Dr. Santanu Sarkar
6.	Development of three dimensional blade profiles based on iterative inverse design methodology	2015-2017	GTRE	37.40	Dr. B.V.S.S. Prasad and Dr. Y.V.S.S. Sanyasiraju
7.	Projective modules, Euler classes, Chow-Witt groups and A^1-homotopy theory	2014-2019	DST-INSPIRE	32.44388	Dr. Sarang S. Sane
8.	Some aspects of derived categories	2015-2017	ICSR-NFIG	5	Dr. Sarang S. Sane
9.	Topology and Geometry and their applications in other areas of mathematics	2016-2018	ICSR-NFIG	5	Dr. Soumen Sarkar
10.	Operator Algebras	2016-2018	ICSR-NFIG	5	Dr. K. Sumesh

Research publications of the faculty members and research scholars

Books/Book Chapters: 1

Total number of papers published in refereed national journals: 3

Total number of papers published in refereed international journals: 60

Total number of papers presented in international conferences: 6

Books/Book Chapters

P.N. Shivakumar, K.C. Sivakumar and Y. Zhang. Infinite matrices and their recent applications. 2016. *Infinite Matrices and Their Recent Applications* 1: 118. doi: 10.1007/978-3-319-30180-8

Papers published in refereed international journals

1. A. Jana and M. T. Nair. 2016. Quasi-reversibility method for an ill-posed nonhomogeneous parabolic problem. *Numerical Functional Analysis and Optimization* 37(12): 1529-1550. doi:10.1080/01630563.2016.1216448
2. S. R. Manam and M. Sivanesan. 2016. Scattering of water waves by vertical porous barriers: An analytical approach. *Wave Motion* 67: 89-101. doi:10.1016/j.wavemoti.2016.07.008
3. I. Jeyaraman and K. C. Sivakumar. 2016. Complementarity properties of singular M-matrices. *Linear Algebra and Its Applications* 510: 42-63. doi:10.1016/j.laa.2016.08.003
4. R. Balaji and K. Palpandi. 2016. On the Lipschitz continuity of the solution map in linear complementarity problems over second-order cone. *Linear Algebra and Its Applications* 510: 146-159. doi:10.1016/j.laa.2016.08.019
5. B. Jeyaram, R. Radha and R. Raghavan. 2016. New cellular automata-based image cryptosystem and a novel non-parametric pixel randomness test. *Security and Communication Networks* 9(16): 3365-3377. doi:10.1002/sec.1542
6. P. Barik, A. Dey and B. N. Suhas. 2016. On the rationality of Nagaraj–Seshadri moduli space. *Bulletin des Sciences Mathematiques* 140(8): 990-1002. doi:10.1016/j.bulsci.2016.06.001
7. D. M. Pancholi and S. Pandit. 2016. Geometry of Legendrian knots. *Journal of Knot Theory and its Ramifications* 25(13). doi:10.1142/S0218216516500693
8. S. Ghosh and R. Usha. 2016. Stability of viscosity stratified flows down an incline: Role of miscibility and wall slip. *Physics of Fluids* 28(10). doi:10.1063/1.4964118
9. M. Augat, S. Balasubramanian and S. McCullough. 2016. Compact sets in the free topology. *Linear Algebra and Its Applications* 506: 6-9. doi:10.1016/j.laa.2016.05.010
10. A. K. B. Chand and K. R. Tyada. 2016. Partially blended constrained rational cubic trigonometric fractal interpolation surfaces. *Fractals* 24(3). doi:10.1142/S0218348X16500274
11. S. Balasubramanian. 2016. On the GrÜss inequality for unital 2-positive linear maps. *Operators and Matrices* 10(3): 643-649. doi:10.7153/oam-10-38
12. A. Venkateswarlu and S. Sarkar. 2016. On acyclic edge-coloring of the complete bipartite graphs K<inf>2p-1,2p-1</inf> for odd prime p. *Discrete Mathematics* 339(1): 72-77. doi:10.1016/j.disc.2015.07.010
13. S. Krishnamoorthy. 2016. A note on the Fourier coefficients of a Cohen-Eisenstein series. *International Journal of Number Theory* 12(5): 1149-1161. doi:10.1142/S1793042116500706
14. J. P. Bannon, J. Cameron and K. Mukherjee. 2016. The modular symmetry of Markov maps. *Journal of Mathematical Analysis and Applications* 439(2): 701-708. doi:10.1016/j.jmaa.2016.03.013
15. R. Usha and Anjalaiah. 2016. Steady solution and spatial stability of gravity-driven thin-film flow: reconstruction of an uneven slippery bottom substrate. *Acta Mechanica* 227(6): 1685-1709. doi:10.1007/s00707-016-1576-7
16. S. Bera and K. Mahalingam. 2016. Some algebraic aspects of Parikh q-matrices. *International Journal of Foundations of Computer Science* 27(4): 479-499. doi:10.1142/S0129054116500118
17. S. Bera and K. Mahalingam. 2016. Structural properties of word representable graphs. *Mathematics in Computer Science* 10(2): 209-222. doi:10.1007/s11786-016-0257-1
18. A. Dey and M. Poddar. 2016. Equivariant Abelian principal bundles on nonsingular toric varieties. *Bulletin des Sciences Mathematiques* 140(5): 471-487. doi:10.1016/j.bulsci.2015.05.002
19. Á. Baricz, S. Ponnusamy and S. Singh. 2016. Modified Dini functions: monotonicity patterns and functional inequalities. *Acta Mathematica Hungarica* 149(1): 120-142. doi:10.1007/s10474-016-0599-9
20. T. V. Anoop, P. Drábek and S. Sasi. 2016. On the structure of the second eigenfunctions of the p-Laplacian on a ball. *Proceedings of the American Mathematical Society* 144(6): 2503-2512. doi:10.1090/proc/12902
21. A. Jana and M. T. Nair. 2016. Truncated spectral regularization for an ill-posed nonhomogeneous parabolic problem. *Journal of Mathematical Analysis and Applications* 438(1): 351-372. doi:10.1016/j.jmaa.2016.01.069
22. A. K. B. Chand, M. A. Navascués, P.Viswanathan and S. K. Katiyar. 2016. Fractal trigonometric polynomials for restricted range approximation. *Fractals* 24(2). doi: 10.1142/S0218348X16500225
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Distinguished visitors to the Department

Sl. No.	Name and Designation	Date of visit	Purpose of visit
1.	Prof. Phoolan Prasad	12-14 April 2016	Research collaboration with Prof. Satyajit Roy
2.	Dr. D. Venku Naidu, Assistant Professor, Department of Mathematics, IIT Hyderabad	27 May-13 June 2016	Research collaboration with Prof. R. Radha
4.	Prof. P. M. Patil, Karnataka University	19-24 June 2016	Research collaboration with Prof. Satyajit Roy
5.	Dr. Viswanathan, Assistant Professor, IIT Delhi	15-30 June 2016	Research collaboration with Dr. A.K.B. Chand
6.	Prof. Peter Massopust, Technical University Munich, Germany	14-29 July 2016	GIAN course on Splines and fractals in approximation and interpolation theory
7.	Mr. Mangwiro Magodora, Bindura University, Zimbabwe	14 June-11 September 2016	INSA JRD - TATA fellow
8.	Dr. Narasimha Kumar, Assistant Professor, IIT Hyderabad	24 July-1 August 2016	Research collaboration with Inspire Faculty Dr. Srilakshmi Krishnamoorthy
9.	Prof. K. Thulasiraman, Department of Computer Science University of Oklahoma, USA	26-27 June 2016	Research collaboration with Prof. K.C. Sivakumar
10.	Prof. Manoj Changat, Kerala University	18-20 August 2016	Research collaboration with Dr. N. Narayanan
11.	Dr. Biplab Basak, PDF, ISI Bengaluru	23-26 October 2016	Research collaboration with Dr. Soumen Sarkar
12.	Dr. B. Baskar, IISER, Pune	19-22 October 2016	Research collaboration with Dr. Dipramit Majumdar
13.	Dr. Soumnath Jha, IIT Kanpur	4-11 December 2016	Research collaboration with Dr. Dipramit Majumdar
14.	Prof. Alokenath Chakrabarti, Emeritus Professor, IISC, Bengaluru	9-13 January 2017	Research collaboration with Prof. Satyajit Roy
15.	Prof. Hrushikesh Mhaskar, California State University Los Angeles, USA	10-25 January 2017	Research collaboration with Prof. S.H. Kulkarni
16.	Prof. Hira L.Koul, Michigan State University	20-29 January 2017	Research collaboration with Dr. Neelesh S. Upadhye
17.	Dr. Grammont Laurence, University of Sait-Etienn, France	11-18 January 2017	Research collaboration with Prof. M.Thamban Nair
18.	Prof. Anthony Bahri, Department of Mathematics, Rider University, USA	9-17 January 2017	Research collaboration with Dr. Soumen Sarkar
19.	Prof. Dietrich Notbohm, Department of Mathematics, Vrije Universiteit Amsterdam, The Netherlands	9-17 January 2017	Research collaboration with Dr. Soumen Sarkar

Sl. No.	Name and Designation	Date of visit	Purpose of visit
20.	Mr. Jongbaek Song, Department of Mathematical Sciences, Korea Advanced Institute of Science and Technology, Daejeon, Republic of Korea	9-17 January 2017	Research collaboration with Dr. Soumen Sarkar
21.	Dr. Radhendushka Srivastava, IIT Bombay	3-7 February 2017	Research collaboration with Dr. Santanu Sarkar
22.	Dr. B. Baskar, IISER,Pune	15-17 March 2017	Research collaboration with Dr. Dipramit Majumdar
23.	Prof. Jugal K. Verma, IIT Bombay	21 March 2017	Research collaboration with Dr. A.V. Jayanthan
24.	Prof. B.V. Limaye	31 March-3 April 2017	Research collaboration with Prof. M. Thamban Nair

4.12.5. Other Activities of the Department

Seminar talks

Sl. No.	Faculty Member	Title	Date
1.	Prof. hab. inz. Agnieszka Wylomanska Wroclaw, University of Technology, Poland	Codifference as a practical tool to measure Interdependence	7 April 2016
2.	Prof. Vijay Kodiyalam, IMSc., Chennai	What is free probability?	21 April 2016
3.	Prof. K. V. Subrahmanyam, Chennai Mathematical Institute	An introduction to Invariant theory	4 April 2016
4.	Prof Kamal Lodaya, IMSC, Chennai	Courcelle's theorem	11 April 2016
5.	Prof. M. S. Raghunathan	The prime number theorem	18 April 2016
6.	Dr. Sudheesh Kumar, ISI, Chennai	How many ways can we spell Gini index?	1 June 2016
7.	Dr. Akshay Rane ICT, Mumbai	Asymptotic expansions of approximate solution of operator equations and eigenvalue problems with kernel of green's functions type	2 June 2016
8.	Prof. Krishnaiyan Thulasiraman, Professor and Hitachi Chair, School of Computer Science, University of Oklahoma, USA	Resistance networks, Kirchhoff index and path diversity in graphs	27 June 2016
9.	Dr. Arul Shankar Benjamin, Peirce Fellow, Harvard University	Polynomials with squarefree discriminants	18 July 2016
10.	Dr. Narasimha Kumar, IIT Hyderabad	On the gaps between non-zero Fourier coefficients of cusp forms of higher weight	26 July 2016
11.	Prof. Peter Massopust, Technical University of Munich	Fractal functions and wavelets: examples of multiscale theory	28 July 2016
12.	Dr. M. Ganesh, Colorado School of Mines, USA	A hybrid HPC framework with analysis for a class of stochastic models	11 August 2016
13.	Dr. Madhusudan Manjunath, Department of Mathematics, UC Berkeley	Tropical lifting problems	18 August 2016
14.	Dr. Saravanan Venkatachalam, Wayne State University Detroit, USA	Introduction to stochastic integer programs	22 August 2016
15.	Dr. K. Manjunatha Prasad, Manipal University, Manipal	Characterization of outer inverses and some Applications	23 August 2016
16.	Dr. S. Sundar, Chennai Mathematical Institute	On the Wiener-Hopf compactification of a symmetric cone	25 August 2016
17.	Dr. V. S. Sunder, Institute of Mathematical Sciences, Chennai	Two projections in general position	1 September 2016
18.	Dr. Soumen Sarkar, Department of Mathematics, IIT Madras	Orbit class and remarks on invariant topological complexity	8 September 2016
19.	Dr. S.P. Suresh, Chennai Mathematical Institute	Indian classical epistemology: An introduction	22 September 2016
20.	Dr. Ajith Iqbal Singh, IMSC, Chennai	Injectivity versus surjectivity and multipliers versus quotient rings	29 September 2016
21.	Dr. Amritanshu Prasad, Institute of Mathematical Sciences, Chennai	Representations of symmetric groups with nontrivial determinant	6 October 2016
22.	Dr. B. Baskar, Indian Institute of Science Education and Research, Pune	Special values of L-functions	20 October 2016
23.	Dr. Rituparna Sen, Indian Statistical Institute, Chennai	Statistical problems of big data with some applications in finance	3 November 2016
24.	Dr. R. Venkatesh, Department of Mathematics, IIT Madras	Unique factorization of tensor products for finite-dimensional simple Lie algebras	10 November 2016
25.	Dr. Somnath Jha, IIT Kanpur	Congruent number problem	8 December 2016
26.	Dr. Sushil Gorai, IISER, Kolkata	Polynomial convexity of compact subsets of tatally-real submanifolds Cn	12 December 2016
27.	Dr. M. Ashok Kumar, IIT Indore	Statistical inference based on a parametric family of relative entropies	15 December 2016
28.	Prof. Dietrich Notbohm, Vrije Universiteit Amsterdam	Equivariant almost complex structure on quasi toric manifolds	11 January 2017
29.	Prof. Anthony Bahri Rider University, United States	Geometry and topology of polyhedral products	13 January 2017
30.	Mr. Jongbaek Song, Korea Advanced Institute of Science and Technology	Integrality condition on the Stanley-Reisner ring	18 January 2017
31.	Prof. Laurence Grammont Institute Camille Jordan, University of Lyon, Saint-Etienne, France	A new method to solve nonlinear weakly singular integral equations	17 January 2017
32.	Dr. Koushik Saha, IIT Bombay	Moment method and joint convergence of random matrices	19 January 2017
33.	Prof. Hira L. Koul, Michigan State University	Residual empirical processes	25 January 2017
34.	Dr. J. Jaikrishnan, IIT Madras	Impossibility theorems in social choice theory	2 February 2017
35.	Prof. Alladi Sitaram, Chennai Mathematical Institute	A rapid journey through Fourier analysis	9 February 2017
36.	Dr. Vikas Krishnamurthy, Imperial College, London	Theoretical models for compressible vortex Streets	16 February 2017
37.	Prof. V. Lakshmibai, Northeastern University, Boston, Massachusetts	Ubiquity of Schubert varieties	23 February 2017
38.	Dr. Arpan Kabiraj, Chennai Mathematical Institute	Goldman bracket: Centre and geometric intersection number	2 March 2017
39.	Dr. Priyavrat Deshpande, Chennai Mathematical Institute	Moduli space of planar polygons: a topological study of mechanical linkages	9 March 2017
40.	Dr. D. Divakaran, Institute of Mathematical Sciences, Chennai	Finiteness theorems for holomorphic maps from products of hyperbolic Riemann surfaces	16 March 2017
41.	Dr. Nachiketa Mishra, ICTS-TIFR, Bengaluru	On Fourier-Galerkin approach for FFT-based Homogenization	23 March 2017
42.	Prof. R. Ramanujam, Institute of Mathematical Sciences, Chennai	Who is afraid of infinite state systems?	30 March 2017

4.13. Department of Mechanical Engineering

4.13.1. Introduction

The Department of Mechanical Engineering was established in 1959, the foundation year of the institute. Today, it 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 six laboratories: Heat Transfer and Thermal Power, Hydro-Turbo Machines, I.C. Engines, Refrigeration and Air Conditioning, Thermal-Turbo Machines and Thermodynamics and Combustion. The design stream consists of the machine design section, machine dynamics laboratory. The manufacturing engineering stream consists of the manufacturing engineering section and precision engineering and instrumentation laboratories.

4.13.2. Academic courses

New courses introduced

Sl. No.	Course No.	Title
1.	ME5XXX	Metal Forming Analysis and Tool Design
2.	ME3401	Introduction to Mechanical Engineering
3.	MEXXX	Capillarity and Wetting Phenomena
4.	MEXXX	Advanced Sheet Metal Forming
5.	MEXXX	Micro and Nano Manufacturing Processes
6.	MEXXX (GIAN Course)	Automotive Noise and Vibration Control: Contemporary Engineering Practice and Research Issues

Students on roll as of September 2016+M.S. and Ph. D. admission in January 2011:

Program	Year I	Year II	Year III	Year IV	Year V and others	Total
B. Tech.	75	82	81	71	15	324
Dual Degree	79	80	71	72	78	380
M. Tech.	71	94				165
M.S.	19	23	33	16		91
Ph.D.	23	28	64	43	40	198
Total	**267**	**307**	**249**	**202**	**133**	**1158**

Student/scholar who attended conference/seminar/symposia abroad/India

Sl. No.	Student/Scholar	Roll No.	Conference/Seminar/ Symposia/ Workshop	Date and Venue	Financial Assistance from
Abroad					
1.	Mayuresh Sadashiv Maradhar	ME15S054	International Mechatronics and Robotics Engineering 2017	8-9 February 2017, Paris, France	IIT Madras
2.	Adwitiya Dube	ME13S037	SAE World Congress and Exhibition	12-14 April 2016, Detroit, USA	IIT Madras
3.	Nitish Kumar Chaurasia	ME14S027	7th European-Thermal Sciences Conference	19-23 June 2016, Krakow, Poland	IIT Madras
4.	R. Srikanth	ME12D067	Eurotherm 2016	19-23 June 2016, Krakow, Poland	IIT Madras
5.	Pradeep S. Jakkareddy	ME13D009	Eurotherm 2016	19-23 June 2016, Krakow, Poland	IIT Madras
6.	Naresh Yarramsetty	ME14D030	Eurotherm 2016	19-23 June 2016, Krakow, Poland	IIT Madras
7.	Pranit S. Joshi	ME14S060	Eurotherm 2016	19-23 June 2016, Krakow, Poland	IIT Madras
8.	S. Somasundharam	ME12D068	7th European-Thermal Sciences Conference	19-23 June 2016, Krakow, Poland	IIT Madras
9.	Arunachalam M.	ME14S010	17th European Conference on Composite Materials (ECCM17)	26-30 June 2016, Munich, Germany	IIT Madras
10.	N. Rino Nelson	ME12D065	11th International Congress on Thermal Stresses 2016 (TS2016)	5-9 June 2016, Salerno, Italy	IIT Madras
11.	S. Shiva Prasad	ME12D073	19th World Conference on Non-Destructive Testing	13-17 June 2016, Munich, Germany	IIT Madras
12.	Renil Thomas K.	ME13D212	19th World Conference on Non-Destructive Testing	13-17 June 2016, Munich, Germany	IIT Madras
13.	Nithin P. V.	ME14D086	19th World Conference on Non-Destructive Testing	13-17 June 2016, Munich, Germany	IIT Madras
14.	Ajith Joseph	ME11D018	4th International Conference on Computational and Mathematical Biomedical Engineering (CMBE16)	29 June-1 July 2016, ENS Cachan, France	IIT Madras
15.	K. Dhayananth	ME14S016	CMBE16	29 June-1 July 2016, ENS Cachan, France	IIT Madras
16.	Sangamesh C. Godi	ME14D042	ASME's International Mechanical Engineering Congress and Exposition (IMECE) - 2016 Conference	11-17 November 2016, Phoenix, Arizona, USA	IIT Madras
17.	V. Sindhu	ME13D053	Attended Advances in Materials and Processing Technologies Conference (AMPT 2016)	8-11 November 2016, Kuala Lumpur, Malaysia	IIT Madras
	D. Vasumathy	ME14S088			
18.	P. Dhananchezhiyan	ME14S014	Oral presentation at AMPT 2016	8-11 November 2016, Kuala Lumpur, Malaysia	IIT Madras
19.	Laveena Sharma	ME14S066	ISROMAC 2016	10-15 April 2016, Honolulu, USA	Institute
20.	Abhishek Raj	ME13D020	MicroTAS 2016	9-13 October 2016, Dublin	IIT Madras
21.	Ankit Bhai Patel	ME15D202	IMECE-2016	11-17 November 2016, Phoenix	IIT Madras
22.	Dhyanjyoti Deb Nath	ME13S056	IMECE-2016	11-17 November 2016, Phoenix	IIT Madras
23.	Kapil Somani	ME14S062	ISFMFE-2016	18-22 October 2016, Jeju, South Korea	IIT Madras
24.	K. Ananthakrishnan	ME12D025	AIAA-Propulsion and Energy-2016	18-22 July 2016, London	IIT Madras and Boeing
25.	K. Ananthakrishnan	ME12D025	ICMAE- 2016	19-21 July 2016, Bristol	Partially by alumni
26.	K. Ananthakrishnan	ME12D025	AAC – 2016	25-27 July 2016, USA	Partially by alumni
27.	Joby Joseph	ME14S020	Eurotherm 2016	19-23 June 2016, Poland	IIT Madras
28.	Maruti B. Patil	ME15S008	4th International Tribology Symposium of IFToMM (International Federation for the Promotion of Mechanism and Machine Science, ITS-IFToMM)	19-22 March 2017, Jeju, South Korea	IIT Madras
29.	K. Sreeraj	ME15D018	ITS-IFToMM	19-22 March 2017, Jeju, South Korea	DST funding
30.	E. Jerin Robins	ME13S061	Desalination for the Environment: Clean Water and Energy	22-26 May 2016, Rome, Italy	IIT Madras
31.	Arpan Das	ME14S050	Sixth EASN International Conference	18-21 October, 2016, Porto, Portugal	IIT Madras
32.	Vikas Keshari	ME15S026	Industrial and Commercial Refrigeration - REFCON 2016	11-12 November 2016, Chennai, India	IIT Madras
	N. R. Gokulraj	ME14S057			

Sl. No.	Student/Scholar	Roll No.	Conference/Seminar/ Symposia/ Workshop	Date and Venue	Financial Assistance from
	Bhuvanesh	ME13B013			
	Dharama Sastha	ME15S026			
India					
1.	Vikas Heshari	ME15S026	ISME 2017	25 January 2017	IIT Madras
2.	Rohit Khare	ME15S089	International Conference on Sustainable Energy and Environmental Challenges	26-28 February 2017	MHRD (for National Conference)
3.	Aditya Dilip Lele	ME15S084	International Conference on Sustainable energy and environmental challenges	26-28 February 2017	MHRD (for National Conference)
4.	Vineed Narayanan	ME10D050	26th International Cryogenic Engineering Conference International Cryogenic Materials Conference 2016	March 2016, New Delhi	IIT Madras
5.	Raghuram Karthik Desu and Akhil Vijayan	ME14D051 and ME13D209	Discussed about IIT and IPR collaboration (lab visit)	17-19 May 2016, Institute for Plasma Research, Gandhi Nagar, Gujarat	Project fund and Project fund
6.	E. Pradeev	ME14M026	Controls Measurement and Calibration Congress	12-13 May 2016, Pune	IIT Madras
7.	Paul Pramod	ME 12B043	Controls Measurement and Calibration Congress	12-13 May 2016, Pune	IIT Madras
8.	Jensen Samuel	ME14D016	Controls Measurement and Calibration Congress	12-13 May 2016, Pune	IIT Madras
9.	S. Satya Durga Rao	ME14D208	Sixth International Congress on Computational Mechanics and Simulation (ICCMS 2016)	27 June-1 July 2016, IIT Bombay	IIT Madras
10.	Rahul Dutta	ME14S20	6th International and 27th All India Manufacturing Technology, Design and Research Conference (AIMTDR 2016)	16-18 December 2016, Pune College of Engineering Pune	IIT Madras
	Shalini Singh	ME15D025			
	P. RadhaKrishnan	ME12D014			
11.	M.Murugesa Pandian	ME14D080	ILASS Asia 2016 (18th Annual conference on Liquid Atomization and Sprays)	6-9 November 2016, Chennai	IIT Madras
12.	Mikhil Surendran	ME13D035	ILASS - Asia 2016	6-9 November 2016, Chennai	IIT Madras
	S. Radhakrishnan	ME14D038			
	Sumit Joshi	ME13D218			
	W.S. Prashanth	ME14S030			
13.	Mikhil Surendran	ME13D035	ILASS - Asia 2016	6-9 November 2016, Chennai	IIT Madras
14.	Sagar Adatrao	ME15S018	IEEE International Conference on Computing, Analytics and Security Trends (CAST 2016)	19-21 December 2016, Chennai	IIT Madras
	Rakesh Gohane	ME15S018			
15.	Chandrasekar S.	AT14M007	ILASS - Asia 2016	6-9 November 2016, Chennai	IIT Madras
	Aravind Babu	Summer Fellowship			
	Gautham Krishnan and Narendiren CG	ME13B052			
	Sandeep M.	ME13D050			
16.	Manas Kumar Pal	ME12D040	ILASS - Asia 2016	6-9 November 2016, Chennai	IIT Madras
	S. Joshi	ME13D018			
17.	N. Ramalingam	ME12D050	FMFP	15-17 December 2016	Institute
18.	D. Krishnaraja	ME14D021	FMFP	15-17 December 2016	Institute
19.	C. Hariharan	ME09D029	ACGT2016	14-16 November 2016	Personal
20.	Rohit Thakran	ME15S024	ACGT2016	14-16 November 2016	Institute
21.	Kapil Somani	ME14S062	LAMSYS-2016	24-25 June 2016, Sriharikota	Institute
22.	Mallikarjuna Rao	ME15D015	ACGT-2016	14-16 November 2016, IIT Bombay	Institute
23.	K. Pol Reddy	ME12D045	ACGT-2016	14-16 November 2016, IIT Bombay	Institute
24.	K. Pol Reddy	ME12D045	ICTFCEN-2016	17-19 November 2016, KGP	Institute
25.	K. Srinivasa Rao	ME10D013	NAPC-2017	15-17 March 2017, IIT Kanpur	Personal
26.	Alankrita Singh	ME15D424	NAPC-2017	15-17 March 2017, IIT Kanpur	Institute
27.	Maruti B. Patil	ME15S08	National Tribology Conference (NTC-2016)	8-10 December, 2016, IIT (BHU), Varanasi	IIT Madras
28.	Yadvendra Kaushik	ME13S018	2nd International Conference on Mechanical and Manufacturing Engineering	6-7 April 2017, Kanchipuram, India	Self
29.	R. Vamshi	ME11B145	2nd International Conference on Mechanical and Manufacturing Engineering	6-7 April 2017, Kanchipuram, India	Self
30.	S. Harikrishnan	ME14D067	ICCMS 2016	27 June-1 July 2016, IIT Bombay	IIT Madras
31.	M. Neeraj Paul	ME14D031	Fluid Mechanics and Fluid Power	15-17 December 2016	IIT Madras
32.	Vikas Keshari	ME15S026	ISME 2017	25 January 2017	IIT Madras

Students/scholars who won outside prizes and awards

Sl. No.	Student/Scholar	Roll No.	Name of Prize	Awarded by
1.	**Gunjanbhai Patel**	**ME14S207**	**CHIME Best Student Project Award**	7th International Conference on Transforming Healthcare with IT (THIT) 2016

Students/scholars who won convocation/Institute Day Prize

Sl. No.	Student/Scholar	Roll No.	Prize	Name of Donor
1.	M. Dirgim Babu	ME14M018	Memorial prize for best academic performance on the first two semesters of M. Tech. Thermal Engineering; silver medal and cash prize of Rs 5000	Prof. N. Venkatrayulu Memorial Prize
2.	Myneni Manoj	ME14M073	Sri Ramanan Ramamurthy Memorial Prize	IIT Madras

4.13.3. Faculty and their Activities

Faculty

Name & Designation	Major areas of specialization
Professor	
Dr. B. V. S. S. S. Prasad **HEAD**	Blade cooling, thermal hydraulics, computational fluid dynamics (CFD)
Dr. T. Sundararajan	Droplet combustion, supersonic reacting jet flows, CFD
Dr. Babu Viswanathan	CFD, high-speed reacting flows, high-performance computing

Name & Designation	Major areas of specialization
Dr. Chakravarthy Balaji	Fundamental heat transfer, optimisation of thermal systems, inverse problems in heat transfer, satellite meteorology, numerical weather prediction
Dr. P. Chandramouli	Nonlinear dynamics, acoustics and noise control
Dr. Sarit Kumar Das (on deputation)	Heat exchangers, two-phase fl ow, nano fluids, jet oscillations, nuclear heat transfer
Dr. M. Govardhan	Contra-rotating turbomachinery, secondary fl ow loss reduction techniques, rotating vaneless diffusers, CFD
Dr. Krishnan Balasubramaniam	Nondestructive evaluation, materials characterisation, online measurements
Dr. M. P. Maiya	Sorption technology, metal hydride systems, hybrid air conditioning
Dr. A. Mani	Refrigeration, desalination, solar energy
Dr. Pramod S. Mehta	Combustion modelling, fluid dynamics in I.C. engines, engine emission control
Dr. Raju Sethuraman	Computational solid mechanics, fatigue and fracture of materials
Dr. A. Ramesh	I.C. engine combustion and emissions, electronic engine management, alternative fuels
Dr. N. Ramesh Babu	Manufacturing engineering—advanced machining processes, process modeling, precision machine tool development
Dr. V. Raghu Prakash	Fatigue and fracture mechanics, random load life prediction, product design
Dr. A. Seshadri Sekhar	Rotor dynamics, condition monitoring, tribology
Dr. Shankar Krishnapillai	Structural vibrations, design optimization, system identification
Dr. C. Sujatha	Vehicle dynamics, machinery diagnostics, signal analysis
Dr. K. Srinivasa Reddy	Renewable energies, solar energy, energy conservation, energy environment, heat transfer in two-phase systems
Dr. K. Srinivasan	Jet flow and noise, active and passive flow control, measurement and instrumentation
Dr. G. Venkatrathnam	Refrigerant mixtures, new processes that work with refrigerant mixtures, improvement of performance of vapour compression refrigerators
Dr. L. Vijayaraghavan	Machining, CAD, surface engineering, grinding
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. Shaligram Tiwari	Thermocapillary convection, heat and mass transfer
Associate Professor	
Dr. Dhiman Chatterjee	Fluid mechanics, turbomachines, cavitation
Dr. Krishna Kannan	Continuum mechanics, thermodynamics, constitutive modelling of polymeric materials
Dr. J. M. Mallikarjuna	In-cylinder flow studies in engines, HCCI and GDI engines, alternate fuels
Dr. V. Raghavan	Combustion modeling, droplet combustion, laminar flames
Dr. G. L. Samuel	Machining, metrology and computer-aided inspection, micromachining
Dr. Shamit Bakshi	CFD in I.C. engines, liquid atomization and spray systems, fuel nozzle modeling
Dr. Sujatha Srinivasan	Biomechanics, mechanisms, assistive devices
Dr. Somashekhar S. Hiremath	Micromachining, mechatronic system design, oil hydraulics, system simulation and modelling, finite element method (FEM)
Dr. Sathyan Subbiah	Novel applications of machining, diamond turning, layered material exfoliation, surface texturing
Dr. Prabhu Rajagopal	Ultrasonic waves for nondestructive evaluation, health monitoring and process control, computational methods for modelling elastic wave phenomena
Dr. Amitava Ghosh	Machining and grinding of advantage materials, development of abrasives
Dr. Ashis Kumar Sen	Microfluidics, microsystems, thermo-fluids
Dr. Parag Ravindran	Viscoelastic fluids constitutive modeling
Assistant Professor	
Dr. Abhijit Sarkar	Vibration, acoustics, computational methods
Dr. T. N. C. Anand	CFD simulations of I.C. engines processes, laser-based diagnostics of sprays and combustion
Dr. K. Anand	Low-temperature combustion engines, surrogate modelling of automotive fuels, engine emission reduction through fuel modifications
Dr. Anil Kumar Meena	Casting processes, cast irons and steels manufacturing, microstructure and properties of ADI, dry and near-dry machining process
Dr. Arvind Pattamatta	Micro/nano scale energy transport, computational heat transfer, mesoscopic modeling, phase change heat transfer, turbulence modeling
Dr. N. Arunachalam	Sustainable manufacturing, diagnostics, prognsotics and health management of machine tools, smart machine tools
Dr. P. V. Manivannan	Instrumentation and controls, mechatronic system design, microprocessor
Dr. Manoj Pandey	Finite element analysis, dynamics and MEMS
Dr. Mayank Mittal	IC Engines, optical diagnostics, fluid mechanics
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. Ramkumar Penchaliah	Tribology, engine tribology, condition monitoring and nanolubrication
Dr. Ratna Kumar Annabattula	Finite element analysis, granular mechanics, mechanics of granular materials for energy applications such as nuclear fusion, lithium-ion batteries and solar thermal energy and multiscale materials modeling
Dr. Ravikiran Sangras	Experimental fluid mechanics, combustion, turbulent flows
Dr. Sateesh Gedupudi	Heat Exchangers, two-phase flow, nano fluids, jet oscillations, nuclear heat transfer
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. S. Soundarapandian	Additive manufacturing, computational modeling and simulation
Dr. Sourav Ratshit	Laser processing
Dr. Srikrishna Sahu	Spray dynamics, two-phase flow, optical diagnostics
Dr. Shyama Prasad Das	Unsteady hydro and aerodynamics, turbomachines, interfacial hydrodynamics and transport
Dr. Sundararajan Natarajan	Computational mechanics, moving boundary problems, composite mechanics
Dr. K. Vishwanath	Turbomachinery noise
Dr. Sivasrinivasu Devadula	Manufacturing engineering
Dr. Krithika Narayanaswamy	Thermodynamics, combustion concepts and applications, numerical methods for thermal engineering
Dr. Kameswararao Anupidi	Fluid mechanics, computational fluid dynamics, bio-fluid dynamics, turbulence modelling
Emeritus Scientist/Emeritus Professor	
Dr. S. P. Venkateshan	Heat transfer, instrumentation
Dr. M. S. Shunmugam	Metrology, manufacturing – gear, BTA machining, reaming, centreless grinding, EDM, friction welding manufacturing automation and robotics, computer application in manufacturing – process planning, inspection planning, quality control

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

Sl. No.	Faculty Member	Title	Date and Venue
Workshops			
1.	Dr. M.P. Maiya	One-day workshop on Low Carbon Energy Technology in Buildings (LCETB)	27 May 2016, IIT Madras
2.	Dr. M.P. Maiya	Round table discussion on Energy-efficient and environment-friendly refrigeration for super markets and office building in India – Testing of CO_2 in Commercial Refrigeration Systems	30 May 2016, IIT Madras
3.	Dr. K. Srinivas Reddy	Transferring Knowledge on the Sustainability of Concentrated Solar water Purification in India	12-13 December 2016, IIT Madras, Chennai
4.	Dr. K. Srinivas Reddy	Co-ordinated a two-day Indo-UK Workshop on Transferring Knowledge on the Sustainability of Concentrated Solar water Purification in India	12-13 December 2016, IIT Madras, Chennai
5.	Dr. M.P. Maiya	One-day workshop on low Carbon Energy Technology in Building (LCETB)	27 May 2016
6.	Dr. M.P. Maiya	Roundtable discussion on Energy-efficient and environment-friendly refrigeration for super markets and office building in India – Testing of CO_2 in Commercial Refrigeration Systems	30 May 2016

Sl. No.	Faculty Member	Title	Date and Venue
Short-term courses			
1.	Dr. Ratna Kumar Annabattula, Dr. Narasimhan Swaminathan and Dr. Sundararajan Natarajan	Techniques in Multi-Scale Modelling	5-10 September 2016, IIT Madras
2.	Dr. P. V. Manivannan	AICTE Sponsored short-term QIP programme on Role of Mechatronics in Intelligent Robotics and Automotive Control	ICSR, IIT Madras, 14 November 2016
3.	Dr. Mayank Mittal and Dr. Anand	Advanced IC Engine Technologies (AICET 2016)	ICSR, IIT Madras, 21-26 November 2016
4.	Dr. A. Ramesh	Automotive Systems and Manufacturing	IIT Madras, 30 November-2 December 2016
5.	Dr. P. Ramkumar	Tribology in Design	7-12 December 2016, IIT Madras
6.	Dr. G. L. Samuel, Dr. K.P. Rajurkar, Director of Center for Nontraditional Manufacturing Research and College of Engineering, US	Micro and Nano Manufacturing Processes	IIT Madras, 5-10 December 2016

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
Workshop:				
1.	Dr. Sathyan Subbiah	Single Point Diamond Turning Workshop	CMTI, Bengaluru	4 March 2016
2.	Prof. M.P. Maiya	Evidence based on site assessment during accreditation	NBA (National Bureau of Accreditation)	21 March 2016
3.	Dr. Ratna Kumar Annabattula	Oral Presentation at International workshop on Mechanics of Energy Materials	Sydney, Australia	14-15 November 2016
4.	Dr. M. P. Maiya	Orientation workshop on Outcome based education and Accreditation for programme evaluators (PEVs)	IIT Madras, ICSR Building	12 November 2016
Seminar:				
1.	Dr. N. Ramesh Babu	Organised Gain course on Application of system approach for precision grinding processes by Dr. K. Subramanian, President	STIMS, Institute, USA	6-10 June 2016
2.	Dr. N. Ramesh Babu	Talk on Advanced manufacturing at the workshop on advance manufacturing technologies in defence	BMS College of Engineering	17 June 2016
3.	Dr. N. Ramesh Babu	Talk on Advanced manufacturing at the workshop on advance manufacturing technologies in defence	NIAS, Bengaluru	18 June 2016
4.	Dr. M. P. Maiya	Inaugural function of URJAVARAN 2016	ISHRAE Kalpakkam, Mahabalipuram	26 November 2016
Symposium				
1.	Dr. B. V. S. S. S. Prasad	Attended 7th International Symposium on Fluid Machinery Engineering and Fluids Engineering (ISFMFE 2016)	Jeju Island, South Korea	18-22 October 2016
2.	Sujatha Srinivasan	Roundtable on Future of Manufacturing	National Institute of Advanced Studies (NIAS), Bengaluru	21-22 October 2016
Conferences				
1.	Dr. Shyama Prasad Das	Emil Hop finger Colloquium 2016	LEGI, Grenoble	11-13 May 2016
2.	Dr. Sourav Rakshit	IEEE Conference on Robotics and Automation	Stockholm, Sweden	15-22 May 2016
3.	Dr. Dhiman Chatterjee	2016 International Conference of Micro-fluidics, Nano-fluidics and Lab-on-Chip	Dalian Maritime University, Dalian China	10-12 June 2016
4.	Dr. Sujatha Srinivasan	SB3C 2016 Summer Biomechanics, Bioengineering and Biotransport Conference	National Harbour, MD, USA	29 June-2 July 2016
5.	Dr. P. Ramkumar	Session Chair, National Tribology Conference (NTC-2016)	Indian Institute of Technology (BHU), Varanasi, U.P., India.	8-10 December 2016
6.	Dr. P. Ramkumar	Session Chair, 4th International Tribology Symposium of IFToMM (International Federation for the Promotion of Mechanism and Machine Science (ITS-IFToMM)	Jeju, South Korea	19-22 March 2017
7.	Dr. P. Ramkumar	Session Chair, 2nd International Conference on Mechanical and Manufacturing Engineering (ICMME)	Sankara University, Kanchipuram	6-7 April 2017
8.	Dr. M. P. Maiya	National Conference on Advances in Refrigeration and Cryogenics	Mahatma Gandhi Mission College of Engineering and Technology Kamothe, Navi Mumbai	10-12 June 2016
9.	Dr. A. Mani	Experimental and Numerical Investigations of Ejector Jet Refrigeration System with Primary Stream Swirl	Purdue University, 610 Purdue Mall, West Lafayette	11-14 July 2016
10.	Dr. A. Mani	CFD heat and mass transfer studies in a R134a-DMF bubble absorber with swirl flow entry of R134a vapour	Purdue University, West Lafayette	11-14 July 2016
11.	Dr. M. P. Maiya	Roundtable discussion on Phasing Down HFCs in India: Road to the HFC Amendment to the Montreal Protocol	Ministry of Environment, Forest and Climate Change (MoEFCC), New Delhi	26 September 2016
12.	Dr. M. P. Maiya	ASHRAE -CRC as President, ASHRAE Chennai Chapter	ASHRAE Region at Large CRC 2016, Bangkok, Thailand	29 September-2 October 2016
13.	Dr. M.P. Maiya	Inaugural, Chief Guest address function in the capacity of President ASHARE Chennai Chapter	Annamalai University, Tamil Nadu	3 November 2016
14.	Dr. M.P. Maiya	REFCON 2016 on Refrigeration and Cold Storage Systems	ISHRAE Chennai Chapter in association with ASHRAE Chennai Chapter	11-12 November 2016, Hyatt Regency Chennai
15.	Dr. A. Mani	International Conference and Exhibition on Building Utilities	Jamia Millia Islamia, New Delhi	1-2 January 2017
16.	Dr. A. Mani	International Conference on Recent Advancements in Refrigeration and Air Conditioning (RAAR2016)	CV Raman College of Engineering, Bhubaneswar	10-12 November 2016

Special lectures delivered by the faculty in other institutions

Sl. No.	Faculty Member	Topic	Institution	Date
1.	Dr. M. P. Maiya	Introduction to Psychrometry	Rajagiri School of Engineering and Technology (RSET) Kochi, Kerala	6 January 2017
2.	Dr. M. P. Maiya	Air Properties on Air Conditioning	University college of Engineering, Nagarcoil	7 January 2017
3.	Dr. M.S. Shunmugam	Surface and Form Measurements in Automobile Manufacturing	Anna University, Chennai	12 January 2017
4.	Dr. G. L. Samuel	Advances in Manufacturing	Swarnandhra College of Engineering and Technology, Narsapur	2 February 2017
5.	Dr. Parag Ravindran	Models for the Mechanical Response of Materials	Saveetha Engineering College, Chennai	3 February 2017
6.	Dr. G. L. Samuel	Micro Manufacturing	Kakinada Institute of Engineering and Technology, Kakinada	3 February 2017
7.	Dr. G. L. Samuel	How to get funding to projects from various funding agencies?	Aditya College of Engineering and Technology, Kakinada	4 February 2017
8.	Dr. P. Chandramouli	Invited Talk	VIT	24 February 2017

Sl. No.	Faculty Member	Topic	Institution	Date
9.	Dr. Arunachalam M.	IOT Enabled Manufacturing Process Monitoring and Control	NITTTR, Chennai	28 February 2017
10.	Dr. Srikrishna Sahu	A lecture on Droplet-Turbulence interaction in a poly-dispersed spray	IISc Bengaluru	21 April 2016
11.	Dr. M. P. Maiya	Guest lecture	NIT (National Institute of Technology), Uttharakhand	17 April 2016
12.	Dr. M. P. Maiya	Faculty selection	NIT (National Institute of Technology), Uttharakhand	18 April 2016
13.	Dr. A. Mani	Solar Vapor Jet Refrigeration Technologies	National Conference in Mechanical Engineering, NSN College of Engineering, Karur	5 March 2016
14.	Dr. M.P. Maiya	Ph.D. Viva	IISc, Bengaluru	26 March 2016
15.	Dr. M.P. Maiya	Ph.D. Viva	NIIT Gurushetra	2 April 2016
16.	Dr. M.P. Maiya	NBA accreditation	College of Engineering Technology – MIUAT	1 April 2016
17.	Dr. M.P. Maiya	Ph.D. Viva	IISc, Bengaluru	26 March 2016
18.	Dr. L. Vijayaragavan	Examiner – Viva	NIIT Trichy	5th April 2016
19.	S. Soundarapandian	Laser-based 3D printing	NIT Trichy	9th April 2016
20.	Dr.G.L.Samuel	Application of smart materials	VIT University Vellore	11th April 2016
21.	Dr. K. S. Reddy	Concentrated solar thermal and concentrated solar power system for poly-generation in short-term course on Distributed Multimode Renewable Energy Systems	Department of Mechanical Engineering, NIT Rourkela	12 April 2016
22.	Dr. K. S. Reddy	Advanced solar thermal technologies for process heat and power generation, Faculty Development Program on State-of-the-art Solar Energy Technologies	Department of Mechanical Engineering, College of Engineering, Adoor	23 February 2016
23.	Dr. C. Balaji	The Joy of Research	Thapar University, Patiala	24 May 2016
24.	Dr. C. Balaji	The Joy of Research	K.V. Institute of Management	13 May 2016
25.	Dr. C. Balaji	The Joy of Teaching	VIT Chennai	9 June 2016
26.	Dr. K. S. Reddy	Advances in Solar Thermal Power Generation, in the Refresher Course on Advances in Non-Conventional and Renewable Energy Technologies	College of Engineering and Management, Kolaghat, West Bengal	28 June 2016
27.	Dr. A. Seshadri Sekhar	Bearing Influences on Rotors/ Machinery – the responses, stability, etc.	M.I.T, Manipal	20 May 2016
28.	Dr. A. Seshadri Sekhar	ER MR Fluid Based Bearings	M.I.T, Manipal	21 May 2016
29.	Dr. G.L. Samuel	Geometric Tolerancing and Measurements	NIT, Trichy	14 June 2016
30.	Dr. M. P. Maiya	Natural Refrigerants in HFC Phase Down for Commercial AC Sector, Opportunities and Challenges	MoEFCC, New Delhi	26 September 2016
31.	Dr. M. S. Shunmugam	Delivered lectures on Manufacturing (Mechanical Engineering)	IIT Tirupati	6-7 October 2016
32.	Dr. N. Ramesh Babu	Invited talk: Indo-UK Workshop on Advanced Manufacturing	Bengaluru	11 November 2016
33.	Dr. N. Ramesh Babu	Invited Talk: Industry 4.0 Seminar	Anna University	21 December 2016
34.	Dr. Sathyan Subbiah	Gave talk on Problem-based approach to teaching manufacturing subjects	VIT Vellore	19 November 2016
35.	Dr. Ratna Kumar Annabattula	Bending, Buckling and Curling in Thin Films	VSSC, Trivandrum	10-13 December 2016
36.	Dr. K. Srinivas Reddy	Innovative Thermal Energy Storage Materials for Reliability Improvement of Solar Energy Systems in Faculty Development Programme on Innovative Materials for Thermal Energy Storage	Department of Mechanical Engineering, College of Engineering, Adoor, Kerala	20 December 2016
37.	Dr. K. Srinivas Reddy	Integrated Renewable Power System with Energy Storage for Sustainable rural Energy Supply in Faculty Development Programme on Innovative Materials for Thermal Energy Storage	Department of Mechanical Engineering, College of Engineering, Adoor, Kerala	19 December 2016
38.	Dr. K. Srinivas Reddy	Indigenous Solar Desalination Technologies for Sustainable Water Production in National Conference on Energy, Economy and Environment, Energy 2016	Department of Mechanical Engineering, NIT Calicut	17 December 2016
39.	Dr. K. Srinivas Reddy	Emerging Technologies Using Renewable Energy Sources in two-day national workshop on Emerging Solar Thermal Technologies for Sustainable Energy Supply	Department of Mechanical Engineering, Kinston Engineering College, Vellore	16 December 2016
40.	Dr. K. Srinivas Reddy	Techno-Commercial Aspects of Indigenous Solar Desalination Technologies in Indo-UK Workshop on Transferring Knowledge on the Sustainability of Concentrated Solar Power Water Purification in India	Department of Mechanical Engineering, IIT Madras, Chennai	12 December 2016
41.	Dr. K. Srinivas Reddy	Techno-Commercial Aspects of Indigenous Solar Desalination Technologies for Global Solar Sustainable Water Production in panel discussion on the conference theme Globalisation of Technology and Development, 11th Annual Conference of Knowledge Forum	Department of Humanities and Social Sciences, IIT Madras, Chennai	5 December 2016
42.	Dr. K. Srinivas Reddy	Advanced Solar Thermal Technologies for Industrial Process Heat and Power in National Seminar on Smart Instrumentation for Smart City	Department of Electronics and Instrumentation Engineering, Sree Vidyanikethan Engineering College, Tirupathi, Andhra Pradesh	1 December 2016
43.	Dr. K. Srinivas Reddy	Solar Energy for Industrial Applications in National Seminar on Smart Instrumentation for Smart City	Department of Electronics and Instrumentation Engineering, Sree Vidyanikethan Engineering College, Tirupathi, Andhra Pradesh	1 December 2016
44.	Dr. P. Ramkumar	MS Thesis Examiner	Department of Production Engineering, NIT Trichy	May 2016
45.	Dr. P. Ramkumar	Current Trends in Engine Tribology at Recent Advances in Tribology Workshop	NIT Calicut, Kerala	22 October 2016
46.	Dr. P. Ramkumar	White Etching Cracks (WEC) Failures in Wind Turbine Gearbox Bearing at Tribology Frontiers in Design and Manufacturing Workshop	NIT Surathkal, Karnataka	24-25 October 2016
47.	Dr. P. Ramkumar	Tribology Testing and Measuring Methods at TEQP II sponsored Faculty Development Program on Experimental Approaches in Material Characterisation	Government College of Technology (GCT), Coimbatore	16 February 2017
48.	Dr. M.P. Maiya	External Examiner for PG Programme M>E Thermal Engineering with specialization in refrigeration and air conditioning –RA 8411 Project work Phase II –Viva Voce Examination	Anna University, Chennai	4 May 2016

Sl. No.	Faculty Member	Topic	Institution	Date
49.	Dr. M.P. Maiya	Psychrometry	Loyola-ICAM College of Engineering and Technology	23 August 2016
50.	Dr. M. P. Maiya	Natural Refrigerants in HFC Phase Down for Commercial AC Sector, Opportunities and Challenges	Roundtable discussion on Phasing Down HFCs in India: Road to the HFC Amendment to the Montreal Protocol, MoEFCC, New Delhi	26 September 2016
51.	Dr. M. P. Maiya	A talk on Psychometric	Department of Mechanical Engineering, Annamalai University	3 November 2016
52.	Dr. M. P. Maiya	Thermal Comfort and Energy Conservation	College of Engineering Pune, Shivajinagar, Pune	7 December 2016
53.	Dr. M. P. Maiya	Refrigeration, Air Conditioning	University College of Engineering, Villipuram, Anna University	18 December 2016
54.	Dr. M. P. Maiya	Psychometric chart and AC Processes, Properties of Air-Water, Mixture in seven days' FDTP course on ME 6002 Refrigeration and Air-conditioning	Guindy College of Engineering, Anna University, Chennai	16 December 2016
55.	Dr. M. P. Maiya	Introduction to Psychrometry	RSET, Kochi	6 January 2017
56.	Dr. M. P. Maiya	Air Properties on Air Conditioning	University college of Engineering, Nagarcoil	7 January 2017
57.	Dr. A. Mani	Ejector Refrigeration system	International Conference and Exhibition on Building Utilities, Jamia Millia Islamia, New Delhi	1-2 December 2016
58.	Dr. M. P. Maiya	Active and Passive Beams	Vishveswarayya Seminar Hall, IIT Madras	18 March 2017
59.	Dr. M. P. Maiya	Active and Passive Beams	ASHRAE Distinguished Lecture	15 March 2017
60.	Dr. M. P. Maiya	Air-Water Mixtures	Karunya University, Coimbatore	17 March 2017
61.	Dr. A. Mani	RAAR2016	C.V. Raman College of Engineering, Bhubaneswar	10-12 November 2016
62.	Dr. A.Mani	Desalination of Waste Water using Solar Energy	Institution Engieer, Neyveli	March 2017

Visits abroad by faculty

Sl. No.	Faculty Member	Country Visited	Date	Purpose	Funding from
1.	Dr. Dhiman Chatterjee	Honolulu, USA	8-16 April 2016	ISROMAC-16	IIT Madras
2.	Dr. M. P. Maiya	Bangkok, Thailand	29 September-2 October 2016	ASHRAE CRC	ASHRAE and Projects
3.	Dr. Dhiman Chatterjee	Hawaii, Honolulu, USA	8-16 April 2016	Oral Presentation: Combined Silt and Cavitations' Erosion Resistance of Nano-particle Reinforced Polyurethane Coatings on 16Cr-5Ni Martensitic Stainless Steel Substrate	IIT Madras
4.	Dr. Arvind Pattamatta	Germany	1 June-30 July 2016	DAAD exchange programme at TU Darmstadt	IIT Madras
5.	Dr. Dhiman Chatterjee	Dalian, China	8-15 June 2016	Oral Presentation: Experimental characterization of piezo-electrically actuated silicon micro-machined valve-less micro-pump	Institute
6.	Dr. Manoj Pandey	San Francisco, USA	25 May-22 July 2016	Oral Presentation: Nonlinear Mode Mixing Based Chaotic Vibrations in a Micro Electro Mechanical Systems (MEMS)	Institute
7.	Dr. N. Ramesh Babu	Blacksburg, VA, USA	25 June-10 July 2016	Oral Presentation: Performance Enhancement of Cylindrical Grinding Process with a Portable Diagnostic System	Institute
8.	Dr. Sourav Rakshit	Stockholm, Sweden	15-23 May 2016	Oral Presentation: A Trajectory Optimization Formulation for Assistive Robotic Devices	Institute
9.	Dr. Raghavan V	Seoul, Korea	30 July-7 August 2016	Oral Presentation: 1. Effect of Ullage on Burning Behavior of Small-Scale Pool Fires in a Cavity 2. Spatio-temporal Structure of Vertically Spreading Flame over Non-planar PMMA Surface	Institute
10.	Dr. Krithika Narayanaswamy	Germany	8-27 May 2016	Collaboration on research projects	Indo-German Center for Sustainability
11.	Dr. M S.Shunmugam	London	1-3 December 2016	Editors Meet, *International Journal of Advanced Manufacturing Technology* (Springer)	IIT Madras
12.	Dr. V Raghu Prakash	Italy	18-24 November 2016	Research visit at the Department of Mechanical Engineering, Polotecnico di Milano, Italy	No Financial Assistance from IIT Madras
13.	Dr. A Ramesh	Italy	10-13 December and 18-19 December 2016	Visited universities before and after the conference at Italy	No Financial Assistance from IIT Madras
14.	Dr. Sundararajan Natarajan	Sydney, Australia	21 November-12 December 2016	Visited University of Technology, Sydney as a key Technology Partner Visiting Fellow	No Financial Assistance from IIT Madras
15.	Dr. Shaligram Tiwari	Singapore	30 November-3 December 2016	In connection with GATE International 2017 Center Vetting	GATE
16.	Dr. Sujatha Srinivasan	Australia	May 2016	Visiting Fellowship from the University of Melbourne	University of Melbourne
17.	Dr. Sujatha Srinivasan	Australia	January 30-February 3	Collaboration workshops organized by IAR at University of Melbourne, Swinburne University and University of Sydney	IAR, IIT Madras
18.	Dr. Shyama Prasad Das	France	11-13 May 2016	Emil Hopfinger Colloquium 2016	CPDA
19.	Dr. Shyama Prasad Das	Malaysia	21-23 November 2016	Asian Congress of Fluid Mechanics	CPDA, PCF, Seed Grant
20.	Dr. M. Govardhan	Australia	December 2016	20th Asian Fluid Mechanics Conference	CPDA/Project
21.	Dr. M. Govardhan	Switzerland	12-27 June 2016	Multiple venues	self
22.	Dr. Ashis Kumar Sen	Japan	12-19 March	Research collaboration	Collaborator
23.	Dr. P. Ramkumar	University of Southampton, UK	10 June-31 July 2016	Academic visitor for research collaboration	
24.	Dr. A. Mani	USA	11-14 July 2016	16th International Refrigeration and Air Conditioning Conference	IIT Madras
25.	Dr. A. Mani	USA	3 June-8 July	University of Minnesota, University of North Dakota, Purdue University of West Lafayette	IIT Madras
26.	Dr. A. Mani	USA	18-22 July	University of Illinois, Urbana-Champaign	IIT Madras
27.	Dr. M. P. Maiya	Bangkok, Thailand	29 September-2 October 2016	ASHRAE - CRC	ASHRAE and Projects

Honors and Awards obtained by faculty

Sl. No.	Faculty Member	Award	Awarded by	Awarded for	Date
I. Honors					
1.	Dr. Prabhu Rajagopal	2016 National Design Award	National Design and Research Forum (NDRF) of the Institution of Engineers India (IEI)	Recent work on a new design interpretation of cultural concepts, especially Magical Realism, in the context of underwater and submersible robots	29 December 2016
2.	Dr. M. S. Shunmugam	Life Time Achievement award	From Padma Vibhushan Dr. R. A. Mashelkar	During the inaugural function of 6th International and 27th All India Manufacturing Technology, Design and Research Conference held at College of Engineering Pune India	16-18 December 2016
3.	Dr. N. Ramesh Babu, Dr. Sivasrinivasu Devadula and Peter Singh (ME14D032)	Best paper award	College of Engineering, Pune	Research work published in 6th International and 27th All India Manufacturing Technology, Design and Research (AIMTDR) Conference	16-18 December 2016
II. Awards					
1.	Dr. Sujatha Srinivasan	7th NCPEDP-Mphasis Universal Design Award 2016 – Working Professionals Category	NCPEDP and Mphasis	Awards in this category are given to people across the country who work for the cause of accessibility and universal design	14 August 2016
2.	Dr. Sujatha Srinivasan	Visiting Fellowship	University of Melbourne	Visit University of Melbourne to deliver a talk and explore collaborations	May 2016
3.	Dr. Ashis Kumar Sen	IRDA-Early Career Level, 2017	IIT Madras	Excellence in Research and Development	18 April 2017

Books, Monographs authored/co-authored:

Sl. No.	Faculty Member	Title	Publisher	Author/ Co-author
Books:				
1.	Dr. Krithika Narayanaswamy	Surrogates for Biodiesel: Review and Challenges	Springer	Aditya Dilip Lele, Dr. K. Anand and Dr. Krithika Narayanaswamy
2.	Dr. V. Raghavan	Combustion Technology - Essentials of Flames and Burners	Ane Books Private Limited	Dr. V. Raghavan

Journal Editorial Boards

Sl. No.	Faculty Member	Position (Editor/Member)	Journal Name
1.	M. Govardhan	Member of the Editorial Board	*International Journal of Thermal Science*

4.13.4. Design and Development Activities

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

1. A novel instrument for measuring the injection rate of a common rail fuel injector.

New facilities added or major equipment procured

Sl. No.	Name of Equipment	Value (₹ in lakhs)
1.	Transient Dynamometer for engine experimentation under actual road conditions	198
2.	Inauguration of Next-generation Precision Grinder	275
3.	Cortex Metamax 3B VO2 Analyzer System	20

4.13.5. Patents

Patents filed

Sl. No.	Faculty Member	Topic of patent
1.	Dr. K. Srinivas Reddy	Black Water Treatment Using Green Energy: A Closed Loop Sanitation System
2.	Dr. T. N. C. Anand	Mixture Preparation and Control of Engine Using Disc-Type Atomizer Fueling System
3.	Dr. Ashis Kumar Sen	Microfacs for Detection and Isolation of Target Cells
4.	Dr. P. V. Manivannan	Automated Steering Rack Centering System for Automobiles
5.	Dr. G. Venkataratnam	System for the liquefaction of nitrogen operating at high ambient temperatures
6.	Dr. G. L. Samuel	Micro/nano-Textured drill bits with MQL system for low and high aspect ratio drilling if Super alloys for sustainability
7.	Dr. Krishnan Balasubramanian	A novel combinational mask based grating methodology to employ nonlinear wave mixing using laser ultrasonics
8.	Dr. Krishnan Balasubramanian	Selectively exposed embedded acoustic waveguide sensors for guided wave based online monitoring of rheology and damage/defect thereof
9.	Dr. Krishnan Balasubramanian	Guided wave mode selected ultrasonic transucers for leave-in-place high bulk-nondestructive evaluation, based on magnetostrictive amorphous metallic strips
10.	Dr. Prabhu Rajagopal	Flexible Ribbed Bar Waveguide Array Transducer for Ultrasonic Guided Wave Generation
11.	Dr. Prabhu Rajagopal	Design of a Remotely Operated Crawler for Submerged Metal Plate and On-ground Tank Floor Inspections
12.	Dr. V. Raghavan	A Dual Leg Combustor-Gasification System for Indirect Gasification of Indian Coals with High-Ash Content
13.	Dr. C. Sujatha	Split Fifth Wheel Coupling for Tractor-semitrailer Combination
14.	Dr. N. Ramesh Babu	High Precision Machine Tool and Method of Characterisation thereof
15.	Dr. Sujatha Srinivasan	Lever Operated Knee Joint for Orthosis and Prosthesis
16.	Dr. Sujatha Srinivasan	Lever Operated Knee Joint for Orthosis and Prosthesis
17.	Dr. Sujatha Srinivasan	Easy to use portable manual standing wheelchair with safety features and for outdoor use

Patents awarded

Sl. No.	Faculty Member	Topic
1.	Sujatha Srinivasan (with Ganesh Bapat (ME12D074) and Muthuvisvashwaran – Project Associate)	Lever Operated Knee Joint for Orthosis and Prosthesis

4.13.6. Research and Consultancy

Sponsored Research Projects

Sl. No.	Title	Period	Funding Agency	Amount (lakhs of ₹)	Co-ordinators
1.	Design of Vapour Extraction and Exhaust System for Tank Wagon Gantry at IOCL Tondiarpet Terminal	Four months (January-May)	Sri Sai Durga Enterprises, Chennai	2.50	Dr. M. P. Maiya
2.	Machining and Characterization of Micro-shaped Holes in High Temperature Materials using Hybrid Machining Process	Two years (2015-2017)	ARDB	238.90	Prof. M. S. Shunmugam
3.	Department of Science and Technology - Fund for Improvement of S&T Infrastructure in Higher Educational Institutions (FIST)	Five years (2014-19)	FIST	580	Faculty in Manufacturing Engineering Section
4.	Dynamic Downscaling to Study climate Change Impacts on Water Resources in India	Two years	Ministry of Water Resources	44.74	Principal Investigator: Dr. C. Balaji
5.	A Multiscale Framework for Designing Green Tyres	Three years	IMPRINT	13.00	Dr. Krishna Kannan
6.	Studies on IGBT System in the Wind Power Plant	1 December 2016 (1.5 years)	ReGen Powertech Private Limited, Chennai	12.20	Dr. A. Mani

Sl. No.	Title	Period	Funding Agency	Amount (lakhs of ₹)	Co-ordinators
7.	Heat and Mass Transfer Across Liquid-Vapor Interface in a Pressurized Cryogenic Tank with and without Sloshing	Two years	ISRO	38.40	Dr. Shyama Prasad Das (PI); Dr. Shaligram Tiwari (Co-PI)
8.	Consultancy for Replacement of Existing AC Ducts	1 March-31 December 2016	Doordharshan Kendra, Hydrabad	3.435	Dr. M. P. Maiya
9.	Performance Analysis and Development of Compact Vapour Jet Refrigeration System	August 2012-March 2016	DST	88	Dr.A.Mani
10.	Solar MED Desalination	October 2014-November 2017	Ministry of Earth Science	122.5	Dr.A.Mani
11.	Heat Transfer Enhancement Studies Metallic Foam in Multi-Effect Distillation System	March 2014-March 2017	BRNS	19.81	Dr.A.Mani
12.	Directionally Chopped Rick Hick Production	April 2016 to Dec 2017	Reliance Industry	21	Dr.Sathyan Subbiah
13.	Design of Large Dimension Flop	April 2016 to April 2017	Reliance Industry	4.7	Dr. Sathyan Subbiah
14.	Energy Efficient and Environmentally Friendly Refrigeration and Air Conditioning for Supermarkets in India – INDEE, Phase I	Three years	Norwegian University of Science and Technology	40	Dr. M. P. Maiya
15.	A Meso-Scale Computational Study on the Interactions between Microstructure, Electrochemistry and Mechanics in Si based Anodes for Li-ion Battery Applications	31.3.2017 to 30.3.2020	Department of Science and Technology	50.2	Dr. Narasimhan Swaminathan, Dr. Ratna Kumar Annabattula
16.	Smart Submersible (6 inch) Pumping Solutions for Industrial and Water Supply Applications	15 February 2017-14 February 2018	Department of Heavy Industry	32.5	Dr. B. V. S. S. S. Prasad and Dr. Dhiman Chatterjee
17.	A Multi-scale Framework for Designing Green Tyres	16 February 2017 to 15 February 2020	Impacting Research Innovation and Technology – IMPRINT	129.73	Dr. Krishna Kannan, Dr. Narasimhan Swaminathan, Dr. Manoj Pandey and Dr. Sundararajan Natarajan
18.	Molecular Dynamics Simulations of Radiation Damage in Lithium Metatitanate and Lithium Ortho Silicate	24 August 2016-23 August 2019	Board of Research in Nuclear Sciences	15.11	Dr. Narasimhan Swaminathan
19.	Non-imaging Optics Based Low Concentrating Photovoltaic Thermal (LCPVT) hybrid system	15 September 2016-14 September 2019	Department of Science and Technology	23.8	Dr. K. Srinivasa Reddy
20.	Affordable Standing Wheelchair	6 April 2015-5 April 2018	Wellcome Trust UK	300.21	Dr. Sujatha Srinivasan
21.	Development of a prototype for dismantling time expired ammunitions with abrasive water	19 June 2015-18 June 2018	Armament Research Board	46.16	Dr. Ramesh Babu Dr. N. SivaSrinivasu Devadula
22.	Experimental Investigation of Thermo-Mechanical Response of Ceramic Breeder Pebble Beds	18 September 2015-17 September 2017	Board of Research in Nuclear Sciences	18.75	Dr. Ratna Kumar Annabattula
23.	Machining and Characterization of Micro-shaped Holes in High Temperature Materials Using Hybrid Machining Process	23 February 2016-22 February 2018	Aeronautics Research and Development Board	238.9	Dr. M. S. Shunmugam and Dr. G. Samuel
24.	Development of Three Dimensional Blade Profiles based on Iterative Inverse Design Methodology	30 September 2015-29 September 2017	Gas Turbine Research Establishment	37.4	Dr. B. V. S. S. S. Prasad and Dr. Y. V. S. S. Sanyasiraju
25.	Microfluidic Platform for Identification and Isolation of Target Cells	21 October 2015-20 October 2018	Department of Science and Technology	47.07	Dr. Ashis Kumar Sen, Dr. Anil Prabhakar and Dr. Madhulika Dixit
26.	Advanced Manufacturing Process Monitoring Using In-Line Laser Thermography (AMPLAST)	19 September 2014-18 September 2017	Indo-German Science and Technology Centre	192.5	Dr. Krishnan Balasubramaniam and Dr. C. V. KrishnaMurthy
27.	Development of On-line, High-Temperature, Non-Destructive Measurement/Sensing Techniques during Manufacturing of Power Plant Components	1 October 2014-30 September 2017	Department of Science and Technology	292.1	Dr. Krishnan Balasubramaniam, Dr. Prabhu Rajagopal and Dr. C. V. KrishnaMurthy
28.	Solar Multi-Effect Desalination System	29 October 2014-24 April 2017	Ministry of Earth Sciences, New Delhi	122.5	Dr. A. Mani
29.	Reliable and Efficient System for Community Energy Solutions -RESCUES	6 March 2015-5 March 2018	Department of Science and Technology	47.2	Dr. K. Srinivasa Reddy
30.	Establishment of Facilities for Characterization and Machining Studies of Advanced Materials – FIST	11 November 2014-10 November 2019	Department of Science and Technology	580	Dr. B. V. S. S. S. Prasad, Dr. L. Vijayaraghavan, Dr. V. Raghu Prakash and Dr. Sushanta Kumar Panigrahi
31.	Effect of Forward Sweep of Blades on the Performance of Axial Compressor Stage	10 February 2015-30 June 2017	Gas Turbine Research Establishment	23.2	Dr. M. Govardhan and Dr. Shyama Prasad Das
32.	Endwall Contouring and Leading Edge Fillets for Reducing Secondary Losses in and Axial Turbine Stage	10 February 2015-30 June 2017	Gas Turbine Research Establishment	14.8	Dr. M. Govardhan and Dr. Shyama Prasad Das
33.	Design and Development of Cost-Efficient Solar Receiver Tube for Medium and High Temperature Solar Thermal Applications	3 February 2016-2 February 2019	Department of Science and Technology	22.12	Dr. T. Sundararajan
34.	Development and Integration of Biomass and Concentrating Photovoltaic System for Rural and Urban Energy Bridge: BioCPV	11 July 2012-31 March 2017	Department of Science and Technology	276.24	Dr. K. Srinivasa Reddy, Dr. Srirama Srinivas S and Dr. Mahesh Kumar
35.	Development of High Performance Active Brazed Bond for Producing Super Abrasive Grinding Tools	18 February 2013-17 June 2017	Department of Science and Technology	45.7	Dr. Amitava Gosh
36.	Theoretical and Experimental Studies on Crew Seat Impact Attenuation System	12 February 2013-30 April 2017	Vikram Sarabhai Space Centre	10.7	Dr. P. Chandramouli
37.	Development of Solar Trigeneration System for Cooling Heating and Potable Water	16 January 2013-31 January 2017	Department of Science and Technology	88.59	Dr. K. Srinivasa Reddy and Dr. M. P. Maiya
38.	Low-temperature ORC Storage and Hybridization	23 January 2013-22 January 2018	Indo-US Science and Technology Forum	71	Dr. Ashok Jhunjhunwala and Dr. G. Venkataratnam
39.	Experiments and Modeling of the Size and Concentration Effect on the Enhancement of Various Modes of Heat Transfer in Nanofluids and its Applications in Automotive Engines	7 November 2013-31 March 2017	Defence Research and Development Organisation	78.1	Dr. Arvind Pattamatta and Dr. A. Ramesh
40.	Development and Demonstration of Control Strategies for Common Rail Direct Injection (CRDI) Engines in a Reference Engine and Extension of the Technology for Armored Fighting Vehicle (AFV) Engines	7 November 2013-31 March 2017	Defence Research and Development Organisation	317.38	Dr. A. Ramesh and Dr. J. M. Mallikarjuna
41.	Passive Cooling System for Tropical Climate Concrete Core Cooling Coupled with Cooling Tower	4 October 2013-3 April 2017	Department of Science and Technology	36.5	Dr. M. P. Maiya and Dr. S. M. Shiva Nagendra
42.	Development of Electrospray Based MEMS Microthruster	23 October 2013-30 June 2017	Indian Space Research Organisation	39.83	Dr. Ashis Kumar Sen and Dr. Mahesh V. Panchagnula
43.	Ultrasonic Shear Horizontal (SH) Guided Waves generated by Electro Magnetic Acoustic Transducers (EMAT) for the Inspection of Bond Quality in Aero-space Composite Joints	23 April 2014-22 April 2017	Indo-French Centre for the Promotion of Advance Research	41.15	Dr. Krishnan Balasubramaniam and Dr. Prabhu Rajagopal
44.	Performance and Durability Improvement of the Solar Thermal Desalination System at Narippaiyur, and Utilization of Reject Sea Water for Algae cultivation to Produce Biogas	5 February 2016-4 February 2019	Department of Science and Technology	21.9	Dr. T. Sundararajan and Dr. A. Mani
45.	CFD Studies on Jet Deflector Duct of Future Launchpad for Advanced Launch Vehicles of ISRO	1 March 2016-31 March 2018	Indian Space Research Organisation	23.22	Dr. T. Sundararajan and Dr. V. Raghavan

