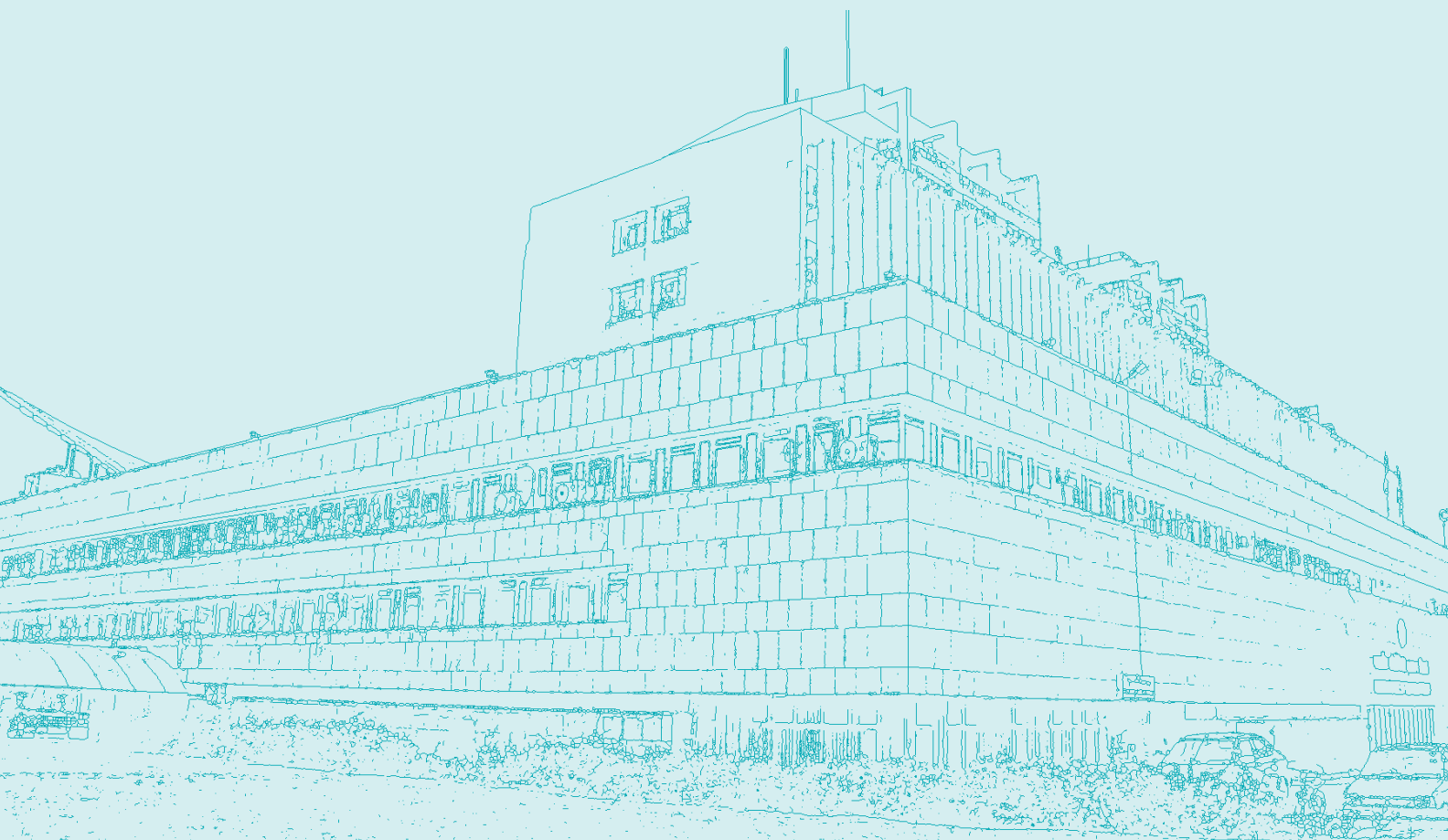


# ANNUAL REPORT | 2018-2019

(April 1, 2018 - March 31, 2019)



## Our Vision

To contribute to India and the World through excellence in scientific and technical education and research; to serve as a valuable resource for industry and society; and to remain a source of pride for all Indians.



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Director : Prof. V. Ramgopal Rao

“ We are working towards the triple objectives of Excellence, Expansion and Inclusion. We plan to achieve these objectives by focusing on the 3 I’s, namely Internationalization, Interdisciplinary Research and Industry Connect. Institute has been bestowed with the status of Institution of Eminence by the UGC-MHRD, as part of the new status, the Institute will get a grant of ₹1,000 Crores over the next five years, which will be used in developing academic landscape, thematic initiatives and collaborations across campus. ”

# Director's Report

IIT Delhi is pleased to release its Annual Report for the year 2018-2019, and I am delighted to share with you the highlights of our major activities, achievements, initiatives and future plans.

India as a country is in a very unique stage in the history of this universe. We have the capacity as well as an aspiration to be a global leader in the most advanced of the technologies like space and atomic energy, while still trying to address the very basic needs of our vast population with challenges like open defecation, malnutrition etc. This report underlines the efforts as well as achievements of IIT Delhi not only in imparting high quality technical education but also towards addressing a very large range of societal needs through application of Science & Technology. We are working towards the triple objectives of Excellence, Expansion and Inclusion. We plan to achieve these objectives by focusing on the 3 I's, namely Internationalization, Interdisciplinary Research and Industry Connect.

## Ranking of IIT Delhi

It is a great pleasure and privilege for me to share that IIT Delhi has achieved the rank of 172 in the QS World University Rankings 2018. It may be noted that IIT Delhi is one of the three Indian Institutes in the top 200 of this ranking, the other two being IIT Bombay and IISc Bangalore. Multiple engineering departments of IIT Delhi have however been ranked in the top 100 in the QS World ranking for this year. I am also pleased to share here that IIT Delhi is ranked first among engineering colleges in India for 2018 by India Today. The Institute is also ranked third among engineering colleges by the National Institutional Ranking Framework (NIRF) in 2018 and Fourth overall.

## Institution of Eminence

All of you will be delighted to know that IIT Delhi has been bestowed with the status of Institution of Eminence by the UGC-MHRD. The announcement to this effect was made by the Hon'ble Minister for HRD on July 9, 2018. IIT Delhi and IIT Bombay are the only two IITs who have been bestowed with the IoE recognition by the Govt. of India. It is also noteworthy to mention that only 6 institutions have been selected for this recognition out of a total of 120 proposals submitted to MHRD. UGC had suggested 20 parameters to qualify to be an institute of excellence. IIT Delhi already fulfills many of these parameters. The institute will get a grant of ₹1,000 crore over the next five years as part of the new status. The funds that the institute will get will be fundamentally used in deepening

the existing academic landscape, developing thematic initiatives and collaborations across campus, strengthening capabilities to translate knowledge into societal impact, establishing cross-cutting initiatives to strengthen the foundation of research. The funds will be used to improve the faculty-student ratio, attract and incentivize talented faculty and meritorious students, plan for teaching and research collaboration with global universities figuring in the most reputed world ranking. The institute will also endeavor to recruit more foreign faculty and increase the local and foreign student strength.

Kudos to the entire faculty fraternity, students and staff for their outstanding contributions leading to the IoE recognition for the Institute. Let us realize that we stand on the shoulders of alumni, the retired faculty, the past leadership and the ex-employees of the institute, as well as our well-wishers.

## Research and Development

The collective vision of IIT Delhi is to be a leading academic institution in the world by advancing knowledge through high impact research and impart quality education to produce technologically adept and socially conscious professionals, and by catalyzing innovation-driven entrepreneurship, thereby addressing strategic goals of the nation and needs of global society. Our endeavor is to raise the bar and set higher benchmarks for ourselves and for the rest of the country. The last one year has been no exception. We have done pretty well in all aspects of institutional activities, be it teaching, research or outreach activities.

For the year 2018-19, the actual recurring expenditure under Plan, were to the extent of ₹54697.47 lakh and Plan non-recurring expenditure ₹12,956.14 lakh. The Institute generated about 21.40% of the actual recurring expenditure through internal revenue generation, including fees, sponsored research, consultancies and continuing education programs.

During the year 2018-19, the Institute received ₹55,652.00 lakhs as Plan Grant – ₹47,981.00 lakhs for Recurring Expenditure and ₹7,671.00 lakhs for Normal Non-Recurring expenditure. The income from internal accrual from the fees, interest/sponsored projects was to the extent of ₹11,705.54 lakhs. Within the financial resources available to the Institute, a number of construction and development activities have been started to augment the Institute infrastructure. During the year 2018-19, the Institute also

received ₹4,296.00 lakhs from MHRD under World Class Institutions Scheme (IOE).

Over the years, at IIT Delhi, we have built a robust research tradition, which can be seen by the inspiring statistics in terms of different research parameters. Specially, we have continuously enhanced on our credentials in research as evidenced by way of publications, citations and Ph.Ds per faculty, which are among the highest for any institution in India and compare favorably with the best in the world.

Our target of continuously searching for and significantly increasing the intake of quality candidates into our Ph.D. programmes is on the right course and we are seeing a robust growth of 25% per year in our Ph.D. graduation rate. At its 49th Convocation held on 3rd November, 2018, IIT Delhi awarded 378 Ph.D. degrees, the highest ever for IIT Delhi. This is indeed a moment of pride for all of us. Over 60% of registered students at IIT Delhi are currently masters and Ph.D. students. Institute has over 2600 Ph.D. students on its rolls right now.

IIT Delhi is committed to provide excellent human resource to meet national needs and global expectations. It is a unique institution and a dream destination for those who wish to be leaders in science, technology and management. IIT Delhi is internationally recognized for delivering excellent education at the undergraduate and postgraduate levels, while endeavoring to become a great research institution. While excellence has many parameters, setting up of state-of-the-art teaching and research infrastructure does require resources. With the support from the Government of India, industry and the alumni, IIT Delhi has been able to create an excellent infrastructure. While the Government has supported us with generous funding for which we are grateful, our alumni have extended noteworthy support to the institute.

During the year 2018-2019 under report, 292 Sponsored Research Projects with a total funding of ₹317 crores and about 292 consultancy projects with a total value of ₹26.86 crores were undertaken by the Institute. 19 Collaborative Sponsored Research Projects and 3 Consultancy Jobs with international funding were also undertaken by the Institute. The collaborating countries include United States, France, Korea, Germany, United Kingdom, Norway, Hungary, Russia, Kuwait, Mauritius and Switzerland. 72 technology development and transfer projects worth ₹28.09 crores have also been undertaken.

In order to jump start the research activities of newly joined faculty members, IIT Delhi provides a seed research funding to the new faculty upon joining the Institute to the tune of ₹50.00 lakhs or more when necessary. We are expecting our sponsored R&D funding to cross ₹500 crores in the coming

year. This growth has become possible mainly because of our increased push for research and development activities in the Institute.

As the Research & Development activities are seeing a robust growth at IIT Delhi, our focus has also been to strengthen the "Relevance & Delivery" aspects of our research. IIT Delhi has been entrusted with the responsibility of being the nodal coordinating institution for the country by MHRD for the Unnat Bharat Abhiyan (UBA) programme of Govt. of India. Till date, a network of about 2,000 Participating Institutions (PIs) with more than 10,000 villages have been adopted under the Unnat Bharat Abhiyan. Regional Coordinating Institutions (RCIs) have been created in the country (covering all the states) for smooth functioning/implementation of program in effective manner. These institutes are IITs, NITs, central and states Universities, Agricultural Universities. There are 11 Subject Expert Groups (SEGs) working on the subject specific problems for technical and management interventions/guidance to participating institutions in Agriculture, Water Management, Rural Energy, Craft and Artisans, Rural Sanitation, ethos in Technical Education, School Education, Rural Infrastructure, Capacity Building, etc. Every subject expert group is coordinated by a separate institution. The program is progressing in bringing a paradigm shift in academic and research programs in the country by making these more inclusive working on the subject specific development problems and providing technical solutions. Our Centre for Rural Development & Technology (CRDT), which is coordinating the UBA programme, has also been making rapid strides in developing technologies for the upliftment of rural areas through development of innovative technologies.

IIT Delhi has many Centers of Excellence (CoEs) carrying out cutting edge research in interdisciplinary areas. These CoEs are funded by industries, alumni and government. The CoEs are currently working on aspects such as air pollution, 5G technologies, Industry 4.0, Renewable energies etc.

Some of the major research initiatives undertaken by the Institute include – Faculty Interdisciplinary Research Project to enhance interdisciplinary and collaborative research interest in the Institute; Multi-institutional collaborations for undertaking joint research projects with eminent institutions such as All India Institute of Medical Sciences, Indian Council of Agricultural Research, and All India Institute of Ayurveda; 1-2-3-4 Discover and Learn Projects Scheme to enhance research aptitude among undergraduate students and increase the component of 'learning by research'; IRD Student Startup Action Scheme; Summer Undergraduate Research Award; IRD Early-Doc Fellowship Scheme to support Ph.D. students after the

successful completion of Ph.D. Viva-Voce examination to complete the manuscript writing related to thesis work; Research Excellence Travel Award to top 20% of Ph.D. students who are within five years of their registration. The Department of Design has started a new Social Innovation lab to address unmet needs of society, and to undertake projects relevant to rural entrepreneurship. Using design thinking approach, the lab is presently working to promote social innovation based entrepreneurship among rural women of Haryana. The department has also started a new course on "Social Immersion" for students.

IIT Delhi has registered around 53% increase in the total number of women candidates this year through JEE. The actual number increased from 91 in 2017 to 139 in 2018. PG and Ph.D. programs are continuously seeing an increase in number of women candidates which stands at around 28% at present. We have also significantly strengthened our incubation activities on the campus. We have seen an 8 times growth in the number of incubated companies at IIT Delhi since 2014. As part of our society connect initiative, IIT Delhi jointly with its alumni has also started a Women Entrepreneurship & Empowerment (WEE) programme which is helping women from various walks of life to become entrepreneurs. Second batch of WEE students have gone through this programme and many of them have successfully launched their ventures. WEE programme is being mentored by IIT Delhi with active participation of IIT Delhi alumni. WEE is now helping other IITs on the women entrepreneurship activities.

During the past one year, the Institute has made significant efforts to connect with the industry. The major initiatives and the activities of the Institute for collaboration with industry include the Postgraduate Executive Program in collaboration with NITIE, Mumbai in Visionary Leadership of Manufacturing; Common Engineering Facility Centre in collaboration with Automation Industry Association; and active participation in the Uchhatar Avishkar Yojana and the IMPRINT schemes of MHRD. There are also multiple Centers of Excellence created with participation of external agencies and industries at IIT Delhi.

IIT Delhi has been organizing Open House to exhibit an extensive collection of innovative research and product development projects to school children consecutively for the past ten years. The twelfth edition of Open House was held successfully on 21st April, 2018. Open House targets, among other audiences, young school kids in NCR region and the footfall is approximately 5000 visitors in a day. Open House serves as a learning platform to learn new things, an intellectual hub where one can interact with students from various other institutes and also as a venue where the latest developments in technology and engineering are exhibited.

The Institute celebrated Industry Day on 22nd September, 2018. This one-day event brought together academic researchers and businesses from across various sectors to forge engagement opportunities and identify future research project ideas for development. The event had a footfall of close to 1000 visitors, including industry experts and other delegates, making it a great opportunity for networking between industry professionals and researchers. The event brought together over 350 industry experts to discuss major collaborations and build relationships between industry and academia based on current societal requirement. Industry Day 2018 focused on five themes - Healthcare for All, Smart Manufacturing, Artificial Intelligence and Blockchain Technologies, Sustainable Habitat and Strengthening the Start-up Eco-system.

In an effort to boost innovation and research, a Technology Park has been formally inaugurated at the IIT Delhi Sonipat extension campus on April 3, 2018. Chief Minister of Haryana Shri Manohar Lal Khattar was the chief guest on the occasion. Dr. Satya Pal Singh, Minister of State, HRD and Mr. Ram Vilas Sharma, Minister of Education in Haryana government were also present. Construction work is currently underway for another Technology Park on the main campus at IIT Delhi while the third Technology Park in the IIT Delhi Jhajjar campus is in the planning stages. Thirty Three (33) infant technology startups striving to solve problems in fields ranging from automobiles to health, biotechnology and heritage conservation have also been incubated at IIT Delhi. The startups founded by IIT alumni get mentoring, infrastructure support and funding through the Foundation for Innovation and Technology Transfer (FITT), IIT Delhi.

FITT has been at the forefront in managing several innovation and entrepreneurship programs in the country. As a nodal agency in several Government schemes, FITT administers programs of - The Ministry of Micro, Small and Medium Enterprises (MSME) for promoting and supporting innovation amongst micro and small enterprises leveraging the knowledge resources at IIT Delhi; Ministry of Electronic and Information Technology (DietY) seed support in the broad area of ICT is also forthcoming under the "Technology Incubation and Development of Entrepreneurs" (TIDE) scheme; Technology Development Board (TDB)'s scheme for the specific purpose of providing early stage financial support to start-up units incubated at IIT Delhi's TBIU and a Partner of BIRAC (DBT) towards implementing their Biotechnology Ignition Grant (BIG) scheme in the country. FITT is in association with Pfizer, for implementation of the Pfizer IIT Delhi Innovation and IP Program, thereby providing financial grant support : i) Upto ₹50 lakhs to

healthcare based innovators/start-ups for incubation and ii) ₹3 lakhs for IP protection for selected applicants.

Under the NIDHI-Seed Support System (NIDHI-SSS) program of DST, introduced in the year 2017, FITT provides funding to incubate start-ups upto ₹1 crore. So far nine incubatees have been supported by seed funding to the tune of ₹3.24 crores. The BioNest program of BIRAC, which is under implementation at FITT, has provided seed grant upto ₹55 lakhs to three biotech start-ups. FITT has been promoting the Women Entrepreneurship and Empowerment (WEE) program supported by the Department of Science and Technology (DST) at IIT Delhi. WEE classes were conducted during the weekends at IIT Delhi with the global industry experts mentoring the woman entrepreneurs. During the 3rd phase of this WEE program 14 women were shortlisted for the award. The Deferred Placement Policy (DPP) offered by IIT Delhi is being implemented by FITT for students who opt out of placement in order to inculcate their start-up idea. A student must opt for deferred placement in the final semester of the pre-final year and is eligible to sit for placement after two years if their start-up is not successful. Selected innovative ideas are eligible for incubation at the TBIU. In the year 2018-19, six applicants have been shortlisted under DPP.

IIT Delhi signed MOUs with Indian Council of Agriculture Research (ICAR) and All India Institute of Ayurveda (AIIA) for implementing multi-disciplinary R&D activities. IIT Delhi and ICAR intend to pursue research in areas of mutual interest including agriculture, IT, electronics, information and communication, IT based societal development. The collaboration with AIIA is aimed towards boosting research in the field of Ayurveda.

Defence Innovation Organisation- Innovation for Defence Excellence (DIO-IDEX), Ministry of Defence India has entered into an MoU with FITT on March 1, 2019 to support start-ups and innovators in Defence and Aerospace.

Teams have been constituted, lead by Deans/Deputy Directors to visit 7 countries (Bangladesh, Ethiopia, Iran, Malaysia, Sri Lanka, Uzbekistan, and Vietnam) for promoting foreign Ph.D. and attracting the best talent from these countries. Visits to Bangladesh and Malaysia trips have already been undertaken.

The Institute has announced International Ph.D. Fellowship Program (IPFP) for admission of foreign Ph.D. Research scholars in IIT Delhi. Under this program, 500 fellowships have been made available under IoE with provisions for same fellowship and fee at par with the Indian students. Posters made for this program have been sent to 250 Universities (SAARC, African & East European countries). A Workshop for Counsellors/Ambassadors of different

countries was also organized on 1st February, 2019 by the Institute to share more details of this program and initiative for admission of foreign students. Around 155 foreign students have applied under this program.

The Institute has initiated a Ph.D. Startup Incubator Program designed primarily to support innovators and entrepreneurs to carry forward a promising deep technology idea and generate proof of concept to validate the idea. This program will facilitate entrepreneurs working in deep technology domains to take the quantum leap towards commercialization. Under this program, a seed grant would be provided to these ventures as translational grant.

An IIT Delhi-TCS Research Day was organized on 21st January at IIT Delhi with the objective of understanding the research synergies under the five themes and identifying the areas of collaboration. The themes included Life Sciences Research; Energy and Utilities Research; Manufacturing Research; A Session on 5G Technology; and Deep Dive on AI and Machine Learning. Participants included Scientists and Research Heads of TCS, IIT Delhi faculty members and student community. The TCS Speakers highlighted current technology trends, business cases while IITD speakers shared specific research activities being carried out in respective areas. IITD Start-Ups also exhibited their products. Lab visits were also undertaken by the Research Heads and Senior Scientists of TCS to understand the research capabilities at IIT Delhi.

Foundation Day of IIT Delhi was celebrated on 28th January, 2019. Prof. K. Vijay Raghavan, Principal Scientific Advisor to the Govt. of India delivered Foundation Day Lecture on the topic "Science for the People and the People for Science".

MHRD approved formation of a Section-8 Company to be operated by the Consortium of IITs, viz., IIT Delhi, IIT Madras and IIT Kharagpur, for the purpose of undertaking accreditation activities.

### Internationalization

In the changing global scenario, international rankings have become important for IIT Delhi. International rankings call for a significant internationalization of the campus and global outreach. This year has been a milestone year for the institute in this respect. IIT Delhi has partnered with a leading Australian institution, the University of Queensland (UQ) to launch its first ever international joint Ph.D. program. We signed the historic agreement at IIT Delhi on September 22, 2018 formalizing a mutual goal to build diverse and sustainable partnerships. The UQ-IITD Academy of Research (UQIDAR) will pave the way for students and academics to partner on projects addressing some of the



most pressing issues affecting India, Australia, and global communities. Open to all disciplines, the UQIDAR will enable students to gain a global qualification from both IITD and UQ, a university ranked among the world's top 50. We are also in discussions with NCTU, Taiwan to launch a Joint Ph.D. Programme with support of semiconductor industries. Our target is to reach a number of 1000 International students at IIT Delhi by 2021.

MOUs/Agreements for teaching and research collaboration, cooperation and exchange programmes have been executed with many international universities/institutions/organizations including Chalmers University, University of Tokyo, Osaka University, Universidad de Santiago de Compostela (Spain), Hiroshima University, Amsterdam University of Applied Sciences, University of Essex, The ARC Center of Excellence for Climate Extremes Australia, The International Committee of The Red Cross, The University of Newcastle Upon Tyne (UK), The University of Queensland, Technical University of Munich International Centre, Leibniz-Institut für Polymerforschung Dresden and The Board of Trustees of the University of Illinois.

### Human Resource Development

To enhance the efficiency of our employees, many training programs are regularly conducted including Executive Development programs for the officers. To encourage the employees to work in Hindi and also in compliance with the direction of the government, special training programmes were also conducted for use of Hindi in official transactions. The Institute is in the advanced stage of implementing the ERP System for a paperless work environment to automate its operations in all the functional areas. It has already implemented many modules online. The recruitment process for staff is in full swing as per the Recruitment Rules approved by the Board of Governors, which will equip the Institute with adequate manpower for efficient functioning. Recruitment of faculty at different levels is being carried round the year through open advertisement and as a result of which faculty strength has been increased to a considerable level.

The Institute extends good medical facilities to the serving and retired employees through IIT Hospital, CGHS recognized hospitals and medical insurance scheme. The Hospital is well equipped to take care of primary emergencies.

### Training and Placement

Under the Training & Placement activity, a start-up intern and job fair was held in April, 2018 in collaboration with the Entrepreneurship Development Cell (eDC) of IIT Delhi. A Career Conclave based on the theme "Careers in the

Industry 4.0 Era" was held to help the student body as a whole to gain fresh insights into the employers' perspective on potential recruits by interacting with opportunity providers and talent custodians from industry prior to the start of interview processes. Another new initiative introduced this year included a Campus to Corporate workshop on "Ways of Winning @ Work" held in April, 2018 to help students transition from academic to work life by sensitizing them to behavioral norms expected by organizations from professionals in the work environment. During this period, the T&P Unit received job requisitions from 373 Companies for 543 job profiles, as a result of which 765 students were placed. A total of 829 job offers were received (56 students got multiple jobs) and 36 students got selected for opportunities abroad. Approximately 90% students who registered for placement got placed through T&P. The remaining opted for higher studies/research or are working on their own start-up ideas or got jobs through off-campus recruitments.

### Infrastructure Development

IIT Delhi, having been conferred with Institution of Eminence status by the Government of India, has undertaken several new infrastructure projects. Some of the notable projects recently taken up include - Construction of one 836-seater boys hostel; Construction of one 326-seater girls hostel; Redevelopment of 96 Married students' apartments; Construction of six towers of Faculty accommodation comprising 152 apartments; Indoor sports complex with partial support from Alumni; Construction of ₹325 crore Research & Innovation Park; and Construction of Central Research Facility building at Sonapat. Construction of state-of-art Chemistry Lab in the Lecture Hall Complex has been completed. We have redeveloped our sport fields and facilities. Provision of Open Gym at multiple locations of IIT Delhi for the benefit of the students and the campus community with the funding support from Ms. Meenakshi Lekhi, Hon'ble MP of Lok Sabha for this region from the MPLAD scheme is also in progress. The Institute has also taken up construction of sewage treatment plants for IIT sewage, the treated water of which will be recycled to reduce the raw water demand from Delhi Jal Board and simultaneously reduce the load on municipal sewer. This project is likely to be completed and commissioned by December 2018. Besides, we are also adding 750 KW solar power generation system to our already existing 2MW solar power capacity to reduce our dependency on the conventional power; and we have taken measures to become zero waste campus in the next one year. We are also planning to take up new construction activities in Sonapat and Jajjhar campuses of IIT Delhi, which will primarily host modern and collaborative research labs, incubation

centres, etc. The Institute has also made consistent efforts in upgrading its infrastructure to cater to the needs of its expansion plans and for better amenities. Besides planning and building new hostels and additional academic space, the Institute is also engaged in a massive exercise of renovation of old houses, hostels and sports facilities.

### Faculty Awards/Recognitions

Our faculty members are among the finest in the country and are recognized internationally for their quality of research, teaching and curriculum development. They also contribute greatly for the development of the nation by being associated with a large number of decision making bodies, providing crucial guidance and advice on policy matters and technical issues. Our distinguished faculty colleagues continue to make a difference to the world of Science, Engineering, Humanities and Management and continue to earn recognitions and awards which bring glory to the Institute. Many of them have been bestowed with honors, awards and elected as Fellows of several professional national and international bodies during the last one year.

I am particularly happy to inform you that Prof. Amit Kumar, Department of Computer Science & Engineering, has been awarded the prestigious Shanti Swarup Bhatnagar Prize in Mathematical Sciences, the highest scientific recognition in India for researchers, for the year 2018.

Prof. Ravinder Kaur, Department of Humanities & Social Sciences, has been awarded "Delhi School of Economics Distinguished Alumni Award". Prof. M. Balakrishnan, Department of Computer Science & Engineering has been elected as a Fellow of the Indian National Academy of Engineering. Prof. M. Balakrishnan, along with Prof. P.V.M. Rao, Department of Mechanical Engineering, have also been honoured with the National Award for Improving the Accessibility for the Differently Abled through S&T interventions. Prof. S.K. Khare, Department of Chemistry, has been elected Fellow of the Royal Society of Chemistry. Prof. Santosh Kapuria, Department of Applied Mechanics and Prof. Ranjan Mallik, Department of Electrical Engineering have been awarded the J.C. Bose National Fellowship by DST. Prof. Bhim Singh, Department of Electrical Engineering, has been appointed as Chairperson of the Board of Governors of Maulana Azad National Institute of Technology, Bhopal. He has also received the Faculty Research Award from Careers360 which is a premier education advisory company. Prof. G. Bhuvanewari, Department of Electrical Engineering, has been selected for 2018 IEEE PES Wanda Reder Pioneer in Power Award. Prof. C.T. Dhanya, Department of Civil Engineering, has been awarded with Science and Engineering Research

Board (SERB) Women Excellence Award 2018. Prof. P.V. Madhusudhan Rao, Department of Design, has been awarded with the Abdul Kalam Technology Innovation National Fellowship by Department of Science & Technology, Govt. of India. Prof. Ravi Shankar, Department of Management Studies, received the Outstanding Faculty Award for the year 2018 from MHRD with the citation "Most Proficient Faculty of India" in the domain of Business, Management and Accounting. Prof. V.K. Vijay, Centre for Rural Development and Technology, has been appointed as a Member of the BOG of IIT Bhilai. Prof. Santanu Chaudhary, Department of Electrical Engineering, has been appointed as Director of IIT Jodhpur. Prof. Manan Suri, Department of Electrical Engineering, has been honored by MIT Technology Review as one of the top 10 Innovators under 35 from India. He has also been selected for the IEEE EDS Early Career Award for the year 2018. Prof. Subrat Kar has been awarded "IETE Prof. S.V.C. Aiyar Memorial Award-2017" for significant contributions in "Academic guidance, teaching and research contributions to the field of telecommunications". Prof. Debanjan Bhowmik received Associateship (2017-2022) from the Indian Academy of Sciences. Prof. Swades De has been elected as a Fellow of the National Academy of Sciences India (NASI).

### Alumni Activities

Our alumni have given donations to help us take some of our important projects forward, in addition to instituting Chairs and the Young Faculty Incentive Fellowships, both of which help us to reward our bright faculty for their outstanding performance. The alumni of the Batch of 1969 have signed an MoU with IIT Delhi on February 18, 2019 to establish an annual award named the "Batch of 1969 Innovation Fellow (Award)". To set up a special fund for this Award, the Batch of 1969 has collectively contributed over ₹1 Crore with an aim to promote a spirit of innovation and entrepreneurship among the graduating students at IIT Delhi.

The Alumni Development Office is now fully functional with its own manpower. This office is working as the Office of Alumni Relationships (OAR) and is working for deepening the relationship between the Institute and its Alumni through various events, alumni portal activities and campaigns. Mentorship opportunities have been created on the Institute Alumni portal. A number of students have already benefitted out of this and many others have applied under this programme which is being supported by alumni and others. IIT Delhi lays great emphasis on interaction between the alumni and the alma mater. We are proud of our alumni and their achievements. The success of the alumni is one of the most important yardsticks by which we measure our achievements.

As a part of its outreach initiatives, the Institute celebrated its Golden Jubilee Reunion (Batch 1968 and 1969), Alumni Day, Silver Jubilee Reunion (Batch 1994), Pearl Reunion (1984 Batch). These Reunions played an important role in further deepening the bond of mutual love and respect that has existed between the Institute and its Alumni.

Apart from active engagement of Alumni during the year, AAIP office has taken important steps under its International Programmes portfolio. IIT Delhi Launched International Ph.D. Fellowship Programmes on Feb 12th 2019. A delegation led by Prof. H.E. Khalid Samadi, Secretary of State for Higher Education and Scientific Research, Ministry of National Education, Vocational Training, Government of the Kingdom of Morocco visited the Institute on January 22nd 2019 in connection with bilateral cooperation with IIT Delhi.

The Institute also organized 'Giving Week' this year starting on 8th March, 2019. It was the time when we could all come together to support the Institution, to which we owe a lot for what we are today, and made a huge and significant impact that left a legacy to be cherished forever. The initiative was a success with about ₹25 lakhs being collected during the campaign from donors across different continents. The funds so generated will be utilized in consultation with the Alumni Advisory Committee of the Institute.

### Student's Activities

The Institute organized various student related activities including literary, cultural and sports from time to time during the year in which the students participated actively and won prizes and awards. IIT Delhi won the General Championship at the 53rd Inter IIT Sports Meet held at IIT Guwahati.

### Convocation and Alumni Awards

The 49th Convocation of the Institute was held on 3rd November, 2018. Ms. Anu Aga, who is an Indian billionaire

business woman and social worker and who led Thermax, an energy and environment engineering business, as its chairperson from 1996 to 2004, was the Chief Guest.

The Institute recognizes the outstanding contributions made by the alumni in various areas by conferring the Distinguished Alumni Awards each year. This award is the highest honor conferred by the Institution to its alumni to recognize their achievements and outstanding contributions to academics, business, profession and/or public service. This year the awards were conferred at the Convocation on Dr. V.N. Padmanabhan, (B.Tech., CSE, 1993), Principal Researcher, Microsoft Research India for contributions in Teaching and Research; Mr. Sumant Sinha, (B.Tech., Civil Engineering, 1987), Chairman & Managing Director, ReNew Power Limited for Corporate Business Development and Entrepreneurship; and Mr. R.H. Dalmia, (B.Tech., Mech. Engineering, 1972), President, OCL India Limited for Public Service and Policy.

Finally, I would like to acknowledge the support received in abundant measure from the Ministry of Human Resource Development, the various sponsoring agencies, the collaborating industries, institutions and alumni. I also personally acknowledge the support and encouragement I have received from the Chairman and Members of the Board of Governors, and from all my colleagues, and extend my appreciation to the students for their exemplary behavior and their contributions towards enriching the campus life.

Wishing IIT Delhi to reach new heights!

Jai Hind!

**Director**

Indian Institute of Technology Delhi  
Email: [director@admin.iitd.ac.in](mailto:director@admin.iitd.ac.in)

## Our Mission

- To generate new knowledge by engaging in cutting-edge research and to promote academic growth by offering state-of-the-art undergraduate, postgraduate and doctoral programmes;
- To identify, based on an informed perception of Indian, regional and global needs, areas of specialization upon which the Institute can concentrate;
- To undertake collaborative projects which offer opportunities for long-term interaction with academia and industry;
- To develop human potential to its fullest extent so that intellectually capable and imaginatively gifted leaders can emerge in a range of professions.



## Dreaming big.....

### In the formative stages:

*Prof. R. N. Dogra,  
the founding Director,  
IIT Delhi  
detailing the model of  
the Institute's building*



## HISTORY

The concept of the IITs was first introduced in a report in the year 1945 by Shri. N. M. Sircar, then member of Education on Viceroy's Executive Council. Following his recommendations, the first Indian Institute of Technology was established in the year 1950 in Kharagpur. In his report, Shri Sircar had suggested that such Institutes should also be started in different parts of the country. The Government having accepted these recommendations of the Sircar Committee decided to establish more Institutes of Technology with the assistance of friendly countries who were prepared to help. The first offer of help came from USSR which agreed to collaborate in the establishment of an Institute through UNESCO at Bombay. This was followed by the Institutes of Technology at Madras, Kanpur and Delhi with collaborations with West Germany, USA and UK, respectively.

The Institute was later declared an Institute of National Importance under the "Institutes of Technology (Amendment) Act, 1963", re-named as "Indian Institute of Technology Delhi", and accorded the status of a deemed university.

The Institute has been declared as the "Institute of Eminence" by the Govt. of India in 2018.

Decades later, the sixth IIT was established in Guwahati (1994). India's first technical institute, set up in 1847 and known as the Thomson College of Engineering and subsequently the University of Roorkee, was ordained as the seventh IIT in September 2001. In the year 2008, six new IITs were started: IIT Bhubaneswar, IIT Gandhinagar, IIT Hyderabad, IIT Patna, IIT Jodhpur and IIT Ropar. This was followed by two more IITs in 2009: IIT Indore and IIT Mandi. In 2012, Institute of Technology, BHU was designated the sixteenth IIT. Other six new IITs in Tirupati, Palakkad, Dhanbad, Bhilai, Goa and Jammu, were established in 2015-16, along with the conversion of ISM Dhanbad to IIT.

Presently Indian Institute of Technology Delhi is one of the twenty three Institutes of excellence for higher education, research and development in science, engineering and technology, humanities & social sciences, and in management in India; the others are at Bhilai, Varanasi, Bhubaneswar, Bombay, Dhanbad, Dharwad, Gandhinagar, Goa, Guwahati, Hyderabad, Indore, Jammu, Jodhpur, Kanpur, Kharagpur, Madras, Mandi, Palakkad, Patna, Roorkee, Ropar and Tirupati.

## STATUS

Indian Institute of Technology Delhi is an autonomous statutory organisation of the Government of India functioning within the "Institutes of Technology Act, 1961" as amended by the "Institutes of Technology (Amendment) Act, 1963". It is accorded the status of a deemed university with

powers to frame its own academic policy, to conduct its own examinations, and to award its own degrees. The twenty three Institutes of Technology are coordinated by an apex body known as IIT Council with the Minister for Human Resource Development of the Government of India as its Chairman.

## OBJECTIVES

The objectives of the Institute include :

- Offering instruction in applied sciences, engineering and technology, and management at a level comparable to the very best anywhere in the world;
- Providing leadership in curriculum planning, laboratory development and examination system;
- Developing programmes for faculty development both for its own staff and for teachers of other engineering institutions;
- Developing close collaboration with industry through exchange of personnel and undertaking consultancy projects;
- Developing strong collaboration links with other academic and research institutions in the country and abroad;
- Developing a continuing education programme for employed engineers and making it available both on campus and by distance learning techniques at off campus locations;
- Preparing manpower for the unorganised sector and for self-employment.

## CAMPUS

The Institute campus extends over an area of 320 acres. Tastefully laid out with the picturesque landscape and with numerous buildings of various types and, with clean and wide roads, the campus presents a spectacle of harmony in architecture and natural beauty. The campus area has been divided into four functional zones:

- Residential zone for students;
- Residential zone for the faculty and other supporting staff;
- Academic zone for academic buildings and workshops; and
- Cultural-cum-social and recreational zone for students.



IIT Delhi Campus Map

The site being longitudinal in shape, the academic and social-cum-cultural zones have been located mid-way between the two residential zones in order to reduce walking distance. The campus provides several essential amenities for community living like hospital, shopping centre, banks, post office, community centre, staff club, students activities centre, stadium and playing fields etc.

IIT Delhi has been extending its boundaries. One extension campus has been established in Sonapat, Haryana over 50 acres of land allocated by Haryana Govt. A Technopark filled with high class facilities has been set-up there. Another extension campus is planned in Jhajjar, Haryana over 50 acres of land.

## BOARD OF GOVERNORS AND ITS COMMITTEES

IIT Delhi is an autonomous organisation of the Government of India. Responsibility for the general superintendence, direction and control of the affairs of the Institute is vested in the Board of Governors. The Board functions through its standing committees — the Finance Committee, the Buildings & Works Committee and other committees which may be constituted to consider specific issues. The compositions of the Board of Governors during the period from April 1, 2018 to March 31, 2019 is as follows:

### BOARD OF GOVERNORS



**Kumar Mangalam Birla**  
*Chairperson*  
*(upto January 17, 2019)*

V. Ramgopal Rao

*(Officiating Chairperson from January 18, 2019)*

Punya S. Srivastava (Ms.)/Devinder Singh

Akshai Aggarwal

Ashok Gupta

Shashi Wadhwa (Ms.)

S.K. Sopory

Vijay Thadani

Sandeep Chatterjee, Secretary

Nalin Pant

S.V. Veeravalli

M. Balakrishnan

## ADMINISTRATION

The Director is the principal academic and executive officer of the Institute and is responsible for the proper administration of the Institute and for the imparting of instruction and maintenance of discipline therein. He is assisted in his day to day work by Deputy Director(s), Registrar, Deans, Associate Deans and senior faculty of the Institute. The senior members of the Administration during the period from April 1, 2018 to March 31, 2019 are as follows:

### DIRECTOR



**V. Ramgopal Rao**  
*Director*

### DEPUTY DIRECTORS



**Ashok Gupta**  
*D. D. (Operations)*



**M. Balakrishnan**  
*D. D. (Strategy & Planning)*

## DEANS



**Bhim Singh**  
Dean, Academics



**Sandeep Sen**  
Dean, Faculty  
(16-08-2016 to 31-08-2018)



**Sudipto Mukherjee**  
Dean, Faculty  
(01-09-2018 to Present)



**B.R. Mehta**  
Dean, R & D



**T.R. Sreekrishnan**  
Dean, Student Affairs  
(16-08-2016 to 31-08-2018)



**Rajesh Khanna**  
Dean, Student Affairs  
(01-09-2018 to Present)



**V.K. Agarwal**  
Dean, Infrastructure  
(16-08-2016 to 31-08-2018)



**K.C. Iyer**  
Dean, Infrastructure  
(01-09-2018 to Present)



**Sanjeev Sanghi**  
Dean, AA & IP

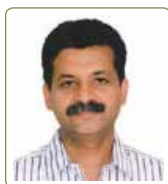


**Kanika T. Bhal**  
Dean, Planning  
(01-09-2018 to Present)

## ASSOCIATE DEANS



**Shantanu Roy**  
Asso. Dean, Acad. (PGR)



**Joby Joseph**  
Asso. Dean, Acad. (Curri.)



**Subrat Kar**  
Asso. Dean, Faculty



**S.K. Khare**  
Asso. Dean, R&D



**A.K. Saroha**  
Asso. Dean, S.A. (H.M.)  
(16-08-2016 to 31-08-2018)



**Arvind K. Nema**  
Asso. Dean, S.A. (H.M.)  
(01-09-2018 to Present)



**James Gomes**  
Asso. Dean, S.A. (Events)  
(16-08-2016 to 31-08-2018)



**Bishwajit Kundu**  
Asso. Dean, S.A. (Events)  
(01-09-2018 to Present)



**Sangeeta Kohli**  
Asso. Dean, S.A. (Welfare)  
(16-08-2016 to 31-08-2018)



**Angelie Multani**  
Asso. Dean, S.A. (Welfare)  
(01-09-2018 to Present)



**Bishwajit Kundu**  
Asso. Dean, Infrastructure  
(04-09-2017 to 31-8-2018)



**Abhijit R. Abhyankar**  
Asso. Dean, Infrastructure  
(01-09-2018 to Present)



**Deepti Gupta**  
Asso. Dean, Infrastructure



**Anurag S. Rathore**  
Asso. Dean, Corporate Relations

## REGISTRAR



**Sandeep Chatterjee**



# Academic Units at IIT Delhi

(April 1, 2018 - March 31, 2019)

The major academic units of the Institute are the departments, centres and schools. Interdisciplinary research is organized in programmes. The activities of departments include teaching at all levels and research. The centres focus on interdisciplinary research and some teaching, mostly at the postgraduate level.

The various academic units are listed below.

Departments	Interdisciplinary Centres	Schools
1. Applied Mechanics	1. Applied Research in Electronics	1. Bharti School of Telecommunication Technology and Management
2. Biochemical Engineering and Biotechnology	2. Atmospheric Sciences	2. Amar Nath and Shashi Khosla School of Information Technology
3. Chemical Engineering	3. Biomedical Engineering	3. Kusuma School of Biological Sciences
4. Chemistry	4. Energy Studies	4. School of Interdisciplinary Research
5. Civil Engineering	5. Industrial Tribology Machine Dynamics and Maintenance Engineering Centre	5. School of Public Policy
6. Computer Science and Engineering	6. Instrument Design & Development Centre	
7. Design	7. Rural Development and Technology	
8. Electrical Engineering	8. National Resource Centre for Value Education in Engineering	
9. Humanities and Social Sciences		
10. Management Studies		
11. Materials Science and Engineering		
12. Mathematics		
13. Mechanical Engineering		
14. Physics		
15. Textile Technology		

IIT Delhi has 15 departments. Each department has its own administration structure with the Head of the Department (HoD) at the top of it. The (HoD) heads the department appointed for a period of two years (extendable by one more year) after which a new head is appointed. Each department offers a programme (at the undergraduate or post-graduate level), while some departments such as Mechanical Engineering Department offer two or more undergraduate level programmes and some departments collaborate with each other to offer a joint programme. An example of the latter is the M.Tech. in Optoelectronics and Optical Communications programmes, which is offered by the Department of Physics and Department of Electrical Engineering. The DMS (Department of Management Studies), IIT Delhi came into existence in 1993 by an amendment to IIT Delhi statutes. The department offers a two year full time MBA programme with focus on Management Systems, a two year full time MBA with focus on Telecommunication Systems Management and a three year part time (evening) MBA programme with focus on Technology Management.

An interdisciplinary centre differs from a department in the fact that it deals with an overlap of two or more disciplines of engineering or science. Similar to the departments, the centres also offer programmes though they offer these courses only at the post-graduation level.

To extend its research activities and academic outreach further, the Institute has established two departments and two schools namely Department of Design, Department of Materials Science & Engineering, School of Interdisciplinary Research and School of Public Policy.

# Current Degree Programmes

(April 1, 2018 - March 31, 2019)

The Institute offers undergraduate and postgraduate programmes in a number of areas leading to the degrees of B.Tech./M.Sc./M.Tech./M.S.(R)/M.Des./MBA and Ph.D. in Science, Engineering & Technology, Humanities & Social Sciences and Management. The Institute also offers Diploma (DIIT) in Naval Construction for the Naval Officers. The primary objective of these teaching programmes is to offer instruction in applied sciences, engineering, and management at a level comparable to the very best anywhere in the world. This is achieved through an undergraduate curriculum, which places a strong emphasis on the understanding of fundamental principles as well as specialised knowledge, a postgraduate programme, distinguished by its interdisciplinary approach and emphasis on research.

## Pedagogy

Teaching at the Institute incorporates a cohesive, contextual and nurturing environment for learning. The emphasis is on self-motivated learning by using information, experience and practice. The teaching methodology aims at using the inputs from core functional areas to interdisciplinary issues and problem solving. Students undertake classroom and workshop assignments, conduct field observations, make presentations and participate in group discussions and seminars and are encouraged to develop industry linkages.

## Evaluation

The academic year consists of two semesters and a summer

term. The education system is organised around a credit system, which ensures continuous evaluation of student's performance and provides flexibility to choose courses of interest and to progress at an optimum pace suited to a student's ability or convenience. Each course is assigned certain number of credits depending upon the class contact hours. A minimum number of credits and CGPA are to be completed satisfactorily in order to qualify for the award of a degree.

The medium of instruction is English.

## Curriculum Development

The Senate of the Institute is constantly engaged in reviewing and approving new courses to improve the curriculum. This year several new minor area programmes have been designed with a view to offer a second area of specialization.

Under a new Academic Welfare Scheme introduced by the Institute this year for weak students, a special student advisor is identified in each department for students who need special help, at the beginning of each semester. Extra classes are conducted for such students and the student advisor closely monitors the attendance and performance of these students and also provides support to help improve their performance.