Sl. No.	Title	Period	Funding Agency	Amount (lakhs of ₹)	Co-ordinators
46.	Center of Excellence on Machine Tools and Production Technology	31 March 2016-30 March 2019	Department of Heavy Industry	5612.5	Dr. Ramesh Babu and Dr. Krishna Vasudevan
47.	Drilling-induced Damage Assessment of CFRP using Acoustic Emission	31 March 2016-30 March 2019	Department of Science and Technology	43.65	Dr. L. Vijayaraghavan, Dr. N. Arunchalam and Dr. R. Velmurugan
48.	Development and Characterization of PCM-based Thermal Energy Storage for Solar Process Heat Applications	31 May 2016-30 May 2019	Department of Science and Technology	59.15	Dr. K. Srinivasa Reddy and Dr. T. Sundararajan
49.	A Plug-And-Train Robotic Kit for Hand Neuro-rehabilitation	6 July 2016-5 July 2019	Department of Biotechnology	19.51	Sujatha Srinivasan
50.	Energy Effiecient and Environmentally Friendly Refrigeration and Air Conditioning for Supermarkets in India-INDEE, Phase I	27 October 2016-26 October 2019	Norwegian University of Science and Technology	40	Dr. M. P. Maiya
51.	Development of a Machine for making Large Low-cost Prototypes using Layered Object Manufacturing (LOM) Method	14 December 2016-13 December 2018	Department of Science and Technology	64.14	Dr. Sathyan Subbiah and Dr. L. Vijayaraghavan
52.	Numerical Investigation of Blood Flow in Healthy and Pathological Arteries	18 October 2016-17 October 2019	Department of Science and Technology	27.14	Dr. Kameswararao Anupindi
53.	Development of an Innovative Process to Fabricate Ultra-Fine Grained Bimetallic Thin Sheets for Microforming Applications	16 February 2017-15 February 2020	Impacting Research Innovation and Technology - IMPRINT	148.92	Dr. Sushanta Kumar Panigrahi and Dr. M.S. Shunmugam
54.	Development, Commercialization and Deployment of Complete Mobility Solution (indoor & outdoor) for People with Loco-Motor Disability	31 March 2017-30 March 2019	Impacting Research Innovation and Technology - IMPRINT	185.74	Sujatha Srinivasan
55.	Nano Structured Metallic Materials using Constrained Groove Pressing: Influence of Tool Design	1 April 2016-31 March 2019	Department of Science and Technology	5.52	Dr. K. Hariharan
56.	Heat and Mass Transfer Across Liquid-vapor Interface in a Pressurized Cryogenic Tank with and without Sloshing	14 February 2017-13 February 2019	Indian Space Research Organisation	38.4	Dr. Shyama Prasad Das and Dr. Shaligram Tiwari
57.	Design and Development of Five Axis Magnetic Field Assisted Fluid Jet Polishing Machine for Nano-Surface Generation on Optical, Metallic, CFRP Composites and Hybrid Materials (with Composite Backup Structure)	14 February 2017-13 February 2019	Indian Space Research Organisation	43	Dr. L. Vijayaraghavan and Dr. N. Arunachalam
58.	An In-situ Study of Microstructural Deformation and Damage Associated with Plastic Instabilities in Al-Mg alloys	19 January 2017-18 January 2019	Department of Science and Technology	19.2	Dr. V. Raghu Prakash
59.	Micro/mini Turbine for Hydropower Generation Applications in India	Three years	Government of India (UAY Scheme)	187.72	Dr. Dhiman Chatterjee and Dr. S. P. Das (from IIT Madras), Prof. R.P. Saini (from IIT Roorkee) and Dr. Nikhil S. Tambe (Eaton Corporation)
60.	Micro/mini Turbine For Hydropower Generation Applications in India	1 August 2016-31 March 2018	MHRD/MNRE/EATON	187.72	Dr. Dhiman Chatterjee (PI), Dr. S P Das (Co-PI)
61.	Development of Fuel Flex Microturbine for Clean Power	28 July 2016-31 March 2018	MHRD/GE	1001	Prof. B.V.S.S.S. PRASAD (PI) Co-PI s: S. R. Chakravarthy, T. M. Murugananadam, V. Raghavan, Dr. Shyama Prasad Das, S. Soundarapandian and Dr. Kameswara Rao Anupindi
62.	Microfluidic Platform for Continuous Monitoring of Gasotransmitters for Early Level Management of Systemic Inflammatory Response Syndrome (SIRS) in trauma patients	2017-2020	MHRD	200	Dr. Ashis Kumar Sen (PI), Dr. Madhulika Dixit and Dr. K. M. Muraleedharan; Dr. Paul Ramesh (Apollo)
63.	Development of Smartphone Integrated Generic Microfluidic Devices for Rapid, Portable, and Affordable Point-of-Care Diagnostics	2017-2020	MHRD	320 (IITM's share= 101)	Dr. Ashis Kumar Sen (PI), Dr. T. S. Chandra, Dr. Suman Chakraborty (IIT KGP) and Dr. Amit Agrawal (IITB)
64.	Development of Microfluidics Based Healthcare Diagnostics	2015-2017	IIT Madras	200	Dr. Ashis Kumar Sen (PI)+ Team of faculty member from IIT Madras
65.	Computing for Water: Molecular Dynamics Simulations of Nanoscale Hydrodynamics for the Development of Efficient Water Desalination Technology	2016-2019	DST Nanomission	40	Dr. Sarith Sathian (PI) Dr. Ashis Kumar Sen

Industrial Consultancy projects

Sl. No.	Faculty Member	Title	Industry	Amount (₹ in lakhs)
1.	Dr. P. Chandramouli and Dr. Shankar Krishnapillai	Seismic test on 245/420 kV Current Transformers	Siemens India Limited	5.98
2.	Dr. P. Chandramouli and Dr. Krishna Kannan	Seismic test of 336/216 kV Polymer Surge Arrester	Oblum Electrical Industries Private Limited	5.29
3.	Dr. P. Chandramouli and Dr. P. Ram Kumar	Design Evaluation of Rack and Pinion of Passenger Hoist	L&T Construction, Buildings and Factories	2.53
4.	Dr. A. Mani	Study on development of Solar-based Cold Storage at CARD	Neyveli Lignite Corporation Limited,	81.42
5.	Dr. Krishnan BalaSubramanian	Gopalakrishnan-Deshpande Centre for Innovation and Entrepreneurship	Alumni Association	500
6.	Dr. Sundararajan Natarajan	Development of Software Tools for Solving Fracture Mechanics Problems	Vikram Sarabai Space Centre	14.3
7.	Dr. Dhiman Chatterjee and Dr. V. Anantha Subramanian	Development of Hydrokinetic Energy Conversion System	Indian Oil Corporation Limited	80.2
8.	Dr. Shamit Bakshi and Dr. T. N. C. Anand	Experiments on Gas Atomization of low Melting Point Metal for Powder Production	Sandvik Asia Private Limited	24
9.	Dr. K. Srinivasa Reddy	Design and Development of Solar Thermal Systems and Estimation of Thermal Conductivity of Insulating Materials	Common Code	0
10.	Dr. N. Ramesh Babu	Accelerated grinding and other topics of mutual interest	Saint-Gobain Research India Limited	24.62
11.	Dr. K. Viswanath	Calibration of S type Probe	Common Code	0
12.	Dr. Raghu Prakash	Evaluation of fracture toughness and fatigue crack growth rate (FCGR) behavior of Su-718	Gas Turbine Research Establishment	9.72
13.	Dr. G. L. Samuel and Dr. M. S. Shunmugam	Manufacturing and Testing of Micro Components	Common Code	5
14.	Dr. G. L. Samuel and Dr. M. S. Shunmugam	Manufacturing and Testing of Micro Components	Common Code	5
15.	Dr. Ashis Kumar Sen	Use of Microflucidics equipment facilities	Common Code	0.5
16.	Dr. K. Srinivasa Reddy	Development of Solar Thermal Systems & Estimation of Thermal Conductivity of Insulating Materials	Common Code	1.99
17.	Dr. K. Srinivasa Reddy	Estimation of Thermal Conductivity of LRB Rockwool Mattress	Punjstar Insulation Fibre Co	2.24
18.	Dr. K. Srinivasa Reddy	Design and Development of Solar Thermal Systems and Estimation of K-Value of Various Insulating Materials	Common Code	1.12

Sl. No.	Faculty Member	Title	Industry	Amount (₹ in lakhs)
19.	Dr. K. Srinivasa Reddy	Estimation of Thermal Conductivity of Fibrous Sheets of Silica Aerogel	International Advanced Research Centre for Powder Metallurgy and New Materials	1.12
20.	Dr. Shankar Krishnapillai	Evaluation and Testing of Pan Masala Packing Machine	Directorate General of Central Excise Intelligence	1.5
21.	Dr. Raghu Prakash	Evaluation of Fatigue Properties of Structural Materials through Indentation Test Methods and Correlation with Standard Fatigue Test Data	Indira Gandhi Centre for Atomic Research	26.28
22.	Dr. Raghu Prakash and Dr. S. GaneshSubramanian	High-temperature Evaluation of Fatigue Crack Growth of Austenitic Stainless Steel (type 304 LN and 316 LN SS) Weld Joints made of A-TIG and TIG Welding Processes and Comparison with that of the Base Metals	Indira Gandhi Centre for Atomic Research	25.12
23.	Dr. Krishnan BalaSubramanian	Hybrid Inspection System for Reformer Tubes	Indian Oil Corporation Limited	94.88
24.	Dr. G. Venkataratnam	Development of High Efficiency Air Conditioners of Capacity 1.5 TR Capacity	Blue Star Limited	18
25.	Dr. G. Venkataratnam	Development of High Efficiency Air Conditioners of Capacity 1.5 TR Capacity	Blue Star Limited	6.9
26.	Dr. M. P. Maiya and Dr. S. Srinivasa Murthy	Replacement of 4X80 TR water cooled AC plant including duct at DDK Chennai	All India Radio	5.9
27.	Dr. C. Sujatha	Dynamic simulation oand instrumented trial of combat vehicle	Ordnance Factory, Medak	45
28.	Dr. Krishna Kannan and Dr. Manoj Pandey	Combined Homogenized and Meso-level Models for Tire Design - part A	M. R. F. Limited	26.4
29.	Dr. Manoj Pandey and Dr. Krishna Kannan	Combined Homogenized and Meso Level Models for tire design - Part B	M. R. F. Limited	26.4
30.	Dr. Ratna Kumar Annabattula and Dr. Manoj Pandey	Structural Analysis of Combat Vehicle Hull	Ordnance Factory, Medak	50
31.	Dr. K. Srinivasa Reddy	Design and Development of Solar Thermal Systems and Estimation of Thermal Conductivity of Insulating Materials	Common Code	2.53
32.	Dr. Raghu Prakash	Failure and Microscopic investigation of heat exchanger	Common Code	0.4
33.	Dr. M. P. Maiya and Dr. S. M. Shiva Nagendra	Study and evaluation of the design of the three stage cooling systems for Titan Corporate Office, Bengaluru	Titan Company Limited	8.99
34.	Dr. A. Ramesh	Low Compression Ratio Diesel Engine	Mahindra & Mahindra Limited	39.64
35.	Dr. K. Srinivasa Reddy	K- Value Test LRB Rockwool matts	Common Code	2.02
36.	Dr. Krishnan BalaSubramanian	Feasibility Evaluation and Development of Sensors for Boiler Tube Condition	National Thermal Power Corporation Limited	55.32
37.	Dr. Shankar Krishnapillai	Design Evaluation of Rack and Pinion for Passenger Hoist	L&T Construction, Buildings and Factories	2.62
38.	Dr. Sujatha Srinivasan	TTK Center for R2D2	TTK Prestige Limited	368
39.	Dr. K. Srinivasa Reddy	Testing of Thermal Conductivity of LRB Slag Free Blankets	Rockwool (India) Limited,	2.24
40.	Dr. C. Sujatha and Dr. Parag Ravindran	Bending test on 624 kV Arrester	Common Code	0
41.	Dr. K. Srinivasa Reddy	Development of Solar Thermal Systems and Estimation of K-Value of Various Insulating Materials	Common Code	0
42.	Dr. Sathyan Subbiah	Directionally Chopped Rice Husk (DCRH) Production	Reliance Industries Limited	21.1
43.	Dr. Abhijit Sarkar and Dr. Ratna Kumar Annabattula	Stress analysis and weight reduction of long retractable soot blower assembly	Bharat Heavy Electricals Ltd	7.73
44.	Dr. P. Chandramouli	Marine planetary gearbox design validation	Shanthi Gears Limited	6.9
45.	Dr. Ashis Kumar Sen	Development of Multilayer Optofluidic Chip Fabrication Protocol and Fabrication of Optofluidic Chips	Common Code	0
46.	Dr. G. L. Samuel	Measurement of Surface Area of Anoxkaldnes K3 Media used in Biological Wastewater Treatment	Common Code	0.07
47.	Dr. T. N. C. Anand	Testing a New Concept Gasoline Injector on a Two-Wheeler Engine	Stanadyne Private Limited	15.3
48.	Dr. M. Govardhan	Calibration of S Type Probe	Common Code	0
49.	Dr. Sushanta Kumar Panigrahi, Dr. Somnath Chandaroy	FESEM External Testing	Common Code	5
50.	Dr. Sushanta Kumar Panigrahi, Dr.Somnath Chandaroy	FESEM Internal Testing	Common Code	5
51.	Dr. N. Arunachalam	Design and Development of Automated Food Processing Machine	Food Printer Private Limited	23.92
52.	Dr. K. Srinivasa Reddy	Soloar Thermal System Development and Estimation of Thermal Conductivity of Insultation Materials	Common Code	1.12
53.	Dr. G. L. Samuel and Dr. M. S. Shunmugam	Design and Development of Smart Switch for heavy Vehicles	Eltron Electricals	3
54.	Dr. P. Chandramouli and Dr. Abhijit Sarkar	Seismic test of 245 kV Double Break Isolator With Earth Switch	Air Break Switchgear Products Private Limited	3.68
55.	Dr. P. Chandramouli and Dr. Parag Ravindran	Seismic test of 765 kV Disconnector	Siemens Hyderabad	3.74
56.	Dr. Krishnan BalaSubramanian	Evaluation of NDE techniques for Service exposed aerospace components	Defence Research and Development Organisation	46.31
57.	Dr. A. Mani	Studies on IGBT system in wind power plant	Regen Powertech Private Limited	12.2
58.	Dr. P. Chandramouli and Dr. Shankar Krishnapillai	Seismic test on 245 kV and 420 kV Circuit Breakers	Alstom Limited	2.88
59.	Dr. P. Chandramouli and Dr. A. Seshadri Sekhar	Seismic and Mechanical Test for 800 kV and 420 kV CVT	Alstom T & D India Limited	7.48
60.	Dr. M. P. Maiya	Assessment and followup action of AC systems	Common Code	0.5
61.	Dr. Ashis Kumar Sen	Development of microfluidic device for blood palsma seperation	Siemens Health Care Private Limited	8.1
62.	Dr. Shankar Krishnapillai	Design and Development of Agricultural Transportation Systems	Cholamandalam Ms General Insurance Co Limited	32.55
63.	Dr. G. L. Samuel	Development of Smart Switches	Electronics and Electricals	3.00

RBIC projects

Sl. No.	Faculty Member	Title	Industry	Amount (₹ in lakhs)
1.	Dr. Sujatha Srinivasan	TTK Center for R2D2 (CSR project)	TTK Group	368
2.	Dr. Dhiman Chatterjee, Dr. S. P. Das, Dr. V. Anantha Subramanian and Dr. P. Chandramouli	Development of Hydrokinetic Energy Conversion System	Indian Oil Corporation	80.199
3.	Dr. S. K. Bhattacharyya and Dr. Dhiman Chatterjee	Canister flooding dynamics	DRDL	22.472
4.	Dr. Dhiman Chatterjee, Dr. S. K. Das and Dr. A. Ramesh	Cooling system - Design for tractor application	TAFE	13.4832
5.	Dr. Dhiman Chatterjee (PI) Co-PIs: Dr. S. P. Das, Dr. P. Chandramouli, Dr. V. Anantha Subramanian and Dr. Krishna Vasudevan	Development of Hydrokinetic Energy Conversion System	Indian Oil Corporation Limited	80.20

Sl. No.	Faculty Member	Title	Industry	Amount (₹ in lakhs)
6.	Dr. M. Govardhan	Aerodynamic characterization of turbine rear frame using flow measurement techniques-Phase II	GE India Technologies Private Limited, Bengaluru	12.00
7.	Dr. M. Govardhan	Aeromechanical design of an axial compressor for process industry	BHEL R&D, Hyderabad	10.31
8.	Dr. A. Mani	Studies on IGBT System in the Wind Power Plant	RgenPower Technology Private Limited, Chennai	12.22
9.	Dr. A. Mani	Solar Cold Storage	NLC India Limited	70.8

Retainer Consultancy

Sl. No.	Faculty Member	Title	Industry	Amount (₹ in lakhs)
1.	Dr. Sayan Gupta, Dr. Arokia Rajan, Dr. Shaikh Faruue Ali and Dr. Dhiman Chatterjee	Optimization of AUSC Safety Valve through Flow Dynamics and Combined Structural and Thermal Analysis	BHEL	6.21

Exchange program with other Universities including Institutions/Universities under MOU:

Yugandhar Arcot (ME15D021) under Joint Doctoral Degree Programme (JDP)

Faculty members' participation with other institution under MoU:

Sl. No.	Faculty Member	Participation details	University/Institution
1.	Dr. Sujatha Srinivasan	Joint project	University of Sydney
2.	Dr. Sujatha Srinivasan	MoU finalized	Rehabilitation Institute of Chicago
3.	Prof. M. Govardhan	On-site review GATET Projects, 14-15 May 2016	GTRE, Bengaluru
4.	Prof. M. Govardhan	GATET Executive Committee Meeting, 28-29 January 2017	GATET, Bengaluru
5.	Prof. M. Govardhan	Research Council Meeting, GTRE, 17.11.2016	GTRE, Bengaluru
6.	Prof. M. Govardhan	Annual Review Meeting,GATET,GTRE, 5-6 May 2016	GATET, GTRE Bengaluru

4.13.7. Research and Consultancy

Research publications of the faculty members and research scholars

Books/Book chapters: 4

Papers published in refereed international journals: 157

Papers published in refereed national journals: 5

Papers presented in international conferences: 70

Books/Book chapters:

1. V. Raghavan. Combustion Technology: Essentials of Flames and Burners. 2016. *Combustion Technology: Essentials of Flames and Burners* 1: 225. doi: 10.1002/9781119241775
2. O. Manna, S.K. Das, R. Sharma and K.K. Kar. Superhydrophobic and superoleophobic surfaces in composite materials. 2016. *Composite Materials: Processing, Applications, Characterizations* 647-686. doi: 10.1007/978-3-662-49514-8_19
3. N.D. Kaushika, K.S. Reddy and K. Kaushik. Sustainable energy and the environment: A clean technology approach. 2016. *Sustainable Energy and the Environment: A Clean Technology Approach* 1:242. doi: 10.1007/978-3-319-29446-9
4. S. Babu, S.K. Panigrahi, G.D. Janaki Ram, P.V. Venkitakrishnan and R. Suresh Kumar. Friction stir welding of austenitic stainless steel to an aluminum-copper alloy. 2016. *Friction Stir Welding and Processing VIII* 181-188. doi: 10.1007/978-3-319-48173-9_20

Papers published in refereed international journals

1. Prabhakar, N. Agrawal, V. Raghavan and S.K. Das. 2016. Experimental investigation on helium distribution and stratification in unventilated vertical cylindrical enclosure – Effect of jet release rates and total release volume. *International Journal of Hydrogen Energy* 41(48): 23213-23228. doi: 10.1016/j.ijhydene.2016.10.098
2. P. Dhar, A. Katiyar and L.S. Maganti. 2016. Smart viscoelastic and self-healing characteristics of graphene nano-gels. *Journal of Applied Physics* 120(21). doi: 10.1063/1.4971267
3. A.K. Pujari, B.V.S.S.S. Prasad and N. Sitaram. 2016. Effect of blowing ratio on the internal heat transfer of a cooled nozzle guide vane in a linear cascade. *Journal of Thermal Science and Engineering Applications* 8(4). doi: 10.1115/1.4034057
4. N. Rino Nelson, N. Siva Prasad and A.S. Sekhar. 2016. Effect of thermal loading on sealing behavior of single and twin-gasketed flange joints. *Proceedings of the Institution of Mechanical Engineers, Part E: Journal of Process Mechanical Engineering* 230(6): 464-473. doi: 10.1177/0954408915574295
5. M.J. Prasad and T. Sundararajan. 2016. Numerical simulation of fuel mixing with air in laminar buoyant vortex rings. *International Journal of Heat and Fluid Flow* 62: 174-188. doi: 10.1016/j.ijheatfluidflow.2016.11.003
6. P. Balakrishnan and K. Srinivasan. 2016. Reduction of jet impingement noise by addition of swirl. *Journal of Vibration and Acoustics, Transactions of the ASME* 138(6). doi: 10.1115/1.4034376
7. P. Alagappan, K.R. Rajagopal and K. Kannan. 2016. Deformations of infinite slabs of non-linear viscoelastic solids containing an elliptic hole. *Meccanica* 51(12): 3067-3080. doi: 10.1007/s11012-016-0539-3
8. X. Yu, M. Ratassepp, P. Rajagopal and Z. Fan. 2016. Anisotropic effects on ultrasonic guided waves propagation in composite bends. *Ultrasonics* 72: 95-105. doi: 10.1016/j.ultras.2016.07.016
9. S. Rajkumar, S. Bakshi and P.S. Mehta. 2016. Multizone phenomenological modeling of combustion and emissions for multiple-injection common rail direct injection diesel engines. *Journal of Engineering for Gas Turbines and Power* 138(12). doi: 10.1115/1.4034094
10. A. Katiyar, P. Dhar, T. Nandi and S.K. Das. 2016. Magnetic field induced augmented thermal conduction phenomenon in magneto-nanocolloids. *Journal of Magnetism and Magnetic Materials* 419: 588-599. doi: 10.1016/j.jmmm.2016.06.065
11. Katiyar, P. Dhar, T. Nandi and S.K. Das. 2016. Effects of nanostructure permittivity and dimensions on the increased dielectric strength of nano insulating oils. *Colloids and Surfaces A: Physicochemical and Engineering Aspects* 509: 235-243. doi: 10.1016/j.colsurfa.2016.09.015
12. B.N. Sahoo and S.K. Panigrahi. 2016. Synthesis, characterization and mechanical properties of in-situ (TiC-TiB_2) reinforced magnesium matrix composite. *Materials and Design* 109: 300-313. doi: 10.1016/j.matdes.2016.07.024
13. S. Varunkumar, M. Zaved and H.S. Mukunda. 2016. A novel approach to composite propellant combustion modeling with a new Heterogeneous Quasi One-dimensional (HeQu1-D) framework. *Combustion and Flame* 173: 1339-1351. doi: 10.1016/j.combustflame.2016.07.031
14. P.K. Shijin, A. Babu and V. Raghavan. 2016. Experimental study of bluff body stabilized laminar reactive boundary layers. *International Journal of Heat and Mass Transfer* 102: 219-225. doi: 10.1016/j.ijheatmasstransfer.2016.06.028
15. R.K. Sandeep, K. Kannan and K.R. Rajagopal. 2016. Numerical and approximate analytical solutions for cylindrical and spherical annuli for a new class of elastic materials. *Archive of Applied Mechanics* 86(11): 1815-1826. doi: 10.1007/s00419-016-1146-4
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17. A. Katiyar, P. Dhar, T. Nandi and S.K. Das. 2016. Enhanced heat conduction characteristics of Fe, Ni and Co nanofluids influenced by magnetic field. *Experimental Thermal and Fluid Science* 78: 345-353. doi: 10.1016/j.expthermflusci.2016.06.014
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19. F. Khan MD and S.K. Panigrahi. 2016. Achieving excellent thermal stability and very high activation energy in an ultrafine-grained magnesium silver rare earth alloy prepared by friction stir processing. *Materials Science and Engineering A* 675: 338-344. doi: 10.1016/j.msea.2016.08.077
20. P.C. Jayanti and G. Venkatarathnam. 2016. Identification of the phase of a substance from the derivatives of pressure, volume and temperature, without prior knowledge of saturation properties: Extension to solid phase. *Fluid Phase Equilibria* 425: 269-277. doi: 10.1016/j.fluid.2016.06.001

21. S.P. Reddy, R.A. Samy and A.K. Sen. 2016. Interaction of elastocapillary flows in parallel microchannels across a thin membrane. *Applied Physics Letters* 109(14). doi: 10.1063/1.4964264
22. K.S. Reddy and H. Sharon. 2016. Active multi-effect vertical solar still: Mathematical modeling, performance investigation and enviro-economic analyses. *Desalination* 395: 99-120. doi: 10.1016/j.desal.2016.05.027
23. S. Aravindan, S. Jalaldeen, P. Chellapandi and N. Swaminathan. 2016. Yield behavior of porous nuclear fuel (UO_2). *Mechanics of Advanced Materials and Structures* 23(10): 1149-1162. doi: 10.1080/15376494.2015.1059529
24. N.T. Mathew. 2016. Drilling of titanium aluminide at different aspect ratio under dry and wet conditions. *Journal of Manufacturing Processes* 24: 256-269. doi: 10.1016/j.jmapro.2016.09.009
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39. T.K. Jose and K. Anand. 2016. Effects of biodiesel composition on its long-term storage stability. *Fuel* 177: 190-196. doi: 10.1016/j.fuel.2016.03.007
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41. R.J. Immanuel and S.K. Panigrahi. 2016. Transformation of cast A356 ingots to wrought sheets with enhanced mechanical and tribological properties by different thermo-mechanical processing routes. *Materials and Design* 101: 44-55. doi: 10.1016/j.matdes.2016.03.125
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Distinguished visitors to the Department

Sl. No.	Name and Designation	Date of visit	Purpose of visit
1.	Prof. Emil Hopfinger, Legi, Grenoble, France	16 January-3 February 2017	Collaborative research
2.	Dr. Benjamin Terry, Assistant Professor, Mechanical and Material Engineering, University of Nebraska Lincoln, Lincoln, NE, USA	8 June 2016	Seminar Talk: An oxygen micro-bubble third lung: A novel method and therapeutic device for hypoxia and acute respiratory distress syndrome
3.	Dr. M. Ramgopal, Professor, Mechanical Engineering, IIT Kharagpur	28 June 2016	Guest Lecture: Adaptive Comfort
4.	Dr. Arun Jayaraman, Rehabilitation Institute of Chicago	24 June 2016	Guest Lecture: What to expect and not expect from advanced rehabilitation technologies
5.	Dr. Chandra Veer Singh, Assistant Professor, Department of Materials Science and Engineering, Department of Mechanical and Industrial Engineering, University of Toronto	6 September 2016	Delivered Seminar Talk: New insights into design of low – dimensional materials for sustainable energy and transportation
6.	Prof Alberto Coronas, Universitat Rovira I Virgili, Department of Mechanical Engineering, CREVER Avda. Paisos Catalans, 26,43007, Tarragona, Spain	11 April 2016	Seminar
7.	Dr. David Barton's, University of Leeds, Faculty of Engineering, School of Mechanical Engineering, UK	10 November 2016 / MSB	Visited Mechanical Engineering Department, Meeting with HoD and Faculty, Lab tour
8.	Dr. Ing. Axel Sielaff, Institute for Technical Thermodynamics (TTD), TU Darmstadt	23 November 2016 / MSB 211	Delivered a talk on Experimental Heat Transfer: Near wall effect in pool boiling and evaporation
9.	A.K. Chattopadhyay, Department of Mechanical Engineering, IIT Kharagpur	24 November 2016 / ICSR	Delivered a talk on Advanced coatings for cutting tools
10.	Dr. Srinath Ekkad, Associate VP for Research, Virginia Tech University	18 November 2016/MSB	Given Seminar talk on Research collaboration with our department and presents about the developments in their laboratory
11.	Prof Robert J K Wood, Professor, nCATS, Faculty of Engineering and Environment, University of Southampton, UK	15-17 December 2017	Collaborative research and gave talk on Marine Wear Tribocorrosion
12.	Prof. M. Ramgopal IIT Kharagpur	28 June 2016	Ph.D. viva

4.13.8. Other Activities of the Department

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

M.S.:

Vignesh Kumar D.	ME13S016	Dr. Krishna Kannan and Dr. Parag Ravindran	A constitutive model for a compressible viscoelastic solid and its application to some boundary value problems	2016
Sumit Sarma	ME13S028	Dr. V. Raghavan, Dr. R. Satyanarayan and Chakravarthy	Experimental studies on burning of non-planar PMMA surfaces	2016
Bajwa Roodra Pratap Singh	ME13S052	Dr. P. V. Manivannan	Investigation on control techniques for flexible joints and links	2016
Rohit S. Nair	ME13S078	Dr. C. Balaji	Synergistic analysis of heat transfer characteristics of an internally finned heat pipe	2016
V. Manoj Siva	ME10S009	Dr. S. K. Das	Investigation of flow and temperature maldistribution in parallel microchannel systems	2016
Madan kumar	ME11S099	Dr. Pramod S. Mehta and Dr. A. Ramesh	An improved technique for in-cylinder swirl estimation in a diesel engine	2016
D. Vignesh Kumar	ME13S016	Dr. Krishna Kannan and Dr. Parag Ravindran	A constitutive model for a compressible viscoelastic solid and its application to some boundary value problems	2016
Sudhanshu Pandey	ME14S038	Dr. S. P. Venkateshan and Dr. S. Gedupudi	Numerical and experimental studies on multi-mode heat transfer in a square cavity with triangular fins	2016
S. Sundararajan	ME12S012	Dr. L. Vijayaraghavan	An integrated approach through on machine measurements for air compressor crankcase machining	2016
Baviskar Akshay Shrikant	ME13S090	Dr. Shankar Krishnapilla	Improved hybrid multi-objective optimization algorithms for engineering applications	2016

Ph.D:

Bura Sreenivas	ME09D010	Dr. G. Venkatarathnam	Design and optimization of nonflammable and low GWP zeotropic refrigerant mixtures	2016
D. G. Leo Samuel	ME10D029	Dr. M. P. Maiya and Dr. S. M. Shiva Nagendra	Investigation on cooling tower-based thermally activated building system for human comfort	2016
Mini R. S.	ME10D031	Dr. Krishnan Balasubramaniam, Dr. Parag Ravindran	Wave propagation through microstructural features with geometric nonlinearity-experimental and numerical investigations	2016
I. Suresh Kannan	ME10D043	Dr. Amitava Ghosh	Strategies to arrest BUE/BUL formation in end milling of aluminium and its alloys	2016
K. V. Mohankumar	ME11D030	Dr. Krishna Kannan	On a few non-standard problems in mechanics	2016
S. Madhavan	ME11D030	Dr. C. Sujatha and Dr. A. S. Sekhar	Vibration characterization of aero engine blades using TIP timing technique	2016

P. Marimuthu	ME11D032	Dr. G. Muthuveerappan and Dr. M. S. Shunmugam	Investigation on the performance characteristics of symmetric and asymmetric high contact ratio spur gears	2016
T. Jagadesh	ME12D007	Dr. G. L. Samuel	Modeling and experimental analysis of micro turning of titanium alloys	2016
K. Manoj Kumar	ME11D031	Dr. Amitava Ghosh	Small quantity cooling lubrication grinding using nano-engineered cutting fluids	2016

International collaboration achievements by the Department

Faculty visit

Sl. No.	Faculty Member	Purpose of Visit	Date and Venue
1.	Dr. M. P. Maiya	Inaugural function of ASHRAE Student branch	RSET, Cochin, 6 January 2017
2.	Dr. M. P. Maiya	Inaugural function of ASHRAE Student Chapter	University College of Engineering, Nagarcoil, 7 January 2017
3.	Dr. G. L. Samuel	IMTEX 2017 Indian Machine Tool Exhibition	Bengaluru, 26 January 2017
4.	Dr. L. Vijayaraghavan	PHD Viva voce Examination	JNTU Anantapur, 18 February 2017
5.	Dr. M. P. Maiya	Air – Conditioning and Refrigeration Exhibition (ACREX 2017)	Greater Noida, New Delhi, 23-25 February 2017
6.	Dr. Krithika Narayanasamy	Collaborations on research projects	Institute for Combustion Technology, RWTH Aachen
7.	Dr. Shyama Prasad Das	Teaching a course (Thermodynamics)	Every Monday and Tuesday at IIT Tirupati
8.	Dr. M. P. Maiya	Visiting DCR University of Science and Technology	DCR University of Science and Technology, Murthal, Haryana, 20-23 October 2016
9.	Dr. G. L. Samuel	Laser Photonics Exhibition	BIEL Bengaluru, 22 September 2016
10.	Dr. G. L. Samuel	International Advanced Research Center	ARCI Hyderabad, 28 October 2016
11.	Dr. M. P. Maiya	Ph.D. viva	NIT Kurukshetra, 7 October 2016
12.	Dr. M. P. Maiya	Ph.D. viva	NIT Surathkal, 15 October 2016
13.	Dr. N. Arunachalam	Visit to India Pistons	8 November 2016
14.	Dr. Sivasrinivasu Devadula	ACE Designers	Bengaluru, 23-25 November 2016
15.	Dr. Sivasrinivasu Devadula	DRDO	Pune, 6-8 December 2016
16.	Dr. P. Ramkumar	Industry Connect with GE	GRC, GE Bengaluru, 5-6 May 2016
17.	Dr. P. Ramkumar	Research Collaboration GE Energy Limited	GE Energy Limited, Hyderabad, 12 May 2016
18.	Dr. M. P. Maiya	Special Lecture: External Examiner for PG Programme M>E Thermal Engineering with Specialization in Refrigeration and air conditioning –RA 8411 Project work Phase II –Viva Voce Examination	Anna University, Chennai, 4 May 2016
19.	Dr. M. P. Maiya	Special Lecture on Solar Cooling System for Buildings, One-day workshop on Low Carbon Energy Technologies in Buildings (LCETB)	IIT Madras, 27 May 2016
20.	Dr. M. P. Maiya	National Conference on Advances in Refrigeration and Cryogenics	Mahatma Gandhi Mission College of Engineering and Technology Kamothe, Navi Mumbai, 10-12 June 2016
21.	Dr. M. P. Maiya	Ph.D. viva	Indian Institute of Science, Bengaluru, 6 June 2016
22.	Dr. M. P. Maiya	Ph.D. viva	NIT Kurukshetra, 23–24 July 2016
23.	Dr. M. P. Maiya	Expert measures of NBA team towards its UG Mechanical Engineering program	Veer Surendra Sai University of Technology Burla, Odisha, 29–31 July 2016
24.	Dr. M. P. Maiya	Meeting attended -Capacity of President ASHRAE Chennai Chapter	ASHRAE India chapters' Goa, 27 August 2016
25.	Dr. M. P. Maiya	Special Lecture	Loyola-ICAM College of Engineering and Technology, 23 August 2016
26.	Dr. A. Mani	Ph. D. viva	Homi Bhabha National Institute, BARC, Mumbai, 1 August 2016
27.	Dr. M. P. Maiya	Ph.D. viva	NIT Kurukshetra, 7 October 2016
28.	Dr. M. P. Maiya	Ph.D. viva	NITK Surathkal, 15 October 2016
29.	Dr. M. P. Maiya	Member of the NBA Expert Team for the accreditation of PG Mechanical stream	Deenbandhu Chhotu Ram University of Science and Technology, Murthal, Haryana, 21-23 October 2016
30.	Dr. Shaligram Tiwari	GATE-JAM	IIT Delhi, 12-13 December 2016
31.	Dr. M. P. Maiya	RAC Society meeting	Kolkata, 15 December 2016
32.	Dr. M. P. Maiya	Inaugural, Chief guest address function of Seven Days FDTP Course on ME 6002 Refrigeration and Air-conditioning	Anna University, Chennai, 2 December 2016
33.	Dr. M. P. Maiya	Inaugural function of ASHRAE Student branch	RSET, Cochin, 6 January 2017
34.	Dr. M. P. Maiya	Inaugural function of ASHRAE Student Chapter	University College of Engineering, Nagarcoil, 7 January 2017
35.	Dr. M. P. Maiya	Meeting on the sidelines with ASHRAE President	Greater Noida, New Delhi 23-25 February 2017
36.	Dr. M. P. Maiya	Air Conditioning and Refrigeration Exhibition (ACREX 2017)	Greater Noida, New Delhi, 23-25 February 2017
37.	Dr. M. P. Maiya	Lecture on Air–Water Mixtures	Karunya University, Coimbatore, 17 March 2017
38.	Dr. A. Mani	Keynote lecture in the International Conference RAAR2016	CV Raman College of Engineering, Bhubaneswar
39.	Dr. A. Mani	Keynote lecture in the International Conference	Jamia Millia Islamia, New Delhi, 2-4 December 2016
40.	Dr. A. Mani	Invited special lecture for Institution of Engineers, Neyveli	NLC India Limited, 5 March 2017

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 Department of Metallurgy at the very inception of the institute. It was renamed as Department of Metallurgical and Materials Engineering in 2003. Actively engaged in research, education and industrial consultancy, the department offers B.Tech., M.Tech., M.S. and Ph.D. degree courses. 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 of its faculty in industrial metallurgy. Over the years, it has hosted excellent research infrastructure in the broad areas of material science and engineering, ranging from materials processing (forming, joining, casting, particulate processing, nanostructured materials) to characterization (X-ray diffraction, electron microscopy, 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 India for teaching, research and consultancy in the emerging areas of material science and engineering while consolidating its strength in traditional areas of metallurgical engineering. The activities for the year 2016-2017 corroborate the department's progress in keeping with its vision.

4.14.2. Academic Programmes

New courses introduced

Sl. No.	Course No.	Title
1.	MM 2013	Structure of Materials
2.	MM 2015	Thermodynamics of Materials
3.	MM 2041	Transport Phenomena in Materials
4.	MM 3180	Advanced Materials and Processes
5.	MM5480	Advanced Phase Transformations
6.	MM 5016	Polymer and Colloids: Physics and Applications
7.	MM5003	Atomistic Modeling of Materials
8.	MM 5041	Medical Materials
9.	MM6020	Fatigue of Materials
10.	MM6022	Hot Working of Metals and Alloys
11.	MM 5005	Process Metallurgy of Steelmaking
12.	MM 5004	Pyro-Metallurgy of Copper Extraction
13.	MM 5021	Deformation and Failure of Materials at Elevated Temperatures
14.	MM6023	Advanced Transmission Electron Microscopy for Nanoscale Research
15.	ID 6060	Materials Selection: Role of Microstructure

GIAN courses conducted

Sl. No.	Name of the Course	Period	Guest	Host
1.	Advanced Steels for the Automotive Industry and Other Sectors	1-15 June 2016	Prof. Peter D. Hodgson, Deakin University, Australia	Dr. B.S. Murty and Dr. V. Subramanya Sarma
2.	Fabrication, Testing and System Integration of Solid Oxide Fuel Cells	27 June–2 July 2016	Prof. Aman Dhir, Birmingham University, UK	Dr. Sreenivas Jayanti and Dr. Ranjit Bauri
3.	Advanced Casting and Solidification of Light Alloys for Transportation	4-11 July 2016	Prof. Ravi C. Ravindran, Ryerson University, Canada	Prof. B.S. Murty
4.	Friction Stir Welding and Processing	5-10 September 2016	Prof. Rajiv Mishra, University of North Texas, USA	Dr. Ranjit Bauri
5.	Fundamentals of Slag Chemistry	25 September-1 October 2016	Prof. Geoffrey Brooks, Swinburne University Australia	Dr. Ajay Kumar Shukla
6.	Thermochemical Modeling of Steelmaking Process	11-17 October 2016	Dr. Ing Prof. Olena Volkovais, Iron and Steel Institute, TU, Freiburg, Germany	Dr. Ajay Kumar Shukla
7.	Process Engineering Principles and Software for Pyrometallurgical Processes for Metal Extraction	2-16 December 2016	Prof. David G. C. Robertson, Missouri University of Science and Technology, USA	Dr. Ajay Kumar Shukla
8.	Introduction to Metal Foams and Cellular Metals	5-11 December 2016	Prof. John Banhart, Technical University Berlin, Germany	Dr. Manas Mukherjee
9.	High Temperature Structural Materials	7-19 December 2016	Prof. Martin Heilmiaer, KIT, Germany	Dr. V. Subramanya Sarma
10.	Non-equilibrium Processing of Advanced materials	12-18 December 2016	Prof. C. Suryanarayana, University of Central Florida, Orlando, FL 32816-2450, USA	Prof. B.S. Murty
11.	Sintering and sintering-free processing of ceramics and microstructural development	2-8 January 2017	Prof. Raj Bordia, Clemson University, USA	Dr. N.V. Ravi Kumar
12.	Contact Angles: Measurement, Interpretation and Modern Applications	29 January - 4 February 2017	Prof. J. Drelich, MTU, USA	Dr. N.V. Ravi Kumar

Students on roll as of September 2016 + M.S. and Ph.D. scholars admitted in January 2017

Programme	Year I	Year II	Year III	Year IV	Year V and Others	Total
B.Tech.	31	31	31	30	17	140
Dual Degree	11	9	13	13	24	70
M.Tech.	21	25	-	-	1	47
M.S.	7	4	4	3	-	18
Ph.D.	31	27	18	22	29	127
Total	**101**	**96**	**66**	**68**	**71**	**402**

Students with overseas collaborations

Joint Doctoral Program (JDP)

S. No.	Student	Roll No.	IITM Guides	JDP Partner	Area of research
1.	Lavanya Raman	MM13D201	B.S. Murty and Ravi Sankar Kottada	Daniel Fabijanic and Peter Hodgson	Refractory high entropy alloys
2.	K. Guruvidyathri	MM13D008	B.S. Murty and K.C. Hari Kumar	J.W.Yeh	High entropy alloys
3.	Ameey Anupam	MM14D005	Ravi Sankar Kottada and B.S. Murty	Chris Bernt	High entropy alloy coatings
4.	Rahul Bhattacharya	MM15D019	B.S. Murty	Daniel Fabijanic and Peter Hodgson	Oxidation of high entropy alloys
5.	Rahul John	MM16F003	B.S. Murty	Daniel Fabijanic and Peter Hodgson	Deformation behaviour of high entropy alloys
6.	M. Iyappan	MM15D002	Uday Chakkingal	Matthias Weiss	Formability of aluminium alloys
M.Tech.					
1	Rama Srinivas Varanasi	MM12B032	B.S. Murty	K.G. Pradeep	Nano-Si anode for lithium ion batteries
1.	Lakshmi Manta Sravani	MM15M022	Kanjarla Anand Krishna	C.V.S. Kiran	Structure-property correlation in Ti alloys
2.	Aditya	MM15M003	V. Subramanya Sarma	Alexander Kauffman	High entropy alloys
3.	Gopi Chand	MM15M026	S.S. Bhattacharya	Horst Han	High entropy oxides
4.	Saurabh Bopte	MM15M007	S.S. Bhattacharya	C.M. Schneider	Carbon nano materials
B.Tech.					

S. No.	Student	Roll No.	IITM Guides	JDP Partner	Area of research
1.	Jung Soo Lee	MM13B018	B.S. Murty	Eun Soo park	High-entropy bulk metallic glass

Endowment prize instituted

Sl. No.	Fellowship name	Sponsor	Purpose
1.	Sri N. Balasubramanian Fellowship	Natesan Synchrocones Pvt. Ltd through Metallurgical and Materials Engineering Students Association (METSA)	For B.Tech/DD/M.Tech students attending national and international conferences

Students/scholars who attended conference/seminar/symposia/workshop

Sl. No.	Student/Scholar	Roll No.	Conference/Seminar/Symposia/ Workshop	Date and Venue	Financial Assistance from
Abroad					
1.	Soumya Sridar	MM12D020	CALPHAD XLV	30 May-3 June 2016, Awaji Island, Japan	IIT Madras
2.	A.S. Kranthi Kiran	MM14D301	ASEAN Summer Course on Bioceramics and Tissue Engineering	27July-4 August 2016, Yogyakarta, Indonesia	ASEAN
3.	A.S. Kranthi Kiran	MM14D301	Joint Ph.D. Research Proposal Meeting, National University of Singapore	5 August 2016, Singapore	IITM Alumni Fund
4.	J.U. Nandhini	MM14D405	XIIIth International Conference on Nanostructured Materails (NANO 2016)	7-12 August 2016, Canada	IIT Madras
5.	Raghunandan	MM12D009	International Congress on Ceramics-6	21-25 August 2016, Germany	IIT Madras
6.	Selva Prabhakaran	MM12D025	Synthesis and characterisation of NCD-MCD and functionally graded diamond coatings on RB-SiC	4-8 September 2016, France	IIT Madras
7.	Deepu Mathew John	MM14D207	MSE Congress 2016	27-29 September 2016, TU Darmstadt, Germany	IIT Madras
8.	Nitesh Raj Jaladurgam	MM14S010	MSE Congress 2016	27-29 September 2016, TU Darmstadt, Germany	IIT Madras
9.	Ameey Anupam	MM14D005	International Conference on High-Entropy Materials (ICHEM 2016)	6-9 November 2016, National Tsing Hua University, Hsinchu, Taiwan	IIT Madras
10.	K. Guruvidyathri	MM13D008	International Conference on High-Entropy Materials (ICHEM 2016)	6-9 November 2016, National Tsing Hua University, Hsinchu, Taiwan	IIT Madras
11.	Lavanya Raman	MM13D201	International Conference on High-Entropy Materials (ICHEM 2016)	6-9 November 2016, National Tsing Hua University, Hsinchu, Taiwan	IIT Madras
12.	Rahul Bhattacharya	MM15D019	International Conference on High-Entropy Materials (ICHEM 2016)	6-9 November 2016, National Tsing Hua University, Hsinchu, Taiwan	IIT Madras
India					
13.	Deepu Mathew John	MM14D207	HT&SE 2016	12-15 May 2016, Chennai	IIT Madras
14.	John Silvester Raju	MM11D022	International Conference on Functional Nanomaterials (ICFNM)	28 September 2016, Howrah	IIT Madras
15.	Darshan Chalapathi	MM16D001	National Symposium on Thermomechanical Processing and Microstructure	8-12 December 2016, IIT Hyderabad	IIT Madras
16.	K.S. Suganthi (Post doc)		IUMRS-ICYRAM 2016	11-15 December 2016, IISc Bengaluru	IIT Madras
17.	Shantharama	MM14D015	CompFlu 2016	13-15 December 2016, Hyderabad	IIT Madras
18.	Yashaswee Pal	MM13B036	Amalgam 2017	24-26 February 2017, IIT Madras	IIT Madras
19.	AmeeyAnupam	MM14D005	International Workshop on High Entropy Materials (IWHEM-2017)	11-12 March 2017, University of Hyderabad Hyderabad	IIT Madras
20.	K. Guruvidyathri	MM13D008	IWHEM-2017	11-12 March 2017, University of Hyderabad, Hyderabad	IIT Madras
21.	Mayur Vaidya	MM12D022	IWHEM-2017	11-12 March 2017, University of Hyderabad Hyderabad	IIT Madras
22.	Mohan M. Garlapati	MM15D410	IWHEM-2017	11-12 March 2017, University of Hyderabad Hyderabad	IIT Madras
23.	R. Lavanya	MM13D201	IWHEM-2017	11-12 March 2017, University of Hyderabad, Hyderabad	IIT Madras
24.	Raghavendra Kulkarni	PH14D018 (Jointly with Dr. B.S.Murty)	IWHEM-2017	11-12 March 2017, University of Hyderabad, Hyderabad	IIT Madras
25.	Rahul Bhattacharya	MM15D019	IWHEM-2017	11-12 March 2017, University of Hyderabad, Hyderabad	IIT Madras
26.	Rahul John	MM16F003	IWHEM-2017	11-12 March 2017, University of Hyderabad, Hyderabad	IIT Madras
27.	M.R. Rahul	MM15D012	IWHEM-2017	11-12 March 2017, University of Hyderabad, Hyderabad	IIT Madras
28.	Rahul Ravi	MM13D011	IWHEM-2017	11-12 March 2017, University of Hyderabad, Hyderabad	IIT Madras

Students/scholars who won outside prizes and awards

Sl. No.	Student/Scholar	Roll No.	Prize	Awarded by
1.	Deepu Mathew John	MM14D207	Best Poster Award for "An ICME approach towards the design of a new gear steel with reduced distortion"	12-15 May 2016, HTSE 2016, Chennai
2.	Soumya Sridhar	MM12D020	Larry Kaufman Scholarship	30 May-3 June, 2016, CALPHAD XLV, Japan
3.	Rahul Bhattacharya	MM15D019	Best Oral Presentation Award for Effect of aluminium content on the oxidation behavior of arc melted $Al_xCoCrFeNi$ (x=0, 0.3, 0.6, 1 mole) high entropy alloys"	11-14 November 2016, NMD-ATM 2016, Kanpur
4.	Adil Shiak	MM14S202	Best Poster Presentation Award for "Low temperature synthesis of AlB_{12} for energy application"	11-14 November 2016, NMD-ATM 2016, Kanpur
5.	Sneha Srithi	MM14S201	Best Paper Award: "A novel approach to reduce wear using oil-soluble carbon nanomaterial additives"	21-23 December 2016, ISRS, IIT Madras
6.	Koundinya	MM12D021	Best Paper Award: "Role of eutectic phase on creep behavior of magnesium alloy"	21-23 December 2016, ISRS, IIT Madras
7.	Amit Kumar Kuril	MM14D002	Best Paper Award: "Microstructure and mechanical properties of plasma are welded dual phase steel DP 600"	21-23 December 2016, ISRS, IIT Madras
8.	Soumya Sridhar	MM12D020	Best Paper Award: "Thermodynamic modelling of Z-phase in ferritic-martensitic steels"	21-23 December 2016, ISRS, IIT Madras
9.	J. Rajesh	MM13D012	First prize in Metallography Contest (TEM Category): "Influence of temperature and strain rate on the deformation behavior of ODS-18Cr steel"	21-23 December 2016, ISRS, IIT Madras

Sl. No.	Student/Scholar	Roll No.	Prize	Awarded by
10.	Bobu Manuel Jolly	MM10D007	Second Prize in Metallography Contest (SEM Category): "Morphology of aluminia particles prepared by flame assisted spray pyrolysis from organic percursor solution"	21-23 December 2016, ISRS, IIT Madras
11.	Lalith Kumar and Mr. Kishore	MM15D404 and MM16D413	First prize in Materials Quiz	21-23 December 2016, ISRS, IIT Madras
12.	N.T.B.N Koundinya and Lavanya	MM12D021 and MM13D201	Second prize in Materials Quiz	21-23 December 2016, ISRS, IIT Madras
13.	Mayur Vaidya and U. Aravind	MM12D022 MM13D210	Third prize in Materials Quiz	21-23 December 2016, ISRS, IIT Madras
14.	Sneha Sruthi	MM14S201	Best Oral Presentation: "Investigation of carbon nanomaterials as lubricant additive in mineral-based oil"	26-28 December 2016, ICISM, Singapore
15.	Yashaswee Pal	MM13B036	Certificate of Excellence: Paper presentation-Second Position	24-26 February 2017 IIT Madras
16.	Rahul John	MM16F003	Best Paper Award for "Hot deformation behavior of $Al_{0.3}$CoCrFeNi HEA synthesized by MA-SPS"	11-12 March 2017, IWHEM-2017, University of Hyderabad
17.	Gautham Muthusamy	MM13B040	Sri Satish Pai Prize	
18.	Sanghvi Kevin Paresh	MM12B028	Ratna Award	

Students/scholars who won convocation/Institute Day prize

Sl. No.	Student/Scholar	Roll No.	Prize	Name of Donor
1.	M. Jagannatham	MM10D009	Sudarshan Bhat Memorial Prize at 53rd Convocation 2016 for Best Ph.D. thesis	
2.	K. Madhumathi	MM12D005	Institute Research Award	IIT Madras
3.	R. Viswanathan	MM12D028	Institute Research Award	IIT Madras
4.	S. Soumya	MM12D030	Institute Research Award	IIT Madras

4.14.3.Faculty and their Activities

Faculty

Professors	
B.S. Murty, (Head) Ph.D. (IISc, Bengaluru)	Nanocrystalline materials, bulk metallic glasses, high-entropy alloys, composites, phase transformations, electron microscopy, atom probe tomography
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
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, D 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
Prathap Haridoss, Ph.D. (U. Wisconsin-Madison)	Production and characterisation of carbon nanotubes; synthesis of CdS nanocrystals; CO-tolerant PEM fuel cell catalysts
T.S. Sampath Kumar, Ph.D. (IISc, Bengaluru)	Nanostructured biomaterials, antimicrobial ceramics and delivery systems, value- added biomaterials from natural wastes
Uday Chakkingal, Ph.D. (Rensselaer Polytechnic Institute)	Metal forming and material processing, severe plastic deformation processes, aluminium alloys, fatigue
G. Sundararajan, Ph.D. (Ohio State University)	Tribological behaviour of materials, indentation behaviour of materials, coatings on materials; deformation and fracture behaviour of materials
V. Sampath, Ph.D. (IISc, Bengaluru)	Shape memory alloys/smart materials, composite materials, powder metallurgy, structure–property correlations in materials
G. Phanikumar, Ph.D. (IISc, Bengaluru)	Solidification using electromagnetic levitation and melt spinning, transportphenomena in manufacturing processes, microstructure simulation and characterization
Associate Professors	
R. Bauri, Ph.D. (IISc, Bengaluru)	Metal matrix composites, aluminium alloys, solid oxide fuel cells
N.V. Ravi Kumar, Ph.D. (MPI-Stuttgart)	Polymer-derived ceramics, silicon carbide/silicon nitride ceramics, high-temperature mechanical properties, object-oriented finite element programming for prediction of macroscopic properties
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. Janki Ram, Ph.D. (IIT Madras)	Welding, additive manufacturing, failure analysis
Somnath Bhattacharyya, Ph.D. (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
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
Assistant Professors	
Ajay Kumar Sukla, 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
Anand K. Kanjarla, Ph.D. (Katholieke Universiteit Leuven (KUL), Belgium)	Microstructural approach to mechanics of materials, finite element method and fast Fourier transform approach to crystal plasticity (CPFEM and CPFFT), plastic anisotropy and crystallographic texture, microstructure evolution in irradiated systems
Lakshman Neelakantan, Ph.D. (MPIE Dusseldorf and RUB, Bochum, Gemany)	Corrosion characteristics, smart coating for corrosion protection, electro-dissolution, planarization and deposition
Manas Mukherjee, Ph.D. (Technical University Berlin, Germany)	Metal foam production and characterization, physics of foaming, X-ray tomography, solidification
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
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 Thomos, 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
Sreeram K. Kalpathy, Ph.D. (Univ. of Minnsota)	Soft Matter: colloid and polymer science, interfacial fluid mechanics, physical chemistry of surfaces, coating and printing methods
Murugaiyan A., Ph.D. (Delft University of Technology, Netherlands)	Welding metallurgy, welding processes development, steels product development, *in situ* 3D synchrontron 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

Visiting Faculty

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
S. Venugopal, Ph.D. (University of Madras)	Metal working, irradiation experiments, tribology, post-irradiation examination, in-service inspection of nuclear plant components

Steel Chair Professor

Santanu Kumar Ray, Ph.D. (IIT Kharagpur)	R&D in steel making, continuous casting of steels

AICTE-INAE Distinguished Professor

R. Natarajan, B.Tech (IIT Madras), Vice President (TII), Chennai	R&D in steel technology for tubular products

Adjunct Faculty

R. Gopalan, Ph.D. (IIT Madras), Associate Director and Head, Centre for Automotive Energy Materials, ARCI, IITM Research Park	Magnetic materials, thermo-electric materials, fuel cells
Raju Ramanujan, Ph.D. (CMU), Professor, NTU, Singapore	Nano functional materials

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

Sl. No.	Coordinator(s)	Title	Period
Conferences			
1.	B.S. Murty	International Conference on Metals and Materials Research (ICMR-2016)	20-22 June 2016, Bengaluru
2.	M. Kamaraj, V. Subramanya Sarma, Murugaiyan Amirthalingam and B.S. Murty	ISRS-2016	21-23 December 2016, IIT Madras
3.	V. Sampath	International Conference on Advances in Smart and Functional Materials (ASFM)	13-14 January 2017, Bhopal
4.	Murugaiyan Amirthalingam	Chaired a technical session at 1st International Conference on Advances in Metallurgy, Materials and Manufacturing (ICAMMM 2017)	6 March 2017, GCE Salem
Seminar			
1.	B.S. Murty	4th EGR Distinguished Lecture by Dr. C.G. Krishnadas Nair	3 May 2016, IIT Madras
Workshops			
1.	A. Murugaiyan	Use of Gleeble in Materials Processing	15-16 July 2016, IIT Madras
2.	A. Murugaiyan	One-day workshop on High Performance Welding	14 December 2016, IIT Madras
3.	K.C. Harikumar	JAIST-India Workshop	
4.	B.S. Murty	Brainstorming session on M. Tech. in Industrial Metallurgy through E-Learning	19 December 2016, IIT Madras
5.	Parasuraman Swaminathn	Bruker-ISRS 2016 pre-conference workshop on surface characterization	21-23 December 2016, IIT Madras
6.	B.S. Murty, T.S. Sampath Kumar and Murugaiyan Amirthalingam	Amalgam 2017	24-26 February 2017, IIT Madras
7.	S.S. Bhattacharya	Chaired the session, Synthesis and Processing Challenges at International Workshop on High Entropy Materials	11-12 March 2017, University of Hyderabad
8.	B.S. Murty	Chairman of International Workshop on High Entropy Materials	11-12 March 2017, University of Hyderabad
9.	Ajay Kumar Shukla	Two-day workshop under the banner of CEP, IITM on Copper Extraction by Pyrometallurgy Route for Practicing Engineers and Scientists	
Short-term course			
1.	M. Kamaraj	One-day awarness course on Additive Manufacturing	9 April 2016, IIT Madras
2.	Tiju Thomas	Technical Writing	8-22 December 2016, IIT Madras

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

Sl. No.	Faculty Member	Title	Institution	Period
Workshops				
1.	B.S. Murty	Challenges in high entropy alloy research	IWHEM-2017 University of Hyderabad (UoH)	11-12 March 2017
2.	Ravi Sankar Kottada	Thermal stability and creep of CoCrFeNi high entropy alloy	IWHEM-2017 University of Hyderabad (UoH)	11-12 March 2017
3.	Srinivas Rao Bakshi	Ti-Al-Ni-Co-Cr-Fe Multi-component high entropy alloys by mechanical alloying and spark plasma sintering for high temperature applications	IWHEM-2017 University of Hyderabad (UoH)	11-12 March 2017
4.	G. Phanikumar	Phase selection kinetics in undercooled $FeCONiCuX_{0.5}$ alloys	IWHEM-2017 University of Hyderabad (UoH)	11-12 March 2017
Seminars				
1.	G. Phanikumar	Oral Presentation: Physical metallurgy in ICME era	Bengaluru	20-22 June 2016
2.	Srinivasa Rao Bakshi	Oral Presentation: Effect of carbon nano-filler addition on the durability of epoxy adhesive joints subjected to hygrothermal aging	Bengaluru	6 July 2016
3.	Srinivasa Rao Bakshi	Attended M.Tech. (by research) viva voce meeting	NIT Rourkela	6 January 2017
4.	Tiju Thomas	Participated in the Michigan State University-IITM discussion	IIT Madras	20-23 January 2017
Conferences				
1.	B.S. Murty	Advances in Materials Engineering	RGUKT, Nuzvid	2 April 2016
2.	T.S. Sampath Kumar	Value Added Bioceramics from Natural Products-Indian Scenario (BiTERM 2016)	IIT Delhi	15-17 April 2016
3.	T.S. Sampath Kumar	Invited talk on Biomedical Applications of Ceramics from Natural Products at the National Seminar on Porous Ceramics	Anna University	27-28 May 2016
4.	T.S. Sampath Kumar	Invited talk: Sustainable Bioceramics from Natural Products, International Conference on Materials for Sustainable Future	SASTRA University, Thanjavur	14-15 July 2016
5.	T.S. Sampath Kumar	Invited talk: Nanofeaturing of Metallic Implants for Enhanced Biofunctionalization at ICAMMP-IV	Indian Institute of Technology Kharagpur	5-7 November 2016
6.	B.S. Murty	Invited talk: Challenges in the Understanding of Phase Formation in High Entropy Alloy	ICHEM-2016, National Tsing Hua University, Hsinchu, Taiwan	6-9 November 2016
7.	Ravi Sankar Kottada	Creep of CoCrFeNi High Entropy Alloy	ICHEM-2016, National Tsing Hua University, Hsinchu, Taiwan	6-9 November 2016
8.	V.S. Sarma	Presented paper: Grain Boundaries: Structure to Engineering	NMD-ATM	13 November 2016
9.	Uday Chakkingal	Delivered keynote lecture and chaired a session at the International Conference on Materials and Manufacturing (ICAMM 2016) organised by Osmania University	DRDL, Hyderabad	8-10 December 2016

Sl. No.	Faculty Member	Title	Institution	Period
10.	Sreeram K. Kalpathy	Presented paper, Temperature Gradients as a Potential Strategy for Templating in Thin Liquid Films at CompFlu (Complex Fluids) 2016 conference	IIT, Hyderabad	13-15 December 2016
11.	V.S. Sarma	Presented paper, Microstructural Design Strategies for Improving the Ductility of Ultrafine Grained/ Nanostructured Metals and Alloys	International Conference on Texture, Micro-texture and Mechanical Behavior-2017	13-15 February 2017

Special lectures delivered by the faculty in other institutions

Sl. No.	Faculty Member	Topic	Institution	Date
1.	Murugaiyan Amirthalingam	Advanced Methods in Welding of Automotive Steels	Indian Welding Society 2016 conference, Mumbai	5 October 2016
2.	V. Sampath	An Overview of Shape Memory Alloys	MIT, Chromepet	5 December 2016
3.	Anand Kanjarla	National Symposium on Thermomechanical Processing and Microstructure	IIT Hyderabad	8-12 December 2016
4.	Murugaiyan Amirthalingam	Understanding Crystallographic Isotropy by *in situ* Synchrotron X-ray Diffraction	IIEST, Shibpur	11 December 2016
5.	Parasuraman Swminathan	Optical Surface Characterization Techniques	IIT Madras	20 December 2016
6.	Satyesh Kumar Yadav	Computation of Materials Properties from First-Principles (as a part of GIAN course on "Multiscale Modeling of Polymer Nano-Composites" organised by Prof. R. Velumurugan)	IIT Madras	20 January 2017
7.	T.S. Sampath Kumar	Nanostructured Metallic Implants by Severe Plastic Deformation Techniques	University of Madras	7-8 February 2017
8.	Tiju Thomas	(a) Science and Engineering of Nitrides and Nanostructures (b) Scientific Café for Building Intra- and Inter-Institutional Knowledge Networks	Sri Ramakrishna Engineering College, Coimbatore	17 February 2017
9.	Sreeram K. Kalpathy	Transport Phenomena in Liquid and Colloidal Materials-based Coating Processes	VJCET, Kerala	21 February 2017
10.	Sreeram K. Kalpathy	Some Metallurgical Properties of a Laser-Deposited Nickel-Titanium Shape Memory Alloy	VJCET, Kerala	21 February 2017
11.	S. Ganesh Sundara Raman	Fatigue Testing-An overview	Anna University	25 February 2017
12.	Parasuraman Swaminathan	Challenges in Electronic Device Fabrication	VIT University, Vellore	28 February 2017
13.	M. Kamaraj	Advanced Coating Technologies for Manufacturing of High Temperature Parts at a one-day workshop on Advanced Manufacturing Technologies	VIT University, Vellore	4 March 2017
14.	Murugaiyan Amirthalingam	Keynote lecture on Hot Cracking During Welding on 1st International Conference on Advances in Metallurgy, Materials and Manufacturing	ICAMMM 2017, Salem	6 March 2017
15.	Uday Chakkingal	Introduction to Sheet Metal Forming	Anna University	9 March 2017
16.	Tiju Thomas	Science and Engineering of Nitrides and Nanostructures	Guindy College of Engineering, Chennai	13 March 2017
17.	Murugaiyan Amirthalingam	Indian Welding Society Day celebrations titled "Hot Cracking During Welding of Advanced High Strength Steels"	Hotel Ambica Empire, Chennai	14 March 2017
18.	T.S. Sampath Kumar	Nanotechnology Advances in Biomaterials	Anna University	22-24 March 2017
19.	M. Balasurbamanian	Engineering Applications of Composite Materials at the International Symposium on Advanced Materials for Engineering Applications	NIE Mysuru	25 March 2017
20.	Parasuraman Swaminathan	Printed Electronics	NIT, Trichy	26 March 2017
21.	Uday Chakkingal	Some Applications of Severe Plastic Deformation in Alumininum Alloys	NIIST, Trivandrum	

Visits abroad by faculty

Sl. No.	Name of faculty	Country Visited	Date	Purpose of visit	Funding from
1.	N.V. Ravikumar	Germany	28 April-1 May 2016	Professional Development	CPDA
2.	T.S. Sampathkumar	Singapore	14-18 June 2016	Research Collaboration Workshops	IIT Madras
3.	K.C. Hari Kumar	Japan	29 June-3 July 2016	Oral Presentation	IIT Madras
4.	N.V. Ravikumar	Copenhagen	30 June- 27 July 2016	As Visiting Professor	IIT Madras
5.	T.S. Sampath Kumar	Indonesia	27 July-4 August 2016	Invited talks at the ASEAN Summer Course on Bioceramics and Tissue Engineering	ASEAN
6.	N.V. Ravikumar	Germany	19-29 August 2016	Oral Presentation	IIT Madras
7.	Prathap Haridoss	Germany	5-10 September 2016	RWTH-IITM Strategic Partnership Kick Off Meeting	IIT Madras
8.	B.S. Murty	Germany	6-9 September 2016	RWTH-IITM Strategic Partnership Kick Off Meeting	IIT Madras
9.	Ravi Sankar Kottada	Germany	6-9 September 2016	RWTH-IITM Strategic Partnership Kick Off Meeting	IIT Madras
10.	Gandham Phanikumar	Germany	27 September-1 October 2016	IGSTC Annual Project Meeting, RWTH	IIT Madras
11.	T.S. Sampathkumar	Mauritius	6-8 October 2016	IMSACON 2016	IIT Madras
12.	M. Kamaraj	China	16-20 October 2016	9th China-Japan Bilateral Symposium on High Temperature Strength of Materials	IIT Madras
13.	B.S. Murty	Taiwan	5-8 November 2016	ICHEM 2016	PCF
14.	Murugaiyan Amirthalingam	Netherlands	11 November-9 December 2016	Ongoing collaborations	TU-Delft
15.	M. Kamaraj	Japan	28-30 November 2016	6th International Advisory Board Meeting	IIT Madras
16.	B.S. Murty	Australia	6-8 December 2016	Plenary talk at CAMS-2016	CAMS
17.	Ranjit Bauri	Australia	30-31 January 2017	To attend International Conference Melbourne-India Postgraduate Program	IIT Madras
18.	Ajay Kumar Shukla	Germany	4-15 January 2017	To visit and deliver lectures in iron and steel Industry	IIT Madras
19.	K.C. Hari Kumar	Japan	7-17 January 2017	To attend the workshop JAIST-IITGN	IIT Madras

Honours and awards obtained by faculty

Sl. No.	Faculty Member	Name of Award	Awarded by	Awarded for	Date
Honours					
1.	B.S. Murty	Appointed as Girija and Muralidharan Chair	IIT Madras	Research	1 April 2016
2.	T.S. Sampath Kumar	A member of the selection panel for the MAHE award for the Best Scientific Paper presented by a Faculty/Scientist	International Conference Bi Term 2016	Research	15-17 April 2016, New Delhi
3.	B.S. Murty	Appointed as Institute Professor	IIT Madras	Research	25 April 2016
4.	T.S. Sampath Kumar	Chief Guest and Inaugural Address on Biomaterials: Present and Future at the ICMR-sponsored seminar on "Current Trends in Biomaterials and Application of FEM in Dentistry"	K.S. Rangasamy College of Technology, Tiruchengode	Research	9-10 September 2016
5.	T.S. Sampath Kumar	Member, Materials Panel, Naval Research Board	DRDO	Research	17 October 2016
6.	B.S. Murty	Inducted as Associate Faculty Member of School of Engineering	University of British Columbia, Okanagan Campus, Kelowna, Canada	Research	April 2016
7.	T.S. Sampath Kumar	Guest of Honour at the inauguration ceremony	TEQIP-sponsored national workshop	Materials for Bio-Medical and Specialty Applications	23-24 January 2017, NIT Surathkal

Sl. No.	Faculty Member	Name of Award	Awarded by	Awarded for	Date
8.	T.S. Sampath Kumar	Inaugural Lecture on Naturally derived Bioceramics-Processing and Applications		National Seminar on Advanced Biomaterials and Applications	15 February 2017, Hindustan University, Chennai
9.	Murugaiyan Amirthalingam	Chief Guest		IWS Day Celebration	14 March 2017, Hotel Ambica Empire, Chennai
10.	Murugaiyan Amirthalingam	Member of National Committee on Welding	Confederation of Indian Industries (CII)		2017-18
Awards					
1.	Srinivasa Rao Bakshi	Institute Research and Development Award in Junior level	IIT Madras	Research	April 2016
2.	B.S. Murty	Institute Research and Development Award in Senior level (Lifetime Achievement Award)	IIT Madras	Research	April 2016

Fellowships of academies and professional societies

Sl. No.	Faculty Member	Year of admission
1.	B.S. Murty, Fellow of Andhra Pradesh Academy of Sciences	2016

Editorial boards of journals

Sl. No.	Faculty Member	Position	Journal
1.	Dr. N.V. Ravi Kumar	Editor	*Surface Innovations*
2.	Dr. Somnath Bhattacharyya	Editor	*Scientific Reports*
3.	Dr. Somnath Bhattacharyya	Editor	*Indian Journal of Materials Science*
4.	T.S. Sampath Kumar	Member	*Biomaterials and Tissue Technology*

4.14.4. Design and Development Activities

Patents filed

Sl. No.	Faculty Member	Topic of patent
1.	N.S. Srinivasa Rao Bakshi Karthiselva and B.S. Murty	Method for Fabricating Textured Ultrahigh Temperature Diborides (patent application no. 201641010562)
2.	B.S. Murty, Rahul Bhattacharya and M. Kamaraj	Processing of High Entropy Alloys with Exceptionally Good High Temperature Oxidation Properties (patent application no. 201641011314)

Patents awarded

Sl. No.	Faculty Member	Topic of patent
1.	B.S. Murty, S. Kumar and V.S. Sarma, IITM (Indian patent no. 283467)	Functionally graded, aluminum alloy based *in situ* metal matrix composites (FG-AMC)

4.14.5. Research and Consultancy

Sponsored research projects

Sl. No.	Project No	PI	Title	Agency	Amount (lakhs of ₹)
1.	MET1617146DSTXTIJU	Tiju Thomas	Morphology Transitions in Nanostructures of Transition/Rare Earth Metal Compunds and their Applications	DST	24.14
2.	MET1617147DSTXTSSA	T.S. Sampath Kumar	In vitro Degradation and Cytotoxicity Studies of Surface Modified PEO/Chitosan/TiO_2 Coated Magnesium Alloys for Orthopaedic Applications	DST	19.2
3.	MET1617148MSTEHODX	Uday Chakkingal	Centre of Excellence in Iron and Steel Technology (COEXIST)	Ministry of Steel	3555
4.	MET1617149MUAYMKAM	M. Kamaraj	Cold Spray Technology Development for Repair and Coating of Aircraft Engine Components	UAY	520
5.	MET1617150DSTXTSSA	T.S. Sampath Kumar	Agarose-based Wound Dressings	DST	43.52
6.	MET1617151DSTXVSAM	V. Sampath	New Family of Fe-containing Magnetic Shape Memory Alloys with Giant Reversible Strain	DST	26.56
7.	MET1617152DSTXBSMT	B.S. Murty	National Facility for the Atomic Scale Materials Characterization Using Remote Operable Atom Probe Tomography (NFAPT)	DST	25.70
8.	MET1617154MSTESABI	Sabita Sarkar	Development of Fludized 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	Ministry of Steel	51
9.	MET1617155DSTXSRER	Sreeram K. Kalpathy	Ordered Patterns of Colloids and Polymers on Porous Substrates: Deposition, Characterization and Modelling	DST	45.29
10.	MET1617156DSTXSOMT	Somnath Bhattacharyya	Studying Structure and Chemistry Within and at the Interfaces of Nano Lamella in Cold Rolled Ti-Alloys Using Transmission Electron Microscopy to Determine Reason Behind its Superior Strength	DST	6.3
11.	MET1617157DSTXVSAM	V. Sampath	Studies on Functional Fatigue Behaviour of Shape Memory Alloys for Actuator and Sensor Applications	DST	48.16
12.	MET1617158DSTXRANJ	Ranjit Bauri	Development of a Novel Electrolyte-Free Single Layer Solid Oxide Fuel Cell	DST	43.66
13.	MET1617159DSTXMURG	Murugaiyan Amirthalingam	Engineering Weld Microstructures Against Hydrogen Embrittlement	DST	85.49
14.	MET1617169ISROGDJA	G.D. Janaki Ram	Weld Repair of XH43 and XH67 Superalloy Castings	ISRO	27.69

Industrial consultancy projects

Sl. No.	Project Number	PI Name	Agency	Title	Amount (lakhs of ₹)
1.	RB1617MET008DRDOGANP	Gandham Phani Kumar	DRDO	Modeling of Segregation Behavior of Beta Stabilization Elements During Solidification of a Beta Titanium Alloy (containing Fe and/or CR) after Vacuum Arc Melting	11
2.	RB1617MET009GEITGANP	Gandham Phani Kumar	GE India	Microstructure Modeling During Solidification of Superalloys During Castings and Additive Manufacturing	6.5
3.	RB1617MET011ADIYSANK	S. Sankaran	Aditya Birla Science and Technology	Machinablity Characterization Studies on Free-machining 6xxx alloys	16.12
4.	RB1617MET010EWACBSMT	B.S. Murty	EWAC Alloys Limited	Design and Development of High Entropy Alloy in the form of MMAW Electrode Exhibiting Wear and Corrosion Resistance at Elevated Temperatures	10
5.	RB1617MET006DRDOSANK	S. Sankaran	DRDO	Advanced Microstructural Studies on Ultra High Strength Steels for Armor Applications	32.20
6.	RB1617MET007L&TLMURG	Murugaiyan Amirthalingam	Larsen and Toubro Limited	Fume Level Reduction in High Performance Hard facing FCAW Wire	1.73
7.	RC1617MET721EWACSANR	Santanu Kumar Ray	EWAC Alloys Limited	Design and Development of Alloy to Enhance Service Life of Upper Segment Rolls of Caster	4.14

Sl. No.	Project Number	PI Name	Agency	Title	Amount (lakhs of ₹)
8.	RC1617MET722EWACSANR	Santanu Kumar Ray	EWAC Alloys Limited	Development of Erosion-Resistant Alloy to Enhance Service Life of Exhauster Fan Blade	3.45
9.	IC1617MET008SRETVSAM	V. Sampath	Sree Rengaraj Ispat Industries P Ltd	Investigation of Explosion of Steam Turbine of a Mini Steel Plant	4.85
10.	RC1617MET724MISHSANR	Santanu Kumar Ray	MIDHANI	Imparting Knowledge And Expertise in Areas of Special Steels to Enhance Quality	3.45
11.	RB1617MET005TTDEMKAM	M. Kamaraj	Tirumala Tirupati Devasthanam	Alternative Gold Coating for Structures at Tirupati Devasthanam	11.73
12.	IC1617MET006RENUSRRB	Srinivasa Rao Bakshi	Renault Nissan Technology and Business Centre India Private Limited (RNTBCI)	Characterization and Analysis of the Materials	11.50
13.	IC1617MET004AAAAMKAM	M. Kamaraj	Common Code	Mechanical Testing - II	0.41
14.	IC1617MET003NATRGDJA	G.D Janaki Ram	National Engineering Industries Limited	Bainite Transformation Kinetics of Bearing Steels	5.75
15.	RB1617MET003GEITGANP	Gandham Phani Kumar	GE India	Preparation and Testing of Friction Surfaced Layers on Steel Substrates	7.48
16.	RB1617MET004TITCBSMT	B.S. Murty	TITAN	Bulk Metallic Glasses	28.75
17.	IC1617MET005AAAAMURG	Murugaiyan Amirthalingam	Common Code	Simulation of Roll Bonding - Al/Mg/Al Layered Composites using Gleeble	0.69
18.	RB1617MET002JSWSSABI	Sabita Sarkar	JSW	Development of Reduction Roasting Technology using Iron Ore and Coking Coal to Maximize Iron Recovery	22.80
19.	IC1617MET002SMEERAVK	N.V. Ravi Kumar	Sree Meenatchi Enterprises	Retained Austenite, Residual Stress Analysis and Failure Analysis of Automotive Components	1.32
20.	IC1617MET001AAAARAVK	N.V. Ravi Kumar	Common Code	Technical Opinion, Analysis of Ceramics and Ceramic Based Components	Nil
21.	RB1617MET001ABSMANAD	Anand Krishna Kanjarla	AB Sandvik Materials Technology	On the Multiscale Modelling of Texture and Anisotropy Development during Thermo-mechanical Processing of Duplex Stainless Steels	36.72
22.	IC1617MET007AAAAMURG	Murugaiyan Amirthalingam	Common Code	Gleeble Testing for External Agencies	Nil

Research publications of the faculty members and research scholars

Books: 7

Total number of papers published in refereed international journals: 130

Total number of papers presented in national conferences: 7

Total number of papers presented in international conferences: 2

Books

1. S. Babu, S.K. Panigrahi, G.D. Janaki Ram, P.V. Venkitakrishnan and R. Suresh Kumar. 2016. Friction stir welding of austenitic stainless steel to an aluminum-copper alloy. *Friction Stir Welding and Processing* VIII: 181-188. doi: 10.1007/978-3-319-48173-9_20
2. L. Yang, H. Miyanaji, D. Janaki Ram, A. Zandinejad and S. Zhang. 2016. Functionally Graded Ceramic Based Materials Using Additive Manufacturing: Review and Progress. *Additive Manufacturing and Strategic Technologies in Advanced Ceramics* 258: 43-55. doi: 10.1002/9781119236016.ch5
3. T. S. Sampath Kumar and K. Madhumathi. 2016. Antibacterial potential of nanobioceramics used as drug carriers. *Handbook of Bioceramics and Biocomposites* 1333-1373. doi: 10.1007/978-3-319-12460-5_58
4. V. Sampath and N. R. Rajasekaran. 2016. Effect of *in situ* titanium boride particle addition and friction stir processing on wear behavior of aluminum alloy 2219. *Advanced Composites for Aerospace, Marine, and Land Applications* II: 81-91. doi: 10.1007/978-3-319-48141-8_6
5. T. Sankara Narayanan, S. K. Seshadri, I.S. Park and M. H. Lee. 2016. Electroless nanocomposite coatings: Synthesis, characteristics, and applications. *Handbook of Nanoelectrochemistry: Electrochemical Synthesis Methods, Properties, and Characterization Techniques* 389-416. doi: 10.1007/978-3-319-15266-0_13
6. T.S. Sampath Kumar and K. Madhumathi. 2016. Antibacterial potential of nanobioceramics used as drug carriers. *Handbook of Bioceramics and Biocomposites* 1333-1373. doi: 10.1007/978-3-319-12460-5_58
7. Sreeram K. Kalpathy. 2016. Polymer Coatings and Patterning Techniques. *Advances in Polymer Materials and Technology* 1: 281-295

Papers published in refereed international journals

1. T.R. Tamilarasan, R. Rajendran, M. Siva Shankar M, U. Sanjith, G. Rajagopal and J. Sudagar. 2016. Wear and scratch behaviour of electroless Ni-P-nano-TiO_2 Effect of surfactants. *Wear.* 346-347: 148-157. doi: 10.1016/j.wear.2015.11.015
2. A. Selvakumar, R. Perumalraj, J. Sudagar and S. Mohan. 2016. Nickel multiwalled carbon nanotube composite coating on aluminum alloy rotor for textile industries. *Proceedings of the Institution of Mechanical Engineers, Part L Journal of MaterialsDesign and Applications.* 230(1): 319-327. doi: 10.1177/1464420715573648
3. A. Selvakumar, R. Perumalraj, P.N.R. Jeevananthan, S. Archana and J. Sudagar. 2016. Electroless NiP-MWCNT composite coating for textile industry application. *Surface Engineering.* 32(5): 338-343. doi: 10.1080/02670844.2015.1104102
4. N. Saikrishna, G. Pradeep Kumar Reddy, B. Munirathinam and B. Ratna Sunil. 2016. Influence of bimodal grain size distribution on the corrosion behavior of friction stir processed biodegradable AZ31 magnesium alloy. *Journal of Magnesium and Alloys* 4(1): 68-76. doi: 10.1016/j.jma.2015.12.004
5. M. Das, V. K. Balla, T.S.S. Kumar, A. Bandyopadhyay and I. Manna. 2016. Tribological, electrochemical and *in vitro* biocompatibility properties of SiC-reinforced composite coatings. *Materials and Design.* 95: 510-517. doi: 10.1016/j.matdes.2016.01.143
6. K. Susmitha, M. Mamatha Kumari, M. Naresh Kumar, L. Giribabu, J. Theerthagiri, J. Madhavan and M. Raghavender. 2016. Carbon nanohorns functionalized PEDOT: PSS nanocomposites for dye-sensitized solar cell applications. *Journal of Materials ScienceMaterials in Electronics* 27(4): 4050-4056. doi: 10.1007/s10854-015-4261-z
7. S. Harish, D. Sivaprahasam, M. Battabyal and R. Gopalan. 2016. Phase stability and thermoelectric properties of Cu10.5Zn1.5Sb4S13 tetrahedrite. *Journal of Alloys and Compounds.* 667: 323-328. doi: 10.1016/j.jallcom.2016.01.094
8. G. S. Rao, V.M.J Sharma, S.G.S. Raman, M. Amruth, P.R. Narayanan, S.C. Sharma and P.V. VenkitaKrishnan. 2016. Effects of temperature and strain rate on tensile properties of Cu-Cr-Zr-Ti Alloy. *Materials Science and Engineering A* 668: 97-104. doi: 10.1016/j.msea.2016.05.035
9. K. Susmitha, M. M. Kumari, A.J. Berkmans, M. N. Kumar, L. Giribabu, S. V. Manorama and M. Raghavender. 2016. Carbon nanohorns based counter electrodes developed by spray method for dye sensitized solar cells. *Solar Energy* 133: 524-532. doi: 10.1016/j.solener.2016.03.059
10. O. E. Femi, K. Akkiraju, B. S. Murthy, N. Ravishankar and K. Chattopadhyay. 2016. Effect of processing route on the bipolar contribution to the thermoelectric properties of n-type eutectic Bi22.5Sb7.5Te70 alloy. *Journal of Alloys and Compounds* 682: 791-798. doi: 10.1016/j.jallcom.2016.05.054
11. A. Das, V. Verma, C. B. Basak. 2016. Elucidating microstructure of spinodal copper alloy through annealing. *Materials Characterization* 120: 152-158. doi: 10.1016/j.matchar.2016.08.021
12. W. A, Eranezhuth, S. Sridar, B.K. Adhimoolam and R. Kumar. 2016. Ablation resistance of precursor derived Si-Hf-C-N(O) ceramics. *Journal of the European Ceramic Society* 36(15): 3717-3723. doi: 10.1016/j.jeurceramsoc.2016.03.038
13. N. Chawake, R.S. Varanasi, B. Jaswanth, L. Pinto, S. Kashyap, N.T.B.N. Koundinya, A.K. Srivastav, A. Jain, M. Sundararaman and R.S. Kottada. 2016. Evolution of morphology and texture during high energy ball milling of Ni and Ni-5 wt%Cu powders. *Materials Characterization* 120: 90-96. doi: 10.1016/j.matchar.2016.08.019
14. K. Prasad, R. Sarkar, K.B.S. Rao and M. Sundararaman. 2016. A Critical Assessment of Cyclic Softening and Hardening Behavior in a Near- Titanium Alloy During Thermomechanical Fatigue. *Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science* 47(10): 4904-4921. doi: 10.1007/s11661-016-3670-9

15. M.M. Shafeeq, G.K. Gupta, M. M. Malik, V. Sampath and O. P. Modi. 2016. Influence of quenching methods on martensitic transformation and mechanical properties of P/M processed Cu–Al–Ni–Ti shape memory alloys. *Powder Metallurgy* 59(4): 271-280. doi: 10.1080/00325899.2016.1206261
16. K. Prasad, V. Kumar, K. Bhanu Sankara Rao and M. Sundararaman. 2016. Effects of Crack Closure and Cyclic Deformation on Thermomechanical Fatigue Crack Growth of a Near Titanium Alloy. *Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science* 47(7): 3713-3730. doi: 10.1007/s11661-016-3482-y
17. K. Prasad, R. Sarkar, V. Kumar, K. B. S. Rao and M. Sundararaman. 2016. Influence of test temperature on cyclic deformation behavior of a near titanium alloy. *Materials Science and Engineering A* 662: 373-384. doi: 10.1016/j.msea.2016.03.079
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22. N. S. Karthiselva, B. S. Murty and S. R. Bakshi. 2016. Low temperature synthesis of dense and ultrafine grained zirconium diboride compacts by reactive spark plasma sintering. *Scripta Materialia* 110: 78-81. doi: 10.1016/j.scriptamat.2015.08.005
23. K.G. Raghavendra, A. Dasgupta, Bhaskar, K. Jayasankar, C. N. Athreya, P. Panda, S. Saroja, V. Subramanya Sarma and R. Ramaseshan. 2016. Synthesis and characterization of Fe-15wt.% ZrO_2 nanocomposite powders by mechanical milling. *Powder Technology* 287: 190-200. doi: 10.1016/j.powtec.2015.10.003
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26. V. Mannava, A. V. Swaminathan, M. Kamaraj and R. S. Kottada. 2016. An innovative spraying setup to obtain uniform salt(s) mixture deposition to investigate hot corrosion. *Review of Scientific Instruments.* 87(2): 025107-1-025107-7. doi: 10.1063/1.4941779
27. M. Lodhe, A. Selvam, A. Udayakumar and M. Balasubramanian. 2016. Effect of polycarbosilane addition to a mixture of rice husk and coconut shell on SiC whisker growth. *Ceramics International* 42(2): 2393-2401. doi: 10.1016/j.ceramint.2015.10.037
28. P. Ramasamy, M. Stoica, A.H. Taghvaei, K.G. Prashanth, R. Kumar and J. Eckert. 2016. Kinetic analysis of the non-isothermal crystallization process, magnetic and mechanical properties of FeCoBSiNb and FeCoBSiNbCu bulk metallic glasses. *Journal of Applied Physics* 119(7): 73908. -.. doi: 10.1063/1.4942179
29. P. Rajak, S. B. Lee and S. Bhattacharyya. 2016. Indication of thermal roughening in the retrieved mean inner potential across a 5 grain boundary in $SrTiO_3$ annealed at different temperatures. *Journal of Materials Science* 51(3): 1484-1489. doi: 10.1007/s10853-015-9468-0
30. S. Singh, M. Sribalaji, N. P. Wasekar, S. Joshi, G. Sundararajan, R. Singh and A.K. Keshri. 2016. Microstructural, phase evolution and corrosion properties of silicon carbide reinforced pulse electrodeposited nickel-tungsten composite coatings. *Applied Surface Science* 364: 264-272. doi: 10.1016/j.apsusc.2015.12.179
31. M. Nagini, A. Jyothirmayi, R. Vijay, T.N. Rao, A.V. Reddy, K. V. Rajulapati and G. Sundararajan. 2016. Influence of Dispersoids on Corrosion Behavior of Oxide Dispersion-Strengthened 18Cr Steels made by High-Energy Milling. *Journal of Materials Engineering and Performance* 25(2): 577-586. doi: 10.1007/s11665-015-1859-5
32. N. Raghukiran and R. Kumar. 2016. The role of the bimodal distribution of ultra-fine silicon phase and nano-scale V-phase ($AlSi_2Sc_2$) on spark plasma sintered hypereutectic Al-Si-Sc alloys. *Materials Science and Engineering A* 657: 123-135. doi: 10.1016/j.msea.2016.01.069
33. K. Arun Babu, V. Subramanya Sarma, C. N. Athreya and K. A. Padmanabhan. 2016. Experimental verification of grain boundary-sliding controlled steady state superplastic flow in both continually and statically recrystallizing Al alloys. *Materials Science and Engineering A* 657: 185-196. doi: 10.1016/j.msea.2016.01.054
34. P. Jojibabu, M. Jagannatham, P. Haridoss, G. D. Janaki Ram, A. P. Deshpande and S. R. Bakshi. 2016. Effect of different carbon nano-fillers on rheological properties and lap shear strength of epoxy adhesive joints. *Composites Part AApplied Science and Manufacturing* 82: 53-64. doi: 10.1016/j.compositesa.2015.12.003
35. J. Kumar, S. G. Sundara Raman and V. Kumar. 2016. Analysis and Modeling of Thermal Signatures for Fatigue Damage Characterization in Ti–6Al–4V Titanium Alloy. *Journal of Nondestructive Evaluation* 35(1): 1-10. doi: 10.1007/s10921-015-0317-5
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42. A. Mitra, N. Siva Prasad and G.D. Janaki Ram. 2016. Estimation of residual stresses in an 800 mm thick steel submerged arc weldment. *Journal of Materials Processing Technology* 229: 181-190. doi: 10.1016/j.jmatprotec.2015.09.007
43. N.S. Karthiselva and S. R. Bakshi. 2016. Carbon nanotube and *in situ* titanium carbide reinforced titanium diboride matrix composites synthesized by reactive spark plasma sintering. *Materials Science and Engineering A* 663: 38-48. doi: 10.1016/j.msea.2016.03.098
44. C. Chattopadhyay and B. S. Murty. 2016. Kinetic modification of the 'confusion principle' for metallic glass formation. *Scripta Materialia* 116: 7-10. doi: 10.1016/j.scriptamat.2016.01.022
45. N. P. Wasekar, P. Haridoss, S. K. Seshadri and G. Sundararajan. 2016. Influence of mode of electrodeposition, current density and saccharin on the microstructure and hardness of electrodeposited nanocrystalline nickel coatings. *Surface and Coatings Technology* 291: 130-140. doi: 10.1016/j.surfcoat.2016.02.024
46. M. Lodhe, N. Chawake, D. Yadav and M. Balasubramanian. 2016. On correlation between transformation and densification mechanisms in SiC during spark plasma sintering. *Scripta Materialia* 115: 137-140. doi: 10.1016/j.scriptamat.2016.01.002
47. G. Srinivas Reddy and R. Bauri. 2016. Size-controlled growth of spherical nanoparticles of Y-doped $BaZrO_3$ perovskite. *Applied Physics AMaterials Science and Processing* 122(4): 428-435. doi: 10.1007/s00339-016-9982-1
48. K. Murugan, J. Joardar, A. S. Gandhi, B. S. Murty and P. H. Borse. 2016. Photo-induced monomer/dimer kinetics in methylene blue degradation over doped and phase controlled nano-TiO_2 films. *RSC Advances* 6(49): 43563-43573. doi: 10.1039/c6ra03738k
49. A. Pawbake, A. Mayabadi, R. Waykar, R. Kulkarni, A. Jadhavar, V. Waman, J. Parmar; S. Bhattacharyya, Y.R. Ma, R.S. Devan, H. Pathan and S. Jadkar. 2016. Growth of boron doped hydrogenated nanocrystalline cubic silicon carbide (3C-SiC) films by Hot Wire-CVD. *Materials Research Bulletin* 76: 205-215. doi: 10.1016/j.materresbull.2015.12.012
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In proceedings of international conferences

1. P. Eftekharimilani, E.M. van der Aa, M. Amirthalingam, M.J.M. Hermans and I.M. Richardson. Effect of double pulsing on the microstructural evolution of low alloyed and 3rd generation 1 Gpa advanced high-strength steels during resistance spot welding. *9th International Seminar and Conference on Advances in Resistance Welding*, Florida, USA, April 2016
2. V. Yogeshwar Chakrapani, T.S. Sampath Kumar, Deepa K. Raj and T.V. Kumary. Electrosprayed calcium phosphate nano-carriers as therapeutic agents. *Frontiers in Bioengineering and Biotechnology,* Conference Abstract: 10th World Biomaterials Congress. doi: 10.3389/conf.FBIOE.2016.01.00400

Distinguished visitors to the Department

Sl. No.	Name and Designation	Date of Visit	Purpose
1.	Dr. K. Madanagopal, Head, AGM Division, BARC	1-2 April 2016	Delivered a series of lectures
2.	Prof. John Norrish, University of Wollongong, Australia	6 April 2016	Delivered a talk on “Can quality be inspected into a weld? the case for online monitoring and control”
3.	Dr. R. Subasri, Scientist E, ARCI, Hyderabad	16 April 2016	Delivered a talk on Sol-Gel Coatings
4.	Mr. S.A. Syed Asif, Hysitron R&D Center, Minneapolis, MN, USA	5 May 2016	Delivered a talk on “High-temperature and high-throughput mechanical measurements at nanometer length scale”
5.	Dr. Ahmad Omar (Alumni, B.Tech. and M. Tech. 2011)	12 May 2016	Delivered a talk on “Disentangling the intrinsic attributes and physical properties in cobalt-based quaternary heusler compounds”
6.	Dr. Sathiskumar Jothi, Lecturer, COE, Swansea University, UK	23 June 2016	Delivered a talk on “Hydrogen-induced weld failure analysis in aerospace materials using multi-scale approach”
7.	Dr. Kazuhiro Hono, NIMS, Tsukuba, Japan	7 July 2016	IIM Talk: “Dy-free high coercivity Nd-Fe-B permanent magnets”
8.	Dr. Abhishek Tripathi, IISc Bengaluru	7 July 2016	Delivered a talk on “Friction stir processing of AZ31 magnesium alloy”
9.	Dr. Raju V. Ramanujan, School of Materials Science and Engineering	15 July 2016	IIM Talk: Novel applications of magnetic nanomaterials
10.	Dr. Rangachary Mukundan, Los Alamos National Laboratory, Los Alamos, USA	25 July 2016	IIM Talk: Performance and durability of proton exchange membrane fuel cells
11.	Prof. Maulik K. Patel, MSE Department, Univ of Tennessee, Knoxville	26 July 2016	Delivered a talk on “Materials under Extreme Conditions: Nuclear materials”
12.	Dr. R. Raghavan, Massachusetts Institute of Technology, USA	27 July 2016	IIM Talk: Atomic mechanisms for viscoelastic damping in inorganic solids
13.	Dr. Anupam Ahlawat and Dr. P.B.N. Prasad, Techno Confluence Intelligent Engineering Solutions Private Limited, Bengaluru	10 August 2016	High-temperature non-contact mechanical characterization system
14.	Dr. V.R.S.S. Mokkapati, Sabanci University, Istanbul, Turkey	4 October 2016	Graphene for bio-medical applications and transmission electron microscopy
15.	Dr. A.K. Bhaduri, Distinguished Scientific and Director, IGCAR, Kalpakkam	14 October 2016	Dr. Placid Rodriguez Memorial Lecture on Issues and challenges in welding and hard facing of prototype fast breeder reactor components
16.	Dr. Olena Volkova, Director, Institute of Iron and Steel Technology, TU Bergakademie Freiburg, Germany	18 October 2016	Current research at Institute for Iron and Steel Technology
17.	Dr. K.G. Pradeep, Materials Chemistry-RWTH Aachen University, Germany	26 October 2016	Atomic scale study of cu custering and nanocrystallization in Fe-Si based soft magnetic alloys
18.	Dr. Dheepa Srinivasan, GE, Bengaluru	26 October 2016	Importance of surface finish to gas turbine components manufacture and failures
19.	Dr. Pavan Nukala, Materials Science and Engineering, University of Pennsylvania, Philadelphia, USA	2 November 2016	Power-efficient crystal-amorphous switching in GeTe via defect engineering
20.	Dr. Ravishankar Sundararaman, Rensselaer Polytechnic Institute (RPI), USA	5 December 2016	Leaving the collective: Plasmonics from a hot electron’s point of view
21.	Prof. Carlos H. Cáceres, The University of Queensland, Australia	6 December 2016	Mechanical design from first principles incorporating materials selection
22.	Dr. Krishnan L. Luthra, Niskayuna, USA	7 December 2016	History of development and commercialization of GE’s ceramic matrix composites (CMCs) for aircraft engines
23.	Prof. John Banhart, Technical University of Berlin, Germany	8 December 2016	Light metal foams-scientific challenges and industrial applications
24.	Dr. S. Herbert, Head, Technical Development, Fronius International, GmbH, Austria	14 December 2016	High-performance welding
25.	Dr. K.S. Raghavan	19 December 2016	Linking constituent phase properties to edge stretchability characteristics in a dual phase 980
26.	Prof. Martin Heilmaier, Karlsruhe Institute of Technology (KIT), Germany	20 December 2016	Alloying and Processing Concepts for Balanced Properties of Ultrahigh Temperature Mo-based Silicide

Sl. No.	Name and Designation	Date of Visit	Purpose
27.	Dr. Rajendra Bordia, Professor, Clemson University, Clemson, USA	3 January 2017	Analysis and Simulation Guided Processing of Hierarchical Porous Ceramics
28.	Dr. Anirudh R. Natarajan, Graduate Student, University of Calfornia Santa Barbara, USA	6 January 2017	Towards an Understanding of Phase Stability and Precipitation in Magnesium Alloys
29.	Dr. Vivek Verma, Associate Professor, IIT Kanpur	18 January 2017	Physico-chemical Modification of Polyvinyl Alcohol for Biomedical and Packaging Applications
30.	Dr Kiranmayi Abburi Venkata, Postdoctoral Research Associate, University of Bristol, UK	30 January 2017	Residual Stresses–Characterisation and Determination of their Effects on Structural Integrity
31.	Ms. Debbie Aliyah, Aliyah Analytical Inc., USA	31 January 2017	Visual Inspection for Engineering and Failure Analysis
32.	Prof. Jaroslaw Drelich, Department of Materials Science & Engineering, Michigan Technological University, USA	1 February 2017	IIM Talk: Charge Heterogeneity of Surfaces: Why do We Need to Study it?
33.	Prof. M. Roshan	9 February 2017	IIM Talk: Experience of an IIT professor with Metal Casting Industry of USA
34.	Dr. R.V. Ramanujan, Nanyang Technological University, Singapore	15 February 2017	IIM Talk: Affordable, High-Performance Magnetic Cooling
35.	Prof. Horst Hahn, KIT, Germany	7 March 2017	IIM Talk: Design of Materials Properties by Microstructure and External Fields
36.	Dr. Julia Ivanisenjko, KIT, Germany	9 March 2017	IIM Talk: Application of Severe Plastic Deformation for the Processing of High-Entropy Alloys
37.	Dr. Daniel Miracle, AF Research Laboratory, Materials and Manufacturing Directorate, OH, USA	15 March 2017	IIM Talk: New Strategies and Tests to Accelerate Discovery and Development of Multi-Principal Element Structural Alloys
38.	Prof. Christopher Berndt, Swinburne University, Melbourne, Australia	16 March 2017	IIM Talk: Challenges for Thermal Spray: What Do We Do Next?

4.14.6.Other Activities of the Department

Activities initiated

- An M.Tech. programme in Industrial Metallurgy was started through e-learning mode.
- M.Tech. projects were also initiated with various industries.

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 representatives of the then Ministry of Education, CSIR, UGC, DST, ONGC, 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.

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 Ocean Engineering, M.Tech in Ocean Technology – UoP (NIOT), M.Tech. in Offshore Structural Engineering – UoP (L&T), M.Tech in Petroleum Engineering, M.S. and Ph.D. in Ocean Engineering and Petroleum Engineering.

Students on roll as of September 2016 + M.S. and Ph.D admission in January 2017

Programme	Year I	Year II	Year III	Year IV	Year V and Others	Total
B.Tech.	35	28	31	32	35	161
Dual Degree	18	13	14	17	21	83
M.Tech.	56	40	-	-	-	96
M.S.	12	20	12	3	5	52
Ph.D.	26	22	22	44	37	151
Total	**153**	**123**	**79**	**96**	**98**	**578**

Students/scholars who attended conference/seminar/symposia abroad/India

Sl. No.	Student/Scholar	Roll No.	Conference/Seminar/Symposia/Workshop	Date and Venue	Financial Assistance from
Abroad					
1.	Satish	OE15S005	3rd International Conference on Coastal Zone Engineering and Management in the Middle	Dubai	DST Project
2.	R. Sukanya	OE15S026	3rd International conference on Coastal Zone Engineering and Management in the Middle East	Dubai	19-21 November 2017
3.	D. Daniel Raj	OE15S028	3rd International Conference on Coastal Zone Engineering and Management	Dubai	19-21 November 2017
4.	D. Daniel Raj	OE15S028	21st International Conference on Hydraulics, Water Resources and coastal Engineering	Pune	8-10 December
5.	R. Suchithra	OE15D014	Comparative Performance of Doubly-Fed Induction Generator with Wells and Impulse Turbine	Asian Wave and Tidal Energy Conference, Singapore	24-28 October 2016
6.	K. Ezhilsabareesh	OE15S004	Parametric Study of Blade Shape to Enhance Performance of a Turbine Used in OWC	2nd International Conference on Renewable Energies Offshore, Lisbon, Portugal	24–28 October 2016
7.	E. Dinesh Kumar	OE13D028	A Study on Solitary Wave Overtopping using Lattice Boltzmann Method	Rio de Janerio, Brazil	16–21 October 2016
8.	D. Daniel Raj	OE15S028	Experimental Investigation on Optimizing the Projecting Side Walls of an Oscillating Water Column	Rio de Janerio, Brazil	16–21 October 2016

Students/scholars who won outside prizes and awards

Sl. No.	Student/Scholar	Roll No.	Prize	Awarded by
1.	Nithesh Kumble Gokuldas	OE10D002	Best Presentation	Imari Saga, Japan

4.15.3. Faculty and their Activities

Faculty

Names	
Professors	
Prof. S.A. Sannasiraj (Head of the Department) Prof. S.K. Bhattacharyya Prof. V. Sundar Prof. R. Sundaravadivelu Prof. V. Anantha Subramanian Prof. K. Murali Prof. S. Surendran Prof. P. Krishnankutty Prof. S. Nallayarasu Prof. S. Chandrasekaran Prof. P. Shanmugam Prof. R. Panneer Selvam Prof. G. Suresh Kumar Prof. Palaniswamy Ananthakrishnan	Major areas of specialization Naval Architecture Ocean Engineering Petroleum Engineering Offshore Technology Program Dr. Rajesh R. Nair Dr. Rajiv Sharma Dr. Jitendra Sangwai Dr. Abdus Samad Dr. Nilanjan Saha
Associate Professors	
Assistant Professors	
Dr. Deepak Kumar Dr. V. Sriram Dr. Tarun K Chandrayadula Dr. R. Vijay Kumar	

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

Sl. No.	Coordinator(s)	Title	Period and Place
Conferences			
1.	Dr. Abdus Samad	Surface Wave Effect on Marine Current Turbine, Modelling and Analysis (ICMAE)	18-22 July 2016, London, UK
2.	Dr. Abdus Samad	Control Modeling of Tidal Turbine Performance for Indian Remote Islands (ICMAE)	18-22 July 2016 London, UK
3.	Prof. V. Sundar	International Conference in Hydrodynamics, ICHD 2016	17-26 September 2016, Netherlands
4.	Prof. V. Sundar	9th International Conference on Coastal and Port Engineering in Developing Countries (PIANC-COPEDEC IX)	16-21 October 2016, Rio de Janeiro, Brazil
Symposia			
1.	Dr. Abdus Samad	ASME Turboexpo 2016	Seoul 2016
2.	Dr. Abdus Samad	Brainpool Invited Scientist Fellowship, Seoul National University	South Korea, 2016
Workshops			
1.	Dr. Abdus Samad	KITECH-IITM workshop	26-27 March 2017, IIT Madras
2.	Dr. Rajesh Nair	Application of Ground Penetrating Rader Methods in the Design of Foundation of Building, Highway and Bridges, Industrial Structure, Oil Well Pad and Underground Structures	22-24 March 2017
3.	Dr. Abdus Samad	Unsteady flow and Hysteresis Behavior of a Turbine Used in a Wave Energy Harvesting Plant Workshop on Brain Pool Program	13-14 July 2016, Seoul, Republic of Korea

Special lectures delivered by the faculty in other institutions

Sl. No.	Faculty Member	Topic	Institution	Date
1.	Prof. V. Sundar	"Adaptation to natural coastal hazards – case studies along the Indian coast" in the 3rd International Conference on Coastal Zone Engineering and Management in the Middle East	Arabian Coast 2016, Dubai	19-21 November 2016
2.	Prof. V. Sundar	"Comprehensive Shoreline Management Plan for Tamil Nadu Coast" Pre-conference Seminar on Climate Resilient Coastal Protection and Management CWPRS	Pune	7 December 2016
3.	Prof. S. A. Sannasiraj	Ocean Energy Resource Potential in India and its Economics, IORA Blue Economy Dialogue	RIS and Ministry of External Affairs, New Delhi	4-5 November 2016
4.	Prof. S. A. Sannasiraj	Coastal Protection Strategies and Need of Shoreline Management Plan, National Symposium on Climate Change and Coastal Vulnerability, TROPMET 2016	Indian Meteorological Society, Vishakhapatnam	20-22 December 2016

Visits abroad by faculty

Sl. No.	Faculty Member	Country Visited	Date	Purpose of visit	Funding from
1.	Prof. V. Sundar	Russia	8-14 May 2016	Scientific collaboration within the join RFBR	DST Project
2.	Prof. V. Sundar	Singapore	25-27 May 2016	International experts of Coastal Adaptation Study	Project
3.	Prof. V. Sundar	Portland, Oregon	27-30 June 2016	International Symposium on Hydraulic Structures	Registration fee from CPDA funds Other claim from project
4.	Prof. S. Surendran	Dhaka	9-10 December 2016	MARTEC conference held in BUET	CPDA
5.	Prof. P. Krishnankutty	AZ, USA	11-17 November 2016	ASME International Mechanical Engineering Congress & Exposition	CPDA & PCF
6.	Prof. V. Sundar	Colombo, Sri Lanka	28-31 August	20th Congress of the Asia Pacific Division of the International Association for Hydro Environment Engineering and Research	CPDA
7.	Dr. Abdus Samad	Cheonan-si, Chungcheongnam-do, Republic of Korea	September 2016	Korea Institute of Industrial Technology (KITECH)	Funding from Korea Institute of Industrial Technology (KITECH)

Honours and awards obtained by faculty

Sl. No.	Faculty member	Award	Awarded by	Awarded for	Date
1.	Dr. Abdus Samad	Melpadom Attumalil Georgekutty	Mar Thoma Syrian Church, Kerala, India	Young Scientist Award 2016	January 2017

4.15.4. Design and Development Activities

New facilities added or major equipment procured

Sl. No.	Name of Equipment	Amount (lakhs of ₹)
1.	Prof. P. Shanmugam Ocean Optics and Imaging Laboratory An integrated sensor mounting cage for underwater deployment of instruments on cruise VSF (Volume Scattering Function) Meter to measure angular scattering pattern of underwater light field	62

4.15.5. Research and Consultancy

Sponsored research projects

Sl. No.	Title	Period	Funding Agency	Amount (lakhs of ₹)	Co-ordinators
1.	Nonlinear Interaction between Extreme Wave and Floating Bodies with Deformable Structure	One year	DST-UKIERI	-	Dr. V. Sriram, Prof. V. Sundar, Prof. Murali, Prof. Sannasiraj, Dr. S. Yan, UK, Prof. Qingwei Ma, UK

Industrial Consultancy Projects

Sl. No.	Faculty Member	Title	Amount (lakhs of ₹)
1.	Prof. P. Krishnankutty and Prof. V. Anantha Subramanian	Model Test of Floating Solar Energy Platform	2.87
2.	Prof. S. Surendran	Providing Technical Specification and Vetting Design of Boat Ambulance	6.9
3.	Prof. R. Sundaravadivelu	PMC for Restoration Rehabilitation of Breasting and Mooring Dolphins of OS TT at VPT	52.9
4.	Prof. R. Sundaravadivelu	Technical Advisory for Tender Stage for EPC Tender for Tharangambadi Supercritical Thermal Power Project	5.75
5.	Prof. K. Murali, Prof. R. Sundaravadivelu and Prof. S.A. Sannasiraj	Provision of Consultancy Services for Perimeter Security Infrastructure at Minniebay and Garacharma Defence Land Port Blair	79.8
6.	Prof. S. Nallayarasu	Preliminary Concept Selection Study	6.8
7.	Prof. V. Sundar, Prof. S. A. Sannasiraj and Prof. K. Murali	Hydrodynamics Sedimentation Studies and Shoreline Management at Andhra Pradesh	17.25
8.	Prof. R. Sundaravadivelu	Dredging of Satapada Jetty Periphery in Puri district, Odisha	5.17
9.	Prof. R. Sundaravadivelu	Taking Pre and Post Levels of Dredging and Calculation of Dredging Quantity in Removal of Shoals at Upstream of Mahanadi Barrage	51.75
10.	Prof. R. Sundaravadivelu	Construction of IVVT Terminal at Sahibganj, Jharkhand for Inland Waterways Authority of India (IWAI)	15
11.	Prof. R. Sundaravadivelu	Reconstruction of N1 and N3 Jetty at Visakhapatnam	92.77
12.	Prof. R. Sundaravadivelu	Basin Design and Coast Estimate for Marine Structures at Haldia	9
13.	Prof. S. Nallayarasu	Pre-Bid Engineering for KG DW 98/2 project	26
14.	Prof. V. Anantha Subramanian	Hydrodynamic Test on the New Coastal Research Vessel for NIOT	36
15.	Prof. S. Nallayarasu	Proof Checking of Container Berth at Vizhinjam Port, Kerala	26
16.	Prof. S.A. Sannasiraj, Prof. K. Murali and Prof. V. Sundar	Feasibility study for the development of a jetty off GHCL Sutrapada	19.55
17.	Prof. Abdus Samad	A Novel Energy Harvester from Any Vibrating Source, IITM	2
18.	Prof. V. Sundar and Prof. S. A Sannasiraj	Executive Engineer, WRD, Araniran Basin Division, Chepauk	4.02
19.	Dr. R. Vijayakumar	Indian Navy, Directorate of Naval Design, New Delhi	28.98
20.	Prof. S. Nallayarasu	Mumbai Port Trust, Mumbai	30
21.	Prof. V. Anantha Subramanian	Touhindal Islam, Ananda Shipyard Ltd., Dhaka, Bangladesh	7.02
22.	Prof. S. Nallayarasu	Sapurakencana, Petroleum, SKCP	6.60
23.	Prof. P. Shanmugam	SA Engineering College, Avadi	5
24.	Prof. S. Nallayarasu	Preparation of port master plan and DPR for Keta Lagoon, Ghana	50.62
25.	Prof. V. Anantha Subramanian	Testing of Aquaculture Cage - Garwar wall Ropes Ltd Pune	11.50
26.	Prof. R. Sundaravadivelu and Dr. Nilanjan Saha	Engaging IIT Madras, a reputed consultant, for design of temporary dyke - Reliance Infrastructure Ltd	8.62
27.	Prof. R. Sundaravadivelu	Stability cheek for handling bigger size vessel for existing breakwater berth	5.75
28.	Prof. R. Sundaravadivelu	Design of wharf for special storage at sea port of Cuddalore Port	3.43
29.	Prof. R. Sundaravadivelu	Preparation of PPR for MPTI in Gujarat	10.26
30.	Prof. R. Sundaravadivelu	Barrage jetty backup area development, IFFCO Kandla	1.15
31.	Prof. R. Panneer Selvam and Prof. R. Sundaravadivelu	Design checking of extension of auction platform in Chennai Fishing Harbour	2.30
32.	Prof. R. Sundaravadivelu and Dr. Nilanjan Saha	Expertise consultancy services for outer terminal-II at HDC Haldia	80.50
33.	Dr. Rajiv Sharma	Design and development of a completion fluid for high pressure and high temperature	1,62, 99, 925
34.	Dr. V. Sriram and Prof. S.A. Sannasiraj	To inspect and issue stability certificate	42,550
35.	Prof. S. A. Sannasiraj	Naval refit jetty	60
36.	Prof. R. Panneer Selvam	Proof Checking Kudankulam Temporary Dyke - Indian Tobacco Division	5.75
37.	Prof. R. Sundaravadivelu	The structural stability of only 2 nos ship loaders and 2 No's bucket wheel reclaimas	2.30
38.	Prof. R. Sundaravadivelu	Construction of multimodal terminal at Varanasi, Uttar Pradesh for IWAD	17.25
39.	Dr. Jitendra Sangwai	Process Engineering at Biogas Plant	1.34
40.	Prof. V. Sundar and Prof. S.A. Sannasiraj	Study Onshore Protection Measures in front at Administrative Building at Chidambaranar Port Trust	16.10
41.	Prof. S. Nallayarasu	Verification of CIB4	13.68
42.	Prof. R. Sundaravadivelu	Conducting Health Study of the Central Platform at South Tanker Berth (STB)	1.72
43.	Prof. R. Sundaravadivelu	Proof checking of structural 220 residential quarters for RAF at Coimbatore	3.85

Faculty members' participation with other institution under MoUs

Sl. No.	Faculty Member	Details of Participation	University/Institution
1.	Prof. S. Surendran	IIT Madras, August 2016	Pusan National University, Republic of Korea
2.	Prof. S.K. Bhattacharrya	November 2016	University of Tasmania, Australia

Research publications of the faculty members and research scholars

Total number of papers published in refereed international journals: 62

Total number of papers published in refereed national journals: 2

Papers presented at National/International conferences Publications in proceedings of national conferences: 23

Papers published in refereed international journals

1. T. Sharma, S. Iglauer and J.S. Sangwai. 2016. Silica nanofluids in an oilfield polymer polyacrylamide: interfacial properties, wettability alteration, and applications for chemical enhanced oil recovery. *Industrial and Engineering Chemistry Research* 55(48):12387-12397. doi:10.1021/acs.iecr.6b03299
2. P. Halder and A. Samad. 2016. Optimal wells turbine speeds at different wave conditions. *International Journal of Marine Energy* 16: 133-149. doi: 10.1016/j.ijome.2016.05.008
3. V. Renu and G.S. Kumar. 2016. Numerical modeling on benzene dissolution into groundwater and transport of dissolved benzene in a saturated fracture-matrix system. *Environmental Processes* 3(4):781-802. doi:10.1007/s40710-016-0166-y
4. S.A. Sannasiraj and V. Sundar. 2016. Assessment of wave energy potential and its harvesting approach along the Indian coast. *Renewable Energy* 99:398-409. doi:10.1016/j.renene.2016.07.017
5. S. Nallayarasu and T.P. Mathai. 2016. Effect of Mathieu instability on motion response of Spar hull with heave damping plate. *Ships and Offshore Structures* 11(8):833-846. doi:10.1080/17445302.2015.1073866
6. V.C. Nair, S. Ramesh, G.A. Ramadass and J.S. Sangwai. 2016. Influence of thermal stimulation on the methane hydrate dissociation in porous media under confined reservoir. *Journal of Petroleum Science and Engineering* 147: 547-559. doi:10.1016/j.petrol.2016.09.017
7. D. Mech and J.S. Sangwai. 2016. Phase equilibrium of the methane hydrate system in the presence of mixed promoters (THF + TBAB) and the effect of inhibitors (NaCl, methanol, and ethylene glycol). *Journal of Chemical and Engineering Data* 61(10):3607-3617. doi:10.1021/acs.jced.6b00518
8. R.T. Veettil and G.S. Kumar. 2016. Numerical modeling on the sensitivity of directional dependent interface heat transfer on thermal transport in a coupled fracture-matrix system. *Geosciences Journal* 20(5):639-647. doi:10.1007/s12303-015-0054-x

9. S. John Ashlin, V. Sundar and S.A. Sannasiraj. 2016. Effects of bottom profile of an oscillating water column device on its hydrodynamic characteristics. *Renewable Energy* 96: 341-353. doi:10.1016/j.renene.2016.04.091
10. S.A.I. Bellary and A. Samad. 2016. Centrifugal impeller blade shape optimization through numerical modeling. *International Journal of Fluid Machinery and Systems* 9(4):313-324. doi:10.5293/IJFMS.2016.9.4.313
11. D. Mech, P. Gupta and J.S. Sangwai. 2016. Kinetics of methane hydrate formation in an aqueous solution of thermodynamic promoters (THF and TBAB) with and without kinetic promoter (SDS). *Journal of Natural Gas Science and Engineering* 35: 1519-1534. doi:10.1016/j.jngse.2016.06.013
12. D. Mech and J.S. Sangwai. 2016. Effect of molecular weight of polyethylene glycol (PEG), a hydrate inhibitive water-based drilling fluid additive, on the formation and dissociation kinetics of methane hydrate. *Journal of Natural Gas Science and Engineering* 35: 1441-1452. doi:10.1016/j.jngse.2016.06.020
13. K. Narendran, K. Murali and V. Sundar. 2016. Investigations into efficiency of vortex induced vibration hydro-kinetic energy device. *Energy* 109: 224-235. doi:10.1016/j.energy.2016.04.110
14. R. Vivek and G.S. Kumar. 2016. Numerical investigation on effect of varying injection scenario and relative permeability hysteresis on CO_2 dissolution in saline aquifer. *Environmental Earth Sciences* 75(16). doi:10.1007/s12665-016-5959-9
15. R. Rajita Shenoi, P. Krishnankutt and R. Panneer Selvam. 2016. Study of maneuverability of container ship with nonlinear and roll-coupled effects by numerical simulations using RANSE-based solver. *Journal of Offshore Mechanics and Arctic Engineering* 138(4). doi:10.1115/1.4032895
16. V. Renu and G. Suresh Kumar. 2016. Temporal moment analysis of multi-species radionuclide transport in a coupled fracture-skin-matrix system with a variable fracture aperture. *Environmental Modeling and Assessment* 21(4):547-562. doi:10.1007/s10666-016-9515-5
17. A. Subbulakshmi and R. Sundaravadivelu. 2016. Heave damping of spar platform for offshore wind turbine with heave plate. *Ocean Engineering* 121: 24-36. doi:10.1016/j.oceaneng.2016.05.009
18. D.S. Bhaskara Rao and R. Panneer Selvam. 2016. Response analysis of tension-based tension leg platform under irregular waves. *China Ocean Engineering* 30(4):603-614. doi:10.1007/s13344-016-0038-2
19. N. Natarajan and G. Suresh Kumar. 2016. Effect of sips sorption isotherm on contaminant transport mechanism in fractured porous media. *KSCE Journal of Civil Engineering* 20(5):1714-1720. doi:10.1007/s12205-015-1424-7
20. B. Rajesh Reguram, S. Surendran and S.K. Lee. 2016. Application of fin system to reduce pitch motion. *International Journal of Naval Architecture and Ocean Engineering* 8(4):409-421. doi:10.1016/j.ijnaoe.2016.05.004
21. P. Shanmugam, T. Varunan, S.N. Nagendra Jaiganesh, A. Sahay and P. Chauhan. 2016. Optical assessment of colored dissolved organic matter and its related parameters in dynamic coastal water systems. *Estuarine, Coastal and Shelf Science* 175: 126-145. doi:10.1016/j.ecss.2016.03.020
22. E.C. Santhosh and J.S. Sangwai. 2016. A hybrid differential evolution algorithm approach towards assisted history matching and uncertainty quantification for reservoir models. *Journal of Petroleum Science and Engineering* 142: 21-35. doi:10.1016/j.petrol.2016.01.038
23. E.A. Gokul and P. Shanmugam. 2016. An optical system for detecting and describing major algal blooms in coastal and oceanic waters around India. *Journal of Geophysical Research: Oceans* 121(6):4097-4127. doi:10.1002/2015JC011604
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25. S. Said, V. Govindaraj, J.-M. Herri, Y. Ouabbas, M. Khodja, M. Belloum, J.S. Sangwai and R. Nagarajan. 2016. A study on the influence of nanofluids on gas hydrate formation kinetics and their potential: Application to the CO_2 capture process. *Journal of Natural Gas Science and Engineering* 32: 95-108. doi:10.1016/j.jngse.2016.04.003
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5. N. Senthil Kumar and S. Nallayarasu. Experimental and numerical investigation on the effect of varying hull shape near the water plane on the mathieu-type instability of spar. *Proceedings of the International Conference on Offshore Mechanics and Arctic Engineering – OMAE* 1. doi: 10.1115/OMAE2016-54779
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11. R.K. Singh and P. Shanmugam. Destriping Ocean Color Monitor-2 data. 2016 *Proceedings of SPIE - The International Society for Optical Engineering* 9881. doi: 10.1117/12.2223512
12. M.H. Siddique, K.R. Mrinal and A. Samad. Optimization of a centrifugal pump impeller by controlling blade profile parameters. *Proceedings of the ASME Turbo Expo* 2C-2016. doi: 10.1115/GT2016-56604
13. S.K. Sahu and P. Shanmugam. Scattering phase function for particulates-in-water: Modeling and validation. *2016 Proceedings of SPIE - The International Society for Optical Engineering* 9882. doi: 10.1117/12.2223570
14. P.J. Dev and P. Shanmugam. Determination of immersion factors for radiance sensors in marine and inland waters: A semi-analytical approach using refractive index approximation. 2016 *Proceedings of SPIE - The International Society for Optical Engineering* 9878. doi: 10.1117/12.2223711
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16. M.J. Rao, S. Nallayarasu and S.K. Bhattacharyya. Assessment of nonlinear heave damping model for spar with heave plate using free decay tests. *2016 Proceedings of the International Conference on Offshore Mechanics and Arctic Engineering – OMAE* 2. doi: 10.1115/OMAE2016-54404
17. R.T. Veedu and P. Krishnankutty. Numerical study on the maneuvering of a ship in waves based on unified state space model. *2016 Proceedings of the International Conference on Offshore Mechanics and Arctic Engineering – OMAE* 7. doi: 10.1115/OMAE2016-54311
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20. E. Alvarez, B. Sullivan and V. Sundar. Applications of geosynthetics for integral solutions for beach restoration and long-term management. *GA 2016 - 6th Asian Regional Conference on Geosynthetics: Geosynthetics for Infrastructure Development, Proceedings* pp. 941-949
21. P. Halder and A. Samad. Marine energy turbine performance: effect of blade sweep. 5th International Conference on Advances in Energy Research (ICAER) 2015 90: 245-249. 2016. doi: 10.1016/j.egypro.2016.11.191
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Proceeding of 4th International Conference on Process Engineering and Advanced Materials (ICPEAM 2016) 148:1220-1224. doi: 10.1016/j.proeng.2016.06.455

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Distinguished visitors to the Department

Sl. No.	Name and Designation	Date	Purpose of Visit
1.	Dr. Narakom Srinil, School of Marine Science and Technology, Newcastle University	29-31 March 2017	Phenomenological Modelling of Fluid–Flexible Structure Interactions
2.	Prof. Dhanak, Department of Ocean and Mechanical Engineering, and Director, SEATECH	6 February 2017	Discuss the research collaboration between IIT Madras and Florida Atlantic University
3.	Mr. Leif Broberg, Flowtech, the owners of the ShipFlow Software	9 March 2017	Shipflow Software Features and its Applications
4.	Rear Admiral Chandra Shekhar Rao, NM, Director General Naval Design (Submarine Design Group), Indian Navy	24 November 2016	MARHY 2016
5.	Dr. S. Neelamani, Senior Research Scientist, Kuwait Institute of Scientific Research, Kuwait	5 December 2016	Recent Innovations in Marine Structures
6.	Shri Anil Kumar Sachan, IDT, ONGC	18 December 2016	Petroleum Science and Technology, ICPST 2016
7.	Capt. J. Suresh, Commanding Officer, Indian Naval Ship, Adyar	10-12 March 2017	Wavez 2017
8.	Raghu Ramamoorthy, Director of Petrophysics, United Arab Emirates	6 September 2016	The Historic Origins of Schlumberger
9.	Dr Pankaj Tiwari, OMV Exploration and Production GmbH	19 September 2016	Applications of Quantitative Seismic Interpretation in Reservoir Characterization (Management)
10.	Dr. Mirdula Srinivasan, Ph.D., Embassy Science Fellow, US Consulate, Chennai	20 October	2016NOAA Marine Science and Conservation Activities: Challenges and Opportunities
11.	Dr. Salahuddin Ahmed, Associate Professor, Platform Design and Survivability Office of Naval Research Global, London, UK	21 October 2016	US Office of Naval Research Global (ONRG) Overview Brief

4.16. Department of Physics

4.16.1. Introduction

The Department of Physics of Indian institute of Technology Madras was established in the year 1959. A comprehensive centre for higher education and research encompassing traditional areas and rapidly evolving frontiers, the department has been recognised internationally. Its faculty has experts in the areas of experimental solid state physics, 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) programme, 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.), M. Sc., Dual Degree (B.S. and M.S.), M. Tech. (Solid State Technology) and Ph.D.