The undergraduate and postgraduate programmes are managed by the Board of Academic Programmes (BAP). The composition of BAP as on 31.03.2019 is as follows:

## BOARD OF ACADEMIC PROGRAMMES (BAP)

Prof. Bhim Singh, Chairperson	Prof. Apurba Das	Prof. Arun Kumar	Prof. Shantanu Roy
Prof. Vivek V. Buwa	Prof. Samrat Mukhopadhyay	Prof. Hariprasad P.	Prof. Joby Joseph
Prof. Paresh Chokshi	Prof. S. Dharmaraja	Prof. Deepak Kumar	Prof. Mukul Sarkar
Prof. S. Arun Kumar	Prof. Anima Nagar (Ms.)	Prof. Jyoti Kumar	Prof. Anupam Shukla
Prof. Amitabha Bagchi	Prof. T.R. Sreekrishnan	Mr. Pardeep Kumar Gupta	Mr. Sahil Kumar Kargwal
Prof. R. Ayothiraman	Prof. D. Sundar	Prof. Amit Gupta	Mr. Amit Choudhary
Prof. Shashank Bishnoi	Prof. Anupam Dewan	Prof. B.K. Satapathy	Mr. Shreyansh Maloo
Prof. Jayadeva	Prof. S. Nagendran	Prof. C.S. Dey	Mr. Pradeep Kundu Thoklang
Prof. A.R. Abhyankar	Prof. Kamlesh Singh	Prof. Lallan Kumar	Mr. Deewan Sonam
Prof. A. Ray	Prof. Ravi Shankar	Prof. Parag Singla	Mr. Abhinav Arora
Prof. Sujeet K. Sinha	Prof. A.D. Rao	Prof. Siddharth Pandey	Mr. Jashan Singh Suri
Prof. Pankaj Srivastava	Prof. Veena Koul (Ms.)	Prof. B.R. Chahar	Mr. Suresh Kumar Gohar
Prof. Joyee Ghosh (Ms.)	Prof. Ashu Verma (Ms.)	Prof. S. Dharmaraja	Mr. Atul Vyas, Secretary

## Current Degree Programmes

Below is the list of courses offered currently.

### UNDERGRADUATE STUDIES\*

Bachelor of Technology [B.Tech.] Duration : 4 years	Dual Degree Programme [B.Tech. and M.Tech.] Duration : 5 years
Biochemical Engineering & Biotechnology	B.Tech. and M.Tech. in Biochemical Engineering & Biotechnology
Chemical Engineering	B.Tech. and M.Tech. in Chemical Engineering
Computer Science & Engineering	B.Tech. and M.Tech. in Computer Science & Engineering
Civil Engineering	B.Tech. and M.Tech. in Mathematics & Computing
Electrical Engineering	
Electrical Engineering (Power and Automation)	
Mathematics & Computing	
Mechanical Engineering	
Production and Industrial Engineering	
Engineering Physics	
Textile Technology	

\* Admission to the first year of the four year B.Tech., 5-year dual degree programmes is made through a Joint Entrance Examination (JEE) Advanced which is common for all the Indian Institutes of Technology.

### POSTGRADUATE STUDIES & RESEARCH (MASTERS PROGRAMMES)\*\*

M.Sc. 2 years	M.Tech. 2 years	M.S. (Research) 2 years	M.Des. 2 years
1. Chemistry 2. Mathematics 3. Physics	1. Engineering Analysis and Design 2. Biomedical Engineering 3. Chemical Engineering 4. Molecular Engineering: Chemical Synthesis and Analysis 5. Construction Technology and Management 6. Geotechnical & Geoenvironmental Engineering 7. Structural Engineering 8. Water Resources Engineering 9. Construction Engineering and Management 10. Rock Engineering of Underground Structures 11. Environmental Engineering and Management 12. Transportation Engineering 13. Computer Science & Engineering 14. Control and Automation 15. Communications Engineering 16. Power Electronics, Electrical Machines & Drives 17. Computer Technology 18. Integrated Electronics & Circuits 19. Power Systems 20. Thermal Engineering 21. Production Engineering 22. Industrial Engineering 23. Mechanical Design 24. Tele-communication Technology and Management 25. VLSI Design Tools and Technology 26. Radio Frequency Design & Technology 27. Solid State Materials 28. Applied Optics 29. Atmospheric Oceanic Science Technology 30. Fibre Science & Technology 31. Textile Engineering 32. Textile Chemical Processing 33. Energy Studies 34. Industrial Tribology & Maintenance Engineering 35. Polymer Science & Technology 36. Opto-electronics & Optical Communication 37. Instrument Technology	1. Applied Mechanics 2. Biochemical Engg. & Biotechnology 3. Chemical Engineering 4. Computer Science & Engineering 5. Electrical Engineering 6. Civil Engineering 7. Mechanical Engineering 8. Telecommunication Technology and Management 9. Biological Sciences 10. Information Technology	1. Industrial Design

contd. ....

### POSTGRADUATE STUDIES & RESEARCH (MASTERS PROGRAMMES)\*\*

M.B.A.	M.B.A.	D.I.I.T.
2 years Full Time	3 years Part Time	1½ years
1. Management Systems 2. Telecommunication Systems Management	1. Technology Management	1. Naval Construction

\*\*The admission to full-time M.Tech. programmes is made on the basis of performance in the Graduate Aptitude Test in Engineering (GATE) — an All India entrance test—and interview at the Institute. A limited number of students are also admitted on part-time basis from amongst working professionals alongwith the regular full-time students, subject to their satisfying certain academic and experience requirements.

### DOCTORATE PROGRAMMES

The Institute offers research opportunities for doctoral research in all its Departments/Centres/Schools. Creative and productive enquiry is the basic concept underlying the research work. In order to overcome any deficiency in the breadth of fundamental training or proper foundation for advanced work, special preliminary or pre-doctoral courses are suggested by each department/centre/school. The award of Ph.D. is in recognition of high achievements, independent research and application of scientific knowledge to the solution of technical and scientific problems. The Institute lays special emphasis on India-centric research activities.

The following Departments / Centres / Schools of the Institute offer Doctorate programmes:

DEPARTMENTS / CENTRES / SCHOOLS	
Applied Mechanics	Applied Research in Electronics
Biochemical Engineering and Biotechnology	Atmospheric Sciences
Chemical Engineering	Biomedical Engineering
Chemistry	Energy Studies
Civil Engineering	Industrial Tribology, Machine Dynamics & Maintenance Engineering
Computer Science and Engineering	Instrument Design and Development
Design	Rural Development and Technology
Electrical Engineering	National Resource Centre for Value Education in Engineering
Humanities and Social Sciences	Amar Nath and Shashi Khosla School of Information Technology
Management Studies	Bharti School of Telecommunication Technology and Management
Materials Science and Engineering	Kusuma School of Biological Sciences
Mathematics	School of Interdisciplinary Research
Mechanical Engineering	School of Public Policy
Physics	Transportation Research & Injury Prevention Programme
Textile Technology	

### JOINT DOCTORATE PROGRAMME

Apart from the above, the institute also offers a Joint Ph.D. Programme in participating with University of Queensland, Australia.

### BOARD OF EDUCATIONAL AND RESEARCH PLANNING (BERP)

Board of Educational and Research Planning is the chief planning and policy making body of the Institute for its teaching and research activities. Head of the Planning unit is the Member - Secretary of BERP. The planning unit prepared ground work for all the matters to be considered by BERP. The recommendations of BERP are forwarded to the Senate for approval. BERP is also responsible for the short and long term educational and research planning of the Institute. The composition of the Board of Educational and Research Planning as on March 31, 2019 is as follows:

BOARD OF EDUCATIONAL AND RESEARCH PLANNING		
<b>V. Ramgopal Rao,</b> Director (Chairperson)	<b>B.R. Mehta,</b> Dean (R&D)	<b>S.R. Kale,</b> Nominee of Senate
<b>M. Balakrishnan,</b> Dy. Director (Strategy & Planning)	<b>T.R. Sreekrishnan/Rajesh Khanna,</b> Dean (Student Affairs)	<b>N.G. Ramesh,</b> Nominee of Senate
<b>Ashok Gupta,</b> Dy. Director (Operations)	<b>Sanjeev Sanghi,</b> Dean (AA&IP)	<b>Satyawati Sharma (Ms.),</b> Nominee of Senate
<b>Bhim Singh,</b> Dean (Academics)	<b>V.K. Agarwal/K.C. Iyer,</b> Dean (Infrastructure)	<b>Kanika T. Bhal (Ms.),</b> Dean (Planning) - Member Secretary
<b>Sandeep Sen/Sudipto Mukherjee,</b> Dean (Faculty)		



# 5. Performance Highlights

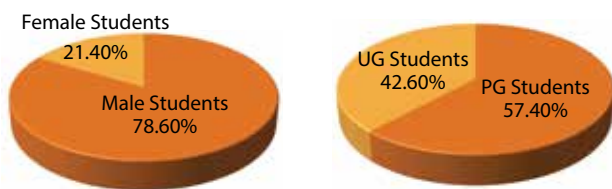
(April 1, 2018 - March 31, 2019)

# Performance Statistics

(April 1, 2018- March 31, 2019)

# 1

*IIT Delhi has been ranked in the First Position by India Today and Third Position by NIRF amongst all the Engineering Colleges in India.*



## 378

Scholars received the Ph.D. degree

## 8864

Total students on roll

## 3778

UG students on roll

## 2616

Research Scholars on roll

## 2470

PG students on roll

## 1894

Female students

## 82

Foreign students from 16 countries



## 74

Awards/scholarships/medals given at the Undergraduate and Postgraduate level. In addition, the Institute has a "Loan Scholarship Scheme" which makes it more affordable for the students who take loan from banks.

## 697

Research Scholar Admissions



## 44

New faculty members joined the institute this year.

## 1142

PG Admissions

## 906

UG Admissions

## 602

Faculty and Academic Staff

## 697

Non-academic Staff

## 2745

Total Admissions

## 98

Faculty Fellows under CEP

117

Operational MoUs/Agreements with Foreign Institutions/Organisation

317

New Sponsored Research Projects with a total funding of ₹347.52 crores.

35

MoUs/Agreements Indian Institutions/Organizations



349

Consultancy Jobs with a total value of ₹45.73 crores.



2070

Research articles published by the faculty members and researchers of the institute in international journals

22

Collaborative Projects/Consultancies with International Funding



1800

Articles indexed in Scopus, an international indexing service in Science & Technology and Social Sciences

1626

Printed books added under the Central Library Collection



190

Titles of E-books added under the Central Library Collection

44

New Courses Proposed/Initiated/Developed by Faculty

448

Companies visited for Placement



71

QIP/CEP/TEQIP/GIAN Courses

1075

Total Job Offers

74

Major New Equipment Installed

934

Total Placements

588

UG Placements



251

Seminars/Conferences/Workshops/Lectures

346

PG Placements



# Admissions

(April 1, 2018 - March 31, 2019)

Academic programmes at IITD cover a wide range of science and engineering disciplines. In IITD's Bachelor's programmes, which are the most sought after even on global scales, and for which the entry is through the Joint Entrance Examination, the intake has steadily increased for the last few years and during the year 2018-2019, 3,778 UG students were on roll. These figures include 424 female students. The enrolment of postgraduate students during the year 2018-2019 was 5086. These figures include 1,470 female students. There were 82 foreign students from 16 countries pursuing undergraduate and postgraduate education at the Institute during the year 2018-2019. In order to make IIT Delhi more international in character and to make better use of international intellectual resources, the administration is constantly working towards increasing the strength of international students and faculty in the campus.

The Ministry of Human Resource Development, Government of India, has emphasized the need to increase the admission of foreign nationals under the self-financing scheme. The Institute has taken necessary steps in this regard and we hope to increase the strength of the foreign nationals in the coming years.

## ADMISSION PROCEDURE

### Undergraduate

Admission to all Undergraduate Programmes listed before are made through the Joint Entrance Examination (JEE) Advanced. The eligibility for appearing for JEE is as follows:

- The minimum academic qualification is the final examination of 10+2 system or its equivalent. The candidates belonging to the general category and OBC must secure a minimum of 60% marks in aggregate in their Qualifying Examination. Candidates belonging to SC, ST and PD categories must secure a minimum of 55% marks in aggregate in the Qualifying Examination. If any Board awards only letter grades without providing an equivalent percentage of marks

on the grade sheet, the candidate should obtain a certificate from the Board specifying equivalent marks, and submit it at the time of counselling.

Those appearing in 10+2 final or its equivalent examination may also appear in JEE for consideration of Provisional admission. All provisional admissions stand cancelled if proof of having passed the qualifying examination (10+2 or equivalent) is not submitted before September 30th of the year in which admission is sought.

### Postgraduate

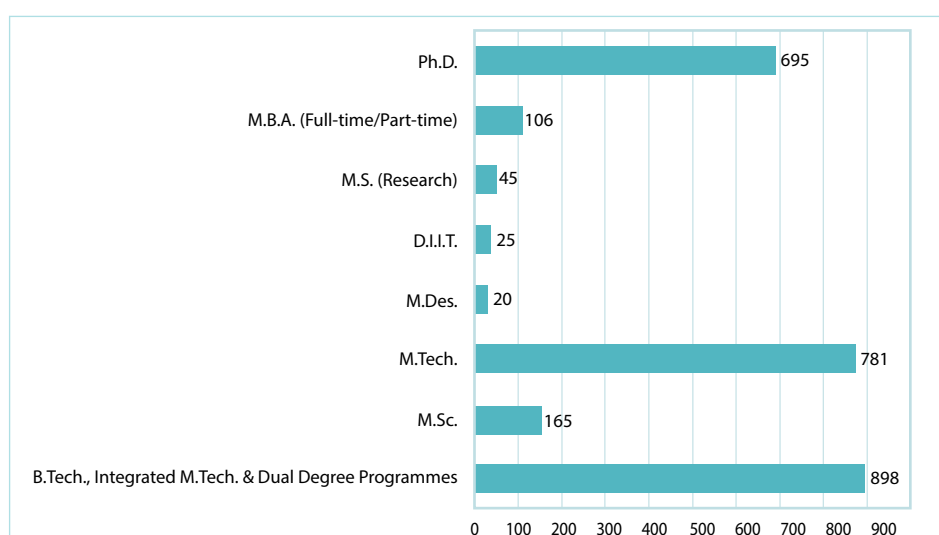
The admission to full-time M.Tech. programmes is made on the basis of performance in the Graduate Aptitude Test in Engineering (GATE) — an All India entrance test, and interview at the Institute. A limited number of students are also admitted on part-time basis from amongst working professionals along with the regular full-time students, subject to their satisfying certain academic and experience requirements.

Admission to the 2-year M.Des. Programme in Industrial Design is made on the basis of Common Entrance Examination for Design (CEED).

Admission to the MBA Programme is made on the basis of Common Admission Test (CAT), and for M.Sc. Programme applicant has to come through Joint Admission Test for M.Sc. (JAM).

All applications are processed by the concerned Department/Centre/School/Programme and shortlisted applicants are called for a written test and/or interview. The date for test / interview is communicated by the Department/Centre/School Programme. Selected candidates are given offer letters by the Departments/Centres/Schools after approval of the selection by the Dean, Academics. They are required to pay the first installment of fees by a given date, failing which their admission offer stands automatically cancelled. Seats so released are then offered to wait listed candidates.

Fig. 1: Programme wise details of total number of admissions in 2018-2019.



## COURSES AND ADMISSIONS

Following Tables (I, II, III) give the details regarding the admissions in the given period in different courses offered at IIT Delhi. Table IV and V show the total number of students enrolled in different departments and centres. Category-wise distribution of students in different programmes is given in Table VI.

**Table I: Break-up of Admissions through Joint Entrance Examination during 2018-2019 according to the Various Disciplines**

Discipline	Sanctioned Strength	Actual Admissions
B.Tech. in Biochemical Engineering and Biotechnology (BB1)	45	45
B.Tech. in Chemical Engineering (CH1)	75	74
B.Tech. in Civil Engineering (CE1)	105	106
B.Tech. in Computer Science & Engineering (CS1)	68	77
B.Tech. in Electrical Engineering (EE1)	75	85
B. Tech. in Electrical Engineering (Power and Automation) (EE3)	45	49
B. Tech. in Mathematics & Computer Applications (MT1)	36	39
B.Tech. in Mechanical Engineering (ME1)	68	78
B.Tech. in Production Engineering (ME2)	67	74
B.Tech. in Engineering Physics (PH1)	60	59
B.Tech. in Textile Technology (TT1)	105	104
M.Tech. in Mathematics & Computer Applications (5-year Integrated) (MT6)	20	23
B.Tech. and M.Tech. in Computer Science & Engineering (5-year Dual Degree) (CS5)	22	25
B.Tech. and M.Tech. in Chemical Engg. (5-year Dual Degree) (CH7)	45	45
B.Tech. and M.Tech. in Biochemical Engineering and Biotechnology (5-year dual Degree) (BB5)	15	15

**Table II: Students Admitted to First Year of the M.Tech./M.Des./M.S.(R)/D.I.I.T./M.B.A./M.Sc. Programmes as on August 01, 2018 (the last date for late registration in 1st Semester 2018-2019)**

Programme	Students with Institute Assistantship	Others (including part-time students)	Total
<b>Master of Technology (M.Tech.)</b>			
<b>Department of Applied Mechanics</b>			
Engineering Analysis and Design (AMA)	50	10	60
<b>Department of Chemical Engineering</b>			
Chemical Engineering (CHE)	32	9	41
<b>Department of Chemistry</b>			
Molecular Engg.: Chemical Synthesis and Analysis (CYM)	8	2	10
<b>Department of Civil Engineering</b>			
Geotechnical & Geoenvironmental Engineering (CEG)	16	0	16

Table II, contd.

Structural Engineering (CES)	20	11	31
Water Resources Engineering (CEW)	14	2	16
Rock Engineering & Underground Structures (CEU)	18	5	23
Construction Engineering and Management (CET)	21	1	22
Construction Technology and Management (CEC)	0	30	30
Environmental Engineering and Management (CEV)	18	4	22
Transportation Engineering (CEP)	8	5	13
<b>Department of Computer Science &amp; Engineering</b>			
Computer Science & Engineering (MCS)	22	7	29
<b>Department of Electrical Engineering</b>			
Integrated Electronics & Circuits (EEN)	13	1	14
Communications Engineering (EEE)	15	6	21
Control & Automation (EEA)	16	0	16
Power Electronics, Electrical Machines & Drives (EEP)	11	3	14
Computer Technology (EET)	21	2	23
Power System (EES)	16	5	21
<b>Department of Mechanical Engineering</b>			
Thermal Engineering (MET)	28	6	34
Mechanical Design (MEM)	26	5	31
Production Engineering (MEP)	20	1	21
Industrial Engineering (MEE)	7	2	9
<b>Department of Physics</b>			
Applied Optics (PHA)	22	1	23
Solid State Materials (PHM)	21	0	21
<b>Department of Textile Technology</b>			
Textile Engineering (TTE)	18	0	18
Fibre Science & Technology (TTF)	16	0	16
Textile Chemical Processing (TTC)	9	2	11
<b>Centre for Applied Research in Electronics</b>			
Radio Frequency Design and Technology (CRF)	14	11	25
<b>Centre for Atmospheric Sciences</b>			
Atmospheric-Oceanic Science & Technology (AST)	10	1	11

Table II, contd.

Biomedical Engineering (BMT)	6	0	6
<b>Interdisciplinary Programmes</b>			
Energy Studies (JES)	26	2	28
Industrial Tribology & Maintenance Engineering (JIT)	13	2	15
Instrument Technology (JID)	16	1	17
Polymer Science & Technology (JPT)	14	2	16
Opto-electronics & Optical Communication (JOP)	20	4	24
VLSI Design Tools & Technology (JVL)	0	15	15
<b>Bharti School of Telecommunication Technology &amp; Management</b>			
Telecommunication Technology and Management (JTM)	18	0	18
<b>Total</b>	<b>623</b>	<b>158</b>	<b>781</b>
<b>Master of Design</b>			
Industrial Design (JDS)	20	0	20
<b>Master of Science</b>			
Chemistry (CYS)	0	56	56
Mathematics (MAS)	3	51	54
Physics (PHS)	3	52	55
<b>Master of Science (Research)</b>			
Mechanical Engineering (MEY)	5	2	7
Civil Engineering (CEY)	1	0	1
Amar Nath and Shashi Khosla School of Information Tech. (SIY)	1	4	5
Bharti School of Telecommunication Tech. & Mgmt. (BSY)	1	1	2
Kusuma School of Biological Sciences (BLY)	2	1	3
Applied Mechanics (AMY)	4	0	4
Computer Science & Engineering (CSY)	0	1	1
Electrical Engineering (EEY)	2	11	13
Chemical Engineering (CHY)	1	4	5
Biochemical Engineering & Biotechnology (BEY)	4	0	4
<b>Master of Business Administration (MBA)</b>			
Technology Management (SMN)	0	36	36
Management Systems (SMF)	0	66	66
Telecommunication Systems Management (SMT)	0	4	4
<b>D.I.I.T.</b>			
Naval Construction (AMX)	0	25	25
<b>Total</b>	<b>670</b>	<b>472</b>	<b>1142</b>

Table III : Research Scholars Admitted in both the Semesters of the Session 2018-2019

Department/Centre/School	Semester-I			Semester-II			Total
	Institute Supported Scholars	Scholars Supported from Other Sources	Other Inclg. Part Time Students	Institute Supported Scholars	Scholars Supported from Other Sources	Other Inclg. Part Time Students	
Applied Mechanics (AMZ)	6	0	0	6	1	1	14
Biochemical Engg. & Biotech. (BEZ)	6	0	0	4	3	0	13
Chemical Engineering (CHZ)	14	16	3	14	8	5	60
Chemistry (CYZ)	17	12	1	4	11	1	46
Civil Engineering (CEZ)	19	12	6	15	5	2	59
Computer Science & Engg. (CSZ)	6	1	0	2	0	0	9
Design (DDZ)	3	1	1	2	0	0	7
Electrical Engineering (EEZ)	30	21	8	17	10	5	91
Humanities & Social Sciences (HUZ)	5	6	2	6	6	1	26
Management Studies (SMZ)	10	8	5	12	12	7	54
Mathematics (MAZ)	8	1	0	7	3	0	19
Materials Science & Engg. (MSZ)	10	2	0	4	1	1	18
Mechanical Engineering (MEZ)	17	2	0	12	10	2	43
Physics (PHZ)	19	30	2	7	20	5	83
Textile Technology (TTZ)	9	0	0	4	5	0	18
Applied Research in Electronics (CRZ)	4	2	1	1	2	1	11
Atmospheric Sciences (ASZ)	4	3	0	2	1	0	10
Biomedical Engineering (BMZ)	4	1	0	1	1	1	8
Energy Studies (ESZ)	4	0	0	6	1	0	11
Rural Development & Tech. (RDZ)	2	6	3	9	7	1	28
Indl. Tribology, Machine Dynamics & Maintenance Engg. Centre (ITZ)	1	1	0	2	0	0	4
Instrumentation Design Development Centre (IDZ)	1	0	0	0	0	0	1
School of Biological Sciences (BLZ)	1	2	0	6	3	1	14
Bharti School of Telecommunication Tech. & Mgmt. (BSZ)	5	6	3	6	1	1	22
Transportation Research & Injury Prevention Programmes (TRZ)	1	2	2	0	0	0	5
National Resource Centre for Value Education in Engg. (NRZ)	0	0	0	0	1	1	2
Amar Nath and Shashi Khosla School of IT (ANZ)	5	5	3	2	0	0	15
School of Interdisciplinary Research (SRZ)	1	4	1	0	1	0	7
<b>Total</b>	<b>212</b>	<b>144</b>	<b>41</b>	<b>151</b>	<b>113</b>	<b>36</b>	<b>697</b>

**Table IV : Total number of M.Tech./M.S.(R)/M.Sc./D.I.I.T./M.B.A. Students on Rolls as on July 31, 2018 (the last date for late registration in Ist Semester, 2018-2019)**

Programme	Institute Supported Students	Students Supported from Other Sources (Include Part-time)	Total
<b>Master of Technology (M.Tech.)</b>			
<b>Department of Applied Mechanics</b>			
Engineering Analysis and Design (AMA)	92	13	105
Engineering Mechanics (AME)	6	2	8
Design Engineering (AMD)	5	0	5
<b>Department of Chemical Engineering</b>			
Chemical Engineering (CHE)	62	12	74
<b>Department of Chemistry</b>			
Molecular Engg. : Chemical Synthesis and Analysis (CYM)	19	2	21
<b>Department of Civil Engineering</b>			
Geotechnical & Geoenvironment Engineering (CEG)	30	4	34
Rock Engineering Underground Structures (CEU)	41	10	51
Structural Engineering (CES)	36	30	66
Water Resources Engineering (CEW)	35	2	37
Environmental Engineering and Management (CEV)	41	7	48
Construction Engineering and Management (CET)	41	9	50
Construction Technology and Management (CEC)	0	61	61
Transportation Engineering (CEP)	23	17	40
<b>Department of Computer Science &amp; Engineering</b>			
Computer Science & Engineering (MCS)	48	20	68
<b>Department of Electrical Engineering</b>			
Integrated Electronics & Circuits (EEN)	24	5	29
Communications Engineering (EEE)	26	11	37
Control & Automation (EEA)	24	0	24
Power Electronics, Electrical Machines & Drives (EEP)	23	7	30
Computer Technology (EET)	44	6	50
Power Systems (EES)	26	15	41
<b>Department of Mechanical Engineering</b>			
Thermal Engineering (MET)	57	8	65
Mechanical Design (MEM)	47	8	55
Production Engineering (MEP)	36	2	38
Industrial Engineering (MEE)	17	5	22
<b>Department of Physics</b>			
Applied Optics (PHA)	39	3	42
Solid State Materials (PHM)	38	3	41
<b>Department of Textile Technology</b>			
Textile Chemical Processing (TTC)	20	3	23

## Admissions

Table IV, contd.

Textile Engineering (TTE)	35	7	42
Fibre Science & Technology (TTF)	33	1	34
<b>Centre for Atmospheric Sciences</b>			
Atmospheric-Oceanic Science & Technology (AST)	21	5	26
<b>Centre for Applied Research in Electronics</b>			
Radio Frequency Design and Technology (CRF)	28	23	51
Centre for Bio-medical Engineering (BMT)	13	0	13
<b>Interdisciplinary Programmes</b>			
Energy Studies (JES)	43	5	48
Instrument Technology (JID)	28	4	32
Industrial Tribology & Maintenance Engineering (JIT)	26	3	29
Polymer Science & Technology (JPT)	30	6	36
Opto Electronics & Optical Communication (JOP)	39	10	49
VLSI Design Tools and Technology (JVL)	0	29	29
Energy and Environment Management (JEN)	0	2	2
Industrial Design (JDS)	38	2	40
Telecommunication Technology and Management (JTM)	32	3	35
<b>Total</b>	<b>1266</b>	<b>365</b>	<b>1631</b>
<b>Master of Business Administration</b>			
Management Studies	0	326	326
<b>D.I.I.T.</b>			
Naval Construction (AMX)	0	56	56
<b>Master of Science</b>			
Chemistry (CYS)	18	92	110
Mathematics (MAS)	24	87	111
Physics (PHS)	19	94	113
<b>Master of Science (Research)</b>			
Applied Mechanics (AMY)	3	1	4
Biochemical Engineering & Biotechnology (BEY)	11	1	12
Chemical Engineering (CHY)	1	3	4
Computer Science & Engineering (CSY)	2	7	9
Civil Engineering (CEY)	1	3	4
Electrical Engineering (EEY)	10	35	45
Mechanical Engineering (MEY)	8	7	15
Bharti School of Telecommunication Technology & Management (BSY)	2	9	11
Kusuma School of Biological Sciences (BLY)	7	2	9
Amar Nath & Shashi Khosla School of Information Technology (SIY)	1	9	10
<b>Grand Total</b>	<b>1373</b>	<b>1097</b>	<b>2470</b>

**Table V : Research Scholars on the Institute Rolls as on July 31, 2018 (the last date for late registration in the 1st semester, 2018-2019)**

Department/Centre/School	Institute Scholarships	Others Scholarships	Part-Time Students	Total
Applied Mechanics (AMZ)	52	6	31	89
Biochemical Engineering & Biotechnology (BEZ)	37	20	4	61
Chemical Engineering (CHZ)	76	62	35	173
Chemistry (CYZ)	46	76	8	130
Civil Engineering (CEZ)	106	47	90	243
Computer Science & Engineering (CSZ)	31	14	8	53
Design (DDZ)	3	2	1	6
Electrical Engineering (EEZ)	174	109	100	383
Humanities & Social Sciences (HUZ)	52	39	38	129
Management Studies (SMZ)	69	38	60	167
Mathematics (MAZ)	25	39	4	68
Materials Science & Engineering (MSZ)	10	6	0	22
Mechanical Engineering (MEZ)	117	44	44	205
Physics (PHZ)	70	131	37	238
Textile Technology (TTZ)	41	19	12	72
Centre for Applied Research in Electronics (CRZ)	24	15	14	53
Centre for Atmospheric Sciences (ASZ)	34	11	8	53
Centre for Biomedical Engineering (BMZ)	27	6	12	45
Centre for Energy Studies (ESZ)	39	13	25	77
Centre for Polymer Science & Engineering (PTZ)	20	5	2	27
Centre for Rural Development & Technology (RDZ)	44	32	26	102
National Resource Centre for Value Education in Engg. (NRZ)	0	0	6	6
Transportation Research & Injury Prevention Prog. (TRZ)	5	0	5	10
Instrument Design & Development Centre (IDZ)	12	0	5	17
Industrial Tribology, Machine Dynamics & Maintenance Engineering Centre (ITZ)	13	5	2	20
Interdisciplinary Research (SRZ)	1	13	1	15
Kusuma School of Biological Sciences (BLZ)	19	46	1	66
Bharti School of Telecommunication Tech. & Mgmt. (BSZ)	26	12	18	56
Amar Nath and Shashi Khosla School of IT (ANZ)	17	8	11	36
<b>Total</b>	<b>1190</b>	<b>818</b>	<b>608</b>	<b>2616</b>

**Table VI : Category and Gender wise distribution of enrolled students in UG and PG courses**

Programme	General		OBC		SC		ST		PH		Total		Grand Total
	M	F	M	F	M	F	M	F	M	F	M	F	
P.G.	1206	327	468	85	231	43	68	16	23	3	1996	474	<b>2470</b>
Ph.D.	1183	809	284	125	126	52	21	9	6	1	1620	996	<b>2616</b>
<b>Total (a)</b>	<b>2389</b>	<b>1136</b>	<b>752</b>	<b>210</b>	<b>357</b>	<b>95</b>	<b>89</b>	<b>25</b>	<b>29</b>	<b>4</b>	<b>3616</b>	<b>1470</b>	<b>5086</b>
<b>B.Tech. (b)</b>	<b>1567</b>	<b>212</b>	<b>902</b>	<b>109</b>	<b>536</b>	<b>59</b>	<b>267</b>	<b>38</b>	<b>81</b>	<b>6</b>	<b>3353</b>	<b>424</b>	<b>3777</b>
<b>Total (a+b)</b>	<b>3956</b>	<b>1348</b>	<b>1654</b>	<b>319</b>	<b>893</b>	<b>154</b>	<b>356</b>	<b>63</b>	<b>110</b>	<b>10</b>	<b>6969</b>	<b>1894</b>	<b>8863</b>



# Academic Performance

(April 1, 2018 - March 31, 2019)

All the IITs follow the credits system of performance evaluation, with proportional weighting of courses based on their importance. The total marks (usually out of 100) form the basis of grades, with a grade value (out of 10) assigned to a range of marks. Sometimes, relative grading is done considering the overall performance of the whole class.

2064 candidates were awarded of various degrees and diplomas of the Institute at the 49<sup>th</sup> Annual Convocation held in November 2018. Details of the same are given in Figure 2 and Tables I, II and III.

Fig. 2: Programme wise details of total degrees/diplomas given in 2018-2019.

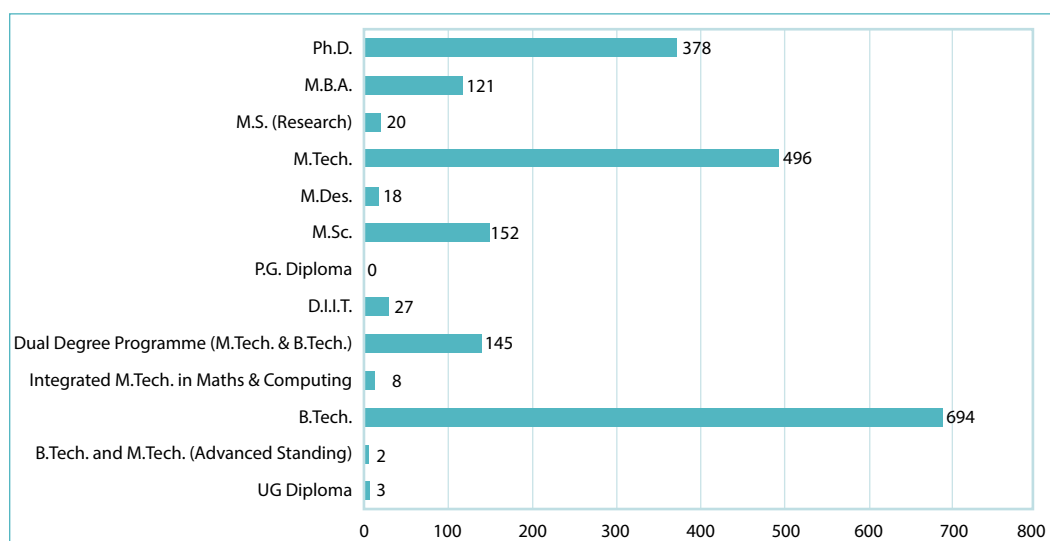


Table I : Number of Undergraduate Students Awarded of Degrees/Diplomas in Convocation 2018

Discipline	No. of Students Passed
<b>5 Year Dual Degree / Integrated</b>	
B.Tech. and M.Tech. in Biochemical Engineering & Biotechnology	33
B.Tech. and M. Tech. in Chemical Engineering	45
B.Tech. and M.Tech. in Computer Science & Engineering	29
B.Tech. in Electrical Engineering and M.Tech. in Information and Communication Technology	1
M.Tech. in Mathematics and Computing	37
Integrated M.Tech. in Mathematics and Computing	8
<b>B.Tech. Degree</b>	
Biochemical Engineering & Biotechnology	31
Chemical Engineering	102
Computer Science & Engineering	76
Civil Engineering	68
Electrical Engineering	75
Electrical Engineering (Power & Automation)	45
Mathematics & Computing	33
Mechanical Engineering	74
Production and Industrial Engineering	53
Engineering Physics	48
Textile Technology	89
B.Tech. and M.Tech. (Advanced Standing)	2
Diploma (Undergraduate)	3
<b>Total</b>	<b>852</b>

**Table II : Number of Postgraduate Students Awarded of Degrees/Diplomas in 2018**

	Programme	No. of Degrees/Diplomas Awarded
<b>(a)</b>	<b>Master of Technology</b>	
	Engineering Mechanics (AME)	13
	Design Engineering (AMD)	22
	Molecular Engineering: Chemical Synthesis & Analysis (CYM)	11
	Chemical Engineering (CHE)	14
	Construction Technology & Management (CEC)	28
	Geotechnical and Geoenvironmental Engineering (CEG)	8
	Structural Engineering (CES)	20
	Water Resources Engineering (CEW)	4
	Rock Engineering & Underground Structures (CEU)	17
	Construction Engineering and Management (CET)	13
	Environmental Engineering and Management (CEV)	8
	Transportation Engineering (CEP)	14
	Computer Science & Engineering (MCS)	34
	Control and Automation (EEA)	13
	Communications Engineering (EEE)	19
	Power Electronics, Electrical Machines & Drives (EEP)	4
	Computer Technology (EET)	13
	Integrated Electronics & Circuits (EEN)	8
	Power Systems (EES)	2
	Thermal Engineering (MET)	6
	Production Engineering (MEP)	20
	Industrial Engineering (MEE)	4
	Mechanical Design (MEM)	15
	Energy and Environmental Management (Evening) (JEN)	2
	Atmospheric-Ocean Sciences and Technology (AST)	11
	Instrument Technology (JID)	8
	Applied Optics (PHA)	12
	Solid State Materials (PHM)	13
	Fibre Science & Technology (TTF)	14
	Textile Engineering (TTE)	12
	Radio Frequency Design and Technology (CRF)	24
	Energy Studies (JES)	16
	Industrial Tribology & Maintenance Engineering (JIT)	11
	Polymer Science & Technology (JPT)	19
	Opto-Electronics & Optical Communication (JOP)	23
	VLSI Design Tools and Technology (JVL)	7
	Telecommunication Technology and Mangement (JTM)	14
<b>(b)</b>	<b>Master of Design in Industrial Design (JDS)</b>	18
<b>(c)</b>	<b>Master of Business Administration</b>	
	Management Systems (SMF)	71
	Technology Management (SMN)	30
	Telecommunication System Management (SMT)	20
<b>(d)</b>	<b>D.I.I.T. (2-Year)</b>	
	Naval Construction (AMX)	27*

## Academic Performance

contd.

<b>(e)</b>	<b>Master of Science</b>	
	M.Sc. in Chemistry (CYS)	53
	M.Sc. in Mathematics (MAS)	34
	M.Sc. in Physics (PHS)	49
<b>(f)</b>	<b>Master of Science (Research)</b>	
	Amar Nath & Shashi Khosla School of IT (SIY)	2
	Civil Engineering (CEY)	1
	Biochemical Engineering & Biotechnology (BEY)	5
	Applied Mechanics (AMY)	1
	Electrical Engineering (EEY)	5
	Computer Science and Engineering (CSY)	3
	Mechanical Engineering (MEY)	2
	Bharti School of Telecommunication Technology & Management (BSY)	1
	<b>Total</b>	<b>807 (+27)* = 834</b>

\* (Diplomas Awarded)

**Table III : Number of Ph.D. Degrees Awarded in 2018**

Department/Centre/School	No. of Degrees Awarded
Applied Mechanics (AMZ)	10
Biochemical Engineering & Biotechnology (BEZ)	8
Chemical Engineering (CHZ)	15
Chemistry (CZY)	29
Civil Engineering (CEZ)	40
Computer Science & Engineering (CSZ)	5
Electrical Engineering (EEZ)	41
Humanities & Social Sciences (HUZ)	11
Management Studies (SMZ)	25
Mathematics (MAZ)	13
Mechanical Engineering (MEZ)	36
Physics (PHZ)	22
Textile Technology (TTZ)	8
Centre for Applied Research in Electronics (CRZ)	6
Centre for Biomedical Engineering (BMZ)	14
Centre for Energy Studies (ESZ)	31
National Resource Centre for Value Education in Engineering (NRCVEE)	1
Industrial Tribology, Machine Dynamics & Maintenance Engineering Centre (ITZ)	3
Instrument Design Development Centre (IDZ)	4
Centre for Polymer Science & Engineering (PTZ)	9
Centre for Rural Development & Technology (RDZ)	11
Centre for Atmospheric Sciences (ASZ)	8
Bharti School of Telecommunication Technology and Management (BSZ)	8
Kusuma School of Biological Sciences (BLZ)	13
Amar Nath & Shashi Khosla School of IT (ITZ)	5
Transportation Research and Injury Prevention Programme (TRIP)	2
<b>Total</b>	<b>378</b>

## Academic Performance

For each semester, the students are graded on a scale of 0 to 10 based on their performance, by taking a weighted average of the grade points from all the courses, with their respective credit points. Each semester evaluation is done independently and then the weighted average over all semesters is used to calculate the cumulative grade point average (CGPA). The following table gives the Discipline-wise break-up of CGPA for the two Academic Semesters:

**Table IV: Discipline-wise break-up of CGPA for the two Academic Semesters (Undergraduate Courses) [Academic Session 2017-2018 (2014 Entry Students)]**

Discipline	10.00-9.00	8.99-8.00	7.99-7.00	6.99-6.00	5.99-5.00	4.99-4.00	3.99-3.00	2.99-2.00	Less than 2.00	Total
<b>First Semester</b>										
Dual-Degree in Biochemical Engineering & Biotechnology (BB5)	0	1	5	4	1	1	0	0	0	12
Biochemical Engineering & Biotechnology (BB1)	1	11	8	10	10	0	0	0	0	40
Civil Engineering (CE1)	2	24	34	25	17	0	0	0	0	102
Chemical Engineering (CH1)	3	19	28	15	8	3	0	0	0	76
Dual Degree in Chemical Engg. (CH7)	1	13	7	6	12	1	0	0	0	40
Computer Science & Engineering (CS1)	14	19	20	14	5	1	0	0	0	73
Dual-Degree in Computer Science & Engineering (CS5)	4	6	6	5	3	0	0	0	0	24
Electrical Engineering (EE1)	12	25	27	10	5	1	0	0	0	80
Electrical Engineering (Power) & Automation (EE3)	2	15	9	17	4	0	0	0	0	47
Mechanical Engineering (ME1)	3	23	25	7	10	0	0	0	0	68
Production & Industrial Engg. (ME2)	0	10	17	20	12	1	0	0	0	60
Mathematics & Computing (MT1)	3	10	11	8	6	0	0	0	0	38
Dual-Degree in Mathematics & Computing (MT6)	0	7	4	6	4	1	0	0	0	22
Engineering Physics (PH1)	1	8	13	17	15	1	0	0	0	55
Textile Engineering (TT1)	0	8	33	22	27	4	0	0	0	94
<b>Total</b>	<b>46</b>	<b>199</b>	<b>247</b>	<b>186</b>	<b>139</b>	<b>14</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>831</b>
<b>Second Semester</b>										
Dual-Degree in Biochemical Engineering & Biotechnology (BB5)	1	12	6	10	7	0	0	0	0	36
Biochemical Engineering & Biotechnology (BB1)	0	1	6	3	2	0	0	0	0	12
Civil Engineering (CE1)	2	25	33	26	16	0	0	0	0	102
Chemical Engineering (CH1)	5	17	26	18	7	3	0	0	0	76
Dual-Degree in Chemical Engg. (CH7)	1	13	7	6	13	0	0	0	0	40
Computer Science & Engineering (CS1)	13	18	21	13	6	1	0	0	0	72
Dual-Degree in Computer Science & Engineering (CS5)	4	6	6	5	3	0	0	0	0	24
Electrical Engineering (EE1)	12	24	28	10	5	1	0	0	0	80
Electrical Engineering Power & Automation (EE3)	2	15	9	18	3	0	0	0	0	47
Mechanical Engineering (ME1)	3	24	24	9	8	0	0	0	0	68
Production & Industrial Engg. (ME2)	0	10	20	17	10	2	0	0	0	59
Mathematics & Computing (MT1)	2	11	10	10	4	0	0	0	0	37
Dual-Degree in Mathematics & Computing (MT6)	1	6	4	7	3	1	0	0	0	22
Engineering Physics (PH1)	1	8	14	18	12	0	0	0	0	53
Textile Engineering (TT1)	0	10	31	25	24	5	0	0	0	95
<b>Total</b>	<b>47</b>	<b>200</b>	<b>245</b>	<b>195</b>	<b>123</b>	<b>13</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>823</b>

Table V : Academic Performance of 1st year Students of Postgraduate Programmes

Department/Centre/School	Programme	No. of students admitted (2018)	No. of students qualified to continue*
<b>Master of Technology</b>			
Applied Mechanics	Engineering Analysis and Design (AMA)	60	53
Chemical Engineering	Chemical Engineering (CHE)	41	34
Chemistry	Molecular Engineering: Chemical Synthesis and Analysis (CYM)	10	10
Civil Engineering	Construction Technology and Management (CEC)	30	30
	Geotechnical & Geoenvironmental Engineering (CEG)	16	10
	Structural Engineering (CES)	31	24
	Water Resources Engineering (CEW)	16	9
	Construction Engineering and Management (CET)	22	11
	Rock Engineering of Underground Structures (CEU)	23	14
	Environmental Engineering and Management (CEV)	22	16
	Transportation Engineering (CEP)	13	9
Computer Science & Engineering	Computer Science & Engineering (MCS)	29	27
Electrical Engineering	Control and Automation (EEA)	16	14
	Communications Engineering (EEE)	21	16
	Power Electronics, Electrical Machines & Drives (EEP)	14	10
	Computer Technology (EET)	23	21
	Integrated Electronics & Circuits (EEN)	14	10
	Power Systems (EES)	21	17
Mechanical Engineering	Thermal Engineering (MET)	34	30
	Production Engineering (MEP)	21	18
	Industrial Engineering (MEE)	9	9
	Mechanical Design (MEM)	31	30
Physics	Solid State Materials (PHM)	22	20
	Applied Optics (PHA)	21	17
Bharti School of Telecomm. Technology and Mgmt.	Telecommunication Technology and Management (JTM)	18	12
Applied Research in Electronics	Radio Frequency Design & Technology (CRF)	25	25
Atmospheric Sciences	Atmospheric Oceanic Science & Technology (AST)	11	11
Biomedical Engineering	Biomedical Engineering (BMT)	6	6
Textile Technology	Fibre Science & Technology (TTF)	16	16
	Textile Engineering (TTE)	18	18
	Textile Chemical Processing (TTC)	11	11
Interdisciplinary Programme	Energy Studies (JES)	28	22
	Industrial Tribology & Maintenance Engineering (JIT)	15	14
	Polymer Science & Technology (JPT)	16	15
	Opto-electronics & Optical Communication (JOP)	24	22
	Instrument Technology (JID)	17	17
	VLSI Design Tools and Technology (JVL)	15	13

## Academic Performance

contd.

<b>Master of Science (Research)</b>			
	Applied Mechanics (AMY)	1	1
	Amar Nath & Shashi Khosla School of Information Technology (SIY)	4	4
	Computer Science & Engineering (CSY)	0	0
	Chemical Engineering (CHY)	4	2
	Civil Engineering (CEY)	0	0
	Biochemical Engineering & Biotechnology (BEY)	4	4
	Bharti School of Telecommunication Tech. & Mgmt. (BSY)	2	1
	Kusuma School of Biological Sciences (BLY)	2	2
	Mechanical Engineering (MEY)	5	5
	Electrical Engineering (EEY)	12	11
<b>Master of Design</b>			
	Industrial Design (JDS)	20	20
<b>D.I.I.T. (2 year)</b>			
	Naval Construction (AMX)	25	25
<b>Master of Science</b>			
	Chemistry (CYS)	56	55
	Mathematics (MAS)	54	53
	Physics (PHS)	55	51
<b>Master of Business Administration</b>			
	Technology Management (SMN)	36	36
	Management Systems (SMF)	66	65
	Telecommunication Systems Management (SMT)	4	4
<b>Total</b>		<b>1130</b>	<b>1000</b>

\*The remaining students either left the Institute or failed to meet the minimum C.G.P.A. requirements to continue in the next semester.



# Internship and Placement

(April 1, 2018 - March 31, 2019)

## Training & Placement

Training & Placement activities are guided by an Institute level Committee consisting of faculty members and students. The student committees, i.e. Central Committee at the Institute level as well as Nucleus Committees at departmental level, actively participated in the Training & Placement activities.

As in the past the Training and Placement Unit continued to plan, organise and consolidate the Training and Placement activities for students. It actively interacted with various industrial, technical, management and research organisations in the country. The dual aim of establishing this rapport is to ensure that students are given adequate technical exposure/ industrial training and subsequently get employment in organisations which match their aspirations and objectives.

As in previous years, web based placement services were provided using the internal T&P server this year as well. The students got all information on their desktop PCs/laptops. They applied on-line and could see the progress of their application including the final results. The companies too were issued user names and passwords for accessing and short-listing CVs and uploading their presentations and files. This considerably reduced the conventional pre-placement talks on the campus. The analysis of the past training and placement activities was presented to the students to help them decide their future course of action. Constant liaison with industries was maintained throughout the year to ensure adequate placement and internship opportunities for student across sectors.