New courses introduced

Sl. No.	Course No.	Title
1.	PH5011	Science and Technology of Solid State
2.	PH6022	Introduction to Nanoscience
3.	PH5310	Synthesis and Characterisation of Functional Materials

Students on roll as of September 2016 + M.S. and Ph.D. admitted in January 2017

Programme	Year I	Year II	Year III	Year IV	Year V and Other's	Total
B.Tech.	30	30	30	30	28	148
Dual Degree	11	06	09	18	08	52
M.Sc.	42	43	–	–	–	85
M.Tech.	9	13	–	–	–	22
Ph.D.	26	34	30	41	37+14	182
Total	**118**	**126**	**58**	**89**	**87**	**489**

Students/scholars who attended conferences/workshops/seminars/ symposia abroad/India

Sl. No.	Student/scholar	Roll No.	Conference/Seminar/ Symposium/Workshop	Date and Venue	Place Visited
Abroad					
1	Taniya Mandal	PH12D013	Superstring Solutions, Supersymmetry and Geometry Workshop	1-7 May 2016	Spain
2	K. Uday Kumar	PH12D014	**SVC TECHCON 2016** (Paper: High-efficiency magnetron sputtered tungsten oxide thin film electro-chromics with neon sputtering)	9-13 May 2016	USA
3	Ushasi Roy	PH13D014	IASBS-ICTP School on Active Matter and Chemotaxis	14-25 May 2016	Iran
4	Pritha Dolai	PH12D044	IASBS-ICTP School on Active Matter and Chemotaxis	14-25 May 2016	Iran
5	Mekha Vimal	PH15D016	International Workshop on Atomic Physics	02-27 November 2016	Germany
6	M. P. Sharannia	PH12D053	Frontiers in Theoretical and Applied Physics (FTAPS 2017) conference (poster presentation: Structural, magnetic and transport properties of $SrNdNiRuO_{6)}$	American University of Sharjah, 22-25 February 2017	UAE
7	Subhasis Samanta	PH12D056	APS March Meeting 2017 (Quantum confinement in double perovskite multilayers: Sr_2FeMoO_6-La_2CoMnO_6)	13-17 March 2017	USA

Sl. No.	Student/scholar	Roll No.	Conference/Seminar/ Symposium/Workshop	Date and Venue	Place Visited
8.	Debika Chowdhury	PH13D028	Summer School in Cosmology (poster presentation: Three-point functions in the early universe)	6-17 June 2016	Trieste, Italy
India					
1.	Debika Chowdhury	PH13D028	GIAN course: Origin and Evolution of Perturbations during Inflation and Reheating	25-30 November 2016	Chennai
2.	H.V. Ragavendra	PH16D018	GIAN course: Origin and Evolution of Perturbations during Inflation and Reheating	25-30 November 2016	Chennai
3.	H.V. Ragavendra	PH16D018	Structure Formation in Standard Cosmology workshop	23 November -19 December 2016	Hyderabad
4.	H.V. Ragavendra	PH16D018	Inter-University Centre for Astronomy and Astrophysics (Topical course: Computational Statistics and Astrostatistics)	2-10 January 2017 .	Pune

Students/scholars who won outside prizes and awards

Sl. No.	Student/Scholar	Roll No.	Prize	Awarded by
1.	A.V. Radhamani	PH10D032	International Symposium, Enhanced supercapacitive performance of Mn_2O_3-$ZnMn_2O_4$ composite nanofibers	IIT Madras
2.	P. M. Geethu	PH13D031	Second Best Award for poster, Percolation phenomena in revers microemulsions	4th International Conference on Nanostructured Materials and Nano Composites (ICNM-2017), Kottayam, 10-12 February 2017

4.16.3.Faculty and their Activities

Faculty

Name and Qualifications	Major Areas of Specialization
Professors	
Ramachandra Rao, M.S. **(Head)**	Correlation effect in metal oxide and doped diamond, electrical, optical and magnetic properties of metal oxide thin films and nanostructures and photovoltaic materials
Arul Lakshminarayan	Quantum information, complex quantum systems, mathematical physics
Neelima Gupte	Nonlinear dynamics, statistical physics
P.C. Deshmukh	Atomic and molecular physics
Prem B. Bisht	Ultrafast laser spectroscopy, fluorescence microscopy
K. Sethupathi	Experimental condensed matter physics, magnetic oxide materials and cryogenic insulation
Govindarajan Suresh	String theory
V. Srinivas	Magnetic materials
C. Vijayan	Nanophotonics, light-matter interaction
V. Sankaranarayanan	Low-temperature physics and cryogenics, magnetocaloric effect, superconductivity
S. Ramaprabhu	Nanomaterials, fuel cells, Li battery
M. V. Satyanarayana	Quantum optics, laser physics, photonics
G. Markandeyulu	Magnetism, magnetic materials
N. Harish Kumar	Superconductivity, spintronics, novel magnetic materials
S. Lakshmi Bala	Classical and quantum dynamical systems, nonlinear dynamics and chaos, chaos in gauge theories, quantum information theory
A. Subrahmanyam	Photovoltaics, photocatalysis, electrochromics, bio-medical engineering, surface engineering
V. Subramanian	Microwave techniques, propagation and devices, dielectrics and multi-ferroics
S. Kasiviswanathan	Near and far-field response of plasmonic structures, films of transparent oxide and ternary semiconductors, systems exhibiting quantum coherence
P.N. Santhosh	Multiferroics, layered oxide materials, CuO-based nanomaterials
P.B. Sunil Kumar	Soft condensed matter physics, biological physics and computational physics
L. Sriramkumar	Semi-classical and quantum gravity, inflationary cosmology and the cosmic microwave background, alternatives to inflation
V. R. K. Murthy	Microwave physics and materials
Associate Professors	
G. Aravind	Autoionisation and autodetachment resonances in atomic, molecular and cluster systems.
A. R. Ganesan	Applied optics, holography, adaptive optics
C. V. Krishnamurthy	Non-destructive evaluation, microstructural modeling, light scattering
James Libby	Experimental particle physics, flavour and neutrino experiments
Manoj Gopalakrishnan	Theoretical biological physics, stochastic processes, statistical mechanics
P. Murugavel	Ferroelectrics, dielectrics and multifunctional oxides for multiferroic and photovoltaic studies
R. Nirmala	Intermetallics
Prahallad Padhan	Magnetic materials and heterostructures, spintronic devices, electronic and magnetic properties of novel materials in nanostructure form
Prafulla Kumar Behera	Collider experiments and atmospheric neutrino experiment
Rajesh Narayanan	Condensed matter theory, strongly correlated systems, disordered systems
Ranjit Kumar Nanda	Magnetism in strongly correlated systems, graphene with defects and functionalisation, CO_2 reduction
Sudakar Chandran	Materials for energy applications, defect-structure property correlations, multifunctional materials
Somnath Chanda Roy	Experimental materials science, nanomaterials and thin films, nanotechnology for energy and environment
M. Pattabiraman	Experimental atomic physics, quantum optics, magnetometry
Mahaveer Kumar Jain	Semiconductors, photovoltaics, chemical sensors
Prasanta Kumar Tripathy	String theory, high-energy physics
Assistant Professor	
Aditi Simha	Soft condensed matter, non-equilibrium statistical physics
Ashwin Joy	Condensed matter physics
Basudev Roy	Experimental soft matter, optical tweezers
Chandrakant Mishra	Gravitational waves
Dawood Kothawala	Semi-classical gravity, quantum mechanics of black holes, QFT with minimal length scale
Dillip K. Satapathy	Structure and mechanics of polymer films, directed self-assembly of microemulsions and colloids, X-ray and neutron characterization of materials
Jayeeta Bhattacharyya	Semiconductors, optical spectroscopy, THz spectroscopy
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
Panchanan Khuntia	Experimental condensed matter physics
Prabha Mandayam	Quantum information and computing, quantum optics
Prabhat Ranjan Pujahari	Experimental high-energy physics
Shanthanu Mukherjee	Condensed matter theory
Sivarama Krishnan	Femtosecond dynamics, photonics, quantum dynamics
Sunethra Ramanan	Nuclear structure, renormalization group, effective field theories
Vaibhav Mathok	Quantum information theory, chaos and complex systems
Visiting Faculty	
Dr. Jatin Rath	Photovoltaics, nanomaterials, CVD

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

Sl. No.	Coordinator(s)	Title	Period
Workshop			
1.	Co-director	SERC School in Nuclear Physics	7-27 February 2017
2.	J. Libby (IITM), G. Mohanty (TIFR) and A. Dighe (TIFR)	9th International Workshop on the CKM Unitarity Triangle (CKM 2016), TIFR, Mumbai	28 November- 2 December 2016
Short-term courses			
1.	J. Libby	Modern Nuclear Many-body Problem	23-25 February 2017
2.	L. Sriramkumar	GIAN Course: Origin and Evolution of Perturbations during Inflation and Reheating	25-30 November 2016
3.	Sivarama Krishnan	GIAN course on Attosecond Physics: Science and Technology	5-9 November 2017

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

Sl. No.	Faculty Member	Title	Institution	Period
Workshops				
1.	S. Ramaprabhu	Synthesis and Energy Application of Carbon-Based Advanced Functional Materials	International Workshop on Advanced Functional Nanomaterials (IWAN 4)	22 March 2017
2.	S. Ramaprabhu	Science of Nanomaterials Physics Education and Research	Indian Institute of Technology Madras	29 December 2016
3.	L. Sriramkumar	The Future of Gravitational-Wave Astronomy	International Centre for Theoretical Sciences, Bengaluru	6-7 April 2016
4.		International Workshop on CMB Spectral Distortions from Cosmic Baryon Evolution	Raman Research Institute, Bengaluru	11-15 July 2016
5.		Aspects of Early Universe Cosmology	Saha Institute of Nuclear Physics, Kolkata	16-20 April 2017
6.		Aspects of Gravity and Cosmology	Inter-University Centre for Astronomy and Astrophysics, Pune	7-9 March 2017
7.	Prafulla Kumar Behera	Nuclear Safety and Security Training	Texas A&M, USA	4-10 July 2016
8.		Nuclear Safety and Security Training	Albuquerque, NM (SNL), USA	11-17 July 2016
9.		Nuclear Safety and Security Training	Oak Ridge National Laboratory (ORNL)	18-21 July 2016
10.		Nuclear Safety and Security Training	NRC Technical Training Center	22-23 July 2016
11.		Annual Meeting	Institute of Nuclear Material Management (INMM)	24-29 July 2016
12.	Chandra Kant Mishra	NWGAW 2016	Dibrugarh University	2-4 November 2016
Seminars				
1.	Prafulla Kumar Behera	CMS meeting	IOP BBSR, India	7-16 May 2016
2.		Advance Nuclear Security Workshop	IIT Kanpur, India	24-28 August 2016
3.		INO collaboration meeting	Mumbai, India	2-4 September 2016
4.		DST women scientist selection and project review	Hyderabad, India	15-18 September 2016
5.		National Conference in Neutrino Physics 2016	Chennai, India	28-29 September 2016
6.		CKM 2016 Conference	Mumbai, India	23-24 October 2016
7.		CMS week meeting	Mumbai, India	15-17 November 2016
8.		RSTV interview on CMS, CERN activities	Delhi, India	24 November 2016
9.		INO collaboration activities	Bhubaneswar, India	25-29 January 2017
10.		India CMS collaboration meeting	Pune, India	18-19 February 2017
11.		INO collaboration meeting	Varanasi, India	17-20 March 2017
Symposium				
1.	J. Libby	XXII DAE-BRNS High Energy Physics Symposium 2016	Delhi University	12-16 December 2016
Conferences				
1.	Dr. S. Ramaprabhu	Investigation on New Electrode Materials for Lithium Batteries	EMN Nanotechnology Conference, Dubai	2 April 2016
2.	Dr. Sivarama Krishnan	International Conference of Atomic Physics with Focus on Attosecond Science	Max Planck Institute for the Physics of Complex Systems, Dresden, Germany	29 November–2 December 2016
3.	Prafulla Kumar Behera	XIII Workshop on Resistive Plate Chambers and Related Detectors (RPC2016)	Ghent University, Belgium	22-26 February 2016
4.		Nuclear Safety Workshop	USA	3-29 July 2016
5.		Advance Nuclear Security Workshop	IIT Kanpur, India	24-28 August 2016
6.		NCPC 2016	Chennai, India	28-29 September 2016
7.		CKM 2016	TIFR, Mumbai, India	27 November-3 December 2016
8.		DAE-BRNS High Energy Physics Symposium	Delhi, India	12-17 December 2016
9.		104th Indian Science Congress	Tirupati, India	2-7 January 2017
10.	Dr. Jayeeta Bhattacharya	Photoluminescence quenching experiments on III-V semiconductor heterostructures using a free electron laser	Inter-University Accelerator Centre (IUAC), Delhi	6 February-7 March 2017
11.	N. Harish Kumar	6th International Conference On Electroactive Ceramics And Polymers	IIT Kharagpur	20-22 February 2017

Special lectures delivered by faculty in other institutions

Sl. No.	Faculty Member	Topic	Institution	Date
1.	Dr. M.S. Ramachandra Rao	Functional Properties of Nanostructured Electronic Systems	CEMAT, IISc, Bengaluru	18 July 2016
		Colloquium: Science of Low-Dimensional Systems and Emergence of Nanotechnology	IISER, Bhopal	2 September 2016
		Introduction to Nanoscience	Science City Lecture, Chennai	7 September 2016
		Advanced Materials in Modern-day Science and Technology (keynote address)	BRNS sponsored National Conference on Materials for Modern World (NCMMW – 2016); Eswari Engineering College	15 September 2016
		Electronic, Spectroscopic and Mechanical Properties of Thin Films, Nanostructures and Advanced Materials	Zerinke Institute, University of Groningen, Netherlands	19 September 2016
		Nanostructures and Advanced Materials for Energy Applications	Asian Consortium on Computational Materials Science (ACCMS): SRM University, Chennai in association with SINP, Kolkata	24 September 2016
2.	Dr. James Frederick Libby	Physics Advisory and Local Organizing Committee member, 9th International Workshop on the CKM Unitarity Triangle (CKM2016)	Tata Institute of Fundamental Research, Mumbai	28 November-22 December 2016
		CP Violation and Rare Decays: Beauty and Charm Hadrons	XXII DAE-BRNS High-Energy Physics Symposium 2016, University of Delhi	12-16 December 2016
3.	Dr. M. S. Ramachandra Rao	$ZnMn_2O_4$ Nanofiber Electrodes for Supercapacitor Applications	International Conference of Young Researchers on Advanced Materials (IUMRS-ICYRAM), Indian Institute of Science, Bengaluru	11-15 December 2016

Sl. No.	Faculty Member	Topic	Institution	Date
4.	Dr. Prafulla Kumar Behera	Detector and Instrumentation (session chair)	XXII DAE-BRNS High-Energy Physics Symposium 2016, University of Delhi	12-16 December 2016
		ICAL Detector for Neutrino Detection	104th Indian Science Congress, Sri Venkateswara University, Tirupati	3-7 January 2017
5.	Dr. Nirmala R.	Anisotropic magnetocaloric effect in rare earth intermetallic compounds: a case study with single crystal $Dy_5Si_2Ge_{20}$	International Conference on Magnetic Materials and Applications (ICMAGMA), Hyderabad	1-3 February 2017
		Advanced materials for magnetic cooling	National Conference on Current Trends in Advanced Materials (NCCTAM), Hindustan University, Chennai	23 February- 24 March 2017
6.	Dr. Sunethra Ramanan	SERC School for Nuclear Physics	Bharathiar University Coimbatore	7 February- 27 March 2017
7.	Dr. N. Harish Kumar	The Quest for Magnetic Semiconductors in Electroceramics	6th International Conference on Electroactive Ceramics and Polymers, IIT Kharagpur	20-22 February 2017
		Sri Spintronics and Optospintronics	Paramakalyani College, Alwarkurichi, Tamil Nadu	24 February 2017
		Magnetic Materials	SA Engineering College, Chennai	28 February 2017
8.	Dr. James Frederick Libby	Statistical Methods, Computational High-Energy Physics, UGC-Networking Resource Centre	University of Hyderabad	6-11 March 2017
9.	Arul Lakshminarayan	Of Entanglement, Quantum Chaos and Randomness	IISER Trivandrum	10 November 2016
10.	Arul Lakshminarayan	A Colloquium on Entanglement in Nonintegrable Systems	IIT Kanpur	27 January 2017
11.	Arul Lakshminarayan	Introduction to Quantum Information	UGC workshop on Quantum Information Sciences, Pondicherry University	17 February 2017
12.	Dr. Manu Jaiswal	The Elusive Determination of the Thermal Expansion Coefficient of Graphene	IUMRS-ICYRAM, IISc, Bengaluru	13 December 2016
13.	Dr. Manu Jaiswal	Graphene Membranes on Dynamical Substrates	10th India-Singapore Joint Physics Symposium, IISc, Bengaluru	24 February 2017
14.	V. Subramanian	Metamaterials for Microwave Applications	KIIT, Bhubaneswar	10 April 2017
15.	Prabha Mandayam	A lecture at UGC-SAP Workshop on Quantum Information Science	Pondicherry University	17-18 February 2017
16.	Dr. S. Ramaprabhu	Science and Technology of Nanomaterials, Synthesis and characterisation of CNT and grapheme, Energy-related and environmental applications of nanomaterials nanofluids and nanolubricants	Thiyagaraj College of Engineering	31 March 2017
17.	Dr. S. Ramaprabhu	Energy Application or Nanofluid	Manonmaniam Sundaranar University, Tirunelveli	2-3 March 2017
18.	Dr. S. Ramaprabhu	Engineering Carbon-Based Nanomaterials for Applications	Crystal Growth Centre, Anna University	06 October 2016
19.	Dr. S. Ramaprabhu	Synthesis and Application of Carbon Nanotube and Reduced Graphene Oxide	IIT Bombay	10 August 2016
20.	Dr. S. Ramaprabhu	Engineering Hybrid Carbon Nanomaterials for Different Applications	IISER Thiruvananthapuram	17 June 2016
21.	Dr. S. Ramaprabhu	Synthesis and Applications of Carbon Nanotubes and Reduced Graphene Oxide	CSIR-National Institute for Interdisciplinary Science and Technology, Trivandrum	17 June 2016
22.	Dr. S. Ramaprabhu	Basics of Nanoscience and Nanotechnology, Carbon Nanotubes and Graphene: Synthesis and Applications, Applications of Nanomaterials, Hydrogen in Nanomaterials	Government College of Technology, Coimbatore	9 April 2016
23.	Dr. S. Ramaprabhu	Investigation on New Electrode Materials for Lithium Batteries	EMN Nanotechnology Conference, Dubai	2 April 2016
24.	Dr. S. Ramaprabhu	Engineering Carbon-Based Nanomaterials for Energy and Environmental Applications	IIT Guwahati	1 March 2016
25.	Dr. S. Ramaprabhu	Nanomaterials and their Applications	Madras Christian College, Chennai	23 January 2016
26.	Dr. S. Ramaprabhu	Nanomaterials and their Applications	ASM International Chennai Chapter and Madras Metallurgical Society (MMS)	23 January 2016
27.	J. Libby	Four lectures on Statistical Methods at the Xth SERC School on Experimental High Energy Physics	Delhi University	19 April-9 May 2016
28.	J. Libby	Three lectures on Statistical Methods at Workshop on Computational High Energy Physics	UGC Networking Resource Centre, University of Hyderabad	6-11 March 2017
29.	J. Libby	The Importance of psi(3770) running to LHCb and Belle II	Institute of High Energy Physics, Beijing, China	12 November 2016
30.	L. Sriramkumar	Bouncing Universes	Seminar at Saha Institute of Nuclear Physics, Kolkata	25 July 2016
31.	L. Sriramkumar	Bouncing Universes	Seminar at Department of Theoretical Physics, Tata Institute of Fundamental Research, Mumbai	21 November 2016
32.	L. Sriramkumar	Whither inflation?	Colloquium at Department of Theoretical Physics, Tata Institute of Fundamental Research, Mumbai	22 November 2016
33.	L. Sriramkumar	Unraveling the Mysteries of the Early Universe	Hindustan University, Chennai	10 January 2017
34.	L. Sriramkumar	Viable Tensor-to-Scalar Ratio in a Symmetric Matter Bounce	Invited for talk in a workshop on Aspects of Early Universe Cosmology, Saha Institute of Nuclear Physics, Kolkata	17 January 2017
35.	L. Sriramkumar	Inflation and Alternatives	Invited for talk in a workshop on Aspects of Gravity and Cosmology, Inter-University Centre for Astronomy and Astrophysics, Pune	7 March 2017
36.	Sivarama Krishnan	Small Atomic Systems in Helium Nanodroplets	Max Planck Institute for the Physics of Complex Systems, Dresden Germany as a part of the International Workshop on Atomic Physics	29 November 2016
37.	C. V. Krishnamurthy	Prof. K. Lakshminarayanan Endowment Lecture	Department of Physics, Ramakrishna Mission Vivekananda College, Chennai	16 February 2017
38.	C. V. Krishnamurthy	Chief guest at the first anniversary of the NDE Division; presented a lecture on Non-destructive Techniques Relevant to Steel Industry	Tata Steel, Jamshedpur	28 February 2017
39.	P. Murugavel	Ferroelectric Critical Thickness Limit and its Application in Tunneling Devices	National Centre for Nanoscience and Technology, Madras University	8 February 2017
40.	P. Murugavel	The Role of Interface at the Ferroelectric Critical Thickness Limit	Department of Physics, Manonmaniam Sundaranary University	3 March 2017
41.	N. Harish Kumar N. Harish Kumar	A special lecture on Magnetic Materials	SA Engineering College, Chennai	28 February 2017
42.		Lecture on Fascinating World of Physics	Shri Ganambica Degree College, Madanapalli, Andhra Pradesh	23 April 2017

Visits abroad by faculty

Sl. No.	Faculty member	Country Visited	Date	Purpose	Funding from
1.	Dr. S. Ramaprabhu	UAE	31 March-4 April 2016	Deliver a talk in the EMN Dubai Meeting 2016	
2.	Dr. Rajesh Narayanan	South Korea	31 March-30 September 2016	Sabbatical leave to accept the position of Visiting Researcher at Asia Pacific Center for Theoretical Physics	
3.	Dr. Sudakar Chandran	USA	18-22 April 2016	Attend the Gavin Lawes Memorial Symposium	
4.	Dr. A. Subrahmanyam	USA and Norway	9-26 May 2016	International Conference of the Society of Vacuum Coaters and for New Indigo Project Meeting 2016	
5.	Dr. Prafulla Kumar Behera	Switzerland	23 May 2016-7 June 2016	Activities related to the CMS Collaboration	
6.	Dr. M. S. Ramachandra Rao	USA	1 April 2016	Delivered an invited talk at MRS Spring meeting at Phoenix, Arizona	
7.	Dr. M. S. Ramachandra Rao	Netherlands and France	22 February-3 March 2017	Deliver a talk and conducting the Ph.D. Viva at University of Groningen	
8.	Dr. Sivarama Krishnan	Italy	26 February-7 March 2017	International research visit at the Elettra Synchrotron following successful grant to the proposal (# 20160497) in global competition on Molecular Isomerization in He anodroplets	
9.	J. Libby	China	20-31 July 2016	Collaboration on the BESIII experiment Institute of High Energy Physics, Beijing	Exploratory Research Proposal
10.	J. Libby	China	11-16 November 2016	BES III Collaboration Meeting in Winter 2016 Institute of High Energy Physics, Beijing	Exploratory Research Proposal
11.	Dr. James Frederik Libby	China	9-14 March 2017	Attended the BESIII Workshop	
12.	Dr. Prafulla Kumar Behera	Switzerland	26 March-11 April 2017	Attended the CMS Collaboration meeting and detector development activities, CERN European Organization for Nuclear Research, Geneva	
13.	Arul Lakshminarayan	Germany	20-27 August 2016	Max Planck Institute, Dresden	CPDA+Local hospitality
14.	Ashwin Joy	China	9-12 May 2016	A talk on the joint conference of the 12th Asia Pacific Plasma Theory Conference (APPTC) and the 10th West Lake International Symposium will be held at Zhejiang University, Hangzhou, China	NFIG
15.	L. Sriramkumar	USA	29 July-7 August 2016	To explore interactions with Kenyon College, Gambier, Ohio, USA and IIT Madras	Kenyon College, Gambier, Ohio, USA
16.	L. Sriramkumar	USA	1-16 September 2016	Department of Physics and Astronomy, Johns Hopkins University, Baltimore, USA	Indo-US Science and Technology Forum
17.	Sivarama Krishnan	Germany Dresden	27 November-2 December 2016	Invited for talk at Max Planck Institute for the Physics of Complex Systems, Dresden Germany	DST-Max Planck Partner Group
18.	Sivarama Krishnan	Germany, Heidelberg	5-9 December 2016	Collaborative research, Max Planck Institute for Nuclear Physics, Heidelberg, Germany	DST – Max Planck Partner Group
19.	Sivarama Krishnan	Trieste, Italy	9-23 December 2016	Research campaign following successful proposal for beamtime at Elettra Sinctrone, Trieste, Italy	DST, Government of India
20.	Prafulla Kumar Behera	Belgium	22-26 February 2016	Delivering a talk at RPC2016 conference	CPDA
21.	Prafulla Kumar Behera	Japan	13-25 June 2016	Belle Experiment Research Activities	DST
22.	Prafulla Kumar Behera	USA	July 2016	Visit with students M. Tech. (Ne) for Nuclear Safety and Security Workshop	US State Department

Honours and awards obtained by faculty

Sl. No.	Faculty Member	Award	Awarded by	Awarded for	Date
Honours					
1.	Dr. M. S. Ramachandra Rrao	Nomination on Board of Governors of IISER-TVM	Indian Institute of Science Education and Research, Thiruvananthapuram (IISER-TVM)		Two years w.e.f. 1 February 2017
2.	Panchanana Khuntia	Outstanding Reviewer	Institute of Physics, UK	Outstanding Reviewer	April 2017
3.	Sivarama Krishnan	Nominated as Head of a Partner Group	Max Planck Society, Germany	Scientific work hitherto as a young researcher	November 2016
Awards					
1.	Dr. Manu Jaiswal	Young Scientist Award 2016 (Saraswathy Sreenivasan Prize)	The Academy of Sciences, Chennai	Contribution to research	March 2017
2.	Dr. Manu Jaiswal	Young Faculty Recognition Award 2016	IIT Madras	Excellence in Teaching and Research	5 September 2016
3.	Dr. C.V. Krishnamurthy	DRDO Academy Excellence Award for 2015	DRDO		
4.	Dr. Sivarama Krishnan	Early Career Research Award	DST, Government of India	Young Researcher Contributions to Science and Technology	March 2017
5.	Chandra Kant Mishra	Special Breakthrough Prize in Fundamental Physics awarded to the LIGO team	Breakthrough Prize Foundation	Detection of Gravitational Waves	4 December 2016

Fellowships of academies and professional societies

Sl. No.	Faculty Member	Year of Admission
Others		
1.	Max Planck Partner Groups Dr. Sivarama Krishnan, Heading a Max Planck India Partner Group, Max Planck Society, Germany	August 2016-August 2019

Editorial boards of journals

Sl. No.	Faculty Member	Position	Journal
1.	Panchanana Khuntia	Editor	*Frontiers in Physics*

4.16.4.Design and Development Activities

New facilities added or major equipment procured

Sl. No.	Equipment	Amount (lakhs of ₹)
1.	Electrochemical workstation	41
2.	LCG computing facility by NKN	~15
3.	RPC detector development facility	~300 (over last three years)

Patents filed

Sl. No.	Faculty Member	Title of patent
1.	Dr. S. Ramaprabhu	Synthesis of Highly Nitrogen Doped Carbon Nanostructures (Ref: 201641029179), August 26, 2016
2.	Dr. S. Ramaprabhu	Binary Reaction Embedded Anode for High Current Density and Long Cycle Life Lithium ion Battery (Ref: TEMP-E-1-6749-2017-CHE)
3.	Dr. S. Ramaprabhu	New Methodology to Enhance the Cycle Life of the Secondary Batteries (Ref: TEMP-E-1-6805-2017-CHE)
4.	V. Subramanian	Microwave Absorbing Kitchen Apron

Patent awarded

Sl. No.	Faculty member	Title of patent
1.	Dr. Sivarama Krishnan, Daniel A. Corliss, Sadanand V. Deshpande, Veeresh V. Deshpande and Oleg Gluschenkov	Dual Pulse Driven Extreme Ultraviolet (EUV) Radiation Source utilising a Droplet Comprising a Metal Core With Dual Concentric Shells of Buffer Gas

4.16.5. Research and Consultancy

Sponsored research projects

Sl. No.	Title	Period	Funding Agency	Amount (lakhs of ₹)	Co-ordinators
1.	A Fine-control Knob for Populating 2D Atomic Crystals with Atomic-scale Defects	One year	IC&SR Research Fund	7.5	Dr. Manu Jaiswal
2.	Development of Non-oxide Based Electrode Materials for PEC Tandem Cell towards Efficient Water Splitting	Two years	DST	19.20	Dr. M.S. Ramachandra Rao, Dr. Meenal Sudheer Deo (PDF)
3.	Quantum-Correlated Measurements with BESIII	One year	IC&SR Research Fund	9	Dr. James Fredrick Libby
4.	Construction of an Ion-Storage Ring and a Novel Anion Source Coupled to it for Photon-ion Collision Studies	One year	IC&SR Research Fund	10	Dr. G. Aravind
5.	Nitrogen-doped Partially Exfoliated Multi-walled Carbon Nanotubes-PtRu Nanoparticle Hybrids as High-Performance Anode for Direct Methanol Fuel Cells	Three years	DST	29.748	Dr. S. Ramaprabhu, Dr. Manu Jaiswal
6.	High-Sensitivity Piezo-Resistive Array of Sensors based on Flexible Graphene-Metal-Polymer Based Composite Layers	Three years	MHRD	464.58	Dr. S. Ramaprabhu, Dr. K Balasubramanian, M.M., Dr. S. Varughese, CH, Dr. Abhijit Deshpande P. CH, Dr. C. Lakshman Rao, AP
7.	First Principles Modeling of Organic Inorganic Halide Erovskite Thin Film Solar Cells	Three years	CSIR-HRDG	19.88	Dr. B. Ranjit Kumar Nanda
8.	Fabrication of White Light Emitting Diode using Low Cost and Environmental Friendly Quaternary Cu-In-Zn-S-Cu-ZnO core-shell Inorganic Quantum Dots	Two years	DST – SERB	19.2	Dr. Sudakar Chandran
9.	Photocatalytic (sunlight assisted) Conversion of CO_2 to Hydrocarbon Fuel: a small step but giant leap towards sustainability	Three years	MHRD	720	Dr. Somnath Chanda Roy Dr. Puspavanam, CH Dr. B.Ranjit Nanda, PH Dr. T.Sundarajan, ME Dr. Somnath Bhattcharya, MM
10.	Compact Muon Solenoid (CMS) Upgrade Operation and Utilization	Three years	Department of Science and Technology	307	Dr. Prafulla Kumar Behera Dr. James Frederick Libby
11.	Growth and Characterization of n-type and p-type Diamond films: An investigation of Superconductivity in Boron-Doped Diamond Films and Electronic Transport and XPS Studies in Nitrogen-Doped Diamond Films	Two years	CSIR, IITM	18.64	Dr. M. S. Ramachandra Rao
12.	Development of Microwave Camera for Microwave Far-Field Imaging	One year	IC&SR Research Fund	8	Dr. V. Subramanian
13.	Sessile Drop Evaporation Induced Wrinkle Morphology of Freestanding Elastomer Films	One year	IC&SR	6	Dr. Dillip Kumar Satapathy
14.	Advanced X-ray Diffractometer (Rigaku) and Powder XRD (Panalytical)	One year	IC&SR	5.50	Dr. Dillip Kumar Satapathy
15.	Effect of Alcohols and Polymers on Bending Modulus of reverse Microemulsions and Swelling of Biopolymer Thin Films: Effects of Confinement and Solvent – Polymer Interaction (CRS-M-233)	Three years	UGC	1.35	Dr. Dillip Kumar Satapathy
16.	Supporting the XPS, SEM TERM	One Year	IC&SR	16.80	Dr. M.S. Ramachandra Rao
17.	Alternative Energy and Nanotechnology (AENL) Laboratory	One Year	IC&SR	7	Dr. S. Ramaprabhu
18.	Central Electron Microscopy Facility	One Year	IC&SR	9.6	Dr. Sudakar Chandran
19.	MPMS XL SQUID Magnetometer, SQUID based Vibrating Sample magnetometer (SVSM)	One Year	IC&SR	6.80	Dr. K. Sethupathi
20.	Microscopic Theory and Experimental Simulation on Multi-Band Quantum Materials	Two Years	IC&SR	5	Dr. Shantanu Mukherjee
21.	Differential Scanning Calorimeter (DSC) Thermo-Gravimetry Analyser (TGA)	One Year	IC&SR	4	Dr. Somnath Chanda Roy
22.	Development of non-Pt Electrocatalysts for Hydrogen Proton Exchange Membrane Fuel Cells	One Year	US Defence	16.2	Dr. S. Ramaprabhu
23.	Durable Fuel Cells based on Polymer-coated Nanocarbon Composites	Three years	Indo-French DST	28.35	Dr. S. Ramaprabhu
24.	High-capacity Li-rich Layered Oxide Cathode for Quick Charge Battery: Enhancing the Electrochemical Performance for Electric Vehicle Applications	Three years	DST	158.14	Dr. Sudakar Chandran Dr. B. Ranjit Kumar Nanda
25.	Enhancement of Ferroelectric and Magnetoelectric Effect in $GdMnO_3$	Two years	DST	39.93	Dr. P. Murugavel
26.	Effective Harnessing Of Light-Matter Interaction in Disordered Photonic Media	Three years	DST	47.85	Dr. C. Vijayan Dr. S. Sivaramakrishnan
27.	Effect of Crystal Symmetry and d-f-Orbitals on the Electronic Properties of Strongly Correlated Oxides and their Interfaces	Three years	DST	28.50	Dr. B. Ranjit Kumar Nanda
28.	Polarization Dependent Spectroscopic Measurements on Organic Thin Films	Three years	IC&SR IITM	21	Dr. Jayeeta Bhattacharyya
29.	Complex Systems and Math Biology	Two Years	IC&SR IITM	5	Dr. Vaibhav Madhok
30.	Flexible and High Performance Perovskite based Solar Cells on Graphene Electrodes	October 2014-October 2017	DST-A*STAR	42.7	Dr. Manu Jaiswal (PI India) Dr. Loh Kian Ping (Pi Singapore)
31.	Atomic Scale Defects in Graphene	May 2016- July 2017	IC&SR	7.5	Dr. Manu Jaiswal
32.	Quantum Key Distribution (SA-ADV-Quantum-2015-16 (C))	2016-2017	Office of PSA, GoI		Co-PI Prabha Mandayam
33.	From Charm to Beauty: Towards a Precision Measurement of the CKM Angle Gamma	28 February-1 March 2017	UGC-UKIERI (British Council)	17.22 (IITM) + 40.1 (Oxford) = 57.32	J. Libby and G. Wilkinson (Oxford)
34.	R&D efforts for University Groups for the INO Project	31 October 2013-30 October 2018	DST	321.8	P. Behera (PI), A. Prabhakar (Co-PI), N. Krishnapurna (Co-PI), S. Pavan (Co-PI), Aniruddhin (Co-PI) and N. Chandrachoodan (Co-PI)

Sl. No.	Title	Period	Funding Agency	Amount (lakhs of ₹)	Co-ordinators
35.	Indo-US Center for Fundamental Tests of Cosmology with Planck Measurements of the Cosmic Microwave Background	2015-2017	Indo-US Science and Technology Forum	20.9	L. Sriramkumar (Co-PI) With Prof. K. M. Gorski, Jet Propulsion Laboratory (JPL), California Institute of Technology, Pasadena, and Prof. Tarun Souradeep, Inter-University Centre for Astronomy and Astrophysics (IUCAA), Pune (Pis).
36.	Femtosecond Pulse Ultra-Precision Machining of Soft and Hard Materials	2016–2018	DST, Tech. and Systems Development Programme	350	Sivarama Krishnan (PI), Co-PI's: Soundarapandian S, Anil Prabhakar, Balaji Srinivasan, Nilesh J. Vasa
37.	Scaling Electron Dynamics from Angstrom to Nanoscale	2016–2018	Max Planck Society and DST, Govt of India	60000 euros + ₹ 43 lakhs	Sivarama Krishnan (PI) Co-PI: Prof. Th. Pfeifer, Director, Max Planck Institute for Nuclear Physics, Heidelberg, Germany.
38.	Seeded Femtosecond Nanoplasmas for Accelerated Neutral Atom Beams Applied to Nanolithography	2016–2018	SERB, DST, Government of India	49	Sivarama Krishnan (PI)
39.	Early Career Research Award	January 2017-December 2019	DST	49	Dr. Jayeeta Bhattacharyya, Dr. Debdutta Ray
40.	Enhancement of Ferroelectric and Magnetoelectric Effect in $GdMnO_3$ by Rare Earth Substitution	31 March 2017-30 February 2019 (two years)	SERB	39.93	P. Murugavel

Industrial Consultancy projects

Sl. No.	Faculty Member	Title	Industry	Amount (lakhs of ₹)
1.	Dr. S. Ramaprabhu	Development of Nanolubricant with Coal Mill Gearbox Oil as Base Lubricant	NTPC	86.25
2.	Dr. S. Ramaprabhu	Development of Partiallly Exfoliated Carbon Nanotubes based Li-S Battery and 2032 Coin Cells	RCI	100
3.	Dr. S. Ramaprabhu	Development of High Capacity Metal Oxide-Carbon Nano Material-based Anode Material for Sodium Ion Batteries	RCI	10
4.	Dr. S. Ramaprabhu	Development of Li-S Battery with Improved Sulphur Utilisation and Cyclic Stability	US Air Force	31.5
5.	Dr. S. Ramaprabhu	Development of non-Pt Electrocatalysts for Hydrogen Proton Exchange Membrane Fuel Cells	US Air Force	16.2

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

Sl. No.	Scholar	Place, Country visited	Purpose	Period
1.	Dinesh Kumar (PH12D005)	Japan	IITM, Chennai-SIT, Tokyo Research exchange program with JASSO scholarship	3 October 2016-30 January 2017
2.	Fabitha K. (PH11D013)	Japan	IITM, Chennai-SIT, Tokyo Research exchange program with JASSO scholarship	3 October 2016-30 January 2017
3.	Suraj T. S. (PH14D046)	Japan	IITM, Chennai-SIT, Tokyo Research exchange program with JASSO scholarship.	3 October 2016-30 January 2017
4.	Marthandao Rath (PH12D040)	Japan	IITM, Chennai-SIT, Tokyo Research exchange program with JASSO scholarship	8 January 2016-8 March 2017
5.	Dileep K. (PH15D003)	Singapore	Joint-Ph.D. Program at National University of Singapore	9 January 2017-8 January 2019
6.	Muhammed Juvaid M. (PH13D201)	Singapore	Joint-Ph.D. Program at National University of Singapore	9 January 2017-8 January 2019
7.	Debika Chowdhury (PH13D028)	Paris, France	Research visit to Institute D'astrophysique De Paris, France Under Raman–Charpak Fellowship Program	1 January 2017-30 June 2017

Faculty members' participation with other institution under MoU

Sl. No.	Faculty Member	Participation Details	University/institution
1.	Dr. Manu Jaiswal	Joint DST – A*STAR project	NUS, Singapore
2.	L. Sriramkumar	Supervising IMSc student, Rathul Nath Raveendran	Institute of Mathematical Sciences (IMSc), Chennai
3.	Sivarama Krishnan	Co-supervising Ph.D. student, Hem Kumar Srinivas, undertaking graduate research at Max Planck Institute for Nuclear Physics, Heidelberg	Max Planck Institute for Nuclear Physics, Heidelberg, Germany (Agreement with IIT-Madras as a part of DST-Max Planck Partner Group)

Research publications of the faculty members and research scholars

Total number of papers published in referred international journals: 172

Total number of papers presented in national/ international conferences: 25

Papers published in referred international journals:

1. V. Khachatryan, A. M. Sirunyan, A. Tumasyan, P. K. Behera et al. 016. Measurement of the ZZ production cross section and Z l+l-l +l - branching fraction in pp collisions at s=13 TeV. *Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics* 763: 280-303. doi: 10.1016/j.physletb.2016.10.054
2. M. R. Banki, M. Tathavadekar, V. Chunchua and S. C. Roy. 2016. Modified photo-electrochemical and photo-voltaic properties of solvothermally crystallised TiO_2 nanotube arrays. *Journal of Materials Science: Materials in Electronics.* 389(12): 12427-12437. doi: 10.1007/s10854-016-5248-0
3. The CMS collaboration, V. Khachatryan, A. M. Sirunyan, P. K. Behera et al. 2016. Search for new physics in final states with two opposite-sign, same-flavor leptons, jets, and missing transverse momentum in pp collisions at √s = 13 TeV. *Journal of High Energy Physics.* 389(12). doi: 10.1007/JHEP12(2016)013
4. V. Khachatryan, A. M. Sirunyan, A. Tumasyan, P. K. Behera et al. 2016. Measurement of the W boson helicity fractions in the decays of top quark pairs to lepton + jets final states produced in pp collisions at s=8TeV. *Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics.* 389: 512-534. doi: 10. 1016/j. physletb. 2016. 10. 007
5. N. Kajuri. 2016. Strong equivalence principle in polymer quantum mechanics and deformed Heisenberg algebra. *Physical Review D - Particles, Fields, Gravitation and Cosmology.* 389(8). doi: 10.1103/PhysRevD. 94. 084007
6. A. Pullamsetty and R. Sundara. 2016. Investigation of catalytic activity towards oxygen reduction reaction of Pt dispersed on boron doped graphene in acid medium. *Journal of Colloid and Interface Science.* 389: 260-270. doi: 10. 1016/j. jcis. 2016. 06. 069
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10. J. C. Ruiz Vargas, V. Khachatryan, A. M. Sirunyan, A. Tumasyan, P. K. Behera et al. 2016. Decomposing transverse momentum balance contributions for quenched jets in PbPb collisions at √sNN=2. 76 TeV. *Journal of High Energy Physics.* 389(11). doi: 10. 1007/JHEP11(2016)055

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22. S. Praharaj, D. Rout, B. B. Kar and V. Subramanian. 2016. Dielectric properties and glassy behavior study of $70(Na_{0.5}Bi_{0.5})TiO_3$-$30SrTiO_3$ lead-free ceramic. *AIP Conference Proceedings* 1728. doi: 10.1063/1.4946407
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Distinguished visitors to the Department

Sl. No.	Name and Designation	Date of Visit	Purpose of Visit
1.	Prof. Jaap Dijkhuis, Utrecht University, Debye Institute for Nanomaterials Science (DINS), Netherlands	6 April 2016	Nano Acoustic Pulses in Sapphire
2.	Prof. Manoj K. Harbola, IIT Kanpur	8 April 2016	Bubbles, Whisky, Wine and Physical Review Letters
3.	Dr. Satyam Mukherjee, IIM Udaipur	27 April 2016	Age of Information and Fitness of Ideas in Science and Innovation
4.	Dr. Archana Sharma, CERN, Geneva, Switzerland	4 May 2016	Particle Detectors for Radiation: High Energy Physics and Beyond
5.	Dr.Ravi Kunjwal (IMSc)	6 May 2016	Kochen-Specker Theorem and Noncontextuality
6.	Dr. Shruti Dogra, IISER Mohali	19 May 2016	Exploring Contextuality and Determining the Parity of a Permutation using an NMR qutrit
7.	Prof. Priya Mahadevan, S. N. Bose National Centre for Basic Sciences, Kolkata	13 April 2016	Brahmagupta Physics Colloquium: The story of the electron in a solid
8.	Dr. Ramesh J. Mani, Department of Physics and Astronomy, Georgia State University, Atlanta U.S.A.	14 June 2016	Seminar: A magneto-transport study of grapheme
9.	Dr. Pascal Landais, School of Eelctronic Engineering, Dublin City University, Ireland	15 June 2016	Seminar: Advances in passively mode-locked lasers
10.	Dr. Ramesh J. Mani, Department of Physics and Astronomy, Georgia State University, Atlanta USA	15 June 2016	Seminar: Zero-resistance states induced by electromagnetic wave excitation in the high mobility GaAs-AlGaAs 2d electron system
11.	Dr. Ankush Sengupta	27 June 2016	Hunting for Survival: Chemotaxis, Search and Statistical Mechanics
12.	Dr. Albin James, Department of Physics, University of Southern California, Los Angeles, USA	23 June 2016	Seminar: String background with local conformal symmetry
13.	Prof. Jean-François PIERSON, Institut Jean Lamour (UMR CNRS 7198), Université de Lorraine, Nancy, France	30 June 2016	Room temperature local epitaxial growth of Cu and Ni oxide thin films
14.	Prof. Venu Gopal Achanta, DCMP and MS, TIFR India	5 July 2016	Plasmonic metamaterials
15.	Prof. R. Vijaya, Department of Physics and Centre for Lasers and Photonics, IIT Kanpur, India	11 July 2016	Photonic crystal-based devices for novel functionalities
16.	Dr. Deepak Iyer, Department of Physics, Bucknell University, USA	26 July 2016	Numerical linked cluster expansions and finite size errors
17.	Dr. Satish Kumar Saravanan, Lorentz Institute, Leiden University and National Institute for Subatomic Physics, The Netherlands	8 August 2016	Seminar: Spin dynamics in general relativity
18.	Dr. Anirban Polley, University of Chicago, Illinois, USA	8 August 2016	Seminar: How does the closed state of V 3 Integrin destabilized by mutations? - Multiscale molecular dynamics study
19.	Dr. Satrajit Chakrabarty, Signorell Group, Laboratory of Physical Chemistry, ETH Zurich	22 August 2016	Seminar: Test-tubes for gas phase molecules and clusters: using them to understand nucleation, hydration and interstellar space
20.	Dr. Shruti Mukundan, IISc, Bengaluru	23 August 2016	Seminar: Oxides and Nitrides towards Light Emission
21.	Prof. Andrew Boothroyd, University of Oxford	28 September 2016	Brahmagupta Physics Colloquium: Unravelling emergent order in quantum materials

Sl. No.	Name and Designation	Date of Visit	Purpose of Visit
22.	Dr. Nagaiah Kambhala, Centre for Nano and Soft Matter Sciences, Bengaluru	2 December 2016	Invited seminar talk: Magnetic and electrical transport phenomena in oxide materials
23.	Dr. Krishna Muralidharan, Department of Materials Science and Engineering, University of Arizona, USA	27 December 2016	Invited seminar talk: Experimental and theoretical investigations of graphene-fullerene based systems for technological applications
24.	Athreya Shankar, JILA, NIST, and University of Colorado, Boulder	4 January 2017	Invited seminar talk: Steady-state spin synchronization in optical cavities and ion-trap systems
25.	Sathish Thiyagarajan, Columbia University	12 January 2017	Invited seminar talk: The actomyosin ring regulates septum cell wall growth during fission yeast cytokinesis
26.	Srivatsan Balakrishnan	16 January 2017	Invited seminar talk: Shape dependence of Renyi entropy in holographic CFTs
27.	Naveen S. Prabhakar, Department of Physics, Stony Brook University	18 January 2017	Invited seminar talk: A new connection between supersymmetric gauge theory and supergravity
28.	Dr. Vasudeva Siruguri Centre Director, UGC-DAE Consortium for Scientific Research, Mumbai Centre, R-5 Shed, BARC Campus, Mumbai	23 January 2017	Invited seminar talk: Chemical and magnetic structures using neutron diffraction
29.	Dr. Ravi Chandran Raju, University of Queensland (UQ), Australia	24 January 2017	Invited seminar talk: Organic-inorganic halide perovskite solar cells
30.	Tapas K. Manna, School of Biology, IISER Thiruvananthapuram, India	27 January 2017	Invited seminar talk: Architecture of microtubule-chromosome interface: how far we are to build it
31.	Speaker: Bhaswar Ghosh, Centre for Systems and Synthetic Microbiology (SYNMIKRO), Max Planck Institute for Terrestrial Microbiology, Marburg, Germany	31 January 2017	Cellular noise suppression and optimized information transmission through a signaling cascade in yeast
32.	Prof. Sanjeev Dhuradhar, IUCAA Pune	10 February 2017	Invited seminar talk: Einstein right once again: gravitational wave detection and astronomy
33.	Dr. Aditya Nath Mishra, IIT Indore	13 February 2017	Invited seminar talk: Multihadron production and inclusive photon measurement in ALICE experiment at the LHC
34.	Prof. Arnd Baecker, TU Dresden	27 February 2017	Invited seminar talk: Classical and quantum aspects of higher-dimensional systems
35.	Dr. Somnath Choudhury, IISc, Bengaluru	3 March 2017	The Large Hadron Collider, Tau Leptons and its role in Higgs Physics
36.	Dr. Biplab Dey (INFN)	8 March 2017	Invited seminar: Hunting for new physics via B decay anomalies
37.	Madhav Ranganathan, Department of Chemistry, IIT Kanpur.	14 March 2017	Talk: Atomistic and continuum modeling of Ge-Si heteroepitaxial growth
38.	Dr. Vivishek Sudhir	21 March 2017	Talk: Quantum measurement and control of a macroscopic mechanical oscillator
39.	Steven Tomsovic	25 October 2016	Invited seminar talk: Universality in the entanglement and localization of strongly chaotic subsystems
40.	Dr. Madhuparna Karmakar, IMSc, Chennai	31 October 2016	Invited seminar talk: Population imbalanced Fermi superfluid
41.	Dr. Pramod Kumar Nayak, Ulsan National Institute of Science and Technology (UNIST), Republic of Korea	15 November 2016	Invited seminar talk: Two-dimensional materials and their heterostructures
42.	Dr. Suman Majumdar, Astrophysics Group, Imperial College, London, U.K.	16 November 2016	Invited seminar talk: Observing the mysterious epoch of reionization using the 21 cm line
43.	Dr. Baladitya Suri, Quantum Device Physics laboratory, MC2, Kemivagen 9 Chalmers University of Technology, Gothenburg, Sweden	18 November 2016	Invited seminar talk: Artificial atoms interacting with photons and phonons
44.	Dr. Matthias Althammer, Walther-Meißner-Institut, Bayerische Akademie der Wissenschaften, Walther-Meißner-Str. 8, 85748 Garching, Germany	24 November 2016	Invited seminar talk: Pure spin currents in ferromagnetic insulator-normal metal hybrids
45.	Prof. V. K. B. Kota, Physical Research Laboratory, Ahmedabad	25 November 2016	Invited seminar talk: Random matrix theory for transition strength distributions
46.	Prof. N. D. Hari Dass, TIFR, Hyderabad	28 November 2016	Invited seminar talk: From strings to strings - the amazing story of strings in quantum chromodymamics

4.16.6. Other Activities of the Department

Faculty visit

Sl. No.	Faculty Member	Purpose of Visit	Date and Venue
1.	Dr. Sunethra Raman	Research collaboration	France
2.	Dr. M. S. Ramachandra Rao	University of Montpellier, MaMaSELF program, Lectures to Erasmus Mundus Master's students: Introduction to Nanoscience	University of Maryland, France
		Executive board meeting, Full board meeting of *J.Phys.D. Appl. Phys*, IoPP	IoPP, Bristol (England)
		Colloquium: Electronic, spectroscopic and mechanical properties of thin films and nanostructures	WMI, Garching, Munich, Germany
		Colloquium: Physics and Technology of Nanostructured Electronic Materials	University of Leipzig, Leipzig, Germany
3.	Dr. Sivaramakrishnan	Deliver an invited talk	Germany
4.	Dr. Sudakar Chandran	Deliver an invited talk at the IUMRS-MRSS 2016	Singapore
5.	Dr. Dawood Kothawala	Deliver a talk on Mathematical Physics Group	UK
6.	Dr. Prem B. Bisht	For collaborative academic work under European Marie Curie IRSES Project - Ultrafast Photonic processes and Interactions (UP-PI) Programme	UK
7.	Dr. R. Nirmala	Oral presentation at the International Conference of Asian Union of Magnetics Societies (ICAUMS 2016)	National Cheng Kung University, Taiwan
8.	Dr. Arul Lakshminarayan	Oral presentation on Random Product Matrices–New Developments and Applications	Germany
9.	Dr. Neelima M. Gupte	International Conference on Applications of Nonlinear Dynamics (ICAND) 2016	USA
10.	Dr. A. Subrahmanyam	Visited IHI Hauzer Techno Coating B.V. at Venlo	The Netherlands
International Meeting on Electrochromics -12			
Editors meeting in Amsterdam			
11.	Dr. L. Sriramkumar	International Meeting on Project	USA
12.	Dr. M.S. Ramachandra Rao	6th edition of Meet the University of Groningen program; also visited the Zerinke Institute	The Netherlands
13.	Dr. M.S. Ramachandra Rao	Zn-doped MnO_2 nanoflakes for asymmetric supercapacitor devices, MRS Fall meeting and exhibit 2016 (MRS)	USA
		Sakua Science Plan - Shibaura Institute of Technlogy	Japan
14.	Dr. Prafulla Kumar Bhehera	CMS Collaboration CERN, The European Organization for Nuclear Research	Switzerland
15.	Dr. James Frederick Libby	9th International Workshop on the CKM Unitarity Triangle (CKM2016), TIFR, Mumbai	TIFR, Mumbai
		Plenary talk: CP Violation and rare decays: Beauty and Charm Hadrons, XXII DAE-BRNS High Energy Physics Symposium 2016	University of Delhi
16.	Dr. M. S. Ramachandra Rao	A talk on $ZnMn_2O_4$ Nanofiber Electrodes for Supercapacitor Applications	International Conference of Young Researchers on Advanced Materials (IUMRS-ICYRAM), Indian Institute of Science, Bengaluru
17.	Dr. Prafulla Kumar Bhehera	CMS Collaboration CERN, The European Organization for Nuclear Research	Switzerland
18.	Dr. P.B. Sunil Kumar	Visit Institutions for Collaboration (Fysik, Kemi og Farmaci)	USA and Denmark
19.	L. Sriramkumar	To collaborate with Prof. Marc Kamionkowski, Department of Physics and Astronomy, Johns Hopkins University (visit supported by Indo-US Science and Technology Forum)	1-16 September 2016, Department of Physics and Astronomy, Johns Hopkins University, Baltimore, USA
20.	Chandra Kant Mishra	ICTS-TIFR, Bengaluru	Collaborative research

Student visit

Sl. No.	Student	Purpose of Visit	Date and Venue
1.	Ananya G (PH12D022)	International Conference on Lithium Batteries	19-24 June 2016
2.	Raghu Sripada (PH12D011)	International Conference on Lithium Batteries	19-24 June 2016
3.	Martando Rath (PH12D040)	International Conference on Electronic Materials (IUMRS-ICEM 2016)	4-8 July 2016
4.	Prasanth Krishnan K.P (PH12D010)	5th International Conference on New Frontiers in Physics (ICNFP 2016)	6-14 July 2016
5.	Ankur Mandal (PH12D023)	25th International Conference on Atomic Physics, ICAP 2016	24-29 July 2016
6.	Swetamber Prakas Das (PH12D0012)	International Conference on Perspectives of Nonlinear Dynamics (PNLD) 2016	24-29 July 2016
7.	Joydeep Singha (PH13D079)	PNLD 2016	24-29 July 2016
8.	Kanka Ghosh (PH14D034)	Symposium on Molecular Dynamics for Modern Materials with LAMMPS	15-19 August 2016
9.	Dinesh Kumar (PH12D005)	27th International Conference on Diamond and Carbon Materials, Montpellier	4-8 September 2016
10.	Radhika V. Nair (PH13D009)	International Symposium: SPIE Nanoscience + Engineering, part of the SPIE Optics	28 August-1 September 2016
11.	Gummaluri Venkata Sivasree (PH14D005)	International Symposium on SPIE Nanoscience + Engineering, part of the SPIE Optics	28 August-1 September 2016
12.	A.V. Radhamani (PH10D032)	Zn-doped MnO_2 nanoflakes for asymmetric supercapacitor devices MRS Fall meeting and exhibit 2016	USA
13.	Krishnakumar Ravindran (PH14D008)	Institute of High-Energy Physics, Beijing, China working on the BESIII experiment	Beijing
14.	Fabitha K. (PH11D013)	Visit to Kyushu University for research work	Japan
15.	Sarath Srinivas (PH13D044)	International conference talk: Triplet pairing in pure neutron matter	Canada
16.	Haripriya G.R. (PH13D004)	International conference talk: Magnetism and Magnetic Materials (MMM 2016)	2016 USA
17.	Sharannia M. P. (PH12D053)	International conference talk: Magnetism and Magnetic Materials (MMM 2016)	2016 USA
18.	Shanigaram Mallesh (PH12D062)	International conference talk: Magnetism and Magnetic Materials (MMM 2016)	2016 USA
19.	Radhamani A.V. (PH10D032)	Zn-doped MnO_2 nanoflackes as cathode material for asymmetric supercapacitor devices	USA
20.	M. P. Sharannia (PH12D053)	A poster titled Structural, magnetic and transport properties of $SrNdNiRuO_6$ in Frontiers in Theoretical and Applied Physics (FTAPS 2017) conference, American University of Sharjah Sharjah, UAE	22-25 February 2017
21.	Subhasis Samanta (PH12D056)	Quantum confinement in double perovskite multilayers: Sr_2FeMoO_6-La_2CoMnO_6 (APS March Meeting 2017)	13-17 March 2017
22.	Dr. M. K. Kavitha (DST-PDF)	Visit to NUS, Sinagpore for collaboration	10 March-9 April 2016
23.	Resmi P. K.	Silicon Vertex Detector construction for Belle II Project	11 June–30 July 2016
24.	Ravindran Krishnakumar	Work on the BESIII experiment	20 July-1 August 2016
25.	Ravindran Krishnakumar	Work on the BESIII experiment	11 November–4 January 2017
26.	Resmi P. K.	3rd Asia-Europe-Pacific School on High Energy Physics, Beijing, China	12-25 October 2016
27.	Rebin Raj	3rd Asia-Europe-Pacific School on High Energy Physics, Beijing, China	12-25 October 2016
28.	Debika Chowdhury	To collaborate with Prof. Marc Kamionkowski of Department of Physics and Astronomy, Johns Hopkins University, Baltimore, U.S.A. (visit supported by the Indo-US Science and Technology Forum)	1-30 September 2016
29.	Debika Chowdhury	To collaborate with Prof. Jérôme Martin of Institut d'Astrophysique de Paris, Paris, France (visit supported by Raman-Charpak Fellowship)	1 February to 15 July 2017
30.	Mekha Vimal (PH15D016)	Research collaboration	5-9 December 2016
31.	Mekha Vimal (PH15D016)	Research campaign	10-23 December 2016
32.	Anu B. and Subhamoy Sahoo	Photonics 2016 conference	4-8 December 2016
33.	Nandana Nandakumar M.	Poster presentation: International conference on Magnetism and Magnetic Materials (ICMAGMA 2017)	1-3 February 2017
34.	P.V. Midhunlal	Poster presentation: ICMAGMA 2017	1-3 February 2017
35.	Gyanti Prakash Moharana	Poster presentation: ICMAGMA 2017	1-3 February 2017

4.16.7. Activities initiated

International collaboration

1. Professor Steven Tomsovic, Department of Physics, Washington State University, Pullman, USA was a Visiting Professor (September-December 2016).
2. Professor Arnd Backer, TU Dresden, Germany, visited the institute from 24 February-2 March.
3. Professor Thomas Seligman, UNAM, University of Mexico, Cuernavaca, Mexico.
4. Professor Thomas Pfeifer, Director, Max Planck Institute for Nuclear Physics, Heidelberg, initiated collaboration under the Max Planck Partner Group Program with Dr. Sivarama Krishnan, Department of Physics, IIT Madras on Scaling Electron Dynamics from Angstrom to Nanoscale.

5. Sophisticated Analytical Instrument Facility

5.1. Introduction

The Sophisticated Analytical Instrument Facility (SAIF) at Indian Institute of Technology, Madras was established with the financial support from the Department of Science and Technology, Government of India. The facility provides sophisticated instruments and equipment to students, scientists, researchers and faculty members, apart from academia, educational institutions, national laboratories, R&D establishments and industries from all over India in general and South India in particular. The primary purpose of the facility 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, the facility 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. Faculty and their Activities

Faculty

Name and Qualifications	Major Areas of Specialization
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
Scientific Officer/Engineer R. Murugesan, Ph.D.	Mass spectroscopy, chromatography, Raman and IR spectroscopy
Technical Staff C. Baby, Ph.D. K.V. Rama, Ph.D. K.P. Paranjothi, Ph.D. Sudhadevi Antharjanam, Ph.D. N. Sivaramakrishnan, M.S. G.R. Kamalnab, IEEE P. Thiruppathi, IEEE N.K. Gopinath, M.Sc., M.Phil.	Nuclear magnetic resonance spectroscopy, fluorimetry analytical chemistry, ICP-OES, thermal and elemental analyses Mass spectroscopy, electronics and instrumentation Single crystal X-ray diffractometry, optical spectroscopy VSM, scanning electron microscopy Electronics and instrumentation Electronics and instrumentation Materials science

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
Seminar				
1.	Dr. C. Baby	National Seminar on NMR Spectroscopy and its Biomedical Applications	Mar Ivanios College, Thiruvananthapuram	6-7 October 2016
2.	Dr. R. Murugesan	National Seminar on Bio-fuel	HKRH College Uthamapalayam Theni	11 June 2016
3.	Dr. R. Murugesan	National Seminar on Standardisation of Herbo-mineral Drugs	National Institute of Siddha, Tambaram	6 August 2016
Conference				
1.	Dr. R. Murugesan	International Conference on Importance of Herbal Medicines	Sahyadri Science College Shimoga, Karnataka	21–23 December 2016

Special lectures delivered by the faculty in other institutions

Sl. No.	Faculty Member	Topic of Lecture	Institution	Date
1.	Dr. C. Baby	Keynote address on the discovery and evolution of NMR spectroscopy	Mar Ivanios College, Thiruvananthapuram	6 October 2016
2.	Dr. C. Baby	A bird's eyeview on modern high resolution NMR spectroscopy and its applications	Mar Ivanios College, Thiruvananthapuram	6 October 2016
3.	Dr. C. Baby	NMR spectroscopy	Department of Chemistry, S.N. College, Chempazhanthy	7 October 2016
4.	Dr. R. Murugesan	A Review on colonic drug delivery system	JNTU, Hyderabad	10 January 2017
5.	Dr. R. Murugesan	FTIR spectroscopy and its applications	NIT, Trichy	19 November 2016

Fellowships of academies and professional societies

Sl. No.	Faculty Member	Year of admission
1.	Prof. S. Subramanian was awarded the fellowship of the International Electron Paramagnetic Resonance Society for his outstanding contributions to the field of ESR/EPR. He is the first Indian to receive this award.	August 2016

Design and Development Activities

New facilities added or major equipment procured

Sl. No.	Name of Equipment	Amount (lakhs of ₹)
1.	CHNSO analyzer for organic and Inorganic materials (four modules)	120
2.	Single crystal X-ray diffractometer with dual source	200
3.	500 MHz FT-NMR Spectrometer with Solid State and Microprobe Accessories (being installed)	400

Research and Consultancy

Research publications

Papers published in refereed international journals: 4

Total number of papers presented in national conferences: 3 (As abstract)

Total number of papers presented in international conferences: 1 (As abstract)

1. K. Boopathi, R. Jagan and P. Ramasamy. 2016. Synthesis, crystal growth and characterizations of bis (l-proline) cadmium iodide: a new semi-organic nonlinear optical material. *Applied Physics A: Materials Science and Processing* 122(7). doi: 10.1007/s00339-016-0123-7
2. A. Arunkumar, V. Mohankumar, R. Jagan and P. Ramasamy. 2016. Structure, growth and characterization of picolinium perchlorate single crystals. *Optik* 127(13): 5466-5471. doi: 10.1016/j.ijleo.2016.01.140
3. R. M. Nair, M.R. Sudarsanakumar, S. Suma, M.R. Prathapachandra Kurup and P.K. Sudhadevi Antharjanam. 2016. Crystal structure and characterization of a novel luminescent 1D coordination polymer: $[Ca_9(\mu\text{-}H_2O)_9(\text{picolinate})_{18}]\cdot 4H_2O$. *Inorganic Chemistry Communications* 63: 81-85. doi:10.1016/j.inoche.2015.11.010
4. P. Nagapandiselvi, C. Baby and R. Gopalakrishnan. 2016. Synthesis, growth, structure, mechanical and optical properties of a new semi-organic 2-methyl imidazolium dihydrogen phosphate single crystal. *Materials Research Bulletin* 81: 33-42. doi: 10.1016/j.materresbull.2016.04.026

6.1. Centre for Continuing Education

6.1.1. Introduction

The Centre for Continuing Education (CCE) was established in June 1986. It supports faculty members in meeting the following objectives of Indian Institute of Technology 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:
  a) Academic programmes (M. Tech. and Ph.D.) under the Quality Improvement Programme (QIP) (sponsored by the AICTE)
  b) Short-term courses (STCs) under QIP (sponsored by the AICTE)
  c) Curriculum development activities under the Curriculum Development Cell (CD Cell)
  d) Writing books under the Book Writing Scheme
  e) Continuing Education Programmes (CEPs) for professionals from industry
  f) User-Oriented Programmes (UOPs) for specific industries through which their engineers acquire higher degrees (M. Tech.)
  g) Courses under National Programme on Technology-Enhanced Learning (NPTEL)
  h) Recording important activities through the facilities in the Central Photographic Section
  i) Conducting conferences/seminars/workshops/symposia
  j) Allotment of ISBN numbers for textbooks and other publications of faculty members
  k) Online continuing education programmes for industries
  l) Courses under Global Initiative of Academic Networks (GIAN)

The Centre for Teaching and Learning was established in 2011 under the auspices of the CCE. This has now grown into a fully functional centre with its own administrative structure. This centre strives to be a centre of excellence and innovation in the Teaching Learning Processes (TLP) and a new and sustainable paradigm in higher technical education, producing human resources of the highest professional and personal quality for the service of the nation.

6.1.2. Quality Improvement Programme (QIP)

The faculty development activities of the 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 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 to 2016–2017, 531 faculty members from other institutions have obtained Ph.D. degrees and 606 faculty members have obtained M. Tech. degree.

Period	Ph.D.			M. Tech.		
	Admitted	On Roll	Awarded	Admitted	On Roll	Awarded
2016–2017	14	56	13	3	7	1
Since inception	655	–	531	640	–	606

6.1.3. Short-Term Training Programmes under QIP (AICTE-STC)

Organization of short-term courses under QIP for faculty members of engineering institutions is supported by the AICTE. These courses 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 the programme, 19 courses (with a total duration of 19 weeks) were conducted during 2016–2017 and total of 513 teachers of engineering institutions participated. From 1970–1971 to 2016–2017, 384 programmes have been conducted, and 9,351 teachers from various engineering colleges have participated and benefited from these courses. The details of the courses conducted in 2016-2017 are given below.

Sl. No.	Department/s	Coordinator/s	Title	Dates	Participants
1.	Mechanical Engineering	Dr. Krithika Naranaswamy	Fuels, Combustion and Burners	4-9 July 2016	25
2.	Electrical Engineering	Dr. Anjan Chakravorty	Microelectronics: From Fundamentals to Devices	11-16 July 2016	30
3.	Mechanical Engineering	Dr. Ratna Kumar Annabattula, Dr. Narasimhan Swaminathan and Dr. Sundararajan Natarajan	Techniques in Multi- Scale Modelling	5-10 September 2017	30
4.	Management Studies	Dr. Richa Agarwal, Dr. Upendra Kumar Maurya and Dr. Vaibhav Chawla	Workshop on Developing Psychimetric Scales in Management	7–12 September 2017	30
5.	Applied Mechanics	Prof. K. Ramesh	Digital Optical Measurements: Digital Photoelastic and Digital Measurement	12–17 September 2017	22
6.	Engineering Design	Dr. Palaniappan Ramu and Dr. G. Saravana Kumar	Optimization in Engineering Design	26 September-1 October 2016	28
7.	Civil Engineering	Prof. S. Mohan	Environmental Systems Modeling	3-8 October 2016	32
8.	Mechanical Engineering	Dr. P. Ramkumar and Prof. A. S. Sekhar	Tribology in Design	7–12 November 2016	26
9.	Mechanical Engineering	Dr. P.V. Manivannan	Role of Mechatronics in Intelligent Robotics and Automotive Control	14-19 November 2016	42
10.	Mechanical Engineering	Dr. Mayank Mittal	Advanced IC Engine Technologies	21-26 November 2016	27
11.	Management Studies	Dr. M. Geeta and Dr. Upendra Kumar Maurya	AICTE-sponsored Faculty Development Programme: Workshop on Research Methodology in Social Science	2-7 January 2017	30
12.	Mathematics	Dr. Neelesh S. Upadhye and Dr. A. J. Shaiju	Mathematical Finance: Theory and Practice	16–21 January 2017	25
13.	Chemical Engineering	Dr. Sumesh Thampi and Dr. Ethayaraja Mani	Application of Emulsion, Foams and Colloidal Dispersions	23–28 January 2017	22
14.	Biotechnology	Dr. Kathik Raman	Computational Systems Biology	6-11 February 2017	27
15.	Civil Engineering	Dr. Soumendra Nath Kuiry	Introduction to two- dimensional flow modeling using GIS	13–18 February 2017	18
16.	Civil Engineering	Dr. V. B. Maji, Dr. T. Thyagaraj and Dr. R.G. Robinson	Investigation in soil and Rock for Optimal Geotechnical Designs	20–15 February 2017	25
17.	Civil Engineering	Dr. S. Mathava Kumar and Dr. Indumathi Nambi	Advanced Wastewater Treatment	6–11 March 2017	27
18.	Mechanical Engineering	Dr. Soundarapandian	Modeling Simulation and Experimental Approaches of Unconventional Manufacturing Techniques	13–18 March 2017	27
19.	Applied Mechanics	Prof. B.S.V. Prasad Patnaik	Cardiovascular Solid and Fluid Mechanics	26 March-1 April 2017	20
	Total				**513**

6.1.4. Activities of the CD Cell

- Support is available from the CD Cell with funding from the CCE for activities such as course structuring, preparation of instructional and resource material (monographs, laboratory manuals, workshop materials and others) and development of computer-aided instruction packages to explore interesting avenues for innovation in design and delivery of courses. The material developed through these activities can be made available for use by the various engineering institutes in the country. During the year under review, four activities under the CD Cell, including workshops, were organized.