This office also organised some pre-placement workshops, panel discussions, practice test series and career counselling talks by distinguished persons from reputed technical, industrial, management and research organisations for the benefit of the students. Some Institute alumni holding very senior positions in private and public sector organisations were also invited to share their personal experiences with the student community of the Institute.

Many new initiatives to increase operational efficiency at the ground level were also initiated by this unit during this year like automating student slotting for interviews etc. T&P participated actively in "Industry Day" of the Institute which was held in September, 2018 by Office of Corporate Relations, IIT Delhi to increase outreach of job opportunities for Ph.D. scholars. Other flagship initiatives included a Career Conclave based on the theme "Prism of Possibilities: Visualise, Improvise,

Realise" held in September, 2018 to help the student body as a whole to gain fresh insights into the employers' perspective on potential recruits by interacting with opportunity providers and talent custodians from industry prior to the start of interview processes. This also had the aim of sensitising students to enable them to make more informed career choices.

## Training / Internship

A personal dialogue with top executives of a large number of industries resulted in better understanding of their functional requirements and training activities. This effort also helped the T&P Unit in the effective planning of summer practical training for 2nd, 3rd and 4th year B.Tech./ Dual degree/Integrated M.Tech. students as well as M.Des. students (from this year onwards), besides obtaining a good number of stipends and other facilities such as transport, accommodation, etc. DMS arranged internships for their students at the departmental level.

Training rules as per the new curriculum guidelines were implemented for the UG students (B.Tech. and Dual degree). Detailed instructions to students were also issued prior to the commencement of the training programme. It was also clarified to students that Design Practical Experience (DPE) norms would apply for availing Non Graded Units (NGU) credits for internships.

## Placement

A letter of invitation for Campus Interviews was sent to a large number of public and private sector organisations especially to those which visited the Institute for campus interviews during the last three years. A large number of them gave electronic copies of their job profiles which were made available to the students through the internal web server. This vigorous drive resulted in job requisitions being obtained from industries from 448 Companies for 572 job profiles with selections on 264 profiles. 934 students were placed while a total of 1075 job offers were received (96 students got multiple jobs) by the Institute including DMS and T&P placements. 49 students got selected for opportunities abroad with 36 of them opting to explore these further. Approximately 87% students who availed T&P/DMS services got placed. The remaining opted for higher studies/research or are preparing for civil services or are working on their own startup ideas or got jobs through their own contacts/efforts. The sector-wise distribution of Student Placements is given in Table I.

**Table I : Sector-wise distribution of Student Placements**

Sector	Students Placed
Analytics	127
Consulting	80
Core (Technical)	296
Finance	25
Information Technology	179
Teaching & Research	8
Management	111
Other	108
<b>Total</b>	<b>934</b>

Ground rules for placement evolved in consultation with the students and faculty members led to a just and equitable distribution of job opportunities amongst the student community.

The discipline wise break-up of the campus placement position is shown in Table II and III.

**Table II : Discipline-wise break-up of On-Campus Placement Position of B.Tech. / Dual degree and 5-year integrated M.Tech. Students during 2018-19**

Discipline	No. of Students Registered	No. of Effective Placements*	No. of Students with more than one job**
<b>(a) B.Tech.</b>			
Biochemical Engineering & Biotechnology	29	28	0
Chemical Engineering	62	52	6
Civil Engineering	45	40	1
Computer Science & Engineering	61	61	11
Electrical Engineering	66	65	8
Electrical Engineering (Power & Automation)	41	40	3
Mathematics & Computing	36	36	5
Mechanical Engineering	64	54	6
Industrial & Production Engineering	42	38	3
Textile Technology	73	58	4
Engineering Physics	25	24	1
<b>(b) Dual / 5-Year Integrated M.Tech. Programmes</b>			
Biochemical Engineering & Biotechnology	11	10	1
Chemical Engineering / Dual Degree	32	28	2
Computer Science & Engineering	22	22	5
Mathematics & Computing	24	24	6
Advanced Standing (Civil, Computer Science, Mechanical)	8	8	1
<b>Total</b>	<b>641</b>	<b>588</b>	<b>63</b>

\* Others got placement via off-campus mode. (Some would have gone for higher studies/research or for Civil Services or are working on their own startup ideas or got jobs through their own contacts/efforts.)

\*\* This is because more than one company declared the results on the same day.



**Table III : On-campus Placement Position of M.Tech. Students during 2018-19**

Department / Interdisciplinary Programme	No. of Students Registered	No. of Effective Placements*	No. of Students with More than one job**
Applied Mechanics	28	23	0
Biomedical Engineering	4	4	0
Atmospheric Sciences	5	1	0
Chemical Engineering	12	10	0
Chemistry	2	0	0
Civil Engineering	24	11	1
Computer Science & Engineering	25	25	5
Electrical Engineering	45	44	8
Mechanical Engineering	41	28	3
Physics	6	3	0
Textile Technology	34	11	0
Energy Studies	7	5	0
ITMMEC	2	2	0
Optoelectronics and Optical Communication	8	7	0
Polymer Science & Technology	8	4	0
Instrument Technology	4	4	1
Design Tools and Technology (VLSI)	7	7	0
Applied Research in Electronics (CARE)	12	12	4
Telecommunication Technology Management	8	7	0
<b>Total</b>	<b>282</b>	<b>208</b>	<b>22</b>

\* Others have got placement via off-campus mode. (Some would have gone for higher studies/research or for Civil Services or are working on their own startup ideas or got jobs through their own contacts/efforts.)

\*\* This is because more than one company declared the results on the same day.

1. In addition 13 M.Des, 08 M.Sc. and 06 MS Research students also were placed through T&P campus activities. DMS runs its placement process for MBA students separately.
2. Total Jobs = B.Tech. + Dual Degree + M.Tech. + M.Sc. + M.S.(R) + M.Des. + MBA = 496+92+208+13+08+06+111=934
3. This data is for students who opted for placement through T&P and DMS. DMS runs its placement process separately.
4. Data on students finally joining the jobs opted on campus not available with T&P.

Ph.D. placements were also facilitated by T&P. PhD profiles were made available to organisations through T&P and scholars were subsequently contacted directly by organizations for further processes.



# Scholarships, Assistantships and Awards

(April 1, 2018 - March 31, 2019)

The Institute believes in the maxim that no deserving student, however weak in financial backing, should be denied the opportunity of education at IIT Delhi. To encourage and to provide financial incentives to meritorious students and assistance to the needy students of the Institute, individuals, trusts and organisations have been instituting scholarships, awards, etc. at the Institute. At present, there are 74 awards/scholarships/medals being given at the Undergraduate and Postgraduate level. This is in addition to more than 3400 students who received awards instituted by the Institute directly in the form of merit-cum-means scholarships, cash prizes and freeships.

A new (UG) scholarship was instituted this year - IONX Scholarship (₹1 Lac).

Below is a summary of cash prizes and merit-cum means scholarships offered to B.Tech. students during the session 2018-2019.

## Scholarships / Assistantships / Freeships and Awards

**Table I : Number of Cash Prizes Merit-cum-Means Scholarships/Freeships offered to B.Tech./Dual Degree Students during the Session 2018-2019**

Class	Cash Prizes (SCHII028)	No. of Scholarships Awarded (SCHII035/ SCHII059)	Free Mess Services (SCHII036)	Freeships for General & OBC (SCHOI305)	PG (SCHII057/ SCHII058)	UG TA (SCHII060)	Sponsored Awards/ Fellowships/ Scholarships*
Year I	74	312	41	0	0	0	38
Year II	107	276	41	0	0	0	37
Year III	99	284	40	0	0	0	18
Year IV	109	118	36	0	0	114	15
Year V	55	0	17	0	111	0	0
Backlog	10	0	0	0	3	0	0
<b>Total</b>	<b>454</b>	<b>990</b>	<b>175</b>	<b>0</b>	<b>114</b>	<b>114</b>	<b>108</b>

**Table II : Assistantships to Dual Degree and Advanced Standing Students during the Session 2018-2019**

Course	No. of Assistantships Renewed (SCHII058/SCHII057)	No. of Assistantships Awarded (SCHII058/SCHII057)
Biochemical Engineering & Biotechnology (BB5)	6	16
Computer Science & Engineering (CS5)	11	25
Electrical Engineering (EE5)	0	0
Chemical Engineering (CH7)	11	38
Mathematics and Computing (MT6)	6	21
Advanced Standing	6	14
<b>Total</b>	<b>40</b>	<b>114</b>

Students pursuing M.Tech./M.Des./M.S.(R) are eligible for Institute assistantship at the time of admission. However, for continuation of the assistantship they have to maintain a minimum SGPA (semester grade point average) at the end of every semester. The table below shows the assistantship awarded to 2018 entry students and renewed to the existing students. A total of 654 students were awarded assistantship in 2018-19.

**Table III: Assistantships Offered to the Students of M.Tech./M.Des./M.S.(R) Programmes during the Session 2018-2019.**

Programme	No. of Assistantships Renewed (Old)	No. of Assistantships Awarded (first year) 2018
<b>Master of Technology (M.Tech.)</b>		
Engineering Analysis & Design (AMA)	43	50
Engineering Mechanics (AME)	6	0
Design Engineering (AMD)	5	0
Chemical Engineering (CHE)	30	32
Molecular Engineering : Chemical Synthesis & Analysis (CYM)	11	8
Geotechnical and Geoenvironmental Engineering (CEG)	14	15
Structural Engineering (CES)	14	20
Construction Engineering and Management (CET)	20	21
Environmental Engineering and Management (CEV)	24	18
Rock Engineering and Underground Structures (CEU)	24	18
Water Resources Engineering (CEW)	20	14
Transportation Engineering (CEP)	16	8
Computer Science & Engineering (MCS)	26	21
Power Electronics, Electrical Machines & Drives (EEP)	13	11
Communications Engineering (EEE)	11	15
Control and Automation (EEA)	8	16
Computer Technology (EET)	24	21
Power System (EES)	13	16
Integrated Electronics & Circuits (EEN)	11	13
Thermal Engineering (MET)	29	28
Production Engineering (MEP)	16	20
Industrial Engineering (MEE)	9	7
Mechanical Design (MEM)	21	25
Applied Optics (PHA)	17	22
Solid State Materials (PHM)	17	21
Textile Engineering (TTE)	18	18
Textile Chemical Processing (TTC)	12	9
Fibre Science & Technology (TTF)	18	16
Atmospheric-Oceanic Science & Technology (AST)	11	10

## Scholarships, Assistantships and Awards

contd. ....

Radio Frequency Design and Technology (CRF)	15	14
Biomedical Engineering (BMT)	7	6
Energy Studies (JES)	17	25
Industrial Tribology & Maintenance Engineering (JIT)	13	13
Polymer Science & Technology (JPT)	16	14
Opto-electronics & Optical Communication (JOP)	20	20
Instrument Technology (JID)	11	16
Telecommunication Technology and Management (JTM)	16	18
<b>Master of Design</b>		
Industrial Design (JDS)	18	20
<b>Master of Science (Research)</b>		
Biochemical Engineering & Biotechnology (BEY)	6	4
Bharti School of Telecommunication Technology & Management (BSY)	2	1
Amar Nath & Shashi Khosla School of Information Technology (SIY)	2	1
Computer Science & Engineering (CSY)	0	0
Civil Engineering (CEY)	1	0
Electrical Engineering (EEY)	8	2
Chemical Engineering (CHY)	0	0
Mechanical Engineering (MEY)	6	4
Applied Mechanical (AMY)	2	1
Biological Sciences (BLY)	5	1
<b>Total</b>	<b>666</b>	<b>654</b>

List of the merit-cum-means scholarships awarded for M.Sc. is as follows:

**Table IV : Merit-cum-means Scholarships Awarded to M.Sc. Students**

		2017	2018
Chemistry	Year I	14	14
	Year II	14	14
Mathematics	Year I	13	14
	Year II	12	13
Physics	Year I	09	14
	Year II	06	14
<b>Total</b>		<b>68</b>	<b>83</b>

Nine M.Tech. students of the Institute had gone to Germany under the DAAD Scholarship Scheme to do part of their thesis research under the Indo-

German collaboration program. The 17<sup>th</sup> batch of 9 students for this year has been selected and they departed in September 2018.

### STUDENT'S AWARDS/ACHIEVEMENTS/PAPERS

#### Applied Mechanics

- Student Kalash Gupta (2018CS10346) awarded for Prof. R.K. Mittal Excellence award of ₹10,000/- by Department of Applied Mechanics.
- Student Ananye Agarwal (2017CS10326) awarded for Prof. R.K. Mittal Excellence award of ₹10,000/- by Department of Applied Mechanics.
- Lt. C.V. Sandeep Kumar received Shri Paramanandhan Gold Medal of the chief of the Naval Staff for Best Academic Performance in DIIT (NC) Course.
- Lt. Anand S. Nair and Lt. Nishtha Uniyal received Commodore Garg Silver Medal of the Vice Chief of the Naval Staff for Best Design Project and Dissertation in DIIT (NC) Course.
- Captain Mohan Ram Medal for Best Minor Project - Lt. C.V. Sandeep Kumar.

#### Biochemical Engineering and Biotechnology

- Omkar Vinchure received EMBO short term fellowship.
- Ms. Srishti Srivastava received Second prize in poster presentation by CDD press at 3rd Pan IIT Biotech Meet, 2019 at IIT Chennai.
- Gautam Anand received EMBO Short Term Fellowship.
- Ms. Richa Sharma received Best Poster Prize at Ecology of Soil Microorganisms (ESM), in Helsinki, Finland (June 2018).

#### Chemical Engineering

- INDO-CANADA SHASTRI FELLOWSHIP for Collaborative research work awarded to Ms. Firdaus Parveen (Research scholar under the supervision of Prof. Sreedevi U.).
- Members of the Renewable Energy and Chemicals Group at the Department of Chemical Engineering IIT Delhi (Ms. Shelaka Gupta, Dr. Md. Imteyaz Alam, Dr. Tuhin S. Khan, Mr. Ejaz Ahmad, Ms. Fatima Jalid and Prof. M. Ali Haider) received the Gandhian Young Technological Innovation (GYTI) Award 2018 at the Rashtrapati Bhavan from the Honorable President of India on 19th March 2018.
- Ms. Anamika Tiwari (Ph.D. scholar) selected for TCS RSP program.

#### Chemistry

- Shubhrima Ghosh was awarded Research Excellence Best Poster Award at Bio-Innovation for Environmental and Health Sustainable Developments" (BEHSD-2018) conference, CSIR-IITR, Lucknow.
- Syeda Warisul Fatima presented Oral talk at 3rd International conference on ADC Development & Manufacture SELECTBIO-2018 "Antibody Drug Conjugates" in Le Méridien, Bengaluru.
- Ms. Poonam Sharma, received "Late Dr. Jayshree Daoo Award" by INDIAN WOMEN SCIENTISTS' ASSOCIATION. The award is for a bright girl student pursuing Ph.D. in any field of science (₹15,000).
- Ms. Preeti Jha, received NASI-Swarna Jayanti Puraskar (2018) for best paper presentation during 88th Annual Session of

National Academy of Sciences, India, Chitrakoot, India.

- Ms. Preeti Jha, Ph.D. received "Best Paper Award" in 50th Annual Conference of the Society of Nuclear Medicine, India: SNMICON2018, Chandigarh, India.
- Anirban Das presented a poster titled "Photoelectrocatalytic studies on Titania."
- Supported Au Nanoparticles" at ICONSAT2018 held at Bengaluru.
- Vaishali Sethi visited Photon Factory, KEK, Japan to perform Synchrotron Small- angle X-ray measurement from 27th February - 2nd March 2018.

#### Civil Engineering

- "Suzuki Foundation Fellowship" awarded to Mr Tathagata Roy at the Toyohashi University of Technology, Japan.
- "Professor Amiya Basu Research Award in Civil Engineering" awarded to Mr Tathagata Roy at the Indian Institute of Technology (IIT) Delhi, India.
- "IACMAG Doctoral Research Award" conferred to Mr. Daniel Habtamu Zelleke by the International Association for Computer Methods and Advances in Geomechanics (IACMAG) at the Indian Institute of Technology (IIT) Gandhinagar, India.
- "Best Paper Awards for Young Engineers" awarded to Ms. Smrutirekha Sahoo, Co-authored by Dr. Bappaditya Manna, at International Symposium on "Geotechnics of Transportation Infrastructure (ISGTI 2018)", Organized by Indian Geotechnical Society, IIT Delhi, 7-8 April, 2018.
- "Best Technical Paper Presentation" of Technical Session – 5, awarded to Mr. Prasun Halder, Co-authored by Dr. Bappaditya Manna, at 7th Indian Young Geotechnical Engineers Conference, NIT Silchar, 15-16 March, 2019.
- Selected for "Indo-U.S. Women Overseas Student Internship" in Science, Technology, Engineering, Mathematics and Medicine (WISTEMM) Program 2018 Call Awards.
- Exchange Ph.D. student under Erasmus+ ICM KA 107 to Universidad Santiago de Compostela - September 2018 to December 2018.
- Visiting Ph.D. student to Centre for Advanced Structural Analysis (CASA), NTNU-Norwegian University of Science and Technology (NTNU), Norway - May 2018 to July 2018.
- ICEM 2018 Conference Attendance Award at the 18th International Conference on Experimental Mechanics going to be held in Brussels, Belgium from 1-5 July, 2018.

#### Computer Science and Engineering

- Ph.D. student Himanshu Jain's paper: "Slice: Scalable Linear Extreme Classifiers trained on 100 Million Labels for Related Searches" wins best paper award at TheWebConference, 2018.
- Rahul Jain wins the Best Ph.D. Thesis Award at the recently concluded 32nd International Conference on VLSI Design and 18th Intl. Conf. on Embedded Systems for his thesis titled "Machine Learned Machines: Reinforcement Learning Exploration for Architecture Co-optimization".

- A team of three students from CSE/SIT, Anupam Sobti, Ayushi Agarwal and Saurabh Tewari, won the first prize in the Cadence Tensilica Hackathon held on 5th January as a part of Embedded and VLSI Design Conference 2019. The theme of the hackathon was "Porting deep Neural Network for Cadence® Tensilica® AI Processor".
- Sandeep Chandran has been awarded the FITT "Best Industry Relevant Ph.D. Project in IIT Delhi" Award for his Ph.D. thesis titled "FlexDFD: Flexible DFD Hardware for Efficient Post-silicon Validation" for the year 2017-18.

### Design

- Samarth, an IIT Delhi student-led innovation by Master of Design (M.Des) students, Amit Kumar and Rituparna Guha won the national leg of James Dyson award. Samarth is an assistive mechanism to provide an easy, safe and convenient way of shifting wheel chair users, from wheelchair to other mediums such as beds etc. by easing the life of care givers.
- An assistive technology innovation by Archit Matta, Ayush Kumar, and Bhavya Kaushik, B.Tech. students of IIT Delhi has won the First prize in the RESNA18 Student Design Competition held at Washington DC, USA. They came up with DEIASO, a smart band which alerts hearing Impaired personnel during crisis situations. The team also won this year's Project Technovation award as a part of 8th Edition of Maruti Suzuki 'Colors of Youth' Competition.
- Project 'Praanam' by Master of Design (M.Des.) students Prankur Kataria and Priyanka Rai has won the "What Design Can Do: Clean Energy Challenge 2019" under student category. Praanam is a portable window attachment which will decrease the energy consumption, designed for cities like Delhi where rapid building construction results in high demand for energy consumption. It's a product which will help in cooling as well as purification of air entering houses through windows.
- Abhishek Dahiya and Naveen Kumar, Ph.D. students of Department of Design, IIT Delhi, secured first position in student design challenge, at DEW 2016, a design workshop organized by IIITDM Jabalpur in collaboration with the Ministry of Foreign Affairs, Japan.

### Electrical Engineering

- Mr. Akash Nayak (2016EET2634) selected for 'Dr. Shivraj Nandan Sinha Medal' in the area of Bio-Medical Engineering.
- Ms. Neha Gupta (2015EES2505) selected for 'K.S. Prakasa Rao Memorial Award' for obtaining the highest CGPA amongst the graduating class of EES.
- Ms. Neha Gupta (2015EES2505) selected for 'Prof. J. Nanda Cash Award' for obtaining the highest CGPA amongst the graduating class of EES.
- Mr. Rupam Basak (2016EEP2613) selected for 'IEEE-PEDES'96 Award' for securing top position in the batch of graduating students of EEP.
- Amita Giri (2017EEZ8183) receives the most prestigious Prime Minister's Research Fellowship (PMRF) award.

### Humanities and Social Sciences

- Ruhi Sonal wins TCS research scholarship.

### Management Studies

- Rajinder Partap Singh and Maninder Singh from Executive MBA 2016-19 were a part of the competition conducted by the 500 Startups and Kejora Ventures, Indonesia at The Harvard Project for Asian and International Relations (HPAIR), The Harvard's Asia Conference, Kuala Lumpur, Malaysia. In the team of 5- Rajinder Singh from DMS, IITD, along with the delegates Jerom (Philippines), Ho Long (Hongkong), Aurelie (Malaysia), and Pratik (India) with diverse backgrounds, and Rajinder being the only management student in team, he got opportunity to lead the team. Their Team won the First Position in this IC Pitch 3.
- MBA students, Ankit Agrawal & Sujoy Sengupta for finishing as runner up at trilogy 2018 conducted by IIM, Lucknow-Team Pacifiers (Naushi Khare) Meghdipa Dey, Nikunj Garg) for being Runners up at National Finals of Inscribe 2017 by Bosch India.

### Materials Science and Engineering

- Sumbul Hafeez & Smrutirekha Mishra student of Prof. Leena Nebhani received Consolation award in open house demonstration in 2018 - IIT Delhi.
- Agni Biswal student of Prof. Sampa Saha received Research Excellence Travel Award and CSIR Travel Grant Award
- Srijita Purkayastha, student of Prof. A.K. Ghosh, received Best Poster Award, "Conference: Innovative Food packaging techniques and its safety aspects", Title: "Single layered blown film of LDPE/PA6/Nanoclay for high performance characteristics" on 10 May, 2019.
- Bariya Qayyum, student of Prof. A.K. Ghosh received Best Poster Award, Conference: "10th International Conference on Advancements in Polymeric Materials, APM-2019", Topic: "Preparation of surface modified nanocellulose (NFC) and Development of PLA/nanocellulose bio-nanocomposites based blown films" on 22 January, 2019 at CIPET, Chennai.
- Smrutirekha Mishra student of Prof. Leena Nebhani received 3rd prize for oral presentation at Young researchers symposium -IIT Delhi 2019.
- Amit Kumar student of Prof. Leena Nebhani received consolation prize at Young researchers symposium -IIT Delhi 2019.

### Physics

- Shubham Jain, Surabhi Gupta, Kaavya Sahay, B.Tech. EP 2nd Year received Gold Medal Rank in 2019 University Physics Competition.
- Shashank Gahlaut received "IITDAA - Research and Innovation Award" at Open House 21st April, 2018 at IIT Delhi.
- Following students of Saswata Bhattacharya:
  - a. Best Poster by Ekta Arora in Jawaharlal Nehru Technological University, Hyderabad from 3-6 October, 2018 in "International Conference on Nano Science and Engineering Applications".
  - b. Best Poster awards (individually) to both Shikha Saini, Pooja Basera and Ekta Arora in the "International Workshop on Nano/Micro 2d-3d Fabrication, Manufacturing of Electronic - Biomedical Devices &

Applications" at IIT Mandi 31 October to 2 November, 2018 at IIT Delhi.

- c. Best ASM poster award to Shikha Saini in ASM 2019, 6-10 March, 2019 at IIT Delhi.
- d. Best RSC poster awards (individually) to both Pooja Basera and Ekta Arora in ASM 2019, 6-10 March, 2019 at IIT Delhi.
- e. Best contributed oral presentation by a Ph.D student was award to Pooja Basera in ASM 2019, 6-10 March, 2019 at IIT Delhi.

### Textile Technology

- Anand Yadav (2015TT10869) received 2nd Prize, eNOVATE-The BPlan Competition, NSIT, Dwarka, 9 Feb 2019.
- Anand Yadav (2015TT10869) received 2nd Prize, Competition on Innovative Prototypes for Start-ups, 45th meet of National Research Development Corporation (NRDC), 30-31 March, Ahmedabad.
- Anand Yadav (2015TT10869) received Incubation Grant, Business Plan Competition for Start-up in 51st meeting of TBIU / BBIF Standing Screening Committee, FITT, IIT Delhi, 16 January, 2019.
- Sahil Kumar Kargwal (2015TT10933) and Parth Dixit (2015TT10920) received 2nd Prize, PAYTM build for India Hackathon 2019, IIT Delhi, 12-13 January, 2019.
- Best Ph.D Student Oral Presentation Award, International Conference AUTEX 2018 –18th World Textile Conference 2018, 20-22 June, 2018 in Istanbul, Turkey.
- Mukesh Bajya, Abhijit Majumdar, B.S. Butola received Best Poster Paper Award, 6th International Conference on Technical Textiles and Nonwovens-2018 held at IIT Delhi during 6-8 December, 2018.
- Sahil Kumar Kargwal (2015TT10933) and Parth Dixit (2015TT10920) received 8th position out of 50, AVSAR - The B-Plan Competition, Bharati Vidyapeeth University, Institute of Management and Research (BVIMR), Delhi, 25 January, 2019.
- Akanksha Pragya (2015TT10862) received 2nd Prize, Poster Competition, Open House 2018, IIT Delhi, 28 April, 2018.
- A. Ghosh, A. Majumdar & B.S. Butola, Soft Body Armour (NIJ IIIA) Development using 3D Woven Aramid Fabrics Reinforced with Shear Thickening Fluid was awarded 1st prize in student oral presentation category at AUTEX 2018 held at Istanbul, Turkey, 10-14 June, 2018.
- Best Poster Award to M Somani in 6th International Conference on Technical Textile and Nonwoven. 7 December, 2018, IIT Delhi, New Delhi, India.
- Awarded BIG Start up Grant (Biotechnology Ignition Grant), BIRAC, DBT, Govt. of India, Title of Proposal: "Antimicrobial water storage containers for underprivileged urban and rural population", Ms. Anasuya Roy (Ph.D. Scholar) IIT Delhi Faculty Mentor: Dr. Mangala Joshi, 44.23 Lakhs, Approved, March 2019, Industry Partner: Water Health India.
- Siddhant Varshney awarded UQ-IIT D Research Academy Fellowship, Under UQIADR (2018-2022).
- Best Poster Award to Joy J, B. Gupta, Ray AR in International

Conference "Road Map-Textiles in 2050" Textile Association India (Delhi), November 17, 2018, New Delhi, India.

- Best poster Award to Ghanshyam Neje on Multilayer spacer weaving in "All India Textile Association Conference" held in Delhi.

### Atmospheric Sciences

- Fullbright-Kalam climate fellowship 9 months to Ms. Sudipta Ghosh to conduct research project on "Toward an improved representation of black carbon aerosols in regional climate models for climate studies in India"
- Prof. M.P. Singh award Mr. Piyush Srivastava (2011ASZ8400)
- Japan Prize at ICUC10 conference held in Newyork to Ph.D. student Mr. Ankur Prabhat Sati on the oral presentation "Comparison of Model Simulated in Context of Increasing Urbanization over National Capital Region, India." at ICUC (International Council on Urban Climate) -10.

### Biomedical Engineering

- Neha Singh received the Ericsson Innovation Award 2018 in the area of Biomedical Engineering in Sweden on 18 December, 2018.
- Esha Baidya received the 3rd Best Poster Award in the area of Health care for all on Industry Day, IIT Delhi on 22 September, 2018.
- Asutosh Tiwari received First Prize in Health Care Technology Category, Industry Day, IIT Delhi on 22 September, 2018.
- Asutosh Tiwari received Second Prize in Innovative Ideas and Patent Category in the area of Neuromechanics, Biomedical Engineering, NBRCom – AIIMS Rishikesh on 15 October, 2018.

### Energy Studies

- Dr. Shankar Dayal Sharma (Former President of India), Gold Medal Award to Parikshit Pareek M.Tech. Student (2017-2018)
- Mr. Rajet Saxena R/S received best paper presentation award in the 4th World Congress on Mechanical, Chemical & Material Engineering (MCM18) held at Madrid (Spain) during Aug. 16-18, 2018.
- Mr. Vipin Dhyani and Prof. K.A. Subramanian, Control of Backfire by Online monitoring of the Engine oil in a Hydrogen Fueled Spark Ignition Engine", Best Poster Award, International Symposium on Fuels and Lubricants (ISFL)-2018, held at Faridabad, India from April 15-17, 2018.
- Nikhil Pathak, Ph.D. Student at Centre for Energy Studies received POSOCO Power System Award.

### Bharti School of Telecommunication Technology & Mgmt.

- Bharti Merit Award on 12 April, 2018.

### Amar Nath and Shashi Khosla School of Information Technology

- A team of three students from CSE/SIT, Anupam Sobti, Ayushi Agarwal and Saurabh Tewari, won the first prize in the Cadence Tensilica Hackathon held on 5th January as a part of Embedded and VLSI Design Conference 2019. The theme of the hackathon was "Porting deep Neural Network for Cadence® Tensilica® AI Processor".

The students pursuing Ph.D. are also eligible for assistantships. This year additional 208 students were awarded assistantships. Assistantship to existing students continues provided, they show satisfactory progress. The table below gives a discipline wise break-up of assistantships awarded during the period.

**Table V : Institute Assistantships Awarded to Research Scholars during the Session 2018-2019**

Department/Centre/School	No. of Assistantships Renewed	No. of Assistantship Awarded (2018 entry)
Applied Mechanics (AMZ)	48	6
Biochemical Engineering & Biotechnology (BEZ)	34	6
Chemical Engineering (CHZ)	68	14
Chemistry (CYZ)	30	17
Civil Engineering (CEZ)	95	19
Computer Science & Engineering (CSZ)	29	6
Design (DDZ)	0	3
Electrical Engineering (EEZ)	156	30
Humanities & Social Sciences (HUZ)	50	5
Management Studies (SMZ)	57	10
Mathematics (MAZ)	19	8
Material Science & Engineering (MSZ)	0	10
Mechanical Engineering (MEZ)	105	16
Physics (PHZ)	67	18
Textile Technology (TTZ)	38	9
Centre for Applied Research in Electronics (CRZ)	20	4
Centre for Atmospheric Sciences (ASZ)	32	3
Centre for Biomedical Engineering (BMZ)	24	4
Centre for Energy Studies (ESZ)	39	3
Industrial Tribology, Machine Dynamics & Maintenance Engineering Centre (ITZ)	13	1
Industrial Design & Development Centre (IDZ)	12	1
Centre for Polymer Science & Engineering (PTZ)	20	0
Centre for Rural Development & Technology (RDZ)	44	2
Kusuma School of Biological Sciences (BLZ)	20	1
Amar Nath and Shashi Khosla School of Information Technology (ANZ)	12	5
Bharti School of Telecommunication Technology & Management (BSZ)	21	5
Interdisciplinary Research (SRZ)	0	1
Transport Res. & Injury Prevention Programme (TRZ)	5	1
<b>Total</b>	<b>1058</b>	<b>208</b>



# Infrastructure Development

(April 1, 2018 - March 31, 2019)

## PHYSICAL INFRASTRUCTURE

### Creation of World Class Institution

The Institute has been focusing on attracting young talented academicians and post-doctoral fellows from across the world. For this, we need, on the one hand, world-class laboratories, high-end equipment to conduct research, and on the other hand, quality living experience such as accommodation facilities.

The Institute has drawn the blueprints to build lab infrastructure of global standards and acquire equipment for technological convergence domains like smart infrastructure and affordable health care, among others.

In order to achieve the aspirations for higher global ranking, it is vital that IIT rethink and revitalize its approach to its infrastructure. Changes are required at all stages of estate development, including Specification and Prioritization, Delivery and Quality Management and Maintenance. Much work is underway already; however, concerns remain and it is vital that significant resources be made available to deliver internationally competitive infrastructure.

The new space is being developed with greater sensitivity to international developments in curriculum design and corresponding changes to learning and teaching approaches (i.e., project-based work that demands more flexible and reconfigurable space), accommodation standards, student interaction and stimulation, and the requirements of a leading engineering research institute.

### Physical Infrastructure: Approved and in Progress

All infrastructure related activities are managed by the Building & Works Committee. Environment Clearance obtained from Ministry of Environment and Forest (MoEF) for the following projects of IIT Delhi, which was the last of the mandatory approvals/Clearance required for the commencement of these projects were obtained and constructions commenced on the first nine projects. Salient features of these projects along with their progress status are given in the subsequent paragraphs.

- Construction of Engineering Blocks 99B & 99C
- Construction of Research and Innovation Park
- Setting up of STP in IIT Campus
- Construction of Faculty Flats
- Construction of building infrastructure for central research facility (CRF) at Sonapat
- Construction of Boys Hostel 'E'
- Construction of New Girls Hostel
- Construction of Nalanda Married Research Scholar Apartments
- Construction of Indoor Sports Complex

- Construction of Golden Jubilee G.H. Keswani Research Centre.

### Construction of Engineering Blocks 99B & 99C

CPWD has awarded the work of construction of Engineering Blocks to M/s. NCCL. The work is in full swing and about 36% of work has been completed at site and the tentative date for completion of project is 30/04/2020. These two blocks are being constructed on either side of Lecture Hall Complex. These blocks shall provide additional area for Labs, Workshops, and Faculty rooms etc. The approximate floor area of the Engineering Block 99B & 99C is 32,000 sq m. & 26,000 sqm. respectively.

### Construction of Research and Innovation Park

The main purpose of this project is to facilitate state of the art facilities for R&D activities. This building consists of 2 Basements, a Ground Floor and 6 Upper Floors. The work has been assigned to NBCC. The work is in full swing and about 8% of work has been completed at site and tentative date for completion is 30/10/2020.

### Setting up of STP in IIT Campus

1 MLD capacity STP near Mehrauli Gate at East campus, and 0.5 MLD capacity STP near Jwalamukhi Hostel to collect total sewage of the campus have been completed and commissioned. The treated water is now being used for Horticulture purpose across the campus.

### Construction of Faculty Flats

154 numbers Faculty Flats in six towers are being constructed by NBCC in West campus. The work is in progress and about 8% of work has been completed and the tentative date for completion is 30/08/2020.

### Construction of Central Research Facility (CRF) at Sonapat

IIT Delhi was allotted 50 acres of land in parts of 10 acres and 40 acres each at RGEC, Kundli, Sonapat for development of extended campus of IIT Delhi. Construction of building for housing central research facility (CRF) equipment has been completed by NBCC.

### Construction of Boys Hostel 'E'

A Boys Hostel with 836 seated capacity, fully air conditioned, is being built. The G+7 storied building has a built up area of 14,000 Sqm (approx.). The work by CPWD is in progress and about 8% of work has been completed and the tentative date for completion is 30/06/2020.

### Construction of New Girls Hostel

A Girls Hostel with 324 seated capacity, fully air conditioned, is being built. The G+7 storied building has a built up area of 14,000 Sqm (approx.). The work by CPWD is in progress and about 12.18% of work has been completed and the tentative date for completion is 30/06/2020.

### **Construction of Nalanda Married Research Scholar Accommodation (Phase-I)**

Nalanda Married Research Scholar Accommodation (Phase-I) work has been assigned to NBCC. The proposed accommodation will have 103 single bedroom flats. The work is in progress and about 35% of work has been completed and the tentative date for completion is 30/11/2019.

### **Construction of Indoor Sports Complex**

Construction of Indoor Sports Complex has been assigned to CPWD. This project has been taken up with alumni contribution by 1995 batch alumnus, Mr. Saurabh Mittal. The construction work is in progress and is about 12% complete with tentative date of completion as 31/12/2019.

### **Construction of Golden Jubilee G.H. Keswani Research Centre**

Construction of Golden Jubilee G.H. Keswani Research Centre is to be executed as alumni contribution by the owners of M/s Lemon Tree Hotels. The work is expected to commence shortly.

### **Physical Infrastructure in Planning Stage**

The Institute has initiated proposals for development of additional infrastructure for the increased intake of Student/Faculty, due to EWS quota and IoE Status of IIT Delhi. The next phase of works has been assigned to CPWD for development of architectural design and construction. CPWD has submitted a preliminary cost for Rs. 1171.0 Crore. DPR for these works is expected shortly from CPWD. The projects covered under the additional infrastructure are as under.

**Faculty Housing:** 05 Blocks of residential accommodation with 105 no. of dwelling units is to be constructed with total built up area of 22050 Sqm.

**Mini Academic Complex:** Mini Academic Engineering complex namely Blocks-102A,102B & 102C are to be constructed with B+G+6 floor with ground coverage areas of 8200 Sqm., 7400 Sqm and 6000 Sqm respectively giving a total built up area of 21,600 Sqm.

**Academic Block:** Another Academic Block 103 is being planned after demolition of a few old type 'A' quarters in dilapidated condition with construction of B+G+7 floors. Approximately built up area will be 3500 Sqm.

**Staff Housing:** For staff, 01 Block of residential accommodation of C-Type with 18 numbers of dwelling units is planned for construction with approximate total built up area of 2820 Sqm.

**Construction of Additional Hostels:** 07 hostels are to be reconstructed with G+7 floors with a covered area of 11360 Sqm (approx.) for each hostel after demolition of current G+3 storey hostels.

**Construction of Nalanda Accommodation (Phase-II):** Phase-II of Nalanda Research Scholar accommodation is planned to be taken up soon after completion of Phase-I construction work. The phase-II will cater for 96 additional flats for married research scholars.

**Rehabilitation/ Augmentation network of sewerage, water supply and drainage:** Due to substantial increase in Institute infrastructure, the augmentation of old and existing sewer & drainage system, water distribution network, communication services electrical cabling etc. has become critical. Accordingly, rehabilitation/augmentation of utility network of entire institute is being planned along with proposed buildings.

## **MAJOR NEW EQUIPMENT INSTALLED**

### **Biochemical Engineering and Biotechnology**

- Chemidoc Multimode plate reader (Fluorescence and absorbance) has been installed in Prof. Ravi Krishnan Elangovan Lab.

### **Chemistry**

- Real Time PCR Detection System Model:-CFx-96, with PC and UPS (17.9L).

### **Civil Engineering**

- Thermogravimetric Analyser.
- Geotechnical Dynamic Testing Facility.
- Geosynthetic tensile testing machine grip.

### **Computer Science and Engineering**

- Dell Optiplex Workstation and Monitor (6.41L).
- Super Micro X86 Server (17.28L).
- Dell Power Edge R-740 Server with 5 year warranty, (14.17L).
- Additional Nodes & Disks for existing Netapp Storage (64.43L).
- MDO3104 Mixed Domain Oscilloscope (15.96L).
- S1218047A Super Server (17.28L).
- Dell Precision T-7920 Workstation with accessories and 3 years warranty (9.52L).
- Dell Precision T-5820 with accessories and 3 years warranty (8.45L).

### **Electrical Engineering**

- Supermicro X86 Server 4029 GP-TRT2 (17.2L).
- Finite Element Software 1 Research EM+ 25 Teaching EM License ES (11.9L).
- Upgrade of Opal-RT Real Time Simulator (19.1L).
- High End Computing Server using Supermicro (15.1L).
- Supply installation of integration of Wind Turbine Emulator (16L).
- Parylene Coating System with Fabrication, Testing and supply along with Liquid Nitrogen Dewar (25.7L).
- Ease of use probe system, 150mm Triaxial, EDU (30L).
- A Multi zone Furnance based Material Purification and Growth System (16.9L).
- PMSG Wind Turbine Emulator having Grid Connected Ability (16.8L)
- Renishaw Invia Reflex Spectrometer System (15L).

- Auriga (FESEM-FIB) Field Emission Scanning Electron Microscope PE with Gemini (22.9L).
- Real Time Controller Kit (11.5L).
- FESEM/FIB Multi Injection System Designed and Tested for Carl Zeiss (23L).
- Complete Thermal System for Summit Platform (13.8L).
- UHF/lock in Amplifier 600MHz Dual, Dual Signal Generator (27L).
- 6 CH Power Quality Analyzer (19.7L).
- Real Time Digital Emulator make Typhoon Hill GMBH (24.8L).
- Mixed Domain Oscilloscope (11.4L)
- Novacor Chasis including 2 Cores licensed (98.4L).

### Humanities and Social Sciences

- 2 Channel data acquisition (BIOPAC)

### Materials Science and Engineering

- Advance Compounding.
- FE-SEM-EBSD.
- Fluorescence Microscope.
- Vacuum Hot Sintering Press.

### Mechanical Engineering

- Markforged Model (15.9L).
- Material Testing Machine (32L).
- Dynamic Mechanical Analyzer (42L).
- Electrodynamic Shaker (22.8L).
- Model Floor Mounted Test. Sys. (35.7L).
- High Speed Camera (110L).
- Simultaneous Thermal Analyser (22.8L).
- Measuring Microscope (8.9L).

### Physics

- Nanoindentation system.

### Textile Technology

- Gas Permeation Analyzer.
- Lab Coating Machine.
- Cone Calorimeter in Textile Chemistry Lab.
- Piezometer 300.
- Particle Size Analyzer (Anton Parr Litesizer 500).
- High Capacity UTM (230 KN).
- Drop Weight Impact Tester.
- Charpy Impact Tester.
- Filament Winding Machine.
- VARTM Machine.
- 3D Weaving Machine.

- Differential Scanning Colorimetry.
- Thermogravimetric Analysis.
- Dynamic Mechanical Analysis.
- Gas Permeability Testing Equipment.
- Twin Screw Extruder with Injection Moulding Machine (Thermax Haake).

### Applied Research in Electronics

- THz Detector Testing Facility
- Semiconductor Parameter Analyzer.
- CVD Furnaces.

### Biomedical Engineering

- DLS Zeta Analyzer from Anton Paar has been installed in Prof. Harpal Singh's Lab on 12th March 2019.

### Energy Studies

- Facility developed for testing of hydrogen fuelled generator upto 28 kW electricity power generation.
- Pyrheliometer with Sun Tracker.
- Optical Microscope.
- Photo-luminescence Spectroscopy.
- Testing Station for Biomass Combustion Devices.

### Bharti School of Telecommunication Technology and Management

- 5G NR simulation software for Massive MIMO Lab.
- 2 GPU server for server room.

### UNNAT BHARAT ABHIYA (UBA) (CENTRE FOR RURAL DEVELOPMENT & TECHNOLOGY)

#### Progress Report (UBA)

Unnat Bharat Abhiyan established a network of 2048 Participating Institutions (PIs) with 40 Regional Coordinating institutions (RCIs) mostly IITs, NITs and Central/Agricultural universities and 10 Subject Expert Groups (SEGs) in 2018 -19 with 10000+ villages. On the occasion of Independence Day of India 15th August 2018, 858 Gramsabhas were organized in villages by 318 PIs and plan of action was prepared and submitted by PIs.





In March 2018 UBA started with 688 Participating Institutions (PIs). The Honorable Minister of State, MHRD Shri Satya Pal Singh Ji, launched Unnat Bharat Abhiyan 2.0 in the month of April 2018. Web based registration portal was developed for selection and reporting for participating institutions under UBA. The first installment of funds was received and thereafter 10 Subject Expert Groups were established and a meeting was held in the month of May 2018, to discuss the modalities of SEGs under UBA. Activity planning workshops and Orientation workshops were held for PIs in the country at all regional centers. Ministry approved revised SFC note with revised budget and Regional Coordinating Institutes (RCIs) in the month of January 2019. 1897 village survey data with 2,01,570 household survey data is now also available on web portal of UBA. On the occasion of Independence Day of India 15th August 2018, 858 Gramsabhas were organized in villages by 318 PIs and plan of action was prepared and submitted by PIs. 471 and 145 Proposals received under Different SEGs for technology Intervention and Customization respectively. Funds was transferred to 1242 PIs of ₹50 thousand, 6 SEG institutions as first Installment of ₹5 Lakhs, 20 RCIs as first installment of ₹10 lakhs. Also after evaluation of proposals submitted under different SEGs funds was transferred to 31 PIs for technology intervention and to 8 PIs for technology customization.

Many other activities are also taking place in the clusters by PIs:



Self-help group training and PRA exercise in Haridwar Cluster.



Teachers Training workshops were organized in Vrindavan cluster to "Understanding Education and Role Awareness through the Self".



Gramsabha organised by Madin Polytechnic College, Kerala.



Personality Refinement for School Children's by SVNIT Surat.

# Central Facilities

(April 1, 2018 - March 31, 2019)

## CENTRAL RESEARCH FACILITY (CRF)

The Central Research Facility (CRF) is a common instrument and fabrication facility of IIT Delhi created to support UG, PG, PhD students and faculty members in their research activities. CRF has state-of-the-art analytical and instruments manned by qualified personnel to provide sample testing and analysis to support research activities in IIT Delhi. The facilities are also made available, on payment basis, to other academic and research institutions, industries and organizations in the neighbourhood.

### Objectives of the CRF:

1. To provide expertise in the analytical sciences and to facilitate research on the structure and function of molecules and materials.
2. To engage in the analytical sciences with student community, government research labs and commercial partners.
3. To foster enthusiasm and collaboration in scientific research.
4. To strengthen the research-relevant infrastructure of basic science and technology and built a facility that represents a key commitment for preserving and raising the efficiency of research to top international standards.

### Facilities approved/procured in the last year:

With the support of MHRD and HEFA funding, around 12 new facilities have been approved/procured for CRF in the last one year. The installation of most of these facilities will commence very soon in IIT Delhi Sonipat campus (newly build up building in Plot No. 4B of Rajiv Gandhi Education City, Kundli, Sonipat). These facilities are as follows:

1. 200 KV COLD FEG Transmission electron microscopy (TEM) with Electron Energy Loss Spectroscopy (EELS), dual OXFORD EDS detector and probe corrector with STEM.
2. X-ray Photoelectron Spectroscopy (XPS)
3. X-ray Diffraction (XRD) with sample stage for Low Temperature (temperature range is from 12 to 315 K)
4. Small-angle X-ray scattering (SAXS) system with tensile stage heating/cooling module
5. Thermal series comprising of Modulated Differential Scanning Calorimeter; Modulated Thermo gravimetric Analyzer with DTA and DSC; Dynamic Mechanical Analyzer (DMA) and Thermomechanical Analyzer (TMA)
6. Universal Testing Machine (Static and Dynamic UTM)
7. Rheometer system having separate motor & transducer technology with Peltier plate system (Environmental Control Box)
8. Fourier-transform infrared spectroscopy (FTIR) Advanced Spectrometer (MID, FAR, NIR, ATR)

9. Cryogen free Physical Property Measurement System (PPMS) with 14 Tesla superconducting magnet
10. Femto Second Laser Cutting System having laser source for cutting and ablation of polymers and thin metals; wavelength of laser source  $1035 \pm 5$  nm; pulse energy of Maximum 80  $\mu$ J and pulse width of <400 fs.
11. Ion Milling System along with Ultrasonic Disc Cutter with Stereo Optical Microscope; Disc Grinder; Dimple Grinder-II with Auto-terminator & with Stereo Microscope; TEM Cross Section Kit; Disc Punch and Minitom Low Speed Diamond Saw
12. Scanning Tunneling Microscope (STM) with magnet and advanced preparation chamber

## CENTRAL LIBRARY

### Introduction

The IIT Delhi Library System comprises of a Central Library and 18 departmental libraries that collectively support the teaching, research and extension programmes of the Institute. All the students, faculty, and employees of the Institute are entitled to make use of the Library facilities. The Alumni of the Institute are also entitled to Library services provided they are members of the Institute's Alumni Association. Similarly, industrial establishments can avail the library services on taking corporate membership of the Library. Library consultation facilities are extended to faculty, students of outside organizations and the wards/spouses of IIT faculty and staff on their request. Retired teaching and non-teaching staff members can also avail the library facilities. The Library currently has over 9000 registered members.