Sl. No.	Department/s	Coordinator/s	Title of Activity	Dates	Sponsoring Agency
1.	Humanities and Social Sciences	Dr. Rajesh Kumar	Emerging Trends in Applied Linguistics Research	14–15 April 2016	CCE
2.	Humanities and Social Sciences, Management Studies	Dr. S.P. Dhanavel and Dr. V. Vijyalakshmi	Self-Awareness and Higher Goals in Education—SAHGE 2016	30 May – 3June 2016	CCE
3.	Management Studies	Dr. Rupashree Baral	20th National Academy of Psychology (NAOP) Conference	15-16 May 2015	CCE

6.1.5. Book Writing Scheme (BWS)

The BWS is designed to encourage teachers to write textbooks and monographs. Fifty-six books have been published by the institute's faculty members under the scheme so far. The number of books published under the Golden Jubilee Book Writing Scheme is 24. During the year under review, the following book was in progress:

Sl. No.	Author	Department	Title of the Book
1.	Dr. K. Srinivasa Reddy	Mechanical Engineering	*Solar Energy: Process Heat and Electricity Generation*

6.1.6. Continuing Education Programmes (CEPs)

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. CEPs are divided into two categories: Internal CEPs and External CEPs. From its inception in 1980 to 2017, a total of 1,544 STCs have been conducted, benefitting 1,95,142 participants. Eighty to ninety such programmes are generally organised every year. During 2016–2017, 80 STCs were conducted with 59,791 participants attending. The following STCs were conducted during 2016–2017:

Internal CEPs

Sl. No.	Department/s	Coordinator/s	Title of the Proceedings	Duration	No.of Participants
1.	Engineering Design	Dr. C. S. Shankar Ram	Vehicle Dynamics Simulation	29 April 2016	20
2.	Management Studies	Dr. Lata Dyaram and Prof. T. J. Kamalanabhan	Architect Essentials Program	8-22 April 2016	20
3.	Mechanical Engineering	Dr. Narasimhan Swaminathan and Dr. Ratnakumar Annabattula	Mechanical Design	23 April – 29 October 2016	228
4.	Management Studies	Prof. T. J. Kamalanabhan and Prof. M. Thenmozhi	General Management	9–14 May 2016	27
5.	Biotechnology	Prof. Sathyanarayana Gummadi and Prof. Mukesh Doble	Summer workshop on Bioprocess	27 June-1 July 2016	45
6.	Ocean Engineering	Dr. S. Nallayarasu	Conducting Recruitment Process	15 May 2016	67
7.	Mechanical Engineering	Dr. G.L. Samuel	Recent Advances and Future Trends in Manufacturing Processes	11–12 May 2016	
8.	Management Studies	Dr. Saji K. Mathew and Prof. Arun Kumar G.	India Immersion-Victoria University Wellington	29 April 2016	24
9.	Metallurgical and Materials Engineering	Dr. Murugaiyan A.	Use of Gleebe in Materials Processing	15–16 July 2016	18
10.	Computer Science Engineering	Dr. Rupesh Narse	Programming Applications in Python	1–18 June 2016	32
11.	Metallurgical and Materials Engineering	Dr. Ajay Kumar Shukla	Two days' workshop on Copper Extraction	1 June-1 August 2016	25
12.	Applied Mechanics	Prof. K. Ramesh	Digital Optical Measurements, Digital Photoelasticity and Digital Image Correlation	12–17 September 2016	4
13.	Management Studies	Dr. Rahul R. Marathe	Training Module on Applications of Operations Research	15–17 June 2016	20
14.	Humanities and Social Sciences	Dr.Yi Hsun Chen, Visiting Faculty	Basic Mandarin I	1 August-24 November 2016	20
15.	Engineering Design	Dr. C.S. Shankar Ram	Fundamentals of Automotive Systems	14–15 July 2016	20
16.	Management Studies	Dr. Lata Dyaram, Prof. T. J. Kamalanabhan	Architect Essentials Program	8–22 July 2016	20
17.	Management Studies	Prof. R. P. Sundarraj	Business Solutions Using R-based Analytics	27–28 July 2016	20
18.	Civil Engineering	Dr. S. Mohan	Environmental Systems Modeling	3–8 October 2016	20
19.	Engineering Design	Dr. Palaniappan Ramu and Dr. Saravana Kumar	Optimization in Engineering Design	26 September -1 October 2016	10
20.	Civil Engineering	Dr. S. Arul Jayachandran	Workshop on Limit State Design of Structural Steel Work	1 December 2016	80
21.	Management Studies	Prof. T. J. Kamalanabhan and Prof. M. Thenmozhi	Management and Supervisory Development Programme	2–10 November 2016	20
22.	Management Studies	Prof R. P. Sundarraj	Business Solutions Using R-based Analytics	10–11 August 2016	20
23.	Management Studies	Prof R. P. Sundarraj	Business Solutions with R—Part 2	23–25 August 2016	20
24.	Management Studies	Dr. Rupashree Baral and Prof T. J. Kamalanabhan	Project DISHA – Dealer Training Programme	8-9 September 2016	18
25.	Engineering Design	Dr. C. S. Shankar Ram	Fundamentals of Automotive Systems	8 September -9 August 2016	20
26.	Management Studies	Dr. Richa Agarwal, Dr. Vaibhav Chawla and Dr. Upendra K. Maurya	Short-term Training Program on Scale Development	7–12 September 2016	2
27.	Chemical Engineering	Prof Arun K. Tangirala	Sparse Optimization for Signals and System	22–23 October 2016	31
28.	Management Studies	Dr. Rupashree Baral and Prof. T. J. Kamalanabhan	Project DISHA-Dealer Training Programme	22–23 September2016	30
29.	Management Studies	Dr. Rupashree Baral and Prof. T. J. Kamalanabhan	Project DISHA-Dealer Training Programme	15–16 September 2016	30
30.	Applied Mechanics	Dr. Satyanarayanan S.	Solar Thermal Applications in Industrial Heating	23 – 24 September 2016	-
31.	Civil Engineering	Dr S. Arul Jayachandran	Design and Challenges in Glass Facades in Buildings	29 September 2016	50
32.	Management Studies	Dr. Richa Agrawal	2nd Scale Development Workshop	28 September-2 October 2016	14
33.	Management Studies	Dr. Rupashree Baral and Prof. T. J. Kamalanabhan	Project DISHA-Dealer Training Programme	20–21 October 2016	30
34.	Management Studies	Dr. RupashreeBaral, Prof. T. J. Kamalanabhan	Project DISHA-Dealer Training Programme	6–7 October 2016	30
35.	Management Studies	Prof. R. P. Sundarraj	Business Solutions with R—Part 2	25–27 October 2016	20
36.	Engineering Design	Dr. C. S. Shankar Ram	Fundamentals of Automotive Systems	24–25 November 2016	20
37.	Ocean Engineering	Prof. P. Krishnankutty and Prof. V. Anantha Subramanian	Short-term Lab Course on Experimental Hydrodynamics	31 October-11 November 2016	60
38.	Management Studies	Dr. Rupashree Baral and Prof. T. J. Kamalanabhan	Project DISHA-Dealer Training Programme	18–19 November 2016	30
39.	Management Studies	Prof. C. Rajendran	Six Sigma Green Belt	10–30 November 2016	14
40.	Management Studies	Prof. R. P. Sundarraj	Business Solutions Using R-based Analytics	22–23 November 2016	25

Sl. No.	Department/s	Coordinator/s	Title of the Proceedings	Duration	No.of Participants
41.	Civil, EWRE Division	Dr. Indumathi M. Nambi	Antibiotics and Antimicrobial Resistance in water	7 March 2016	80
42.	Central Electronics Centre (CEC)	Dr. V. Jagadeesh Kumar	Basic Test and Measuring Instruments: Concepts, Calibration and Measurement Uncertainty	14–16 December 2016	15
43.	Civil Engineering	Prof. Manu Santhanam	Construction Materials and Management Course	30 January-3 February 2017	9
44.	Engineering Design	Dr. C. S. Shankar Ram	Fundamentals of Automotive Systems	19–20 January 2017	25
45.	Management Studies	Dr. Rupashree Baral and Prof. T. J. Kamalanabhan	Project DISHA – Dealer Training Programme	17–18 January 2017	30
46.	Management Studies	Dr. Rupashree Baral and Prof. T. J. Kamalanabhan	Project DISHA – Dealer Training Programme	23-24 January 2017	30
47.	Humanities and Social Sciences	Prof. Yi Hsun Chen, Visiting Faculty	Basic Mandarin I	12 February-26 March 2017	20
48.	Management Studies	Dr. Rupashree Baral and Prof. T. J. Kamalanabhan	Project DISHA – Dealer Training Programme	9–10 February 2017	32
49.	Management Studies	Dr. Rupashree Baral and Prof. T. J. Kamalanabhan	Project DISHA – Dealer Training Programme	23–24 February 2017	21
50.	Civil Engineering	Dr. Soumendra Nath Kuiry and Dr. Balaji Narasimhan	Introduction to Two-Dimensional Flow Modeling using GIS	13–18 February 2017	8
51.	Management Studies	Dr. Rupashree Baral and Prof. T. J. Kamalanabhan	Project DISHA – Dealer Training Programme	23-24 March 2017	30
52.	Management Studies	Dr. Rupashree Baral and Prof. T. J. Kamalanabhan	Project DISHA – Dealer Training Programme	15-16 March 2017	30
53.	Management Studies	Prof .T.J. Kamalanabhan and Prof. M. Thenmozhi	3rd Scale Development Workshop	19-26 March 2017	15
Total	**1549**				

External CEPs

Sl. No.	Department/s	Coordinator/s	Title of the Proceedings	Duration	No. of Participants
1.	Engineering Design	Dr. Palaniappan Ramu,	Statistics and Reliability	2-4 April 2016	20
2.	Engineering Design	Dr. C.S. Shankar Ram	Vehicle Dynamics	21-22 April 2016	20
3.	Civil Engineering	Dr. Arul Jayachandran	Design of Structural Steelwork as per IS:800(2007)	27-30 April 2016	25
4.	Electrical Engineering	Prof. Shanthi Pavan	Short course on Continuous Time Delta Sigma Converter Design	20-24 June 2016	15
5.	NPTEL	Dr. Andrew Thangaraj	IITM-NPTEL Online Certificate Exams for 35 Courses	1 January-1 April 2016	4067
6.	Engineering Design	Dr. Palaniappan Ramu	Statistics and Reliability	18-23 April 2016	20
7.	Management Studies	Dr. Saji K. Mathew	Quality Management of Measurement Process and Calibration	20 May 2016	20
8.	Management Studies	Dr. Arshinder Kaur	Integrated Materials Management and Outsourcing	1-2 June 2016	25-30
9.	Management Studies	Dr. L. Prakash Sai	Strategy Mapping, KPIs and Balanced Scorecard	10 June 2016	30
10.	Applied Mechanics	Dr. S. Satyanarayanan	Optical emission measurement technologies – Fundamentals	15–17 June 2016	15
11.	Civil Engineering	Dr. AshwinMahalingam	Project Management for Engineers from Chennai Metrowater	14–15 July 2016	-
12.	NPTEL	Prof. Andrew Thangaraj	National Programming Aptitude Test	1 May 2016	-
13.	Management Studies	Dr. L. Prakash Sai and Dr. Arun Kumar G.	Corporate Strategy and Corporate Finance	4–5 August 2016	90
14.	NPTEL	Prof. Andrew Thangaraj	IITM-NPTEL Online Certification Exam for 73 Courses	1 July-1 October 2016	23171
15.	Centre for Social Innovation and Entrepreneurship	Prof. R. Nagarajan, Dean I & AR	Product Design and Development	1 August-1 October 2016	30
16.	Applied Mechanics	Dr. S. Satyanarayanan	Industrial Heating Using Solar Thermal Technologies	19 August 2016	15
17.	Management Studies	Dr. L. Prakash Sai and Dr. Arun Kumar G.	Conflict and Negotiation Management Skills	19-21 September 2016	30
18.	Management Studies	Prof R. P. Sundarraj	Business Solutions Using R-based Analytics	5-6 October 2016	25
19.	Engineering Design	Dr. Palaniappan Ramu	Surrogate enabled optimization	11–25 November 2016	15
20.	NPTEL	Prof. Andrew Thangaraj	IITM-NPTEL Online Certification Exam for 30 Courses	1 July-1 October 2016	8268
21.	Mechanical Engineering	Prof. A. Ramesh	Current Trends in Automotive Systems and Maufacturing	30 November-2 December 2016	88
22.	Electrical Engineering	Dr. Ramkrishna Pasumarthy, Dr. Saikrishna P.S. and Dr. ViswanathTalasila	Complex Networks and Cyber Physical Systems	21–25 March 2017	30
23.	Management Studies	Prof G. Arun Kumar	Finance for Non-Finance Executives	14 November 2016	30
24.	National Centre for Catalysis Reserarch (NCCR)	Prof. P. Selvam	Catalysis-Theory Practice	3–6 January 2017; 10–12 January 2017	40
25.	O/o Dean (Students)	Lt. Col. Jayakumar (Retd.), Joint Registrar	Outbound training	10 January 2017	34
26.	NPTEL	Prof. Andrew Thangaraj	IITM-NPTEL Online Certification Exam for 64 Courses	1 January-1 March 2017	22099
27.	Civil Engineering	Prof. S. R. Satish Kumar	Structural Analysis and Design	23–25 March 2017	15
					58242

6.1.7. User Oriented Programs (UOPs)

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, 20 programmes have been conducted or are being conducted by the Departments of Civil Engineering, Ocean Engineering, Mechanical Engineering, Engineering Design and Management Studies.

Sl. No.	Department	Coordinator/s	Project number	Title of the Proceedings
1.	Civil Engineering	Dr. K. Ananthanarayanan, Dr. Koshy Varghese and Dr. K. N. Satyanarayana	CCE/CEP/UOP/19/KA&KV&KNS/CE/15-16	Construction Technology and Management (18th batch)
2.	Civil Engineering	Dr. K. Ramamurthy and Dr. Koshy Varghese	CCE/CEP/UOP/19A/KR&KV/CE/16-17	Construction Technology and Management (19th batch)
3.	Management Studies	Dr. Rahul Ratnakar Marathe and Prof. Srinivasan G.	CCE/CEP/UOP/18/VLM/15-16	Visionary Leadership in Manufacturing Programme (VLM)
4.	Ocean Engineering	Dr. S. A. Sannasiraj	CCE/CEP/UoP/05/HOE	M.Tech. Course on Ocean Technology
5.	Ocean Engineering	Dr. S. Nallayarasu	CCE/CEP/UoP/12/OE/SN/-SKB/11-12	M.Tech. Offshore Structural Engineering for L&T

Internet-based Interactive Online M.Tech Programmes for Industries

IIT Madras has been actively interacting with leading industries through R&D, consultancy projects and continuing educational programmes. Several projects have been undertaken for the development of products and processes. Based on the approval and guidelines of the Senate and the needs of the industries, IIT Madras has come up with M.Tech. programmes in the online mode with adequate opportunity for student and teacher interaction. 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 has to 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 below. Admissions have been completed for the M.Tech. (Automotive Technology) course scheduled to commence by April 2017. Five automotive industries have sponsored 29 students for this course in the first year.

Sl. 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 specialization 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

Global Initiative of Academic Networks (GAIN)

The Government of India approved a new programme titled Global Initiative of Academic Networks (GIAN) in Higher Education for 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 country's existing academic resources, accelerate the pace of quality reform and elevate its scientific and technological capacity to global excellence. Under this scheme, 85 courses as listed below were conducted along with accomplished researchers and technologists from all over the globe. The status of the proposals for GIAN courses from IIT Madras as on 31 March 2017 is indicated in the following tables:

Round	Month	Proposals Received	Proposals Shortlisted
1.	August 2015	27	25
2.	October 2015	40	39
3.	January 2016	53	47
4.	February 2016	16	16
	TOTAL	138	127

Submitted	127
Approved	111
Rejected	16
Withdrawn after approval	4
Courses completed	95
Courses in January–February	4

S.No	Department	Host Faculty	International Faculty	GIAN Course Title	Duration	No. of Participants
1.	Civil Engineering	Dr. Ashwin Mahalingam	Dr. Nuno Gil, University of Manchester, UK	Megaproject Leadership and Governance: Capabilities for New Infrastructure Development	1-7 April 2016	15
2.	Civil Engineering	Dr. Arun Menon	Prof. Dina D'Ayala, University of London, UK	Seismic Risk Assessment at Urban Scale	18-22 April 2016	16
3.	Applied Mechanics	Dr. S. Vengadesan	Dr. Paul Durbin, Iowa State University, USA	Turbulence Models for Engineering Application	16-22 May 2016	24
4.	Mechanical Engineering	Dr. P. Chandramouli	Prof. Rajendra Singh [United States of America]	Automotive Noise and Vibration Control: Contemporary Engineering Practice and Research Issues	16-27 May 2016	29
5.	Mechanical Engineering	Dr. Sundararajan Natarajan	Prof. Bordas Stéphane Pierre Alain [United Kingdom]	Multiscale Methods for Mechanics	23 May-3 June 2016	18
6.	Engineering Design	Dr. C. S. Shankar Ram	Prof. Rajesh Rajamani [United States of America]	Vehicle Dynamics and Control	30 May-3 June 2016	31
7.	Metallurgical and Materials Engineering	Dr. B. S. Murty Dr.V. Subramanya Sarma	Prof. Peter D Hodgson [Australia]	Advanced Steels for the Automotive Industry and Other Sectors	1-15 June 2016	22
8.	Computer and Science Engineering	Dr. Krishna M. Sivalingam	Prof. Byrav Ramamurthy [United States of America]	Mobile and Cloud Security	6-17 June 2016	23
9.	Chemistry	Dr. P. Selvam	Prof. K. Seshan [Netherlands (Holland, Europe)]	Catalysis in Green Chemistry and Environmental Applications	1-10 June 2016	23
10.	Mechanical Engineering	Dr. N. Ramesh Babu	Dr. K. (Subbu) Subramanian [United States of America]	Application of System Approach for Precision Grinding Processes	6-10 June 2016	28
11.	Engineering Design	Dr. M. S. Sivakumar and Dr. Srikanth Vedantam	Prof. Arun Srinivasa, Texas A&M University, Texas, USA	Mechanics and Modeling ofSoft Materials: From Natural Rubber to Biomaterials	13-19 June, 2016	55
12.	Management Studies	Dr. Usha Mohan	Dr. Zach G. Zacharia, Lehigh University, Bethlehem, PA, USA	Increasing Efficiency and Reducing Cost Within a Supply Chain (U.S. and Indian Perspectives)	13-17 June 2016	16
13.	Computer science Engineering	Dr. Rupesh Nasre	Prof. Ponnuswamy Sadayappan [United States of America]	High-Performance Parallel Computing	20 June-1 July 2016	31
14.	Metallurgical and Materials Engineering	Dr. Sreenivas Jayanti and Dr. Ranjit Bauri	Dr. Aman Dhir [United Kingdom]	Fabrication, Testing and System Integration of Solid Oxide Fuel Cells	27 June-2 July 2016	17
15.	Management Studies	Dr. C. Rajendran	Prof. A. Ravi Ravindran [United States of America]	Supply Chain Engineering and Multi-Criteria Decision Making	27 June-8 July 2016	22
16.	Biotechnology	Dr. T. S. Chandra and Dr. S. Ramalingam, Anna University	Prof. Mark A. Eiteman, University of Georgia, USA	Metabolic Engineering for Bioprocesses	2-15 July 2016	31
17.	Metallurgical and Materials Engineering	Dr. B. S. Murty	Prof. C. Ravi Ravindran [Canada]	Advanced Casting and Solidification of Light Alloys for Transportation	4-11 July 2016	15
18.	Management Studies	Dr. C. Rajendran	Prof. Dr. Rainer Leisten, University of Duisburg-Essen, Germany	Scheduling Systems - An Integrated View on Models, Methods and Tools with a Focus on Manufacturing and Service Systems	8-17 July 2016	25
19.	Civil Engineering	Dr. Ravindra Gettu and Dr. Amlan K. Sengupta	Prof. Joan Ramon Casas, Technical University of Catalonia (UPC), Barcelona, Spain	Advanced Bridge Design and Construction	11-23 July 2016	38
20.	Management Studies	Dr. A. K. B. Chand	Prof. P.D. Peter Massopust [Germany]	Splines and Fractals in Approximation and Interpolation Theory	15-29 July 2016	23

S.No	Department	Host Faculty	International Faculty	GIAN Course Title	Duration	No. of Participants
21.	Civil Engineering	Dr. Ashwin Mahalingam (CE)	Dr. Geert Dewulf, University of Twente, The Netherlands	Stakeholder Management for Large Engineering Projects	18-24 July 2016	27
22.	Computer and Science Engineering	Dr. C. Pandurangan	Prof. Aravind Srinivasan [United States of America]	Randomized Algorithms	18-31 July 2016	15
23.	Mechanical Engineering	Dr. Sundararajan Natarajan	Prof. Timon Rabczuk, Bauhaus University, Germany	Nonlinear Continuum Mechanics	18-29 July 2016	33
24.	Civil Engineering	Dr. G. R. Dodagoudar	Prof. Carlo G. Lai, University of Pavia, Italy	Advances in Seismic Hazard Analysis and Soil-Structure Interaction	18-30 July 2016	51
25.	Aerospace Engineering	Dr. S. R. Chakravarthy (AE)	Prof. Narayanan M. Komerath, Georgia Institute of Technology, USA	Micro-Renewable Energy Architecture	25 July-5 August 2016	5
26.	Electrical Engineering	Dr. V. Jagadesh Kumar and Dr. Boby George	Prof. Steffen Leonhardt, Aachen University, Aachen, Germany	Biomedical Engineering Systems	25 July-5 August 2016	31
27.	Computer and Science Engineering	Dr. John E. Augustine	Dr. Gopal Pandurangan, University of Houston, USA	Distributed Network Algorithms: Foundations and Future Directions	1-12 August 2016	28
28.	Applied Mechanics	Dr. K. Arul Prakash	Prof. P. Nithiarasu, Swansea University, UK	Finite Elements in Fluids	1-5 August 2016	48
29.	Management Studies	Dr. Arshinder Kaur	Prof. Kannan Govindan, University of Southern Denmark, Odense, Denmark	Supply Chain Modeling and Decision Making	1-7 August 2016	29
30.	Applied Mechanics	Dr. B.S.V. Prasad Patnaik and Dr. A. J. Shaiju	Prof. Andrew Gilbert, University of Exeter, UK	Fluid Vortices: From Vorticity to Differential Geometry	1-6 August 2016	18
31.	Humanities and Sciences Engineering	Dr. Arvind Sivaramakrishnan and Dr. V. R. Muraleedharan	Prof. Ronald Beiner [Canada]	Negotiating a Democratic Space – Philosophy, Religion, and the State	6-12 August 2016	7
32.	Chemistry	Dr. P. Selvam	Prof. A. Manthiram, University of Texas at Austin, USA	Electrochemical Energy Conversion and Storage: Materials and Methods	8-17 August 2016	45
33.	Management Studies	Dr. M. Thenmozhi and Dr. S. Krishna Prasanna	Prof. Marti G. Subrahmanyam, Leonard N. Stern School of Business, New York, USA	Emerging Market Finance Research: Future Directions	8-12 August 2016	68
34.	Humanities and Sciences Engineering	Dr. Binitha V. Thampi	Dr. Ajit Zacharias, Levy Economics Institute of Bard College, NY, USA	Gender Dimensions of Social and Economic Policies	8-13 August 2016	23
35.	Mechanical Engineering	Dr. V. Raghavan and Dr. Krithika Narayanaswamy	Prof. Kalyanasundaram Seshadri, University of California, San Diego, USA	Theoretical and Kinetics Aspects of Combustion	16-22 August 2016	27
36.	Metallurgical and Materials Engineering	Dr. Ranjit Bauri	Prof. Rajiv S. Mishra, University of North Texas, USA	Friction Stir Welding and Processing	5-10 September 2016	31
37.	Ocean Engineering	Dr. Jitendra S. Sangwai	Dr. Hassan Karimaie, StatOil, Norway	Enhanced Oil Recovery from Heavy Oil and Fractured Reservoirs	11-17 September 2016	72
38.	Electrical Engineering	Dr. Balaji Srinivasan, Dr. Deepa Venkitesh and Dr. Anil Prabhakar	Prof. Johan Nilsson, University of Southampton, UK	Fiber Lasers and Applications	13-24 September2016	30
39.	Metallurgical Materials Engineering	Dr. Ajay Kumar Shukla	Prof. Geoffrey Brooks [Australia]	Fundamentals of Slag Chemistry	25 September-1 October 2016	8
40.	Civil Engineering	Dr. Devdas Menon	Prof. Mike Schlaich, Technische Universität Berlin, Germany	Conceptual and Structural Design- Lightweight Structures	26 September-1 October 2016	65
41.	Civil Engineering	Dr. Arun Menon	Prof. Claudio Modena [Italy]	Rehabilitation of Heritage Structures	28 September-8 October 2016	27
42.	Metallurgical and Materials Engineering	Dr. Ajay Kumar Shukla	Prof. Olena Volkova, Germany	Thermochemical Modeling of Steelmaking Process	11-17 October 2016	12
43.	Aerospace Engineering	Dr. S. R. Chakravarthy and Dr. T. M. Muruganandam	Prof. Andreas Dreizler, Technische Universitat Darmstadt, Germany	Combustion and flow diagnostics	26 September-7 October 2016	
44.	Electrical Engineering	Dr. Balaji Srinivasan and Dr. Deepa Venkitesh	Prof. Luc Thevenaz EPFL, Switzerland	Distributed Fiber Sensors and its Applications	17-28 October 2016	15
45.	Chemical Engineering	Dr. S. Pushpavanam and Dr. T. Renganathan	Prof. G. Labrosse, President, TchebyFlow, France	Spectral Methods for Transport Phenomena Processes in Industry and Academic Research	31 October-11 November 2016	40
46.	Chemical Engineering	Dr. Ravi Krishna	Prof. Louis J. Thibodeaux, Louisiana State University, Baton Rouge, USA	Environmental Chemodynamics	7-18 November 2016	8
47.	Mechanical Engineering	Dr. Sundararajan Natarajan	Prof. Chongmin Song, University of New South Wales, Sydney, Australia	Scaled Boundary Finite Element Method	14-18 November 2016	23
48.	Chemistry	Dr. P. Selvam	Prof.EmilRoduner, University of Stuttgart, Germany	Nanomaterials: Size- and Shape-Dependent Phenomena - Advances in Catalysis and Energy Materials Applications	14-23 November 2016	23
49.	Electrical Engineering	Dr. Shanthi Pavan	Dr. Eric A.M. Klumperink, University of Twente, The Netherlands	Advances in Flexible CMOS Radio Frequency Transceivers	14-18 November 2016	43
50.	Electrical Engineering	Dr. Shanthi Pavan	Prof. K. A. A. Makinwa Delft University of Technology Delft, The Netherlands	Designing Smart Sensor Systems	21-25 November 2016	54
51.	Civil Engineering	Dr. Balaji Narasimhan and Dr. K. P. Sudheer	Prof. R. Srinivasan, Texas A&M University, USA	Hydroinformatics for Integrated Water Resources Management	28 November- 9 December 2016	42
52.	Metallurgical and Materials Engineering	Dr. Ajay Kumar Shukla	Prof. David G. C. Robertson [United States of America]	Process Engineering Principles and Software for Pyrometallurgical Processes for Metal Extraction	2-16 December 2016	3
53.	Civil Engineering	Dr. A. Veeraragavan	Prof. Soheil Nazarian, University of Texas at El Paso, USA	Non-Destructive Testing of Pavements from Cradle to Grave	5-10 December 2016	23
54.	Applied Mechanics	Dr. B.S.V. Prasad Patnaik and Dr. B. V. Rathish Kumar (MA, IITK)	Prof. K. B. Chandran, University of Iowa, USA	Cardiovascular Fluid Mechanics: Foundations	5-10 December 2016	22
55.	Mechanical Engineering	Dr. G. L. Samuel	Prof.K.P.Rajurkar, University of Nebraska-Lincoln, USA	Micro and Nano Manufacturing Processes	5-10 December 2016	37

S.No	Department	Host Faculty	International Faculty	GIAN Course Title	Duration	No. of Participants
56.	Physics	Dr. A. R. Ganesan	Prof.Vasudevan Lakshminarayanan, University of Waterloo, Canada	Physics of the Visual System for Engineers	5-20 December 2016	12
57.	Metallurgical and Materials Engineering	Dr. Manas Mukherjee	Prof.JohnBanhart, Technical University Berlin, Germany	Introduction to Metal Foams and Cellular Metals	5-11 December 2016	16
58.	Applied Mechanics	Dr. C. Lakshmana Rao	Prof. CemalBasaran The State University of New York at Buffalo, USA	Mechanics of Nano-Electronics Packaging	5-9 December 2016	12
59.	Metallurgical and Materials Engineering	Dr. V. Subramanaya Sarma	Prof. Martin Heilmaier Karlsruhe Institute of Technology, Germany	High Temperature Structural Materials	7-19 December 2016	11
60.	Mechanical Engineering	Dr. Manoj Pandey	Dr. Mohammed Younis, SUNY –Binghamton, NY, USA	MEMS Modelling and Nonlinear Dynamic Based Analysis	7-21 December 2016	26
61.	Mechanical Engineering	Dr. Sundararajan Natarajan	Prof. N. Sukumar [United States of America]	Partition of Unity Methods	12-18 December 2016	21
62.	Civil Engineering	Dr. A. Veeraraghavan	Prof. Rajib Basu Mallick [United States of America]	Building Resilient and Sustainable Roadway Infrastructure	12-23 December 2016	26
63.	Metallurgical and Materials Engineering	Dr. B. S. Murty	Prof. C. Suryanarayana, University of Central Florida, Orlando, USA	Non-equilibrium Processing of Advanced Materials	12-18 December 2016	23
64.	Computer and Science Engineering	Dr.V. Krishna Nandivada	Prof. Suresh Jagannathan [United States of America]	Foundations of Memory and Consistency Models	19-23 December 2016	12
65.	Applied Mechanics	Dr. K. Ramesh (AM)	Prof. Krishnaswamy Ravichandar, University of Texas at Austin, USA	Mechanics of Fracture	19-23 December 2016	51
66.	Metallurgical and Materials Engineering	Dr. Ravi Kumar N. V.	Prof. J. W. Drelich, Michigan Technological University, USA	Contact Angles: Measurements, Interpretation and Modern Applications	20-25 November 2016	17
67.	Physics	Dr. Sivarama Krishnan and Dr. Anil Prabhakar	Prof. Uwe Morgner, Leibniz University of Hannover, Germany	Attosecond Photonics – Science and Technology	7-11 November 2016	31
68.	Physics	Dr. L. Sriram Kumar	Prof. Jérôme Martin, CNRS, Paris, France	Origin and Evolution of Perturbations during Inflation and Reheating	25-30 November 2016	25
69.	Electrical Engineering	Dr. Nagendra Krishnapura	Prof. Alper Demir, Koc University, Istanbul, Turkey	Fundamentals of Numerical Modelling and Simulation of Multi-Physics and Multi-Domain Systems	2-6 January 2017	33
70.	Metallurgical and Materials Engineering	Dr. N. V. Ravikumar	Prof. Rajendra K. Bordia, Clemson University, USA	Sintering and Sintering-Free Processing of Ceramics and Microstructural Development	2-8 January 2017	21
71.	Electrical Engineering	Dr. Nagendra Krishnapura	Prof. Jaijeet Roychowdhury, University of California at Berkeley,USA	Computational Techniques for Frequency domain and perturbation Analysis of Electronic and Multi Physics Systems	30 January-3 February 2017	8
72.	Electrical Engineering	Dr. Anil Prabhakar (EE)	Dr. Therese Willkomm, University of New Hampshire, USA	Creating Solutions in Minutes for People with Disabilities	8-13 January 2017	43
73.	Electrical Engineering	Dr. Nagendra Krishnapura	Dr. Mingoo Seok, Columbia University, USA	Near/sub-threshold Circuits and Architectures for Microprocessors	9-13 January 2017	36
74.	Electrical Engineering	Dr. Shanti Bhattacharya	Prof. Kishan Dholakia, University of St. Andrews, Scotland	Complex Light	16-21 January 2017	16
75.	Aerospace Engineering	Dr. R. Velmurugan	Dr. S.D. Jacob Muthu, University of the Witwatersrand Johannesburg, South Africa	Multi-scale Modelling for Polymeric Nano Composites	16-27 January 2017	34
76.	Management Studies	Dr. R. P. Sundarraj and Dr.C. Rajendran	Prof. Soundar Kumara, Pennsylvania State University, USA	Data Analytics with applications to Healthcare	23 January-2 February 2017	28
77.	Metallurgical and Materials Engineering	Dr. Ravi Kumar N. V.	Prof. J. W. Drelich, Michigan Technological University, USA	Contact Angles: Measurements, Interpretation and Modern Applications	29 January-4 February 2017	16
78.	Humanities and Sciences Engineering	Dr. Sonika Gupta	Dr. James Leibold, La Trobe University, Melbourne, Australia	China Wired: Culture & Politics of New Media in China	6-10 February 2017	22
79.	Electrical Engineering	Dr. Deepa Venkitesh	Prof. Thas Nirmalathas	Microwave Photonics-Technologies, Systems and Networks	16-25 February 2017	23
80.	Electrical Engineering	Dr. Anil Prabhakar and Dr. Bijoy K Das	Dr. Inga Anita Fischer, University of Stuttgart, Germany	Advanced Group-IV Semiconductor Electronic and Optoelectronic Devices	15-21 February 2017	7
81.	Ocean Engineering	Dr. Jitendra S. Sangwai	Dr. Hassan Karimaie, Statoil, Norway	Petroleum Reservoir Characterization	26 February-4 March 2017	104
82.	Electrical Engineering	Dr. Shanthi Pavan	Dr.SudhakarPamarti, University of California, Los Angeles, USA	Integrated Phase and Frequency Synthesis	1-15 March 2017	30
83.	Engineering Design	Dr. Balakrishna C. Rao	Prof. Srinivasan Chandrasekar, Purdue University, USA	Process Analysis and Metrology for Discrete Products Manufactuing	13-27 March 2017	12
84.	Electrical Engineering	Dr. Bijoy K. Das	Prof. Shayan Mookhejea, University of California, San Diego, USA	Silicon Photonics: Linear, Nonlinear, and Quantum Integrated Optical Devices and Circuits	19 March-1 April 2017	16
85.	Applied Mechanics	Dr. S. Ramakrishnan	Dr. Sriram Balasubramanian, Drexel University, PA, USA	Pediatrci Biomechanics-Deformities Treatment and Injury Prevention	20-24 March 2017	22
	Total					**2289**

IIT PAL

IIT-PAL is an MHRD initiative where lectures have to be recorded by IIT professors based on the CBSE syllabus of physics, mathematics and chemistry. The national coordinator from IIT Delhi is responsible for managing the fund transfer from MHRD and its allocation to the participating institutions. Channel coordinators and subject coordinators (each for biology, chemistry, mathematics and physics) are also from IIT Delhi. Subject coordinators assign lectures on various topics to institute coordinators (one from each participating institute) who in turn identify the faculty willing to offer and record lectures. Twenty nine lectures each were assigned to IIT Madras in chemistry and mathematics for which recording and review have been completed. Due to administrative reasons, ten lectures in physics were also subsequently assigned to IIT Madras to be completed by end of June 2017. In chemistry, lectures have been recorded on basic principles in chemistry (5), atomic structure (7), periodic classification of elements (3), chemical bonding (7) and basic organic chemistry (7). In mathematics, the topics from the CBSE book include logarithms (5), harder problems in quadratic equations (4), vectors (8), three-dimensional geometry (6) and statistics (6). The assigned task is complete, and telecast has started for the recorded lectures. The recorded lectures are being telecast through *Swayamprabha* channel.

6.1.8. NPTEL: A Joint Initiative of the IITs and IISc, Funded by MHRD

NPTEL, implemented using information and communication technology (ICT), is India's largest technical education dissemination programme involving seven IITs (Bombay, Delhi, Guwahati, Kanpur, Kharagpur, Madras and Roorkee) and IISc, Bengaluru. The institutes have together developed several web and video-based material for science and engineering courses. IIT Madras is the co-ordinating institute of this project.

In NPTEL phases, which began in June 2009, 436 web courses and 492 video courses have been created. The total number of courses now stands at 928 on both the NPTEL website and YouTube, covering 24 disciplines, including engineering, management, basic sciences and humanities. Each web course has textual content that can be used to support a 40-hour course and a typical video course comprising about 40 video lectures of one-hour duration each.

Courses completed (discipline-wise—video and web)

Discipline	Video	Web	Grand Total
Aerospace Engineering	20	17	37
Atmospheric Science	3	1	4
Basic courses (semesters 1 and 2)	21	17	38
Biotechnology	8	16	24
Chemical Engineering	33	35	68
Chemistry and Biochemistry	15	17	32
Civil Engineering	47	60	107
Computer Science and Engineering	48	32	80
Electrical Engineering	42	25	67
Electronics and Communication Engineering	47	27	74
Engineering Design	3	8	11
Environmental Science		3	3
General	3		3
Humanities and Social Sciences	22	25	47
Management	20	13	33
Mathematics	32	25	57
Mechanical Engineering	64	67	131
Metallurgy and Material Science	19	13	32
Mining Engineering	1	1	2
Nanotechnology	2	3	5
Ocean Engineering	18	1	19
Physics	22	16	38
Textile Engineering	2	14	16
Grand Total	**492**	**436**	**928**

Number of courses (video and web) completed by each institute

Institute	Video	Web	Grand Total
IISc Bengaluru	44	39	83
IIT Bombay	49	46	95
IIT Delhi	42	38	80
IIT Guwahati	18	80	98
IIT Kanpur	80	78	158
IIT Kharagpur	111	48	159
IIT Madras	128	77	205
IIT Roorkee	20	30	50
Grand Total	**492**	**436**	**928**

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).

Accessing NPTEL courses

All courses developed under NPTEL phases 1 and 2 and the list of courses (along with syllabi) is available to everyone free of cost, without any formal registration. The videos are also available on YouTube. For ease of use and to help institutes that do not have Internet access or do not enjoy high bandwidths, the content is distributed through following channels:

- Free downloads from the NPTEL website
- From the NPTEL office, Chennai, free of cost
- Video streams on demand through YouTube using any browser add-ons
- Video content in DVDs from Bodh Bridge Educational Services Private Limited, Chennai (for a fee)
- Compressed 'tar' downloads (entire courses or multiple courses)

Free and easy downloads of web and video-based courses are available from the NPTEL website in three formats (MPEG4, FLV and 3GP) and are distributed to individuals/institutions free of cost. The media needed for copying the contents is to be provided by the individual or institution. DVDs of individual video courses are available for a fee that covers the cost of production and distribution. Institutions can use the government-subsidised VPN bandwidth available through NMEICT.

Transcripts and MP3 versions of video lectures

Edited transcripts (in the form of PDF files), audio extracts 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 with the corresponding video lecture. This file, coupled with the text transcript, serves as a good educational resource. So far, more than 19,939 lectures have been transcribed through a manual transcription process, and more than 14,384 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 learn the concept through a partial or complete translation of the spoken content in their first language. It is proposed to take up subtitling in regional languages in the future.

Statistics of NPTEL usage

The web-based NPTEL content is registered with Google Analytics, and the statistics provided by Google are being used to study the effectiveness of this programme. The data that have been collected to date show that the number of visitors to NPTEL has steadily increased over the years and that the NPTEL content is being used extensively by students, faculty members and working professionals.

NPTEL videos are also hosted on YouTube at http://youtube.com/iit. Statistics gathered from YouTube show that NPTEL is the most subscribed to educational channel (on YouTube) and the number of upload views of the channel has crossed 240 million. The NPTEL site has had more than 365 million visits since its inception in 2006.

NPTEL online courses

Online learning has been going through a major revitalization 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 of offering online courses through its new portal (https://onlinecourses.nptel.ac.in/). The portal is powered by Google India. This new effort has been termed NPTEL Online Certification (NOC).

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 a fixed time duration, and, therefore, the

simultaneous participation of teachers and a large number of students may be termed synchronous. This learning is similar to the one that takes place in a classroom although it is enabled by the Internet 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 generation of students. When offered through supplementary DVDs and mobile-delivered content, considering students in non-urban and rural areas, they enable quality and equitable access to a much larger population of students 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 14-week online courses, typically on topics relevant to students (typically 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. Enrolment 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, about 355 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 4 weeks (10 hours), 8–12 weeks (20 hours) or a full semester (40 hours)
4. Two to four hours of lectures every week
   - The lectures are broken up into short modules.
   - Each module has a clear description of its contents and expected learning outcomes.
5. Objective/subjective/programming assessments every week as decided by the faculty member
6. A discussion forum where students can raise questions and get their doubts answered
7. An announcements section in which announcements are posted
8. 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

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 enrolment, which is free.
3. Every week, about two–three hours of video content is released, along with an assignment based on this, 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 ₹ 1000 and ₹ 1250 are charged for non-programming and programming courses, respectively.
6. The certification exam is conducted on two consecutive 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 of IITs (in partnership with industry bodies, if applicable).
8. Now certificates are being used by select universities for transfers, for making the student more employable or for enhancing her or his growth in the current place of work.

Certification completed

Course Run	Number of Courses	Enrolled	Registered	Certified
July 2014	1	53,807	1380	1182
December 14	2	58,947	1653	1549
March 2015	12	78,924	2262	1856
May 2015	15	31,684	1659	853
July 2015	27	23,195	2400	1827
September 2015	18	1,22,782	5569	4625
November 2016	18	38,037	1722	1379
March 2016	29	1,50,766	13,080	11,730
April 2016	35	90,925	4266	3553
September 2016	31	147104	12572	5396
October 2016	73	254072	23176	14199
March 2017	64	208474	22101	15346
April 2017	66	273860	21998	yet to update
Grand Total	**391**	**1259029**	**113838**	**63495**

Tentative list for upcoming July 2017 run:

Sl. No.	Discipline	Course	Duration (hours)
1.	Aerospace Engineering	Gas Dynamics	30
2.		Combustion in Air Breathing Aero Engines	30
3.	Architecture and Planning	Role of Craft and Technology in Interior Architecture	10
4.		Universal Design and Accessibility Planning	10
5.		Introduction to Housing Design	10
6.	Biological Sciences and Biotechnology	General and Applied Microbiology	20
7.		Bio-separation	20
8.		Bio-pharmaceuticals	20
9.		Cell membrane: Structure, Organization and Function	20
10.		Biostatistics and Design of Experiments	20
11.		Biomedical Nanotechnology	10
12.		Mathematics for Biologists	30
13.		Introduction to Mechanobiology	10
14.		Introduction to Cell Mechanics and Mechanobiology	20
15.		Animal Physiology	30
16.		Cell Culture Technologies	20
17.		Forest Biometry	20
18.	Chemical Engineering	Phase Equilibrium Thermodynamics	20
19.		Transport Phenomena	30
20.		Trace and Ultra-Trace Analysis of Metals using Atomic Absorption Spectrometry	20
21.		Unit Operations of Particulate Matter	10
22.		Introduction to Evolutionary Dynamics	20
23.	Chemistry and biochemistry	Organic Stereochemistry and Stereoselective Reactions	10
24.		Analytical Chemistry	30
25.		Co-ordination Chemistry (Chemistry of Transition Elements)	30
26.		Stereochemistry	30
27.		Basics of Fluroscence Spectroscopy	20
28.		Laser's- Fundamentals and Applications	20

Sl. No.	Discipline	Course	Duration (hours)
29.		Metal Mediated Synthesis-I	10
30.		Chemical and Biological Thermodynamics: Principles to Applications	30
31.	Civil Engineering	Municipal Solid Waste Management	30
32.		Computational Hydraulics	30
33.		Design of Steel Structures	30
34.		Strength of Materials	30
35.		Design of Reinforced Concrete Structures	30
36.		Concrete Bridges	10
37.		Structural Analysis I	30
38.		Principles of Surveying	10
39.		Project Planning and Control	20
40.		Geotechnical Engineering Laboratory	20
41.		Digital Image Processing of Remote Sensing Data	10
42.		Mechanics of Solids	30
43.	Computer Science and Engineering	Design and Analysis of Algorithms	20
44.		Programming, Data Structures and Algorithms Using Python	20
45.		Introduction to Operating Systems	20
46.		Ai: Search Methods for Problem Solving	30
47.		Privacy in Social Networks	20
48.		Software Testing	30
49.		Computer Architecture and Organization	30
50.		An Introduction to Algorithms	30
51.		Hardware Modeling using Verilog	20
52.		Introduction to Internet of Things	10
53.		Cloud Computing	20
54.		Software Testing	10
55.		Fundamentals of Database Systems	20
56.		Modern Compilers: Theory and Practice	30
57.		Theory of Computation	20
58.	Electrical /Electronics/Communications Engineering	Power System Analysis	30
59.		Industrial Instrumentation	30
60.		Electrical Machines – I	30
61.		Controls Engineering	30
62.		Basic Electrical Circuits	30
63.		Analog Circuits	30
64.		Networks and Systems	30
65.		Optimal Control	10
66.		Basics of Software-Defined Radios and Practical Applications	10
67.		Microwave Integrated Circuits	20
68.		Principles of Communication Part II	20
69.		Applied Engineering Electromagnetics	30
70.		Principles of Modern CDMA/MIMO/OFDM Wireless Communications	20
71.		Design for Internet of Things	20
72.		Enclosure Design of Electronics Equipment	30
73.		Design of Photovoltaic Systems	30
74.		Analog Communication	30
75.		Modern Digital Communication Techniques	30
76.		Digital Speech Processing	20
77.		Satellite Communication	20
78.		Semiconductor Devices for Integrated Circuits	20
79.		Speech Signal Processing	20
80.		Photonic Integrated Circuits	10
81.	Humanities and Social Sciences	Soft Skills	30
82.		Human Resource Development	30
83.		Educational Leadership	20
84.		Technical English for Engineers	30
85.		Literature for Competitive Exams	30
86.		Applied Linguistics	30
87.		Culture and Communication	10
88.		Cognition, Transformation and Lives	10
89.		Understanding Relation Between Visual Perception and Art Across Culture	10
90.		Introduction to Basic Cognitive Processes	20
91.		Calculus of One Real Variable	20
92.		Science, Technology and Society	30
93.		Gender and Literature	20
94.		Ecology and Society	30
95.		Introduction to Psychology	20
96.	Management	Total Quality Management Part I	20
97.		Gender Justice and Workplace Security	10
98.		Operations Management	30
99.		Issues of Intellectual Property Rights in Biotech	10
100.		IPR for Engineers	30
101.		Marketing Research and Analysis	20
102.		IPR: Theory to Practice	20
103.		Project Management for Managers	30
104.		Corporate Social Responsibility	20
105.		Decision Modeling	20
106.		E-business	30
107.		Six Sigma	30
108.	Mathematics	Differential Equations	30
109.		Advanced Numerical Methods for Solving Engineering	10
110.		Integral Equations, Calculus of Variations and its Applications	30
111.		Nonlinear Programming	10
112.		Numerical Methods	20
113.		Fourier Analysis and its Applications	10
114.		Measure Theory	30
115.		Calculus for Economics, Commerce and Management	20
116.		Constrained and Unconstrained Optimization	30
117.		Numerical Analysis	30
118.		An Introduction to Software	20
119.	Mechanical/Industrial/Materials science and engineering	Iron Making	30

Sl. No.	Discipline	Course	Duration (hours)
120.		Heat Treatment and Surface Hardening part II	20
121.		Phase Transformation in Materials	30
122.		Mechanical Measurement Systems	20
123.		Fundamentals of Manufacturing Processes	30
124.		Fluid Dynamics and Turbomachines	20
125.		Engineering Fracture Mechanics	30
126.		Spur and Helical Gear Cutting	10
127.		Laws of Thermodynamics	10
128.		Lasers in Manufacturing	30
129.		Foundation Of Computational Fluid Dynamics	20
130.		Micro and Nano Scale Energy transport	30
131.		Manufacturing of Composites	20
132.		Ergonomics	20
133.		Nature and Property of Materials	20
134.		Mathematical Methods in Engineering and Sciences	30
135.		Transport Phenomena in Materials	20
136.		Electron Diffraction and Imaging	30
137.		Mechatronics Systems	20
138.		Hydrodynamic Machines	10
139.		Automatic Control	20
140.		Modelling and Simulation of Discrete Event System	20
141.		Polymer and Polymer Composites	20
142.		Manufacturing Systems and Sustainability: An Applied Approach	20
143.		Fundamentals of Material Processing II	20
144.		Acoustic and Noise Control	30
145.		Fundamental of Metal Casting	20
146.	Multidisciplinary	Biology for Engineers and Other Non-Biologists	10
147.		Introduction to Research	20
148.		Health Research Fundamentals	20
149.	Physics	Solar Photovoltaics: Fundamentals, Technology and Application	20
150.		Quantum Physics	20
151.		Mathematics Methods in Physics - i	30
152.		Classical Mechanics: from Newtonian to Lagrangian Formulation	30
153.		Solid State Physics	30

Role of CCE of IIT in NOC

Each online course will be conducted administratively under the 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.

Aricent

Aricent has partnered with NPTEL through IITM-OAA to sponsor scholarships for students in financial need to aid payment for the certification exams.

Use of NPTEL video and Web material as GATE preparation aids

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 five disciplines have been mapped so far with the help of postgraduate student volunteers, and the answers have been further validated by faculty members specializing in the area. Both the students and the faculty members have been paid honoraria.

NPTEL Local Chapters (LCs)

NPTEL has been actively organising local chapters in colleges. These local chapters will provide a platform for continuous engagement with the colleges involved and serve as direct points of contact that will act as champions of NPTEL in these colleges. These chapters are a recent initiative of NPTEL but have received a tremendous response.

Today, there are 908 colleges across India that have NPTEL local chapters.

State	Number of LCs
Andaman and Nicobar	1
Andhra Pradesh	91
Assam	3
Bihar	3
Chhattisgarh	20
Delhi	5
Goa	2
Gujarat	28
Haryana	11
Himachal Pradesh	2
Jammu and Kashmir	3
Jharkhand	7
Karnataka	53
Kerala	47
Madhya Pradesh	25
Maharashtra	186

State	Number of LCs
Manipur	1
Meghalaya	1
New Delhi	1
Odisha	10
Puducherry	6
Punjab	10
Rajasthan	20
Sikkim	1
Tamil Nadu	178
Telangana	29
Tripura	1
Uttar Pradesh	90
Uttarakhand	21
West Bengal	52
Grand Total	**908**

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 the local chapters that NPTEL is able to interact with colleges and award scholarships to deserving candidates with a reduced exam fee.

Feedback on NPTEL

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.

Recording special and topical lectures in different areas

NPTEL has officially approved and recorded lectures on various special topics—History of Mathematics in India since First Century A.D., Ayurvedic Medicine, Temple Arts and Palaeontology, to name a few. These lectures will be supplemented by many more, which will be electives and master's-level courses.

Workshops

Workshops are routinely conducted for students and faculty members of other institutes to create awareness about NPTEL. Three 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

The participants at these workshops are from various institutes, and so the information reaches a large number of colleges. Typically, these issues are addressed: 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 invited from the participants for improvements to enhance the learning experience.

Year	Number of workshops
2016	29
2017	17
Total	**46**

Teachers were informed how to adapt the content for their classes. More than 1,00,000 teachers and students attended these workshops.

During the last year, several MOOCs workshops were conducted across the country to familiarize faculty members with the MOOCs format. Details of the workshops are provided here:

Date	Venue
February 2016	IIT Hyderabad
February 2016	IIIT Hyderabad
March 2016	CEC Delhi
March 2016	IIT Guwahati
March 2016	IIIT Delhi
March 2016	Delhi University
April 2016	IIT Roorkee

NPTEL portals for various workflows

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—For NPTEL online courses
- http://nptel.ac.in/LocalChapter—For NPTEL local chapters with login for single point of contact (SPOCs) and mentors of NPTEL local chapters

NPTEL also has Facebook and Twitter accounts:
https://www.facebook.com/pages/Nptel-India/1413735098927291 - 46,000+ followers
https://twitter.com/nptelindia - 1712 followers

6.1.9. Educational Technology Cell

CCE TV studios

Educational Technology Cell which was started in a small way in 1989, has grown by leaps and bounds and has been the incubator for many later projects like NPTEL, NPTEL online courses, NKN, GIAN and now recently M.Tech Online courses for Industries.

These are the following facilities available:

Studio-1: A fully equipped state-of-the-art television studio equipped with remote-controlled broadcast quality video cameras, control room equipment, video conferencing system and other related equipment housed in a 120-seat theatre
Studio-2: A fully equipped state-of-the-art television studio equipped with remote-controlled broadcast quality video cameras, control room and other related equipment housed in a 60-seat seminar hall
Conference room: Converted to a T.V./video-conferencing studio with a capacity to hold 50 people
MSB-359: A video-conferencing studio in a 54-seat seminar hall
MSB-360: A video-conferencing studio in a 54-seat seminar hall
Alpha Mini Video-conferencing theatre for M.Tech online courses
Beta Mini Video-conferencing theatre for M.Tech. online courses
Gamma Mini Video-conferencing theatre for M.Tech. online courses
Outdoor Video Coverage Unit: For outdoor video coverage in other halls and labs in the IIT campus

6.1.10. Central Photographic Section

The Central Photographic Section caters to the photographic needs of departments and centres of the institute. The jobs include photographic coverage of most of the important functions such as convocations, farewell functions and Independence Day and Republic Day celebrations held at the institute. The section also renders assistance with technical photography and other support to students, research scholars and faculty members of the departments and centres. Recently, the section was modernised, and it meets all the digital high-resolution photography needs of the institute. The Central Photographic Section has contributed a large percentage of the photographs to the Heritage Centre.

6.1.11. Conference registration for 2016-17

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 others organised by them with CCE. The following programmes were registered with CCE in 2016–2017:

Sl. No.	Organising Chairman, Department	Organising Secretary, Department	Title	Duration	Number of Participants
1.	Prof. Manu Santhanam, Civil Engineering		International Conference on Advances in Construction Materials and Systems	2-7 September 2017	550
2.	Dr. T. Asokan, Engineering Design	Dr. H. Somashekhar, Mechanical Engineering	Advances in Robotics	18-19 July 2016	40
3.	Prof. A. Boominathan, Civil Engineering		Indian Geotechnical Conference (IGC 2016)	15-17 December 2016	350
4.	Prof. A. Boominathan, Civil Engineering	Prof. S. R. Gandhi, Civil Engineering	One-day workshop on Pile Foundation	15 December 2016	100
5.	Dr. T. Asokan, Engineering Design	Dr. H. Somashekhar, Mechanical Engineering	Serb School on Robotics		40
6.	Prof. S. Sundar, Mathematics		International Conference on Advances in Scientific Computing	28-30 November 2016	70
7.	Prof. C. Chanddra Sekhar, Computer Science and Engineering		Interspeech 2018	2-6 September 2018	1400
8.	Prof. Bhaskar Ramamurthi, Electrical Engineering	Prof. C. Balaji, Mechanical Engineering	Engineers Conclave 2016 (EC 2016), jointly organized by IIT Madras and INAE	1-3 September 2016	155
9.	Prof. Ashok Jhunjhunwala, Electrical Engineering		Sustainable Green Buildings and Communities (SGBC)	18-20 December 2016	250
10.	Dr. Andrew Thangaraj Electrical Engineering		National Conference On Communication 2017	2-4 March 2016	210
11.	Prof. T. J. Kamalanabhan, Management Studies		26 National Academy Of Psychology (NAOP) Convention	29-31 December 2016	260
12.	Dr. Anbarasan P., Chemistry	Dr. Beeraiah Baire, Chemistry	CIHS 2016	17 August 16	300
13.	Dr. Venkatesh Ramaiyan, Electrical Engineering		WiFi Knowledge Summit	27 August 2016	60
14.	Dr. Gaurav Raina, Dr. Sharayu Moharir, Electrical Engineering	Dr. Krishna Jagannathan, Dr. Aditya Gopalan, Electrical Engineering	ACM Mobihoc 2017	10-14 July 2017	200
15.	Dr.K. Arul Prakash, Applied Mechanics		Workshop on Challenges in Cardio-Vascular Modelling	21-22 December 2016	15
16.	Dr. Lelitha Devi Vanajakshi, Civil Engineering		Indo-US Science and Technology Forum (IUSSTF)	5-6 December 2016	110
17.	Dr. Veeraragavan, Civil Engineering	Dr. J. Murali Krishnan, Civil Engineering	DST-IIT Madras Dissemination Workshop on Modified Binders	24-25 October 2016	150
18.	Dr. N. Ramesh Babu		10th International Conference on Precision Miso, Micro and Nano Engineering (COPEN 2017)	7-9 December 2017	175

Sl. No.	Organising Chairman, Department	Organising Secretary, Department	Title	Duration	Number of Participants
19.	Dr. S.M. Shiva Nagendra, Civil Engineering	Prof. Mukesh Khare, Civil Engineering, IIT Delhi	2nd Indian International Conference on Air Quality Management (IICAQM 2017) - Health and Exposure	24-25 February 2017	
20.	Prof. C. Balaji, Mechanical Engineering		Asian Symposium on Computational Heat Transfer 2017	10-13 December 2017	250
21.	Prof. Guhan Hayaraman, Biotechnology		Biotechnology Innovation and Entrepreneurship	22 October 2016	50
22.	Prof. M V Satyanarayana Physics		A Workshop on Physics Education and Research 2016	26-31 December 2016	40
23.	Dr.R K Amit Management Studies		A Workshop on Status and Future of End of Life Vehicle (ELV) Recycling in India	25 November 2016	100
24.	Prof. Koshy Varghese Civil Engineering		Indian Lean Sonstruction Conference Excellence (ILCE - 2017)	27-29 July 2017	260
25.	Prof. D. Karunagaran Biotechnology		Cancer Prevention and Treatment from Ancient Medicine to Modern Medicine	8-11 February 2018	400
26.	Prof. Sudhir Chella Rajan, Humanities And Social Sciences		Conference on Peri-Urban Development: Concept, Emerging Ideas and Notions of Sustainability	27-28 January 2017	25
27.	Prof. Guhan Jayaraman, Biotechnology		IICMS Seminar On HPLC	16 November 2016	55
28.	Prof. Aysha Iqbal, Humanities Social Sciences		Traversing the Margins	3-5 February 2017	300
29.	Prof. Balaji Narsimhan, Civil Engineering	Prof. K. P. Sudheer, Civil Engineering	2018 Swat International Conference and Workshop	8-12 January 2018	150
30.	Prof. Guhan Jayaraman, Biotechology		Downstream Processing In Biotechnology	23-25 February 2017	15
31.	Dr. Abdus Samad, Ocean Engineering	Prof. B.V.S.S.S. Prasad, Mechanical Engineering	A joint workshop by IIT Madras and Korea Institute of Industrial Technology	27-28 March 2017	16
32.	Prof. K. Murali, Ocean Engineering	Dr.Abdus Samad, Dr. Nilanjan Saha, Ocean Engineering	International Conference on Ocean Engineering	18-21 February 2018	200
33.	Prof. V. Kamakoti, Computer Science Engineering		RISCV International Conference	2-3 April 2017	75
34.	Dr. V. Sriram, Ocean Engineering		Workshop on Numerical Modelling and Applications in Coastal Processes	9-10 May 2017	40
35.	Prof. B. V. S. S. Prasad, Mechanical Engineering	Dr. N. Arunachalam, Mechanical Engineering	International Conference on Manufacturing Technology and Simulation	7-8 July 2017	70
36.	Dr. Rajesh R. Nair Ocean Engineering		Application of Geophysical Characterization in the Design of Foundation of Building and Industrial Oil and Gas Will Pad	29-31 March 2017	25
37.	Dr. Rajesh R. Nair Ocean Engineering		Assessment of Underground Structures Hidden Channels and Reservoirs Using Geophysical Techniques	9-10 March 2017	25
38.	Dr. Basavaraj M. Gurappa, Chemical Engineering	Dr. Abhijit P. Deshpande	COMPFLU 2017	18-20 December 2017	220

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 and relationships with industries. The centre facilitates active participation of faculty in various interactive programmes organized for the benefit of industries and the institute, plays a pro-active role in managing the intellectual property generated by the institute and its commercialization, and 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 its other activities are sponsored research programmes, consultancy projects (research based/retainer/institutional), collaborative projects with organizations and industries in foreign countries, industrial associateship scheme, ISRO-IITM Space Technology Cell joint projects, IGCAR-IITM Cell joint projects, NIOT-IITM Ocean Technology Cell, patenting and technology transfers, faculty and student entrepreneurship and incubation, and positive messaging and outreach programme.

6.2.2. Faculty and their Activities

Faculty

Dean: Prof. Krishnan Balasubramanian

Associate Dean: Prof. Ravindra Gettu (from May 2016)

Staff

Sh. R. Sundaram Chief Techno Economic Officer

Dr. V. Suresh Senior Techno Economic Officer

Sh. B. Nagarajan Joint Registrar (up to February 2017)

Sh. Sundaravinayagam Deputy Registrar (from August 2016)

Sh. P. Sarvaharana Assistant Registrar

Sponsored Research

A total of 212 projects of value ₹ 32,650 lakh were taken up by the institute during 2016-2017. The details of the projects are given below.

Sl. No.	Agency	Number of Projects	Amount (lakhs of ₹)
1.	Uchhatar Avishkar Yojana - IIT Madras	24	9931.88
2.	Department of Science and Technology	107	8692.95
3.	Ministry of Steel	2	3606.00
4.	Assam Power Distribution Company Ltd	1	3321.56
5.	Impacting Research Innovation and Technology – IMPRINT	11	2342.05
6.	Defence Research and Development Organisation	3	1133.08
7.	Central Water Commission	1	592.00
8.	Ministry of Human Resource and Development	2	469.00
9.	Central Power Research Institute	4	439.61
10.	Department of Biotechnology	10	319.56
11.	Indo-German Science and Technology Centre	3	300.00
12.	University Grants Commission	2	281.35
13.	Gas Turbine Research Establishment	1	173.40
14.	Indian Space Research Organisation	5	170.05
15.	Aeronautics Research and Development Board	4	115.18
16.	Board of Research in Nuclear Sciences	4	111.81

Sl. No.	Agency	Number of Projects	Amount (lakhs of ₹)
17.	Office of the Principal Scientific Adviser	1	100.00
18.	Naval Research Board	2	86.53
19.	Council of Scientific and Industrial Research	3	52.98
20.	Government of National Capital Territory of Delhi	1	51.89
21.	Indian National Science Academy	5	45.61
22.	Ministry of Water Resources	1	44.75
23.	Max Planck Institute for Nuclear Physics	1	40.23
24.	Norwegian University of Science and Technology	1	40.00
25.	Department of Heavy Industry	1	32.50
26.	Cardiff University, UK	1	31.96
27.	Biotechnology Industry Research Assistance Council	1	25.05
28.	National Institute of Ocean Technology	1	18.84
29.	National Remote Sensing Centre	1	18.60
30.	United Nations University	1	17.60
31.	Indian Council for Medical Research	1	13.56
32.	Central Pollution Control Board	1	8.30
33.	Indian Council of Social Science and Research	1	4.50
34.	French Institute of Pondicherry	1	3.40
35.	Shastri Indo-Canadian Institute	1	2.44
36.	IBM Corporation, USA	1	1.68
	Others	1	10.00
	Total	**212**	**32,649.92**

This includes international collaborative and industry sponsored projects. About 290 faculty members served as coordinators for projects sanctioned in 2016–2017. The value of the on-going sponsored projects during 2016–2017 is ₹ 93,761 lakh. About 340 faculty members were actively involved in these projects.

6.2.3. Consultancy programmes

A total of 565 consultancy assignments amounting to ₹ 11,357 lakh were taken up during 2016-2017. The consultancy projects were of various kinds.

Sl. No.	Type of Consultancy	Number of Jobs	Amount (lakhs of ₹)
1.	Institutional consultancy	383	4231
2.	Research-based industrial projects	139	5776
3.	Retainer consultancy	33	216
4.	Testing (ET and IT)	10	50
	Additional value		1084
		565	**11,357**

A total of 210 faculty members were actively involved in the consultancy projects. The total value of the on-going consultancy projects during 2016-2017 is ₹ 19,412 lakh.

Corporate Social Responsibility: The CSR activities defined in Schedule VII of the Companies Act 2013 have many areas where Indian Institute of Technology Madras can be actively involved with industries. This new scheme was approved from November 2015 and 18 projects were assigned an amount of ₹ 2,949 lakh. The corporate houses include Verizon Date Services India Private Limited, Cholamandalam MS General Insurance Co Limited, ICICI Securities Limited, AM Corporate Social Responsibility Foundation, Aricent Technologies, Mahindra & Mahindra Limited, ABB Limited, Sasken Communication Technologies Limited, L&T Technology Services, Rural Electrification Corporation Limited, City Union Bank Limited, TTK Prestige Limited and Tata Consultancy Services.

6.2.4. New Faculty Scheme

The institute provides funds to a faculty to initiate research in their area of specialization at IIT Madras. This funding helps them to get sponsored research grants to continue and establish their research activities at IIT Madras. Proposals for projects up to ₹ 5 lakh are recommended by the Dean, IC&SR to the Director for approval. In case of proposals where there is experimental activity requiring special equipment, an institute support of up to ₹ 20 lakh is made possible for the project. During the year, 17 proposals were approved for funding under the New Faculty Scheme for a total sum of ₹ 495 lakh.

6.2.5. Industrial Associateship Scheme

A total of 101 (20 large-scale, 58 medium-scale and 23 small-scale) industries were members of this scheme in 2016. 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

This is a continuing activity sponsored by Indian Space Research Organisation (ISRO) where research projects of interest to ISRO are taken up at IIT Madras. Twenty six projects totaling ₹ 774 lakh are currently going on. Five new projects of the tune of ₹ 170 lakh were taken up during 2016-2017.

IGCAR-IITM Cell

Four projects were going on during 2016-2017, totaling to a value of ₹ 106 lakh. No new projects were initiated during this period.

NIOT-IITM Cell

The NIOT-IITM Cell has been set up in IIT Madras to further National Institute of Ocean Technology (NIOT) sponsored research activities at the institute during 2010–2011. The five ongoing projects were continued during 2016-2017, totaling to a value of ₹ 136 lakh. A new project worth ₹ 19 lakh was sanctioned in 2015–2016.

HAL-IITM Centre for Aerospace Transmission Systems (CATS)

HAL-IITM Centre for Aerospace Transmission Systems (CATS) has been set up in IIT Madras. Hindustan Aeronautics Limited (HAL) is interested in supporting research and development projects at IITM in the area of aerospace transmission system through the centre.

Technologies for Social Development

IIT Madras initiated activities for transfer of technologies that are of immediate relevance to society. For this purpose, the following three projects have been taken up: Socially Relevant Projects, Rural Technology Action Group and Centre for Social Innovation and Entrepreneurship (CSIE).

Socially Relevant Projects

The Socially Relevant Projects (SRP) programme was started 2003 with an initial grant of ₹ 10 lakh from IIT Madras. The initiative over the years is being supported by funds received from IIT Madras alumni. In 2011, in honour of Prof. M.S. Ananth who was retiring as institute's Director, the alumni established the Prof. M.S. Ananth Endowment Fund. The interest from this fund, along with other contributions from alumni, is now used to fund projects under the SRP scheme.

In 2016, the following five projects are funded under the scheme:

1. Empowerment of differently abled persons

The project, proposed by Dr. S. Pushpavanam of Department of Chemical Engineering, was launched in Dindigul district. The aim of the project is to collect information and set up a database of differently abled people in the state of Tamil Nadu. The focus was multi-fold:

1. To get an accurate database by approaching people and getting first-hand information.
2. To understand the different kinds of disabilities particularly faced by the rural population.
3. To determine whether people are aware of different government schemes and increase their awareness.

4. To facilitate means to ensure government support reaches people.

Two workshops-cum-medical camps were conducted in Dindigul in association with PSNA College. The focus was on determining if there were any causes for disability specific to the region and to make the participants aware of the initiatives of the government. The number of people affected with mental disorders such as cerebral palsy was found to be high. Through the camps, we could determine that many affected people needed prosthetic devices. Measurements were taken for manufacturing these devices and the project was used to provide a subsidy to the needy.