### Library Hours

The Library remains open throughout the year except on six holidays, namely; Diwali, Dussehra, Holi, Independence Day, Mahatma Gandhi's Birthday and Republic Day. The book stack area on the 1st floor and the Ground floor is open from 9:00 AM to 9:00 PM (weekdays) and 10:00 AM to 6:30 PM (weekends & holidays). Reading areas on ground floor, first floor and 2nd Floor remain open 24x7 hrs.



**Library Resources**

**a. Collection**

The Central Library, IIT Delhi has strong collections pertaining to physical sciences, engineering, technology, biotechnology, computer and information technology, social sciences, management, etc.

As per record, the collection of the Library as on 31st March 2019 is as follows:

Books	1,85,960
Journals (Bound Volume)	1,05,765
Theses	5,882
Online Electronic Journals/Conference Proceedings/Patents/Standards/ Manuals, etc. (Directly subscribed + available through eSS Consortia)	60,000
Online Databases	15

**b. Video Library**

The Library is equipped with a video viewing facility and has a sizeable collection of CDs of video lectures and kept in the Computer Applications Division of the Central Library for viewing.

**c. Reference Collection**

The Library maintains a separate reference collection consisting of encyclopedias, dictionaries, handbooks, technical data, almanacs, atlases, bibliographies, etc.

**d. Hindi Collection**

The Central Library has built up a good collection of books in Hindi. These include books on various subjects being taught and researched at the Institute as well as books on literature in Hindi.

**Electronic Journals and Online Bibliographic Databases**

The Institute has access to over 60,000 full-text electronic journals/proceedings/standards and over 15 databases/bibliographic databases from several publishers and aggregators through the Direct subscription/access through eShodh Sindhu consortium. The details and links to these electronic journals are available through the Library web site as well through the Library Web OPAC.

**Electronic Books**

The Central Library/IITD has access to eBooks from No. of international publishers/aggregators e.g. Bloomsbury, Cambridge University Press, Degruyter, Elsevier eBooks and Major Reference Works, McGraw Hill Education, Pearson, Springer, Taylor and Francis eBooks and Major Reference Works, Wiley, World Scientific, etc.

Apart from the above eBooks, two eBook collections “World eBook Library” and “South Asian Archives” are also available through the National Digital Library of India (NDL).

**Computer and Networking Facilities**

The Library has its sub-LAN which is connected to the Campus LAN. It has a Computer Lab for the users of the Library as well.

**a. Computerization of In-house Activities**

All in-house activities of the Library including acquisition, cataloguing, circulation, serials control, etc. are fully computerized using LibSys 7, LSmart and DSpace Software Packages. The Online Public Access Catalogue (OPAC), Discovery Service, Single Window Search and Library App can be used to search bibliographic records and full texts available through web-based search interfaces on Intranet as well as on the Internet including Remote Access using VPN. The editing and updating activities are done regularly. Besides, the Central Library has two in-house databases for specialized collections. These include database of Ph.D. theses submitted to the IIT Delhi and database of research articles by the faculty and researchers of the Institute.

**b. RFID Technology in the Library**

The Central Library is an early adapter of emerging and innovative technologies and has been using RFID technology since 2010. It is the best automation system used worldwide and is an effective way of managing collections of the library and providing enhanced services to the users having benefits like: self check-out of books, self-check-in (book drop), to control theft, to find misplaced reading material, sorting, inventory accuracy, stock verification procedures, security control, video surveillance, people counter, Smart Card issuance, etc. It is an automatic data capture technology that uses tiny microchips and miniature antennas affixed to documents. RFID plays a vital role in redefining the library processes to make everyone’s job easier right from the users to library staff. IIT Delhi library has one of the most successful running RFID implementations of the country.

**Other Library Services and Facilities**

**a. IIT Delhi Faculty Profiling System**

The Central Library in collaboration with the MHRD project IRINS has developed and launched a customized profiling system of IIT Delhi through which customized data of the institute and its faculty is available in the most presentable form at <http://iitd.irins.org>. It facilitates the Faculty members to collect, curate and showcase the scholarly communication activities and provides an opportunity to create the scholarly network. It has been integrated with Academic identities such as ORCID ID, Scopus ID, Google Scholar ID, CrossRef, etc. for ingesting the scholarly publications from various sources. One can create/update profile using the VIDWAN site (<https://vidwan.inflibnet.ac.in/login>) and also can manually add the publications which are not listed.

### **b. Library App for Single Window Search**

The Central Library has launched its Single Window Search App which is available on Google Play Store and iOS with the name, "Single Window Search for IIT Delhi e-Resources" at <https://play.google.com/store/apps/details?id=com.iitdelhieds&hl=en>. The App provides access to all library resources, services, and products through Mobile devices.

### **c. Discovery Service/Single Window Search**

All the resources of the IIT Delhi are accessible through Ebsco Discovery Services which provides a single access point to bibliographical, full text and internal resources using the landing page of the Central Library at <http://library.iitd.ac.in>.

### **d. eNewsClipping Service**

The Central Library offers eNewsclipping Service to users in public domain on topics related to Higher Education, CFTIs, IITs, etc. which is highly used by IIT Delhi community and academia and is accessible from <http://library.iitd.ac.in/news.php>

### **e. Ask the Librarian**

The library users may use Ask the Librarian Interface for their different queries through the: <http://library.iitd.ac.in/ask.php>

### **f. Reader's Assistance**

The Library assists its users ranging from the location of a book to finding the specific information required by a user. A suggestion book is maintained with Incharge, Reader Services where the users of the Library can suggest measures for improvements in its facilities and services apart from other ways of communication.

### **g. Circulation of Books and Library Membership**

The Library members, according to their borrowing category, can borrow stipulated number of books at a time against their bar-coded/RFID patron card. They can use 24x7 Self Check-out, Book Drop facility and an Email is sent for every transaction.

### **h. Inter-Library Loan (ILL) and Resource Sharing Facility**

The Library arranges books from other libraries in India on Inter-Library Loan (ILL) on a reciprocal basis. Copies of research articles are also arranged from other IITs/Institute under a resource sharing arrangement by all the IITs. The Library is also a member of the DELNET and utilizes its services.

### **i. Photocopying, Scanning, Digital Printing, and Binding Facility**

The Library has very good Photocopying, Scanning, Digital Printing, and Binding Facility within its premises through an external vendor on payment basis.

### **j. Book Bank Facility**

The Book Bank holds multiple copies of selected textbooks for making them available to the students for the entire period of a semester, free of cost. Students can draw up to six books over and above for the whole semester. These books are issued on specific dates and the notification in this regard is sent

through email to all the students and also shared through the library website. A maximum of six books from the book bank can be issued to the students. During the book bank in August 2018; 604 students got the book bank books and during the book bank in January 2019; 441 students availed the book bank facility. A total of 3000 books were issued to the students during both the semesters.

### **k. Text Books Facility (Print and Online)**

The text books are the most useful collection of the library, especially for course/syllabus related readings. The section has enough syllabus related text books. The books for this section are purchased generally on the recommendations from different faculty members through the concerned Heads of the Department. The Central Library also has access to large no. of e-textbooks for undergraduate students and the same are accessible in the campus through the library website.

### **l. Theses Consultation Facility**

The Central Library receives all the Ph.D. Theses awarded by IIT Delhi. Print copies of theses are housed in Text Book & Book Bank Section located at the ground floor of the library for consultation purpose only. The extended abstracts of theses are made available through library Online Public Access Catalog (OPAC)-<http://libcat.iitd.ac.in:8080/opac> or Discovery/Single Window Search Interface and also through the Institutional Repository of IIT Delhi at <http://eprint.iitd.ac.in>

### **m. Institutional Repository at IIT Delhi**

The eprints@IIT Delhi has been set-up to host full-text of research publications of faculty and researchers of the IIT Delhi using DSpace, an open source Digital Library software developed by the Massachusetts Institute of Technology. The eprints@IIT Delhi provides a platform for faculty and researchers to deposit, reuse and share their research publications. The repository also can capture, index, store, disseminate and preserve digital materials created in any part of the Institute. Faculty and researchers can register themselves with the digital repository and submit their pre-prints (a pre-refereed version of an article), post-prints (post-refereed final version) and publisher PDFs (if allowed by the publisher).

### **n. User Centric Workshops / Trainings / Talks / Outreach programmes, etc.**

Central Library, in collaboration with the domain experts, organizes user-centric workshops/training programmes/talks, etc. throughout the year. These events are highly useful for the users in information literacy, improving their writing ability and familiarise them with the latest tools and technologies which can be used in the study, research and information retrieval. These events also give the users, the glimpses of available resources/newly added resources to the library and the procedure to use them.

## **COMPUTER SERVICES CENTRE**

The main objectives of the Centre are to :

- Provide round the clock computing and networking

facilities to serve a user population of 12,000+ users consisting of Undergraduate, Postgraduate, Research Scholars, Faculty, Staff and also to visiting faculty & students of the Institute and provide advice on all the aspects of academic computing. The centre also participates in the Academic programme of some of the departments and centres.

- Implement and maintain System and Application software.
- Implement and Manage the Institute Network.
- Computational labs facility to students for the conduct of UG/PG Lab courses.
- Impart Introductory and advanced instructions to users.
- Work on cutting edge technology and provide Services to users based on new technology.
- Provide support to Institute Computerization efforts.
- Provide training to Institute employees.

### General Computing Facilities

The Centre is equipped with 112 HP/CISCO UCS blade servers out of which 64 Blade Servers are used for Cloud computing with 200TB of virtualized storage and 48 blade servers with 130 TB of storage for user homes and infrastructure use like email, proxy, web services etc. CSC also has around 450 Desktop Computers under Windows10 & Linux environment in ten labs connected over a switched fast Ethernet. Uninterrupted Power Supply is provided through 2x80 KVA MGE UPS system supported by DG set. The HPC facility housed in the Data Centre has 17,680 cores with over 58 TB RAM spread over 600 nodes. Accelerated / hybrid computing is achieved using ~390 GPU cards. More details available on <http://supercomputing.iitd.ac.in>.

### Facilities/Services

The following facilities and Services are available for the Institute users: -

Data Centre (DC), Disaster Recovery data Centre (DRDC), Compute facility through Baadal- Cloud computing environment, email facility with Kerberos authentication, Infra-structure Services through Virtualization technology, Microsoft Volume licensing EES agreement for software such as Windows OS, MS Office, Windows Server, MS Office 365 etc., third party software such as MATLAB, ANSYS, Mathematica, Fluent, Comsol, Lab-View etc., local repositories of open-source software such as Ubuntu, moodle- a course management software, member of Eduroam, Owncloud, download server to facilitate download of huge data for Research, Virtual web hosting, user webpages of faculty & students, VPN facility for accessing intranet from outside IITD, NTP server, MRTG & RRD health graphs of various services, and SLA- complaint registration & monitoring system.

The Institute LAN is a state-of-the-art switched network with Fiber Optics and enhanced cat5/cat6 UTP backbone. It consists of more than 9000 network access points spread over the campus using about 265 Cisco switches and about 75 virtual LANs. Network access is provided to every student, faculty, staff, and visiting faculty/guests. Internet connectivity and

connectivity with other Institutes is provided through a router, redundant firewall switching modules, and 2x10 Gbps from National Knowledge Network (NKN). Internet and Intranet access to faculty/officer homes provided via GPON over fiber (750+ houses) and ADSL connectivity over internal telephone lines. The Wi-Fi facilities are available across academic area, all hostels, guest houses, RCA, Hospital, and Sonipat campus through 950+ wireless access points deployed across campus.

### Activities undertaken during the year 2018-19:

The following new modules have been implemented in the new ERP:

- Staff Recruitment
- E-Dak
- Guest House Booking System
- HR Module for various Establishment
- Recruitment module for applying to Chair Professor
- Employee ID Card Module
- Welfare Society Module
- Investment Declaration for Income Tax
- Staff Appraisal System
- Online Children Education Allowance
- Online Telephone Reimbursement
- Payment Gateway Integration with Paytm and SBI
- Portal for International Students PG Application
- Academics Modules: Time Table, Course Offering, Add/Drop of courses, Pre-Registration, Audit Withdrawal, Grading, (CGPA Computation and Graduation) on parallel basis, Self-Study, Student course Feedback.

### Major Development on Ingres System:

- Cash Management Plan implementation of SBI
- RTGS implementation in Hostel

### Major Development work in Other Platforms:

- T&P site on new platform
- System for QIP
- MHRD Project for Project monitoring of newly undertaken work by Works section

### New Website Development:

- System for ETSC Facilities
- CERCA Website
- Industry Day site
- International PG Student website
- Website for IOE
- IOE Internal site for Project Monitoring
- SIRE website new addons
- QIP Admissions with all India result Processing.
- Training and Placement System with new Java platform
- Revamp of CSC website



- Payment Gateway with Paytm for International Payments for PG(International Students)
- Payment Gateway with Billdesk for Indian Payment (Indian Students)
- Semester Fees Collection using Paytm app along with SBI I-collect options
- Convocation Registration & Fees Collection system

### Workshops and Symposia

- A national workshop cum symposium was organized in March 2019:
- ASM2019: Workshop and Symposium on Advanced Simulation Methods: DFT, MD and Beyond.
- The workshop and symposium had 300+ participants from across India.
- User workshops for introduction for IITD HPC are organized every month – so far 30+ user workshops have been conducted.

## CENTRAL WORKSHOP

### Introduction

Central Workshop is one of the pivoting units of the institute which teaches conceptually “how” a product comes to its present form by way of imparting core manufacturing education to all the first year students of IIT Delhi. It also provides product manufacturing support to entire institute community in general and undergraduate students in particular. More than 900 undergraduate students in their first year acquire hands-on manufacturing skills in the Central Workshop. The Central Workshop not only introduces art and science of manufacturing but also infuses confidence to take up product design and manufacturing activities in future. Central Workshop is also a place where B.Tech. students of Mechanical Engineering and B.Tech. students of Production & Industrial Engineering acquire training and knowledge in specialized areas of manufacturing like Metal Casting, Metal Forming, Machining, Welding & Joining, CNC programming and 3D Printing, Plastic Product manufacturing etc. M.Tech. students of Production Engg. also use Central Workshop facilities for their practical classes in various courses as well as for project and research work.

The Central Workshop is fully equipped with latest power tools, equipments and facilities in all areas of manufacturing technologies. It also caters to the fabrication needs of students doing product design & manufacturing courses, minor projects, B.Tech. project, Master's thesis and Doctoral research. Large number of students use this facility to build products and compete at national and international level product building competitions like Formula student car, mini Baja, Robocon etc. The facility can also be used by external agencies for their manufacturing and training needs during the vacation period.

Central Workshop has undertaken efforts to reorganize, modernize and prepare it for continuously changing global

manufacturing scenario. Efforts are also on to prepare students for a broader view of manufacturing which involves planning and deploying optimum ways to transform raw material into goods by integration of people, capital, processes, systems and enterprises to deliver products of value to the society.

A new shop ‘CNC Learning’ has been created in 2013-14 to imbibe product realization through computer generated geometries. A rapid prototype model can also be visualized by use of state of art 3D printing technology in this new shop of Central Workshop. Laser cutting facility has also been added recently.

### MAKERSPACE

Makerspace is a central facility for students/staff/faculty of the institute to carryout their prototyping needs. This facility is in addition to central workshop and is different in two respects. Makerspace facilitates students/staff/faculty to obtain training to use proptotyping machines and equipment to build their prototypes in DIY (Do it yourself) manner. Secondly makerspace is available for use beyond office hours in the evenings. Makerspace is presently being supported by MHRD's Design Innovation Center (DIC) and 1986 batch of Alumni.

### EDUCATIONAL TECHNOLOGY SERVICES CENTRE

The Educational Technology Services Centre (ETSC) is actively engaged in providing and promoting the use of Educational Technology within the Institute and also at the national level. Some of the activities are: design, development and dissemination of video and web-based instructional resources; provision and maintenance of A/V equipment for classroom teaching; organization of training programmes for faculty, staff and professionals across the country and undertaking sponsored research and consultancy projects; audio/video conferencing for faculty selection interviews and other meetings including Ph.D. viva voce examination; e-learning and distance education using video conferencing facility.

The Centre has a modern video studio and recording and editing facilities. Multiple studio-classrooms are available for on-line recording of courses. Non-linear editing set up and streaming servers are available for post-production and video streaming respectively. In addition there are 4 classrooms of seating capacity more than 125, where lectures can be video recorded.

ETSC uses the Sony ANYCAST system and the New TekTricaster system in the Video Studio and in two lecture theatres for non-linear editing and recording. Video conferencing facilities have been installed in two lecture theatres and in the Conference Room of ETSC. The facility is being used for faculty interviews, meetings and distance education. For connectivity both ISDN and IP based network connection are used. Two lecture delivery rooms for Remote Delivery have been equipped with remote teaching facility.

## Central Facilities

Some of the new initiatives of the ETSC include projects sponsored by MHRD, Swayam, Swayam-Prabha and IIT-PAL. Under Swayam, ETSC actively encourages faculty members of the institute to develop MOOCs (massively open and online courses) to be disseminated country-wide. ETSC is responsible for recording, post-production and uploading content into the Swayam platform, as well as, hand-holding faculty members towards developing content. Under Swayam-Prabha, ETSC manages 2 TV-channels (Electrical Engineering and Civil Engineering). In IIT-PAL ETSC engages in working with faculty members of the institute towards content creation, recording, post-production and managing of 4 TV channels (Physics, Chemistry, Maths and Biology).

ETSC also manages all audio and video facilities of the Institute that are used during classes, as well as for events in the Institute. Meetings, conferences, seminars as well as cultural events are all handled by ETSC.

### HINDI CELL

During the period (1st April 2018 to 31st March 2019) the following important activities were organized by Hindi Cell:

- Workshop on “Computer par Hindi ke prayog ke liye e-Tools Avem Software” was held on 23 March, 2018 for Staff members (Group ‘B’‘C’) and Hindi Nodal officer of the Institute.
- Workshop on “Timahi Pragti Report ke liye akron ka sanklan karne Avem Report Bharne se sambandhit Karyshala” was held on 30 May, 2018 for (Group ‘B’‘C’) Staff members and Hindi Nodal officer & Bedi & Bedi Temporary Staff member of the Institute.
- Half day workshop on “Timahi Pragti Report Prapatra Bharne ke sambandh mein Karyshala” was held on 24 September, 2018 for Group ‘A’ officer, ‘B’, ‘C’ Staff members and Hindi Nodal officer of the Institute.
- Hindi Pakhwara was organized during the 14-30 September, 2018 in which many activities were organized.
- Rajbhasha Hindi related work in the Institute for Inspection by the Parliamentary Committee on Official Language on 27 February, 2019.

### IIT HOSPITAL

The Institute has a 14 beds hospital centrally located in the campus, which provides facilities for OPD treatment and admissions. The Hospital is managed by a team of full time 9 Allopathic doctors, 1 Homeopathic doctor, 1 dentist and 5 Allopathic Contract Doctors from Apollo Life. The hospital is also visited by part time specialists from AIIMS in the fields of Orthopedics, ENT, Ophthalmology, Dermatology, Radio-diagnosis, Cardiology, Ayurvedic, Endocrinology, Counseling & Psychiatry. The doctors are assisted by efficient group of pharmacists, nurses, physiotherapist and other paramedical staff. The hospital is well equipped to provide basic health facilities and primary care in emergencies and serious patients are shifted to All India Institute of Medical Sciences

(AIIMS) and Safdarjang Hospital (SJH) with the help of hospital ambulance service which is available 24 hours on all days.

IIT Delhi Hospital is the recognized centre for Pulse Polio Immunization and other programmes undertaken by the Government. It also provides medical aid during sports meets, Rendezvous, cultural functions etc. Demonstrations in first-aid, AIDS and Cardio-pulmonary Resuscitation (CPR), and other medical problems are conducted for the students and other staff of the Institute. Besides other free educative and health checkup camps are also conducted from time to time.

#### Hospital Statistics 2018-2019

Patients Attended in OPD	91,147
X-Ray	1,722
Ultra Sound	362
Patients Admitted	434
Physiotherapy	4,461
Surgical Dressing	2,631
Dental Treatment	3,343
Pathology Lab Test	38,259
ECG	1,570

### Hospital Facilities

#### a. OPD facility (Allopathy & Homeopathy)

Patients are registered at the reception and are seen on first come, first serve basis. However, out of turn consultation may be provided in case of emergency and to senior citizens. Wheel chairs, trolleys and attendants are there to help very sick patients. Patients have the right to consult any doctor. In OPD, clinical consultation is provided to patients which includes history taking, clinical examination, diagnosis and providing prescription to patients besides advising laboratory tests in some cases. Hospital has a large new OPD complex with excellent waiting facilities for patients where, prompt OPD services are provided by doctors. There is also a waiting hall with chairs, a TV, public utilities like drinking water and toilets.



### **b. Dental facility**

An experienced dental surgeon carries out procedures like dental extractions, scaling/cleaning, extractions, fillings, & RCT.

### **c. Ward / Indoor facility**

Ward facilities are available for observation and management of medical problems like typhoid, acute gastroenteritis, COPD, bronchial asthma, malaria, dengue, viral fever, pneumonias, etc. Facility for 24x7 physical presence of doctor has currently been added.

### **d. Minor OT**

Provides services for minor surgical procedures like dressing of lacerated wounds, suturing of minor lacerations and resuturing, excision of corns and sebaceous cysts are done under local anesthesia.

### **e. Physiotherapy**

Range of physiotherapy services to assist the patients to recover from wide range of musculoskeletal painful disorders. Available modalities are MWD, SWD, U/S, TENS, IFC laser therapy traction unit, magnolia.

### **f. Laboratory Services**

IIT has a basic composite lab as well as NABL accredited laboratory services for carrying out specialized tests. They collect sample from 8 a.m. to 12 p.m. (Monday to Friday) in IIT Hospital. Sample collection time for IIT Laboratory is 8 a.m. to 10:30 a.m. while emergency tests like Blood Sugar, Platelet Counts, HB & Blood Grouping are done in emergency cases throughout OPD hours. The facility is also available on Saturdays, and holidays through outsourced lab Dr. P. Bhasin Pathlab Pvt. Ltd.

### **g. Pharmacy**

Free reliable quality medicines are available to beneficiaries on doctor prescription during OPD hours (8 a.m. to 8 p.m.). Medicines not available are provided by supply order signed by the prescribing doctor and Head, Hospital Services, which can be collected from Apollo Pharmacy on campus.

### **h. Radiology / X-ray facility**

X-Ray pleophos-D, 300 MA Siemens available, X-rays done on all working days during OPD hours. Sonoline G-50 U/s machine Siemens ultrasound is available and ultrasounds are done once a week by visiting specialist.

### **i. ECG Services**

24 hours ECG services, including machine report are carried out by trained staff.

### **j. Ambulance Services**

A 24 hours patient transport vehicle available. Patients are transported from home (on campus) to IIT hospital and patients are referred by emergency duty doctor to empanelled hospital for specialized treatment.

### **k. Specialist OPD Services**

Visiting specialists of various specialists like ophthalmology,

ENT, psychiatry, orthopedic, cardiology, endocrinology and ultrasonology visit the IIT Delhi Hospital in the evening from 5:30 p.m. to 7:30 p.m.

## **NATIONAL RESOURCE CENTRE FOR VALUE EDUCATION IN ENGINEERING (NRCVEE)**

The main mandate of this Centre is different from the Teaching and Research activities of other departments and Centres. Thus, most of the heads under which the information has been asked are not applicable to us. The information is organized in a format more relevant to this Centre's activities.

### **1. Teaching Activities**

#### **1.1 VEV courses offered by Guest / Institute faculty**

Considering the fact that NRCVEE does not have any full time faculty, the courses offered by the Centre are taught by joint / associated faculty from other Departments / Centres / Schools. Three years back 1-credit special modules on broad topics of relevance to NRCVEE were approved and many of them are being taught primarily by guest faculty enriching the material offered to the students. In the period under consideration, the details of the one credit VEV courses offered by the Institute are given below:

- (i) Dr. Ramesh Bijalani VEV732: Special Module on Inner Development-II (Decision making based on self-discovery) - I and II semester 2018-19
- (ii) Ms. Pravrajika Divyanandaprana VEV731: Special Module on inner Development-I (Introduction to the Science of Happiness)- I semester 2018-19. This course was video recorded and its lectures have been made available at the following link: [https://www.youtube.com/watch?v=A\\_uDAkb\\_6RI&list=PLFmQ3Upk\\_iK7jlseTEluGUWqz6oY0e02D](https://www.youtube.com/watch?v=A_uDAkb_6RI&list=PLFmQ3Upk_iK7jlseTEluGUWqz6oY0e02D)
- (iii) Ms. Pravrajika Divyanandaprana VEV733: Special Module on Leadership (Introduction to Karma Yoga: Art of Effective Leadership)- II semester 2018-19. This course was video recorded and its lectures have been made available at the following link: [https://www.youtube.com/watch?v=ZPIJYHDVfWU&list=PLFmQ3Upk\\_iK55JLEWyzFagPLbDAv\\_bpDY](https://www.youtube.com/watch?v=ZPIJYHDVfWU&list=PLFmQ3Upk_iK55JLEWyzFagPLbDAv_bpDY)

#### **1.2 Administration of the course on Professional Ethics and Social Responsibility**

The administration of this course takes major share of the time of the NRCVEE staff and the concerned faculty. In the period under consideration, the following were taken up for the PESR course:

- (i) Streamlining the administration of all components of PESR with the help of the part-time staff hired for the purpose.
- (ii) NEN 300 Courses is being offered in both the semesters. This course has only 6 hours of contact with

3 sessions of 2 hours each. Each class can have only about 30 students. We have about 13 to 14 batches per semester covering about 400 students. NEN 300 is done effectively with the help of 5 resource persons from outside the Institute and one from DMS. The model for conducting this course in different batches is now fairly established which can be followed for all future batches as well.

- (iii) NEN 202 workshops: Following workshops were organized in IIT Delhi (details are given below):
- 'Mind Body Soil' by Ms. Navneet Sodhi and Suman Gupta (09th July - 14th July, 2019)
  - 'Success Through the Art' by Ms. Aparna Apte Gupta (09th July - 14th July, 2019)
  - 'Grow within Under' by Ms. Kavita Neelakantan (14th July - 19th July, 2019)
  - 'Inner Clarity' by Adinarayanan (1st December - 6th December, 2018)
  - 'Mind Body and Heart' by Ms. Navneet Sodhi and Ms. Suman Gupta (1st December - 6th December, 2018)
  - 'Inner Clarity' by Adinarayanan (2nd March to 7th March, 2019)

### 1.3 Research Activities

- NRCVEE admitted its first full-time Ph.D. student in the area of Holistic Health and wellness.
- NRCVEE Research Scholar Mr. Narendra Kumar Arya got a Doctorate degree on 4th November, 2018.
- Research Publications of NRCVEE
  - Arya N.K., Singh K., Malik A., and Mehrotra R. (2018). Effect of heartfulness cleaning and meditation on heart rate variability. *Indian heart journal*, 70, S50-S55.
  - Arya N.K., Singh K., and Malik A. (2017). Effect of Heartfulness Spiritual Practice based program on mental and physical health indicators. *Int J Res Manage Soc Sci*, 5, 91-103.
  - Arya N.K., Singh K., and Malik A. (2017). Impact of five days spiritual practice in Himalayan Ashram of Sahaj Marg on well-being related parameters and selected physiological indicators. *The International Journal of*

*Indian Psychology*, 4(2/88), 36-50.

## 2. Outreach and other Activities

### 2.1 Programmes organized by the Vivekananda Study Circle

- Talk on 'Ways to Joyous Youthful Life' by Sister Shivani on 17th September, 2018.
- VSC presented a talk on "Vivek & Vivekananda":
  - Adinarayanan Ji is a computer scientist turned Yogi. Adinarayanan Founder Anaadi foundation is a Tapasvi and visionary teacher on 18th January, 2019.
  - Pravrajika Divyanandaprana is a Monastic Member of Ramakrishna Sarada Mission and also the Principal of NiveditaVidyamandir, NewDelhion 18th January, 2019.
- Seminar to commemorate Swami Vivekanand's Historic Address @ Parliament of Religions on 9th February 2019.
- Talk by Sri M. on Exploring Consciousness the Upanishadic Way on 13th March, 2019.

### 2.2 Technical talk

- Documentary screening of Dinarang: The Musical Life of Pt. Dinkar Kaikini on 14th July, 2018.

### 2.3 Yoga and Meditation workshops

- Regular Yoga Classes for campus residents: In August 2014, NRCVEE joined Board for Sports Activities (BSA) for starting regular yoga sessions by trained yoga instructors. To ensure seriousness in the participants, these are paid classes with monthly registration. The evening classes have been running for almost five years. Free Yoga classes specifically for students are also organized from time to time.
- Meditation Workshops: Two workshops on "Mindfulness Meditation"
  - One day workshop by Prof. M.R. Ravi on April 15, 2018.
  - One day workshop by Prof. M.R. Ravi on October 28, 2018.

These workshops were very well attended by students, staff and faculty and were very well received.

- Jal Neti Workshop for students and faculty.

### 2.4 International Yoga Day (IYD)

IYD, 2018 was very successful with several participants in the practical yoga sessions as well as in the talks on yoga.

### 2.5 Gandhi Jayanti Celebrations

In the organization of these programmes at the institute level, NRCVEE has been taking the lead.

# New Initiatives

(April 1, 2018 - March 31, 2019)

## NEW COURSES PROPOSED/DEVELOPED/INITIATED

During the period, the following new courses have been proposed/developed/initiated :

### Biochemical Engineering and Biotechnology

- BBL752 Microbial Ecology
- BBL756 Plasmid Biology
- BBL751 Biotechnology Entrepreneurship
- Optics within biology

### Chemical Engineering

- CLL788 Process Data Analytics (3-0-0) UG & PG level developed by Prof. Hariprasad Kodamana.
- CLL787 Statistical Methods for Chemical Engineering (3-0-0) UG & PG level developed by Prof. Hariprasad Kodamana.)

### Civil Engineering

- "Digital Design and Construction" by Dr. Uma Maheshwari

### Humanities and Social Sciences

- HSV771 Ethnographic Research Methods by Dr. Farhana Ibrahim

### Management Studies

- MSV801 Selected Topics in OB & HR Management
- MSV802 Selected Topics in Finance
- MSV803 Selected Topics in IT Management
- MSV804 Selected Topics in Operations Management
- MSV805 Selected Topics in Economics
- MSV806 Selected Topics in Marketing Management
- MSV815 Case Study Teaching and Writing
- MSV816 Contemporary Issue in Management
- MSV817 Art of Scholarship in Management Research
- MS.P801 Interdisciplinary Research in Management
- MSV818 Contemporary Issues in OB & HR Management
- MSV819 Contemporary Issues in Finance
- MSV820 Contemporary Issues in IT Management
- MSV821 Contemporary Issues in Operations Management
- MSV822 Contemporary Issues in Economic Policy
- MSV824 Contemporary Issues in Strategic Management

### Materials Science and Engineering

- MLL727 Smart Polymeric Materials (3-0-0) developed by Prof. Tripathi

### Mathematics

- MTL796 Stochastic Differential Equations and its Application
- MTL797 Computational Methods for Finance

### Textile Technology

- MOOCs Courses on "Textured Yarn Technology" and "Advanced Textile Printing Technology" by Prof. Kushal Sen under NPTEL, during Jan –April, 2019.
- MOOCs Course on "Carding and Drawing" by Prof. R. Chattopadhyay in July 2018.
- MOOCs course on "Theory of yarn Structure" by Prof. Dipayan Das under NPTEL during Jan-April, 2019.
- MOOCs Course on "Science of Clothing Comfort", "Evaluation of Textile Materials" and "Testing of Functional and Technical Textiles" under NPTEL by Prof. Apurba Das.

### Biomedical Engineering

- BML771 Orthopaedic Device Design

### Energy Studies

- A new M.Tech. Programme on Energy & Environment Technologies and Management (ESN) has been developed.

### Rural Development and Technology

- RDL702 Karigar and Traditional Industries (Course coordinator : Prof. P.M.V. Subbarao).
- RDL725 Ecological Perspective of Growth and Development (Course coordinator : Prof. Vivek Kumar).
- RDL727 Conservation and Recycling in Rural Areas (Course coordinator : Prof. P.M.V. Subbarao).
- RDL761 Value Chain in Agro-Food Processing (Course coordinator : Prof. J.K. Sahu).
- RDL770 Holistic Value Chain and Technologies for Rural Development (Course coordinator: Prof. Kavya Dashora).

### Amar Nath and Shashi Khosla School of Information Technology

- SIV851 Special Module on eGovernance (1 credit)
- SIL861 Special Topics in Information and Communication Technologies for Development (3 credits)
- SIL761 Introduction to Information and Communication Technologies for Development (4 credits)
- SIL763 Introduction to Blockchains, Cryptocurrencies and Smart Contracts (4 credits)

### QIP/CEP/TEQIP/GIAN COURSES

#### Applied Mechanics

- "Micromechanics of Fracture" under GIAN organized and hosted by Prof. S. Pradyumna (Applied Mechanics), Speaker: Prof. Dietmar Gross, TU Darmstadt (Foreign Faculty) from 21-25 January, 2019.
- CEP- MID Career Refresher Course (MCRC) for officers of Corps of Naval Constructors, Indian Navy, May 2018.

### Biochemical Engineering and Biotechnology

- Short Term Course on “Microbial Diversity for Human Welfare” under the aegis of ‘Technical Education Quality Improvement Program (TEQIP-III)’ conducted by Profs. Shilpi Sharma and Preeti Srivastava during 9-11 April, 2018.

### Chemical Engineering

- Workshop on “Advanced Simulation Methods: DFT, MD and Beyond - Basic Principles and Modern Insights” under TEQIP by Prof. Saswata Bhattacharya, Prof. Hemant Kashyap, Prof. Manish Agarwal, Prof. M. Ali Haider and Prof. Anoop Krishnan from 6-10 March, 2019.
- “Downstream Processing for Production of Biologicals” under GIAN by Prof. Anurag Rathore from 11-14 December, 2018.
- “Analytical Systems Biology and characterization of Biotherapeutics” under GIAN by Prof. Anurag Rathore from 11-14 December, 2018.
- “Centre of Excellence for Biopharmaceutical Technology Course Series” under CEP by Prof. Anurag Rathore from 12-14 December, 2018.

### Computer Science and Engineering

- CEP course on “running deep learning inferences on embedded platforms” at CDOT.
- CEP workshop “5G and IoT Security” (Indo-Japanese International Workshop) from 10-11 September, 2018.

### Electrical Engineering

- ‘Cloud Computing & Network Virtualization’ organized by Prof. Subrat Kar, Deptt of Electrical Engineering, IIT Delhi from 10-14 October, 2018.
- ‘Brain Science and Technology’ organized by Prof. Tapan K. Gandhi, Deptt of Electrical Engineering, IIT Delhi from 2-6 March, 2019.
- “Next Generation Wireless Communication Technologies” organised by Prof. Saif K Mohammed and Prof. Shankar Prakriya, during 4-7 July, 2018 in Sonapat campus.

### Humanities and Social Sciences

- Certificate Course in “Econometrics for Business Decisions” 1-23 September, 2018 jointly organised by HSS and DMS, Coordinators: Dr. Amlendu Dubey, Dr. Ankush Agrawal and Dr. Sourabh Bikas Paul.
- “Confronting Evil”, international philosophy conference & QIP course, Coordinator: Dr. Divya Dwivedi.

### Management Studies

- “Developing Skills for Effective communication” by Prof. Shuchi Sinha from 28-30 August, 2018.
- “Decision making and Negotiation for managers” by Prof. Shuchi Sinha, 11-13 December, 2018.
- “Developing Leadership potential and Building Effective Teams” by Prof Shuchi Sinha, 4-6 December, 2018.
- “Executive Programme in DATA & Decision Science

Consulting” by Prof. Surya Prakash Singh and Prof. Arpan K. Kar, 8-15 October, 2018.

- “Executive Programme in Management in Strategic Innovations, Digital Marketing and Business Analytics” by Prof. Sanjay Dhir, Prof. Arpan K. Kar and Prof. P. Vigneswara Ilavarasan from January 2018 till June 2018 (only on Weekends).
- “Econometrics for Business Decision” by Prof. Amlendu Dubey from 1-23 September, 2018.
- “Certificate Course on Business Management (Focus: Digital Marketing)” by Prof. Harish Chaudhary, Session 1: 20th October, 2018 to 23rd December, 2018. Session 2: 02.06.2019 till 05.08.2019.
- “Not for Profit Marketing” CEP GIAN coordinated by Prof. Mahim Sagar. 27-31 August, 2018.
- “Startup Base-camp 101” by Prof. M.P. Gupta & Prof. Harshwardhan Mishra from 11 June till 11 October, 2018.

### Materials Science and Engineering

- Prof. Suresh Neelakantan, as course coordinator, along with Prof. Nitya Nand Gosvami and Prof. Jayant Jain organized CEP training courses for Maruti Suzuki India Limited (MSIL), Gurgaon employees at IIT Delhi:
  - a. On “Automotive Materials – Fundamentals to Applications” during 2-8 May, 2018 (5 days).
  - b. On “Automotive Materials – Fundamentals to Applications” during 20-24 August, 2018.
- Prof. Nitya Nand Gosvami (course coordinator), along with Prof. Suresh Neelakantan and Prof. Jayant Jain, organized a CEP training course on ‘Metallurgical Failure Analysis’ for MSIL employees during 7-9 March, 2019 at IIT Delhi.
- J. Jain, S. Neelakantan, N. Gosvami and R. Prasad, organized a CEP course on “Engineering Materials for Automotive Applications”, Maruti Suzuki India Ltd., from 29 April - 3 May, 2019, at IIT Delhi.

### Mechanical Engineering

- “Surface Texturing for Green Technologies” organized by Prof. R.K. Pandey, Department of Mechanical Engineering, IIT Delhi during 25-29 March, 2019.

### Physics

- “AMS2019 workshop” was an event under TQIP/CEP organized by Saswata Bhattacharya from 6-10 March, 2019.

### Textile Technology

- “Leadership and Entrepreneurial Skills” organised by Prof. R. Chattopadhyay and Prof. Kushal Sen, Department of Textile Technology, IIT Delhi from 30 April to 12 May, 2018.
- A QIP/CEP program was conducted on “Sustainability in Textile manufacturing processes” by Prof. B.K. Behera.

### Atmospheric Sciences

- “Advanced Oceanography” Course conducted through CEP for Naval Officers, Coordinated by Prof. A.D. Rao and Prof. Vimlesh Pant during 11-16 February, 2019.

**Rural Development and Technology**

- GIAN course on “Technical Challenges and Solutions for Holistic Development of Communities” (In the Aegis of Unnat Bharat Abhiyan) at IIT Delhi in collaboration with Foreign Faculty Dr. Priti Parikh (Associate Professor, Civil, Environmental and Geomatic Engineering Department, University College London) on 14-19 September, 2018.

**Amar Nath and Shashi Khosla School of Information Technology**

- CEP workshop on “5G & IoT Security” during 10-11 September, 2018.

**MoUs SIGNED BY THE INSTITUTE**

**A. Memorandum of Understandings**

In order to have close cooperation in the field of Teaching and Research, the Institute has signed MoUs/Agreements with institutions/organizations in India and abroad. Currently there are 117 MoUs with foreign Institutions/Organizations and 35 MoUs with Indian Institutions/Organizations. The objectives of these MoUs include exchange of students and faculty, joint research activities and fellowships for training at doctoral and postdoctoral level etc.

During the period 36 MoUs were signed with the foreign Institutions/Organizations:

Memorandum of Understanding (MoU) signed during the period	
Name of the Institution	Country
Chalmers University	Sweden
University of Tokyo	Tokyo
The ARC Center of Excellence for Climate Extremes Australia	Australia
Clemson University	USA
Ferdowsi University of Mashhad	Iran
Hiroshima University (ILDP)	Japan
Monterrey Institute of Technology and Higher Education (ITESM)	Mexico
Tashkent University of Innovation & Technology (TUIT)	Uzbekistan
Toyohashi University of Technology Japan (TUT)	Japan
Persian Gulf University Bushehr	Iran
University of Essex	England
Andijan Machine-Building Institute	Uzbekistan
Amsterdam University of Applied Science	Netherlands
Macquarie University	Australia
Instituto Tecnológico y de Estudios Superiores de Monterrey	Mexico
bbw University of Applied Sciences	Germany
Babol Noshirvani University of Technology	Iran

The University of Newcastle	Australia
Agreement of Partnership Technical University of Munich (TUM)	Germany
The Governing Council of the University of Toronto	Canada
Academia Sinica	Taiwan
The University of Queensland	Australia
The ARC Center of Excellence for Climate Extremes Australia	Australia
International Committee of the Red Cross	Switzerland
Leibniz-Institut für Polymerforschung Dresden e.V. (ipf)	Germany
The Board of Trustee of the University of Illinois	USA
National Chiao Tung University	Taiwan
The Board of Regents of the University System of Georgia	USA
Shibaura Institute of Technology (LoI)	Japan
Nanyang Normal University	China
Simon Fraser University (SFU) British Columbia	Canada
Moscow Aviation Institute (National Research University)	Russia
Samarkand State University	Uzbekistan
National Taipei University of Technology (Taiwan)	Taiwan
Technical University of Denmark (DTU)	Denmark
Student Exchange Agreement With Macquarie University Sydney	Australia

**B. Institutions of Chairs**

The Industry and the alumni of the Institute have extended significant support to the Institute for its academic and research programmes by way of instituting chairs in various fields. As on date, 24 Chairs are functional at the Institute.

**C. Scholarships/Medals/Awards/Fellowships**

To encourage and to provide financial assistance to needy students of the Institute, individuals, trusts and organizations have been instituting scholarships etc. At present there are 74 awards/scholarships/medal stand instituted at Undergraduate and Postgraduate levels. In addition the Institute has a “Loan Scholarship Scheme” which makes it more affordable for the students in comparison to taking loan from the banks.

During the period under report following scholarships was instituted:

1. IONX Scholarship (₹1 Lac)

**D. New Faculty Research Grant**

To encourage the new faculty for developing research facilities in the area of their expertise, during the period under report the Institute allocated a sum of ₹377.26 lakhs.

## BOOKS AND CHAPTERS PUBLISHED/EDITED

## Chemistry

- Prof. Anil J. Elias, "The Chemistry of the p-Block elements: Syntheses, Reactions and Applications". Universities Press, Hyderabad, October 2018.
- Sunita J. Varjani, Binod Parameswaran, Sunil Kumar, S.K. Khare (Eds.) (2018) "Biosynthetic Technology and Environmental Challenges", Springer, Singapore. ISBN: 978-981-10-7433-2.
- Shubhrima Ghosh, Sumit Kumar and S. K. Khare (2019), "Microbial Diversity of Saline Habitats: An Overview of Biotechnological Applications. Microorganisms in Saline Environments: Strategies and Functions", Springer Verlag, Germany.
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- Shubhrima Ghosh, Shahenzav Alam, Anurag S. Rathore and S.K. Khare (2019), "Stability of Therapeutic Enzymes: Challenges and Recent Advances. Advances in Experimental Medicine and Biology", Springer Nature, Switzerland.
- Shahenzav Alam, Kumar Pranaw, Rameshwar Tiwari and S.K. Khare (2018), "Recent Development in the Uses of Asparaginase as Food Enzyme. In Green Bio-Processes.", Springer, Singapore.
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- Arti Kumari, Razi Ahmad, Amrik Bhattacharya, Shivani Chaturvedi and S.K. Khare (2018), "Biofuels and Their Impact Assessment: In Biofuels: Advances and Perspectives", Studium Press (India) Pvt. Ltd., India.
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- Gupta, N. Chandna, P. Dubey, A.K. Singh, and N. Jain\* Chem. Commun., 54, 7511 - 7514 (2018) "GO-Cu $_7\text{S}_4$  catalyzed ortho-aminomethylation of phenol derivatives with N, Ndimethylbenzylamines: Site-selective oxidative CD C.S".
- K. Ojha, S. Saha, P. Dagar and A.K. Ganguli, Phys. Chem. Chem. Phys., 2018, 20, 6777-6799 "Nanocatalysts for hydrogen evolution reactions".
- J. Mishra, H. Kaur, A.K. Ganguli and N. Kaur, J. Mol. Struct., 2018, 1161, 34-43 "Fluorescent chemosensor based on urea/thiourea moiety for sensing of Hg (II) ions in an aqueous medium with high sensitivity and selectivity: A comparative account on effect of molecular architecture on chemosensing".
- Sunaina, V. Sethi, S.K. Mehta, A.K. Ganguli and S. Vaidya, Phys. Chem. Chem. Phys., 2019, 21, 336-348 "Understanding the role of co-surfactants in microemulsions on the growth of copper oxalate using SAXS".
- M. Devi, W. Koshibae, G. Sharma, R. Tomar, V.M. Gaikwad, R.M. Varma, M.N. Nair, M. Jha, D.D. Sarma, R. Chatterjee, A.K. Ganguli and S. Chakraverty, J. Mater. Chem. C, 2019, 7, 1337-1344 "The limit to realize an isolated magnetic single skyrmionic state".
- S.T. Nishanthi, K. K. Yadav, A. Baruah, A. K Ganguli and M. Jha, Electrochimica Acta, 2019, 300, 177-185 "New sustainable and environmental friendly process of synthesis of highly porous Mo $_2\text{S}_3$  nanoflowers in cooking oil and their electrochemical properties".
- J. Mishra, N. Kaur and A.K. Ganguli, Inorganica Chimica Acta, 2019, 487, 214-220, "Selective and sensitive fluorescence recognition of Pb(II) in aqueous medium by organic nanoparticles of a urea linker based tetrapodal receptor: Effect of linker molecules in a sensor on chemosensing".
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- A. Singh, V. Sheoran, B. Prakash and A.K. Ganguli, Mater. Res. Express, 2018, "Droplet-microfluidics for the controlled synthesis and efficient photocatalysis of TiO $_2$  nanoparticles, A. Baruah".
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- Pratibha Kumari, Shobhna, Supreet Kaur, and Hemant K. Kashyap, "Influence of Hydration on the Structure of Reline Deep Eutectic Solvent: A Molecular Dynamics Study", ACS Omega, 3, 15246, (2018).
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Pratibha Kumari, Hemant K. Kashyap, and Shalini Gupta, "Mechanistic Evaluation of Lipopolysaccharide-alexidine Interaction Using Spectroscopic and in Silico Approaches", *ACS Infectious Diseases*, 4, 1546 (2018).

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- Sraddha Agrawal and Hemant K. Kashyap, "Structures of Binary Mixtures of Ionic Liquid 1-Butyl-3-methylimidazolium Bis(trifluoromethylsulfonyl)imide with Primary Alcohols: The Role of Hydrogen-Bonding", *J. Mol. Liq.* 261, 337 (2018).
- Gourav Shrivastav, Richard C. Rensing and Hemant K. Kashyap, "Capillary Evaporation of the Ionic Liquid [EMIM][BF4] in Nanoscale Solvophobic Confinement", *J. Chem. Phys.* 148, 193810 (2018).

#### Computer Science and Engineering

- Sandeep Sen, Amit Kumar "Design and Analysis of Algorithms: A contemporary perspective." Cambridge University Press, 2019.
- Saroj Kaushik, "Soft Computing: Fundamentals, Techniques and Application." McGraw Hill Education, June 2018.

#### Electrical Engineering

- Nalin Kumar Sharma and S. Janardhanan, "Discrete-Time Higher Order Sliding Mode – The Concept and the Control", Springer, 2018. ISBN: 978-3-030-00171-1.

#### Humanities and Social Sciences

- Sarbeswar Sahoo "Pentecostalism and Politics of Conversion in India" Cambridge University Press (with a Foreword by Professor Hans Joas), May 2018.
- Kamlesh Singh, "Hijab, Islam and Gender Equality in India" Kluwer Academic Publishers, 2018.
- Arjun Ghosh, Bijon Bhattacharya "Nabanna: of Famine and Resilience" Rupa Publication, 2018.
- Reetika Khera "Dissent on Aadhar- Big data meets big brother" Orient Blackswan, 2018.
- Angelie Multani "Centering the Margins: Essays on the Plays of Mahesh Dattani" Penkraft International, 2018
- Shaj Mohan & Divya Dwivedi "Gandhi and Philosophy: A philosophical investigation of Gandhi's thought" Bloomsbury, 2019.
- Divya Dwivedi, Henrik Nielsen, Skov & Richard Walsh (Eds.) "Narratology and Ideology: Theory, Form, and Context in Postcolonial Narratives" Ohio State University Press, 2018.

#### Management Studies

- "Digital India- Reflection and Practice" published by Springer and Authored by Prof. Shuchi Sinha, Prof. Arpan Kumar Kar, Prof. M.P. Gupta.
- "Flexible Strategies in VUCA Markets" published by Springer under the Book Series Flexible Systems. Management (Editors: Prof. Sanjay Dhir and Prof. Sushil).
- "Global Value Chain, Flexibility and Sustainability" Published by Springer under the Book Series Flexible Systems. Management (Editors: Julia Connell, Renu Agarwal, Sushil and Sanjay Dhir).
- S. Anwar, S. Singh and P.K. Jain (2018), "Financial Flexibility through share repurchases: Evidence from India, Flexibility in Resource Management" Ed., Book Series on Flexible Systems. Management, Springer, PP.163-183. ISSN: 2199-8493.
- M.Y. Khan and P.K. Jain (2019), "Financial Management": Text, Problems. and cases McGraw Hill (India) Ltd. New Delhi, (8th Edition).
- Research book (CBME), Todorisingh Study- Looking at Health Through Women's eyes, co-authored by Prof. Mahim Sagar, Prof. Smita, Prof. Amlendu and Dr. Amit Mehndiratta.
- "Statistics for Business & Economics 2nd Edition" with Wiley by Prof. Seema Sharma.
- "Excellence in School Education (9th Edition)" Conference Proceeding (Editor) – Prof. Harish Chaudhary.

#### Materials Science and Engineering

- Book Chapter entitled "Bio-plastics and Biofuel: Is it the Way in Future Development for End Users?" by Prof. Sampa Saha.

#### Mechanical Engineering

- S.K. Sinha (editor), Handbook of Polymer Tribology, World Scientific Publishers (Singapore), April 2018, ISBN: 978-981-3227-78-1 (hardcover).

#### Textile Technology

- Shahid-ul-Islam and B.S. Butola (Ed.), "The Impact and Prospects of Green Chemistry on Textile Technology", Elsevier, ISBN: 978-0-08-102491-1, 2019.
- Shahid-ul-Islam and B.S. Butola (Ed.), "Nanomaterials in the wet Processing of Textiles", John Wiley Scrivener, ISBN: 978-1-119-45984-2.
- Shahid-ul-Islam and B.S. Butola (Ed.), "Advanced Textile Engineering Materials", John Wiley, ISBN: 978-1-119-48807-1.
- Manjeet Jassal, Ashwini K. Agrawal, Deepika Gupta and Kamlesh Panwar, Chapter on "Aramid Fibers" in Handbook of Fibrous Materials, Jinlian Hu, Wiley-VCH, ISBN: 9783527342204.
- Manjeet Jassal, Ashwini K. Agrawal, Deepika Gupta, and Hardeep Singh Jhinjer., Chapter on "Recent advances

- in electrospun nanocomposite nanofibrous webs for filtration" in *Nanotechnology in Textiles: Advances and Developments in Polymer Nanocomposites* to be published in hardcover and eBook by Pan Stanford Publishing.
- B. Gupta, S. Anjum, A. Sharma, C. Verma, J. Joy, "Development in Polycaprolactone (PCL) Based Antimicrobial Nanocomposites Fibers, in 'Nanotechnology in Textiles: Advances and Developments in Polymer Nanocomposites' Eds: M. Joshi, Pan Stanford Publishing Pvt. Ltd., 2019.
  - S. Anjum, J. Joy, S. Singh, B. Gupta, "Antimicrobial Functionalisation of Surgical sutures, in 'Advances in Polymers Science' Eds: B. Gupta, AK Ghosh, S. Rattan, A. Suzuki, Springer, 2018.
  - Samrat Mukhopadhyay, Bapan Adak "Single-Polymer Composites" CRC Press, ISBN 9781138575325 - CAT# K43673.
  - Mangala Joshi and Bapan Adak, "Advances in Nanotechnology Based Functional, Smart and Intelligent Textiles: A Review for Comprehensive Nanoscience and Nanotechnology, 2nd edition, Publisher Elsevier Editor-in-Chiefs David Andrews Thomas Nann Robert Lipson, ISBN: 9780128122952, year 2019.
  - Mangala Joshi and Anasuya Roy. "Inorganic NPs based antimicrobial textiles and fibers: The future of functional textiles" In Shahid-ul-Islam (Eds.), *Nanomaterials in Wet Processing of Textiles* Scrivener Publishing and John Wiley Inc. ISBN: 978-1-119-45984-2 March 2018.
  - Mangala Joshi, B. Adak, (2018) "Coated or laminated textiles for aerostat and stratospheric airship", In: Ul-Islam, S. Butola, B.S. (Eds.), *Advanced Textile Engineering Materials*, Wiley-Scrivener Publishing, Chapter 7, pp. 257-287.
  - "Nanotechnology in Textiles: Advances and Developments in Polymer Nanocomposites" Edited by Mangala Joshi, Pan Stanford publisher, Singapore (Under publication 2019).
  - "Theory of Structure and Mechanics of Yarns" by Bohuslav Neckar and Dipayan Das, Woodhead Publishing (India) Pvt. Ltd., New Delhi, 2018.
  - "Introduction to Statistical Methods, Design of Experiments and Statistical Quality Control" by Dharmaraja S. and Dipayan Das, Springer, 2018.

### Biomedical Engineering

- Prof. Amit Mehndiratta – "Todaraisingh Study: Looking at Health Through Women's Eye", Thompson Publishers, 24th Jan 2019.

### Energy Studies

- "Finite time thermodynamics of power and refrigeration cycles", by S.C. Kaushik, S.K. Tyagi and P. Kumar, Springer, Germany (2018).
- Arpita Ghosh, Manisha Ghosh Dastidar, T.R. Sreekrishnan, *Bioremediation of Chromium Complex Dye by Growing Aspergillus flavus*, Water Quality Management, (2018). pp 81-92.

- Kaushik Saha, Michele Battistoni, Sibendu Som and Xianguo Li, "Modeling of cavitation in fuel injectors with single- and two-fluid approaches" in the book "Two-phase Flow for Automotive and Power Generation Sectors", pp. 185-201, Springer, 2019.
- Kaushik Saha, A.K. Agarwal, K. Ghosh, S. Som, "Introduction: Two-Phase Flow for Automotive and Power Generation Sectors", pp1-5, 2019.
- S.C. Kaushik, R. Lamba, S.K. Tyagi, *Physics, Modelling and Optimization Studies of Photon Enhanced Thermionic Emission (PETE) Energy Conversion System: A Review*, Book Chapter in the Handbook of Research on Power and Energy System Optimization published by Advances in Environmental Engineering and Green Technologies IGI Global, (2018), pp.399-452.
- R. Lamba, S.C. Kaushik, *Parametric optimization of concentrated photovoltaic-thermoelectric hybrid system, The role of Exergy in Energy and Environment* published by Springer Nature, (2018), pp.525-543.
- N.K. Pathak, Senthil Kumar Pandian and R.P. Sharma, "Plasmonic Perovskite Solar Cell Utilizing Noble Metal – Metal Oxide Hybrid Nanoparticles", Publisher: Elsevier, 2018, Book Chapter in *Noble metal-metal oxide hybrid nanoparticles: fundamentals and applications*.

### Bharti School of Telecommunication Technology & Mgmt.

- Prof. Arpan Kar, "Digital India: Reflections and Practice", Kar A.K., Sinha S. and Gupta M.P. (April 2018). (eds) in Springer Nature. ISBN 978-3-319-78378-9.

### Amar Nath and Shashi Khosla School of Information Technology

- Prof. Saroj Kaushik, "Soft Computing: Fundamentals, Techniques and Application" by McGraw Hill Education in June 2018.

### MAJOR RESEARCH INITIATIVES/ RESEARCH PROJECTS UNDERTAKEN

#### Biochemical Engineering and Biotechnology

- "DOSA: Diagnostics for One Health and User Driven Solutions for AMR" funded with Indo-UK grant by Department of Biotechnology, GOI & ESRC UK.

#### Chemical Engineering

- Prof. K.K. Pant has become founder of American Chemical Society International Student Chapter in IIT Delhi.
- A research agreement signed with Tata Steel R&D on Phase II of the collaborative research on "Mixing in a Basic Oxygen Furnace (BOF) under Combined Blowing Conditions: Cold Flow Measurements and Development of CFD Model" Duration: 2 years (2018-2020), Coordinator: Prof. Vivek V. Buwa.
- Prof. Shalini Gupta is founding member of a new unit in IITD called IGES (Initiative for Gender Equity and

Sensitization) and Secretary & founding member of Society for Interdisciplinary Research in Materials and Biology (SIRMB) 2018.

- An agreement was signed for Scholarships, exchange of Post-Doctoral and Faculty Positions between IIT Delhi and Instituto Tecnológico y de Estudios Superiores de Monterrey (ITESM), Mexico.
- New major national project initiative on development of Coal to Methanol technology based on Indian Coal, funded by DST and supported by NITI Aayog & Thermax (industrial partner) initiated in the Department, Prof. S. Roy, Prof. K.K. Pant, Prof. Sreedevi U., Prof. Divesh Bhatia and Prof. Vivek V. Buwa, are part of the initiative from IITD side.
- Prof. K.K. Pant has been awarded a grant of ₹97.55 lakhs from Semi-Conductor Laboratory, Department of Space, Government of India for project research entitled "Development of suitable processes for the synthesis and purification of Trimethyl phosphate (TMPO) and Triethyl borate (TEB)".
- Dept. received a grant of ₹3.24 Cr for Improvement of S&T Infrastructure in Universities and Higher Educational Institutions (FIST) DST.
- Prof. Sreedevi Upadhyayula, Bimetallic nanocatalysts supported on porous carbon for production of biofuels and value-added chemicals through hydrodeoxygenation process.
- Prof. K.K. Pant, Thermo-Catalytic cracking of waste plastic for the production of value added chemicals, LSRB-DRDO.

### Chemistry

- Multi-Institutional Faculty Interdisciplinary Research Project (M-FIRP) on "Studies on halophilic / haloalkaliphilic actinomycetes and bacteria from hypersaline habitat as potential source of antibacterial molecules for drug resistant microbes was initiated with Dr. Seema Sood, Dr. Arti Kapil, Professor Deptt. of Microbiology, AIIMS, New Delhi & Professor S.K. Khare, Dept. of Chemistry, IIT Delhi.
- Nano-Mission Project (DST)-Design of 2D Transition metal dichalcogenides and their applications in photoelectrochemistry, Professor A.K. Ganguli.

### Computer Science and Engineering

- IBM AI-Horizons -- IITD partnership was signed.
- Joint Indo-US Center on "Algorithms under Uncertainty" with IIT Delhi, IIT Kanpur, Carnegie Mellon University and Duke University as partner institutions.

### Electrical Engineering

- "Research and Development on Fifth Generation (5G) Communication Systems" The Department is contributing towards the development of an indigenously built 5G Test Bed compliant with the 3GPP 5G New Radio standard. This development is part of the Department of

Telecommunication (DoT) funded multi-institute "5G Test Bed" project. Five faculty members and 25 Ph.D. scholars in the Department are involved in this and other projects on 5G R&D.

### Humanities and Social Sciences

- Sarbeswar Sahoo, "Role of Civil Society in Promoting Religious Freedom and Gender Equality in India and Bangladesh" (with University of Cardiff), funded by the Global Challenges Research Fund of the Academy of the Medical Sciences, UK (24,025 Pounds), March 2018 to August 2019.
- Sarbeswar Sahoo, "Civil Society Advocacy and Inclusive Development in India," (with University of Wageningen), funded by Netherlands Research Organization (0.5 million Euro), February 2018 to September 2019.
- Shveta Singh, Kanika T. Bhal and Purnima Singh "Assessment of business and societal impact of corporate social responsibility (CSR)" 2017-2019.
- Purnima Singh and R.B. Nair, "Geography of Philosophy" (Templeton Foundation), 2019-2021.
- Samar Husain, "Prediction processes in sentence processing: Insights from Hindi" (Dept. of Science and Technology – Cognitive Science Research Initiative, Govt. of India), 2016-2019.
- Varsha Singh, "Neural basis of Decision making: Lateralization of cognitive function in medial-temporal lobe epilepsy (MTLE) patients" 2018-2020.
- J.J. Thomas, "Labour in Indian Manufacturing" Azim Premji University, Bangalore, 2018-2019.

### Management Studies

- "Training for All (T4A): An Integrated Training Program to Train Mainstream and Special Education Needs Students in Employability Skills." PI – Prof. Shuchi Sinha funded by – UKIERI – MS.DE funded project under the UKIERI skills thematic Institutional Partnerships 2019.
- "Assessment of multi-stakeholder engagement in tourism - Insights from social media and service providers" Coordinator– Prof. Arpan K. Kar and Prof. P. Vigneswara Ilavarasan.
- "Analyzing Big Data in Twitter for Identifying Concerns - Inputs in Digital Payments and Telecommunications" Coordinator: Prof. Arpan K. Kar.
- "Study of population migration and its impacts (2018)" ₹ 20,70,000 –(PI) Prof. Arpan K. Kar, and Prof. P. Vigneswara Ilavarasan, and Prof. Amlendu K. Dubey.
- "Strategizing Child Safety Management using Facebook Platforms". Cyber Peace Foundation, Jharkhand. (2018) ₹ 18,67,500. (PI) Prof. Arpan K. Kar Prof. and P. Vigneswara Ilavarasan.
- "R&D Case Development in Data Science and Analytics for BitGrit Japan". Netsoft Consulting Services Private Limited, New Delhi. (2018) ₹37,50,00. (PI) Prof. Arpan K. Kar and P. Vigneswara Ilavarasan.

- “Concurrent Evaluation and Monitoring of National Food Security Act, 2013” funded by Ministry of consumer affairs, (PI) Prof. Seema Sharma & Prof. Amlendu K. Dubey.
- “Public Engagement on Health and Development in India” - Prof. Amlendu K. Dubey.
- “Impact Evaluation Study of the Scheme Sub-mission on Seeds and Planting Material” under National Mission on Agriculture Extension and Technology Coordinator: Prof. Amlendu K. Dubey.
- “Preparing for long Term Case Needs of Elderly in India: Design Guidelines for Old Age Home”, Assessment of Manpower for Institutional/Home Based Care of Elderly and Curriculum Development - Prof Amlendu K. Dubey.
- “Concurrent Evaluation and Monitoring of National Food Security Act, 2013 (RP03543)” Funded by Ministry of Food and Consumer Affairs, Duration - 2 May, 2018 - 1 May, 2019, Grant amount - ₹3 lakhs. PI – Prof. Seema Sharma. Co-PI: Prof. Surendra S. Yadav, Team member: Prof. Shveta Singh.
- “Assessment of multistake holder engagement in Tourism – insight from Social Media and service providers” – Prof. Arpan K. Kar and Prof. P. Vigneswara Ilavarasan.
- “Analyzing Big Data in Twitter for identifying Concerns-Inputs in Digital Payments and Telecommunications” – Prof. Arpan K. Kar.
- “Study of Population migration and its impacts” – Prof. Arpan K. Kar, Prof. P. Vigneswara Ilavarasan, and Prof. Amlendu K. Dubey.
- “Assessing Cost of Adaptation of Climate Change for Forests in India” - Prof. Amlendu K. Dubey.

### Mathematics

- “Development of Predictive Data Analysis System using Artificial intelligence”, 2019-2021, (PI) Prof. N. Chatterjee, Funding Amount: ₹130 lakhs Funded by Ministry of Finance Directorate General of Goods and Services Tax Intelligence.
- “Hindi to English Machine Translation System for Judicial Domain”, 2018-2021, (PI) Prof. N. Chatterjee, Funding Amount: ₹18.08 lakhs Funded by Ministry of Electronics and Information Technology, India.
- “Solving Problems of Network Operations”, 2018-2020, (PI) Prof. N. Chatterjee, Funding Amount: 225.6 lakhs Funded by NOKIA Solutions and Networks India Pvt. Ltd.
- “Hackathon for Solving Network Problems”, 2018-19, (PI) Prof. N. Chatterjee, Funding Amount: ₹75.6 lakhs Funded by NOKIA Solutions and Networks India Pvt. Ltd.
- “Performance and Dependability Analysis and Development of Testbed of 5G Networks”, 2018-2021, (PI) Prof. S. Dharmaraja, Funding Amount: ₹43.04 lakhs Funded by Department of Telecommunication.
- “Games and Optimization for Energy Management with Stochasticity-GOMES”, 2018-2021, (PI) Prof. Vikas Vikram Singh, Funding Amount: ₹19.08 lakhs Funded by DST

(Indo-French).

- “Wavelet Methods for PDEs on Network”, (PI) Prof. Mani Mehra, Funding Amount: ₹6.60 lakhs Funded by DST.
- “DST Matrics Project”, (PI) Prof. B.S. Panda, Funding Amount: ₹6.60 lakhs Funded by DST.
- “Fourier Algebras on Ultraspherical Hypergroups”, (PI) Prof. Shravan Kumar, Funding Amount: 6.60 lakhs Funded by DST.
- “Pointwise a Posteriori Error Estimates of Finite Element Methods for the Elliptic Obstacle Problem”, 2019-2022, (PI) Prof. Kamana Porwal, Funded by DST Matrics-SERB Grant.
- “Finite Element Methods for Variational Inequalities of the second kind”, 2019-2022, (PI) Prof. Kamana Porwal, Funded by CSIR Extramural Research Grant.
- “Study of New Types of Continues Fractions and Applications”, (PI) Prof. Ritumoni Sarma, Funding Amount: ₹6.60 lakhs, Funded by DST Matrics Project.

### Textile Technology

- “Extreme cold climate clothing for Indian Army”, Prof. R.S. Rengasamy.
- “Focus Incubation Centre for 3D weaving and Structural composites”, Prof. B.K. Behera.
- Aerostat and Airship Materials Lab has been set up under the DRDO-JATC-SITEX Vertical (Joint Advanced Technology Centre) – ‘Smart and Intelligent Textiles’ vertical. (Prof. Mangla Joshi, Prof. B.S. Butola, Prof. Wazed Ali, Prof. Abhijit Majumdar and Prof. Bipin Kumar).
- Design and development of robot for sliver can transfer from one machine to designated machine under the Department of Heavy Industries, Prof. S.M. Ishtiaque.
- Development of multiple doffer flat carding system for production of medical applications under the Department of Heavy Industries, Prof. S.M. Ishtiaque.
- R&D and consultancy projects with GFL, INDIA on ‘Biocompatible Surfactant for Fluoropolymer’, Prof. Bhuvanesh Gupta.

### Applied Research in Electronics

- THz Electronics
- RF MEMS

### Energy Studies

- Perovskite Solar Cell

### Rural Development and Technology

- SATAT is a major initiative launched on 1 October, 2018. Sustainable Alternative towards Affordable Transportation (SATAT) initiative will boost availability of more affordable and green transport fuels.
- GOBAR-DHAN (Galvanising Organic Bio-Agro Resources) scheme on 30 April, 2018, to convert cattle dung and solid waste in farms to CBG and compost.
- Unnat Bharat Abhiyan 2.0.

- “Scientific Utilization Through Research Augmentation-Prime Products/Panchagavya from Indigenous Cows” (SUTRA-PIC up India).
- A new and major research sponsored by the DST on development of low pressure–high volume biomethane storage cylinder for transportation of bottled biogas for cooking and automotive fuel applications, has been started by Prof. V. K. Vijay, Dr. Ram Chandra and Prof. P. M. V. Subbarao.

### **Bharti School of Telecommunication Technology & Mgmt.**

- 5G COE
- Samsung Innovation
- Multi Testbed 5G:
  - a. Energy Optimization
  - b. IoT
  - c. Massive MIMO
  - d. mmWave
  - e. LiFi
  - f. Security
- Hughes Systique Corp
- Samsung 5G :
  - a. Reducing Latency for VR Gaming on 5G
  - b. Broadcast study for standardization
  - c. IoT activity engaging students & startups
- Air Pollution Monitoring campus network setup/engaging IITD startup
- CRDF for early TD detection
- Standardization:
  - a. ITU FG ML network
  - b. MEITY 3GPP
  - c. Support for Indian Languages Study Group in TSDSI
- Collaboration with:
  - a. Marconi Society
  - b. Celestini
- Industry Partners:
  - a. TCS
  - b. MoMagic + media Tek
  - c. Hughes Systique Corp
  - d. Key Sight

### **Amar Nath and Shashi Khosla School of Information Technology**

- Serving for the visually impaired person through research and innovation in affordable assistive technologies like Smart Cane Device, On Board Device for Bus Identification System, Tactile Readout Device, Tactile Graphics, Non Visual Desktop Access, Reading Assistant etc.

## **PATENTS**

### **Applied Mechanics**

- “All in one smart medical jacket”, PI: Prof. S.N. Singh.

- “Neonatal Incubator”, PI: Prof. S.N. Singh.
- “A novel device for measuring pressure pulses based on applanation tonometry”, PI: Prof. S. Roy.

### **Biochemical Engineering and Biotechnology**

- “Recombinant vector for bio-desulfurization, and implementations thereof”, PI: Prof. P. Srivastava.
- “Bioreactor”, PI: Prof AK Srivastava.
- “Bioreactor and a method for mass propagation of plant cell aggregates”, PI: Prof AK Srivastava.
- “A recombinant vector comprising a fusion DNA for cell surface display, and uses thereof”, PI: Prof P Srivastava.
- “Orthopedic Screw”, PI: Prof. D. Kalyanasundaram.
- “Dynamic platform based cell culture device”, PI: Prof. D. Kalyanasundaram.
- “A system for maintenance of root culture for improved viability and propagation”, PI: Prof. A.K. Shrivastava.

### **Chemical Engineering**

- “Process of preparation of fuel additives and commodity chemicals”, PI: Prof. K.K. Pant.
- “Liquid distributors for three-phase applications of monolith catalysts and substrates”, PI: Prof S. Roy.
- “Method for monitoring of foulants present on chromatographic resins using fluorescence probe”, PI: Prof. A.S. Rathore.
- “Process for producing recombinant peptides”, PI: Prof. A.S. Rathore.
- “An Assay and Kit for detection of endotoxin”, PI: Prof. S. Gupta.
- “Process for conversion of sulfur trioxide and hydrogen production”, PI: Prof. S. Upadhyayula.
- “Catalyst composition for conversion of sulfur trioxide and hydrogen production process”, PI: Prof S. Upadhyayula.
- “A novel process to develop efficient electrode for efficient vanadium redox flow battery”, PI: Prof. A. Verma.
- “A formulation for stabilizing bio-therapeutics”, PI: Prof. A.S. Rathore.
- “A method of preparation of reduced graphene oxide nanoparticles”, PI: Prof. A.N. Bhaskarwar.
- “A system for monitoring and control of chromatography”, PI: Prof. A.S. Rathore.

### **Civil Engineering**

- “Pullout device for measuring inclined pullout resistance of geosynthetic reinforcement material and method thereof”, PI: Prof. J.T. Shahu.
- “Apparatus and method for measuring pullout resistance of a reinforcing element of reinforced soil structures”, PI: Prof. G.V. Ramana.
- “A bioreactor landfill comprising prismoidal lysimeter”, PI: Prof. S. Chakma.

### Computer Science and Engineering

- "System and method for improving the performance of an architectural simulator", PI: Prof. S.R. Sarangi.
- "Method in blockchain systems for fast stabilization and increased responsiveness", PI: Prof. V.J. Ribeiro.
- "Method in blockchain systems for fast stabilization and increased responsiveness", PI: Prof. V.J. Ribeiro.

### Electrical Engineering

- "Shape engineered spectrally selective absorbers", PI: Prof. M. Singh.
- "A three-phase, three wire grid interfaced solar photovoltaic system with islanding and synchronization capabilities", PI: Prof. B. Singh.
- "A random access method and apparatus", PI: Prof. S.K. Mohammad.
- "IOT based person identification system using footfall signature", PI: Prof. S. Kar.
- "Photovoltaic system to track the maximum power point for maximum power extraction and method thereof", PI: Prof. B. Singh.
- "A wireless system for improving performance and prolonging battery lifetime of node by energy harvesting", PI: Prof. S. Prakriya.
- "Passive infrared sensor based indoor localization", PI: Prof. S Kar.
- "A method of distributed state estimation of nodes/bus of a power system", PI: Prof. A.R. Abhyankar.
- "A method and system for single stage solar PV fed water pumping using sensorless BLDC motor", PI: Prof. B. Singh.
- "System for adaptive compressive sampling and method thereof", PI: Prof. S. De.
- "Transmission method for a wireless communication system and apparatus thereof", PI: Prof. S.K. Mohammad.
- "An Extended Boost Range Buck-Boost Converter", PI: Prof. M. Veerachary.
- "Hollow bistable Micro-Electro-Mechanical Systems switch", PI: Bhaskar Mitra.
- "Low cost and efficient line interactive solar-ups system", PI: Prof. B. Singh.
- "A multiple access method for communication systems in high mobility and high delay spread wireless channels", PI: Prof. S.K. Mohammad.
- "Multivariate data compression system and method thereof", PI: Prof. S. De.
- "A self-synchronizing micro grid system and method thereof", PI: Prof. B. Singh.
- "Low temperature lead free high performance piezoelectric thin films", PI: Prof. B. Mitra and Prof. M. Singh.
- "Low cost electrochemical sensor", PI: Prof. M. Singh.
- "A level crossing warning system and a method thereof", PI: Prof. V. Chandra.

- "Robust range-based secure localization in resource constrained wireless sensor networks", PI: Prof. S. Kar.
- "Upconversion based thin films for a-Si photodetector", PI: Prof. M. Singh
- "System and method for identifying passive optical identifier", PI: Prof. A. Dixit.
- "A system and method of power restoration for supply of uninterrupted power", PI: Prof. S. Mishra.
- "A grid integrated solar photovoltaic based water pump driven by synchronous reluctance motor", PI: Prof. B. Singh.
- "Grid-interactive PV/battery system having switched reluctance motor drive for pumping systems", PI: Prof. B. Singh.

### Materials Science and Engineering

- "Process for preparing de-lignified micro-fibrillated fibre", PI: Prof. A.K. Ghosh.

### Mechanical Engineering

- "Composite railway sleeper", PI: Prof. N. Bhatnagar.
- "Rapid manufacturing of metal products using ultrasonic vibration assisted pressureless sintering (UAPS)", PI: Prof. P.M. Pandey.
- "Methodology to fabricate customized shape polymeric tubular stent", PI: Prof. P.M. Pandey.
- "Post-curing inflation of tire", PI: Prof. S. Mukherjee.
- "Internally cooled EDM tool by rapid manufacturing", PI: Prof. P.M. Pandey.
- "A microfluidic device and a method for fabricating a three-dimensional (3D) poly-high internal phase emulsions", PI: Prof. S.S. Bahga.
- "System and method for protecting fragile objects", PI: Prof. S. Mukherjee.
- "Post-curing inflation of tire", PI: Prof. S. Mukherjee.
- "An assistive transfer system for wheelchair users", PI: Prof. S. Mukherjee
- "A device for knotting a suture and a method for knotting a suture thereof", PI: Prof. S. Mukherjee.
- "System and method for protecting fragile objects", PI: Prof. S. Mukherjee.
- "Litter picker device with flexible arm", PI: Prof. S. Mukherjee.
- "Optimal reaction load measuring platform", PI: Prof. J.P. Khatait.
- "Smart Case", PI: Prof. S. Mukherjee.

### Physics

- "System and method for achieving ultra-high depth of field imaging", PI: Prof. K. Khare.
- "Molecularly modified gallium-nitride based ultraviolet photodetector and a method of fabrication thereof", PI: Prof. R. Singh.
- "Magnetically separable super-hydrophobic and super-oleophilic porous carbon nanocomposite for efficient

- separation of oils from water-oil mixture", PI: Prof. N. Khare.
- "Flexible nanocomposite films by incorporating piezoelectric/ferroelectric nanostructures into ferroelectric polymers for enhanced triboelectric effect", PI: Prof. N. Khare.
- "Digital holographic microscopy", PI: Prof. D.S. Mehta.
- "Laser based solid state lighting device for white light generation and method thereof", PI: Prof. D.S. Mehta.

### Textile Technology

- "A process for preparing three dimensional porous scaffold and the three dimensional porous scaffold formed thereof", PI: Prof. R.K. Srivastava.
- "Water purification system", PI: Prof. W. Ali.
- "Composite fibers having aligned inorganic nano structures of high aspect ratio and preparation method", PI: Prof. A.K. Agarwal.
- "3D printed construct for correcting bone defects and stem cell delivery", PI: Prof. S. Ghosh.
- "Ionic liquid, and process for preparation thereof", PI: Prof. B. Nandan.
- "Fiber Reinforced Shear Thickening Fluids (STF) effective at higher temperatures", PI: Prof. B.S. Butola.
- "Apparatus and process for uniform deposition of polymeric nano-fibers on substrate", PI: Prof. A.K. Aggarwal.
- "A process for producing cross-linked polymeric matrices", PI: Prof. R.K. Srivastava.
- "Functionalization of organic substrates", PI: Prof. A.K. Aggarwal.
- "Process of producing a fibrous structure for both acoustic absorption and acoustic insulation from non-thermoplastic fibres", PI: Prof. S. Mukhopadhyay.
- "A 3D Bio-printed scar tissue model", PI: Prof. S. Ghosh.
- "Three-dimensional integrated weaving of wind blade composite", PI: Prof. B.K. Behera

### Applied Research in Electronics

- "Method for fabrication of MEMS integrated sensor and sensor thereof", PI: Prof. S. Dhanekar
- "Underwater Acoustic Communication Link", PI: Prof. M. Aggarwal.
- "Method, system and apparatus for multilingual and multimodal keyword search in a mixlingual CH corpus", PI: Prof. A. Kumar.

### Biomedical Engineering

- "A Process for Fractionating Components of a Biomass", PI: Prof. N. Singh.
- "Elbow implant", PI: Prof. D. Kalyanasundaram.
- "Exoskeleton device for upper limb rehabilitation", PI: Prof. A. Mehndiratta.
- "Artificial skin substitute for burn wounds and trauma care and method of preparation thereof", PI: Prof. V. Koul.

- Deepak Joshi, Ashutosh Tiwari, Indian Patent Application No. 201811034806, entitled "Wearable Gait Analysis System", filed in September 2018.
- Anup Singh, Amit Mehndiratta, Sandeep P. Jogi, Rafeek T., "MRI Compatible Knee Joint Axial-Load Exerting Device", Submitted for National, Patent Application\_ FT/IDF/07/2018/87
- Dinesh Kalyanasundaram and Arnab Sikidar, "Orthopedic Screw", National, 16th November 2018.
- Prof. Harpal Singh, "Polymeric nanoparticles and a process of preparation thereof", United States, Issued on 9 October, 2018
- Sandeep K. Jha & Amit K. Singh, "Non-invasive handheld optical sensor for multi-analyte detection in saliva", National, 11-06-2018
- Sandeep K. Jha and Tanu Bhardwaj, "Aptamers for Ranibizumab", National, 23 November, 2018.
- Sandeep Kumar Jha, Appan Roychoudhury and Suddhasatwa Basu, "Microfluidic Chip for Neurotransmitter Detection", National, 6 January, 2019.
- Veena Koul, Chetan Nehate, Aradhana Nayal "Diblock copolymer in a Nanosystem and Implementations thereof" Indian Patent Application No. 201811014943.

### Energy Study

- S.K. Tyagi, "Biomass Pellet based clean combustion device for cooking and heating applications", Patent application no. FT/IDF/02/2018/14.
- S.K. Chattopadhyay, Diksha Kumari and A. Verma, "Multi-Winding Transformer Based High-Resolution Power Flow Controller for Transmission and Distribution Lines", Patent application no. FT/IDF/11/2018/133.
- Vamsi K. Komarala, Piyush K. Parashar and S.P. Singh, "Plasmonic transparent conducting anode structure with high work function", Indian Patent Application No: 201811005493.
- Vamsi K. Komarala, Mrutyunjay Naik, K. Singh, S. Mandal and S.P. Singh, "Method for fabricating a heterojunction silicon solar cell at room temperature", Indian Patent Application No: 201811017912.

### Rural Development and Technology

- "A system for production of biomethane and biocarbon dioxide from biogas and method thereof", PI: Prof. V.K. Vijay.
- "A process and two-step catalytic reactor system for the production of liquid hydrocarbons from plastic waste", PI: Prof. S.N. Naik.
- "A novel green micro-emulsion for controlling fungal wilt diseases", PI: Prof. S. Sharma.
- "Photobioreactor with novel diffuser design", PI: Prof. A. Malik.

### Kusuma School of Biological Sciences

- "A medicament for the treatment of diseases by biofilm

- forming microorganisms”, PI: Prof. S. Hasnain.
- “Improvement of stability and function of GroEl protein, and implementations thereof”, PI: Prof. T.K. Chaudhury.
- “Process for producing mature serratiopeptidase”, PI: Prof. T.K. Chaudhury.
- “A composition for mucus or sputum liquefaction and a process thereof”, PI: Prof. S.E. Hasnain.

### OTHER RELEVANT INFORMATION

#### Biochemical Engineering and Biotechnology

- Three technologies have been licensed to “Valetude Primus Healthcare Pvt Ltd” a spin off from Department of Biochemical Engineering and Biotechnology.

#### Chemical Engineering

- ISCRE Conference, 2020, Prof. V.V. Buwa, (Co-chairman), Prof. Shantanu Roy, (Co-chairman).
- Workshop on “Catalysis for Clean Energy and Sustainable Future” by Catalysis Society of India, IIT Delhi, Prof. K.K. Pant (Convenor).
- Global Research & Petroleum Congress 2019, Prof. K.K. Pant Member (Conference Advisory).
- ChemCon 2019, Prof. A.K. Saroha (Organizing Secretary).

#### Computer Science and Engineering

- **Alumni fundraising Initiatives:**
  - a. Raised ₹1 Crore for Usha Hasteer Chair from donor Gagan Hasteer (B.Tech. CSE '94)
  - b. Crowdsourced ₹1 Crore from ~40 donors for proposed Prof. Anshul Kumar Chair.
  - c. Awarded 3 names doctoral fellowships from alumni funds to Ph.D. students selected in July 2018.
  - d. Awarded 2 Pankaj Gupta New Faculty Fellowships to Chetan Arora and Srikanta Bedathur from funds raised from donor Pankaj Gupta (B.Tech. CSE '95).
- **Distinguished Alumni Research Advisory Committee comprising:**
  - a. Prof. Chandrajit Bajaj (U Texas, Austin),
  - b. Prof. Vijay Vazirani (U California Irvine),
  - c. Prof. Anuj Dawar (U Cambridge),
  - d. Prof. H V Jagadish (U Michigan),
  - e. Prof. Srinivasan Keshav (U Waterloo),
  - f. Prof. Aarti Gupta (U. Princeton),
  - g. Dr. Ashwin Ram (Google Research),
  - h. Prof. Dinesh Manocha (U Maryland),
  - i. Prof. Somesh Jha (U Wisconsin, Madison).

#### Electrical Engineering

- Prof. S. Chaudhury appointed as Director, IIT Jodhpur.
- Prof. Ranjan Bose appointed as Director, IIIT Delhi

#### Humanities and Social Sciences

- Dr. Divya Dwivedi Invited to join as co-PI with Prof. Anne

Duprat (University of Amiens) in 5 year project ALEA-Figures and Configurations of Chance in the Western World (Literature / Arts / Science / Philosophy: 16th-21st centuries) sponsored by ANRC, MESHs, France.

#### Management Studies

- 2018. Ilavarasan P.V., Kar A.K., Marijin M. and Gupta. Special issue on Digital Nations. Information System Frontiers. (Guest Editorship).
- 2018. Ilavarasan P.V., Kar A.K. and Gupta M.P. Special issue on Social Media and Business Practices in Emerging Markets. Advances in Management Research. Emerald, 15 (2). (Guest Editorship)
- Singla M. and Singh S. (2018). Flexibility in Reforming the Corporate Governance Structure: An Inter-industry Comparison from India. Global Journal of Business Excellence, 11(1), 9-17. (Publisher – GIFT Society)
- Rizvi N.U., Kashiramka S. and Singh S. (2019). Benefit of implementing capital norms. on the probability of crisis: a study on BRICS. Submitted for Annual meetings of European Financial Management Association to be held on June 26-29, 2019.
- Rizvi N.U., Kashiramka S. and Singh S. (2019). Impact of Basel III regulatory norms. on BRICS: An economic benefit perspective. Presented at 3rd International Conference on Evidence-Based Management (ICEBM 2019) held on 1-2 Feb 2019. Published in conference proceedings (Received best paper award)
- Rizvi N.U., Kashiramka S. and Singh S. (2018). A systematic literature review of FinTech and RegTech (International Conference on Emerging Perspectives in FinTech. New Delhi, India)
- Bajaj Y., Kashiramka S. and Singh S. (2018), “Estimation of the Capital Structure Speed of Adjustment in Indian Manufacturing Firms.” International Conference On Financial Markets & Corporate Finance, IIT Kanpur, Uttar Pradesh, July 12-14, 2018.
- Bajaj Y., Kashiramka S. and Singh, S. (2018), “Dynamics of Capital Structure: An Evidence from Indian Manufacturing Firms. [Abstract]”, International Conference on Business and Entrepreneurship Development in a Globalized and Digitalized Era, Academy for Global Business Advancement 15th Annual World Congress, NIDA, Bangkok, Thailand, July 2-4, 2018.
- Gupta V., Singh S. and Yadav Surendra S. (2018). “Three Staged Framework for IPO Underpricing: Evidence from India [Abstract]”, International Conference on Business and Entrepreneurship Development in a Globalized and Digitalized Era, Academy for Global Business Advancement 15th Annual World Congress, NIDA Business School, Bangkok, Thailand, July 2-4, 2018.
- Singla M., Singh S. and Sushil (2018), “Is the Excessive Reliance on the Board Monitoring Justified in the Context of Corporate Governance Framework?” International Conference on Business and Entrepreneurship Development in a Globalized and Digitalized Era, Academy



- for Global Business Conference. Bangkok, NIDA Business School, Bangkok, Thailand July 2-4, 2018.
- Viswanath M.S., Singh S., Yadav Surendra S. (2018), "Analysis & Optimization of Working Capital Management in Construction Industry", International Conference on Civil, Mechanical & Industrial Engineering (ICCMIE) by ASAR, New Delhi. This paper received the Excellent Paper award.
- Singh S. and Singla M. (2018), "Corporate Governance and Firm Performance: The Impact of Various Block-Holders' Ownership on Board Monitoring", NSE-IGIDR CG Conference, 2017, National Stock Exchange, Mumbai, June 21-22, 2018.
- International Conference on Financial Markets and Corporate Finance (ICFMC), Department of Management Studies, IIT Kanpur, Kanpur, July 12-14, 2018.
- Prof. Shveta Singh taught module on "Ratio analysis", at Ethiopian Textile Industry Development Institute, hosted by Department of Textile Technology, IIT Delhi - 11th February, 2019.
- Prof. Shveta Singh taught module on "Financial Management in a Non-Profit Organization", at Technology Enabling Center (TEC), hosted by TIFAC, IIT Delhi - 29th January, 2019.
- Prof. Shveta Singh taught modules on "Management & Cost Accounting", "Balance Sheet, P&L Statement", "Working Capital Management" and "Capital Budgeting and Sources of Finance" to the Startup Base Camp 101, in the Continuing Education Program (CEP) conducted by DMS. - 11th June to 26th September, 2018.
- Prof. Shveta Singh taught module on "Portfolio Management and Corporate Governance" at Indian Institute of Public Administration (IIPA), New Delhi on March 1, 2018.
- Prof. Shveta Singh Taught module on "Overview of Leadership and Strategic Thinking" to senior officers of the Indian Air Force at the Centre for Air Warfare, Hyderabad on March 13-15, 2018.
- Prof. Arpan K. Kar Published about 20 research papers, of which 5 are meeting the high quality criteria of the Department.
- Talk by Prof. P. Vigneswara Ilavarasan on Sharing Economy in the Developing World: Need for conceptual adjustments. Queensland University, Brisbane. 28 March 2019. (Invited Prof Tim)
- Talk by Prof. P. Vigneswara Ilavarasan on Systematic Review for Digital Policy Making for MS.MEs in the Developing World: Methodology, usage & challenges. Loughborough University. 2 July 2018. (Invited by Prof. Alok).
- Talk by Prof. P. Vigneswara Ilavarasan on Digital Platforms, Urban Transport and Development: Evidence from Taxi Platforms. in New Delhi. University of Manchester. 6 July 2018. (Invited by Prof. Heeks).
- Prof. Tripathi visited Leibniz Institute of Polymer Research Dresden during June-July 2018.
- MoU has been developed and signed between IIT Delhi and Leibniz Institute of Polymer Research Dresden under the coordination of Prof. Tripathi and Prof. Fery.
- Prof. J. Jain visited University of British Columbia, Canada, June-July 2018.
- Prof. N.N. Gosvami published research articles in leading international journals: Nano Letters (2018), Tribology Letters (2019) and ACS Nano (2019).
- Prof. Sampa Saha published nine research articles in leading international journals: Materials Science (2019), Colloids (2019), Journals (2018-2019) etc.

### Textile Technology

- Department has been involved in developing R&D roadmap for Technical Textile in India with Niti Ayog and Principal Scientific Advisor to GoI.
- International Collaboration in R D via UQ-IITD Research academy and UQ-IIT D Research Academy Fellowship Grant under International Collaboration of IIT Delhi and University of Queensland, Australia (Collaborators: Prof. Mangala Joshi, IIT Delhi and Prof. Darren Martin, Australian Institute of Bioengineering and Nanotechnology, University of Queensland, Australia).

### Biomedical Engineering

- 8 Ph.D. were awarded this year: Sonal Deshpande, Anil Chandra, Anuradha Soni, Avinash Kumar Seth, Avinash Kaur, Dinesh Kumar, Vartika Dhyani, and Anirban Sengupta.
- 51 Journal papers, 31 publication proceeding and 17 conference abstracts published this year.
- 12 new research projects received sanction and started this year in the Centre.
- 8 Patents filed this year.

### Energy Studies

- Developed a new thermal characterization facility at CES Thermal Devices and Testing Laboratory to characterize Phase Change Materials (PCM).
- Developed Carbon based inexpensive and efficient material for solar cell applications.
- Development of dimethyl ether fuelled automotive diesel engine.
- Development of hydrogen fuelled spark ignition engine for power generation and transportation.
- Methanol fuelled spark ignition engine with oxygen enriched air for ultra-low emission and higher energy efficiency.
- Integrated internal combustion engines and Fuel Cell system with collaboration of IITD and TU Delft, The Netherlands.
- 106 Journals published during the period.

### Materials Science and Engineering

- Prof. Nebhani visited University of Sydney in June 2018.

**Amar Nath and Shashi Khosla School of Information Technology**

- Optimizing System Performance and Energy in Multi Sensor Visual Perception Systems” by Prof. M. Balakrishnan to IUSSTF.
- Fostering Knowledge Sharing Networks Through Voice-based Communication for Low-income SC/ST Populations” by Prof. Aaditeshwar Seth to MeitY.

**OTHER IMPORTANT ACTIVITIES**

- The Indian Institute of Technology Delhi (IITD) has partnered with a leading Australian institution The University of Queensland (UQ) to launch its first

international joint Ph.D. program. UQ Vice-Chancellor and President Professor Peter Hoj and IITD Director Professor V Ramgopal Rao signed the historic agreement at IIT Delhi on September 22, formalising a mutual goal to build diverse and sustainable partnerships.

- IIT Delhi launched International Ph.D. Fellowship Programmes (IPFP) on Feb 12, 2019 in the presence of Ambassadors of various countries in India, and their representatives. The Indian Government has recognized IIT Delhi as an Institution of Eminence and as one of the focal areas of its strategic intent, the Institute has decided to encourage the best talent from across the world to join its Ph.D. programme.