2. Publish high school level science books in regional languages (Telugu and Tamil)

This project was proposed by Dr V. Srinivasa Chakravarthy, Department of Biotechnology. Six new Telugu books were published under the project: *Stars and Planets* by Ephrem Levitan translated as *Taaralu, Grahaalu* (128 pages), *Kanaalu, Kotaanukotla Kanaalu* and *Amdarikannaa Evaru Balavantudu,* all three published by Manchi Pustakam Publishers, and *Khagola Sastra Charitra* (History of Astronomy), *Ganita Gaaradeelu* (Maths for fun) and *Greeku Veerulu* (Greek Heroes–a book on Greek mythology) by Peacock Publishers.

3. Enhancing the success potential of the marginal entrepreneur

Dr. Thillai Rajan, Department of Management Studies, proposed this project. Under the initiative, a development programme on Strategies for Business Growth and Profitability was conducted for the marginal and micro women entrepreneurs from 4–8 January 2017 in Kanchipuram in the premises of the NGO partner, Hand in Hand (HiH). Sixty women participants attended the programme. The programme covered various aspects of business such as marketing, finance, business plan development, information technology, law and banking, and was found to be very useful by the participants.

4. Research at High School Level: A Pilot Study of the Concept

This project was proposed by Dr. Pijush Ghosh, Department of Applied Mechanics of IIT Madras in collaboration with IIT Kharagpur. An awareness workshop conducted in August 2016 with about 125 teachers from 60 schools discussed details of project concept and motivating teachers in doing research at school level. A research proposal meeting was conducted on 30 November 2016 with 12 participants involved at Panchayat Union Middle school, Thirumazhisai. The focus of the workshop was to teach school teachers on 'How to Write Project Proposal'. The institute plans to conduct another small-scale workshop for generating awareness about research at school level.

5. Improving community health through a cancer-screening programme and tools

The project, proposed by Dr. Sridharakumar Narasimhan of Department of Chemical Engineering, is focused on the issue of cervical cancer deaths among women in low and middle income countries (LMIC). Screening at early stages using the popular Pap Smear test has shown significant reduction in fatalities in western countries. However, availability of conventional cytology in LMICs is challenging due to cost and manpower constraints. Thus, there is a need to develop suitable low-cost automatic screening systems that are robust enough, as a primary screen of cytology smears.

The project describes a prototype of an imaging system with low-cost portable digital microscope with single magnification. With magnification of nearly 400x, Pap Smear cells are imaged and analyzed. The slide is placed on motorized linear stage to perform whole slide scanning. Various fields of view images are acquired and stored in database. Image acquisition is followed by image analysis, which involves algorithm to spot potentially abnormal cells in given field of view image. Image analysis involves segmentation of cell images into three regions: nucleus, cytoplasm and background. The image segmentation is performed using Gaussian mixture model based clustering. This is followed by estimating the nuclear size and nucleus to cytoplasm ratio. The abnormal regions are flagged based on the above parameters. The device has the sensitivity of 0.75 and specificity of 0.4 for image classification. The algorithm developed is robust to staining, poor lighting conditions and to a certain extent, the quality of the smear. The portable and low-cost advantage of the system makes it highly feasible and applicable in LMICs.

Future work:

- Slide level classification technique must be developed and needs to be evaluated against annotated sample slides.
- This work should be extended to reduce the time required for scanning by optimizing the number of images acquired from the slide.
- Deep learning techniques like convolution auto-encoders can be implemented on the unlabelled dataset to automatically learn features apart from nucleus size.
- Chromatin distribution inside the nucleus can be observed at higher magnification levels and needs to be considered as feature for classification.

Rural Technology Action Group (RuTAG)

Charcoal kiln for Velikatan (*Prosopis juliflora*)

A prototype kiln has been designed and fabricated to produce charcoal from *Prosopis juliflora*, which grows in abundance in southern Tamil Nadu. When compared to the traditional earth mound process, this kiln provides similar yield with safer working conditions and a reduced time for production. Currently, the scaling-up of the prototype is in progress as a response to the recent government directive to uproot this species.

Oil expeller

Motorized oil expeller has been modified for extracting oil from groundnut, sesame and coconut by cold-press method on a household level. This yields oil with greater nutritive content along with an opportunity for additional income generation.

Palm tree climber

A mechanized palm tree climber that rises up to 30 feet has been developed, improving productivity and safety of this profession. The device has masts attached to a bucket that raises the worker to the required height.

Electronic Jacquard

The looms used in making famous Pattamadai straw mats have been attached with an electronically controlled selector for creating designs, which give versatility and improved productivity. This has been tried out for the first time in Pattamadai, Tamil Nadu.

Bidriware

Following restrictions on usage of clay from Bidar Fort, the artisans involved in manufacture of Bidriware, a unique handicraft product, are on the verge of losing their livelihood due to loss of colour in their products with use of alternative local clay. Analysis of various local clays and development of new additives has been completed in order to achieve the characteristic colour of Bidriware. Trials are underway in order to standardize the new process of manufacture.

Participation in Rural Innovators Startup Conclave

Mr. S. Harish and Mr. S. Krishnakumar presented RuTAG interventions in the textiles sector in the Rural Innovators Startup Conclave (RISC-2017) organized by National Institute of Rural Development and Panchayati Raj, Hyderabad on 23-24 March 2017.

6.2.7. Centre for Social Innovation and Entrepreneurship

6.2.7.1. Introduction

The Centre for Social Innovation and Entrepreneurship (CSIE) at IIT Madras was founded in August 2010 with a focus on teaching and research related to social enterprise in India. It aims to bring together the innovation and entrepreneurship aspects of IIT Madras by creating knowledge and understanding that will be relevant to the problems that the poor in India face.

6.2.7.2. Activities

Events

Camp on Social Innovation through Technology for School Students

CSIE conducted a summer camp on Social Innovation through Technology for school students from 18-20 May 2016 at IIT Madras. The focus of the camp was to create awareness about the role of technology and entrepreneurship to solve socially relevant issues. A total of 115 students attended the camp. Various faculty members from IITM gave talks on innovation, social issues, challenges and opportunities in social entrepreneurship, science and technology and nurturing creativity. The students were given hands on training in the mechanical workshop. Finally, Certificates of Participation were distributed to the students by Prof. R. Nagarajan, Dean, International and Alumni Relations, IIT Madras.

Three-Day Entrepreneurship Awareness Camp

CSIE conducted a three-day Entrepreneurship Awareness Camp from 27-29 July 2016 at IIT Madras under the aegis of NSTEDB, Department of Science and Technology, Government of India. Exactly 151 students attended the camp. Various sessions were conducted on themes such as technology for entrepreneurship, innovation and creativity, role of incubators and IP management. There was a CFI visit on the first day and an industrial visit on the final day, and students were taken to few companies located at IITM Research Park.

B-plan Workshop and Competition

CSIE, in partnership with Tagore Engineering College, conducted a Business Plan workshop followed by a competition for college students on 23-24 August 2016 at IIT Madras. A total of 130 college students from various colleges participated in the workshop. The workshop was taken by Kavita Rajagopalan, Investment Manager, Villgro Innovations Foundation followed by a visit to CFI. Fourteen teams participated in the competition conducted on the second day judged by Joseph Thomas, VP, Development Office, IIT Madras and Bhoovardhan Thirumalai, CEO, Aspiration Energy. The best three teams were awarded with trophies.

Joint Certificate Course

CSIE along with Centre for Continuing Education (CCE) at IITM and Tagore Engineering College (TEC) provided the joint certificate course on Product Design and Development for the semi-finalists of Idea Spark 2015 from Tagore Engineering College during March-July 2016. Twenty-two students attended the course. The second joint certificate course on Product Design and Development for the B.Tech. and M.B.A. students of TEC was successfully completed during August 2016-February 2017. Twenty-nine students attended the course. Some of the guest speakers included Prof. Asokan, Department of Engineering Design, IITM, Mr. Thiru Srinivasan, PALS and Mr. A.B. Chakravarthy, Villgro.

Capacity Building Program for Farmer Producer Organisations (FPOs)

CSIE is conducting capacity building programmes for FPOs under the TNPL CSR grant. It conducted two such programmes at IIT Madras during 20-21 May 2016 and 30-31 August 2016. The objective of the workshops was to give the participants a theoretical understanding of the management, perspectives on market development, governance, financial issues and other legal and insurance related issues.

During the field visits to the selected FPOs, extensive, in-depth profiling of the organization with respect to the management structure, functional divisions and core operations was done to explore, understand and form patterns, if there are, covering issues and challenges for sustainable management of FPOs.

So far, CSIE has reached out to 85 FPOs. Through the field visits and interactions with the FPOs, CSIE received the feedback for a need to have a mobile app, which serves as an ERP. CSIE converted this challenge and organized this as a student competition to encourage students to solve this specific problem through technology and help develop an app. This was organized as part of Shaastra 2017. The winner and runner-up teams were mentored by CSIE to design the user interface and develop the Beta version of the app to be tested at chosen FPOs.

Social Enterprise Education Program – SEEP

CSIE is undertaking SEEP, an initiative under the UK British Council to promote social entrepreneurship education in higher institutions. As part of the SEEP, CSIE along with the University of Southampton conducted an international conference, UK India Social Entrepreneurship in Education Network, to promote collaboration and best practice in social entrepreneurship teaching between UK and Indian universities. Faculties and students from all over India and the UK attended the conference held from 15-16 April 2016 at IIT Madras Research Park. A field visit to Kuthambakkam village was also conducted as part of the conference. Mr. Richard Everitt, Director of Education and Society, British Council was the chief guest of the inaugural session. Please visit www.ukiseen.org for details of the conference.

CSIE organized a seminar on social entrepreneurship on 11 January 2017 to bring together network members. Eighty participants from the network were present during the event. CSIE developed and launched www.ukiseen.org to promote social entrepreneurship in education through competitions, exchange of ideas and project profiles, and sharing of resources. A panel discussion led by panellists Ms. Jaishree Deshpande, Mr. S. “Kris” Gopalakrishnan, Naveen Jha and Raj Melville, and moderated by Mr. Gururaj “Desh” Deshpande was conducted on the theme, Challenges for Social Entrepreneurship.

UK-India Social Innovation Challenge (UKISIC)

CSIE launched the UK-India Social Innovation Challenge, a joint initiative of CSIE, IIT Madras, the Social Impact Lab, University of Southampton, Confederation of Indian Industry, Babele, and the British Council. It was launched during the UKISEEN seminar by Ms. Mei-Kwei Barker, Director South India, British Council. The competition was open to all students and faculty at universities throughout the UK and India. The overall objective of UKISIC was to use the latest digital technology to catalyse the flow of talent, technology and ideas between the two countries. As part of it, the applicants were supposed to propose a business model for a social enterprise, which tackles the United Nations SDG No. 6: Clean water and sanitation. This goal, and therefore the challenge, was to “ensure the availability and sustainable management of water and sanitation for all”.

UKISIC received tremendous response from aspiring entrepreneurs/innovators from the student community from higher institutions in UK and India. The top two entries went to Cranfield University and University of Southampton, UK, respectively. The third entry went to Loyola Institute of Business Administration, India. Visit https://goo.gl/6ZB6O2 for details.

Social Entrepreneurship Club

CSIE in association with Centre for Innovation (CFI) launched Social Entrepreneurship Club at IIT Madras on 29 September 2015. Its mission, in alignment with CSIE, is to build an environment conducive to students to learn about social issues and social enterprises and assist them to become social entrepreneurs. Prof. R. Nagarajan and Prof. Ashwin Mahalingam are the faculty advisors of the club.

Activities:

- SE Club organized a field trip to the Rain Centre at Santhome on 3 April 2016. Around 20 students participated in the visit. The Rain Centre is a non-profit organization that is mainly aimed at spreading awareness about the need, relevance, importance and benefits of rainwater harvesting. The students got a chance to see working models and the different methods that are employed to harvest rainwater.
- SE Club organized a very enlightening lecture by Shashank Avasti, Co- founder of V-shesh. V-shesh is an impact enterprise that assists people with disabilities in education, training and job placements. He elaborated about “gap in the market” and “market in the gap”. The event was held in the BT Seminar Hall on 23 August 2016. Prof. Nagarajan inaugurated the session. Twenty-five students attended the lecture.
- A meeting was held on 27 August 2016 at ICSR Conference Room for all the members of the SE Club, where the agenda for the year was decided. This session was headed by Mr. James Rajanayagam of CSIE. The students also learnt about CSIE and its various projects and activities.
- SE Club along with the Leadership Lecture series organized a Lecture by Mr. Shashi Kumar, Founder, Phoenix Medical Systems. Mr. Shashi Kumar is an alumnus of IIT Madras where he completed his M.S. in Entrepreneurship. The event was held in DoMS Seminar Hall on 1 November 2016. About 80 students attended the event.
- Se Club participated in the CFI Open House on 6 November 2016. Two projects were exhibited in the open house.

- Involve is a student-run social enterprise, which is creating a platform for peer learning. It has so far conducted a pilot run in Delhi and is now creating learning content to implement in Chennai.
- Nirbhaya is an online platform where women can access information on paying guest facilities and hostels. The application for the platform is in its developing stage.

Professors, alumni and students who attended the Open House were appreciative of the projects and gave their opinions for further improvements.

RuTAG Consultancy Project

CSIE is undertaking consultancy project for RuTAG to commercialize improved weaving technology for the artisan community of Pathamadai.

CSIE has visited the place four times to interact with weavers and understand the problems they face with respect to both demand and supply chain, and get feedback on the RuTAG-installed machines, Mechanical and Electronic Jacquard Handlooms.

A Facebook page for Pathamadai products has been launched in order to increase the online presence of the products and promote stories to reach more people. The link to the page is https://www.facebook.com/PathamadaiMats/

CSIE has also provided stall spaces to Pathamadai products at two events. It has designed professional price tags with appealing stories and taglines for these products. A video of the stall proceedings can be seen at https://www.facebook.com/PathamadaiMats/videos/1908480369430635/

CSIE visited Mr. Malligarjunaaiah, Director, Southern Region, Development Commissioner Handicrafts, on 13 February 2017 to submit and brief him about the proposal titled, Business Development and Livelihood Enhancement of Pathamadai and Veeravanallur weavers' communities. Based on the inputs, CSIE will modify and submit an updated proposal.

Research at CSIE

- Study of socio-political factors on the growth of social enterprises is a one-year project awarded by Rajiv Gandhi National Institute for Youth Development. The Principal Investigator is Prof. Sudarsan Padmanabhan. CSIE is one of the co-investigators.
- CSIE and the faculty of Department of Management Studies and Department of Humanities and Sciences of IIT Madras have come together to do a consultancy project - Study of Social Enterprises and Women Empowerment - commissioned by British Council. This team is part of a consortium led by Social Impact Consulting, UK with other members from India, USA, Pakistan and Brazil. The project aims to understand the relationship between social enterprises and women empowerment. The IIT Madras team is led by Prof. G. Arun Kumar. The team conducted key informant interviews, online survey and focus group discussions in different cities (Pune, Coimbatore, Chennai, Ahmedabad, Hyderabad and Mumbai) to gather data and understand the role of social enterprises in empowering women. Currently, the final report is being prepared.

Pre-Incubation Support

CSIE provides mentoring support to students who have ideas to solve social issues. Currently, CSIE is providing mentoring support to Involve, a project in education sector, Pikkolo, a project in waste management, and an e-governance project.

6.2.7.3. Networking, Collaborationand Other Meetings

- As part of the Social Enterprise Education Program (SEEP), British Council called for a review plus knowledge-sharing meeting for all the members of the SEEP on 14 April 2016 at IIT Madras. Mr. Richard Everitt, Director of Education & Society, British Council, chaired the meeting. All the members, including CSIE shared the progress of their respective projects.
- CSIE had a meeting with the members of PARFI (Pan IIT Alumni Reach for India) to explore collaborations. On 10 September 2016, Mr. James Rajanayagam from CSIE was invited to MAMCET, Trichy by PanIIT Alumni Leadership Series (PALS) to deliver a lecture on the role of "students, technology and social issues".
- Mr. Rajanayagam and Mr. Joseph Thomas were invited to judge Round 1 entries at the DBS - NUS Social Venture Challenge Asia 2016.
- On 2 July 2016, Mr. Rajanayagam from CSIE was invited to Auroville by UNLtd Tamil Nadu as a jury member for the selection of incubatees.
- On 7 November 2016, Mr. Rajanayagam from CSIE was invited by AMET University to address the HoDs about the role of technology business incubators (TBIs).
- Mr. Rajanayagam and Aishwarya had a meeting with AGM and DGM, NABARD on 29 November 2016, towards effectuating 'Business Development' workshops through CSIE for Farmer Producer Organizations (FPOs).
- Prof. R Nagarajan and Mr. Rajanayagam were invited to Sri Aurobindo Society (SAS) on 17-18 December 2016 to explore collaboration. They had a meeting with Mr. Vijay, Executive Member, Admin and Finance and other representatives of SAS.
- Mr. Rajanayagam was invited to the CSR Conclave organized by MCC Boyd Business School on 10 December 2016.
- Sandeep and Vidhiya participated in the International Conference on Methodological Issues in Social Entrepreneurship Research organized by Centre for Social Entrepreneurship of TISS, Mumbai from 28-30 January 2017. Vidhiya presented a paper on Methods of Impact Measurement and Evaluation.
- On 25 January 2017, Mr. Rajanayagam represented CSIE to give a talk on social entrepreneurship to the B.Voc students from different parts of India at RGNIYD, Sriperumbudur.
- Mr. Rajanayagam represented CSIE at the National Conclave on Social Entrepreneurship organized by EDI Ahmedabad on 31 January 2017 and participated in a panel discussion on Mainstreaming Social Entrepreneurship Education.
- Mr. Rajanayagam represented CSIE at Spandana, National Level Social Work Students Symposium held on 10 February 2017 at School of Social Work Roshni Nilaya, Mangaluru to give a talk on social entrepreneurship.
- Vidhiya and AIshwarya attended the two-day workshop on Creation and Nurturing Women Tech-Entrepreneurs on 27-28 February 2017, conducted by NASI, Allahabad and Golden Jubilee Biotech Park for Women, Chennai.
- CSIE is providing assistance to Boyd Business School, MCC to conduct a module on social entrepreneurship as part of their certificate course in CSR.

6.2.7.4. Visitors

- William Oakes, Director EPICS Program and Professor at Purdue University, visited CSIE along with his colleague on 10 August 2016 to explore possible collaborations.
- S. Kailasanathan, Managing Director, Mincrosenese and an IIT Madras alumnus, visited CSIE on 6 July 2016 to discuss the areas of possible assistance for his initiative of wireless networking in villages.
- Fifteen first-year MA (SI&E) students with Sridharan Nair, Mentor, Department of Social Engineering, RGNIYD, visited CSIE on 14 July 2016 as part of their exposure visits to Social Enterprise Support Institutions. Mr. Rajanayagam gave an overview about CSIE followed by a visit to CFI.
- Mathew Edrassery, Program Leader - Marketing & Recruitment (South Zone), Gandhi Fellowship, visited CSIE along with his colleague on 7 September 2016 to discuss the areas of possible collaborations in promoting social entrepreneurship.
- Dr. Thomas Mejtoft and delegates from UMEA University visited CSIE on 29 September 2016 to discuss possible collaborations with CSIE and participation in Winter School.
- Umesh Malhotra, Co-founder and Chief Executive, Hippocampus and an alumnus of IIT Madras, visited CSIE on 30 September 2016 to learn about the activities CSIE is engaged in.
- Mr. Johnson Thangaraj and Mr. Sathiyamoorthy, consultants from Vrutti, a livelihood resource centre, visited CSIE on 21 October 2016 and discussed the various possible opportunities for collaboration with CSIE.
- Dr. Sunny Shah, University of Notre Dame, visited CSIE on 7 November 2016 to explore possible collaboration opportunities with CSIE. Prof. Ashwin Mahalingam also attended the meeting.
- Dr. Barla, Director, MCC - Boyd Business School, visited CSIE on 18 November 2016 to explore collaboration.

6.2.7.5. Management Activities

CSIE Governance Committee Meeting

- 10 June 2016
- 20 September 2016
- 4 January 2017

Internal documentation

The planning and informational documents on all activities within the centre are maintained and updated regularly. These include documentation of research proposals, events and reporting. CSIE newsletters were prepared and distributed to various stakeholders.

Distinguished Visitors to the Centre

Delegations from various organisations visited IIT Madras for discussions on possible collaborative research work. These included NTPC, LG Soft India Bangalore, Festo India, Rolls Royce, Tata Communications, Mahindra & Mahindra, Siemens, BHEL Ranipet and Jindal Stainless Limited.

MoUs/agreements

IIT Madras signed MoUs/agreements with the following organisations/institutions during 2016-17:

Agreements

- Directorate General of Lighthouses and Lightships (DGIL)
- Titan Company Limited
- GE India Technology Centre Private Limited
- Auqamall Water Solutions Limited
- Steadfast Medishield Private Limited
- Amazon Development Centre (India) Private Limited
- SMERAS Ratings Limited
- Daksha Imaging Technologies
- Titan Company Limited
- S.S. Industries
- Assam Power Distribution Company Limited
- Tata Steel Limited
- NTPC Limited
- NMS Works Software Private Limited
- Vantage Research Private Limited
- Sconce Solutions (India) Private Limited
- Hitachi India Private Limited
- Central Power Research Institute (CPRI)
- Norwegian University of Science and Technology (NTNU)
- Indian Oil Corporation (IOCL)
- Food Printer Private Limited
- S.K. Dynamics Private Limited
- Zazen Systems Private Limited
- Kamachi Sponge & Power Corporation Limited
- Blueprint IT
- Danfoss Industries Private Limited
- Bharat Petroleum Corporation Limited (BPCL)
- Yalamanchili Manufacturing Private Limited
- Lafarge India Limited
- Pi Beam Labs Private Limited
- Madras Engineering Industries Private Limited
- SynkroMax Biotech Private Limited
- Mahindra & Mahindra Limited
- ABB India Limited
- Sri Kaliswari Metal Powders (P) Ltd.
- Frontier Lifeline Private Limited
- IGSTC, M/s. Ubio Biotechnology
- IITD & Envirotech Instruments Private Limited (EIPL)
- National Institute of Pharmaceutical Education and Research (NIPER)
- Renault Nissan Technology & Business Centre India Private Limited
- Shell India Markets Private Limited
- Thermax Limited
- Energy Efficiency Services Limited
- Siemens Technology and Services Private Limited
- Hitachi India Private Limited
- Blue Star Limited
- Corning Technologies India Private Limited
- GE India Technology Center
- Titan Company Limited
- Unilumen Photonics Private Limited
- Harita Seating Systems Limited
- GE India Technology Center
- Denisco Chemicals Private Limited
- Jain University
- Fraunhofer Institute for Machine Tools and Forming Technology IWU
- Rural Electrification Corporation Limited
- Microspin Machine Works Private Limited
- CSIR-Central Drug Research Institute (CDRI)
- Airbus Safran Launchers SAS and seven others
- EWAC Alloys Limited
- Saint-Gobain Research India Private Limited (SGRI)
- Qunu Lab Private Limited
- Central Water Commission
- National Centre for the Performing Arts
- L.G. Balakrishnan & Bros Limited
- Eaton Technologies Private Limited
- Indivumed, Germany
- Reliance Industries Limited
- EnUrga Inc.
- Aditya Birla Science and Technology Company Private Limited
- Tata Consultancy Services
- National Institute of Technology Calicut
- Helios and Matheson Global Services Private Limited
- Indian Army
- KPMG
- Sree Chitra Tribunal Institute for Medical sciences and Technology (SCTIMIST)
- Centre for Excellence in Well Logging Technology (CEWELL), ONGC
- Biotechnology Industry Research Assistance Council (BIRAC) and AlgalR NutraPharms Private Limited
- Puthra & Associates
- MIL Industries Limited
- Tata Steel Limited
- Stryker Global Technology Center Private Limited
- FIB-SOL Life Technologies Private Limited
- Perfint Healthcare Private Limited
- NLC India Limited
- Indian Space Research Organization
- Mojo Networks
- United Spirits Limited

License Agreement

- NanoHoldings LLC and Others
- Hindustan Institute of Technology and Science (HITS)
- JNT University Anantapur
- Electronics and ICT Academy, National Institute of Technology, Warangal (EICT-NITW) and Gudlavalleru Engineering College
- Quantum Ventura
- Shira Medtech Private Limited
- Lakireddy Bali Reddy College of Engineering
- Enability Foundation for Rehabilitation
- Gitam University

- Tanstia FNF Services Centre

6.2.7.6. Intellectual Property Management Cell

Initiatives

1. Monthly Open Forum

After considerable publicity, this programme is conducted on a particular day in a month, generally when students and faculty members are relatively free and there are no other pressing activities, either curricular or extra-curricular. The programme is open for students and faculty members. Five such programmes were conducted during the period and the response was good and encouraging.

2. M.S. – Ph.D. (Orientation Programme)

This was started three years back and continues to be regular feature, twice a year, as and when there is fresh intake of research scholars. IPM Cell was part of both the orientation programme conducted this year to present an overview of patenting possibilities as an outcome of research effort and prerequisites for an invention to be fit for patent. A total of 703 participants attended the two programmes.

3. Workshop (ID6020 and ED1500)

Workshops are the follow-up action after the orientation programme. The requirements for any invention to be considered for patent are discussed in detail covering legal aspects as well. The participants are also introduced to the "Search" and "Prior Art" concepts. Four such programmes were conducted covering 850 research scholars.

4. M.S. – Ph.D. (Comprehensive Exam – One to One)

At the Comprehensive stage, one-to-one interactions are held with research scholars to assess the suitability of the invention to be filed as patents. Both general possibility and legal aspects are discussed. Five such programmes were conducted covering nine scholars.

5. Department interaction about IP

All the HODs were informed that IPM Cell personnel would be happy to visit the departments and interact at their premises on any aspect of IP. Many such interactions took place at various departments.

6. Search programme for Engineering Design department; PD Lab

A specific request was made by the Department of Engineering Design to conduct "search" programme for their PD Lab students. One such programme was held with 50 participants. "Search" on advance Google platform to check for 'Prior Art' was the main issue discussed.

7. Interaction at IPM Cell office

During the programmes mentioned above, all the participants were informed that for any query they can come to IPM cell for solving their issues. The footfall to Cell office was more than 231. Inventors with initial query, urgent patent filing, Thompson search requirements, claims to be included and others came to the office and were fully guided in all matters.

8. IP Management

1. Application cleared

All applications for patents up to 2007 have been cleared by Controller of Patents office.

2. Patents filed

A total of 100 Indian patents and 20 international patent applications have been filed.

3. Commercialization effort through mail

About 938 letters have been sent to different potential companies for various patents filed so far. From few, IPM cell received reply as well and follow-up action (mainly clarification sought) has been taken.

4. Visit to the campus by different companies

Officials from the following companies visited IITM campus in connection with patents in which they were interested, and discussions were held between the IPM Cell and the inventors.

1) AirOk 2) BCIL 3) Detect Technologies 4) Diamondbay 5) EAC Marine 6) Enability Foundation 7) Godrej 8) HMGS 9) KPMG 10) LG Soft India 11) Micromatic 12) Quantum Ventura 13) QuNu Labs 14) Reliance IITM 15) Vital Bioscientific 16) Shira Medtech 17) Sonolight Imaging 18) Swadha energies 19) SynkroMax 20) UIV Energy

5. IP technology transfer licensed

Total 12 patents were licensed out. There was a receipt of ₹ 87,56,617.

6. Licensing agreement with incubation companies

Three incubation companies entered into a tie-up agreement. These were Enability Foundation, QuNu Labs and Shira Medtech.

Technology transfer

Sl. No.	TT earnings for 2015-2016	Receipt Amount (₹)
1.	Amara Raja Batteries Limited	85814
2.	Aquamall C/o. Prof. T. Pradeep	6000000
3.	Bench Mark Electronic Systems Private Limited	206783
4.	From various parties under the project TT1516CSE117CDACJAN C/o. Prof. Janakiram	459500
5.	CDAC	250000
6.	CMR Education and Consultancy Service, Bengaluru	105000
7.	Eureka Forbes Limited C/o. Aquamall	819270
8.	Gudlavalleru Engineering College	114500
9.	Hindustan Institute of Technology and Science	286250
10.	National Institute of Technology	100000
11.	NIT Warangal	14500
12.	Quantum Ventura	200000
13.	Sri Vasavi Engineering College	115000
14.	From various parties under the project TT1516CSE117CDACJAN C/o. Prof. T. Pradeep	6154454
15.	From various parties under the project TT1516CSE117CDACJAN C/o. Prof. Ligy Phillip	3450000
16.	Others	140000
		18501071

Publications

The Centre for IC&SR brought out the IITM Calendar, IITM New Year Greeting Card and the IITM Diary for 2016.

6.2.7.7. RESEARCH FUND

An amount of ₹ 50 crore has been earmarked for the Research Fund from the IC&SR overheads. The interest on the fund (approximately ₹ 5-6 crore) is used for various research-related expenses. The broad allocation for expenses for financial year 2016–2017 is given below:

1. **R&D Award:** 50% from the Institute Fund and 50% from the Research Fund. These included seven awards for a total value of ₹ 180 lakh.
2. **Innovation Eco-systems:** To support incubation, a fund of ₹ 50 lakh has been provided.
3. **Exploratory Research Projects:** This is to support projects from any faculty that has a "breakthrough" idea and wishes to initiate work without waiting for the proposal to be sanctioned by the funding agency. A maximum of ₹ 10 lakh is allocated for 12 months. The initiative has supported 43 projects for a total value of ₹ 336 lakh.
4. **New Faculty Initiation Grant:** This is an add-on grant up to maximum of ₹ 5 lakh. Under this, national and international travel will be permitted. It supported 35 projects for a total value of ₹ 175 lakh.

5. **One Team Project:** A project of significance which as demonstrated proof of concept is eligible for funding for a period of two years with an initial maximum budget of ₹ 200 lakh. No new projects were initiated during this period.
6. **Patenting and Commercialization activities by IP Cell:** A maximum amount of ₹ 50 lakh was earmarked.
7. **Maintenance of capital equipment and operation of these facilities:** This will be supported by IC&SR initially for a value of ₹ 25 lakh. It will be used for hiring technical persons for maintaining and operating select central research facilities. It covered 28 projects for a total value of ₹ 157 lakh, during the reporting period.

Positive Messaging and Outreach Program

IIT Madras is one of the few high-ranking institutions in India that are prompt, active and well connected on the social media. Our Facebook page has over 1,02,000 likes and is extremely well updated with a response time of just one day, actively engaging over 30,000 people every week. IIT Madras' tweets have 36K impressions every month on an average. We have a noteworthy LinkedIn connect. We are also ahead of the curve in our presence across other platforms like Instagram, Google+ and Pinterest. A monthly e-newsletter is sent to all stakeholders of IITM.

Other information

- A joint meeting was organized for setting-up of Centre of Excellence for Automotive Research (CAAR) at IIT Madras in collaboration with Fraunhofer (FH) on 3 August 2016.
- IGCAR-IITM Cell review meeting was held on 23 August 2016.
- ISRO-IITM Space Technology Cell review meeting was held on 9 September 2016.
- Project Coordinators' meeting was held on 14 September 2016.
- Board of IC&SR meeting was held on 16 September 2016.
- Exploratory Research Projects poster presentation was held on 26 September 2016.
- The Joint Policy Committee Meeting of the ISRO-IITM Space Technology Cell was held on 20 January 2017.
- There was a workshop organized on CAAR at ARAI, Pune on 20 April 2017.

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. It 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 of 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 CEC 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/ organizations 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-voltaic (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 (customized) 12-week training programmes were organized 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. 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. Activities

Short-term courses

Sl. No.	Coordinator(s)	Title	Period
Short-term course for IIT staff:			
1.	Prof. V. Jagadeesh Kumar	Basic Electronics and Instrumentation	Two weeks (26 September to 7 October 2016)
2.	Prof. V. Jagadeesh Kumar	Basic Electronics and Instrumentation	Two weeks (14-26 December 2016)
Short-term course for industries:			
3.	Prof. V. Jagadeesh Kumar	Basic Test and Measuring Instruments: Concepts, calibration and uncertainty in measurement	Three days (14-16 December 2016)

Training attended by the staff members in public sector undertakings

Sl. No.	Faculty Member	Title	Institution	Period
Training:				
1.	K. K. Muthuswamy and V. Neelamanai	Statutory Requirements in Electrical Safety	Chola MS Risk Services	One day (23 September 2016)
2.	N. Karthiyayini and Dr. K. Sulochana	5th NABL Conclave for Laboratories	NABL and CII New Delhi	Two days (27-28 October 2016)
3.	Dr. C. R. Jeevandoss	Quality Management System Auditor/ Lead Auditor Course	TUV NORD	Five days (20-24 November 2016)

6.3.3. Design and Development Activities

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

- **Signal conditioner for testing moisture content in Gypsum board**

New facilities added or major equipment procured

Sl. No.	Name of Equipment	Value (₹ in lakhs)
1.	Horizontal vertical Flame Tester	3.72
2.	Glow Wave Test	US$4790
3.	Impact Test Apparatus	1.68
4.	Vibration Shaker	US$33345
5.	Mega Pulse Antenna Surge Tester	US$7956
6.	16 Channel Temperature Recorder	US$ 9829
7.	Spring Force Testing System	4.28
8.	Data Acquisition System-Fluke 1586A	US$3800

6.3.4. Research and Consultancy

Industrial Consultancy projects:

Sl. No.	Faculty member	Title	Industry	Amount (₹)
1.	The Head, CEC	Lumen test for LED light	Baliga Lighting Equipments Private Limited, Chennai	16488
2.		Testing of ballast as per IS15882:2009	Venture Power Systems India Private Limited, MEPS, Tambaram, Chennai	5725
3.		Testing of 30W LED street light	OSSE Private Limited, Hyderabad	12650
4.		Calibration of clamp meter and power meter	Sun Industrial Automation Solutions, Perungudi, Chennai	6298
5.		Testing of 160W LED floodlight	OSSE Private Limited, Hyderabad	12650
6.		Servicing of electronic load	Ingsman Energy and Fuel Cell Research Organisation Private Limited	17250
7.		Testing of 22WLED tubelight	OSSE Private Limited, Hyderabad	12650
8.		Lumen test for LED light	Baliga Lighting Equipments Private Limited, Chennai	14904
9.		Calibration of clamp meter	Siemens Limited, Nungambakkam, Chennai	5750
10.		Lumen test for LED lights	Baliga Lighting Equipments Private Limited, Chennai	27600
11.		Testing of LED light	OSSE Private Limited, Hyderabad	12650
12.		Testing of body weighing scale	Jude Equipments Private Limited, Chennai	46000
13.		Lumen test for 240W LED	Bajaj Electricals, Cochin	69000
14.		Testing of Servo Board	Atandra Energy Private Limited, Chennai	17250
15.		Testing of RO Profiler OCC LED	Veerel Enterprises, Bengaluru	28750
16.		Testing of batteries	Exide Industries Limited, Hosur	27600
17.		Testing of 16W LED pit Light	OSSE Private Limited, Hyderabad	12650
18.		Calibration of DAQ System	Innovative Solutions, Chennai	10350
19.		Checking of dimension of batteries	Exide Industries Limited, Hosur	18400
20.		Testing of 15W, 40W and 60 W LED fittings	Balinga Lighting Equipments Private Limited, Chennai	41400
21.		Testing of batteries	Exide Industries Limited, Hosur	41400
22.		Servicing of power supply unit	Indian Oil Petronas Private Limited, Chennai	16100
23.	The Head, CEC	Testing of 15W LED Light as per LM79	Balinga Lighting Equipments Private Limited, Chennai	13800
24.		Testing of 22W LED light as per LM79	OSSE Private Limited, Hyderabad	12650
25.		Environmental testing of 1kW grid tied inverters	Sun Industrial Automation and Solutions,Chennai	78200
26.		ESD test as per IEC61000	Exide Industries Limited, Hosur	13800
27.		Testing of 135W LED light as per LM 79 and testing of traffic LED lights	Balinga Lighting Equipments Private Limited, Chennai	33350
28.		Servcing of battery test system	ETDC, Chennai	10005
29.		Servicing of AC power source	Technocomm Instruments Private Limited	184000
30.		Lumen test for 18W LED	Airport Authority India, Chennai	172500
31.		Design of water conductivity circuit	Vital Bioscientific Solutions Private Limited, Chennai	34500
32.		Failure analysis and parts validation of the Cache must-Quito- O unit	Muktha Laboratories Private Limited, Chennai	345000
				1371320

6.4. P.G. Senapathy Centre for Computing Resources

6.4.1. Introduction

The Computer Centre at Indian Institute of Technology Madras was established in 1973 to provide centralized 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 the community have been increasing. The Computer Centre's organization 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 organized under five verticals: high-performance computing environment (HPCE), networks, e-services, data centre and workflow. Each vertical is focused on continually improving its services to meet the needs of the IIT Madras community. The Computer Centre has been ISO 9000 certified since 1999. The TUV has certified the Centre as an ISO 9001:2015 standard management system for a period of three years from February 2017 to January 2020 after conducting the final auditing as per TUV NORD CERT procedures. Currently, it maintains all its processes in conformance with the ISO 9001:2015 standards, and is certified along with other units at the institute by TUV Nord. This report presents a background of each vertical and a summary of the annual activities.

6.4.2. High-Performance Computing Environment

The High-Performance Computing Environment (HPCE) 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.

Virgo cluster

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 warranty of this system expired on January 2017 and the system is under AMC for one more year.

The following are some active research areas that use the Virgo 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 Computer Centre also houses a Libra GPU cluster, with one head node with dual processors and six-core Intel Xeon 5670 series processors with 24 GB RAM and 146 GB SAS hard disks. It has eight compute nodes based on HP Proliant SL390s servers with dual processors, six-core Intel Xeon X5675 processors with three Telsa M2070 GPU cards and 146 GB SAS hard disks in each node. This machine is out of warranty and will be covered in AMC for the next one year.

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. Eight nodes of this cluster are populated with 16 Intel Xeon PHI cards (two PHI cards per node).

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 Super Micro 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.

The HPCE group also maintains machines from various departments and centres. It also supports users in improving code and organizes training programmes related to the effective use of the facility. It maintains all commercial software related licenses and implements the 80:20 policy for all commercial software procured by the centre for HPCE users. Detailed information about the HPCE, including the latest usage statistics and software available is posted on the website, www.cc.iitm.ac.in.

6.4.3. Networks

The campus computer network was established in 1994, connecting about 18 buildings in the Academic Zone with telephone cables. The initial bandwidth was 64 Kbps. Today, with a fiber-backbone high-speed network (10 Gbps), there is connectivity 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 20,000. 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 is 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. Supported Wi-Fi connectivity in the Classroom Complex for online test of Placement Office. Enabled the Placement Office to conduct online tests for more than 500 candidates simultaneously in one building.
2. Supported web-casting of Convocation through Internet and Intranet.
3. Helped in conducting the online examination of Department of Management Studies' papers for IIT Madras B.Tech. students.
4. Installed Network Firewall Fortigate-3200D and redirected all the campus network traffic through it.
5. Installed new network core switch Cisco C6807.
6. Upgraded the Internet bandwidth from 2 Gbps to 10 Gbps through NKN.

6.4.4. E-Services

The E-Services vertical focuses on services such as web system configurations, e-mail, web access, web security, storage solutions, virtualization and web services, among others. Several new services were added by the E-Service group. Following are the services maintained and initiated by the group:

Mail services

1. IIT Madras (email.iitm.ac.in) upgraded to 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)

Web services

1. Virtual hosting
2. Mailing list maintenance
3. Employee user Web portal
4. Websites

Security and monitoring services

1. Firewall tuning
2. Hack solution
3. Security gateway (spam appliances)
4. Log analytics
5. SSL certificate

Storage solution

1. Backup and restore process
2. Disaster recovery
3. Server and desktop consolidation by virtualization (VMWARE)

User management services

1. Active Directory Service (ADS)
2. Lightweight Directory Access Protocol (LDAP)

Development and deployment services

1. Convocations
2. Distinguished Alumnus Awards
3. User registration for IC&SR
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

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

Virtualization

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

Exchange server: Front view / Exchange server: Rear view

Services portfolio

To know more about the services offered by E-Services vertical, visit: https://eservices.iitm.ac.in.

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 interruption. 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	1000 kVA	1 No.
3.	UPS (DB) with 12 V/200 AH (batteries)–120 Nos. and 12 V/120 AH (Rocket)–192 Nos.	160 kVA	4 Nos.
4.	UPS (MGE) with 12 V/150 AH (batteries) –32 Nos.	80 kVA	1No.
5.	UPS (SOCOMEC) with 12 V/150 AH (batteries) –32 Nos.	80 kVA	1 No.
6.	UPS (Emerson) with 12 V/42 AH (batteries) –68 Nos.	30 kVA	2 Nos.
7.	UPS (DB) with 12 V/65 AH (batteries)–25 Nos.	20 kVA	1 No.
8.	PRAC AC (Blue Star)	17 TR (60 kW)	10 Nos.
9.	PRAC AC (Blue Star)	13.5 TR (48 kW)	2 Nos.
10.	PAK AC (Blue Star)	11 TR	4 Nos.
11.	PAK AC (Blue Star)	5.5 TR	2 Nos.
12.	Ductable split AC (Blue Star)	8.75 TR	2 Nos.
13.	Ductable split AC (Blue Star)	5.5 TR	6 Nos.
14.	RO plant (EXEL)	250 LPH	1 No.

The Data Centre has upgraded the Building Management Systems with the latest technology:

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. Humidity control system for D.G. sets installed.
2. LCD projector installed for the seminar room.
3. Modular furniture has been provided to the Room No. 220 and the hall to accommodate SRA and the entire workflow team.
4. All works related to electrical and networking have been carried out.

6.4.6. Workflow

The enterprise resource planning (ERP) software implemented is internally referred to as Workflow. The Workflow group at the Computer Centre works with various sections in 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.

Workflow submissions that were enforced in processes such as leave, LTC, faculty visits, festival advances, children's education allowance, purchase order creation, imprest claims, SRB, student course registrations, student travel approval, student work-log approvals, grade approvals, GTC/DC panel creation, introduction of new courses and others are running successfully. The data extracted from Workflow were analysed using a new reporting tool called Tableau and utilized by the administration section to improve the performance of the administrative staff in the previous financial year and continued in the 2016-17 financial year as well.

The most active processes in Workflow were considered for optimization in the last financial year. Optimization includes enhancing the look and feel of screens, capturing data from users effectively, minimizing the number of clicks to submit a request and triggering email triggers upon submission/approval. Service Level Agreements (task will automatically move to the next level in a process) are two days for middle-level approvals

and two weeks for final approvals in few processes to reduce the turn-around time. As part of optimization, LTC process, national and international visits, TADA advance/claim and others have been migrated to the new proof engine platform in 2016-17.

Online TCF is another major activity that is implemented during the financial year 2015-16. Students are able to submit their feedback online and the reports are enabled for faculty within the Workflow application. This has been enhanced to provide reports directly through Workflow in 2016-17.

6.4.7. Training and Professional Activities

Staff members of the Centre participated in the following training activities this year:

- P. Mahesh Mithreeven attended a workshop on Cisco Unified Computing System at Cisco Systems, Chennai during 27-29 June 2016.
- C.N. Vijayaragavan attended an awareness programme for ISO 9001:2015 conducted by Messrs. TUV Nord India in Chennai on 9 August 2016.
- M. Irudayaraj attended a workshop on VMware at ITC Grand Chola, Chennai on 17 November 2016.
- R. Thiruneelagandan and R. Madhanarasan attended a short-term training programme on Electronics and Instrumentation at CEC, IITM during 12-23 December 2016.

Certifications:

- Certified in Virtualization Concepts
- Certified in VMware vSphere
- Certified in Microsoft Exchange Server Administration

Faculty/staff members and areas of work

Sl. No.	Name	Designation	Area of Focus
1.	C. Balaji	Chairman	Overall coordination and planning
2.	Venkata Krishna Nandivada	Faculty-in-Charge	High-Performance Computing Environment
3.	Nitin Chandrachoodan	Faculty-in-Charge	Networks
4.	N. S. Narayanaswamy	Faculty-in-Charge	E-Services
5.	Rahul Ratnakar Marathe	Faculty-in-Charge	Workflow
6.	V. Ravichandran	Deputy Systems Engineer	High-performance computing, application programming, system programming and administration, user education and planning, Data Centre operations
7.	C. N. Vijayaragavan	Deputy Systems Engineer	Centre representative for ISO-9000
8.	Banavath Baman	Assistant Systems Engineer	Training
9.	S. Anand Kumar	Assistant Systems Engineer	Mail domains, mail gateways, server hardware, VMWARE, web services, virtualization, support services
10.	V. Selvaraju	Assistant Systems Engineer	Network design, servers, switches, campus network maintenance and administration, PC hardware and software
11.	S. Priya	Assistant Systems Engineer (contract)	Workflow, software development
12.	T.V. Subba Rao	Technical Superintendent	Workflow—Administration Module
13.	R. Thiruneelagandan	Junior Technical Superintendent	Planning, operations and maintenance of D.G. sets, UPS, A/c's, BMS, furniture and all data centre-related equipment
14.	P. Gayathri	Junior Systems Engineer	High-performance computing, system software, installation of open source applications and commercial applications, user education development
15.	M. Jeevanantham	Junior Technician	Computer networks
16.	M. Irudayaraj	Junior Technical Superintendent	Web programming, Linux, e-services
17.	R. Madhanarasan	Junior Technical Superintendent	Data Centre, BMS and ISO
18.	E. Arun	Senior Technician	Workflow
19.	P. Mahesh Mithreevan	Junior Technician	Computer networks
20.	D. Jayachandran	Office Superintendent	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

Set up in 1959, the Central Workshop initially consisted of shops associated with three major manufacturing processes, namely metal cutting, metal joining and metal forming. Later, sections on other modern manufacturing processes and control systems were introduced in workshop training. Presently, the Central Workshop of Indian Institute of Technology Madras has facilities in following shops and sections:

Sl. 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, planning machine, radial drilling machine, tool and cutter grinder, CNC lathes, CNC milling machines, vertical and 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 on line and star-delta starter trainers
6.	Instrument Shop	Calibration of pressure gauges up to 1000 bar and precision machines, rapid prototyping machine (3D printer)
7.	Welding Shop	Arc welding, gas welding, brazing, TIG welding, plasma arc cutting and arc welding simulator
8.	Foundry Shop	Sand moulding, 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

The Central Workshop also operates and maintains the buses of the institute.

The Central Workshop is training 797 B. Tech./Dual Degree (Year I) students of 2016-17 batch for course code WS1010 (4 credits), WS1020 (2 credits) and WS 1030 (2 credits, exclusively for the students of Engineering Design Department during their first semester). The details of the students and training modules are given below.

Department	Number of Students	Training Modules
1. Electrical Engineering	121	1. Power Tools 2. Machining process – Turning 3. Machining process – Milling 4. Foundry and Smithy 5. Plastics and FRP 6. Welding 7. Electrical 8. Electronics 9. Pneumatics and Hydraulics 10. Instrumentation and Communication
2. Engineering Physics	30	
3. Mechanical Engineering	147	
4. Metallurgical and Materials Engineering	46	
5. Aerospace Engineering	59	

Department	Number of Students	Training Modules
6. Chemical Engineering	90	
7. Naval Architecture and Ocean Engineering	59	
8. Civil Engineering	99	
9. Biological Engineering	35	
10. Computer Science and Engineering	54	
11. Engineering Design	57	
Total	797	

The first-semester workshop training course for the 2016-17 batch was conducted over 12 days from 25 November to 7 December 2016.

The second-semester training course for 2015-16 Year I B.Tech./Dual Degree students was conducted over 12 days from 18-29 July 2016. The institute also conducted workshop training for Year I B. Tech. students of the 2016–17 batch of IIT Palakkad.

The Central Workshop executes fabrication of experimental test set-ups and their accessories related to B. Tech/M. Tech students and M.S./Ph. D scholars. A total of 1079 work orders were executed during 2016–2017.

The Central Workshop has trained 18 apprentice trainees bearing ITI and diploma qualification. Two of them have been trained for maintenance of buses in auto shop. The Central Workshop facilitated making of models for about 150 students as part of their Manufacturing Technology and Metrology course.

An orientation programme for newly recruited Junior Technicians and Junior Technical Superintendents was also conducted at the Central Workshop. Engineering is Fun workshops for school students and campus children are also being coordinated by the Central Workshop. In 2016, about 70 school students participated in these workshops.

An HRD training programme, Aluminium welding using TIG and MIG application was attended by two staff members from 6-17 February 2017. Another HRD training programme, Troubleshooting and Maintenance of Electric Motors was attended by a staff member from 20-24 February 2017.

6.5.2. Central Glass Blowing Section

Established in 1972, the Central Glass Blowing Section is one of the important infrastructural facilities of Indian Institute of Technology, Madras. 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 was 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 2016 to March 2017, the Central Glass Blowing Section undertook 260 work orders from various departments.

7. International and Alumni Relations

7.1. Introduction

The Dean's Office for International & Alumni Relations (I&AR) was established in October 2012. This office strives to support the institute's drive towards global excellence in education, research, relations with industry, innovation and entrepreneurship, sustainability and social impacts, internationalization and physical infrastructure.

7.2. Vision

The vision of the Office of I&AR is to enhance the global stature and impact of IIT Madras by leveraging alumni and international relations.

7.3. Mission

The mission of the Office of I&AR is to leverage the institute's excellent relationship with alumni to increase engagement with academia/research labs, industry/business, entrepreneurs and foundations to promote institute–external relations by building on alumni relations and to raise funds for the benefit of the institute and its stakeholders such as students, faculty and staff, and society.

7.4. Distinguished Alumnus Awards

The Distinguished Alumnus Award (DAA) is the highest award given to its alumni by IIT Madras in recognition of the achievements of exceptional merit and excellence. The DAs are awarded for outstanding achievements in the areas of entrepreneurship, leadership and management, academia, social and technological innovation, and service to humanity at large.

In December 2016, the following 12 distinguished alumni were announced:

Dr. K. Virupaksha Reddy, President and Founder, PriTel Inc., Illinois, USA. (1972/MSc/CY)

Dr. Pradip Dutta, Professor, Department of Mechanical Engineering, Indian Institute of Science, Bangalore, India. (1987/MT/ME)

Dr. Ramayya Krishnan, Dean, H. John Heinz III College and William W. and Ruth F. Cooper Professor of Management Science and Information Systems, Carnegie Melon University, USA (1981/BT/ME)

Dr. S. Sudarshan, Professor & Subrao M. Nilekani Chair Professor, Department of Computer Science and Engineering, IIT Bombay (1987/BT/CS)

Shri. V. Shankar, Director, Acsys Investments Pvt Ltd., Chennai, India. (1981/BT/ME)

Dr. P.V. Venkitakrishnan, Director, ISRO Propulsion Complex (IPRC), ISRO, Mahendragiri, Nagercoil. (1989/MT/ME) & (2006/PhD/ME)

	Dr. Vivek De, Intel Fellow and Director of Circuit Technology Research, Intel Corporation, Oregon, USA(1985/BT/EE)		Shri. M.R. Madhavan, President, Institute for Policy Research Studies, PRS Legislative Research, New Delhi, India (1990/BT/ME)
	Shri. Satish Pai, Managing Director, Hindalco Industries Limited, Mumbai, India (1985/BT/ME)		Shri. Venkat Viswanathan, Founder and Chairman, Latent View Analytics, Chennai, India (1992/BT/CE)
	Dr. Sethuraman Panchanathan, Chaired Professor and Executive Vice President, Arizona State University, Arizona, USA (1986/MT/EE)		Dr. Anand Ragunathan, Professor @ School of Electrical and Computer Engineering, Purdue University, Indiana, USA (1992/BT/EE)

7.5. Leadership Lecture Series

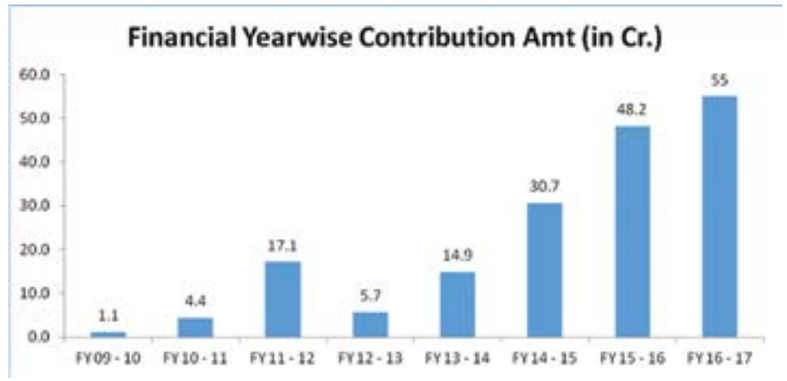
The Leadership Lecture Series was initiated in 2012 to create more avenues for alumni to interact and share their experiences with students and faculty members. Three to four lectures are held each month during the semester. Moore than 150 lectures have been conducted so far. Of these, 27 lectures were held between April 2016 and March 2017. Please visit http://alumni.iitm.ac.in/leadership-lecture-series/for details.

7.6. Travel grants

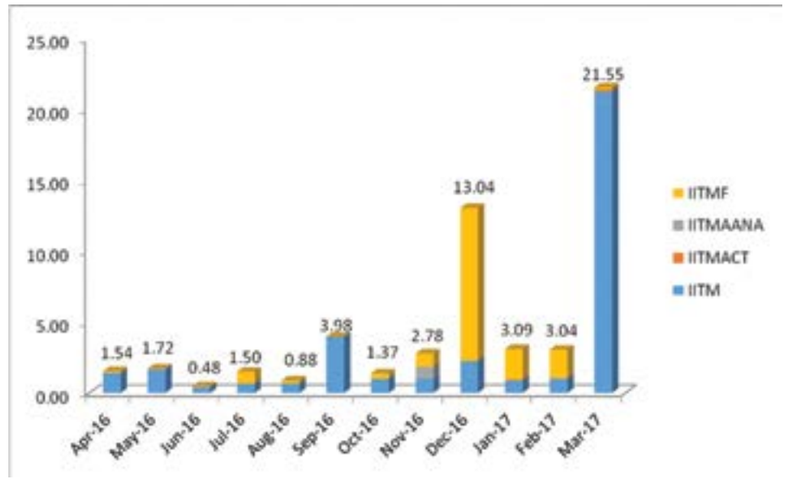
The IITMAANA Travel Grant was instituted 10 years ago. Its scope was enlarged in 2010 to support undergraduate travel also. The programme partially reimburses expenses incurred by students abroad and allows them to travel overseas for competitions, summits, workshops, conferences and internships. In 2016-17, about 250 students received grants, along with 25 faculty members who were supported for travel related to research collaborations. The total amount granted towards faculty travel was about ₹ 13 lakh.

Meeting Number	Date	Total Amount Given (lakh) ₹	Total Number of Student Applicants
33.	5 May 2016	26.24	84
34.	16 September 2016	28.03	83
35.	7 February 2017	33.15	86
	Total	**87.43**	**253**

Statistics of Funds Received



Month-wise and Source-wise Funds Received



Major donations

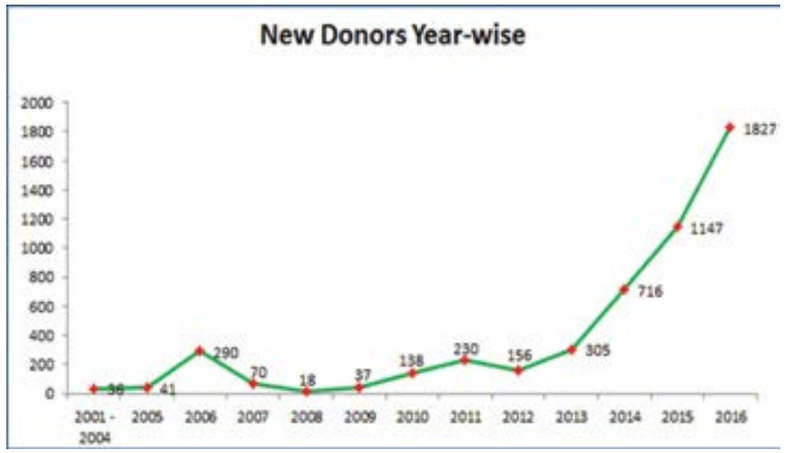
CSR
Rural Electrification Corporation Limited (RECL)
Aricent Technologies (Holdings) Limited
Goldman Sachs Services Private Limited
Nokia Solutions & Networks India Private Limited
Verizon Data Services India Private Limited
TTK Prestige Limited
ABB India Limited
Indian Additives Limited
Wellcome Trust
L&T Technology Services Limited
Sasken Communication Technologies Limited
Titan company Limited
Cholamandalam Ms General Insurance Co. Limited

Mahindra & Mahindra Limited
Cholamandalam Investment & Finance Company Limited (CIFCL)
AM Foundation
Tamil Nadu Newsprint and Papers Limited
Nile Limited (Ramesh V.–1970/BT/ME)
E-Care India Private Limited (Deepak Sanghi–1994/BT/CE)
Natesan Synchrocones Private Limited (Shuba Kumar–1994/BT/MT)
Tata Consultancy Services Limited
City Union Bank Limited
LatentView Analytics Private Limited (Venkat Viswanathan–1992/BT/CE)
Emerson process management power & water solutions India Private Limited
MIL Industries Limited
Non CSR Project
J. Mitra & Co Private Limited (Lalit Mahajan–1968/BT/CH)
Tata Consultancy Services Limited
Wellcome Trust/DBT India Alliance
GE India Technology
The Boeing Company
Qualcomm
The Wellcome Trust / DBT India Alliance
HNI
Kris Gopalakrishnan (1977/MSc/PH and 1979/MT/CS)
Mehta Family Foundation
Anand Rajaraman (1993/BT/CS)
Venky Harinarayan (1988/BT/CS)
1981 batch alumnus
R. Muralidharan (1968/BT/EE)
Deepak Khanchandani Family (Late Deepak Khanchandani–1983/BT/EE)
Mallik Putcha (1964/BT/EE and 1966/MT/EE)
Raghu Ramakrishnan (1983/BT/EE)
Raj Narayanaswamy (1989/BT/CS)
Srinivasan V. (1977/BT/MT)
Indira Subramaniam (1978/BT/EE)
Jagadeesh Moodera (1978/PhD/PH)
Krishna Kittu Kolluri (1986/BT/ME)
Kavaserry Ramchand (1974/BT/ME)
Kumar Doraiswami (1983/BT/ME)
Venkat Mohan (1974/BT/ME)
Kishore Padmanabhan (1975/MT/CS)
Bharat Padebettu (2009/BT/ME)
Vishwanathan S. (1984/BT/ME)
Vijay Ullal (1980/BT/CH)
Batch Reunion
G D S Ramkumar (1990/BT/CS)
Subbiah Vellayan (1990/BT/CE)
Sudheer Koneru (1990/BT/CS)
Ashok Santhanam (1974/BT/ME)
1981 batch alumni
Karthik Vasanth (1991/BT/EE)
Srinivasan Chandrasekar (1990/BT/CS)
Ajay Kaushal (1990/BT/EE)
Vivek Chandrasekharan (1990/BT/ME)
Umesh Malhotra (1990/BT/MT)
Jayanta K. Dey (1990/BT/CS)

7.7. Highlights for FY 2016 - 17

- Total number of new donors who have come on board since 2009 is nearly **5,000**-- about **10%** of our total alumni base.
- **70%** of the receipts are from India-based donors and corporates; **30%** are from the U.S. (a reversal of the historic trend).
- Contribution for CSR projects is **30%** of the total received.
- **50%** of the contributions are from batch reunions and individuals (alumni and non-alumni).
- **20%** of contributions are from industry for non-CSR initiatives (research, naming rights, etc.).
- With the shift of critical mass to India-based contributors, **March** has now become the month with the largest inflow (displacing the previous champion, December).
- **Crowdfunding**, where short-term projects with limited funding requirements are placed on a social media platform, has become a significant source for contributions (nearly ₹ **75 lakh**) and for attracting new donors (**over 200** in FY 2016-17). The mean contribution is ₹ **35,000**.

7.8. New donors (year-wise)



7.9. SSAN Ananya Educational Trust

SSAN Ananya is a trust set up with the noble intention of helping deserving students who require financial help during their education at IIT Madras and inspiring them to be a part of a unique brand of citizens who believe in the importance of 'paying forward' the interest-free loan. So far nine students have received ₹ 12.75 lakh from this scheme.

7.10. Events

Institute Day and DA Forum

The 57thInstitute Day was celebrated on 25 April 2016. Ten out of the 12 Distinguished Alumni (DAs) for 2016 received their awards on this day.

Fifty-four alumni sponsored Institute Day Prizes were given to the students on Institute Day.

Prof. C. Chandra Sekhar, Professor, Computer Science Department, received Srimathi Marti Annapurna Gurunath Award for Excellence in Teaching, sponsored by DA, Marti Subrahmanyam (1967/BT/ME).

AlumnNite

AlumNite was held on 23 July in CLT. The event was attended by 380 alumni and their families; out of these, 109 were 2016 graduands. The 2016 graduands gave an amount of ₹ 35 lakh towards 2016 Batch Caution Deposit Waiver Scheme. DA awards were conferred upon Jayant Baliga (1969/BT/EE)–1999 DA, Dr. S. Christopher (1989/PhD/EE)–2016 DA and Dr. Aravind Srinivasan (1989/BT/CS)–2016 DA. Dr. Y. B. G. Varma Award for Teaching Excellence in Chemical Engineering was launched and more than 20 alumni-sponsored prizes were distributed.

Reunion Day

Nine batches had their reunions. Each batch had an exhilarating time on campus with alumni and families gathering in large numbers.

The batches of 2005 and 2010 had their reunion on 23 July.

The batches of 1971, 1981, 1991, 1996 and 2016 had reunion on 26 December.

The Ruby Reunion of 1976 batch took place on 26 January.

The Golden Reunion of 1967 batch was held on 2 January.

Naming/Chair launches

Girija Muralidharan Institute Chair

R. Muralidharan (1968/BT/EE) and his wife Girija Muralidharan assigned their Insurance Policy benefits for creating the Girija Muralidharan Institute Chair. This is the first time in the history of IIT Madras that an alumnus has contributed through this mechanism. Prof. B. S. Murty, MME Department, is the current occupant of the Chair.

V. Balaraman Institute Chair

V. Balaraman Institute Chair was officially launched on 23 July, and was sponsored by an alumnus of the class of 1981. Prof. Ramesh Babu, ME Department, is the current occupant of this Chair.

Prof. S Sampath Institute Chair

Prof. S. Sampath Institute Chair was officially launched on 26 December. It is sponsored by Shri. Mallik Putcha (1964/BT/EE) and other alumni of the 1964 batch. Prof. Ashok Jhunjhunwala, EE Department, is the current occupant of the Chair.

Prof. C R Muthukrishnan Distinguished Chair

The Third Distinguished Chair in Computational Brain Research in the name of Prof. C. R. Muthukrishnan was launched on 24 April. The Chair is sponsored by our distinguished alumnus Kris Gopalakrishan. Prof. Anand Ragunathan (1992/BT/EE), School of Electrical and Computer Engineering, Purdue University, Indiana is the current occupant of the Chair.

7.11. Scholarship/ Award Launches

Late Mr. R Ramanan Memorial Scholarship

The Ramanan family contributed towards this scholarship in the memory of Late R. Ramanan (1976/ BT/EE). The scholarship will be used as a fellowship to enable economically underprivileged, meritorious students pursue their dreams.

Dr. Y. B. G. Varma Award

Dr. Y.B.G. Varma award for Teaching Excellence in Chemical Engineering was launched on 23 July. The family of Dr. Y. B. G. Varma contributed towards this award.

DA Forum and Evening with Director

Distinguished alumni, donors, IIT Madras faculty and the Director participated in the event held on 24 April. DAs and donors were recognised for their contribution to the development and growth of the institute.

IITMAANA dinner reception

This dinner, sponsored annually by IITMAANA, was organised on 24 July for students going abroad for higher studies. This year, nearly 55 students joined in the festivities.

Chapter Meetings

Delhi — 5 March

London — 8 September

Japan — 19 November

Hong Kong — 26 November

Melbourne — 31 January

IITMAA Mumbai & Pune Chapter — 13 February

Computational Brain Research Workshop

The 2nd Annual workshop on Computational Brain Research was held on 3-7 January 2017. More than 200 researchers participated in the event held on campus.

7.12. Centre Launch

Gopalakrishnan-Deshpande Centre (GDC) Launch

GDC Centre for Innovation and Entrepreneurship was launched on 11 January by Kris Gopalakrishnan (1977/MSc/PH & 1979/MT/CS-1998 DA), Gururaj "Desh" Deshpande (1973/BT/EE-1998 DA) and Jaishree Deshpande (1975/MSc/PH). The centre will pave the way for entrepreneurial thinking in all aspects of functioning of IIT Madras.

7.13. Other Events

"I&AR Student Council 2015-16" Commendation Ceremony – 18 April

AM Corporate Foundation handed over cheque for ₹ 15.65 lakh

Day @ IITM – June

PANIT Biotech Meet – Oct 16-18

Director and Dean I&AR visit to US and Canada from 21-26 June

Mentor for Interns (Delhi) – July 2

Mehta Family visit to IITM – Oct 19

Interaction between IITM & Fidelity – 16 November

IITM Satellite structure handed over at INDO MIM – July 27

IITM Reception at Hilton – 15 November

Portland IITM Reception – 20 November

LoI with Fraunhofer Institute to establish CAAR IWU – 19 October

Marti G. Subrahmanyam's visit to IITM

PAN IIT Leadership Conference – 12-14 August

DaanUtsav – Student Initiatives – October 2

University of Technologi Mara, Malaysia – 27 January 2016

The delegation consisted of eight administrative personnel who were conducting several benchmarking programmes for different institutions in the world. The objectives of the benchmarking programmes were to gain knowledge and experience about the best practices, work culture and good governance. The aspects they wanted to observe during this session were university autonomy, governance and management; human resource development and management; talent management; exit policy; financial and student management; strategic planning; research management; scholar monitoring procedure; and community service responsibility.

They made a visit to the Heritage Centre and had meetings with the Dean I&AR Prof R. Nagarajan, Dean of Administration Prof. Sriram and Dean of Students Prof Sivakumar.

Adama Science and Technology University (ASTU), Adama, Ethiopia – 2 February 2016

On their visit to the institute, Adama University delegates had a meeting with Dean IC&SR, IRO and the IP Cell.

Saint Petersburg Polytechnic University, Russia – 15 February 2016

One of our partners, St. Petersburg Polytechnic University, Russia visited IIT Madras to interact and collaborate with the faculty members. The delegation comprised of seven people who were there for proposing topics for the development of international academic and scientific cooperation. The delegates were V. Khizniak – Head of International Office, O. Emilianova – Deputy Head of International Educational projects office, V. Polyanskiy – Department of System Analysis and Control, V. Kotlarov – Department of Information and Control System, V. Jurihina – International Relations for Institute of Physics, Nanotechnology, A. Filiminov – Head of Department for Physical Electronics and A. Naumov – Department of Material Science and Technology.