# The Year in Perspective

(April 1, 2018 - March 31, 2019)

Glimpses of various activities during 2018-19

## CONVOCATION



Chairman IIT Delhi, Chief Guest Ms. Anu Aga and Director IIT Delhi during Convocation 2018



Distinguished Alumni Award is being conferred to Mr. Sumant Sinha by the Chairman during Convocation 2018



Distinguished Alumni Award is being conferred to Mr. Raghu Hari Dalmia by the Chairman during Convocation 2018



Students receiving Degrees/Medals/Awards during Convocation 2018



Students photo op after receiving Degrees



Students celebrating by throwing mortar boards up

## हिन्दी दिवस समारोह एवं कार्यशालाएँ



Hindi Cell's yearly publication 'Jigyasa' is being launched on Hindi Diwas



Head of Hindi Cell addressing the gathering



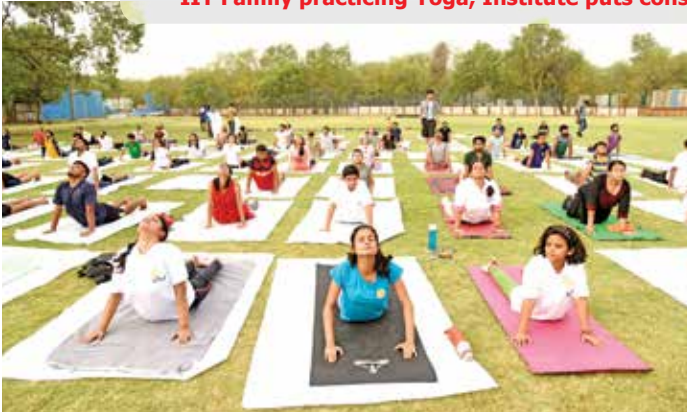
Organisers and participants are being honoured by Prof. M. Balakrishnan, Deputy Director (S&P)



## YOGA DAY



IIT Family practicing Yoga, Institute puts considerable efforts on health wellness programmes



## UNNAT BHARAT ABHIYAN



Glimpses from Unnat Bharat Abhiyan activities during the period



## BOARD FOR HOSTEL MANAGEMENT



Glimpses of BHM Day



## ROBOCON



Glimpses from Robocon



## TRYST



Glimpses from Tryst



# RESEARCH & DEVELOPMENT ACTIVITIES



Glimpses of Research & Development activities in IIT Delhi





# OPEN HOUSE



Prof. V. Ramgopal Rao (Director, IITD) addressing the significance of Open House



Demonstration of activities and experiments are being conducted for the schools students



A group of school children with Prof. V. Ramgopal Rao (Director, IIT Delhi)



Team of Open House

# 6. Research & Development

(April 1, 2018 - March 31, 2019)

- Academic & Sponsored Research 79
- Research Projects and Consultancy 80
- Foundation for Innovation and Technology Transfer (FIIT) 86

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## Research Thrust

Atmospheric Sciences, Embedded Systems, Environmental Science & Engineering, Rural Industrialization, Bioinformatics, Nanotechnology, Fibre Optics and Optical Communications, Biotechnology, Bio-catalysis, Smart and Industrial Textiles, Transportation, Photo-thermal energy conversion, Material Science, Photo-acoustic Microscopy, Power Technology, Signal processing, Opto-electronics, Computer Science, Computer Aided Design & Manufacturing, Smart Buildings and Infrastructure, Artificial Intelligence and Robotics

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# Academic & Sponsored Research

(April 1, 2018 - March 31, 2019)

## ACADEMIC RESEARCH

The academic research carried out by the students for the Ph.D. degree, the final semester major project included in the four-year B.Tech. programme, the five-year integrated M.Tech. programmes, and the four-semester M.Tech./M.S.(R)/M.Des. programmes make a significant contribution to the research output.

The principal source of academic research, however, continues to be through Ph.D. research projects. With a total of 2616 students enrolled for a research degree during the year under review, the emphasis on and commitment to academic research is evident. During the two semesters of 2018-2019, 697 candidates were admitted out of which 363 were full-time Institute scholars with the remaining 334 belonging to other categories like sponsored, part-time etc. A total of 378 theses were approved for the award of Ph.D. degree.

IIT Delhi faculty remain engaged in publishing their research results in various journals, conferences and seminar proceedings. The number of publication along with citation and h-index for the last 5 years is stated below:

Year	No. of Publications	No. of Citations	h-index
2019	1956*	1016	9
2018*	2632	6775	22
2017	2533	12559	30
2016	2075	16621	43
2015	1918	18720	49

Source\*: Scopus as on 19th September 2019.

## SPONSORED RESEARCH

Along with teaching and academic research leading to doctoral degree, IIT Delhi gives high priority to research and development projects sponsored by outside national and international agencies and user organizations. The Institute has as one of its cardinal guiding principles continuous, and meaningful interaction with the world of science & technology and industry.

### INDUSTRIAL RESEARCH AND DEVELOPMENT UNIT (IRD)

The Industrial Research & Development (IRD) Unit has been specifically set up in the Institute to provide specialized administrative and managerial support for the operation of Sponsored Research Projects, Consultancy Jobs and other related R&D activities. Over the years, the Institute has set up many modern laboratories and is continuously supporting infrastructure through these projects.

IRD provides a one-time grant of Rupees One Lakh to each new faculty members who joins the Institute. This assistance

is being given to the new faculty so that they can initiate new projects, which may subsequently be submitted to various funding agencies.

Faculty Interdisciplinary Research Project (FIRP) scheme aims to enhance interdisciplinary and collaborative research interest in the Institute. Total 59 projects were sanctioned for support under FIRP. Selected projects are given an initial grant of ₹10 Lacs. It is expected that the joint research team will submit at least one research project to a funding agency on the completion of 1st year. Additional funds covering the teaching assistance of a Ph.D. student for 4 years will also be provided, if required and justified based on the progress of the first year.

**Multi-institutional Faculty Interdisciplinary Research Project (MFIRP) with All India Institute of Medical Science (AIIMS):** Under this scheme funding will be provided for joint FIRP projects from a team of faculty members from both the Institutes. There will be two PI's (one from each Institute) and the total grant will be ₹20 Lakhs for two years. This initiative is expected to attract strong support from external funding agencies and catalyze cross-research activities between the two Institutes. 25 projects were sanctioned for support under this scheme during the financial year 2018-19.

**Sponsored Research Enhancement Actions (SREA):** Under SREA (1, 2 & 3) schemes IRD provides senior staff to facilitate and enhance sponsored research activities, both in terms of formulating / writing research project proposals and coordinating research projects.

**SREA1:** Assistance for formulating/writing of major research project proposals involving multiple faculty members from IIT Delhi or involving multiple Institutes with IIT Delhi as the Coordinating Institute. The funds proposed for IIT Delhi should be ₹5 Crore or more. Funds for hiring a Project Consultant for a period of 2 months will be provided by IRD during the project preparation stage.

**SREA2:** For a sponsored research project with a funding of ₹2.5-5 crores. Top-up funds required for hiring one Principle Project Officer for the duration of the project will be provided to the Principal Investigator.

**SREA3:** For a sponsored research project with a funding of ₹5 crores or more, top-up funds required for hiring one Project Consultant for the duration of the project will be provided by IRD.

**Equipment Matching Grant for new Faculty:** IRD provides matching equipment grant to new faculty for the purchase of equipment sanctioned under a project. Faculty can avail this grant within 2 years of joining with a ceiling of ₹35 Lacs or an amount equivalent to the funds sanctioned by funding agency for the equipment under the project whichever is lower. Equipment Matching Grants to the tune of ₹180 Lacs

# Research Projects & Consultancy

(April 1, 2018 - March 31, 2019)

have been sanctioned to 7 new faculty members during the financial year 2018-19.

## 1234 Discover and Learn Projects (1-2-3-4) Scheme:

Objective of this scheme is to enhance research aptitude among undergraduate students and increase the component of 'learning by research'. Involvement of students at a very early stage of their stay at the Institute and working jointly with senior students will expose the students to the excitement of research. In addition, continuous operation of research project on a particular objective for at least 4 years is expected to result in meaningful research output, which will add to profile of the students. Financial support of ₹1 Lakh per year has been provided for each project. 5 projects were approved for financial support during the financial year 2018-19.

**IRD Student Startup Action Projects:** IRD support for student start up activity in the campus is given under 'Student Start-up Action Scheme'. Students are engaged in start-up actions at different stages and different forms. The objective of this scheme is to support this activity by providing a support environment in terms of recognition, initial seed grant and expert advice. 5 Projects were sanctioned during the financial year 2018-19 under this scheme. The selected teams are given a seed grant of ₹2 Lacs per year.

**Summer Undergraduate Research Award (SURA):** Objective of SURA scheme is to encourage Research & Development activities among undergraduate students. The students are encouraged to take initiative in identifying, studying and analyzing problems as well as formulating solutions. 35 projects were selected for support under this scheme during the financial year 2018-19.

Assistantships/Fellowships are provided by IRD to the Ph.D. / M.Tech./M.S.(R) students. IRD provides support in the form of Gap Period Assistantship for both M.Tech./M.S.(R) and Ph.D. students who are drawing their fellowship/assistantship from the projects. These assistantships will be provided to the students once the projects get over and there is no other project to pay their assistantship. M.Tech/M.S.(R) students can be supported for a maximum gap period of six months and Ph.D. students would be supported for a maximum gap period of one year.

IRD Early-Doc Fellowships are provided to Ph.D. students after successful completion of Ph.D. Viva Examination. The main objective is to support the Ph.D. Scholar for completing the manuscript writing related to thesis work. A monthly fellowship of ₹40,000/- per month (including HRA) will be given to full time Ph.D. students of IIT Delhi for a maximum period of 3 months w.e.f. the date of his/her Ph.D. Viva.

**Research Excellence Travel Award (RETA):** Highly meritorious Research Scholars (full-time as well as part-time) working fulltime on IRD/FITT projects can be awarded Research Excellence Travel Award (RETA) amounting to ₹1,50,000/- from

IRD promotional funds. RETA can be used only for a single conference travel.

## HIGHLIGHTS (2018-19)

Some important highlights about research are:

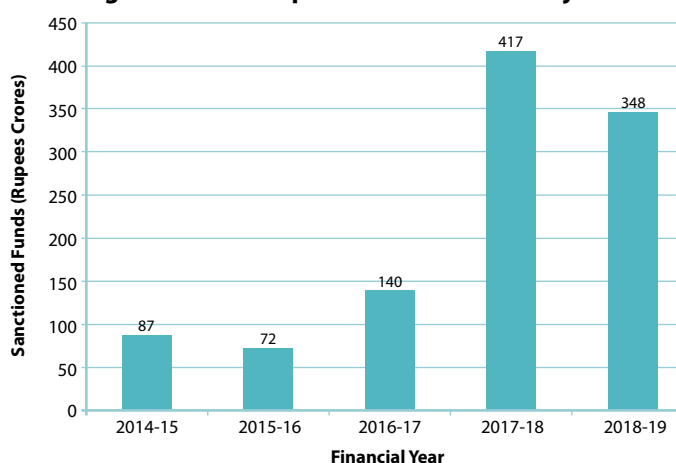
- 317 Sponsored Projects with a total funding of ₹347.52 Crores were undertaken.
- 292 Consultancy Assignments worth ₹26.86 Crores were undertaken through IRD Unit and 57 Technology Development Projects/Contract Research Projects worth ₹18.87 Crores were undertaken through FITT.
- New Faculty grant to the tune of ₹45 Lacs have been given to new faculty members (₹1 Lac per faculty) .
- 25 projects are selected for support under the scheme under Multi-institutional Faculty Interdisciplinary Research Project (MFIRP).
- 5 projects are selected for support under the scheme Discover and Learn Projects (1-2-3-4).
- 5 projects are selected for support under the scheme Student Start-up Action. Each of the selected project will be given a seed grant of ₹1 Lakh.
- 35 UG Projects are selected for support under the Summer Undergraduate Research Award (SURA) scheme

The trend in research funding and their number for last five years is shown in Table II and in Fig.1

**Table I : Statistics of Sponsored Research Project**

Sponsored Research Projects		
Financial Year	Number of Projects	Value (Rupees Cr.)
2014-15	164	87.10
2015-16	136	72.44
2016-17	158	140.21
2017-18	282	417.19
2018-19	317	347.52

**Fig. 1 : Trends in Sponsored Research Projects**



**Table II : Industrial Research and Development Board as on 31.3.2019**

Chairperson		Ex-Officio	
Prof. B.R. Mehta		Prof. Suneet Tuli	Prof. Sandeep Sen
		Prof. Sunil Kumar Khare	
Representatives of Department / Centre / School			
Department of Applied Mechanics, Prof. Sawan S. Sinha		Centre for Atmospheric Sciences, Prof. S.K. Mishra	
Department of Biochemical Engineering & Biotechnology, Prof. Saroj Mishra (Ms.)		Centre for Biomedical Engineering, Prof. Veena Koul (Ms.)	
Department of Chemical Engineering, Prof. K.K. Pant		Centre for Energy Studies, Prof. Vamsi Krishna	
Department of Chemistry, Prof. Sidharth Pandey		Centre for Polymer Science & Engineering, Prof. B.K. Satapathy	
Department of Civil Engineering, Prof. J.T. Shahu		Instrument Design Development Centre, Prof. Satish Kumar Dubey	
Department of Computer Science & Engineering, Prof. Prem Kalra		Industrial Tribology Machine Dynamics & Maintenance Engineering Centre, Prof. N. Tandon	
Department of Electrical Engineering, Prof. Subrat Kar		Centre for Rural Development & Technology, Prof. V.K. Vijay	
Department of Humanities & Social Sciences, Prof. Ambuj D. Sagar		Computer Services Centre, Mr. K. Narayanan	
Department Management Studies, Prof. Ravi Shankar		Educational Technology Services Centre, Prof. Kolin Paul	
Department of Mathematics, Prof. Niladri Chatterjee		National Resource Centre for Value Education in Engineering, Dr. Nomesh Bolia	
Department of Mechanical Engineering, Prof. S. Mukherjee		Kusuma School of Biological Sciences, Prof. C.S. Dey	
Department of Physics, Prof. Neeraj Khare		Bharti School of Telecommunication Technology & Management, Prof. Subrat Kar	
Department of Textile Technology, Prof. S.M. Ishtiaque		Amar Nath & Shashi Khosla School of Information Technology, Prof. Sanjiva Prasad	
Centre for Applied Research in Electronics, Prof. Arun Kumar			
Outside Technical Experts From Industry			
Dr. A.K. Saxena, AGM & Head - BHEL, Gurgaon, Haryana		Dr. Rajiv Sharma, Head, Technology Mission Division, Nano Mission, Department of Science & Technology, Technology Bhawan, New Mehrauli Road, New Delhi – 110 016	
Mr. Ujjwal Chaudhary, AGM – Operation, NTPC – EOC, Sector 24, Noida		Dr. Satendra Kumar, M/s SWAJAL, 230, Udyog Vihar, Phase-I, Gurgaon	
Dr. S. S. V. Ramakumar, Director (R&D), Indian Oil Corporation Ltd. (IOCL), Sector 13, Old Faridabad, Faridabad - 121 006, Haryana		Mr. Vineet Prakash, Geomarket Operations Manager, Software Integrated Solutions- Schlumberger, 14th Floor, Tower C, Building No. 10, DLF Cyber City, Phase II, Gurgaon - 122002, India	
Dr. S.D. Sherlekar, Sankhya Sutra Labs Pvt. Ltd., C/o Jawaharlal Nehru Centre for Advanced Scientific Research, Jakkur, Bangalore-560064		Dr. Jai Menon, Group Director, HT Media, 18-20 HT House, K.G. Marg, New Delhi – 110 001	
Managing Director FITT			
Dr. Anil Wali			
Special Invitee			
Deputy Registrar (Accounts)		Assistant Registrar (Stores)	Assistant Registrar (IRD Accounts)
Secretary			
Assistant Registrar (IRD)			

Some of the major projects undertaken during the period are listed below:

**Table III : Financial Outlay of Some of the Major Projects during 2018-19 (with sanctioned value 100 Lacs and above)**

Project Title	Sponsoring Agency	Sanctioned Funds (₹ Lacs)
Enhancing India's Science, Technology and innovation Policy Analysis Capabilities	Tata Education and Development Trust, India	5000.00
Nanoelectronics Network for Research and Application (NNetRA) (Applications of Non-Silicon Based Nanofabrication Technologies and Nanoscale Devices)	Ministry of Electronics and Information Technology & Department of Science & Technology	2,676.68
Building end to end 5G Test Bed	Ministry of Communication & Information Technology	3001.05
Capacity Building of Academic Institutions : IIT Delhi to Support Remediation Initiatives (Phase I & II)	Ministry of Environment, Forest & Climate Change	1124.80
Social Media Analytics for Security (SMACS)	National Security Council Secretariat	813.60
Centre of Excellence- Personal Body Armour	DRDO, Ministry of Defence	724.00
Design & Development of Mini, Laboratory Table Top and Full Scale Models of High Speed Shadograph Systems for Analysis of Detonations, Explosions And Gun Shots By Utilizing Digital Image Correlation	DRDO, Ministry of Defence	705.00
Line velocity interferometer system for shock wave 2D velocity profile measurement.	Ministry of Defence	597.05
Quantum Technologies using Hybrid Photons for Secure Communication & Quantum Information	Ministry of Defence	593.00
Development and Prototyping of ICT enabled Smart Charging Network Components	Department of Heavy Industry	542.53
Development of entanglement based architecture for quantum information technology	Ministry of Defence	518.80
Design and development of Robot for sliver can transfer from one machine to designated machine	Department of Heavy Industries & Lakshmi Machine Works Limited	464.33
IBM - IITD AI Horizons Network - Neuro-Symbolic Information Systems	International Business Machines Corporation, USA	450.00
Integrated sources of entangled photons for quantum communication and quantum information applications	Department of Science & Technology	420.02
Design and Development of Biomass - Solar Electricity and Cooling Solutions for Rural India	Department of Science & Technology	398.88
Research and development of smart, secure, scalable, resilient and adaptive cyber-physical power system (S3RA-CPPS)	Department of Science & Technology	299.95
Entanglement enhanced qubit generation for quantum informatics	Directorate of Extramural R&I Property Right, DRDO, Ministry of Defence, India	243.02
Research in Human-Centered Robotics with special emphasis on Field and Bio-Medical Rehabilitation (Indo-Korea Joint Network Centre on Robotics)	Undertaken through Department of Science & Technology (DST) Collaborating Institutes : Chungnam National University; Kyungpook National University; Knokuk University, Korea Aerospace University; Daegu Gyeongbuk Institute of Science & Technology; IIT Roorkee; NAL Bangalore; CSIR-CMERI Durgapur; CSIR-CEERI Pilani	223.77

## Research Projects & Consultancy

contd.....

Demonstration of grid supportive EV charger and charging infrastructure at LT level (D-EVCI)	Department of Science & Technology	206.26
DOSA - Diagnostics for One Health and User Driven Solutions for AMR	Department of Biotechnology, Ministry of Science & Technology	192.19
RuTAG Centre : Developing Demand Driven Technology for Rural Areas	Govt. of India	189.71
Monitoring and Evaluation of Ionization based Air Purifying Technology	Central Pollution Control Board	186.91
Biotechnology for the recovery of germanium, indium and copper from industrial copper dust waste (Bio-CuInGe)	Indo-German Science and Technology Centre (IGSTC) Collaborating Institutes : Helmholtz Zentrum Dresden Rossendorf, Germany; GEOS Ingenieurgesellschaft mbH, Germany; Laksmi Life Sciences Coimbatore, India	161.00
Dynamic Downscaling to Study Climate Change Impacts on Water Resources in India	Ministry of water Resources	156.65
Blockchain Technology for E-Stamp Paper	Security Printing and Minting Corporation of (India) Ltd	145.20
Design and Development of Customized 3D Weaving System for Technical Textiles	Ministry of Textiles & Arvind Limited	142.00
An Integrated Technology Platform for Application of Hemp Fibre in Textile Industry	Ministry of Textiles & Athulya Krishi Foundation	140.00
Development of Refreshable Braille Cells	Department of Science & Technology	126.56
Sub-5V Metal Based MEMS Switches for Radar Beam Steering Antenna under Harsh Environments	Department of Science & Technology	124.31
Structure-function studies on a membrane protein from Chikungunya Virus (CHIKV)	Department of Biotechnology	106.60
National Centre for Technology in Family Welfare	Indian Council of Medical Research	106.27
Foam Processability of Ultra High Molecular Weight Polyolefins and Its High Performance Applications	Reliance Industries Limited	101.48
MAVI: Mobility Assistant for Visually Impaired	Department of Science & Technology	100.78

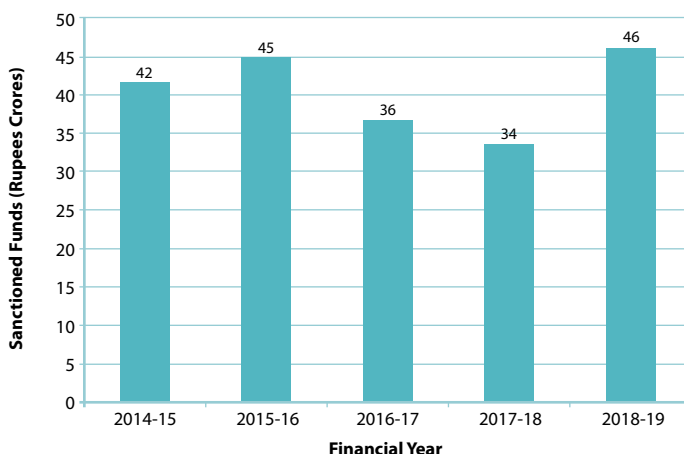
### Consultancy Jobs

Industrial consultancy is another significant area of activity of the Institute. The nature and extent of the industrial consultancy projects undertaken by the Institute is an index of its credibility with the industry and is symbolic of the relevance of a centre of excellence in the context of nation's socio-economic development.

**Table IV : Statistics of Consultancy Jobs Undertaken**

Financial Year	Consultancy Jobs (IRD)		Technology Development Projects / Contract Research (FITT)		TOTAL
	No. of Projects Sactioned	Sactioned Value in ₹ Cr.	No. of Projects Sactioned	Sactioned Value in ₹ Cr.	Sactioned Value in ₹ Cr.
2014-15	394	24.81	96	16.78	41.59
2015-16	365	29.29	79	16.06	45.35
2016-17	318	20.36	52	16.02	36.38
2017-18	282	22.18	51	12.08	34.26
2018-19	292	26.86	57	18.87	45.73

contd.....



**COLLABORATIVE RESEARCH**

The Institute is actively involved in collaborative programmes with national and international organizations/universities to remain at the forefront of scientific and technological developments and to share knowledge. A large number of collaborative Research Projects are under operation with Institutes/Organizations of Austria, Australia, Belarus, Brazil, Canada, Denmark, Ethiopia, European Commission, France, Finland, Germany, Holland, Hungary, Ireland, Israel, Italy, Japan, Korea, Kuwait, Latvia, Netherland, Nepal, Poland, Portugal, Russia, Slovenia, Sweden, Sri Lanka, Switzerland, Taiwan, Tunisia, UK, USA, etc. Major research activities have also been undertaken in the areas of national importance.

During the year under report, the Institute has undertaken 19 new Collaborative Sponsored Research Projects with International funding.

**Table V : International Sponsored Research Projects undertaken during the year 2018-19 (with sanctioned value ₹50 Lacs and above)**

Project Title	Sponsoring Agency/ Collaborating Institute(s)	Sanctioned Funds (₹ Lacs)	Principal Investigator / Department
IBM - IITD AI Horizons Network - Neuro-Symbolic Information Systems	International Business Machines Corporation United States	450.00	Srikanta Bedathur Jagannath Department of Computer Science and Engineering
Research in Human-Centered Robotics with special emphasis on Field and Bio-Medical Rehabilitation (Indo-Korea Joint Network Centre on Robotics)	Undertaken through Department of Science and Technology Participating Institutes : Chungnam National University; Kyungpook National University; Knokuk University Korea Aerospace University; Daegu Gyeongbuk Institute of Science and Technology; IIT Roorkee, NAL Bangalore, CSIR-CMERI Durgapur; CSIR-CEERI Pilani	223.77	Subir Kumar Saha Department of Mechanical Engineering
Biotechnology for the recovery of germanium, indium and copper from industrial copper dust waste (Bio-CuInGe)	Indo German Science and Technology Centre (IGSTC) Participating Institutes : Helmholtz Zentrum Dresden Rossendorf, Germany; GEOS Ingenieurgesellschaft mbH, Germany; Laksmi Life Sciences Coimbatore, India	161.00	Shaikh Ziauddin Ahammad Department of Biochemical Engineering and Biotechnology
Geography of Philosophy	John Templeton Foundation United States	71.34	Purnima Singh Department of Humanities and Social Sciences
The development of a taxi-based dispatcher-controlled EMS for Low- and Middle- Income Countries	University of Chicago United States	52.58	Geetam Tewari Department of Civil Engineering



### CONSULTANCY ASSIGNMENTS WITH INTERNATIONAL ORGANISATIONS

The Institute has been undertaking Consultancy Assignments with International Organizations like: Jaiprakash Associates Ltd., Bhutan; Bulk Testing International, France; Total Marketing Services, France; Japan Automobile Research Institute, Japan; U.S. Air Force Research Laboratory (AFRL), Asian Office of Aerospace R&D, Japan; Nippon Steel & Sumitomo Metal Corp., Japan; LG Electronics Inc, Korea; Panchkanya Plast (P) Ltd., Nepal; Royal Norwegian Embassy, Nepal; G.S. Seismic Control System (P) Ltd., Nepal; Common Fund for Commodities, Netherlands; Energy Research Center of Netherlands; FCG Anzdec Limited, New Zealand; Escom Research and Innovation Department, South Africa; Uppasala University, Sweden; National Property Board, Sweden; International Institute of Non-Aligned Studies, Switzerland; McLellan and Partners Ltd, UK; Emerald Group Publishing Limited, UK; Marvel Chemicals Ltd, UK; Aquatech International Corp., USA; Fushi Copperweld Inc., USA; PPG Industries Inc., USA; United Technologies Corp./ Pratt & Whitney, USA; McAfee Inc., USA; Safe Water Network, USA; Gulf Coast Technical Service, USA; Corning Inc., USA; Biomorphic VLSI Inc., USA; Institute for the Future, USA; Yardi Systems, USA; Dezaview LLC, USA; Owens Corning Sales, LLC, USA; Ahlstrom Nonwovens LLC, USA; Chapter Apps Incorporated, USA; and Universities/Institutions abroad.

During the year under report, the Institute has undertaken 3 new Consultancy Jobs with International funding.

#### International Consultancy Jobs undertaken during the year 2018-19

1. "Curriculum Design and Ongoing Quality Advisory for Academic Programmes at KCST, Kuwait (phase 3)" (₹0.36 Lakhs), Sponsored by Kuwait College for Science and Technology Kuwait, Consultant Incharge/Department - Sanjiva Prasad (Dept. of Computer Science & Engineering).
2. "Review of the structural design of Mauritius Cancer Hospital" (₹5.00 Lakhs), Sponsored by Swadesh Civil Infrastructure Pvt. Ltd. Mauritius, Consultant Incharge/ Department - Shashank Bishnoi (Department of Civil Engineering).

3. "NV and tribo-Performance Evaluation and Analysis of Graphite Particles in NAO Brake-pads" (₹19.64 Lakhs), Sponsored by Imerys Graphite & Carbon Switzerland Ltd. Switzerland, Consultant Incharge/Department - Jayashree Bijwe (Industrial Tribology, Machine Dynamics & Maintenance Engineering).

### OTHER ACTIVITIES

Besides handling Direct Fellowships sponsored by various funding agencies, sponsored Chairs, PAC/Expert Committee Meetings, new faculty grants, PDF Management, DDF/ CDF Management, IRD has also undertaken the following activities during 2017-2018:

- DD-Robocon 2019 Competition.
- International Conference on Multi-body System Dynamics and 10th Asian Conference on Multi-body Dynamics.
- International Workshop & Conference on Perovskite & Hybrid Photo-Voltaics.
- Workshop on exploring effective practice in civil society organizations promotion of human rights, good governance and social justice in India and Bangladesh.
- Indo-South Africa joint Workshop on Renewable Energy.
- International Workshop on Modeling Atmospheric-Oceanic processes for Weather and Climate Extremes.
- Workshop on Changing Grounds: Dynamics of Culture and Livelihood.
- Training and demonstration of Value added products from Tamarind, Mahua and Amla.
- Workshop on Smart Grids.
- International seminar on Disciplinarity in a Digital Age.
- International Conference & meeting of China India Association of Atmospheric Scientists 2019.
- Workshop on Approaches to Language Variation.
- Symposium on Physics of Strongly Correlated Electron System.
- INSPIRE Faculty Awards.

# Foundation for Innovation and Technology Transfer (FITT)

(April 1, 2018 - March 31, 2019)

The Foundation for Innovation and Technology Transfer (FITT) is a pioneer in technology commercialization organization from academia. Created 27 years ago, FITT has established itself as a robust self-sustained body. Following its mission to create partnerships and linkages with business and community to enable knowledge transfer for societal good and economic development, FITT has often resorted to innovative modes of engagement. The academic community at IIT Delhi has been pitching in with their best effort, to strengthen and support the team at FITT to go an extra mile in order to achieve and surpass the expectations of the society and the nation.

FITT provides superior program management services and is steadily increasing its operational landscape. The varied roles of FITT can be seen in enabling innovations and technopreneurship, business partnerships, technology development, consultancy, collaborative R&D, technology commercialization, development programs, corporate memberships etc. These roles are necessitated by the key agenda of the Foundation to showcase the Institute's "intellectual ware" to industry, and thereby unlock its knowledge base and inculcate industrial relevance in teaching and research at IIT Delhi.

FITT's gamut of services and activities include:

- Research partnership with industry for technology development and its commercial applications,
- Transfer of technology relating to proven R&D outputs
- Intellectual property management,
- Innovative problem solving consultancy with industry clients,
- Information support service to industry and R&D organizations,
- Specialist development programmes,
- Corporate membership of FITT,
- Facilitate funding for the development of innovative ideas of commercial implications,
- Incubation and hand holding tech based new business formation.

FITT is a DSIR approved Scientific and Industrial Research Organization (SIRO), by virtue of its charter to implement, inter-alia, industrial R&D projects. During financial year 2018-19, 63 technology development and transfer projects worth ₹2,324 lakhs have been contracted at FITT.

FITT manages the Institute's IPs and IPRs. Over 750 patents have been filed for IIT Delhi. During the last financial year 2018-19, 123 patents were filed and 10 licensing deals were closed. To augment its outreach and technology commercialization

efforts, FITT also engages with specialist outside agencies. Besides enabling regular industry academia meetings, FITT organized a number of visits by IIT Delhi faculty to industrial units in order to assess their R&D needs so as to initiate industry-relevant R&D programs at the Institute. FITT has been instrumental in organising several visits by overseas companies and delegations, enabling dialogue between the visiting delegates and academic community of the Institute.

At the Institute, the Professional Candidate Registration (PCR) program has been adopted towards extending the academic courses at the Institute, amongst the targeted segments of industry, research and academic establishments. Through this unique program, suitably qualified professionals can undertake relevant semester-long course modules here at IIT Delhi, to augment their knowledge base and skill set. During the academic year 2018-19, 50 candidates participated in this program. PCR program promises good capacity building potential in the targeted Delhi NCR region.

Towards fostering innovation-led start-ups, FITT has enabled the establishment and operation of thriving incubators on the campus - Technology Business Incubation Unit (TBIU) and Bio-technology Business Incubation Facility (BBIF). The TBIU is a flagship Institute program designed primarily to promote partnership with new technology entrepreneurs and start-up companies, and also serve as a medium of technology transfer. During the last financial year there were 22 companies resident at the TBIU and 12 in the BBIF. FITT provides co-share equipment facility to bio-tech start-ups. These companies are working in the technology domains of IT, Biotechnology, Engineering design, Cleantech etc. Out of 91 companies admitted so far in the incubator since its inception in the year 2000, 31 companies have started their up-scaling/commercial operation after completing their incubation at the Institute and are reported to be growing at a steady pace.

## Start-up Entries (FY 2018-19)

- Anaavaran Technologies
- AIBIM Innovative Solutions
- CYRAN AI Solutions
- Tensor Dynamics
- Raised Lines Foundation
- HyperX Energy
- Brainvention 2.0
- Machphy Solutions
- Prof. D.K. Dubey
- Stellargene Technologies
- Ramja Genosensor

### Start-up Exits (FY 2018-19)

- Nano Clean Global
- Test Right
- Brownbag

FITT has been at the forefront in managing several innovation and entrepreneurship programs in the country. As a nodal agency in several Government schemes, FITT administers programs of - The Ministry of Micro, Small and Medium Enterprises (MSME) for promoting and supporting innovation amongst micro and small enterprises leveraging the knowledge resources at IIT Delhi; Ministry of Electronic and Information Technology (DietY) seed support in the broad area of ICT is also forthcoming under the "Technology Incubation and Development of Entrepreneurs" (TIDE) scheme; Technology Development Board (TDB)'s scheme for the specific purpose of providing early stage financial support to start-up units incubated at IIT Delhi's TBIU and a Partner of BIRAC (DBT) towards implementing their Biotechnology Ignition Grant (BIG) scheme in the country. FITT is in association with Pfizer, for implementation of the Pfizer IIT Delhi Innovation and IP Program, thereby providing financial grant support:

- Upto ₹50 lakhs to healthcare based innovators/ start-ups for incubation.
- ₹3 lakhs for IP protection for selected applicant.

Under the NIDHI-Seed Support System (NIDHI-SSS) program of DST, introduced in the year 2017, FITT provides funding to incubatee start-ups upto ₹1 crore. So far nine incubatees have been supported by seed funding to the tune of ₹3.24 crores. The BioNest, program of BIRAC, which is under implementation at FITT, has provided seed grant upto ₹55 lakhs to three biotech start-ups.

FITT has been promoting the Women Entrepreneurship and Empowerment (WEE) program supported by the Department of Science and Technology (DST) at IIT Delhi. WEE classes were conducted during the weekends at IIT Delhi with the global industry experts mentoring the woman entrepreneurs. During the 3rd phase of this WEE program 14 women were shortlisted for the award.

The Deferred Placement Policy (DPP) offered by IIT Delhi is being implemented by FITT for students who opt out of placement in order to inculcate their start-up idea. A student must opt for deferred placement in the final semester of the pre-final year and is eligible to sit for placement after two years if their start-up is not successful. Selected innovative ideas are eligible for incubation at the TBIU. In the year 2018-19, six applicants have been shortlisted under DPP.

For promotion of entrepreneurship, FITT and NS Raghavan Centre for Entrepreneurial Learning (NSRCEL), IIM Bangalore has instituted a joint mentoring program for start-ups. Joint Mentoring Session by IITD & IIMB alumni is held at FITT on the 4th Saturday of each calendar month.



Mentoring session to support entrepreneurship and start-ups

FITT has been the implementing partner of The Ministry of Skill Development and Entrepreneurship (MoSDE) for execution of National Entrepreneurship Awards (NEAS). This award aims to recognise the efforts and achievements of exceptional entrepreneurs and those individuals and organizations who are working in the field of entrepreneurship development.

Power System Operations Corporation Ltd (POSOCO), in association with FITT has been implementing the POSOCO Power System Awards (PPSA) since 2013. PPSA is a part of the CSR initiatives of POSOCO, which aims to reward excellence in the area of power system and its related fields. During the 7th edition of this award- PPSA-2019, 15 awardees were shortlisted in Doctoral category and 15 awardees in the Master's category.



Awardees of PPSA- 2019 were felicitated by Prof. V. Ramgopal Rao, Director IIT Delhi at Senate Room on February 25, 2019

FITT has corporate members representing small/medium/ large scale industrial and R&D units. Corporate members receive preferential treatment in matters of collaboration with the Institute in addition to information and technical services that FITT provides.

**GLIMPSES OF OUR ACTIVITIES DURING FY 2018-19**

**FITT celebrates 25 years of Excellence**



*Dr. Satya Pal Singh, Minister of State (HE), MHRD & Minister of Water Resources, River Development & Ganga Rejuvenation delivering his address as the Chief Guest for the Silver Jubilee Function on July 28, 2018*

**MD FITT felicitated at 2nd ASSOCHAM-Ericsson ICT Start-up Awards**



*Dr. Anil Wali felicitated by Shri Ravi Shankar Prasad Minister of Law & Justice, Electronic & IT for his contribution towards promoting IPR on April 26, 2018*

**Technology Transfer @ FITT**



*IIT Delhi's Transfemoral Prosthesis Technology by Prof Deepak Joshi, has been transferred to M/s Fupro Innovations Pvt Ltd through FITT on 14th March, 2019*

**Yes Bank partners with FITT**



*Yes Bank signs MOU with FITT at the Annual Start-up Conclave 2018 on May 10, 2018, to provide comprehensive mentorship & banking services to budding entrepreneurs to boost the start-up ecosystem in India*

**MG Motors partners with FITT**



*FITT signs MOU with MG Motor to co-develop child safety car tech during the Silver Jubilee celebration on July 28, 2018.*

**FITT, IITD joins iDEX network**



*Defence Innovation Organisation- Innovation for Defence Excellence (DIO- IDEX), Ministry of Defence India has entered into an MoU with FITT on March 1, 2019 to support start-ups and innovators in Defence and Aerospace.*

**FITT signs MOU with Srijan Technologies**



Dr. Anil Wali, MD FITT (centre) and Prof Kavya Dashora, CRDT (centre right) signs collaboration agreement with Srijan Technologies at FITT's incubator on February 21, 2019

**Venture Accelerator Program organized by FITT**



FITT in association with TiE-Delhi NCR organized this Venture Accelerator Program for the early and mid-stage start-ups at IIT Delhi during the weekends from September 7-16, 2018

**23rd AGM of FITT**



Prof. M. Balakrishnan, Deputy Director (S&P), IIT Delhi presided over Annual General Meeting (AGM) of FITT held on December 18, 2018 at the Senate Room, IIT Delhi

**Workshop for Med-Tech Start-ups**



Session on "Testing and Calibration for Medical Products" organised by Path in partnership with FITT on February 11, 2019

**FITT organises session on "Copyright Protection & Licensing"**



Mr. Tarun Khurana, copyright expert from Khurana & Khurana Advocates during his lecture on "Copyright Protection and Monetisation" at the IRD Conference Room, IITD on March 29, 2019

**IIT Delhi's extension campus at Sonipat was inaugurated on April 3, 2018**



IIT Delhi Technopark, Sonipat inaugurated by Mr Manohar Lal Khattar, CM, Haryana & Dr Satya Pal Singh, Minister of State (HE), MHRD & Minister of Water Resources, River Development & Ganga Rejuvenation in the presence of Prof V Ramgopal Rao, Director IIT Delhi and dignitaries

**Orientation Program for Technology Enabling Centres of DST organized by FITT**



Prof. V. Ramgopal Rao, Director, IITD during his session organized by FITT on January 29, 2019 at IIT Delhi

Visits 2018-19



Delegation from Queensland University in an interaction with FITT & its start-ups on Nov 26, 2018 at the Technology Business Incubation Unit, IITD



Delegates from National Institute of Industrial Property (INPI) France led by Mr. Pascal Faure, Director General- INPI, visited FITT's TBI on November 28, 2019



India Korea Start- Up Meet, organised by FITT at IIT Delhi on June 9, 2018



Twitter's CEO Jack Dorsey during his interaction with start-ups at FITT's incubator on November 12, 2018

# 7. Events

(April 1, 2018 - March 31, 2019)

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# Convocation

(April 1, 2018 - March 31, 2019)

## **DISTINGUISHED ALUMNI AWARD/DISTINGUISHED ALUMNI SERVICE AWARD**

IIT Delhi lays great emphasis on a strong and vibrant relationship with its alumni. The Institute is proud of its alumni and their achievements. The success of the alumni is one of the most important yardsticks by which the Institute measures its achievements in academic / professional fields.

The Institute recognizes the outstanding contributions made by the alumni in various areas by conferring the Distinguished Alumni Award each year. This award is the highest honour conferred by the Institute on its alumni to recognize their achievements and outstanding contributions to academics, teaching & research, corporate business development, profession and / or public service. For the year under report, the prestigious award was conferred upon the following at the 49th Convocation of the Institute.



**Mr. Raghu Hari Dalmia**

*Distinguished Alumni Award*

B.Tech., Mechanical Engineering (1972),  
President, OCL India Limited



**Dr. Venkata N. Padmanabhan**

*Distinguished Alumni Award*

B.Tech., Computer Science & Engineering (1993),  
Principal Researcher, Microsoft Research India



**Mr. Sumant Sinha**








*Distinguished Alumni Award*

B.Tech., Civil Engineering (1987),  
Chairman & Managing Director, ReNew Power Limited
















Medals and Awards Winners at the 49th Convocation

Following is the list of award winning students at the convocation.

<b>President's Gold Medal</b>	<b>Director's Gold Medal</b>	<b>Dr. Shankar Dayal Sharma Gold Medal</b>	<b>Perfect Ten Gold Medal</b>			
						
Rajesh Kumar	Sanjana Garg	Parikshit Pareek	Anirban Kundu	Saiyed Kashif Shaukat	Vaishali Jain	Vasu Raj

<b>Silver Medalists</b>						
						
Nikhil Agrawal	Swati Agrawal	Ronak Khandelwal	Kartikay Garg	K Vinay	Sourabh Mhaski	Ashutosh Aggarwal
						
Aditi	Divpreet Singh	Vipasha Mittal	Harsh Bansal	Devang Agrawal	Dhruva Ganapathy	Prateek Kumar

- |  |   |  |  |
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| <p><b>Abhinav Dhupar Memorial Award</b><br/>Seema Shrotriya</p> <p><b>Amit Garg Memorial Ethical Leadership Award</b><br/>Anagh Prasad</p> <p><b>Amit Garg Memorial Research Award</b><br/>Arundhuti Banerjee</p> <p><b>Prof. A.K. Sinha Cash Prize</b><br/>Rupam Basak</p> <p><b>Alok Saxena Memorial Award</b><br/>Swati Agrawal</p> <p><b>Dr. Amrik Singh Medal &amp; Prize</b><br/>Sakthi Vijayalakshmi A G</p> <p><b>Shri A.N. Dutta Memorial Award</b><br/>Ankit Mittal</p> <p><b>LT. Arpan Banerjee Award</b><br/>Kiran R</p> <p><b>Prof. Arun Kanda Memorial Cash Award</b><br/>Thalaj Kapoor</p> <p><b>Prof. B. Karunes Memorial Award</b><br/>Abhishek Arora</p> <p><b>Bhagirathi-Bashisht Tiwari Award</b><br/>Parikshit Pareek</p> <p><b>Boss Award</b><br/>Bijjiga Jayaram<br/>Devashish Kumar<br/>Gagan Madan<br/>Omkar Sudhir Patil<br/>Ayush Vani &amp; Abani (Jointly)<br/>Karan Raj Chauhan &amp; Shubham (Jointly)</p> <p><b>Buti Foundation Bodh Raj Gold Medal (for best women student)</b><br/>Vaishali Jain</p> <p><b>Chand Rani-Banarsi Dass Duggal Memorial Award</b><br/>Shivam Garg</p> <p><b>Mrs. Chander Kanta Nanda Excellence Award</b><br/>Soham Roy<br/>Aparana Gupta</p> <p><b>Prof. C.S. Jha Memorial Excellence Award</b><br/>Vipasha Mittal</p> <p><b>Dogra Medal</b><br/>Paras Malik</p> | <p><b>Dogra Educational Endowment Medal</b><br/>Nehate Chetan Narayan</p> <p><b>Excellence Award for Best Project in HV AC &amp; R (Heating Ventilating, Air-Conditioning &amp; Refrigeration)</b><br/>Naman Doshi</p> <p><b>FITT Award for Best Industry Relevant Project</b><br/>C Sandeep<br/>Rajan Kumar<br/>Satyam Gangwar<br/>Sanjiv Gupta</p> <p><b>Ganga Devi and Khem Chand Memorial Award</b><br/>Shobhit Rajsingh Deori</p> <p><b>Shri Harbans Singh Memorial Award</b><br/>Nitin Yogendraprasad Dubey</p> <p><b>Harsha Vardhan Dwarkadas Motiwala Memorial Prize</b><br/>Prateek Kumar</p> <p><b>IEEE-PEDES 96 Award</b><br/>Rupam Basak</p> <p><b>IIIE Cash Award</b><br/>Thalaj Kapoor<br/>Jyoti Kumari</p> <p><b>Prof. J. Nanda Cash Award of Excellence in Power System Engineering</b><br/>Neha Gupta</p> <p><b>Jagat Ram Chopra Award</b><br/>Jyoti Mangal<br/>Rashi Monga<br/>Shweta Kalra<br/>Yashika Gandhi<br/>Ankita Tulshyan<br/>Garima Nautiyal</p> <p><b>Shri Jaidutt Shrimati Saraswati Sodha Research Award</b><br/>Simrjit Singh</p> <p><b>Shrimati Jawala Devi-Sita Ram Kaushik Award</b><br/>Parikshit Pareek<br/>Krushna Reddy Punnnati</p> <p><b>Jayant Sinha Award</b><br/>Rishabh Sanghi</p> <p><b>Dr. Kewal Krishan Baveja Medal</b><br/>Unnati Mahajan</p> | <p><b>K.S. Prakasa Rao Memorial Award</b><br/>Neha Gupta</p> <p><b>K. Vasudevan Award</b><br/>Prateek Kumar</p> <p><b>Laxmi Bai - Lal Chand Khurana Memorial Award</b><br/>Kartikay Garg</p> <p><b>Leela Khushiram Award</b><br/>Swati Agarwal</p> <p><b>Prof. M.C. Puri Memorial Medal</b><br/>Ankita Tulshyan</p> <p><b>Prof. M.P. Singh Award</b><br/>Piyush Srivastava</p> <p><b>Prof. M.M. Chawla Gold Medal (UG)</b><br/>Devang Agrawal</p> <p><b>Kartikay Garg</b></p> <p><b>Mrs. Malti Singh and Shri Ram Rishi Singh Memorial Postgraduate Cash Award</b><br/>Dharanivendhan T<br/>Parthajyoti Gayan</p> <p><b>Prof. Mira Madan Memorial Excellence Award</b><br/>Himanshi<br/>Shalinee</p> <p><b>Mudit Sharma Memorial Gold Medal</b><br/>Dhruva Ganapathy</p> <p><b>NBCC Prize of Excellence</b><br/>Chirag Kothari</p> <p><b>Nayyar Perwez Shahabuddin Medal</b><br/>Rajesh Kumar</p> <p><b>Dr. Neeraj Srivastava Prize</b><br/>Priya Nandal</p> <p><b>Shri O.P. Bansal Cash Award</b><br/>Vaishali Jain</p> <p><b>Prof. O.P. Gupta Medal</b><br/>Parikshit Pareek</p> <p><b>Prof. P.K. Katti Award</b><br/>Mohit Kumar</p> <p><b>Prof. Pushpa Bajaj Gold Medal</b><br/>Sumana Bandyopadhyay</p> <p><b>Parampujya Baba Sant Nagpalji Gold Medal</b><br/>Aseem Saxena</p> <p><b>Punita Kumar - Sinha Award for All Rounder Excellence</b><br/>Swati Agrawal</p> | <p><b>Padmashri Man Mohan Suri Project Award (U.G.)</b><br/>Rohit Patel<br/>Gaurav Milankumar Sardal<br/>Rithul P &amp; Aditya Kumar Chaurasiya (Jointly)</p> <p><b>Padmashri Man Mohan Suri Project Award (P.G.)</b><br/>Rajesh Kumar</p> <p><b>Rajindra Kumari Malhotra Memorial Prize</b><br/>Anagh Prasad</p> <p><b>Rajiv Bambawale Cash Prize</b><br/>Manish Singh</p> <p><b>Rahul Giri Memorial Medal</b><br/>Anagh Prasad</p> <p><b>Reba and Pranab Chatterjee Excellence Award</b><br/>Akshay Chenna</p> <p><b>Mrs. Sabita Karunes Memorial Award</b><br/>Abhishek Dutta</p> <p><b>Rahul Giri Memorial Medal</b><br/>Anagh Prasad</p> <p><b>Reba and Pranab Chatterjee Excellence Award</b><br/>Akshay Chenna</p> <p><b>Mrs. Sabita Karunes Memorial Award</b><br/>Abhishek Dutta</p> <p><b>Mrs. Santokh Gill Award</b><br/>Ankita Tulshyan</p> <p><b>Sarla Devi Duggal Excellence Award for Women</b><br/>Sanjana Garg</p> <p><b>Dr. Shivraj Nandan Sinha Medal</b><br/>Akash Nayak</p> <p><b>Suresh Chandra Memorial Award for Best Software Project (UG)</b><br/>Gagan Madan<br/>Anand Sangwan<br/>Sourav Das &amp; Abhijeet Anand (Jointly)</p> <p><b>Suresh Chandra Memorial Award (P.G.)</b><br/>Aseem Saxena</p> <p><b>Shri S.L. Duggal Excellence Cash Award</b><br/>Apoorva Pradhan</p> <p><b>Shrimati and Shri H.R. Mittal Cash Award</b><br/>Ajith K R</p> <p><b>Shrimati Vijay-Usha Sodha Research Award</b><br/>Desh Bandhu Singh</p> <p><b>Suman - Upma Memorial Gold Medal</b><br/>Aditi</p> <p><b>Suyash Chandra Memorial Cash Award</b><br/>Yash Keerti</p> <p><b>TATA Consultancy Services Project Award</b><br/>Rajesh Kumar</p> <p><b>Vivek Sharma Memorial Award</b><br/>Amit Kothari</p> |
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# Conferences / Seminars / Workshops / Lectures

(April 1, 2018 - March 31, 2019)

The departments, centres and schools of the Institute organized many conferences, seminars, workshops, lectures and some major of them are highlighted here under:

Department / Centre / School	Title of the Conference / Seminar / Workshop / Lecture
Applied Mechanics	Workshop on 'Implementation of Viscoelasticity with deal.ii' organized by Prof. Ajeet kumar/ UGC India & DAAD Germany in the Department of Applied Mechanics from 25 Feb to 1 March, 2019.
	Lecture on Warship Design and Submarine Design by the officers of Design Directorates of Indian Navy (24 Lectures conducted between Jul-18 to March-19 by subject matter experts from industry).
Biochemical Engineering and Biotechnology	"Characterizing the Microbiomes that Rule the World (and Space)" by Dr. Abhishek S. Dhoble (Biological Engineering, University of Illinois at Urbana-Champaign (UIUC), USA).
Chemical Engineering	"Thermal Integration: A Novel Approach of Improving Energetic and Economic Potential, and CO2 Emission Level in Distillation" by Prof. Amiya Jana, IIT Kharagpur on 7 May, 2018.
	"Role of Computational Modeling in Catalysis, Molecular Gels, and Organic Optoelectronic Materials" organized by Prof. Neeraj Rai, Assistant Professor (Dave C. Swalm School of Chemical Engineering and Center for Advanced Vehicular Systems, Mississippi State University, USA) on 13 August, 2018.
	"Nutrient Limited Bioprocesses: Getting Bacteria to Direct Carbon to the Desired Product" by Prof. Mark A. Eiteman, Ph.D. (Professor of BioChemical Engineering and Microbiology, University of Georgia, President-Elect, Institute of Biological Engineering, Fellow of IBE and AIMBE, Distinguished Faculty Scholar) on 18 September, 2018.
	"Nitric Oxide Materials—An Approach to Creating More Biocompatible Medical Device Coatings" by Prof. Hitesh Handa, Ph.D., Assistant Professor (School of Chemical, Materials and Biomedical Engineering, University of Georgia, Athens, GA) on 18 September, 2018.
	"Chemical, Materials and Biomedical Engineering at the University of Georgia" by Dr. James N Warnock, Ph.D. Professor & Founding Chair (School of Chemical, Materials and Biomedical Engineering University of Georgia) on 18 September, 2018.
	"Low Salinity Wettability Alteration Mechanisms in Carbonates" by Dr. Himanshu Sharma, Ph.D. (The University of Texas at Austin) on 11 October, 2018.
	"Improving the Energy Efficiency of Steam Assisted Gravity Drainage with Steam Additives" by Prof. Brij Maini (Professor and NSERC/Nexen & CNOOC, Industrial Research Chair in Advanced In-situ Recovery Processes for Oil Sands, Department of Chemical and Petroleum Engineering at Schulich School of Engineering, University of Calgary) on 6 December, 2018.
	"Towards Sustainable Gas Transport, Recovery and Storage: Tuning and Understanding Gas Interactions at Solid-Water Interfaces using Molecular- and Meso-Scale Studies for Pore-to-Field and Process Scale Applications in Energy and Environment" by Dr. Greeshma Gadikota (Department of Civil and Environmental Engineering, Environmental Chemistry and Technology Program, Geological Engineering Program, Grainger Institute of Engineering, Wisconsin Energy Institute, University of Wisconsin, Madison) on 2 January, 2019.
	"Applications of Data Mining in Chemical Engineering by Professor Moses O. Tadé (Deputy Pro Vice Chancellor, Faculty of Science & Engineering, Curtin University, Perth, Western Australia) on 4 January 2019.
	"Production of renewable diesel from lignocellulosic biomass through fast pyrolysis and hydroprocessing technology" by Dr. Madhumita Patel (Ph.D. in Mechanical Engineering (Sustainable Energy Research) from the University of Alberta) on 16 January, 2019.
"Dynamic Interfacial Tension & Interfacial Rheology" by Dr. Youssef Akil (Technical Consultant, Krüss GmbH) on 22 January 2019.	

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	<p>"Interfaces: From Soft Material Design to Energy Storage" by Dr. Ankur Gupta (Postdoctoral research associate, Department of Mechanical and Aerospace Engineering at Princeton University) on 5 February 2019.</p> <p>"Chemical Thermodynamics of Aqueous Atmospheric Aerosols: Modeling and Microfluidic Measurements" by Dr. Lucy Nandy (Ph.D. from the University of Minnesota, Twin Cities) on 13 February, 2019.</p> <p>"Multiscale modeling of biomass thermochemical conversion" by Dr. Himanshu Goyal (Postdoctoral Researcher, University of Delaware Energy Institute) on 27 February, 2019.</p> <p>"QbD, PAT, QRM for Production of Pharmaceuticals" by A. S. Rathore, Workshop with DSM Sinochem, Kuala Lumpur, Malaysia, June 2018.</p> <p>Indo-German Symposium on "Advanced Measurements and Multiscale CFD Simulations for Intensification of Multiphase Flow Processes" by V V Buwa from 3-5 October 2018 at IIT Delhi.</p>
<b>Chemistry</b>	<p>Chemistry Department Day on 2 March, 2019.</p> <p>Workshop and Symposium on "Advanced Simulation Methods: DFT, MD and Beyond Basic Principles and Modern Insights" Jointly organized by Departments of Physics, Chemistry, Chemical Engineering, Civil Engineering, Materials Science and Engineering, Computer Services Centre, and the HPC Group from 6-10 March, 2019 at IIT Delhi, New Delhi, India.</p> <p>"Quantum dots for light energy harvesting and conversion" by Dr. K. George Thomas (School of Chemistry, Indian Institute of Science Education and Research, Thiruvananthapuram, 695 016, India) on 17 April 2018.</p> <p>"Oxidative Functionalization of C-H Bond Using Molecular Oxygen" by Dr. Joyram Guin (Department of Organic Chemistry, Indian Association for the Cultivation of Science, Kolkata 700032, INDIA) on 24 April, 2018.</p> <p>"Phosphoric Acid-Catalyzed, Enantioselective Transformations of H-Bonded ortho-Quinone Methides and ortho-Quinone Methide Imines" by Dr. Christoph Schneider (University of Leipzig, Institute of Organic Chemistry, Johannisallee 29, D-04103 Leipzig, Germany) on 27 August, 2018.</p> <p>Catalysis: "Awakening Affinities" for Organic Synthesis by Dr. Roderick W. Bates (Division of Chemistry and Biological Chemistry, School of Physical and Mathematical Sciences, Nanyang Technological University, Singapore 637371) on 3 January, 2019.</p> <p>"Extreme ends of Interaction energy Scales in Quantum Chemistry" by Dr. Mainak Sadhukhan (UNIVERSITÉ DU LUXEMBOURG, Luxembourg) on 5 January, 2019.</p> <p>"New Aspects of Enantioselective Catalysis by Chiral Brønsted Acids and Bases" by Dr. Masahiro Terada (Department of Chemistry, Tohoku University, Aoba-ku Sendai 980-8578, Japan) on 11 January, 2019.</p> <p>"Molecular Dynamics Simulations of Ionic Liquid Using Multiscale Methods: From Bulk to Confinement" by Dr. Tamisra Pal (Institut für Festkörperphysik Technische Universität Darmstadt, 64289 Darmstadt, Germany) on 12 January, 2019.</p> <p>"Highly Efficient Catalytic Asymmetric Hydrogenations" by Dr. Qi-Lin Zhou (College of Chemistry, Nankai University Tianjin 300071, China. qlzhou@nankai.edu.cn) on 16 January, 2019.</p> <p>"Centenary of Science Departments in Indian Universities : A Comprehension" by Prof. Arun K. Grover Former Vice-Chancellor, Punjab University, Chandigarh (Punjab Engineering College (Deemed to be University), Chandigarh-160012) on 6 February, 2019.</p> <p>"The Art of Scientific Publication (How to Make Your Next Paper Scientifically Effective?)" by Prof. Prashant V. Kamat, Editor, ACS Energy Letts (Department of Chemistry and Biochemistry, Radiation Laboratory, Notre Dame, USA; Webpage: <a href="http://www.kamatlab.com">http://www.kamatlab.com</a>) on 26 February, 2019.</p> <p>"The Art of Building Small" by Dr. Ben L. Feringa ((Nobel Laureate), The Netherland) on 15 March, 2019.</p>

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	<p>"Protein Electrostatics: Experimental insights that Challenge The Computational Paradigm" by Professor Bertrand Garcia-Moreno E (T.C. Jenkins, Dept. of Biophysics, Johns Hopkins University, Baltimore, USA) on 18 March, 2019.</p> <p>"Green Synthesis of Zeolites from Fly Ash and their Application for Environmental Protection" by Prof. Y. Kalvachev (Institute of Catalysis, Bulgarian Academy of Sciences, Sofia, Bulgaria) on 22 March, 2019.</p> <p>"Exciting Physics of Active Matter inspired by Nature: Flocking and Bacterial Heat Engine" by Professor A.K. Sood (Department of Physics, IISc Bangalore) on 26 March, 2019.</p> <p>"Dynamics of Water in Biomolecules" by Professor Marcia C. Barbosa (Universidade Federal do Rio Grande do Sul, Porto Alegre, Brazil) on 27 March, 2019.</p>
<b>Civil Engineering</b>	<p>International Conference on "Atmospheric Chemistry and Physics in Highly Polluted Environments China-India Association of Atmospheric Scientists (CIAAS-2019)" Organized by Dept. of Civil Engineering, IIT Delhi from 22-24 March, 2019.</p> <p>International Symposium on "Geotechnics of Transportation Infrastructure (ISGTI 2018)", Coordinator: Prof. J.T. Shahu on behalf of IIT Delhi, Organized by Indian Geotechnical Society, IIT Delhi from 7-8 April, 2018.</p> <p>"Digital Fabrication of Innovative Reinforcement for Sustainable Concrete Structures", a technical seminar delivered by Dr. Saverio Spadea from School of Science and Engineering, University of Dundee, UK held at Committee Room, Room No. 221, Block-IV, Department of Civil Engineering, IIT Delhi on 23 November, 2018.</p> <p>"Vibro-Acoustic Analysis of Pre-Stressed Rotating Saw Blades Utilizing the Finite Element Method", a technical seminar delivered by Mr Marcus Maeder from Department of Mechanical Engineering, Technical University of Munich, Germany held at IFUWWT Committee Room, Room No. 212, Block-IV, Department of Civil Engineering, IIT Delhi on 29 March 2019.</p> <p>"AAACE India Launch event" hosted at IIT Delhi on 1st Dec 2018 - chief guest Shri Sadananda Gowda (AAACE advisory board members - Prof. K.C. Iyer &amp; Prof. J. Uma Maheswari)</p> <p>"Sensor Systems for Localization of Trapped Victims in Collapsed Infrastructure (SORTIE)", a two-day Indo-German Workshop coordinated by Professor Dr Vasant Matsagar sponsored by German Federal Ministry of Education and Research (BMBF) held at Committee Room, Room No. 221, Block-IV, Department of Civil Engineering, IIT Delhi from 17-18 September, 2018.</p> <p>"Opportunities of Academic Collaboration under Chinese Belt and Road Initiative (BRI)" by Professor Ghani Razaqpur, Chair Professor in College of Environmental Science and Engineering; and, Professor Jeanne Huang, Director of Sini-Canada R&amp;D Center for Water and Environmental Safety (SCWE), Nankai University, Tianjin, China held at Committee Room, Room No. 221, Block-IV, Department of Civil Engineering, IIT Delhi from 11-12 March, 2019.</p>
<b>Computer Science and Engineering</b>	<p>"5G and IoT Security. Indo-Japanese International Workshop" from 10-11 September, 2018 at Khosla Building, IIT Delhi.</p> <p>"EMPOWER 2018" from 25-27 October, 2018, Sonapat Campus, IIT Delhi.</p> <p>"VLSID 2019. 32nd International Conference on VLSI Design" from 5-9 January, 2019, Maneckshaw Centre, Delhi Cantonment.</p> <p>"Indian Conference on Logic and its Applications (ICLA 2019) and Pre-conference Workshops" from 1-5 March, 2019, Bharti Building, IIT Delhi.</p> <p>"The Billion Building Challenge" by Nipun Batra, U Virginia, USA on 4 May, 2018.</p> <p>"Energy and Thermal Management of CMPs by Dynamic Cache Reconfiguration" by 8.5.2018. Shounak Chakraborty, IIT Guwahati on 8 May, 2018.</p> <p>"Dynamics of Information Diffusion on Online Social Networks" by Yayati Gupta, IIT Ropar on 8 May, 2018.</p> <p>"Intelligent Environments using IoT Systems" by Deepak Vasisht, MIT, Cambridge, USA on 14 May, 2018.</p> <p>"Ultra Low Power Computing in the IoT Era (and a brief discussion of waferscale processors and self-driving cars)" by Rakesh Kumar, U Illinois at Urbana-Champaign on 19 June, 2018.</p>

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<p>"Anomaly detection in data-driven Cyber-Physical Systems" by Srinivasan Iyengar, U Massachusetts at Amherst, USA on 7 August, 2018.</p>
<p>"Research Activities at Oracle Labs, Brisbane" by Paddy Krishnan, Oracle Labs, Brisbane, Australia on 9 August, 2018.</p>
<p>"Putting Networks on a Firm Footing: Revolutionizing Network Management (and More)" by Aditya Akella, U Wisconsin at Madison, USA on 13 August, 2018.</p>
<p>"Pricing for Online Resource Allocation" by Shuchi Chawla, U Wisconsin at Madison, USA on 13 August, 2018.</p>
<p>"Big data and AI (Artificial Intelligence) in Health: opportunities and risks" by Dave Parry, Auckland U of Technology, New Zealand on 21 August, 2018.</p>
<p>"Fine-Pruning: Defending Against Backdooring Attacks on Deep Neural Networks" by Brendan Dolan-Gavitt, NYU Tandon School of Engineering, USA on 31 August, 2018.</p>
<p>"Efficient Symbolic Encodings for Analysis of Asynchronous Message Passing Programs" by Subodh V Sharma, IIT Delhi on 5 September, 2018.</p>
<p>"Addressing the multi-faceted challenges of image-text related tasks through multimodal solutions" by Deepanwita Datta, IIT BHU, India on 18 September, 2018.</p>
<p>"Polystore Systems for Query over Scientific Data-set Archives" by Subhash Bhalla, U Aizu, Japan on 19 September, 2018.</p>
<p>"CrystalBall: Gazing in the Black Box of SAT Solving" by Kuldeep Meel, NUS, Singapore on 26 September, 2018.</p>
<p>"Biometric authentication using template protection schemes" by Donghoon Chang, IIT Delhi, India on 27 September, 2018.</p>
<p>"Ballerina: A Modern Programming Language Focused on Integration" by Sanjiva Weerawarana, WSO2, Sri Lanka on 9 October, 2018.</p>
<p>"Data- and/or Compute- intensive workloads: Is NoC the solution?" by Karthi Duraisamy, Synopsys, USA on 12 October, 2018.</p>
<p>"Parse Condition: Symbolic Encoding of LL(1) Parsing" by Subhajit Roy, IIT Kanpur on 22 October, 2018.</p>
<p>"Chip-to-chip RF Communications and Power Delivery via On-chip Antennas" by Larry Richard (Rick) Carley, Carnegie-Mellon U, USA on 28 October, 2018.</p>
<p>"5G: An Evolution Towards a Revolution" by Karthik Sundaresan, NEC Labs America, USA on 28 October, 2018.</p>
<p>"Edge Computing with ParaDrop" by Suman Banerjee, U Wisconsin at Madison, USA on 28 October, 2018.</p>
<p>"Dynamic Network Analytics" by Kathleen M. Carley, Carnegie-Mellon U, USA on 28 October, 2018.</p>
<p>"Hyper Partial Order Logic: a local logic for Hyper properties" by Loic Helouet, INRIA Rennes on 29 October, 2018.</p>
<p>"Can machine learning trump theory in communication system design? Marconi Society Celestini Project India Lecture" by Prof. Andrea Goldsmith, Stanford University, USA on 1 November, 2018.</p>
<p>"Canopus: Scalable Consensus Permissioned Blockchains, CSE Department Alumnus Distinguished Lecture" by Prof. Srinivasan Keshav, University of Waterloo, Canada on 2 November, 2018.</p>
<p>"Algorithms for Machine Learning", Inspired from Physics, CSE Department Distinguished Lecture by Prof. Nisheet Vishnoi, EPF Lausanne, Switzerland on 5 November, 2018.</p>
<p>"Issues in Scalable Quantum Computing" by Charanjit S Jutla, IBM TJ Watson on 20 November, 2018.</p>
<p>From Reachability in Markov chains to termination on linear loop programs (via number theory) by Akshay Sundararaman, IIT Bombay on 28 November, 2018.</p>

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<p>"Sublinear Algorithms for (Delta +1)-Coloring", CSE Department Distinguished Lecture by Prof. Sanjeev Khanna, University of Pennsylvania, USA on 10 December, 2018.</p>
<p>"Detection of Electricity Access and Reliability from Space" by Brian Min, U Michigan, USA on 12 December, 2018.</p>
<p>"Making the Invisible, Visible, CSE Department Alumnus Distinguished Lecture" by Prof. Chandrajit Bajaj, University of Texas at Austin, USA on 17 December, 2018.</p>
<p>"Regular abstractions with applications to Infinite state verification" by Prakash Saivasan, TU Braunschweig, Germany on 3 January, 2019.</p>
<p>"Coding Space Theory and Optimization of 3D Cameras" by Mohit Gupta, U Wisconsin at Madison on 4 January, 2019.</p>
<p>"Proof-of-Work without all the Work" by Diksha Gupta, U New Mexico, USA on 4 January, 2019.</p>
<p>"Causal Consistency Algorithms for Partially Replicated and Fully Replicated Systems" by Ajay Kshemakalyani, U Illinois at Chicago, USA on 8 January, 2019.</p>
<p>"Memory Defenses - the Elevation from Obscurity to Headlines" by Rajeev Balasubramaniam, U Utah, USA on 8 January, 2019.</p>
<p>"Formal Verification of Robustness Properties of Hybrid Systems" by Pavithra Prabhakar, Kansas State U, USA on 8 January, 2019.</p>
<p>CSE Department Distinguished Lecture by Prof. Deepak Kapur, University of New Mexico, USA on 9 January, 2019.</p>
<p>"From Nand to Tetris: Applied Computer Science from the Ground Up" by Shimon Schocken, IDC Herzliya, Israel on 10 January, 2019.</p>
<p>"Collusion Resistant Traitor Tracing from Learning with Errors" by Rishab Goyal, U Texas at Austin, USA on 10 January, 2019.</p>
<p>"Explainable AI: Making Visual Question Answering Systems more Transparent, DAIR Seminar Lecture" by Ray Mooney, U Texas Austin, USA on 11 January, 2019.</p>
<p>"Symbolic Polynomial Evaluation" by Deepak Kapur, U New Mexico, USA on 11 January, 2019.</p>
<p>"Complexity theory, Cryptography and tests for quantumness", CSE Department Distinguished Lecture by Umesh Vazirani, U California Berkeley, USA on 15 January, 2019.</p>
<p>"A Framework for Specifying and Reasoning about Computations", CSE Department Distinguished Lecture by Prof. Gopalan Nadathur, University of Minnesota, Minneapolis, USA on 16 January, 2019.</p>
<p>"Online Algorithms for Packing and Covering Problems", Bhatnagar Award Felicitation Lecture by Prof. Amit Kumar, IIT Delhi on 16 January, 2019.</p>
<p>"Tutorial on Abella" by Gopalan Nadathur, U Minnesota Minneapolis, USA on 17 January, 2019.</p>
<p>"Improving Conversational Interactions at Alexa" by Rahul Goel, Amazon, USA on 21 January, 2019.</p>
<p>"Extracting and Labeling Information Facets" by Mouna Kacimi, U Bolzano, Italy on 22 January, 2019.</p>
<p>"ABATe: Automatic Behavioral Abstraction Technique to Detect Anomalies in Smart Cyber-Physical Systems" by Sandeep Nair, Narayanan, U Maryland Baltimore County, USA on 22 January, 2019.</p>
<p>"Extreme-Efficiency Computing" by Raghavendra Pothukuchi, U Illinois at Urbana-Champaign, USA on 23 January, 2019.</p>
<p>"Universal Access to All Information" by Carl Malamud, Public Resource Org, USA on 31 January, 2019.</p>
<p>"Prophet Problems and Posted Prices" by Ashish Chiplunkar, EPF Lausanne, Switzerland on 4 February, 2019.</p>
<p>"Fault-Tolerant Structures in Directed Graphs" by Keerti Choudhary, Weizmann Institute, Israel on 5 February, 2019.</p>

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	<p>"Data Science and High Performance Computing: Evolution or Revolution for Research?" by Vincent Heuveline, U Heidelberg, Germany on 18 February, 2019.</p> <p>"Cyber-Security Engineering via the Lens of Decision Science - The Case of Social-Networked Distributed Systems" by Ranjan Pal, U Cambridge, UK on 19 February, 2019.</p> <p>"Towards an Intelligence Architecture for Human-Robot Teaming" by Rohal Paul, MIT, Cambridge USA on 20 February, 2019.</p> <p>"Optimization-Based Model Validation – a Mathematical Technology of High Impact" by Ekaterina Kostina, U Heidelberg, Germany on 25 February, 2019.</p> <p>"Efficient Optimization for Machine Learning" by Elad Hazan, Princeton U, USA on 27 February, 2019.</p> <p>"Common Sense Knowledge for Natural Language Understanding" by Ashutosh Modi, Disney Research Los Angeles, USA on 6 March, 2019.</p> <p>"Relaxed Memory Concurrency and Compiler Correctness" by Soham Chakraborty, MPI-SWS, Kaiserslautern U, Germany on 7 March, 2019.</p> <p>"A Hub of Innovation and Talent Development" by Ali Ghorbani, Canadian Institute for Cybersecurity, U New Brunswick, Canada on 8 March, 2019.</p> <p>"Amplification Theorems for Differentially Private Machine Learning" by Kunal Talwar, Google, USA on 13 March, 2019.</p> <p>"Policy Enforcement Across Web Applications" by Abhishek Bichhawat, Carnegie-Mellon U, USA on 14 March, 2019.</p> <p>"Challenges and Opportunities in Motion and Eye Tracking" by Eakta Jain, University of Florida, USA on 19 March, 2019.</p> <p>"Congestion Control for Networks with Link and Traffic Variability" by Prateesh Goyal, MIT, Cambridge USA on 20 March, 2019.</p> <p>"Opportunities and Challenges in Middleware Systems and Mobile Applications" by Pushpendra Singh, IIT Delhi on 25 March, 2019.</p> <p>"Dimensional reduction and molecular signature extraction from large-scale genomics datasets" by Carl Hermann, Biomedical Genomics Group, Health Data Science Unit, University Clinics Heidelberg on 29 March, 2019.</p> <p>"MobiCom 2018 Tutorials" on 28th October 2018 at Lecture Hall Complex, IIT Delhi.</p> <p>"2nd Winter School on SAT and SMT" From 6-7 December 2018 at IIT Hyderabad.</p>
<b>Design</b>	<p>As a part of a MHRD's DIC (Design Innovation Center) activities, Department of Design organized a week long summer innovation boot camp for about 40 students from Government Schools in Delhi from 4-9 June, 2019.</p> <p>Together with School of Planning and Architecture and Delhi University, IIT Delhi organized a 3-month Delhi Design Innovation Bootcamp for UG/PG student of Delhi colleges during August-November, 2019.</p> <p>IIT Delhi Design Innovation Center (DIC) supported by MHRD hosted 10 students from SIRIUS, Russia and another 10 students from Atal Tinkering Labs, India from October 1 – 5 for an innovation Bootcamp which was organized at Department of Design, IIT Delhi under the aegis of Niti Aayog. The five innovations on which students worked were demonstrated to Russian President Vladimir Putin and Indian Prime Minister Narendra Modi who spent an hour with students.</p> <p>Department of Design organized 3 Day student exchange program on Assistive Technology between students of IIT Delhi and that of Massachusetts Institute of Technology from 4-6, January, 2019. About 25 students from both the Institutes participated in this exchange program.</p> <p>As a part of a MHRD's DIC (Design Innovation Center) activities, three programs of Rural Immersion were organized. As a part of each of these programs about 10 students spent a week in rural areas of West Bengal and Orissa identifying and addressing needs of society.</p>

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	Lecture on "Realizing Smart Robotic Assistants through Advances in Artificial Intelligence" by Dr. S.K. Gupta, Smith International Professor of Mechanical Engineering and Computer Science, Viterbi School of Engineering, University of Southern California, USA on 11 March, 2019.
	Lecture on "Haptics: Science and Technology of Touch for Robotics, Virtual Reality and Healthcare" by Dr Mandayam Srinivasan, Professor, University College London on 16 January, 2019.
	Lecture on "The Internet of Everything and Industrie 4.0 Revolutions" by Ram D. Sriram, Division Chief, Software and Systems Group, National Institute of Standards and Technology, USA on 14 December, 2018.
	Townhall Lecture by Elie Seidman, CEO, Tinder on 1 February, 2019.
<b>Electrical Engineering</b>	"Indian Control Conference 2019" organized by Prof. Shaunak Sen, Prof. S. Bhasin, Prof. Deepak Patil, Dept of EE, IIT Delhi from 9-11 January, 2019.
	Lecture on "Power Electronics Technologies for Utility Scale BES" by Prof. Vassilios G Agelidis on 30 October, 2018.
	Lecture on "PE Transformers" and "DAB for EV Battery Charging" by Prof. Ned Mohan on 3 November, 2018.
	Talk on "GaN and SiC Power Electronic Converters" by Prof. Stig Munk-Nielsen and Mr. Krstian Gadgaard on 20 November, 2018.
<b>Humanities and Social Sciences</b>	Workshop (ICSSR-IITD) on "Approaches to Linguistic Variation", February 2019.
	Utrecht-IITD skype symposium on "Linguistic Variation" October 2018.
	First Annual Conference in Economics on "Transitioning to Middle Income: Challenges and Pathways for India" during 21-22 February, 2019 and sponsored by Techno-Economic Research.
	Workshop on "Civil Society, Human Rights and Social Justice in Bangladesh" with Prof. Paul Chaney (WISERD) and Dr. Seuty Sabur (BRAC University) on 30 August, 2018.
	Panel on "Religion and Socio-Political Violence in South Asia" at the European Conference on South Asian Studies, EHESS, Paris (with Arun W. Jones and Frank Heidemann) July 2018.
	Workshop on "Eyetracking in psycholinguistics" 2018.
	Workshop on "The Meaning of Simultaneity: From Timespace to Spacetime: On Bergson-Einstein debate" on 14 January, 2019.
	Workshop on "Civil Society and Citizenship Rights in India" (with the University of Cardiff, UK) 2018.
	Workshop on "Civil Society and Good Governance in India & Bangladesh" (University of Cardiff and BRAC University, Dhaka) during 24-25 January, 2019.
	Travelling classroom on "Self, Techne, and Biopolitics" 2019.
	Winter School & Workshop on "Religions of India: Transformations of Values, Practices, and Identities" (with University of Groningen, NL) 2018.
	Conference on "Yashpal: Gender, Nation Revolution" 2019.
	Conference on "Disciplinarity in a Digital Age" from 10-12 January, 2019.
	Conference on "The Present of the Day" 2018.
	Graduate Conference on "Community: Subject And/Or Object" March 2019.
	"Research Writing Workshop for Ph.D. Students" from 11-13 March, 2019.
	"Confronting Evil", international philosophy conference & QIP course, India International Centre, from 1-2 March, 2019.
	Workshop on "The Inheritance of ISIS" IIT Delhi on 22 March, 2019.



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	Conference on "Whither Rural Commons? State Policy, Natural Resources and Rural India" Central University of Gujarat, Gandhinagar, Knowledge Partner IIT, Delhi & co-sponsored by the Ford Foundation New Delhi, NABARD & FES, from 20-22 September, 2018.
	Winter School on "Changing Grounds: Dynamics of Culture and Livelihood," with Peter Berger and Roland Hardenberg, at IIT Delhi, from 11-15 February, 2019.
	Curriculum Development Workshop for M.Sc. programme in Cognitive Science, Dec., 2018.
	Curriculum Development Workshop for M.Sc. programme in Economics, 2018.
	First Dr. P.C. Bansil Memorial Lecture by Prof. Kaushik Basu on "Technological Advance and the Changing Nature of Work: Prospects for India" on 21 February, 2019.
<b>Management Studies</b>	"Excellence in school Education" by Prof. Harish Chaudhary, IIT Delhi on 22 December, 2018.
	International Conference on "Emerging Perspectives Fin Tech". Conference was held under the Aegis of the Department of Economic Affairs (DEA) under the Ministry of Finance, Gol, Prof Shveta Singh, India Habitat Centre, New Delhi along with NIFM, Faridabad on 21 and 22 January, 2019.
	3rd Edition of International Conference on Financial Markets and Corporate Finance by ICFMCF, Prof Shveta Singh, IIT Kanpur from 12-14 August, 2018.
	"Health Services" by Prof. Christian Hicks and Prof. S.P. Singh, in Room No. 511, DMS, IIT Delhi, 2018.
	"Strategizing Child Safety management using Facebook Platforms", Cyber Peace Foundation, Jharkhand. ₹18, 67,500 by Prof. Vigneswara Ilavarasan and Prof. Arpan K. Kar, DMS, IIT Delhi, 2018.
	"Study of Population migration and its impact", FIL India Business and Research Service Private Limited, India. INR 20,70,000, Prof. P. Vigneswara Ilavarasan and Prof. Arpan K. Kar, DMS IIT Delhi, 2018.
	"Basics of Finance for Non Finance" in GSFC for Senior Executives by Prof. P. K. Jain, Vadodara, Gujarat, from 2 April, 2018 to 6 April, 2019.
	Extension Workshop of "Basics of Finance of Non Finance" in GFSC for Sr. Executives by Prof. P.K. Jain in Vadodara, Gujarat.
	Workshop on Flexible Systems management "Recent Developments in Interpretive Research Methods" by Prof. Shushil Jain, DMS IIT Delhi on 15 June, 2018.
	Knowledge Sharing Session on HITLAB by Dr. Stan on 16 February, 2019.
	Knowledge Sharing Session for MDP collaboration by Mr. Nimay Kalyani from The University of New Castle on 7 February, 2019.
	Knowledge Sharing Session for collaboration by Dr. Cheryl Matherly from Leigh University on 7 February, 2019.
	Knowledge Sharing Session with HOD for collaboration by Dr. Ali Datmalchian from Simon Fraser University on 1 February, 2019.
	Knowledge Sharing Session for educational tie up with Australian University by Dr. Mark Morley from Australian Government on 29 January, 2019.
	Knowledge sharing session on International Collaboration by Lim Tay Wee from Singapore Management University.
	Knowledge Sharing Session on Chevening, UK Global Award Scheme by Dr. Rajul Dube from Political & Bilateral Affairs, British High Commission on 28 September, 2018.
	Knowledge Sharing Session on MOU Partner Industrial Bank of Korea from Mr. Kim and Mr. Yoo from Industrial Bank of Korea on 12 and 14 September, 2018.
	Knowledge Sharing Session on Faculty by Prof. Christian Hicks from New Castle University, U.K. on 1 September, 2018.

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	<p>Knowledge Sharing Session on B2B meeting by Dr. Jugnu Roy, Ms. Monika Choudhry and Ms. Sailaza Vora from the University of Auckland on 20 August, 2019.</p> <p>Knowledge Sharing Session by Ms. Anisha Dabas on International Tomorrow's India Global Summit.</p> <p>Knowledge Sharing Session by Professor Zafar from 2-13 August, 2018.</p> <p>Workshop Session by Prof. Julia and Dr. Tim from the University of New Castle, Australia on 13 July, 2018.</p> <p>Meeting was organized by Dr. Allan from Sam M. Walton College of Business, University of Arkansas on 11 July, 2018.</p>
<b>Materials Science and Engineering</b>	<p>Prof. N.M. Anoop Krishnan along with Prof. Saswata Bhattacharya (Physics), Prof. Hemant Kashyap (Chemistry), Prof. Ali Haider (Chemical Engineering), Dr. Manish Agarwal (CSC) organized an international conference titled "Advanced Simulation Methods: DFT, MD and beyond" from 6-10 March, 2019. The conference was attended by more than 250 participants and 50 invited speakers including four Bhatnagar awardees. The conference was jointly organized by the Computer Services Center and Departments of Civil Engineering, Materials Science and Engineering, Physics, Chemistry, and Chemical Engineering.</p> <p>Workshop course through GIAN Programme "Nanostructured Steels" funded by MHRD, organized by Department of Materials Science, IIT Delhi, coordinator/host faculty: Prof. Suresh Neelakantan, Foreign Faculty: Prof. Pedro Rivera (Royal Academy of Engineering Research Chair, Lancaster University) from 6-10 April, 2018 at Room 301, Bharti Building, IIT Delhi.</p> <p>"Microstructure control in: Bearing Steels Against Wear, Fatigue and Hydrogen Embrittlement &amp; Additive Manufacturing" organized by Prof. Suresh Neelakantan, Speaker: Prof. Pedro E.J. Rivera (LPW/Royal Academy of Engineering Research Chair, Lancaster University, UK) on 10 April, 2018 at AM Committee Room.</p> <p>"The technology developments and future challenges as they are impacted by Industry megatrends" organized by Prof. Leena Nebhani, Speaker: Dr. Surendra Chawla (Director, External Science and Technology Programme, Goodyear Tire and Rubber Company, Akan, USA) on 10 April, 2018 at TX-120 seminar hall.</p> <p>"Polymer Surfaces for Guiding Nanoparticle Assembly" organized by Prof. B.P. Tripathi, Speaker: Prof. Andreas Fery (Leibniz Institut für Polymerforschung Dresden, Germany) on 13 December, 2018 at TX-120 seminar hall.</p> <p>"High temperature superconducting technology – Current status and its readiness for large scale commercial applications in near future" Organized by Prof. Suresh Neelakantan, Speaker: Dr. Devendra K. Namburi (University of Cambridge, UK), on 11 January, 2019 at DMSE Committee Room.</p> <p>"Self-organising oligopeptide nano- and microstructures" Organized By Prof. B.P. Tripathi, Speaker: Prof. Hans-Georg Braun (Leibniz Institut für Polymerforschung Dresden, Germany &amp; TU Dresden, Biotechnological Center (BIOTEC) Germany) on 31 January, 2019 at TX-120 seminar hall</p>
<b>Mathematics</b>	<p>"Projection Lemma and the Cyclic Decomposition Theorem" by Professor Michael Karow (Department of Mathematics, TU Berlin, Germany) on 26 March, 2019.</p> <p>"Pricing of Passport Option" by Siddhartha Pratim Chakrabarty on 20 March, 2019.</p> <p>"Equality of transvection groups" by Dr. Pratyusha Chattopadhyay on 22 March, 2019.</p> <p>"Sums of \$\$\$-units in recurrence sequences" by Dr. Sudhansu Sekhar Rout on 20 March, 2019.</p> <p>"Hilbert functions of Gorenstein Algebras" by Dr. Shreedevi K Masuti on 19 March, 2019.</p> <p>"Sub-convexity problems: Some history and recent developments" by Dr. Saurabh Kr. Singh on 18 March, 2019.</p> <p>"Center of the Goldman Lie algebra" by Dr. Arpan Kabiraj on 13 March, 2019.</p>

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	<p>"Mixed multiplicities, Minkowski inequalities and Rees' theorem for filtrations" by Dr. Prangama Sarkar on 12 March, 2019.</p> <p>"Estimating a function of scale parameter of an exponential population with unknown location" by Dr. Lakshmi Kanta Patra on 11 March, 2019.</p> <p>"Periods and distinction problems" by Prof. Arnab Mitra (IISER Tirupati) on 1st February, 2019.</p> <p>"Some Unpublished work of Harish-Chandra" by Professor Ramesh Gangolli (University of Washington) on 12 February, 2019.</p> <p>"Solving dynamic multi-objective optimization problems using nature inspired metaheuristics and their real life applications" by Dr. Arnapurna Panda on 4 January, 2019.</p> <p>"Numerical Solutions of Some Linear and Nonlinear Diffusion Equations by Cubic B-spline Collocation Method" by Dr. Rajni Rohila on 2 January, 2019.</p> <p>"Regularization of Ill-Posed Nonhomogeneous Parabolic Problems" by Dr. Ajoy Jana on 13 December, 2018.</p> <p>"Signcryption in a quantum world" by Dr. Tapas Pandit (Postdoctoral fellow, IISC Bangalore) on 30 November, 2018.</p> <p>"On the equivalence of heat Kernels" by Prof. Debdip Ganguly (IISER Pune) on 20 November, 2018.</p> <p>"Spectral Theory of Random Operators" by Prof. Krishna Maddaly (Faculty of Mathematics, Ashoka University) on 26 October, 2018.</p> <p>"Machine learning methods for causal inference from complex observational data" by Prof. Alexander Volfovsky (Department of Statistical Science, Duke University) on 5 October, 2018.</p> <p>"Standard Brownian Motion" by Prof. Krishna Athreya (Professor Emeritus, Departments of mathematics and statistics, Iowa State University, USA) on 23 August, 2018.</p> <p>"Cayley-Hamilton Theorem: Proof Techniques and Extensions" by Prof. Ravindra Bapat (Indian Statistical Institute, New Delhi) on 4 April, 2018.</p>
<b>Mechanical Engineering</b>	<p>"Research experience in biomechanics" by Prof. Dinesh Mohan- Emeritus Fellow, Indian Institute of Technology Delhi.</p> <p>"Community service: Introduction to Robot activity at mechanical system lab of Shibaura Institute of Technology, Japan" by Prof. Nubuto Matsuhira (Shibaura Institute of Technology, Tokyo, Japan)</p> <p>"Metal &amp; Composite 3D printing Technology" by Mr. Saroop Chand (Managing Director Adriotec Information System Pvt. Ltd).</p> <p>"Hydrogen fuel cell vehicle (FCV): a reality or fantasy?" by Dr. Prabakaran Saravanan (I2CNER, Kyushu University, Japan).</p>
<b>Physics</b>	<p>Photonics 2018: 14th International Conference on Fiber Optics and Photonics, IIT Delhi, INDIA from 12-15 December, 2018.</p> <p>2nd Annual Meeting on "Physics of Strongly Correlated Electron Systems" organized by R.S. Dhaka (Deptt. Physics, IIT Delhi) during 6-8 March, 2019 at LHC.</p> <p>2nd Departmental Symposium on "Advances in Physics" organized at the Physics Department of IIT Delhi by R.S. Dhaka during 7-8 April, 2018.</p> <p>SPM2018, "Workshop cum Demonstration on special modes of Atomic Force Microscopy organized by Prof. J.P. Singh from 20-24 December, 2018 at Hotel Vasant Continental, Vasant Vihar, New Delhi.</p> <p>AMS2019, "Workshop and Symposium on Advanced Simulation Methods: DFT, MD and beyond." organized by Saswata Bhattacharya during 6-10 March, 2019.</p>

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	Physics department colloquium “Nanophotonics with nanomembranes” given by Prof. Dr. Oliver G. Schmidt from IFW Dresden, organized by R.S. Dhaka, Physics Department at IIT Delhi on October 26, 2018.
<b>Textile Technology</b>	“6th International Conference on Technical Textiles & Nonwovens, India 2018”, organized by Prof. Wazed Ali, Prof. Bipin Kumar, Prof. Javed sheikh with Scientific Committee members , Prof. R. Alagirusamy, Prof. Apurba Das, Prof. Abhijit Majumdar and Dr. Samrat Mukhopadhyay in Deptt . of Textile Technology, IIT Delhi from 6-8 December, 2018
	"International Conference on Advances in Polymer Science & Technology (APA 2018)", organized by Prof. Bhuvanesh Gupta, Kathmandu, Nepal from 1-3, November, 2018.
	A program was conducted for Grasim Industries Ltd. on "Advancements in textiles and their applications in home textiles".
	Lecture on "electro-optical polymers" by Prof. Samson Jenekhe, University of Washington, USA on 17 December 2018.
<b>Applied Research in Electronics</b>	Jonathan Bird, Professor & Chair Department of Electrical Engineering 230 Davis Hall University at Buffalo The State University of New York.
<b>Atmospheric Sciences</b>	“Biennial Conference of Indian Aerosol Science and Technology Association on “Aerosol Impacts: Human Health to Climate Change” or IASTA 2018 by Dr. Sagnik Dey/Dr. Dilip Ganguly at the Centre for Atmospheric Sciences, IIT Delhi during 26-28 November, 2018.
	“IITD-ANCST International workshop on Modeling Atmospheric – Oceanic Processes for Weather and Climate Extremes” by Convener: Prof. Manju Mohan, Co-conveners: Prof. Vimlesh Pant, Prof. Ravi Kumar Kunchala and Prof. Sandeep Sukumaran during 28-29 March, 2019 at IIT Delhi (MAPEX 2019).
	“Now casting in the marine environment” by Cmd. M.K. Singh, Indian Navy at CAS on 10 April, 2018.
	“Why is radiative forcing from black carbon less effective in warming the climate system than radiative forcing from carbon dioxide?” by Prof G Bala (CAOS, IISc Bangalore) at CAS on 24 August, 2018.
	“Trends in weather services and TWC solutions” by Dr. Mary Glackin, VP Weather Business Solutions at CAS on 23 October, 2018.
	“NASA Applied Remote Sensing Training (ARSET) Program for Water Resources and Disasters Management” by Dr. Amita V. Mehra, NASA-University of Maryland Baltimore County Joint Center for Earth Systems Technology (JCET)at CAS on 22 November, 2018.
	“The aerosol optical depth by components from the Multiangle Imaging Spectro Radiometer (MISR): Applications to evaluating chemistry transport models and studying optical properties of wildfire-induced aerosols” by Dr. Kyo Lee, JPL, NASA and Caltech at CAS on 3 January, 2019.
	“Regional hydroclimatic impacts induced by land cover and climate change in tropical rain forests” by Dr. Jaya Khanna, IIT Roorkee at CAS on 12 March, 2019.
	“Maritime perspective of climate change” by Commodore M.K. Singh, Indian Navy at CAS on 19 February, 2019.
	“Monsoon synoptic activity in a warming climate” by Prof. Sandeep Sukumaran at CAS on 9 March, 2018.
“Atmospheric carbondioxide (CO <sub>2</sub> ) study over India: Challenges and future directions” by Dr. Ravi K Kunchala, CAS at CAS on 13 February, 2019.	
<b>Biomedical Engineering</b>	MedImg: “4th Annual Workshop on Medical Imaging Techniques, Post Processing and Clinical Applications” organised by Prof. Anup Singh and Prof. Amit Mehndiratta at IIT Delhi (Sonipat campus) on 13-15 April, 2018.
	Workshop in Nanomedicine, IITD in partnership with DBT” – Skin Scaffold to Substitute Integra: Indian Perspective, organized by Prof. Veena Koul on 16 April, 2018.