The delegates met some of the professors from the departments of Aerospace Engineering, Applied Mechanics, Mechanical Engineering and Physics. A visit to the Research Park – HTIC/Bio incubator was also made.

Shibaura Institute of Technology, Japan (Study tour) – 28 February 2016

The 1st IITM-SIT short term internship and English programme was held at IITM from 28 February to 13 March 2016. A batch of 10 students and three mentors attended the programme, which was organised with laboratory visits and mini projects. Prof. M.S. Ramachandra Rao, Head of Physics Department, spearheaded and mediated the whole event.

Prof M.S.R. Rao, Prof. Malathy, Head of Department, Humanities and Social Sciences, and Prof. S. Mohan arranged two hours of English language classes for the Japanese students daily to enhance their knowledge of the language. IITM researchers from the departments of Physics, Engineering Design, Civil, Chemistry, Electrical, Mechanical and Computer Science Engineering assisted and explained about all the respective labs. They made a final presentation on the last day regarding their mini project in the Physics department.

During the weekend, the Japanese students made an industrial visit and went for a trip to Mahabalipuram as part of the cultural exposure.

Umea University, Sweden – 29 February 2016

The delegation from Sweden came to explore the possibilities of collaboration. It comprised of Dr. Bhalerao – Ph.D, Chair of the Nordic Center in India, Dr. Konrad Abramowicz – Department of Mathematics and Mathematical Statistics, Dr. Nilsson – Ph.D, Department of Mathematics and Mathematical Statistics, Dr. Sven Ronnback – Department of Applied Physics, and Mr. Johansson – Faculty of Science and Technology.

The delegates visited the Engineering Design, Biotechnology and Mathematics department after which they went to the Center for Innovation and the Research Park. Presentations were made by both Umea and IITM during the visit.

Curtin University, Western Australia – 2 March 2016

Professor Brett Kirk, Associate Deputy Vice Chancellor and Professor Andrew Rohl, Director Curtin Institute for Computation visited the campus on 2 March 2016. They had a meeting with the Computer Science faculty members and made a visit to the Research Park.

Australian High Commissioner–Designate visit – 7 March 2016

Australian High Commissioner–Designate to India, Ms. Harinder Sidhu and Deputy Consul General for South India, Mr. Jon Bonnar from the Australian Consulate General met with the IITM faculty members collaborating with Australian universities. They met with the Director and Dean IAR.

University of Southampton, U.K. – 10 March 2016

The delegation met with the Director and Prof Ashok Jhunjhunwala. They discussed about Preventive Health Care, Power and Climate change. They made a visit to the Center for Social Innovation and Entrepreneurship, the Humanities and Social Sciences department and to the Research Park. The delegation comprised of Prof Jane Falkingham (Dean of Faculty), Prof Derek McGhee (Head of the School of Social Sciences), Prof Sabu Padmadas (Demography and Social Statistics), Mr. Mark Cranshaw (Faculty Director of International Partnerships) and Dr.Pathik Pathak, Director, Social Impact Lab, Faculty Director of Social Entrepreneurship.

University of Ontario Institute of Technology (UOIT), Canada – 14 March 2016

Dean Prof T. Sidhu, UOIT Vice President (Research) Michael Owen and Prof Bale V. Reddy Professor & Chair, Department of Automotive, Mechanical and Manufacturing Engineering visited IITM to look into research activities in engineering and explore opportunities for joint international activities.

Nanyang Technological University, Singapore – 16 March 2016

Director Professor Lalit Goel and Assistant Director Mr. Johnie GOH, Assistant Director, Office of Global Education and Mobility, NTU visited the Institute on 16 March 2016. The purpose of their visit was to discuss possibility of sending more NTU students to IITM on short-term programmes. They were interested to find out more information on existing learning opportunities or if they could customise a programme for NTU students, identify ways to boost semester- long student exchanges between NTU and IITM in the areas of research attachment or academic studies, overview of key IITM facilities for international students such as accommodation and learning facilities, additional opportunities for NTU students in research and industrial internships.

They met with Director Prof Bhaskar Ramamurthi, Dean I&AR Prof R. Nagarajan and Dean AR. A session was held with the IITM students who had gone for their exchange programmes to NTU. A tour of the hostel facilities was also made.

Deakin University – 18 March 2016

Dr. Daniel Fabijanic and Dr. Matthias Weiss from the Institute for Frontier Materials, Deakin visited the institute to meet with the IITM and Deakin DIRI students and faculty.

There was a meeting held with the Heads of Mechanical and the Metallurgical and Materials Department.

Purdue University – 28 March 2016

Dr. Rusi Taleyarkhan, Professor, School of Engineering visited IITM on behalf of Purdue University's engagement efforts with Indian university systems and discussed about joint collaborations, including IITM hosting their students and selecting IITM students to Purdue. He also discussed possibilities for joint research and technology commercialisation and manufacturing in India. He met with the HOD and faculty in the Mechanical and Chemical Engineering department.

University of Sydney, Australia – 29-30 March 2016

The delegates who visited were Prof. Joseph G. Davis, Associate Professor Martin G. Mackey and Dr. Claire E. Hiller. They were there to create a joint project with IITM researchers in the broad area of e-health technologies and applications.

On 29 March, there was a meeting with Dean IAR, Dean AR. Another visit was to Computer Science, Electrical and Applied Mechanics departments to meet the HODs and faculty members. On 30 March, there was a visit to the Research Park, a meeting with Prof. Jagadeesh Kumar V, Dr Mohan Shankar at HTIC, a meeting with Prof. Varadhan at Applied Mechanics Department and a meeting with Prof. Sujatha at the Mechanical Engineering department.

Tomsk Polytechnic University – 29 March 2016

Dr. Liudmila Larina, Deputy Director, International Education and Collaboration, Associate Professor (Chemistry) and Prof. Fedor Gubarev, a professional in NDT methods for engineering and medicine, visited the institute on 29 March. They were interested in bioengineering and biotechnology as well as electronic devices and control systems for medicine. They visited the Biotechnology, Centre for Non-destructive Evaluation and Applied Mechanics department.

For the development of Indo-Russian friendship in the field of education and research, the committee of TPU decided to provide special TPU contest "Your first success" for state academic scholarships for TPU Master Degree programmes in English. The contest was aimed to provide 10 state academic scholarships of Russia exclusively for education at the said programmes.

Tomsk Polytechnic University proposed two programmes to IITM students: Biomedical Sciences and Engineering (the programme is about all forms of medical tomography), developed in cooperation with Siberian State Medical University and Nuclear Power Installation Operation (the programme is about Nuclear Reactor Operation) developed in cooperation with Rosatom State Corporation.

All tests will include 30 questions: 10 questions each in Maths, Physics and specific field of a particular programme (electronics and nuclear physics, respectively). The maximum time for the contest is 50 minutes, besides 10 minutes for introduction. The scholarships will be granted on comparative base.

TPU is coordinator of this contest in India. Five scholarships for master degree programme, Computer Science (in Russian) will be available (one year of pre-university course will be included for free).

Nanyang Technological University – 30-31 March 2016

Prof. B.V.R. Chowdari, Senior Executive Director, and Prof. Bo Liedberg, Dean, Interdisciplinary Graduate School, visited IITM on 30-31 March 2016. On 30 March, there was a meeting with the Director, Dean AR, Dean IAR and Prof. Pradeep. A talk by Prof. B.V.R. Chowdari "Nanyang Technological University Singapore – An Overview" was also held.

On 31 March, they visited Prof. Pradeep's Lab and the IITM Research Park.

University of Buffalo – 8 April 2016

Dr. Andrew Whittaker, Professor and Chair in the Department of Civil, Structural and Environmental Engineering, and Ms. Kellie F. Stanchak Graduate Academic Coordinator in the University of Buffalo met with the Dean I&AR Prof R. Nagarajan and the HOD and faculty of the Civil Engineering department. They later visited the IITM Research Park.

Curtin University Workshop – 5-6 May 2016

A delegation from Curtin University visited IITM to conduct a two-day research collaborative workshop. IITM and Curtin have signed a joint doctoral programme. The main aim of the visit was to broaden and deepen IITM faculty collaborations through a number of workshops focused on areas of mutual research interest so that potential supervision teams and PhD projects can be identified. The delegation had academic meetings with the department of Civil and Mechanical Engineering.

A wrap-up session reporting results from the break-out groups was held preparing a summary of possible collaborations with a proposed timeline for deliverables. A visit to the Research Park and Center for Innovation was also made.

Closing Meeting – Heritage Consortium (Erasmus Mundus) – 9-10 May 2016

The participant from IITM was Ms. Kavitha G.R. (Manager, Office of International Relations). The venue of the meeting was IIT Guwahati and the topics discussed were Internationalisation of Higher Education: Challenges and Perspectives, (Mobility, Credits, Recognition), Outcomes of Heritage Project in terms of management, success stories, partnerships, cooperation, Sustainability/Employability/Cooperation, and Quality in Internationalisation of Higher Education Institutions: Education, Research, Mobility.

After the closing meeting, it was decided to continue with the networking of the aforementioned universities without funding. ECN France and IIT Madras will continue to be the coordinator and joint coordinator of the heritage network for next three years.

Texas A & M University – 2 June 2016

Prof K. Vikram Kinra visited the Institute and met with the Dean Academic Research, Dean I&AR, relevant heads of the department as well as Texas A & M alumni (Civil, Mechanical, Aerospace Engineering and Humanities and Social Sciences). Lab visits were also made along with a campus tour.

Deakin University – 6 June 2016

Prof. Peter Hodgson and Ms. Gayathri visited the campus on 6 June and held a meeting with IITM and Deakin students.

Final Consortium Meeting of Erasmus Mundus Action II – Svagata – 13-14 June 2016

The participants from IITM were Ms. Kavitha G.R. (Manager, Office of International Relations) and Mr. Arvind Sivamani (Liaison Officer, Outbound Students). The venue was Anna University, Chennai. The meeting had a presentation/overview of realisations of mobilities (quantity), evaluation of all partners (quality), impact of the project on each partner institution with respect to sustainability, and challenges (transfer of credits, cultural differences).

NUT, NUS and SMU Singapore Workshop – 13-17 June 2016

The faculty members who attended the workshop were Prof. Pradeep, CY, Prof. C. Rajendran, MS, Prof. Prakash Sai, MS, Prof. T. S. Sampath Kumar, Prof. T. Asokan, ED, Dr. John Ebenezer, CS, Dr. Benny Raphael, CE and Prof. Sujatha N. There were one-on-one meetings with the respective universities of Nanyang Technological University, National University of Singapore and Singapore Management University.

Singapore Economic Development Board, Singapore – 21 July 2016

Center Director Singapore Economic Development Board Ms. Rachel Chia met with Dean I&AR Prof. R. Nagarajan. She later visited the IITM Research Park, had a walk-through of the incubation floor and interacted with some of the select startups. A visit to the HTIC was also made after which there was a meeting with Prof. Ashok Jhunjunwala and Dr. Tamaswati Ghosh.

Nagaoka University of Technology – 2-4 August 2016

The delegates in attendance were Prof. Mikami, Executive Director/Vice President, Prof. Okazaki and Ms. Okawa, Manager International Affairs.

On day one, there was a meeting with Ms. Kavitha, Manager (International Relations). Day two witnessed a meeting with Dean I & AR, Prof. R. Nagarajan and Dean AR, Prof. A. K. Mishra. On day three, there was a meeting with Director Prof. Bhaskar Ramamurthi, Dean I&AR, Dean Academic Courses and Dean Academic Research. An MoU with specific student exchange agreement was signed between NUT and IITM. There was also a meeting arranged with the HoD of ME, Prof. Kamaraj, Prof. Sarathi and Prof. B.S Murthy

International Students Meet – 16 August 2016

On 16 August 2016, the Office of International Relations held an international students' meet where all students were invited for a gathering in IC&SR Conference Hall. The event kicked off with high-tea and was followed by a photo shoot. Director IITM Prof Bhaskar Ramamurthi, Dean of International and Alumni Relations Prof R. Nagarajan, Dean of Students Prof. Sivakumar and CCW Chairman Prof. K. Sethupathi welcomed all students to the campus. There was an interactive session, and it was decided that the institute would organise a workshop for the exchange students to understand more about Indian culture and have monthly meetings with the Dean I&AR to share their views and experience in IIT. The purpose of the meeting was to help students voice their opinions on academic and administrative issues.

University of Westminster, U.K. – 17 August 2016

Professor Ipsita Roy, Head of Applied Biotechnology Research Group Research Coordinator, Department of Life Sciences, Faculty of Science and Technology visited IITM. On Wednesday, 17 August, she met with the Biotechnology and Engineering Design HODs and other interested faculty members to present representative areas of research of various staff members in the department. It was a good opportunity to take discussions forward after the last visit and to talk more about an active student mobility and faculty exchange.

Embassy of France – 17 August 2016

The organisers for this event were Indian Institute of Technology Madras, Office of International Relations, Institut Français en Inde, French Embassy in India and Alliance Française de Madras.

The programme commenced at 4:30 p.m. with the reception of participants followed by a welcome address by Prof. R. Nagarajan, Dean International and Alumni Relations, IIT Madras and Mr Jean-Yves Gillon, Attaché for Cooperation in Education, Institut français en Inde.

There was a presentation made by Mr Hari Naren, Manager Campus France Bangalore for study opportunities in France. Another presentation of the Indo-French cooperation in the fields of science and technology was by Ms Sandrine Maximilien, Attaché for Science and Technology, Embassy of France in India.

Mr Krishnan, Vice President Research and Advance Engineering, Renault Nissan gave a testimony after which there was a live concert by ANOKHA, Indo-French musical journey.

Information sessions for undergraduates – 26 August 2016

A presentation was made in the IC&SR Auditorium by the International Office on Opportunities Abroad, Application Procedure and Scholarships available to IITM students in various partner universities.

Kick-off workshop between IITM and RWTH Aachen University – 6 September 2016

A proposal under IGP (Indo-German Partnerships) in Higher Education Program was submitted by IITM and RWTH Aachen. A kick-off meeting was hosted by RWTH Aachen University.

<u>Current Fields of Collaboration</u>

Participants (faculty and staff) of the kick-off strategic workshop at RWTH Aachen University

1. Prof. T. Sundarrajan – Mechanical Engineering
2. Prof. Mahesh Panchagnula – Applied Mechanics (CSIE, CFI)
3. Dr. Abhijit Chaudhuri – Applied Mechanics
4. Dr. Sridharakumar Narasimhan – Chemical Engineering
5. Dr. Priyanka Shukla – Mathematics
6. Dr. Dali Naidu Arnepalli – Civil Engineering
7. Prof. B.S. Murty – Civil Engineering (IGCS)
8. Prof. Krishna Vasudevan – Electrical Engineering (IGCS)
9. Dr. Lakshmi Narasamma – Electrical Engineering
10. Dr. Guhan Jayaraman – Biotech
11. Dr. Ravishankar Kottada – Metallurgical & Materials Engineering
12. Prof. B.S. Murty - Metallurgical & Materials Engineering
13. Prof. Prathap Haridoss - Metallurgical & Materials Engineering (NPTEL Coordinator)
14. Prof. R. Nagarajan – Dean IAR
15. Ms. Kavitha G.R. – Manager, International Relations

Tokyo Institute of Technology – 6 to 15 September 2016

Ten Tokyo tech students had come for a short-term programme visit to IIT Madras. They were accompanied by Prof Junji Yokokura, Office of Global Human Resources Promotion, Prof Anil C. Wijeyewichkrema, Associate Professor, Unban Earthquake Engineering Center and Ms. Akiko Takamoto Staff, Office of Global Human Resources Promotion.

On the first day, there was a meeting with HOD of Civil Engineering Prof A. Meher Prasad. There was also a visit to the Center for Innovation (CFI) and a Campus Tour (open air theatre, cricket ground, primary school, among others). The next day, students attended classes in respective departments at the institute, and in the evening made a presentation of their university. An Interactive session between the Japanese and Indian students was held (in Hall #3 - IC&SR Building). A visit to the Research Park, respective laboratories and Central Workshop was made on the third day followed by a trip to Kanchipuram on the fourth day. They concluded their visit with a meeting with Dean I&AR Prof. R. Nagarajan.

Swiss Delegation – 9 September 2016

The delegates who attended the institute were Ms. Nadège Vetterli-Senior Research Associate, Lucerne University of Applied Sciences & Arts, Dr. Christian Bermes-Professor, University of Applied Sciences & Arts Eastern Switzerland, Prof. Carsten Wemhoener-Professor, University of Applied Sciences & Arts Eastern Switzerland, Mr. Mark McCormick-Scientific Assistant, University of Applied Sciences & Arts Western Switzerland, Dr. Roger Marti-Head, University of Applied Sciences & Arts Western Switzerland, Dr. Daniele Puccinelli-Senior Researcher, University of Applied Sciences & Arts Southern Switzerland, Dr. Roman Rudel-Head, University of Applied Sciences & Arts Southern Switzerland, Mr. Peter Marty-Head; Lecturer, Zurich University of Applied Sciences, Wädenswil, Prof. Harry Spiess-Lecturer; Scientist; Project Manager, Zurich University of Applied Sciences, Wädenswil, Christine Kyburz-Scientific Collaborator; Project Manager, Swiss Universities.

They had a walk through the IITM campus and saw the rooftop solar system and green buildings. A presentation on Transforming Chennai as a Smart City was made. They visited the departments of Electrical Engineering, Computer Science, Chemistry and the IITM Research Park.

Info sessions for postgraduates and research scholars – 23 September 2016

A presentation on Opportunities Abroad, Joint Supervision Programs, Joint Degree Programs and Erasmus Mundus programmes was made by the International Office in the IC&SR Auditorium.

Umea University, Sweden – 29 September 2016

A delegation of five members of Umea University, Sweden visited IITM on 29 September to initiate collaboration and exchange. IITM has signed an agreement with Umea University. The delegates showed their interest in exploring research interests in IITM. The delegation comprised Mr Thomas Mejtoft (Senior Lecturer, Interaction & Design), Mr Anders Astrand (Senior Lecturer, Energy Engineering), Mr Lennart Edblom (Senior Lecturer, Computing Science), Mrs Rupali Bhalerao (Planning Officer) and Mr Lennart Johansson (International Coordinator).

A meeting with Dean I&AR Prof R. Nagarajan and Mr. James Rajanayagam, Center for Social Innovation and Entrepreneurship in charge, was held with Mr. Thomas Mejtoft. There were also several visits made to the Research Park and Civil Engineering, Computer Science departments. Mr. Thomas Mejtoft also met with Dr. Edamana Prasad from the Teaching Learning Center. A one-hour talk was held in the evening to promote study opportunities at Umea University.

National Tsing Hua University, Taiwan – 29 September 2016

The Taiwanese delegates were Ho Chen, Hong-President, Dr. Wei Chung Wang-Professor and Senior Advisor for Global Affairs, Office of the President, Chang Kuo Hao-Associate Professor and Director of Division of General Affairs, Yang, Hui-Ju-Senior Program Manager, Taiwan Education Centre in India, Chien, Wan Chin-Program Manager, Taiwan Education Centre in India and Chen I- Da-Secretary, Education Division Taipei Economic and Cultural Centre in Delhi.

They met with the Director Prof. Bhaskar Ramamurthi to discuss a new collaboration project provided by NTHU and Industrial Technology Research Institute in Taiwan. A meeting with Tec-IITM at China Studies Centre and a visit to the Research Park also took place.

Bouygues Group, France – 20 October 2016

The delegates in attendance were Maret Vincent Francois, Open Innovation Corporate Director, Gaudin Etienne, Louis, Marie-Corporate Innovation Director Group, Bonnifet Fabrice, Robert, Léon-Sustainable Development Director, Wiart Adrien, Stéphane, Marie-Strategy M&A, Alonzi Virginie, Audrey, Cynthia-Strategic Marketing & Foresight Deputy Director, Carlier Christophe, Hervé-Strategy and Development Direction Business Solution Director, Lacire Servan, Jean, Patrick-Innovation and Technology Director, Calvin Pierre, Jacques-Prospect and Institutional Relation, Marketing and Business Manager, Lienard Christophe, Denis, René-Christophe, Denis, René, Mustiere Pierre, Andre, René-CEO and Ayusawa Stéphanie, Saori-Market Analyst.

In addition to meeting Director Prof Bhaskar Ramamurthi and Dean I&AR Prof R. Nagarajan, the delegates met the Civil Engineering Department staff, in particular the HOD Prof. Meher Prasad and Prof. Devdas Menon, who have been working on the affordable mass housing project. They also made a visit to the Research Park.

Ministry of Economic Affairs, Taiwan – 20 October 2016

The delegates who visited IITM were Mr. Wang Jien-Ping, Deputy Director General, Mr. Yang Ching-Huei, Assistant Director General, Ms. Hao, Tai-Yuan, Manager, Ms. Ko, Hsun-Ting, Project Manager, Ms. Chen, Yi-Hua, Secretary, Ms. Liu, Shin-Yi, Assistant Research Fellow, Mr. Lee, Hung-Cheng, Senior Project Manager, Mr. Wang, Wei-Hong, Associate Research Fellow, Ms. Hsiao, Wei-Yi, Project Specialist, Ms. Wang, Ying-Ying, Associate Researcher, Ms. Gau, Yuh-Shing, Officer, Mr. Dave Tsai, Director, YiHua Chen-Junior Officer, David Wang, Deputy Director General, Sandy Liu, Assistant Research Fellow, Taiwan Institute of Economic Research, Wei Hong Albert Wang, Associate Research Fellow, Taiwan Institute of Economic Research, Steve Lee, Senior Project Manager, Taiwan External Trade Development Council, Angelica Hao, Manager, Taiwan External Trade Development Council, Tina Ko, Project Manager, Taiwan External Trade Development Council.

There was an MoU signing ceremony between Taiwan Investment Talent Recruiting Mission and Indian Institute of Technology Madras. During their visit, the dignitaries also conducted a session for students to create awareness about the opportunities in Taiwan for higher education and employment.

Visit of French Scientific Counselor and CNRS Director – 26 October 2016

Dr. Philippe ARHETS, Counsellor for Science & Technology, French Embassy in India, Prof. Xavier SANTARELLI -Bordeaux University, Prof. M.A. Vijayalakshmi, Current Director, Centre for Bioseparations Technology, VIT University, and Srini V. KAVERI-Director, CNRS Office in India visited IIT Madras to discuss collaborations between French academic institutions and the institute as well as student and research exchange programmes. They met with the Director of IITM, Prof. Bhaskar Ramamurthi and Mr. Rajendra Mootha, COO, IITM Research Park. They helped organise a presentation, a tour and a meet and greet.

International Day – 3 November 2016

On 3 November 2016, the Office of International Relations and Ipals celebrated the fifth edition of the International Day with the campus community. The annual event aims to highlight the cultural diversity of the campus and enables the international and Indian students to appreciate the different cultures and cuisines. The institute has many exchange students from all over the world, majority being from Germany. There are students from Denmark, Sweden, France, Spain, Prague, Italy, China, Japan and Australia as well. Many of the students prepared their local cuisines and enthralled the audience with their dance performances and a well-choreographed fashion show.

University of Notre Dame, U.S.A – 7 November 2016

Dr. Sunny Shah Assistant Director and Faculty from University of Notre Dame visited IITM on 7th November. There was a meeting held with Dean I & AR followed by another with IITM faculty members and HODs in Biotechnology and Engineering Design. He also met with Dr Tamaswati Ghosh at IITM Incubation Cell, Mr. Rajendra Mootha at IITM Research Park and the Leadership team at IITM Bio incubator. A meeting with Dr.Ashwin Mahalingam regarding the Center for Social Innovation and Entrepreneurship was also set up later in the evening.

University of Leeds, UK – 10 November 2016

Prof David Barton visited IITM on 10 November and met with the Dean I &AR Prof R. Nagarajan. There was an MoU signing ceremony after which appointments at different departments were made. Prof Barton met with the HODs and faculty of Mechanical Engineering Department, Applied Mechanics, Engineering Design and Aerospace Engineering. There was also a visit to the Research Park.

Modernising and Enhancing Indian E-Learning Educational Strategies (MIELES) – Kick-off meeting in the University of Barcelona (14–15 November 2016)

The general objective of MIELES is to modernise and enhance access to the Indian higher education system by supporting the development of diverse institutional e-learning strategies. The specific objectives were to:

- S01. - Support Indian institutional management to assess their interests and needs with regards to e-learning
- S02. - Build the capacity of Indian institutions to develop a clear, realistic and tailored strategic approaches to e-learning
- S03. - Enhance the capacity of Indian institutions to implement their institutional e-learning strategies, both through staff training and collaborative pilot projects
- S04. - Enable transfer of knowledge within India regarding e-learning strategy and capacity
- SO5. To enhance Indian-European collaboration in e-learning

It is believed that this approach will be a concrete and innovative way of addressing the most pressing needs in the development of the current Indian higher education sector such as expanding access to higher education, and more specifically, exploiting the potential of Government's (and private sector's) investments in digital infrastructure, internet access and online courses. The project departs from the premise that all Indian higher educaton institutes (HEIs) need support to upscale their e-learning offer. A short needs assessment survey conducted with the Indian partners prior to submitting this proposal suggested as much. This has to do not just with ICT infrastructure, but also with the training of staff to use e-tools. This is a particular need in more

remote regions such as Kerala, Karnataka and Tamil-Nandu, where the HEIs have hardly any activity regarding e-learning, yet are trying to expand access dramatically to the local population. The focus on training university management and supporting universities to develop strategies is a concrete way to ensure that Indian HEI understand the potential of e-learning and identify clear ways to invest in it and utilise it across the institution in all subject areas. E-learning strategies may be different for each institution, depending on their context, which is another reason why this project is important. In addition, through the pilots and staff training phases, the project also encourages institutions to address quality assurance in e-learning, a transversal element of university strategies and a general concern of governments and employers. Finally, the project encourages the sustainable implementation of e-learning strategies beyond the project lifetime. In that it supports the Indian partners to disseminate results both internally in their institutions, at the local level, via multiplier events, and in the EU, where other inter-institutional cooperations and spin-offs may develop.

University of Missouri-Kansas City, USA – 17 November 2016

Dean Kevin Truman, Thomas-Assistant Dean and Ms. Christina Davis-Director, Continuing Education School of Computing and Engineering visited the HODs and faculty members in the Civil Engineering, Computer Science and Engineering, Electrical Engineering, and Mechanical Engineering departments.

AOTULE conference at HKUST – 23-25 November 2016

The Annual General Meeting was held in the Hong Kong University of Science and Technology, Hong Kong for the 11th edition of Asia-Oceania Top University League on Engineering (AOTULE).

The AOTULE promotes inter-university cooperation through joint programmes, including an annual Dean's meeting, student workshop and exchanges of students and staff, to improve the quality of engineering education and research of the members. It aims to broaden participants' perspectives through education, research and cross-cultural interactions.

The annual AOTULE Deans' meeting ran parallel to the student conference and staff meeting. The theme for the meeting was Technological Change in Education. The main emphasis in this meeting was to explore several and collective response to the "avalanche of change", perceived or real, in higher education and to keep track of the main agenda of mobility.

As for the student conference, students were divided into several groups to conduct the group project on

Global Programs Related to Big Cities, apart from presenting their current research projects. This conference was a good opportunity for students to interact and be exposed to non-traditional learning techniques, which will enhance their learning and ability to communicate with people from different cultures and research fields.

The staff meeting was held to discuss student exchange on the postgraduate level and opportunities for short-term programmes. After the respective meetings and discussions there was a presentation made by all the Deans. It was followed by a conference meet with the Deans and staff to deliberate on the points to better the results of the programme.

Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany – 8 December 2016

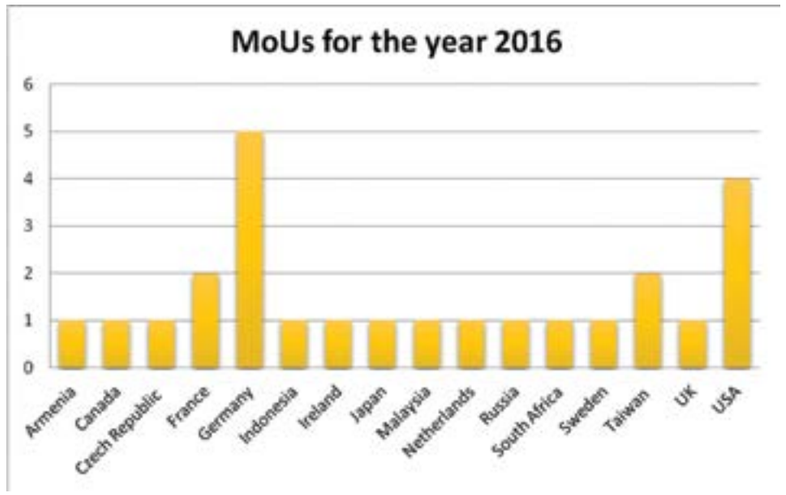
Dr. Ruth Maloszek and Prof. Juergen Kaehler visited the Humanities and Social Sciences Department to further discuss issues of academic cooperation with their Institute of Economics at the Friedrich-Alexander University Erlangen-Nuremberg (FAU) in Germany. They gave a presentation on MA Development Economics and International Studies and International Volatility in Markets for Agricultural Commodities and its Transmission to National Markets.

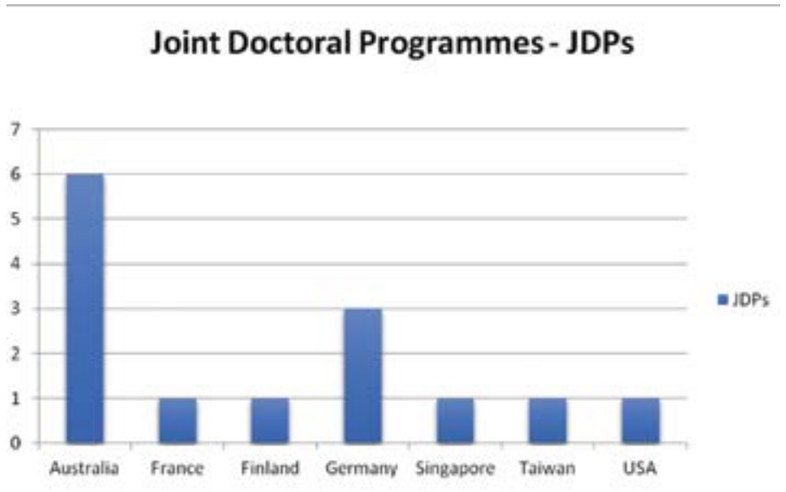
They also met with the Dean I&AR and the International Office.

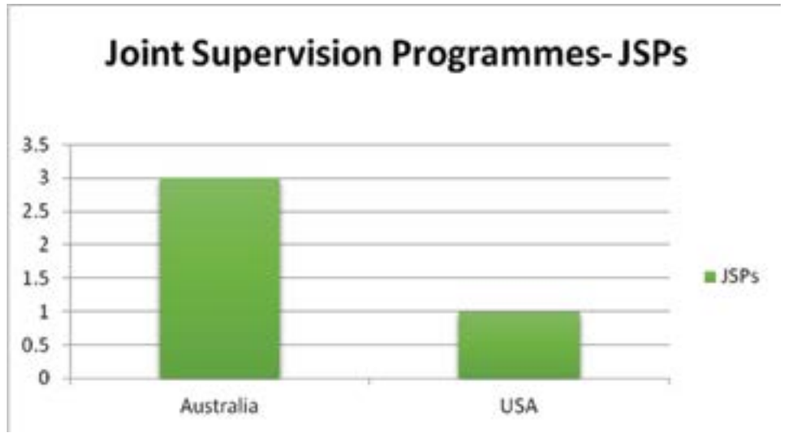
Translational Research and Professional Leadership Centre – 16 December 2016

Mr. Vijaykumar, Director of Technical Education and Suja-Co-ordinator TPLC, met with the Dean I&AR and Director. An MoU was signed on the occasion.

A Graph of the MoUs, JDPs and the JSPs:







List of Joint Degree programs:

1. Aalto University, Finland
2. Michigan State University, USA
3. University of Bordeaux, France
4. RWTH Aachen, Germany
5. Deakin University, Australia
6. Queensland University of Technology, Australia
7. University of Duisburg, Germany
8. Curtin University, Australia
9. University of Technology, Sydney, Australia
10. The University of Melbourne, Australia
11. National University of Singapore, Singapore
12. Swinburne University, Australia
13. National Tsing Hua University, Taiwan,
14. University of Passau, Germany

The first three mentioned in the above list were signed in the year 2016.

Joint Degree Programs – Students Information

National University of Singapore

NAME	DEPARTMENT	IITM MENTOR	HOST MENTOR	DURATION
S. Radhu	Physics	Prof. C. Vijayan	Prof. Ji Wei	1 March 2014-1 March 2015
Sridhar G.	Civil Engineering	Dr. R.G. Robinson and Prof. K. Rajagopal	Prof. Lee Fook Hou	1 August 2013-1 August 2014
Pranjal Verma	Electrical Engineering	Prof. K.S. Swarup	Prof. Dipti Srinivasan	1 August 2016-1 August 2017
Gourav Pandey	Ocean Engineering	Dr. Jitendra Sangwai	Dr. Praveen Linga	8 January 2017-8 January 2018

University of Passau

NAME	DEPARTMENT	IITM MENTOR	HOST MENTOR	DURATION
Kurian	Management Studies	Prof. C. Rajendran	Prof. Hans Ziegler	July 2014–February 2016
Nivedhitha	Management Studies	Prof. Kamalanabhan	Prof. Hans Ziegler	August 2013-February 2014, August 2014-February 2015
Surya	Management Studies	Prof. Saji Mathew	Prof. Franz Lehner	July 2014-February 2016

University of Technology Sydney

NAME	DEPARTMENT	IITM MENTOR	HOST MENTOR	DURATION
Santhosh Loganathan	Civil Engineering	Prof. Koshy Varghese and Prof. K.N. Satyanarayana	Prof. Perry Forsythe and Prof. Shankar Sankaran	January 2017-December 2017

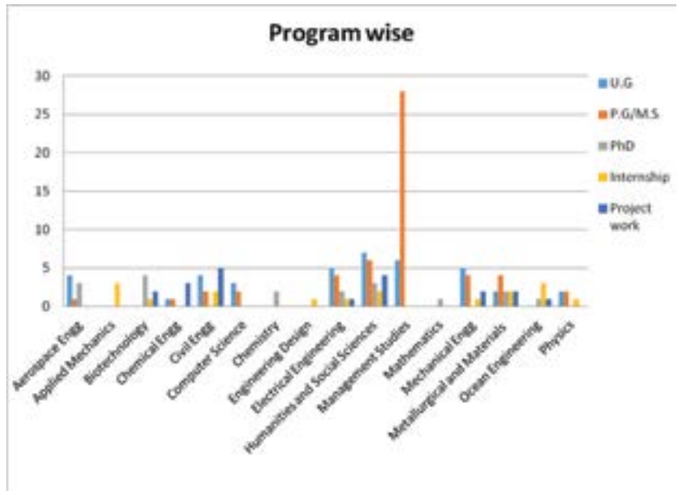
Curtin University

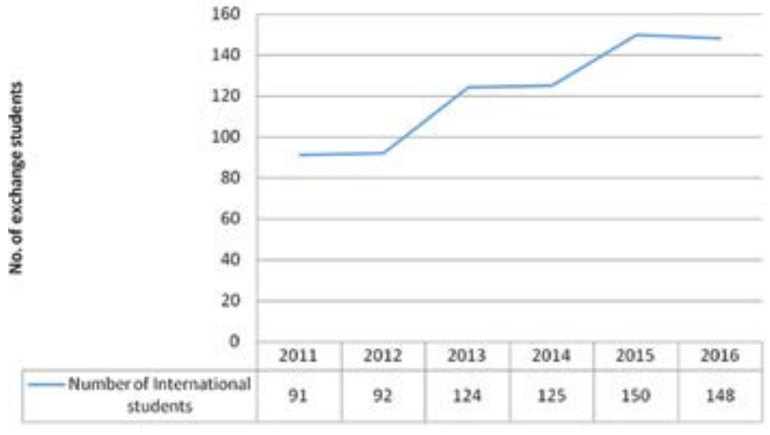
NAME	DEPARTMENT	IITM MENTOR	HOST MENTOR	DURATION
Herald Wilson	Biotechnology	Prof. G.K. Suraish Kumar	Prof. Tushar Sen	January 2018-January 2019

National Tsing Hua University

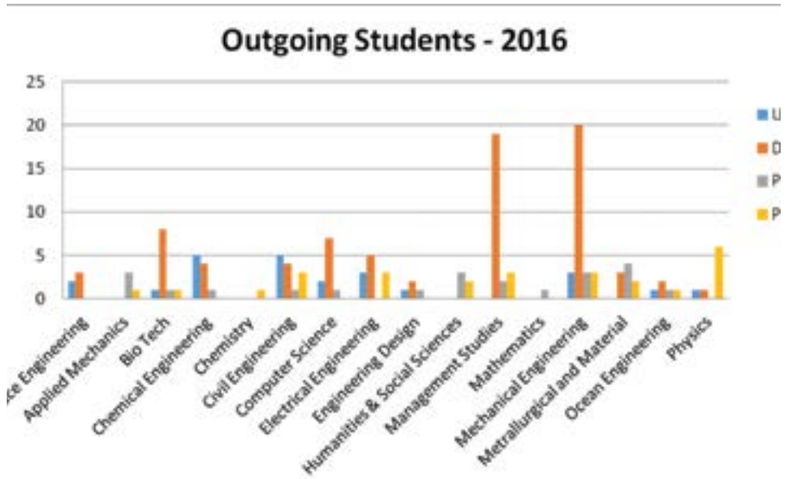
NAME	DEPARTMENT	IITM MENTOR	HOST MENTOR	
Guruvidyathri	Metallurgical and Materials Engineering	Prof. B.S. Murty and Prof. K.C. Hari Kumar	Prof. J.W. Yeh	August 2016-January 2017

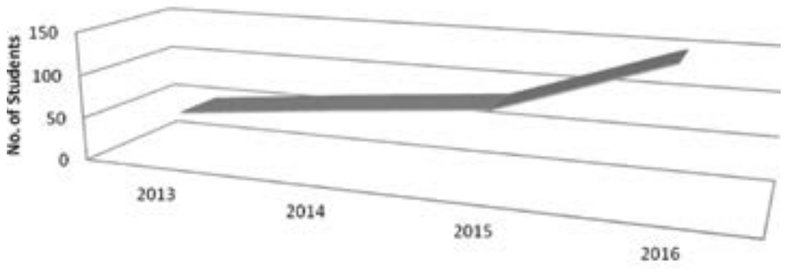
A graph of international students on campus for the year 2016:





A graph of outgoing students for the year 2016:





2013	2014	2015	2016
51	70	87	150

8. Central Library

The Central Library of Indian Institute of Technology Madras is equipped with all modern facilities. It 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 on applied science, engineering, technology, humanities, management, social science and emerging subjects. The collection has 3,80,685 items, including 655 current journals, apart from various value-added services through modern information-handling tools and techniques to cater to the information needs of 12,849 members. The major activities of the Central Library between April 2016 and March 2017 are described here.

8.1. Library Information Services: Statistics

Item	2015–2016	2016-2017
Collections		
Books (general)	2,31,031	2,32,474
Books (gratis)	1183	1672
Books (Hindi)	223	304
Books (project)	854	1187
Theses	7150	7173
Book Bank	14,058	14,058
Current periodicals by subscription	655	655
Back volumes of periodicals	1,14,165	1,14,533
German collection	44,280*	---
CD-ROMs	1499	1500
Audio/video cassettes	448	448
e-Books	6118	6681
Total	**4,21,664**	**3,80,685**
* Proposed to be write off		
Membership		
Staff	751	695
Faculty members (SSO, SO, VF, ADF and others)	697	735
Students	11,046	10,650
Retired faculty member/officer	--	095
Alumni members	366	386
Corporate members	32	42
Special members	Nil	Nil
IAS members	249	190
Project coordinators	56	56
Total	**13,197**	**12,849**
Services: Circulation		
Number of books/journals issued	74,192	62,544
Number of books issued by Book Bank (GS)	3011	2551
Number of books issued by Book Bank (WS)	2180	1912
Overdue and other charges collected (₹)	5,24,736	5,10,584
Photocopy charges collected (₹)	6988	15
Project loans to departments/centres		
Books issued	1360	774
Inter-library loan transactions		
Borrowed from other libraries	Nil	Nil
Loaned to other libraries	Nil	9

Item	2015-2016	2016-2017
Reprint service		
Reprints received from other institutions (pages)	192	273
Reprints supplied to other institutions (pages)	786	752
Smart Cards		
Cards generated/issued	2698	6108
Expenditure (lakhs of ₹)		
1. Purchase of books (₹)	159.90	78.79
2. Subscriptions to journals and databases (₹)	1380	969
New journals/databases added	3	Nil

8.2. ISO 9001:2008 to ISO 9001:2015 Activities

The Central Library actively participated in ISO 9001:2008 activities. It was also involved in the upgrade of ISO certification from ISO 9001:2008 to ISO 9001:2015 for maintaining quality-based library system services and procedures. The major activities related to ISO 9001:2008 and ISO 9001:2015 are listed here:

1. An ISO internal audit was conducted on 22 April 2016.
2. A one-day awareness programme on ISO 9001:2015 was conducted on 9 August 2016.
3. An Internal Auditor Training Program for ISO 9001:2015 was conducted on 15-16 December 2016.
4. Mock Internal Audit for ISO 9001:2015 was conducted on 19 December 2016.
5. Internal Audit for ISO 9001:2015 was conducted on 3 January 2017.
6. An ISO management review meeting (QSM-I and QSM-II) was held on 16 January 2017.
7. M/S Tuv NORD Stage-I Audit was conducted on 19 January 2017.
8. ISO Surveillance External Audit was conducted on 15 February 2017.

8.3. Major initiatives

The Central Library has taken various initiatives to improve the existing infrastructure, facilities, services and 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 as following:

Online resources (e-journals, e-databases, and e-books)

1. The IIT Madras is getting online journals and databases access from 27 publishers through eShodh Sindhu MHRD consortia.
2. 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, 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.
3. E-Books from AMS, Cambridge University Press, CRC, De Gruyter, Elsevier, IOP (2016 collection), McGraw-Hill, Oxford University Press, Pearson, RSC (2016 collections) Wiley, World Scientific, ProQuest Ebrary and EBSCO were purchased with perpetual access rights.

e-Shodh Sindhu Consortium

The MHRD has formed e-Shodh Sindhu 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 Sindu: 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 27 e-resources from eShodh Sindhu for the year 2017.

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.

Systematic re-shelving of books

Two groups 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.

Smart Card facilities

The Central Library provides the Smart Card facility to students, faculty and staff members and others (IAS and corporate members, alumni and retired employees). A dual-side retransfer Smart Card printer is used. The library also provides the dependent card to the present employee of the institute.

Major reorganisation of library book in stacks

Back volumes were shifted from the basement to the third floor and second floor left wing to the right wing and third floor left wing to the right wing to create more reading space for users. Tables and chairs were provided near the book stacks in all the floors. The Book Bank also shifted from the basement to the first floor left wing. The children's corner library shifted to the first floor.

8.4. Institutional Digital repository

Central Library has set up an institutional digital repository IRepose by using DSpace digital library software. IRepose IIT Madras preserves and enables easy and open access to all scholarly publications of IIT Madras Research, i.e. journal articles, book chapters, conference papers, working papers and technical reports, among others. The 16,728 articles bibliographic details have been uploaded on http://irepose.iitm.ac.in:8080/jspui/

8.4.1. Retirement of Staff Members

Mr. T. Ramakrishnan, Assistant Librarian, retired from service on 30 October 2016.

8.5. Automation

1. The e-books have been catalouged in the library i-portal Chamo (http://iportal.cenlib.iitm.ac.in:8080/.)
2. The new library website has been designed.
3. Data relating to 2,745 patrons' (students, faculty and staff members, alumni, IAS members) records were added to the Virtua–VTLS database.

8.6. Officials and their activities

Faculty Member	Qualifications	Major Areas of Specialization
Mahendra N. Jadhav, Librarian	M.Sc., M.L.I.Sc., M.Phil., Ph.D.	Library administration, library automation, digital library, open source software, library portals, RFID, and e-resources, etc
K. Saravanan, Asst. Librarian	M.L.I.Sc., M.Phil., Ph.D.	Library administration, circulation, acquisition, processing and maintenance

8.7. 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. 1	Dr. Mahendra N. Jadhav	Subject Expert Selection Committee	NIT Nagpur	12 July 2016
2. 3	Dr. Mahendra N. Jadhav	Subject Expert Selection Committee	IMU Visakhapatnam	25-26 August 2016
3.	Dr. Mahendra N. Jadhav	Subject Expert Selection Committee	IIT Mandi	19 October 2016
4.	Dr. Mahendra N. Jadhav	RFID Expert Committee Meeting	NIT Trichy	5 December 2016
5.	Dr. Mahendra N. Jadhav	RFID Expert Committee Meeting	CUTN Tiruvarur	25 January 2017
6.	Dr. Mahendra N. Jadhav	Library Purchase Committee meeting	IMU Chennai	27 January 2017
7.	Dr. Mahendra N. Jadhav	External Examiner to conduct viva voce of Ph.D.	Alagappa University	17 February 2017
8.	Dr. Mahendra N. Jadhav	External Examiner to conduct viva voce of Ph.D.	TISS Mumbai	18 March 2017
9. 1	Dr. K. Saravanan	Awareness programme on ISO 9001:2015	IIT Madras	9 August 2016
10. 2	M. Ramani	Awareness programme on ISO 9001:2015	IIT Madras	9 August 2016
11. 3	S. Muthumari	Awareness programme on ISO 9001:2015	IIT Madras	9 August 2016
12. 4	Dr. M. Muthu	Awareness programme on ISO 9001:2015	IIT Madras	9 August 2016
13. 5	S. Muthumari	Future Librarianship: Innovation for Excellence	TIFR Mumbai	22-23 April 2016
14. 6	Dr. M. Muthu	Future Librarianship: Innovation for Excellence	TIFR Mumbai	22-23 April 2016
15. 7	Bholeswar Kisan	Future Librarianship: Innovation for Excellence	TIFR Mumbai	22-23 April 2016

Sl. No.	Faculty/Staff Member	Title	Institution	Dates
16. 8	M. Ramani	Changing Landscape of Science and Technology Libraries (CLSTL 2017)	IIT Gandhi Nagar	2-4 March 2017
17. 9	N. Muruganandham	Changing Landscape of Science and Technology Libraries (CLSTL 2017)	IIT Gandhi Nagar	2-4 March 2017

8.8. Special lectures delivered by officials at other institutions

Sl. No.	Faculty Member	Topic of Lecture	Venue and Date
1.	Dr. Mahendra N. Jadhav	e-Resources management: An experience at IIT Madras	NITTTR–Advanced Certificate Course on Modern Library Practices, Chennai, 3 June 2016
2.	Dr. Mahendra N. Jadhav	An institutional repository	National workshop on Open Source Software for Library Management-OSSLM, Central Library IIT Kharagpur, 13-14 June 2016
3.	Dr. Mahendra N. Jadhav	Panel discussion on "Value of Libraries in Academic and Research Work"	Changing Landscape of Science and Technology Libraries (CLSTL 2017), IIT Gandhinagar, 4 March 2017
4.	Dr. Mahendra N. Jadhav	Content Management of Digital Resources in Libraries	National Seminar, Dr. Ambedkar Government Law College, Chennai, 11 March 2017

8.9. Distinguished visitors/groups to the library

Sl. No.	Name and Designation	Date	Purpose of Visit
1.	Mitali Routaray, NIT Rourkela	12 May 2016	Study the functioning of the library and Literature survey
2.	Thirty college teachers from Bangladesh	1 June 2016	Study the facilities and functioning of the Central Library
3.	K.P. Ambili, Research Scholar, Kerala University	24 August 2016	Study the functioning of the library and Literature survey
	Students from Department of Library and Information Science, Vellalar College for Women, Erode, Tamil Nadu	24 September 2016	Study the facilities and functioning of the Central Library
4.	Research Scholar, CLRI, Chennai	17 October 2016	Study the functioning of the library and Literature survey
5.	Students from Department of Library and Information Science, Rajagiri College, Ernakulam, Kerala	4 January 2017	Study tour and evaluate the facilities and functioning of RFID Technology in the Central Library
6.	Ramanjaney Kumar Upadhyay, Architecture, Thandalam, Chennai	24 February 2017	Study the functioning of the library and Literature survey

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. LED Lights

All the lamps of the library have been replaced with LED lights.

8.12. Future plans

1. Initiate the submission of scholar's electronic thesis to IRepose
2. Initiate the creation of a database of bound volumes
3. Update the project/permanent loan book database
4. Organize professional development lectures and other professional events
5. Initiate the creation of a database of conference proceedings received from faculty members of IIT Madras
6. Weed out and write off mutilated, very old, unused books and German books

9. Student Amenities and Activities

9.1. Hostels

Being a residential institute, Indian Institute of Technology Madras requires students to reside in the hostels on campus. At present, there are 16 men hostels and four women hostels for UG and PG programmes students, research scholars and project staff. A total of 6,948 single rooms, 70 double rooms, 196 triple rooms, five quadruple rooms and three quintuple rooms are available in the hostels. Research scholars and some master's programme students 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 about 8,000 students living in the hostels.

At present, there are 10 dining halls (messes) for students and project staff members to have food. Of these messes, one is run by the staff members of the Office of the Hostel Management, which is a centrally administered body and in overall charge of the functioning of the hostels and the Central Supplies Unit. The remaining nine messes (including two for women students) are run by private contract caterers. The mess registration and allocation of mess to students is done online based on the preference given by individual students. Similarly, the accommodation request is made online. The housekeeping services in the hostels 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, who assists the warden in the day-to-day functioning of the hostel. Each hostel office is supported by the staff of the Office of the Hostel Management. During the period under report, hostel management has initiated efforts to make majority of its activities online. An online portal catering to the demands of students was introduced. Now students use the portal extensively for the following facilities:

- Mess registration: A student can log in and choose the mess of his/her choice every month
- Mess accounts: The mess account is updated daily and the student can know the balance instantly
- Mess rebate: A student can avail his/her rebate by sending the request online
- Mess extras: ID card can be charged instantly and used in the messes for availing extras
- Mess entry: Biometric entry of students to the messes was enabled
- Mess fee: Fee remittance made completely online by which student can remit fee from anywhere
- Saarang/LTAP Fee: A student can avail Saarang tickets, opt and pay for the courses through the portal

There are 74 permanent employees and few contract staff at the messes. They are accountable to the hostel management through respective hostel wardens. The Chairman, Council of Wardens is the Chairman of the Office of the Hostel Management. The Chairman is assisted by the supporting staff. During the period under this annual report, following Wardens were in position:

Chairman, Council of Wardens and Chairman, Hostel Management

K. Sethupathi
Professor, Department of Physics

Name of the Hostel / Unit	Warden
Alakananda	Dr. Thyagaraj T., Associate Professor, Civil Engineering
Bhadra	Dr. Mallikarjuna J. M., Associate Professor, Mechanical Engineering
Brahmaputra	Dr. Arya Kumar B. Chand, Associate Professor, Mathematics
Cauvery	Dr. Srinivasa Rao C.H., Associate Professor, Mathematics
Central Supplies Unit	Dr. Sethupathi K., Professor, Physics
Ganga	Dr. Arul Prakash K., Associate Professor, Applied Mechanics
Godavari	Dr. Chandraraj K., Associate Professor, Biotechnology
Jamuna	Dr. Raghuram Chetty, Associate Professor, Chemical Engineering
Krishna	Dr. Benny Raphael, Associate Professor, Civil Engineering
Mahanadhi	Dr. Subash S., Associate Professor, HSS
Mandakini	Dr. Satyanarayana M.V., Professor, Physics
Narmada	Dr. Srirama Srinivas, Associate Professor, Electrical Engineering
Pampa	Dr. Ramesh Gardas, Associate Professor, Chemistry

Name of the Hostel / Unit	Warden
Saraswathi	Dr. Balaji Narasimhan, Associate Professor, Civil Engineering
Sarayu	Dr. Kalpana Mahalingam, Associate Professor, Mathematics
Sharavati	Dr. Kalpana Mahalingam, Associate Professor, Mathematics
Sabarmati	Dr. Shanti Bhattacharya, Associate Professor, Electrical Engineering
Sindhu	Dr. Boby George, Associate Professor, Electrical Engineering
Tamiraparani	Dr. Satya S Sethy, Associate Professor, Humanities and Social Sciences
Tapti	Dr. Shankar Ram C.S., Associate Professor, Engineering Design
Tunga	Dr. Deepa Venkitesh, Associate Professor, Electrical Engineering

9.2. Medical Facilities

The hospital of IIT Madras is an ISO 9001:2015 certified hospital taking care of the medical needs of 17,720 people on the campus. A 25-bedded hospital, it has a well-equipped casualty and operation theatre with a recovery room and post-operative ward with required infrastructure. Its other facilities include an NABL-accredited clinical laboratory, pharmacy, echocardiogram, ultra-sonogram, X-Ray unit and physiotherapy unit.

The hospital also has a well-equipped Labour Room Unit in addition to the New Born Care. The outpatient department functions from 8.30 am to 6.30 pm and is manned by 10 Medical Officers.

9.3. Institute Gymkhana

The Institute Gymkhana takes care of the general welfare, sports and co-curricular and cultural activities of students. Sports form an integral part of the overall development of personality, which prepares the students to overcome challenges in their life, after their graduation. Hence, students are encouraged to organise and participate in a number of sports activities.

The following tournaments were conducted during the year 2016-2017 by the Institute Gymkhana:

- Freshie Tournament for Year I B. Tech students (for all games)
- The inter-collegiate invitation tournament Sportfest – 2016
- N.S.O selection for Year I B. Tech students (compulsory attendance of 85%)
- Jimmy George – Inter-collegiate Volleyball Tournament – 2016-2017
- Inter-hostel tournament for men, Schroeter Trophy (Gymkhana Day)
- Inter-hostel tournament for girls (Gymkhana Day)
- Inter-hostel tournament for PG students
- Inter IIT Aquatic Meet 2016 at IIT Kanpur
- Inter IIT Tournament organised by IIT Kanpur
- Non-media Tournament: Dean (Students) Trophy for men and women
- Inter- IIT coaching camp (10 days, compulsory for Inter-IIT contingent)
- Inter- IIT Staff Meet selection and coaching
- Institute Annual Open Road Race
- Institute Annual Cycle Race
- Indian Traditional Games (students and campus residents)
- Institute Open Chess Tournament
- Institute Open Triathlon Competition
- Institute Open Bridge Tournament
- Institute Open Best Physique competition
- Institute Open Powerlifting Competition
- Amateur Competition for the Students
- Summer coaching camp for swimming, basketball, badminton, football and tennis

SPORTFEST 2016– 2017

This inter-collegiate Invitation Tournament was conducted between 25 and 30 September 2016 for city colleges, for men and women. This tournament helps finalise the probable Inter-IIT team. Seventeen men's colleges and 11 women's colleges participated. Tournaments were conducted on a league cum knock-out basis. Winner's trophies were awarded for various games. Students of IIT Madras took part enthusiastically in all the games and won in some of the events. The results are listed in the following table:

Sl. No.	Games	Men / Women	Position	College Name
1.	Badminton	Men	IV	V.I.T. Chennai
			III	IIT Madras 'B'
			II	R.M.K. Vivekananda College
			I	IIT Madras 'A'
2.	Badminton	Women	IV	V.I.T. Chennai
			III	IIT Madras 'A'
			II	Women's Christian College
			I	Stella Maris College
3.	Basketball	Men	IV	R.K.M. Vivekananda College
			III	IIT Madras 'A'
			II	Hindustan Arts & Science
			I	D.G. Vaishnava College
4.	Basketball	Women	IV	V.I.T. Chennai
			III	Women's Christian College
			II	IIT Madras 'A'
			I	Stella Maris College
5.	Chess	Men	IV	V.I.T. Chennai
			III	R.K.M. Vivekananda College
			II	IIT Madras
			I	Loyola College
6.	Football	Men	IV	JHA Agarsen College
			III	IIT Madras 'A'
			II	Nazarath College
			I	D.B. Jain College
7.	Hockey	Men	IV	TNPESU
			III	IIT Madras 'A'
			II	St. Joseph College
			I	Nazarath College
8.	Table tennis	Men	IV	IIT Madras 'A'
			III	V.I.T. Chennai
			II	R.K.M. Vivekananda College
			I	D.G. Vaishnava College
9.	Table tennis	Women	III	IIT Madras 'A'
			II	IIITD & Madras
			I	V.I.T. Chennai
10.	Tennis	Women (Singles)	IV	IIT Madras
			III	Loyolo (ICAM)
			II	Loyolo (ICAM)
			I	IIT Madras
11.	Tennis	Men (Doubles)	IV	IIT Madras 'B'
			III	R.K.M. Vivekananda College
			II	IIT Madras 'A'
			I	Loyolo (ICAM)
12.	Tennis	Women (Doubles)	IV	IIT Madras 'C'
			III	IIT Madras 'B'
			II	IIT Madras 'A'
			I	Loyolo (ICAM)

Sl. No.	Games	Men / Women	Position	College Name
13.	Volleyball	Men	IV	IIT Madras 'A'
			III	Guru Nanak College
			II	D.B. Jain College
			I	Hindustan Arts & Science
14.	Volleyball	Women	IV	V.I.T. Chennai
			III	M.G.R. Janaki College
			II	JHA Agarsen College
			I	Stella Maris College
15.	Weightlifting	Men	IV	R.M.K. Engineering College
			III	R.M.D. Engineering College
			II	IIT Madras 'A' Team
			I	Velammal Engineering College

32nd Inter IIT Aquatic Meet - 2016

The 32nd Inter IIT Aquatics meet organised from 1-5 October 2016 saw participation from 12 IITs in swimming and seven in water polo events. The IIT Madras contingent comprising 14 men and four women performed exceptionally well, winning both the men's and women's swimming championship and securing fourth place in men's water polo tournament.

The opening ceremony conducted on 1 October 2016 was graced by the eminent Ms. Bula Choudhury. She is a recipient of the Arjuna award and the Padmashree award, conferred for her amazing feats in the field of open water swimming. She is the first woman to cross the seven seas and has also crossed the English Channel twice during her career. Her address to the participants inspired the athletes and set the spirits high for the competition. The following days saw IIT Madras dominate the competition till the end. The summary of the results of the swimming events is as follows:

NAME	POSITIONS
Men	
C.K. Ananda Krishnan	3 Gold (with one new meet record)
Anirban Nag	1 Gold 1 Silver
Anuj Sindgi	2 Silver 1 Bronze
G. Sriram	1 Silver 1 Bronze
Sanket Warad	1 Bronze
Men's Relay	Gold (with new meet record)
Women	
L.R. Kamala Devi	1 Gold 2 Silver
Gayathri Sambamoorthy	1 Gold
Women's Relay	Bronze

In addition, C.K. Ananda Krishnan was adjudged the best swimmer of the meet. In water polo, the men's team started well with three straight wins to top the group, but the semi-finals saw IIT Madras exit the competition and settle for a fourth place finish.

Inter-IIT Sports Meet 2016

51st Inter IIT Sports Meet in Kanpur lived up to all the hype by breaking several records and setting new heights. Our women's contingent put up a great show by winning the championship after eight long years. Congratulations and special accolades to Nithila and Ankitha for their award-winning performances. The institute finished third in men's championship and the overall championship as well. It bagged gold in swimming, silver in badminton, tennis and table tennis, and bronze in athletics and football. A special mention to Bipin Babu, Sriram G., Soham Parikh, Gayatri S.,Anirban Nag, Ram V.G. and Avienaash for their stellar performances in Inter IIT Sports Meet 2016.

JIMMY GEORGE VOLLEYBALL TOURNAMENT - 2017

The tournament was inaugurated on 30 January 2017 by former Dean (Students), Prof. L.S. Ganesh. Eight men teams were invited and divided into two groups, and matches were conducted in league and super league basis. Four teams competed in league basis in the women's category.

The trophy of the tournament, which is aimed at providing a multi-dimensional platform for the national talents, was bagged by Jeppiar Engineering College in the women's category and Panimalar Engineering College in men's category. The prize distribution ceremony was organised after the matches on 3 February 2017. Dr. Rajendra Kumar, IAS, presided over the function.

Inter-Hostel Tournaments 2016– 2017

This year's Men's Schroeter had a nail-biting end with two hostels, Alakananda and Godavari finishing with the same number of points and same number of gold medals. The tie was finally broken by the number of silver medals won by the hostels. Alakananda was declared the winner of Men's Schroeter 2016-17. Women's Schroeter was won comfortably by Sharavati hostel. Dean's Trophies were retained by Saraswathi and Sarayu with Saraswathi completing a hat-trick and Sarayu a double.

PG Sports League and Amateur League were the last two events of our sports calendar this year. These tournaments had a very good reach among the students, and were great successes in terms of participation and quality of sports.

Schroeter Trophy (Inter IIT events)

Sl. No.	Games
1.	Athletics (men and women)
2.	Badminton (men and women)
3.	Basketball (men and women)
4.	Cricket
5.	Football
6.	Hockey
7.	Tennis (men and women)
8.	Swimming (men and women)
9.	Squash (men)
10.	Table Tennis (men and women)
11.	Volleyball (men and women)
12.	Water polo (men)
13.	Weightlifting (men)

Deans Trophy (non–media tournaments)

Sl. No.	Games
1.	Nine-a-side Tennis Ball - Cricket (hostel wise)
2.	Nine-a-side Tennis Ball - Cricket (freshers only)
3.	Six-a-side Football
4.	Six-a-side Hockey
5.	Three-a-side Basketball
6.	Three-a-side Volleyball
7.	Road Race
8.	Cycle Race
9.	Triathlon
10.	Cycle Race (freshers only)
11.	Chess
12.	Carrom
13.	Ball Badminton

All these events were aimed at encouraging participation from the students and campus community. They were a grand success, attracting a large number of participants, from both staff and students, and student spectators, who encouraged their hostel teams.

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 members, faculty members and campus children benefited from these excellent facilities and coaching offered by the Gymkhana.

The Fitness Club had a registered membership of 541, the Tennis club a membership of 60, the Skating Club a membership of 59, the Badminton Club a membership of 68, the Swimming Pool a membership of 2,239, the Squash a membership of 32, and the Aerobics with a membership of 69. Excellent training and able guidance were provided to students and campus residents at the Fitness Club and Yoga Club, stressing the importance of maintaining a good physique and health.

Planning the calendar of sports events in advance, including the fixtures for the Schroeter and Dean's Trophy events, helped in conducting various sports events smoothly, satisfactorily and in time. This year, in addition, we organised Women's Schroeter, PG Schroeter and Amateur events for students to encourage more sports participations. The institute completed the academic year with Indian traditional games for students and campus residents.

NATIONAL SPORTS ORGANISATION (NSO)

The NSO functions as per the Government of India's decision to improve sports with special focus on maintaining the fitness of students. IIT Madras has been taking necessary steps to encourage students to participate in various games, sports and activities for maintaining physical fitness.

Nearly 450 NSO and 83 for Fitness 1st year undergraduate students were registered under NSO in the academic year 2016-2017. Coaches and experts from various sports federations and Sports Development Authority of Tamil Nadu were engaged in training the NSO students in 20 sports and games (both men and women).

The noteworthy performance of first year students in various tournaments, namely Inter–IIT Sports Meet, Inter-IIT Aquatic Meet, Sportfest and Inter-collegiate Jimmy George Volleyball Tournament is partly due to the quality of training given to students and the hard efforts put in by them during the NSO programme.

9.4. Advisor, Weaker Section

The institute has nominated one Advisor to take care of the welfare of the foreign nationals and weaker section students. The Advisor periodically meets these students and counsels them regarding various academic and non-academic matters. During the period under report, efforts were taken to address the issues faced by differently abled candidates, women candidates and academically weak students. The differently abled students along with their parents/relatives were counselled in the beginning of the academic year and various steps taken by the institute were explained to them to instill confidence in them. The wheel chairs, reading assistance software and other necessary assistance were given to the differently abled students. The engineering unit helped in providing ramps and making campus buildings accessible to differently abled students. Student legislators, mentors and volunteers were identified to render support and counsel the academically weaker students and the students in need from time to time. Student meets were arranged to address various academic and hostel issues of students. The mentor programmes, which were started in the earlier years, are being continued. Efforts have been taken to bring social equity among students.

9.5. MiTR and SAATHI

Division of Responsibilities

SAATHI: Proactive front and MITr: Reactive front

A lot of workshops were organised by the joint team of both SAATHI and MiTR, which were directed towards the well-being of the student community in general and help and support for the deserving students and the faculty in particular in terms of attending to their needs for counseling, medication and discussion forum. The participation from the student volunteers and the faculty members was really awesome.

Both SAATHI and MiTR combine were serving as the guidance and counseling unit, providing emotional support to students, an institute body under a Chief Advisor, and Faculty Mentors, core team, coordinating team, student mentors and temporary volunteers.

RECRUITMENT AND TRAINING OF SAATHI and MITR combined TEAM was jointly taken up by the faculty, and the Medall counseling team which would start by 6 pm and go on till late night, just to ensure the TEAM is a solid rock, when it comes to addressing the students' issues they face on a day-to-day life in campus.

Medall counseling team organised a joint workshop for both SAATHI and MiTR team members on being helper / helpee. A half-day workshop, the training programme culminated in action-packed helper--helpee sessions.

Medall Team 's Dr. Sabiha Sultana conducted a SAFE (spot act follow-up evaluate) panel discussion forum for the SAATHI and MiTR faculty cum students body. It was well received by all concerned. Dr Sabiha Sultana took all on a tour from inside the PPT Hall for narrating how a student gets lost in a campus like IIT having come from his parents and hometown, and the need to make sure that all of us guide them to glory in both academics and in mental health. The NLP was extremely informative and the interactive session was all the more interesting with a lot of knowledge sharing inside the PPT Hall.

Case Study - Nearly 620 students and faculty were addressed by both Your DoST and Medall during this academic year.

Parent—Student Discussions

The academic year had a number of discussions with the Dean Student for the need for parental care. It was emphasised to all the parents by Dean Students.

Continuous monitoring: A continuous monitoring program is ongoing in terms of addressing and following up with students and faculty who have had stressful and anxious moments during the past and current year as well just to make sure they are happy and satisfied while leaving the institute after their studies.

SAATHI—MiTR Day Celebration

A good headcount of 50 comprising both SAATHI and MiTR student and faculty attended this celebration. Dr. Sumathi Narayanan took us through her spell-bounding interactive session on the topic, What We Speak in a Day in the Campus. It was followed by volunteers sharing their experiences while extending support to the needy. The session was followed by a sumptuous dinner.

Events Conducted

1. **Heartfulness meditation (vacation)**
   - An LTAP meditation course by two alumni of IIT Madras, Prashanth Vasu and Bharath Madhavan
2. **Freshie orientation**
   - An orientation session for first-year undergraduate and postgraduate students at the beginning of the academic year was well attended by a combined team of both SAATHI and MiTR and culminated in a long Q&A session.
3. **Treasure hunt for freshies**
   - A fun event for freshies to increase interpersonal interactions and make them acquainted with the campus
4. **Friendship day contest**
   - A group photo contest was conducted on the occasion. With a lot of creativity shown by the students, the contest caught everyone's attention.
5. **NLP Workshop**
   - A Neuro Linguistic Programming workshop on "A Curious Mind: How thoughts and beliefs form and dictate our experiences was an eye opener for the combined SAAHI - MiTR team as to how they need to go about identifying students and faculty who need help and support.
6. **Freshie quiz zero**
   - A simulation of academic quiz for first year students was conducted and the participation was with zeal and enthusiasm.
7. **OBHS 1, 2**
   - On Being A Helper Session.
   - Initially, only for MiTR mentors, OBHS has been opened to all the students, including SAATHI. **8. F.I.E.S.T.A**
   - Faculty Interaction and Engagement with Students Through Activities

- Breaking the ice between faculty and students

9.6. HERB

- Heartfulness Experiencing Relaxation and Balance **10. PRT (vacation)** Emerge as a leader, learning through examples
- Ms. Gunjan Jain talk

Author of *She Walks, She Leads* (stories of the inspiring lives of 24 successful women). In fact, this lecture-cum-demonstration was very well organised by the combined team of SAATHI – MiTR and had impressive audience head count. Cancer Awareness

- World Cancer Day
- An event was organised at Himalaya where a video was played to spread awareness, light lamps (hope) and distribute ribbons. A cancer awareness programme was conducted by Gleneagles Global Health City, organised by the CMO and team with the help and support of both SAATHI - MiTR team. 16. Workshop on Gender and Sexuality
- It took place in collaboration with Vannam, another student group on campus.
- They invited speakers from an NGO NIRANGAL 17. Discovering Inner Calling
- A two-day experiential workshop to find fulfilling and meaningful work (based on Research Positive Psychology)
- The resource persons were Prof. Viji, Prof. L.S. Ganesh, Sri Ram Aiyer of Asoka Foundation along with the MiTR faculty and students core and volunteers. 18. Academic Buddy program
- Buddies assigned to students who would need to have guidance with their academics, was a combined effort of faculty and student volunteers from SAATHI - MiTR team.
- Most students fared well and were happy with the programme Mentorship Programme
- Mentors–Mentee mapping for Freshies, mentors aiding mentees in all aspects of institute life except those related to emotions was a joint workshop conducted by team Medall for faculty and students.

9.7. NCC

A total of 200 (199 Senior Division Air Wing and one senior wing) NCC cadets were enrolled during the year 2016–2017.

8.2 Training was conducted as per the NCC syllabus.

8.3. Participation in Republic Day and Independence Day March Past: A flight of SD cadets joined the march past conducted at the IIT Madras campus on Republic Day and Independence Day.

9.8. National Service Scheme

The National Service Scheme (NSS) was launched in 1969 on the birth centenary of Mahatma Gandhi. It is aimed at involving students in community service. NSS comes under the Union Ministry for Youth and Sports and is an academic requirement in many universities, including IITs and NITs. The fact that NSS is a service organization, an academic requirement makes working with the NSS challenging and exciting.

National Service Scheme, IIT Madras is guided by a faculty advisor and is organised into seven sub-teams of equal footing working within the NSS Managerial Team. The sub teams are Event Management, Project Administration, Public Relations, Finance, Design, Media and Web Ops. Dr. Jyotirmaya Tripathy from the Department of Humanities and Social Sciences was the faculty adviser since January 2016. Our current Faculty Advisor, Dr. K.C. Sivakumar from the Department of Mathematics took charge as the NSS Faculty Adviser on 10 August 2016. The Managerial Team 2016-17 has worked with these two visionaries with utmost dedication and devotion to areas entrusted.

The NSS activities in a year can be broadly classified into three categories: Projects, Events and Winter Internships or as we call it, the Wintern. Projects are those initiatives that are oriented towards specific areas and goals. Every project team includes one or more project representatives (PR), who ideate, design and execute the project, and 15-20 volunteers who actively participate in the process under the guidance of the PR. Events, on the other hand, require participation from all volunteers and include service, awareness and motivational activities. Winterns or Winter Internships are camps organised in the month of December by NSS in collaboration with service-oriented NGOs.

Events

Following the orientation session on 6 August 2016 and a selection test, NSS started its events for the year with its inauguration on 20 August 2016. By then, around 100 volunteers chosen through the selection process had enrolled themselves as NSS volunteers via an online form. Renowned social activist and Magsaysay award recipient Ms. Aruna Roy was the chief guest of the day. Former Governor of West Bengal and civil servant Mr. Gopalkrishna Gandhi and Carnatic music vocalist and Magsaysay award recipient Mr. T. M. Krishna participated in the event as distinguished guests and interacted with the students. The NSS activities of the year were inaugurated by Ms. Aruna Roy by giving a sapling to Dr K. C. Sivakumar, the Faculty Adviser of NSS. The sapling has duly been planted in the premises of the NSS office.

In a follow-up to the coveted NSS Foundation Day, the team adopted Lives on Margins as its theme and conducted a movie screening on 18 September 2016. Two NDTV India documentaries, *Manual Scavengers: The Dirty Picture* and *Bound at Birth* were screened in the Central Lecture Theatre followed by group discussion. NSS Foundation Day lecture was given by renowned social activist and Magsaysay Award recipient Mr. Bezwada Wilson on 26 September 2016 at IC&SR Auditorium. Mr. Wilson gave an inspiring lecture on social service and how it should cater to the needs of the marginalised and deprived particularly focussing on the lives of manual scavengers.

NSS conducted a sign language workshop in association with Ability Foundation Chennai on 1 October 2016. The workshop opened up possibilities for students to explore the universe of sign language. The workshop was led by Ms. Jayashree Raveendran, Director of Ability Foundation, and Vijaya Bhaskar, a sign language interpreter. A field visit to SOS Children's Village in East Tambaram was the last event of the odd semester. It was organised on 6 November 2016 with 49 volunteers and eight Managerial Team members selected through an online form. Volunteers along with the Managerial Team members left for the village in the morning, taught village children, and interacted and played with them. Jayabaalan, Assistant Village Director, also interacted with the team.

A CPR (cardiopulmonary resuscitation) workshop was conducted on 2 February 2017 in conjunction with Fortis Malar Hospital. The team explained the working of this life-saving measure and the necessary precautions to be taken. EnAble Workshop conducted by the NSS in association with EnAble India Foundation on 4 February 2017 in Bengaluru was a one-of-its-kind experience aimed at sensitising students about the needs of the disabled community and methods of social inclusion. Vishnu Mohan, Sailesh, Dinesh and Ajmal representing the foundation led the session, each speaking about their disability and other issues of social inclusion.

The first edition of NSS Lectures on Life (Learn, Innovate, Find and Enable) featured social activists who served the community and society by bringing into light the conservation and sustenance of life-sustaining resources of water and flora. Mr. Rajendra Singh, popularly known as the Waterman of India, was the first speaker on the topic of water as the elixir of life. The lecture was delivered on 12 March 2017. Following Mr. Rajendra Singh, on 14 March 2017, the series featured renowned environmentalist Abdul Ghani, who came with the message for a greener world and the participation of the youth in it. NSS screened the critically acclaimed Marathi movie *Ek Hazarachi Note* as part of its movie screening for the even semester. It took place in the OAT on 31 March 2017. The movie brought widespread appraisal and acclaim from the students and general public alike.

National Service Scheme conducted three monthly collection drives in the odd semester on 28 August, 2 October and 29 October. The general collection drive for the academic and hostel zones was conducted from 2 to 5 November 2016. NSS organised three more monthly collection drives in the even semester on 15 January, 26 February and 9 April 2017. The general collection drive was from 30 March to 3 April 2017. The collected items, including perishables and non-perishables were donated to multiple NGOs working within the city. These include the Gold Heart Foundation, Deepam Trust (Velachery) and Faith Home (Porur).

Projects

The National Service Scheme-IIT Madras had successfully conducted 24 projects in 2016-2017. Broadly classified into three, namely teaching projects, content generation projects and bring a change projects. The names and target areas of projects are as given below.

Project	Project Aim	Project Description
Project Suyam	To educate the students with limited means and help them stay in touch with the competitive world	Suyam is a charitable society founded by youth to help underprivileged children in Vyasarpadi. The trust grew and now they have a school with basic facilities. The teams went to Suyam at Vyasarpadi every weekend. Classes were taken in Maths, Physics and Chemistry for 9th, 10th, 11th and 12th class students. Classes will now be taken on Sunday in the institute for 11th and 12th grades.
Teach for National Olympiad	To expose students to various types of Olympiad problems and improve their understanding skills of basic concepts.	Volunteers should visit Chennai high school in Kottur and teach basic concepts of Maths and Science to 6th and 7th standard students. We help them in their academics by solving different logical questions.

Project	Project Aim	Project Description
Project NMS	To improve verbal communication and reading and writing skills of high school students through language-based puzzles, story-telling sessions, etc.	We visit Nehru Middle School, Velachery and interact with 9th/8th standard students. We help them in developing communication skills and solve language-based puzzles.
Teaching at Kotturpuram	To encourage student participation and reinforce the belief that education is not just about homework and teaching sessions.	This year, we are looking at organising activities and workshops at the teaching centre to improve student participation and break the monotony of everyday class. As part of the project, we will be coordinating activities at three Eureka teaching centres located close to the institute. Foreign exchange students have also volunteered to be part of the project. The children at the centre are aged between 8 and 14.
Teaching at Eureka	To help students with limited needs on a daily basis in their study and in improve their English-speaking skills.	Eureka is a NGO based in Triplicane. We assist the teachers in Eureka centre in teaching all subjects they have in their school (classes 6 to 9). Secondly, we motivate the students to study and help them during their exams and take mock tests in classroom.
Teach Your Neighbour	To assist students in the institute to get a better standard of primary education. Its main objective is to give the students a better exposure of dealing with their subjects and other competitive exams, which most of us are good at	This project is an attempt to help the students to improve their basic aptitude, Maths and communication skills. These classes hope to fulfill the students' quest to learn the seemingly abstract concepts. Classes will be conducted within the institute, thus making it convenient for both volunteers and students alike. This will hopefully lead to fun, frolic and fulfillment for both sides.
Marathi Wikipedia	To enrich Wikipedia by translating its articles from English to Marathi	Volunteers will choose articles by themselves. Specific time will be given to them for translation and then after proof reading the articles, they will be uploaded on the Wikipedia. Also, the credits will depend upon the number of pages they translate.
Telugu Wikipedia	To help students studying in the rural Andhra Pradesh by translating articles and videos into Telugu	We are going to collaborate with an NGO that teaches kids in the rural areas. They want the valuable teaching videos to be given audio in Telugu so that children there can understand. Another thing we are going to do is translating short story books and putting them on a website that has approximately 65,000 downloads. We are also going to work on some translations as suggested by a Bio-Tech professor, who is very interested in translating into Telugu.
Education Via Blogging	To create content for the High School students that will help them learn better than text books.	If you want to sit in your room and do something for students, then this project is for you. We will be creating study materials for 11th and 12th class students mainly. Volunteers can select their own interested topics else they will be allotted. Content should be in simple language so that students will find it simpler and easier to understand. Innovative ideas for content generation are always welcome.
Project Sravyam	To create quality audio content in English and vernacular languages. Distribution of such content and making sure that it reaches the needy are other objectives.	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, and set in Malayalam and Tamil are being given priority.
Hindi Wikipedia	To increase the number of Hindi Wikipedia articles for those students who do not know English and face problems in understanding the language	Volunteers will choose their articles themselves. The articles should not be available in Hindi and should be useful for students. After translation and proof reading, the articles will be uploaded on Wikipedia. Also, credits will depend upon the number of translated pages, quality of the language, and uploading the Hindi articles on Wikipedia.
Enriching Malyalam Wikipedia	Malayalam Wikipedia is extremely helpful for students studying in Malayalam medium schools.	The volunteers are required to contribute original articles on any topic, preferably related to Kerala and Malayalam language. Translating and editing articles from English Wikipedia is discouraged. The project will have a winter camp involving school kids during the winter vacation. The camp will be in Kerala.
Bring a Change		
Bring a Smile	Our 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 while they are in the hospital. Our secondary goal is to create awareness about cancer.	We will be visiting Adyar Cancer Institute every Saturday for two hours, and engage the children in activities such as colouring, drawing, solving puzzles, toys and others.
Project Germinate	The aim is to understand the importance of tree plantation and to grow, protect and propagate trees and plants.	The volunteers will go to a tree park in Kotturpuram on Sunday evenings in the scheduled weeks. The tree park belongs to an NGO named Nizhal Foundation. At the foundation, the volunteers will learn the basics of gardening, weeding and watering the plants, among other activities. Also, two days in the scheduled weeks, they will work at the NSS Office garden. We are also planning to expand our plantations activities outside the NSS Garden if we are able to finish off with NSS Office Garden early.
27th Alphabet	There are entities that give, such as government schemes, NGOs, corporate scholarships, personal financial aids and so on. There are people who need these funds and mentorship. The aim of this project is to create awareness among students, by creating an online platform, a guidebook and targeting personally by giving presentations in schools. Possible Extension: Create blog.	All of us at some point would have come across child labour/ small children begging/ drop outs without sufficients/ outliers who want to follow their dreams other than academia - this project is to guide and help those in financial and informational terms. Here we help them to know about various scholarship schemes by governments and also about different career paths you can take. We already have the info and what we need is to impart our knowledge to the young ones in need. There will be four kinds of work available in the project: content correction, Powerpoint generation, taking classes in schools, and creating pamphlet and blog generation
Igniting Young Minds	Our aim is to motivate students with their life and career; the focus is on underprivileged children	We will be visiting Children's homes and conduct interactive sessions involving fun activities, teaching and motivation. The volunteers are expected to make motivational contents to ignite young minds of the country which could be in the form of posters/articles/ drawings/ photographs. We will also generate contents that will help students in their career aspect.
Science Teaching Kit	Teach high school students basic laws in science using simple toys, career counselling classes, other science-related demonstrations, quizzes, video presentation and others are part of this project	Main part of the project is Wintern in Kerala and school visit in Tamil Nadu. In the first semester, we will do all the ground works needed for the Wintern, and as Wintern, we will visit a school in Kerala. In the second semester, we will have a school visit in Tamil Nadu.
Blood Connect	Our aim will be to tell people about the blood shortage in India and to conduct blood donation camps in the institute	We will conduct two blood camps, one in this semester and the other in the next. Prior to the camps, we will conduct awareness sessions. At the same time, we will start making a blood donor database (basically write down the names of those who donated), besides undertaking some miscellaneous activities.
Project Paws	The project is to give our best in helping animals in distress and finally be better in life by making lives of many better	We help the Blue Cross Society in its generous work for animals. We also do other little, but effective works that spread our word to people such as posters, meetings, local talks and other ideas suggested by volunteers.
We Challenge Autism	The aim of the initiative is to change people's attitude towards autism and to provide a beautiful world for those who are suffering from autism.	We will be hosting different events so as to spread awareness. We will be designing pamphlets and distribute it. We will also be visiting different autistic centres.
Drishti	Drishti aims to inculcate compassion and empathy among the volunteers. Project creates a platform for interactions with the visually challenged and deaf kids.	Volunteers of this project visit the St. Louis special school in Adyar every weekend. They will spend quality time with the kids and will help them in their academics. Volunteers can teach them and can learn from them.
Project Puwter (Project Jeevanam)	The objective is to create sustainable drinking water solutions by creating awareness and working in liaison with NGOs and authorised bodies.	Volunteers need to collect contamination data at three to four specific sites (which will be specified by us - in Chennai and in proximity of 8-10 km from IITM) by using a mobile app developed by us on weekends at different locations. They also need to create awareness among local communities on the harm caused by consuming contaminated water and to get the app installed on their mobiles to report contamination.

The teaching projects were mostly collaborations with various non-governmental organisations in and around Chennai. Content generation projects were centred on creating quality content in the cyberspace and also in other areas. We have had audio content generation projects running in synchronisation with the Kerala Federation of the Blind for various Wikipedia projects aimed at adding to the knowledge capital of various fields in many languages. In the 'bring a change' category, we have had projects working on various social issues that could be bettered by humble efforts of the manpower we have. This included but was not restricted to the visits to organisations running support institutions for the mentally challenged, visits to the neighbouring cancer centre and others.

As an extension of the project activities, we conducted project Winterns in the month of December, during the winter vacations. We have had many projects conducting camps across states and in Chennai too. We are proud

to announce that some projects had clocked over 1300 hours of social service in that short span of time. These Winterns, we believe, has enabled us to provide a satisfactory experience of reaching out to the needy and serving them in humble ways within our reach.

We have collaborated with many new NGOs this year. We conducted an Open house event towards the end of this semester, as an exercise in raising consciousness of the general public as well as the others in the institute not directly related to the NSS activities. We have had a few projects install stalls and display their work done over the year.

Wintern

Wintern is a programme is aimed at providing volunteers a full-fledged in-depth experience of engaging in social work 24x7. The success of Wintern 2016 can be attributed majorly to the enthusiastic and sincere participation of the volunteers. The Wintern timeline was divided into two phases.

We collaborated with HOPE Chennai, Team Everest and NGO Pudiyador. Key accomplishments included developing a curriculum for primary school students, conducting family audits, visiting villages, organising campaigns, feeding the hungry and visiting old age homes, to name a few.

In stage one, an NGO database was created during the May-July 2016 summer vacation. The first Wintern orientation was conducted on 23 September 2016. The aim of the orientation was to keep everyone (NSS volunteers and others) informed about the way Winterns work and when it would be possibly held so that they could give thought to planning vacations beforehand. End of October and early November was the time used for contacting CCW to fix accommodation in campus and informing NGOs about the number of volunteers turning up. Also, volunteers were divided into their respective phases and allotted NGOs as per interest and informed.

Phase 1 of the Winterns was conducted from 23 to 28 November in collaboration with NGOs Pudiyador and HOPE Ambattur. Seven volunteers participated in a teaching project, interacted with students over a course of five days, taught Tamil, English and Maths to students from classes 1-7, and developed a curriculum for primary school students. Eight people went to Pudiyador (irregular attendance was an issue, however) and five went for HOPE.

Phase 2 of the Winterns was conducted from 8-13 December 2016 after the B. Tech workshops. However, the programme had to be terminated officially on 12 December on account of Cyclone Vardah. In this, five volunteers participated for village Arni, taught students, conducted competitions and assisted with school work. There were village visits, family audits, Hunger-free Arni Campaign and an old-age home visit.

9.9. Other Initiatives

The Managerial Team along with six of its volunteers visited Government Girls Home in Purasaivakkam to participate in their Diwali celebration on 23 October 2016. National Service Scheme also presented a social drama on child labour as part of the Republic Day celebrations in the institute on 26 January 2017.

National Service Scheme proudly hosted the second edition of NSS Chennai Chapters' Conclave on 8 April 2017 in Mahatma Hall (Room HSB 356). The conclave brought together NSS units from three colleges in Chennai, namely Anna University, SSN college of Engineering and Sri Venkateshwara College of Engineering, to pledge a joint collaboration and explore areas of common service.

9.10. Closing Remarks

Our experience with NSS solidifies our faith in ability of human beings to come out of their comfort zones to empathise and help the needy and marginalised in society. Let us be proud that each one of us shares this common humanitarian mission.

10. Students Placement

Though the placements started in December 2016, the preparation and process for the same began much earlier.

10.1. Internships

The IIT Madras students are given internships to gain first-hand experience of professional world by going on summer or winter internships. These internships are given to students to make them industry ready. The success of the exercise can be estimated by the 56 pre-placement offers received by the institute this year.

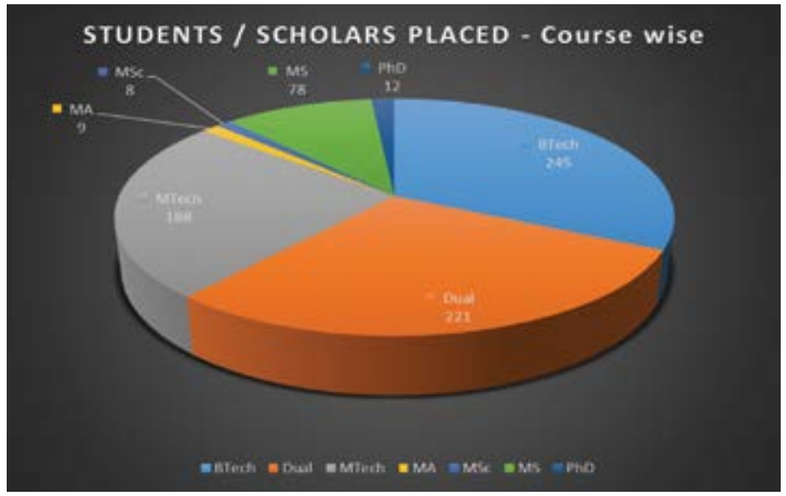
The placement procedure in IIT Madras begins by placement office sending invitation to leading companies with relevant links. The interested companies register though an online portal. The companies have to fill in their requirements, so that interested students can look up and decide whether they want to take part in the placement of a company or not. Companies can conduct pre-placement talks if interested. The placement committee comprises of student, faculty and administrators, who decide on the campus interview date based on the slot availability.

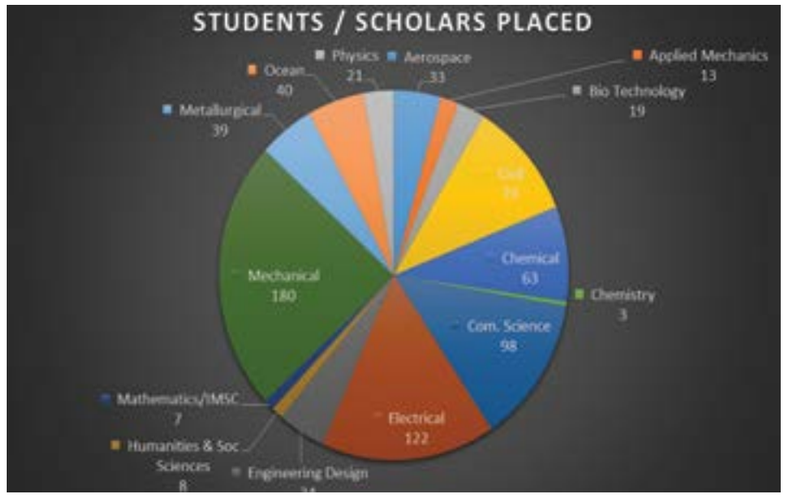
This year, the pre-qualification tests (written or online) were conducted in November itself, and the campus placement began on 1 December 2016. The offers to the placement office were received by March 2017. The number of students placed during 2016–17 is summarized in the table below. This data is updated till March 31, 2017.

Students / Scholars Placed

Branch	B.Tech.	Dual	M.Tech.	M.A.	M.Sc.	M.S.	Ph.D.	Total
Aerospace	16	11	3	-	-	3	0	33
Applied Mechanics	-	-	7	-	-	4	2	13
Biotechnology	-	18	1	-	-	-	-	19
Civil	32	23	21	-	-	2	1	79
Chemical	44	13	6	-	-	-	1	63
Chemistry	-	-	-	-	3	-	-	3
Computer Science	18	21	47	-	-	12	-	98
Electrical	39	36	34	-	-	11	2	122
Engineering Design	-	31	-	-	-	2	1	34
Engineering Physics	-	-	-	-	-	-	-	-
Humanities and Social Sciences	-	-	-	9	-	-	-	8
Mathematics/IMSC	-	-	2	-	5	-	-	7
Mechanical	47	49	43	-	-	40	1	180
Metallurgical	16	7	11	-	-	3	2	39
Ocean	19	8	12	-	-	1	0	40
Physics	14	4	1	-	-	-	2	21
	245	221	188	9	8	78	12	759
Pre-placement offers		56						
Total		**817**						

During the year, 817 students/scholars of various courses (excluding MBA) were placed in various organizations.





11. Financial Assistance to Students

Indian Institute of Technology Madras supports meritorious students with financial assistance through scholarships and fellowships to pursue engineering, technology and science education at the institute. The details of scholarships and fellowships sanctioned to students of different programmes during 2016-17 are listed in this section.

11.1. Assistance to B.Tech /Dual Degree students:

Merit-cum-means scholarship: Twenty-five per cent of the students admitted to B.Tech./Dual Degree programmes and whose parental income is less than ₹ 4.5 lakh per annum were sanctioned Merit-cum-means (MCM) scholarship. These students are exempted from payment of tuition fee of ₹ 45,000 per semester and provided a pocket allowance of ₹ 1,000 per month. During the period under report, 679 students benefited from the scholarship. The year-wise details of the number of students benefited are given in Table 11.1(b).

SC/ST students admitted to B.Tech./Dual Degree programmes and whose parental income is less than ₹ 4.5 lakh per annum were sanctioned the concession of free messing and a pocket allowance of ₹ 250 per month. They were also exempted from tuition fees and hostel seat rent as per Government of India post-matric scholarship rules. As on 31 March 2017, 246 students benefited from the scholarship.

Institute free studentship scholarship for B.Tech/Dual Degree programmes were sanctioned to students, exempting them from payment of tuition fees.

The batch-wise details of number of students benefited also are given below:

11.1.1. Table 11.1 (a)

Sl. No.	Scholarship	Number of students
1.	Ministry of Tribal Affairs SC/ST Scholarship, Government of India	79

11.1.2. Table 11.1 (b) - Number of MCM and SC/ST scholarships

Batch	MCM Scholarship	SC/ST Scholarship
2016	**148**	**57**
2015	156	55
2014	178	68
2013	197	66
Total	**679**	**246**

Top 7% of the general category students admitted to B.Tech./DD programme are eligible for Notional Prize of ₹ 1,000 (one time) and a certificate of merit on the basis of the rank in JEE (Advanced) and parents' income not exceeding ₹ 4.5 lakh. A total of 400 general category students were admitted to B.Tech./DD in July 2016 and 28 students were eligible for Notional Prize.

11.2. Other Scholarships

Scholarships were sanctioned by NCERT, Government of India and State Governments to meritorious students pursuing B.Tech. programme in the institute.

State Government Scholarship obtained by B.Tech./DD students

Scholarship	Batch / Number of students				Total
	2016	2015	2014	2013	
NCERT	3	6	-	1	10
Kerala State	1	-	-	-	1
Total	**4**	**6**	**-**	**1**	**11**

11.3. M.Tech.

Students who joined M.Tech programme through GATE were awarded half-time teaching assistantship (HTTA) at ₹ 12,400 per month. During the period under report, 307 fresh assistantships and two renewed assistantships were given. The discipline-wise details of HTTA are given in the following table:

Number of HTTA awarded

Sl. No.	Discipline	Fresh – 2016 batch		Renewal - 2015 batch (Jan-May 2017)
		Semester I	Non-HTTA converted to HTTA	
1.	Aerospace Engineering	11	1	-
2.	Applied Mechanics	12	1	-
3.	Biotechnology – Clinical Engineering	4	-	-
4.	Chemical Engineering	33	3	-
5.	Civil Engineering	33	3	1
6.	Computer Science and Engineering	44	-	-
8.	Electrical Engineering	41	-	-
9.	Industrial Mathematics and Scientific Computing	5	5	-
10.	Mechanical Engineering	52	6	-
11.	Metallurgical and Materials Engineering	16	3	1
12.	Ocean Engineering	25	-	-
13.	Solid State Technology	8	1	-
	Total	**284**	**23**	**2**

M.Tech. Dual Degree

Students of 2012 batch who joined M.Tech. programme under Dual Degree were awarded HTTAs at ₹ 12,400 per month from 1 June 2015 onwards on the basis of their obtaining a valid GATE score or on securing CGPA of 8.0 or above (CGPA of 7.5 and above for SC/ST). During the period under review, 304 students were awarded fresh assistantships from June-December 2016, and 304 renewed assistantships in January 2017 out of which 288 students were renewed HTTA at the rate of ₹ 12,400 per month and 16 students at the rate of ₹ 6,950 per month since they obtained CGPA of less than 6.5 in July-November 2016 semester. The department-wise details are given below:

Sl. No.	Discipline	2012 batch	
		Fresh (ninth semeser)	Renewal (tenth semester)
1.	Aerospace Engineering	17	17
2.	Biotechnology	28	28
3.	Chemical Engineering	18	18
4.	Civil Engineering	30	30
5.	Computer Science and Engineering	24	24
6.	Electrical Engineering	51	51
7.	Engineering Design	44	44
8.	Mechanical Engineering	67	67
9.	Metallurgical and Materials Engineering	12	12
10.	Naval Architecture and Ocean Engineering	13	13
	Total	**304**	**304**

11.4. M.Sc.

Students admitted to the M.Sc. programme were sanctioned Rs 1,000 per month merit scholarship as per rule. Exemption from payment of tuition fee was also given to certain students. During the period under report, 118 students benefited from the scholarship. The department-wise details are given in the following table:

Number of merit scholarship and freeship awarded

Sl. No.	Course	Merit Scholarship		Freeship (Tuition fee waiver)		50% Freeship (50% tuition fee waiver)	
		Year I	Year II	Year I	Year II	Year I	Year II
1.	Chemistry	15	14	6	6	2	6
2.	Mathematics	14	13	5	5	-	-
3.	Physics	11	11	4	4	2	-
	Total	**40**	**38**	**15**	**15**	**4**	**6**

11.5. M.A.

Institute Merit Scholarship: Twenty-five per cent of students admitted to the M.A. programme and whose parental income is less than ₹ 4.5 lakh were sanctioned merit scholarships. They were exempted from the payment of tuition fee of ₹ 3,000 semester and provided a pocket allowance of ₹ 1,000 per month.

SC/ST students admitted to the M.A. programme and whose parental income is less than ₹ 4.5 lakh were given the concession of free messing and a pocket allowance of ₹ 250 per month and exempted from 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, exempting from payment of tuition fees.

The batch-wise details of number of students benefited are given below:

Batch	Merit Scholarship	SC/ST Scholarship
2016	1	1
2015	2	1
2014	3	1
2013	1	2
2012	1	2
2011	1	1
Total	**9**	**8**

11.6. M.S.

The scholars admitted to the M.S. programme through GATE are given Half-Time Teaching Research Assistantship (HTRA) of Rs 12,400 per month for two years and later extended to third year on the recommendation of GTC. During the period under report, 453 scholars received these assistantships of which 238 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	24	14	38
2.	Applied Mechanics	25	13	38
3.	Biotechnology	6	9	15
4.	Chemical Engineering	11	10	21
5.	Civil Engineering	12	18	30
6.	Computer Science and Engineering	25	24	49
7.	Engineering Design	10	13	23
8.	Electrical Engineering	49	32	81
9.	Management Studies	15	14	29
10.	Mechanical Engineering	41	46	87
11.	Metallurgical and Materials Engineering	8	8	16
12.	Ocean Engineering	12	14	26

Sl. No.	Discipline	Fresh	Renewal	Total
	Total	**238**	**215**	**453**

11.7. Ph.D.

The scholars admitted to the Ph.D. full-time programme in engineering are sanctioned HTRAs of ₹ 25,000 per month for first two years and ₹ 28,000 per month for next three years. During the period under report, 1,450 scholars obtained assistantships, 538 of them being 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	20	52	72
2.	Applied Mechanics	39	41	80
3.	Biotechnology	39	62	101
4.	Chemical Engineering	30	51	81
5.	Chemistry	43	52	95
6.	Civil Engineering	62	113	175
7.	Computer Science and Engineering	16	36	52
8.	Engineering Design	16	31	47
9.	Electrical Engineering	57	96	153
10.	Humanities and Social Sciences	25	23	48
11.	Management Studies	23	21	44
12.	Mathematics	8	21	29
13.	Mechanical Engineering	63	135	198
14.	Metallurgical and Materials Engineering	42	30	72
15.	Ocean Engineering	24	63	87
16.	Physics	31	85	116
	Total	**538**	**912**	**1450**

Ph.D. scholars of science departments who are able to submit thesis within 4.5 years and Ph.D. scholars of engineering departments who are able to submit their thesis within four years from the date of admission are sanctioned Pre-Doctoral Fellowship of ₹ 45,000 for six months. During the year under report, 45 Ph.D. scholars have been sanctioned Pre-Doctoral Fellowship.

11.8. Financial Assistance to Research Scholars/Students for presentation of papers abroad

The institute encourages 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 ₹ 1,50,000, including registration fee.

11.9. National/International conferences in India

Research scholars and students of course programmes are given the following financial assistance for presentation of papers in national/international conferences in India:

11.10. Registration fee

National and international conference: ₹ 5,000

Travel: Third Class AC train fare

Daily allowance: ₹ 500 per diem subject to a maximum of 10 days

12. Weaker Section and Foreign National Students

12.1. B.Tech. programme

As per the GOI orders, 27%, 15% and 7.5% of seats are reserved for OBC, SC and ST students, respectively, in the B.Tech. programme. These students are admitted through the Joint Entrance Examination (JEE) 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, the Advisor explained to each student the requirements of different branches. This helped the students to choose a suitable branch based upon their capability and interest. When a student finds the chosen branch is tough, he is allowed to switch over to lower JEE cut-off branch at the end of his first semester.

The following are the details of number of SC/ST students admitted to B.Tech. programme through JEE and Preparatory Course in July 2016:

Total Sanctioned Intake	Sanctioned Intake		Number joined through				
			Programme	JEE		Preparatory Course	
	SC	ST		SC	ST	ST	PD
B.Tech.-446	70	35	B.Tech.	70	35	2	0
Dual Degree-372	56	28	Dual Degree	53	25	6	0

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 ₹ 250 per month provided their parents' income is ₹ 4.5 lakh 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 and 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.

12.2. Preparatory Course for admission to B.Tech. programme

A preparatory course of one academic year was initiated by the Ministry of Human Resource Development (MHRD), Government of India, during the year 1983-84 exclusively for SC/ST students. Selection for this course is made from the Joint Entrance Examination list of SC/ST 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. programme and not require to write the JEE again. Following are the details of admission in July 2016:

Offer issued for PC			Number joined		
SC	ST	PD	ST	SC	PD
4.	2	7	4	1	6

The 14th preparatory course 2015-16 batch candidates were offered admission to B.Tech/Dual Degree Programme in July 2016 as they successfully completed the preparatory course.

12.3. 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 2016:

Offer issued		No. joined (HTTA)	
SC	ST	SC	ST
59.	29	58	28

12.4. M.Sc. programme

Admission was made to the M.Sc. programme through JAM entrance examinations only. Twenty-two 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.

12.5. Admission of foreign national students and Indian nationals residing abroad

In July 2016, one foreign student joined the M.Tech. programme and nine students joined the B.Tech./DD programme. At the end of March 2017, 12 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
1. Foreign National Students						
M.Tech						
Romania	1	-	-	-	-	1
Ethopia	-	1	-	-	-	1
M.Sc.						
Mauritius	-	-	1	-	-	1
B.Tech/Dual Degree						
USA	3	-	-	-	-	3
Pennsylvania	1	-	-	-	-	1
California	2	-	-	-	-	2
Korea	1	-	-	-	-	1
Connecticut	1	-	-	-	-	1
New Zealand	1	-	-	-	-	1
Total	10	1	1	-	-	12

Foreign students are also permitted to use the Book Bank. Book Bank Library tickets are issued to each student. Books are issued for a semester.

In addition to the above, 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 recognized technical conferences. The grant will cover airline ticket charges and visa fees, but exclude payment of conference registration fees.

13. Campus Amenities

13.1. Engineering Unit

The Engineering Unit of Indian Institute of Technology Madras is entrusted with constructions and maintenance of buildings and services in the institute. The works are carried out through contract by calling tenders and quotations in a transparent manner. For maintaining outstanding quality in the construction of buildings, the unit utilizes the expertise of faculty members. It holds periodic review meetings with stakeholders to complete the projects in time.

The Engineering Unit has introduced new materials and technologies in construction and maintenance activities. The status of its works (completed, in progress and in the planning stage) is as follows:

Major works completed at the IIT Madras campus

Sl. No.	Work	Amount spend (₹ in lakh)
1.	Supply, design, construction, installation, testing and commissioning of a 4 MLD sewage water plant	1040
2.	Construction of new dining facility in Krishna Hostel (G+one floor)	1070
3.	Construction of National Centre for Combustion R&D (NCCRD) building	1415
4.	Construction of Shopping Centre annexure building	25
5.	Construction of lift room for the Department of Computer Science	35
6.	Construction of additional floor over Engineering Design Building	510
7.	Repair and rehabilitation of Sharavathi Hostel at IIT Madras (Phase – II)	365
8.	Construction of two new class room complexes (B Blocks-G+three floors) by replacing the existing Chemistry and Physics Lecture Theatre	1310
9.	Construction of additional building for IC & SR (G+three floors)	304
10.	RCC Box Culvert Phase – II	31
11.	Box culvert – Adyar avenue and storm water drain, etc.	15
12.	Supplying, laying, testing and commissioning of treated sewage water supply pipe line and construction of underground sump in AZ and RZ	375

Major works in progress at IIT Madras

Sl. No.	Work	Amount spend (₹ in lakh)
1.	Construction of 96 new 'B' Type quarters (three blocks; G+8 floors; 32 flats in each block)	6700
2.	Construction of Bio-Technology and Centre for Sustainability building (G+6 floors) at IIT Madras	2956
3.	Construction of Academic Complex (G+6) by replacing the dilapidated workshop and stores buildings	12940

Major works being planned at IIT Madras in 2017-18

Sl. No.	Work	₹ (in lakhs)	Remarks
1.	Construction of two-lane over-bridge connecting the IITM campus with IITM Research Park	1200	Executed by IITM Research Park
2.	Construction of girls hostel by replacing existing rear wing of Sarayu Hostel	2159	Handed over to CPWD
3.	Construction of 64 G1 Type quarters for married research scholars	747	
4.	Construction of 48 new 'D' type quarters (one block; G+8 floors; six flats in each floor)	1747	
5.	Construction of additional rooms for Taramani Guest House	447	Handed over to CPWD
6.	Supply, installation, testing and commissioning of 1 MW Grid connected solar PV Cell installation	1000	Dropped in 118th BWC
7.	Providing grey water delivery line and tanks	240	
8.	Up-gradation of water supply in the campus phase – 1	850	
9.	Construction of additional floor over Structural Engineering Department		

Sl. No.	Work	₹ (in lakhs)	Remarks
10.	Construction of additional floor over Metal Forming Lab		
11.	Construction of additional floor over CSD		Handed over to CPWD
12.	Construction of additional floor over CEC		Tender awarded, work to be taken up by CPWD

13.2. Housing Facilities

A total 457 faculty quarters, 412 staff quarters and 232 student quarters are available in the campus for accommodation. In addition, there are 167 servant quarters. A total of 96 B-Type quarters will be added to the institute by September 2017.

13.3. Horticulture

The Horticulture Unit is functioning under the Engineering Unit. It maintains 30,000 square meter lawns and hedges. It takes care of tree plantation, maintains the plants and performs other associated activities. On 12 December 2016, IITM lost around 600 trees due to Vardah cyclone. Moreover, due to a court order, around 3,000 Julia Prosopis were cut down. The Horticulture Unit has removed all the fallen trees and is replanting in a phased manner.

13.4. Public Health

The Public Health Division takes care of mosquito and termite control and disposal of garbage and hazardous waste generated from different departments in the campus through Tamil Nadu Waste Management Limited.

13.5. Telephone Facilities

A new telephone exchange was commissioned by BSNL, Chennai Telephones Division, in the campus. All the direct lines of the institute that were linked from Raj Bhavan Telephone Exchange have been linked to this exchange.

13.6. Central Supplies Unit

The Central Supplies Unit functions under the administration of a Warden. The unit procures milk from the Tamil Nadu Co-operative Milk Producers' Federation (TCMPF) and distributes it to student hostels. It also 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.

13.7. Hospital

Healthcare is a noble profession and a holistic approach. Our focus has been to provide accurate diagnosis, best medical care, appropriate patient guidance and follow-up in tertiary centres. The dedicated team for this cause is as follows:

Chief Medical Officer i/c	Senior Medical Officers	Medical Officers
Dr. Mahalakhsmi M. Ravi, DGO	Dr. B. Rebecca Punithavalli, MD (O&G)	Dr. N. Porchelvi, MBBS
	Dr. Sabitha Selvam, DMRD	Dr. V. Thenral, MBBS
		Dr. D. Saraswathi, MBBS
		Dr. R. GowriSanker, MBBS, DA
		Dr. J. Siva, MBBS
		Dr. A. J. Tamilmani, MBBS, DLO
		Dr. Preethi, MBBS

The consultants at the hospital are:

Specialists	
Dr. Vishwanath Jayasankar	Orthopaedic Surgeon
Dr. Amit Kumar Sharma	Orthopaedic Surgeon
Dr.D.Sankar	Oral Surgeon
Dr. Sharada Mani	Dentist
Dr. Shashi Umesh	Dentist
Dr. K. Balamurugan	ENT Surgeon
Dr. Fathima Hyder	Paediatrician
Dr. Indira Chaturvedi	Paediatrician
Dr. A.Chandan	Dermatologist
Dr. V. Ganesan	Radiologist
Dr. A. Mohan Rao	General Surgeon
Dr. Shobana Priya	Obstetrician/ Gynecologist
Dr. Aparaajith	Physiotherapist
Dr. Karthick	Ophthalmologist
Dr. Rajaram	Anaesthesiologist
Dr. Harish Bhat	Urologist
Super Specialists	
Dr. S. Manoj	Cardiologist
Dr. N. Mahesh	Neurologist
Dr. Ramanan	Endocrinologist
Dr. Kumaravel	Endocrinologist
Dr. Shiv Prakash	Psychiatrist
Dr. G. Manoharan	Gastroenterologist
Dr. Gnanasambandam	Cardiologist
Dr. Venkatesh	Nephrologist
Dr. V. B. N. Murthy	Plastic Surgeon
On call	
Dr. Sornam	Obstetrician / Gynecologist
Dr. Sukanya	Paediatrician
Dr. Subha	Paediatric surgeon
Dr. Shibin	Anesthesiologist

Apart from the medical officers and consultants, the hospital has paramedics and other supporting staff.

Academic activities

The following continuing medical education (CME) programmes were conducted:

CME Programmes		
Venue		**Topic and Date**
	1	Current Management of Hepatitis B and C, 9 June 2016
Institute Hospital	2	Case study Discussion on Diabetes Management, 24 June 2016
Conference Room	3	Safe Spine Surgeries, 27 July 2016
	4	Intensification of Human Insulin Therapy, 3 August 2016
	5	Recent Trends in Cancer Management, 31 August 2016
	6	Common Renal Problems and Enlarged Prostate, 6 September 2016
	7	Metabolic Syndrome, 9 September 2016
	8	Thyroid Management, 25 November 2016
	9	Preventing from Asthma Exarcebation, 1 December 2016

CME Programmes		
	10	Clinical and Subclinical Hypothyroidsm, 8 December 2016
	11	Thyroid Management, 3 March 2017
Academic activities		
Conferences attended by		
Dr. Mahalakshmi M. Ravi	1	FORUM 2016, Sundaram Medical Foundation (SMF), 9-11 December 2016
	2	DIWAAS, Chennai, 19-20 August 2016
	3	CIDSCON 2016, 6th Annual Conference of CIDS, Varanasi
		26-28 August 2016
	4	AIDC, Rain Tree, 11-12 June 2016
Dr. Sabitha	1	FORUM 2016, SMF, 9-11 December 2016
	2	AIDC, Rain Tree, 11-12 June 2016
	3	Excellence in Body Imaging, 17-18 December 2016
	4	Mastering Medicine, SMF, 3-4 June 2016
	5	COSP 2016
Dr. Rebecca	1	FORUM 2016, SMF, 9-11 December 2016
	2	DIWAAS, Chennai, 19-20 August 2016
	3	Dr. Mohan's International Diabetic Update 2016
Dr. Porchelvi	1	4th Chennai Advanced Wound Care Conference, 18-19 June 2016
	2	Mastering Medicine, SMF, 3-4 June 2016
	3	AIDC, Rain Tree, 11-12 June 2016
Dr. Thenral	1	AIDC, Rain Tree, 11-12 June 2016
	2	4th Chennai Advanced Wound Care Conference, 18-19 June 2016
Dr. Saraswathi	1	FORUM 2016, SMF, 9-11 December 2016
	2	AIDC, Rain Tree, 11-12 June 2016
	3	Mastering Medicine, SMF, 3-4 June 2016
	4	Endocrine Meet, Dr. Kumaravel
	5	Dr. Mohan's International Diabetic Meet
Dr. Gowrisankar	1	TRAC 2016, 1-2 October
	2	FORUM 2016, SMF, 9-11 December 2016
	3	Mastering Medicine, SMF, 3-4 June 2016
	4	AIDC, Rain Tree, 11-12 June 2016
	5	DIWAAS, Chennai, 19-20 August 2016
	6	NAPCON 16, Mumbai, 24-27 November 2016
	7	APICON 2017, Mumbai, 26- 29 January 2017
Dr. Kavitha	1	FORUM 2016, SMF, 9-11 December 2016
Dr. Tamilmani	1	6th ENT Conclave, 5 August 2016, Cochin, Kerala
	2	Infectious Diseases Updates

In-service Education – Nurses

Geriatric Nursing, Sundaram Medical Foundation, 22 July 2016

Events

- Human Energy Medicine Talk by Dr. Hemeswari, Department of Acupuncture and Energy Medicine, took place on 2 April 2016 at Campus Lecture Theatre.
- World Nurses' Day was celebrated at the institute hospital on 12 May 2016.
- Doctors' Day was celebrated on 1 July 2016.

Achievements

- Obtained ISO-9001: 2015 certification
- Dr. Mahalakshmi M. Ravi received the Outstanding Service Trailblazer Award for the year 2016 from Indian Institute of Technology.

	Annual Census of the Hospital for 2016 – 2017											
2016-2017	O.P.	Emergency	In patient in	In Patient	Surgery	Surgery - Minor	Diagnostic	Dental	X-ray	ECG	USG	Physio
	Day	Cases	Casualty	(In ward)	Major		Procedure					
	8am - 6pm	6pm - 8am	Admission									
April 2016	5806	634	168	35	5	24	16	101	256	59	19	463
May 2016	4919	534	131	16	2	5	3	78	176	58	20	457
June 2016	6496	614	180	17	3	10	7	120	126	69	38	491
July 2016	6012	816	194	22	5	11	13	123	213	75	8	454
August 2016	7919	892	282	34	2	16	10	117	250	82	Nil	651
September 2016	7892	755	222	41	6	9	6	137	248	89	46	614
October 2016	8327	1050	390	72	5	12	12	101	305	111	29	541
November 2016	7252	835	218	26	1	11	4	77	268	105	35	623
December 2016	5558	642	225	23	4	8	5	106	226	61	21	433
January 2017	8130	964	250	41	4	11	18	87	302	71	24	473
February 2017	7409	853	228	49	6	19	8	136	265	50	45	560
March 2017	8572	868	240	43	4	13	5	115	339	63	68	662
Total	84292	9457	2728	419	47	149	107	1298	2974	893	353	6422
Grand total = 1,09,139 patients for the year 2016-2017												

Free medical check-up camps for students, employees and their dependents

- Oral health screening camp conducted by Dr. Shankar on 12 April 2016.
- Government Yoga and Naturopathy Medical College - Medical Camp for Migraine on 22 April 2016 at institute's hospital.
- Cancer Research and Relief Trust Screening Camp by Dr. Ramanan, Dr. Malarvizhi and Dr. Kalaivani at institute's hospital on 6 May 2016 (Mammogram 35 and Pap Smear 19).
- On the occasion of Women's Day, a health camp was conducted for four days (6, 7, 9 and 10 March 2017). The camp diagnosed negative case for malignancy, three thyroid cysts, one IHD and low Vitamin D level in majority of the cases.
- ENT Camp on 12 March 2017 with Audiometry by Dr. Balamurugan.
- Retinal screening camp for diabetics and hypertensives in March 2017 by Dr. Karthik.
- A health check-up camp was conducted for CCW Catering staff in September 2016 for 309 employees.
- Students medical check-up for 2016-2017 at K. V. IITM from 8-11 August and 16-17 August 2016 (six days)

The total claim for in-patients admissions in the institute hospital through insurance company was ₹ 50,23,781.

The year saw us scaling our clinical value proposition with the introduction of several new initiatives across super specialties. Non-communicable diseases are being handled as per international guidelines and protocols. Communicable diseases are aptly handled as per guidelines and with special attention to preventive aspects and measures. Individuals brought in moribund state are promptly and efficiently handled by our medical officers who are being trained regularly in relevant and required areas.

13.8. Guest houses

The campus has two guest houses. The guest house near the Administrative Building is called Bose–Einstein Guest House, while the other is Taramani Guest House (TGH). The Bose–Einstein Guest House has 18 air-

conditioned suites. Each room has a telephone, fridge and television. 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.

13.9. Bank

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.

13.10. 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.

13.11. Schools

Vanavani 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 standard XII and the KV offers courses from standard I to XII.

13.12. 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.

13.13. 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.

13.14. Cafeteria

There are two canteens, the IIT Staff Canteen and the IRTC Restaurant, on campus to cater to the needs of employees and students.

13.15. Crèche

A crèche is functioning on the campus for the benefit of the staff and working women. There were about 50 children in the crèche during the period under report.

13.16. 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.

13.17. Security Section

The Security section is an important constituent of Indian Institute of Technology Madras, 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 ensuring harmonious coexistence of campus residents. A part of support service, it serves the residents in cases of emergencies and contingencies that may adversely affect the normal life of the campus.

Recruitment of security guards/training

The first batch of security guards consisting of 12 security guards including one lady, who were recruited, joined this institute on 14 October 2016. Subsequently, they were routed at Police Training College, Ashok Nagar, Chennai for basic training for a period of one month. The training programme covered a wide range of indoor subjects and rigorous part of outdoor, especially squad drill and physical training. The training was completed on 23 November 2016. The main subjects covered under the indoor and outdoor training included:

Indoor

Duties and responsibilities, day-to-day security management, physical security, security of assets/apartments/building, identification of different type of arms in use by public and police, badges of ranks in police and military forces, basic firefighting techniques and firefighting equipment, traffic management, crisis response and disaster management, access control/checking and frisking, filing FIR, handling of walkie-talkie and private security agencies (Regulation Act 2005).

Outdoor

Physical training, squad drill, weapons training and unarmed combat

Passing out parade

The passing out parade took place on 24 November 2016. The parade was reviewed by Director, Dean Administration and Registrar and staff. Squad drill, lathi drill, physical exercise and unarmed combat were performed during the parade.

Inter IIT Sports Meet-2016 at IIT Kanpur

Mr Sakthivel, a security guard of our Institute, won silver and bronze in 400 m and 1500 m race, respectively, at the sports meet.

ISO Training

An awareness training programme on upgraded version of ISO 9001-2015 was undertaken by Chief Security Officer and ASO K.V. Manoharan in December 2016. The supporting staff Mr R. Maheshwar Rao, Junior Assistant and Mr V. Suresh Babu, SI Gr1 also attended the training programme. All of them were actively involved in bringing out the new ISO manual.

ISO Internal Audit

The internal audit for the security section was conducted by Dr. V Vijayalakshmi, Assistant Professor, Department of Management Studies and Mr. P. Hariharan, Technical Superintendent, Central Workshop on 4 January 2017.

Republic Day 2017

The 68th Republic Day was celebrated by the institute at Manohar C. Watsa Stadium on 26 January 2017. Seven contingents participated in the ceremonial parade. These included contingents from Kendriya Vidyalaya and Vanavani schools and a band team. A cash award for the best turn-out personnel was awarded during the function. The NCC contingent of Kendriya Vidyalaya IIT won the prize of the best marching contingent.

Motivation and Professional Development

A half-day training programme for institute's security personnel on Motivation and Professional Development was conducted at the Department of Management Studies on 27 March 2017. The programme emphasized the importance of management of emotions and stress, and more importantly, professionalism in the workplace and ethical behavior in day-to-day work. Prof. T.J. Kamalanaban gave an overview of all the aspects in professional development and Dr. V. Vijayalakshmi conducted a session on management of emotions and stress.

Procurement of digital walkie-talkie sets

The institute procured 12 digital-based walkie-talkie sets replacing the old analogue type and additional six sets compatible with digital mode. Now, the wireless communication has been extended to all gates, patrolling and duty room and duty officer. By switching over to digital sets, the communication has enhanced with more clarity and wider coverage.

Installation of CCTV cameras

CCTV cameras were successfully installed at Research Park gate and Mandakini gate and linked to Duty Control Room recently. Now all the gates are well equipped with CCTV cameras.

Computerization of pass section

The walker's pass has been computerized with effect from January 2017. The passes issued to the parents of KV and Vanavani schools for the academic year 2017-2018 have been computerized with the photo pass with QR code in multicolor and tag provision for easy identification. It will help decrease the crowd at the entry gates during peak hours and lead to computerization of other passes in a phased manner.

13.18. Campus News

Published every Friday, the *Campus News* highlights the important events of the institute.

14. 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 Principal Accountant General (Tamil Nadu and Pondicherry), Chennai on behalf of the Comptroller and Auditor General of India.

The 84th Finance Committee of the institute in its meeting held on 28 November 2016 recommended non-plan revised estimates of ₹ 375.70 crore (gross) for the year 2016–2017 and budget estimates of ₹ 406 crore (gross) for the year 2017–2018. The committee also recommended a revised estimate of ₹ 253 crore for the year 2016–2017 and budget estimates of ₹ 334 crore under the plan head. The same were approved by the Board of Governors of the institute in their 231th meeting held on 28 November 2016. The following is a summary of the revised estimates for 2016–2017 and budget estimates for 2017–2018 under the non-plan and plan heads.

(Figures in crore of ₹)

Item	Budget Estimate 2016–2017	Revised Estimate 2016–2017	Budget Estimate 2017–2018
Non-plan account			
Non-plan grant expected	**283.00**	**334.43**	**328.00**
Institute income projected	49.99	67.57	78.00
Grant projected for salary	163.75	183.95	204.50
Grant for pension and retirement benefits	73.60	93.50	87.30
Grant for non-salary component	45.65	30.68	36.20
Total	**332.99**	**375.70**	**406.00**
Plan grant account			
Grant expected from MHRD	**245.00**	**253.00**	**334.00**
Grant for scholarships OH-31	75.00	75.00	75.00
Grant for asset creation OH-35	170.00	178.00	259.00
Total	**245.00**	**253.00**	**334.00**

14.1. Audit

The annual accounts of the institute for the year 2015–2016 were audited by the Principal Accountant General (Tamil Nadu and Pondicherry) during June–July 2016, and a certified copy of the annual accounts with the audit report was sent to MHRD after the annual accounts were duly adopted by the Board of Governors to arrange for placing the same before both the Houses of Parliament during the winter session.

Summary of provisional plan and non-plan grant utilization for 2016–017

(Figures in crore of ₹)

Item	Amount
Plan grant account	
Opening balance	-27.74
Plan grant received	159.92
Total funds	**132.18**
Plan expenditure	
Building and construction	66.84
Academic equipment	10.31
Equipment for specialized centre	-
Infrastructure (furniture/computers, etc.)	7.02
Periodicals/journals/books for library	9.48
Scholarship payments (HTTA/HTRA/PDF)	74.93
and Revenue expenditure	
Total plan expenditure	**168.58**

Item	Amount
Non-plan account	
Opening balance	-26.42
Grant received during 2016–2017	295.00
Institute Income	96.06
Total funds available	**364.64**
Non-plan expenditure	
Salary and related items	170.57
Pension and other terminal benefits	92.27
Non-salary, non-pension items (other components)	107.81
Total non-plan expenditure	**370.65**

The balance of the corpus fund as on 31 March 2017 is ₹ 201.44 crore and the balance of the institute Endowment account as on 31 March 2017 is ₹ 80.60 crore.

Appendix 1: The Senate

CHAIRMAN

PROF. BHASKAR RAMAMURTHI

1. Prof. Amit Kumar
2. Prof. K. Bhaskar
3. Prof. S.R. Chakravarthy
4. Prof. Luoyi Tao
5. Prof. S. N. Murthy Haradanahalli
6. Prof. Nandan Kumar Sinha
7. Prof. M. Ramakrishna
8. Prof. P. A. Ramakrishna
9. Prof. P. Sriram
10. Prof. R. I. Sujith
11. Prof. R. Velmurugan
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17. Prof. M. Ramasubba Reddy
18. Prof. K. Ramesh
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21. Prof. Amal Kanti Bera
22. Prof. Anju Chadha
23. Prof. Gopala Krishna Aradhyam
24. Prof. Guhan Jayaraman
25. Prof. A. Jayakrishnan
26. Prof. D. Karunagaran
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28. Prof. Nitish R. Mahapatra
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32. Prof. V. Srinivasa Chakravarthy
33. Prof. K. Subramaniam
34. Prof. G. K. Suraishkumar
35. Prof. Abhijit P. Deshpande
36. Prof. Arun K. Tangirala
37. Prof. M. Chidambaram
38. Prof. A. Kannan
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47. Prof. Shankar Narasimhan S.
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50. Prof. Tanmay Basak
51. Prof. Upendra Natarajan
52. Prof. Archita Patnaik
53. Prof. S. Bhaskaran
54. Prof. P. Bhyrappa
55. Prof. R. Dhamodharan
56. Prof. Dillip Kumar Chand
57. Prof. Govindasamy Sekar
58. Prof. Indrapal Singh Aidhen
59. Prof. K. Mangala Sunder
60. Prof. A. K. Mishra
61. Prof. N. Narasimha Murthy
62. Prof. T. Pradeep
63. Prof. G. Ranga Rao
64. Prof. M. V. Sangaranarayanan
65. Prof. Sanjay Kumar
66. Prof. S. Sankararaman
67. Prof. P. Selvam
68. Prof. U. V. Varadaraju
69. Prof. K. Vidyasagar
70. Prof. P. Alagusundaramoorthy
71. Prof. Amlan Kumar Sengupta
72. Prof. K. Ananthanarayanan
73. Prof. G. Appa Rao
74. Prof. Bhairavavajjula Nageswara Rao
75. Prof. A. Boominathan
76. Prof. Devdas Menon
77. Prof. G. R. Dodagoudar
78. Prof. S. R. Gandhi
79. Prof. Karthik K. Srinivasan
80. Prof. Koshy Varghese
81. Prof. Ligy Philip
82. Prof. Manu Santhanam
83. Prof. A. Meher Prasad
84. Prof. S. Mohan
85. Prof. J. Murali Krishnan
86. Prof. B. S. Murthy
87. Prof. C. V. R. Murty
88. Prof. K. Rajagopal
89. Prof. K. Ramamurthy
90. Prof. Ravindra Gettu
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93. Prof. K. N. Sathyanarayana
94. Prof. R. Sivanandan
95. Prof. K. P. Sudheer
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98. Prof. C. Chandrasekhar
99. Prof. Deepak Khemani
100. Prof. T. A. Gonsalves
101. Prof. Hema A. Murthy
102. Prof. D. Janakiram
103. Prof. V. Kamakoti
104. Prof. Krishna Moorthy Sivalingam
105. Prof. Madhu Mutyam

106. Prof. N. S. Narayanaswamy
107. Prof. C. Pandurangan
108. Prof. C. Siva Ram Murthy
109. Prof. P. Srinivasa Kumar
110. Prof. Sukhendu Das
111. Prof. T. Andrew Edwin Raj
112. Prof. Amitava Dasgupta
113. Prof. Anil Prabhakar
114. Prof. R. Aravind
115. Prof. Devendra Jalihal
116. Prof. Enakshi Bhattacharya
117. Prof. K. Giridhar
118. Prof. Harishankar Ramachandran
119. Prof. V. Jagadeesh Kumar
120. Prof. A. Jhunjhunwala
121. Prof. S. Karmalkar
122. Prof. Krishna Vasudevan
123. Prof. Mahesh Kumar
124. Prof. Nandita Dasgupta
125. Prof. A.N. Rajagopalan
126. Prof. Ravinder David Koilpillai
127. Prof. R. Sarathi
128. Prof. Y. Shanthi Pavan
129. Prof. K. Shanthi Swarup
130. Prof. K. Sridharan
131. Prof. Srikrishna Bhashyam
132. Prof. Srinivasan Umesh
133. Prof. Vinita Vasudevan
134. Prof. Asokan Thondiyath
135. Prof. Nilesh J. Vasa
136. Prof. R. Krishnakumar
137. Prof. Srikanth Vedantam
138. Prof. Venkatesh Balasubramanian
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140. Prof. Evangeline Manickam
141. Prof. Jyotirmaya Tripathy
142. Prof. Malathy Duraisamy
143. Prof. V. R. Muraleedharan
144. Prof. Senkamalam Periyasamy Dhanavel
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155. Prof. C. Rajendran
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172. Prof. V. Vetrivel
173. Prof. Arunn Narasimhan
174. Prof. V. Babu
175. Prof. C. Balaji
176. Prof. P. Chandramouli
177. Prof. R. Gnanamoorthy
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179. Prof. Krishnan Balasubramaniam
180. Prof. A. Mani
181. Prof. M. Prakash Maiya
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183. Prof. V. Raghu Prakash
184. Prof. Raju Sethuraman
185. Prof. A. Ramesh
186. Prof. N. Ramesh Babu
187. Prof. Sarit K. Das
188. Prof. A. Seshadri Sekhar
189. Prof. Shaligram Tiwari
190. Prof. Shankar Krishnapillai
191. Prof. K. Srinivasan
192. Prof. K. Srinivasa Reddy
193. Prof. C. Sujatha
194. Prof. T. Sundararajan
195. Prof. G. Vekatarathnam
196. Prof. L. Vijayaraghavan
197. Prof. M. Balasubramanian
198. Prof. S. S. Bhattacharya
199. Prof. S. Ganesh Sundara Raman
200. Prof. K. C. Harikumar
201. Prof. M. Kamaraj
202. Prof. B. S. Murty
203. Prof. Prathap Haridoss
204. Prof. T. S. Sampath Kumar
205. Prof. V. Sampath
206. Prof. G. Sundararajan
207. Prof. Udaychandran Chakkingal
208. Prof. Gandham Phanikumar
209. Prof. V. Anantha Subramanian
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211. Prof. P. Krishnan Kutty
212. Prof. K. Murali
213. Prof. S. Nallayarasu
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215. Prof. S. A. Sannasiraj
216. Prof. P. Shanmugam
217. Prof. Srinivasan Chandrasekaran
218. Prof. V. Sundar
219. Prof. R. Sundaravadivelu
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224. Prof. N. Harish Kumar
225. Prof. S. Kasiviswanathan
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231. Prof. S. Ramaprabhu
232. Prof. V. Sankaranarayanan
233. Prof. P. N. Santhosh
234. Prof. M. V. Satyanarayana
235. Prof. K. Sethupathi
236. Prof. V. Srinivas
237. Prof. L. Sriramkumar
238. Prof. A. Subrahmanyam
239. Prof. V. Subramanian
240. Prof. P. B. Sunil Kumar
241. Prof. Suresh Govindarajan
242. Prof. C. Vijayan

SECRETARY

243. V.G. Bhooma (Registrar)

STUDENT MEMBERS

244. Sanka Shiva Saketh, Academic Affairs Secretary
245. Kotra Srikanth, Research Affairs Secretary
246. Purab Pradeep Jain, Students General Secretary

Appendix 2: Board of Academic Courses

Chairman

Prof. V. Jagadeesh Kumar, Dean, Academic Courses

Member - Ex-Officio

Prof. A. K. Mishra, Dean, Academic Research
Prof. M. S. Sivakumar, Dean, Students
Prof. K. Ramamurthy (Previous DAC)

Member

Dr. Ranjith Mohan, Aerospace Engineering
Prof. B. S. V. Prasad Patnaik, Applied Mechanics
Dr. Vignesh Muthuvijayan, Biotechnology
Prof. Susy Varughese, Chemical Engineering
Prof. G. Ranga Rao, Chemistry
Dr. Balaji Narasimhan, Civil Engineering
Dr. Jayalal Sarma, M N, Computer Science and Engineering
Dr. Palaniappan Ramu, Engineering Design
Dr. S. Aniruddhan, Electrical Engineering
Dr. Milind Brahme, Humanities and Social Science
Dr. A. K. B. Chand, Mathematics
Dr. Saji Mathew, Management Studies
Dr. V. Raghavan, Mechanical Engineering
Prof. G. Phanikumar, Metallurgical and Materials Engineering
Dr. Vijaykumar, Ocean Engineering
Dr. G. Arvind, Physics

Member –Ex-Officio

Dr. G.L. Samuel, Advisor SC/ST/PC students, Mechanical Engineering
Dr. Ranga Rao, Chief Advisor MITr, Chemistry

Student Member

Mr. Sanka Shiva Saketh, Academic Affairs Secretary
Mr. Purab Pradeep Jain, Students General Secretary

Invitee

Mr. R. Esakkimuthu, Joint Registrar (Research)

Secretary - Ex-officio

Mr. D. Ravee, Deputy Registrar (Courses)

Appendix 3: Board of Academic Research

Chairman

Prof. A. K. Mishra, Dean, Academic Research

Member - Ex-Officio

Prof. V. Jagadeesh Kumar, Dean, Academic Courses
Prof. M. S. Sivakumar, Dean, Students

Member

Dr. Sunetra Sarkar, Aerospace Engineering
Dr. Pijush Ghosh, Applied Mechanics
Prof. K. Subramanian, Biotechnology
Prof. Upendra Natarajan, Chemical Engineering
Dr. Saravanan, Civil Engineering
Dr. Arti Dua, Chemistry
Prof. N.S. Narayanaswamy, Computer Science and Engineering
Prof. B. Krishna, Electrical Engineering
Dr. G. Saravana Kumar, Engineering Design
Dr. Solomon J. Benjamin, Humanities and Social Science
Prof. P. Veeramani, Mathematics
Dr. R.K. Amit, Management Studies
Prof. S. Sathyan, Mechanical Engineering
Dr. V. Subramanya Sarma, Metallurgical and Materials Engineering
Prof. P. Ananthakrishnan, Ocean Engineering
Dr. Dillip K. Satapathy, Physics
Dr. G. Ranga Rao, Chief Advisor, MITr, Chemistry

Student Member

Mr. Kotra Srikanth, Research Affairs Secretary
Mr. Purab Pradeep Jain, Students General Secretary

Invitee

Mr. D. Ravee, Deputy Registrar (Courses)
Mr. V. Rajendran, Assistant Registrar (RU)

IDRP Invitee

Dr. Sathyanarayana N. Gummadi

Secretary - Ex-officio

Mr. R. Esakkimuthu, Joint Registrar (Research)

Appendix 4: Board of Students

Chairman

Prof. M.S. Sivakumar, Dean, Students

Members

Prof. A.K. Mishra, Dean, Academic Research
Prof. V. Jagadeesh Kumar, Dean, Academic Courses
Prof. R. Nagarajan, Dean, (International and Alumni Affairs)
Prof. K. Sethupathi, Chairman, Council of Wardens
Prof. P.N. Santhosh, Advisor, Sports
Prof. Umakant, Dash, Advisor, Cultural
Dr. Arockiarajan, Advisor, Co-curricular
Prof. Manu Santhanam, Advisor, Placement
Prof. G.L. Samuel, Advisor, Weaker Section
Prof. G. Ranga Rao, Advisor, Mitr
Prof. P Chandramouli, Advisor, Internship
Prof. P Sudarashan, Advisor, SAC/SLC
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