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	<p>International CEP workshop on 'BioTechnology and BioMedical Engineering', Sponsored by Ministry of External Affairs, Govt. of India, organised by Prof. Anup Singh and Prof. Amit Mehndiratta at IIT Delhi (Sonipat campus) on 3-21 December, 2018.</p> <p>Prof. Sergei Eremin from Moscow State University visited the Centre and delivered a lecture on Immunodiagnostics on 8 July, 2018.</p>
<b>Energy Studies</b>	<p>Lecture on "The Future of Work in the Era of Big Data and Artificial Intelligence" by Prof. Patrick Phelan, Mechanical &amp; Aerospace Engineering at Arizona State University (ASU) on 14 September 2018</p> <p>Expert talk on "Market Expectations from Renewable Energy Sector Professionals: Indian Scenario." By Dr. Ishan Purohit, Energy Specialist, International Finance Corporation (World Bank Group) on 10 September, 2018</p> <p>2nd ANNUAL EXPERT TALK 2018 on July 28, 2018, ISIE India &amp; CES IIT DELHI.</p> <p>A talk "Proximity-induced spin-valley polarization in silicene or germanene on F-doped WS<sub>2</sub>" by Dr. Schwingenschlöggl, Professor of Materials Science &amp; Engineering at King Abdullah University of Science and Technology (KAUST) on April 4, 2018.</p> <p>Workshop on "International Conference on Perovskite and Hybrid Solar Cells (ICPHPV 2019)" Organized by Prof. V. Dutta (IIT Delhi) &amp; Dr. Hari Upadhyaya (London South Bank University, UK) on 4-8 February, 2019 at Seminar Hall, IIT Delhi.</p>
<b>Rural Development and Technology</b>	<p>"National workshop of Regional Coordinating Institutes of Unnat Bharat Abhiyan and MoU signing ceremony" organized by CRDT on 6 March, 2019 at IIT Delhi (40 head of Institutes of IITs, NITs, Universities and Agri Universities).</p> <p>"Three Days National Biogas production, purification and power generation training program" organized by CRDT during 14-16 March, 2019 at IIT Delhi.</p> <p>"Dissemination workshop Panchsheel (Participatory Approach for Nutrition in Children: Strengthening Health, Education, Environment and Engineering Linkage) Study organized by UCL, IITD, JNU and Save the children and funded by MRC, UK on 26 February, 2019 at IIT Delhi.</p> <p>"National Training Programme on Biogas Production, Purification and Power Generation" by Prof. V. K. Vijay, Dr. Ram Chandra, and Prof. P.M.V. Subbarao, IIT Delhi on 14-16 March, 2019.</p> <p>National Biogas Day Workshop on "Roadmap for Compressed Biogas (CBG) in India", Senate Hall, Indian Institute of Technology Delhi on 15 September, 2018.</p>
<b>Bharti School of Telecommunication Technology and Management</b>	<p>"Spirent Wireless Technology Seminar and Demo" Organized by Prof. Seshan Srirangarajan, dept. EE/ Bharti School, IIT Delhi on 18 February, 2019.</p> <p>"5G Awareness Workshop" organized by Prof. Brejesh Lall, Department of Electrical Engineering/Bharti School, IIT Delhi on 14 June, 2018.</p> <p>"5G workshop India Prospective" organized by Prof. Brejesh Lall, Department of Electrical Engineering/Bharti School, IIT Delhi on 21 September, 2018.</p> <p>Talk: "Dirty MIMO Transmitters: Does It Matter?" by Prof. Peter Handel from KTH Stockholm, Sweden on 23 October, 2018.</p> <p>Lecture: "Stress management, Rejuvenation, How to Complete sleep in 1.5 hours" by M.K. Seth from CGM in Bhart Sanchar Nigam Ltd on 16 March, 2018.</p> <p>Airtel Lecture: "Right of Way Policy" by Rajan S. Mathews from Director General, COAI on 5 September, 2018.</p>
<b>Amar Nath and Shashi Khosla School of Information Technology</b>	<p>"EMPOWER 2018" organised by Prof. M. Balakrishnan and Prof. P.V.M. Rao at I-TEC Technopark, Sonipat on 25-27 October, 2018.</p> <p>"32nd International Conference on VLSI Design" sponsored by VLSI Society of India and Co-organised by Prof. Preeti Ranjan Panda, Head, School of IT, at LHC on 5-6 Jan 2019</p>

# Interaction with Alumni

(April 1, 2018 - March 31, 2019)

## INTERACTION WITH ALUMNI

- **Pearl Reunion:** 1982 & 1983 pass out batch of IIT Delhi celebrated their Pearl Reunion on October 6, 2018.
- **Golden Jubilee Reunion:** 1968 pass out batch of IIT Delhi celebrated their Golden Jubilee Reunion on December 15, 2018.
- **Alumni Day:** IIT Delhi celebrated its Alumni Day on December 16, 2018.
- **Silver Jubilee Reunion:** 1994 batch of IIT Delhi celebrated its Silver Jubilee Reunion during December 21-22, 2018.
- **Pearl Reunion:** 1984 pass out batch of IIT Delhi celebrated its Pearl Reunion during December 28-30, 2018.
- **Golden Jubilee Reunion:** 1969 pass out of IIT Delhi celebrated its Golden Jubilee Reunion on March 8, 2019.
- **Giving Week 2019:** The Institute organized the Giving Week this year starting on 8 March 2019. The initiative was a success with about Rs. 25 Lakh being collected during the campaign from donors across different continents and the amount is expected to rise further. The funds generated will be utilized on the advice of Alumni Advisory Committee of the Institute.



# Distinguished Visitors

(April 1, 2018 - March 31, 2019)

## Major visits by the State Dignitaries

- H.E. Dr. Atef Naddaf, Minister of Higher Education of the Syrian Arab Republic visited the Institute on April 3rd 2018.
- On April 24th 2018, His Holiness the Dalai Lama enthralled an audience of about 1500 -waiting in the IIT Delhi auditorium- with his engaging and very relevant talk on 'Happiness and Stress free life'. This was followed by a very engaging Q&A session in which His Holiness addressed the concerns of the audience drawing from his abundant experience and deep spirituality
- A 6 member delegation from Embassy of the Kingdom of the Netherlands with Mr. Michiel Sweers, Deputy Director General, Enterprise and Innovation, Ministry of Economic Affairs, Netherlands visited the Institute on May 24th 2018 for fostering the strong collaboration that exists between IIT Delhi and Netherlands Institutes.
- A 4 member delegation from Australian High Commission visited the Institute on June 22nd 2018.
- A 5 member delegation from French Ministry visited the Institute on June 25th 2018.
- A group of 7 delegates including Prof. Shigeru Kohno, President Nagasaki University and Mr. Tsutomu Tomioka, Member of Parliament along with a team of faculty members visited IIT Delhi on July 23rd 2018 to sign the Letter of Intent between Nagasaki University and IIT Delhi. This LOI will focus on developing the future relationship in the field of both education and academic research while seeking the mutual benefit and full reciprocity.
- Mr. Olimjon Umwov, Deputy Minister for Development of IT and Communication, Uzbekistan visited the Institute on August 7th 2018 for signing the MoU between IIT Delhi and Tashkent State Technical University.
- Minister of Higher Education, Afghanistan visited the Institute on October 3rd 2018.
- A delegation from French Embassy visited the Institute on October 23rd 2018.
- A delegation from Embassy of France visited the Institute on October 25th 2018.
- A 14 member delegation led by Dr. Mohamed Shoukr Nada from Embassy of Egypt visited the Institute on October 29th 2018.
- A 5 member delegation from Queensland led by Hon'ble Kate Jones, Queensland Minister for Innovation, Tourism, Commonwealth Games and Champion of Education visited the Institute on November 26th 2018.

- A delegation led by Prof. H.E. Khalid Samadi, Secretary of State for Higher Education and Scientific Research, Ministry of National Education, Vocational Training, Government of the Kingdom of Morocco visited the Institute on January 22nd 2019 in connection with bilateral cooperation with IIT Delhi.
- A delegation led by Mr. Kim Kum-pytoung, Director/ Counsellor, Korean Cultural Centre, The Embassy of the Republic of Korea with 44 students from Kumoh National Institute of Technology of the Republic of Korea visited the Institute on January 28th 2019.
- A delegation from the UAE led by Minister of Education Mr. Hussain Ebrahim Al Hammadi and accompanied by the Ambassador of UAE to India visited IIT Delhi on January 30th 2019, with a moto to learn India's educational system.

## Other International Delegation Dignitaries

Many delegations from the Industry, Academia and the Governments from several countries visited the Institute to explore the possibilities of mutual interaction. Some of these are highlighted below:

- A 3 member delegation from Clemson University, USA visited the Institute on April 3rd 2018 for signing the MoU between IIT Delhi and Clemson University.
- Prof. Tutumluer, Erol from UIUC visited the Institute on April 6th 2018 for discussion of international cooperation and development of Joint Degree programs between IIT Delhi and UIUC.
- A 20 member delegation from Myanmar visited the Institute on April 17th 2018.
- A 5 member delegation led by Prof. Kieran Kirk from Australian National University (ANU) visited the Institute on April 18th 2018 for discussion on Earth Sciences/ Geology, Chemistry and Biotech/Biology and other research interest and parallel meetings.
- A 7 member delegation from Joint Working Group on Education from Germany visited the Institute on April 20th 2018 to take forward the proposal under the MoU and in the field of Higher Education.
- A 5 member delegation from Amsterdam University of Applied Sciences visited the Institute on April 23rd 2018 and discussed to conducting a Faculty Exchange Program between Amsterdam University of Applied Sciences and IIT Delhi.
- A 11 member delegation from Russian Investors visited the Institute on April 24th 2018.

- A 68 member delegation Defence Ministry of Indonesia visited the Institute on May 2nd 2018. The objective of the visit is to knowledge and information regarding strategy and the development of India's defence technology and defence industry.
- A 5 member delegation led by Ms. Emilia Cartier from Embassy of French visited the Institute on May 10th 2018 to discuss existing exchange and new partnerships possibilities between IIT Delhi and other French higher education institutes.
- A 8 member delegation from Vietnam's Military Technical Academy visited the Institute on May 14th 2018 to discussion about finding an opportunity for educational cooperation between IIT Delhi and Vietnam's Military Technical Academy.
- Mr. K.S. Vasudev Rao, Sr. Asstt. Economic Section from Embassy of Japan visited the Institute on May 14th 2018 to discuss "Fourth Valley Concierge Japan Language Course".
- A delegation from Universidad Complutense de Madrid visited the Institute on May 23rd 2018 for signing the Letter of Intent for further academic cooperation between IIT Delhi and Universidad Computense de Madrid.
- A delegation from Washington University visited the Institute on May 25th 2018.
- A 2 member delegation from Embassy of Japan visited the Institute on June 5th 2018 for discussing the potential cooperation between IIT Delhi and Nagasaki University.
- A 2 member delegation from Embassy of Uzbekistan visited the Institute on June 6th 2018.
- Director General of Global Market Policy, Ministry of Small Medium Enterprises (SME), Korea visited the Institute on June 26th 2018.
- A 9 member delegation from Kuwait Government visited the Institute on June 28th 2018.
- A 4 member delegation from Ferdowsi University of Mashhad, Iran visited the Institute on July 4th 2018.
- A delegation from bbw University of Applied Sciences, Berlin visited the Institute on July 27th 2018 to discuss the possibilities of potential work between two Institute.
- A 11 member delegation from Tsinghua University visited the Institute on July 30th 2018 for general understanding of India's culture and society.
- A 2 member delegation from ITESM, Mexico visited the Institute on August 7th 2018 for strengthening the relationship between IIT Delhi and ITESM.
- A 4 member delegation from K.N. Toosi University of Technology, Tehran, Iran led by Prof. Khalili visited the Institute on August 14th 2018 for discussing joint collaboration programme and signing the MoU between IIT Delhi and K.N. Toosi University of Technology, Tehran, Iran.
- A 21 member delegation (including students) from University of Washington visited the Institute on August 16th 2018.
- A 11 member delegation from Andijan Machine Building Institute, Uzbekistan visited the Institute on August 23rd 2018 for signing MoU between IIT Delhi and Andijan Machine Building Institute.
- A 3 member delegation from University of California Santa Cruz visited the Institute on August 29th 2018 for exploring the possibilities of working together.
- A 3 member delegation from Alzahra University, Iran visited the Institute on August 31st 2018 for discussing joint collaboration programme between IIT Delhi and Alzahra University, Iran.
- A delegation from Egypt visited the Institute on September 6th 2018 to discuss the possibilities of cooperation between IIT Delhi and Arab Academy for Science, Technology and Maritime Transport and Gujarat Forensic Sciences University.
- A delegation from Vie Tnamese Youth Delegation, Vietnam visited the Institute on September 10th 2018.
- A delegation from Tulane University, USA visited the Institute on September 10th 2018.
- A 2 member delegation from Tashkant University of Information Technologies (TUIT), Uzbekistan visited the Institute on September 11th 2018.
- A 2 member delegation from Australian Trade and Investment Commission, Australia visited the Institute on September 11th 2018.
- A 2 member delegation from High Commission of Canada visited the Institute on September 17th 2018.
- A delegation from Malawi University of Science & Technology (MUST) visited the Institute on September 17th 2018.
- A delegation from University of Georgia, USA visited the Institute on September 18th 2018.
- A delegation from Tashkent University of Technologies, Uzbekistan visited the Institute on September 20th 2018.
- A 3 member delegation from Kungliga Tekniska Hogskolan (KTH) Stockholm, Sweden visited the Institute on September 20th 2018 visited the Institute for discussing the present collaboration and future cooperation.
- A delegation from U.S. Army RDECOM-Pacific visited the Institute on September 24th 2018.



## Distinguished Visitors

- Ms. Amrita Sadarangani, Regional Director, South Asia, University of Edinburgh visited the Institute on September 25th 2018.
- A delegation from University of Johannesburg, South Africa visited the Institute on September 26th 2018.
- A 3 member delegation from La Trobe University, Melbourne, Australia visited the Institute on October 3rd 2018.
- A 2 member delegation from University of Applied Science & Technology, Iran visited the Institute on October 3rd 2018.
- A delegation from Forschungszentrum Juelich, Germany (Helmholtz-Institute) visited the Institute on October 9th 2018 for discussion about new research collaboration between IIT Delhi and Forschungszentrum Juelich, Germany.
- A 2 member delegation (Ms. Rachel Burcin, Global Programs Manager and Ms. Swapna Das, Deputy Director, Centre for Innovations Science) from FICCI visited the Institute on October 12th 2018.
- A delegation from University of Auckland visited the Institute on October 16th 2018 for discussion about collaborations between IIT Delhi and University of Auckland.
- A 4 member delegation from Info-Electronics Systems (IES), Canada visited the Institute on October 18th 2018 for discussion about donation of a Software free of cost in the field of application of computer technology in weather, water, environmental monitoring and remote sensing fields.
- A delegation from Nagasaki University visited the Institute on October 23rd 2018 for discussion and report about the progress and new proposals of cooperation between IIT Delhi and Nagasaki University.
- A 8 member delegation from University of Newcastle, U.K. visited the Institute on October 24th 2018.
- A delegation from Wesleyan University, USA visited the Institute on October 25th 2018.
- A 2 member delegation from Sharif University, Iran visited the Institute on October 29th 2018.
- A delegation from TUM International Center Mumbai visited the Institute on October 30th 2018.
- A delegation from CNRS led by Prof. Dominique Baillargeat, University of Limoges (France) visited the Institute on November 1st 2018 for discussion regarding ideas of exploring potential areas of further scientific interactions between IIT Delhi and CNRS.
- A 6 member delegation led by Prof. Dr. Tran Trung Kien (Admissions Director, HUST) from Hanoi University of Science and Technology, Vietnam visited the Institute on November 1st 2018.
- A 4 member delegation from Embassy of Armenia visited the Institute on November 1st 2018.
- A 9 member delegation from Taipei Economic and Cultural Center in India visited the Institute on November 2nd 2018 to facilitate cooperation to mutual benefit between IIT Delhi and ITRI.
- A 3 member delegation from USC Provost visited the Institute on November 2nd 2018.
- A 2 member delegation from Hiroshima University (ILDP) visited the Institute on November 13th 2018 for discussion about previously conducted student exchange between IIT Delhi and Hiroshima University under ILDP.
- A delegation from University of Huddersfield, U.K. visited the Institute on November 16th 2018 for discussing and share interest in Technology Enhanced Learning between IIT Delhi and University of Huddersfield.
- A 20 member delegation from GASA University, China visited the Institute on November 20th 2018.
- A 10 member delegation led by Mr. Brett Berquist, Director International from the University of Auckland, New Zealand visited the Institute on November 27th 2018 for discussing regarding increase of engagement between IIT Delhi and University of Auckland.
- A 3 member delegation from Embassy of Japan visited the Institute on November 27th 2018.
- A 3 member delegation from University of Illinois visited the Institute on December 3rd 2018.
- A 3 member delegation from Singapore Management University (SMU) visited the Institute on December 4th 2018 for discussion regarding exploring academic collaborations between Singapore Management University and IIT Delhi.
- A delegation from University College of Dublin visited the Institute on December 5th 2018.
- A 11 member delegation from Korea visited the Institute on December 7th 2018.
- A 4 member delegation from La Trobe University, Australia visited the Institute on December 14th 2018 for discussing about the Smart City Project between La Trobe University and IIT Delhi.
- A 5 member delegation led by Lily from Shanghai, China visited the Institute on December 20th 2018 and discussed about cultivation and introduction of High-Tech talents and co-operation between Shanghai and IIT Delhi.
- A delegation from Penta-Astra Inc. Busan, South Korea visited the Institute on January 3rd 2019.
- A 3 member delegation led by Son Kum-Ju, Member of the 20th National Assembly from Korean Embassy visited the Institute on January 4th 2019.

## Distinguished Visitors

- A delegation from University of Notre Dame, USA visited the Institute on January 8th 2019.
- A 8 member delegation from India-Iran Business Forum, Iran visited the Institute on January 9th 2019.
- A 3 member delegation led by Mr. Tony Campion, Transformation Engineer from UK's Manufacturing Technology Centre (British High Commission) visited the Institute on January 16th 2019.
- A 2 member delegation from University of Guadalajara, Mexico visited the Institute on January 18th 2019.
- A 8 member delegation from Nanyang Technological University visited the Institute on January 30th 2019.
- A 5 member delegation from Nanyang Normal University, China visited the Institute on January 31st 2019.
- A 6 member delegation from Simon Fraser University (SFU), Canada visited the Institute on February 1st 2019.
- A 3 member delegation led by Ms. Cheryl Matherly from Leigh University, USA visited the Institute on February 7th 2019.
- A 2 member delegation led by Rector of KU Leuven, Belgium, Europe visited the Institute on February 10th 2019.
- A 2 member delegation from Hanyang University, Korea visited the Institute on February 11th 2019.
- A 2 member delegation from Quebec Govt. office in Mumbai visited the Institute on February 11th 2019.
- A 3 member delegation led by Prof. Andrew Deeks, President of University College Dublin visited the Institute on February 12th 2019 for initiating a Student Exchange Programme under the active MoU with IIT Delhi.
- A 5 member delegation from University of Victoria, Canada visited the Institute on February 12th 2019.
- A 2 member delegation from Asian University for Women Support Foundation (AUW) visited the Institute on February 18th 2019.
- A 2 member delegation from Washington University visited the Institute on February 20th 2019.
- A 10 member delegation led by Mr. Amit Khandelwal from University College, London visited the Institute on February 21st 2019.
- Ms. Kerstin Mey, Vice-Chancellor of University of Limerick visited the Institute on February 22nd 2019.
- A 5 member delegation from Embassy of Japan visited the Institute on February 26th 2019.
- A 2 member delegation from Moscow Aviation Institute, New Delhi Bureau Chief of Russian TV and Radio Broadcasting Company visited the Institute on February 26th 2019.
- A 4 member delegation from Embassy of Japan visited the Institute on February 28th 2019 for discussion on India-Japan Cooperation in Science and Technology area and the University research cooperation.
- A 2 member delegation from University of Notre Dame, USA visited the Institute on March 1st 2019 to continue discussions on possible opportunities for student and faculty engagement between IIT Delhi and University of Notre Dame.
- A delegation from Hokkaido University, Japan visited the Institute on March 1st 2019 and discussed about strengthen research collaboration between IIT Delhi and Hokkaido University, Japan.
- A 3 member delegation from Embassy of the Republic of Korea visited the Institute on March 5th 2019 to discuss ways of cooperation between Republic of Korea and IIT Delhi in the field of Science and Technology.
- A 10 member delegation led by Mr. Philip Benning, Vice-President & Dean of Graduate Studies from Technical University Denmark (DTU) visited the Institute on March 25th 2019 and signed MoU and Agreements between IIT Delhi and DTU.
- A 2 member delegation from Boston University School of Public Health (USA) visited the Institute on March 28th 2019.



H.E. Dr. Atef Naddaf, Minister of Higher Education of the Syrian Arab Republic visited the Institute on April 3rd 2018.



Delegation from Vietnam's Military Technical Academy visited the Institute on May 14th 2018

## Distinguished Visitors



Delegation from Kuwait visited the Institute on June 28th 2018



Delegation from Tsinghua University visited the Institute on July 30th 2018.



Delegation from Uzbekistan visited the Institute on August 23rd 2018.



Delegation from Alzahra University, Iran visited the Institute on August 31st 2018.



Delegation from Australian Federal Government's Agency visited the Institute on September 11th 2018



Delegation from University of Queensland visited the Institute on September 22nd 2018 for signing of MoU between IIT Delhi and University of Queensland and on September 24th 2018 for a Research Symposium at IIT Delhi.



Delegation from University of Newcastle visited the Institute on October 2nd 2018.



Delegation from Taipei Economic and Cultural Center in India visited the Institute on November 2nd 2018.

## Distinguished Visitors



Delegation from University of Illinois visited the Institute on December 3rd 2018.



Delegation of Korean Higher Education visited the Institute on December 7th 2018.



Delegation led by Mr. Tony Campion, Transformation Engineer from UK's Manufacturing Technology Centre (British High Commission) visited the Institute on January 16th 2019.



Delegation from Naryang Normal University, China visited the Institute on January 31st 2019.



Delegation from Hanyang University, Korea visited the Institute on February 11th 2019.



Delegation from Washington University visited the Institute on February 20th 2019.



Delegation from Embassy of the Republic of Korea visited the Institute on March 5th 2019.



Delegation led by Mr. Philip Benning, Vice-President & Dean of Graduate Studies from Technical University Denmark (DTU) visited the Institute on March 25th 2019.

### **DISTINGUISHED VISITORS VISITED DEPARTMENT/ CENTRE/SCHOOL**

#### **Applied Mechanics**

- Prof. Arun Srinivasa, Holdredge/Paul of Mechanical Engineering, Texas A & M University from 27-28 February, 2019.
- Prof. Pedro Camanho, Prof. of Mechanical Engineering, Porto Portugal University Visited on 12 April, 2019.
- Rear Admiral G.K. Harish, VSM, Director General Naval Design (Surface Ship Group), Indian Navy on 6 December, 2018.

#### **Biochemical Engineering and Biotechnology**

- Dr. Nicholas Barlev, RAS Professor, Vice-Director of the Institute of Cytology, Russian Academy of Sciences.

#### **Chemical Engineering**

- VAJRA Fellow, Vijay K. Ramani, Roma B. and Raymond H. Wittcoff (Distinguished University Professor of Environment and Energy Department of Energy, Environmental and Chemical Engineering, Director, Center for Solar Energy and Energy Storage Washington University in St. Louis) visited the Institute.

#### **Chemistry**

- Delegation from Hanoi University of Science & Technology (Hust), Vietnam on 1 November, 2018.
- 28 M.Sc. students (Chemistry) with 3 faculty members of the DBT Star College, Mangalore, Karnataka, 27 November, 2018.
- 38 students with 3 faculty members Payyanur College, Kannur, Kerala on 12 December, 2018.
- Prof. Achraf Ghorbal and Prof. Walid Elfalleh (from University of Gabes, Tunisia) visited Department under Indo-Tunisian Bilateral Project on "Synthesis of novel low-cost biosorbents based on modified cellulosic agro-wastes by tetraethylenepentamine, triethylenetetramine, or diethylenetriamine and adsorption study for anionic dyes removal" funded by DST, Government of India.

#### **Computer Science and Engineering**

- Prof. Nisheeth Vishnoi and Prof. Elisa Celis (both faculty at Yale University) visited during 30 October to 3 November, 2018.
- Prof. Sanjeev Khanna (University of Pennsylvania) visited from 10-13 December, 2018.
- Prof. Anupam Gupta (Carnegie Mellon University) visited during 8-15 January, 2019
- Prof. Larry Richard (Rick) Carley, (Carnegie-Mellon University), visited on 28 October, 2018.
- Prof. Kathleen M. Carley, (Carnegie-Mellon University), visited on 28 October, 2018.

- Dr. Padmanabhan Krishnan (Oracle Labs Brisbane, Australia), visited on 9 August, 2018.
- Prof. Andrea Goldsmith (Stanford University), visited on 1 November, 2018.
- Prof. Srinivasan Keshav (University of Waterloo), visited on 2 November, 2018.
- Prof. Chandrajit Bajaj (University of Texas at Austin), visited on 17 December, 2018.
- Prof. Deepak Kapur (University of New Mexico), visited during 25 December, 2018 to 13 January 2019.
- Prof. Shimon Schocken (IDC Herzliya Israel), visited on 10 January 2019.
- Prof. Ray Mooney (University of Texas at Austin), visited on 11 January, 2019.
- Prof. Gopalan Nadathur (University of Minnesota, Minneapolis), from 13-19 January, 2019.
- Prof. Umesh Vazirani (University of California Berkeley), visited on 15 January, 2019.
- Prof. Ian Pratt-Hartmann (University of Manchester, UK and University of Opole, Poland), visited from 1-5 March, 2019.
- Prof. Johann A. Makowsky (Technion, Israel), visited from 1-5 March, 2019.
- Prof. Mike Prest (University of Manchester) visited from 2-4 March, 2019.
- Prof. Martin Lange (University of Kassel), visited from 1-5 March, 2019.
- Prof. Philippe Balbiani (IRIT, CNRS and Toulouse University), visited from 1-5 March, 2019.
- Prof. Carolin Antos (University of Konstanz), visited from 1-5 March, 2019.

#### **Humanities and Social Sciences**

- Ratna Kapur, Harvard Law School, USA.
- Theresa Biberauer, University of Cambridge, UK.
- Roberta Allesandro, Utrecht University, Netherlands.
- Maria Di Sciallo, Quebec University, Canada.
- Sammyh Khan, Keele University, UK.
- Stephen Reicher, University of St Andrews, UK.
- Nicholas Hopkins, University of Dundee, UK
- Nozomu Muto, Yokohama National University, Japan
- Vedi R. Hadiz, University of Melbourne, Australia
- Robert Bernasconi, Penn State University, USA
- Bernard Stiegler, University of Compiègne, France
- Viola Asri, University of Zurich
- K. Michaelowa, University of Zurich
- Timothy Campbell, Cornell University

- Thomas Kemple, University of British Columbia, Canada.
- Rachel Dwyer, University of London, UK
- Shankar Ramaswami, Harvard University, USA
- Kath Weston, University of Virginia, USA
- Marcus Banks, University of Oxford, UK
- Arpita Chatterjee, University of New South Wales, Australia
- Krupa Shandilya, Amherst College, USA
- Kumkum Sangari, University of Wisconsin–Milwaukee, USA
- Paul Chaney, Cardiff University, UK
- Adam Knowles, Drexel University, USA
- Michel Hockx, Keough School of Global Affairs, USA
- Jean-Luc Nancy (Distinguished Professor of Philosophy, University Marc Bloch, Strasbourg; Professor Emeritus, University of Strasbourg)
- Barbara Cassin (CNRS, Paris, Academie Française)
- Patrice Maniglier (Department of Philosophy, University of Paris Nan-Terre).
- Faisal Devji (Dept. of History, St. Anthony's College, Oxford University, UK).
- Shruti Kapila (Department of History, University of Cambridge).
- Anne Duprat (Department of Literature, University of Amiens, France).
- Richard Walsh (Department of English, University of York, UK).

### Management Studies

- Mr. Dhruv Narayan Mukherjee, Senior Manager-CSR, Cairn India Limited.
- Mr. Prakash Tewari, Executive Director- CSR, DLF Limited.
- Mr. Sankalp Chhabra, CSR Lead, Snapdeal.
- Mr. Partha Sarathi Changar, CSR Lead, Akzo Nobel.
- Mr. Anil Sharma, Head-CSR and Sustainability, Havells India Pvt. Limited.
- Mr. Kamalika Deka, Regional head – HR, Dominos.
- Mr. Suresh Reddy, Lead CSR and Director at SRF Foundation came for Samarth.

### Mathematics

- Prof. Milos Simonovits, Alfred Renyi, Hungary during 1-4 May, 2018.
- Dr. Hukum Chandra, National Fellow & Principal Scientist, ICAR, New Delhi on 25 September, 2018.
- Prof. Liliana Blanco Castaneda, Colombia during 11-8 November, 2018.
- Prof. J. Giacomoni, Head of Lab de Math. Appl University of Pau France during 15-21 November, 2018.

- Prof. Dipendra Prasad, TIFR Mumbai.
- Prof. Nitin Nitsure, TIFR Mumbai.

### Textile Technology

- Mr. Sanjay Chatrath, President & CEO, Technical Textiles Business, SRF Limited, Gurgaon visited the department and He was also the Guest of Honour for the Second part of Convocation on 3 November, 2018.
- Mr. Ajay Tamta, Minister of State, Ministry of Textile visited the department in August 2018.
- Mr. Raghvendra Singh, Secretary, Ministry of Textile visited the department on 5 November, 2018.
- Mr. Arun Garofia, CMD, Keshav Knitts visited the department on 29 August, 2018.
- Mr. Amish Vaja, Welspun and Mr. Anil Jain, CMD, Jain Textiles visited the department on 10 October, 2018.
- Mr. Vinod Krishnamurthy, CEO, Fortuna Colours and Prints visited the department 23 October, 2018
- Mr. Sachit Jain, CMD, Vardhaman Steel visited the department on 24 October, 2018.

### Biomedical Engineering

- Prof. Sergei Eremin from Moscow State University visited the Centre on 8th July 2018.
- Prof. S.V. Eswaran from TERI University visited the Centre on 4th December 2018.

### Rural Development and Technology

- Joint Secretary MNRE, Biogas Advisor MNRE: Three days Biogas production, purification and power generation training program at IIT Delhi during 14-16 March, 2019. Participants are from across the country including young entrepreneurs, field workers, researchers, and Biogas interested people.
- Shri Giriraj Singhji, Hon Minister of Medium, Small and Micro Enterprises, Govt of India: National Biogas Day Workshop on Roadmap for Compressed Biogas (CBG) in India, Senate Hall, Indian Institute of Technology Delhi on 15 September, 2018.
- CRDT IIT Delhi and UBA invited Shri Chandi Prasad Bhatt, eminent Environmentalist, Padma Bhushan, to learn from him about the environment and ecology, and how new generation of students can be made aware of local eco surroundings and how it can be started as a module in Unnat Bharat Abhiyan program.

### Bharti School of Telecommunication Technology and Management

- Prof. Krishan K. Sabnani, Prof. Arogyaswami Paulraj, and Prof. Andrea Goldsmith visited the Institute.

# 8. Faculty

(April 1, 2018 - March 31, 2019)

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# Faculty Awards / Recognitions

(April 1, 2018 - March 31, 2019)

The quality of an academic institution primarily depends on its faculty. Our faculty is one of the finest in the country and is recognized internationally for their quality of research, teaching and curriculum development. They also contribute greatly for the development of the nation by being associated with a large number of decision making bodies, providing crucial guidance and advice on policy matters and technical issues. Many of our faculty members serve on the editorial Boards of reputed journals, peer-review papers for publications, serve on committees for recruitment of professionals, and are on the boards of many institutions and organizations. 44 new faculty members have joined the Institute this year, which has enhanced our competence in several emerging areas, while bringing new energy into our academic endeavors.

Recruitment of bright faculty members is one of our most important missions, since therein lies the future of the Institute. Our Board of Governors (BoG) has played a very positive and constructive role in approving policies, which empower the faculty to deliver their best in both teaching and research. We are continuously trying to reach out to the potential faculty members through a variety of means, including round-the-year search and recruitment and on-line submission and processing of applications.

During the period under report, international bibliographic databases have indexed 2070 research articles published by faculty members and researchers of the institute in international journals including 1800 articles indexed in Scopus, an international indexing service in Science & Technology and Social Sciences. The faculty members have also presented a similar number of papers in national and international conferences. Besides, they have also published many books and conducted several continuing education programs. The Institute supported participation of faculty members to international and national conferences this year. Many more participated with financial support from sponsored projects, and other funding agencies. The Institute provides seed research funding to the new faculty upon joining the Institute to the tune of ₹50 lakhs (or more when necessary).

## FACULTY AWARDS/RECOGNITIONS

Our distinguished faculty colleagues continue to make a difference to the world of Science, Engineering, Humanities and Management, and continue to earn recognition and awards, which bring glory to the Institute. Many of them have been bestowed with honours/awards and elected as Fellows of several professional national/international bodies during the year 2018-2019. Some of these recognitions are

highlighted below:

### Biochemical Engineering and Biotechnology

- Prof. S. Mishra inducted as a member in the Steering Committee on HRD Programs/Scheme by Department of Biotechnology (Ministry of Science and Technology).
- Prof. S. Mishra felicitated by BRSI for outstanding contributions in the field of Biotechnology at '15th Annual convention of BRSI-Platinum Jubilee IICT' held at IICT Hyderabad, November, 2018.

### Chemical Engineering

- Prof. K.K. Pant Elected as Faculty Advisor, American Chemical Society International Students Chapter (2018).
- Prof. A. Verma, Expert Member (DST), Mission Innovation Challenge-Off Grid Access to Electricity, 2017-2020.
- Prof. A. Verma, Member: Standing Consultation Committee on Community and Security Issues (2017-2018 and 2018-2019)
- Prof. Anil Verma, Associate Editor, Indian Chemical Engineer, Taylor & Francis Journal (Since 2018).
- Prof. M. Ali Haider, Gandhian Young Technological Innovation (GYTI) Award 2018 in advisory role, presented by the Honorable President of India with a research grant of ₹15 Lacs.
- Prof. M. Ali Haider, Hydrogen Energy and Advanced Materials (HEAM) Scientist of the Year 2018, awarded at the National Meeting of the Indian Association of Hydrogen Energy and Advanced Materials (IAHEAM), sponsored by the ONGC Energy Center, Mumbai.
- Prof. Jayati Sarkar, Indo-US WISTEMM fellowship, DST, 2018 from 15 September, 2018 to 15 December, 2018.
- Prof. Jyoti Phirani has been elected as an advisory board member for SPE Information and Management committee and executive editor of journal of natural gas science and engineering.

### Chemistry

- Professor Ashok Kumar Ganguli has received CRSI Silver Medal Award (Chemical Research Society of India)
- Professor Ashok Kumar Ganguli has received the award of Institute Chair Professor.
- Professor S.K. Khare: Vice Chairman, Biotech Research Society of India-2019.
- Professor S.K. Khare: Fellow, Biotech Research Society of India-2018.



- Professor S.K. Khare: Fellow, Academy of Microbiological Sciences-2018.
- Professor S.K. Khare: Fellow, National Academy of Agricultural Sciences-2018.
- Professor S.K. Khare: Malaviya Memorial Award for Teaching-Senior Faculty, Biotech Research Society of India-2018.

### Civil Engineering

- "Alexander von Humboldt Research Fellowship for Experienced Researchers" conferred to Dr. Tanusree Chakraborty.
- "Erasmus Plus International Credit Mobility" conferred to Dr. Tanusree Chakraborty, the Universidade de Santiago de Compostela, November 2018.

### Computer Science and Engineering

- Prof. Amit Kumar won the Shanti Swarup Bhatnagar Award in 2018.
- Prof. Preeti Ranjan Panda was a winner of the Indian Electronics & Semiconductor Association (IESA) TECHNOVATION 2018 AWARD in the TECHNO MENTOR category.
- Prof. Sayan Ranu's work titled "Debunking the Myths of Influence Maximization: An In-depth Benchmarking Study" has won the SIGMOD reproducibility award for 2018.
- Prof. Balakrishnan along with P.V.M. Rao (Mech. Engg.) have been awarded the National Award for "Improving the Accessibility for the Differently Abled through S&T interventions" for the year 2018 for their work on developing a Refreshable Braille Display.
- Prof. Rijurekha Sen got the Google AI Faculty award (given to 5 Indian faculty members). She also got Computer Communications Review (CCR) best paper award 2018 for her work on Facebook Free Basics audit.

### Electrical Engineering

- Prof. Amol Choudhary selected as a 2019 OSA Ambassador.
- Prof. Bhim Singh received Life Time Achievement Award.
- Prof. Ranjan Mallik received Basic Research Award.
- Prof. Manan Suri received Early Career Award.
- Prof. Manan Suri received IEEE Electron Devices Society Early Career Award.
- Prof. Manav Bhatnagar elected as a fellow of the National Academy of Sciences, India (NASI), Allahabad.
- Prof. Harshan Jagadeesh received Teaching Excellence Award in 2nd Sem 2017-2018.
- Prof. G. Bhuvanewari selected for the prestigious 2018 IEEE PES Wanda Reder Pioneer in Power Award.

- Prof. Manan Suri honored by MIT Technology Review as one of 35 Innovators under 35 in 2018.
- Prof. Abhisek Dixit selected as IEEE EDS Distinguished Lecturer.
- Prof. Lalan Kumar received Early Career Research Award.

### Humanities and Social Sciences

- Prof. Arudra Burra, awarded the Anil Divan Visiting Fellowship at the School of Law, Governance, and Citizenship, Ambedkar University Delhi, for 2019.
- Prof. Sarbeswar Sahoo, Visiting Professor, Wales Institute of Social and Economic Research, Data & Methods (WISERD), University of Cardiff Wales, UK, July 2018.
- Prof. Saptarshi Mukerjee, Visiting fellowships from Toulouse School of Economics, Maastricht University, University of Paris, Yokohama National University, 2018-2019.
- Prof. Divya Dwivedi, Invited Public Lecture and short teaching engagement, Department of Philosophy, Penn State University, September 2018.
- Prof. Divya Dwivedi, Invited lecture at Work Marathon, Royal Geographical Society, London, September 2018.
- Prof. Divya Dwivedi, Invited public lecture "the Indestiny of the World" at UNESCO Headquarter Paris on World Philosophy Day, 16 November, 2019.
- Prof. Divya Dwivedi, Invited keynote lecture in conference "Postcolonial Perspectives" - Goethe Institute Jakarta, Indonesia, January, 2019.
- Prof. Divya Dwivedi, Invited Royal Institute of Philosophy Lecture, UK, March 2019.

### Management Studies

- Excellence in Corporate Governance Research initiative grant (\$2000 USD) in 2018 for paper on "Corporate Governance and Firm Performance: The Impact on Various Block holders" Ownership on Board Monitoring by National Stock Exchange - Indira Gandhi Institute of Development Research has been given to Prof. Shveta Singh.
- Best Paper Award in Conference named International Federation on information Processing, I3E2018 Conference, (GUST), Kuwait awarded to Prof. Arpan K. Kar, Prof P. Vigneswara Ilavarasan & (Ms.) Purva Grover.
- Best Poster from the Alumni given by the IITD Guest House awarded to Ms. Purva Grover & Prof. Arpan K. Kar.

### Materials Science and Engineering

- Prof. Leena Nebhani delivered lecture on "Modular routes to functionalized microparticles and organically modified mesopores Silica nanoparticles at IUPAC World Polymer Congress, Macro, Cairns, Australia in July 2018.

- Prof. Suresh Neelakantan delivered an Invited Lecture on “Smart Metallic Materials for Light Weight Applications” in the NCTU – IIT Delhi Workshop on “Advanced Functional Materials” during 4-5 October, 2018 at Engineering VI Building, NCTU, Taiwan.
- Prof. Sampa Sah delivered a Invited Lecture on “Anisotropic designer Particles” in the NCTU – IIT Delhi Workshop on “Advanced Functional Materials” during 4-5 October, 2018 at Engineering VI Building, NCTU, Taiwan.
- Prof. Suresh Neelakantan delivered a Invited Lecture on “Metallic Materials – Fundamentals to Applications” in the “NCERT Nurturance Programme”, organized at IIT Delhi by Prof. Sujin Babu, Physics department on 15 March, 2019.
- Prof. J. Jain delivered an Invited Lecture on “Magnesium alloys for Light Weight Applications” In the NCTU – IIT Delhi Workshop on “Advanced Functional Materials” during 4-5 October, 2018 at Engineering VI Building, NCTU, Taiwan.
- Prof. J. Jain delivered an Expert lecture on Corrosion, 5 May, 2018, Mechanical Engineering Department, Faculty Development Program, Delhi Technical University, New Delhi.
- Prof. J. Jain delivered an Expert lecture in TEQIP course on “Advancements in Manufacturing of composite Materials and their mechanical and tribological aspects” January 21-25th, 2019, ITS Engineering College, Greater Noida.
- Prof. J. Jain delivered an Expert lecture in QIP course on Mechanical Behavior of Materials, IIT Kanpur, 30 October-3 November, 2018.
- Prof. Nebhani became Academic Editor for PLOS One starting August 2018.
- Prof. J. Jain recipient of India-Birmingham Institute fellowship for the year 2019-2020.
- Prof. N.N. Gosvami delivered an invited lecture at Beilstein Nanotechnology Symposium, Potsdam, Germany, October 2018.
- Prof. N.N. Gosvami delivered an Expert lecture on “Nanoscale Processes in Tribology”, 5 May, 2018, Mechanical Engineering Department, Faculty Development Program, Delhi Technical University, New Delhi.
- Prof. N.N. Gosvami delivered a keynote lecture at “11th Summer School in Tribology”, organized by Indian Oil Corp., Gurgaon, India, 14-18 May, 2019.
- Prof. N.N. Gosvami delivered an invited lecture on “Nanotribology”, at IIT Mandi, India, April 2019.
- Prof. N.N. Gosvami became a lifetime member of Tribology Society of India.
- Prof. N.N. Gosvami served a reviewer for prominent international journal Science.

### Mechanical

- Prof. Supreet Singh Bahga was awarded Teaching Excellence Award at IIT Delhi for teaching MCL826: Introduction to Microfluidics.

### Physics

- R.S. Dhaka was awarded “DAE Young Achiever Award (YAA)-2018” by BRNS, INDIA.
- R.S. Dhaka has been selected as member of Indian National Young Academy of Science (INIAS) 2019-2013.
- J.P. Singh has been selected as Research Advisor- Nan Yang Academy of Sciences Singapore (NASS) 2018-onwards.

### Textile Technology

- Abdul Kalam Technology Innovation National Fellowship 2019 by Indian National Academy of Engineers to Prof. Ashwini K. Agrawal.
- Institute Chair Professor awarded to Prof. Abhijit Mazumdar and Prof. Sourabh Ghosh.
- Fellowship of Society of Dyers and Colourists (FSDC), U.K. Awarded to Prof. Javed N Sheikh.
- IEI Young Engineer Award 2018-19 by Institute of Engineers conferred to Prof. Bipin Kumar.
- The Institution of Engineers Award conferred to Prof. R. Alagirusamy on the occasion of the thirty second national convention of Textile Engineers, January-2019.
- Teaching Excellence Award, IIT Delhi, 2018 conferred to Prof. Bipin Kumar.
- Fulbright-Nehru Professional Fellowship award to initiate collaboration with MIT, Cambridge, USA to Prof. Amit Rawal.

### Atmospheric Sciences

- Prof. Manju Mohan: Fellow, National Environmental Science Academy (NESA).

### Biomedical Engineering

- Prof. Amit Mehndiratta and Prof. Anup Singh has been awarded with E.K. Zavoisky award by joint International Society of Magnetic Resonance in Medicine (ISMRM) and ESMRMB at Paris, France on 16 June, 2018.
- Teaching Excellence Award awarded to Prof. Deepak Joshi on 5th September 2018 (Teachers Day) at IIT Delhi.
- Veena Arora Faculty Research Award to Prof. Neetu Singh on 28 January, 2019 at IIT Delhi.

### Energy Studies

- Anshu Verma, A. Ganguli, R. Narayanan, D. Sahu and R.D. Tarey, “2nd PRIZE IN ORAL PRESENTATION” for Studies on Geometric Expansion of Magnetized Plasma, Proceedings

of the 6th PSSI Plasma Scholars Colloquium held at Sikkim Manipal Institute of Technology (SMIT), Majitar, Sikkim between 24-26 August, 2018, BPE-11.

- K.A. Subramanian, "Best Paper Award" in Technical Session (Poster) for the research work entitled "Development of Innovation in control of backfire" by International Symposium on Fuels and Lubricants – 2018.

### Rural Development and Technology

- Young Scientist Award 2018 to Dr. Ram Chandra – Global Nature Festival 2018 at Constitutional Club of India, New Delhi.

### Bharti School of Telecommunication Technology and Management

- Prof. Manav Bhatnagar:
  - a. Brigadier Bopinder Singh Chair Professor at IIT Delhi.
  - b. Fellow of National Academy of Sciences (NASI).
- Prof. Harshan Jagadeesh received Teaching Excellence Award 2018, IIT Delhi.
- Prof. Lalan Kumar received Early Career Research Award from SERB.
- Prof. Saif K. Mohammed:
  - a. Prof. Kishan Gupta and Pramila Gupta Chair (Jan'19- Dec 2021).
  - b. Fellow, the Institution of Electronics & Telecommunications Engineers (IETE) March 2018.
- Prof. Prathosh A.P. received Qualcomm Innovation Fellowship, 2018.
- Prof. Swades De:
  - a. General Co-Chair, Communication Systems & Networks Conf., 7- 11 January, 2020, Bangalore, India.
  - b. Associate Editor, Springer J. Commun and Information Networks, January 2019.

c. Guest Co-Editor, Wiley International Journal on Communication Systems, 2019.

d. Exemplary Editor Award, IEEE Communications Letters: 2018.

e. Member of DST SERB ECE Program Advisory Committee, since November 2018.

- Prof. Arpan Kar:

a. "IFIP I3E Best Paper Award" for the article titled "Blockchain for businesses: A systematic literature review" at "The 17th IFIP Conference on e-Business, e- Services and e-Society", held in Kuwait City, Kuwait.

b. Excellence in Teaching Award in 2017 by IIT Delhi.

c. Outstanding reviewer, International Journal of Information Management, May 2018.

d. Outstanding reviewer, Journal of Computational Science, May 2018.

e. Outstanding reviewer, Journal of Retailing and Consumer Services, April 2018.

f. Outstanding reviewer, Land Use Policy, September 2018.

g. Outstanding reviewer, Information and Management, March 2018.

### Amar Nath and Shashi Khosla School of Information Technology

- Prof. Preeti Ranjan Panda was a winner of the Indian Electronics & Semiconductor Association (IESA) TECHNOVATION 2018 AWARD in the TECHNO MENTOR category (February 19, 2019).

- Prof. M. Balakrishnan along with P.V.M. Rao (Mechanical Engineering) have been awarded the National Award for "Improving the Accessibility for the Differently Abled through S&T interventions" for the year 2018 for their work on developing a Refreshable Braille Display. This is the second time the team has received this award.

# Faculty in Position

(As on 31<sup>st</sup> March, 2019)

<b>Department of Applied Mechanics</b>	S.N. Singh, Ph.D.	Anurag Singh Rathore, Ph.D.	Pramit K. Chowdhury, Ph.D.
<b>Professor and Head</b>	<b>Department of Biochemical Engineering &amp; Biotechnology</b>	Anupam Shukla, Ph.D.	Shashank Deep, Ph.D.
S.V. Veeravalli, Ph.D.	<b>Professor and Head</b>	Shantanu Roy, Ph.D.	V. Haridas, Ph.D.
<b>Professors</b>	Atul Narang, Ph.D.	Anil K. Saroha, Ph.D.	S. Nagendran, Ph.D.
Puneet Mahajan, Ph.D.	<b>Professors</b>	Sreedevi U. (Ms.), Ph.D.	Sameer Sapra, Ph.D.
Anupam Dewan, Ph.D.	Sunil Nath, Ph.D.	Anil Verma, Ph.D.	<b>Associate Professors</b>
Rajesh Prasad, Ph.D.	Prashant Mishra, Ph.D.	<b>Associate Professors</b>	Ravi P. Singh
Sanjeev Sanghi, Ph.D.	Saroj Mishra (Ms.), Ph.D.	Pareesh P. Chokshi, Ph.D.	Nidhi Jain (Ms.), Ph.D.
Badri Prasad Patel, Ph. D.	A.K. Srivastava, Ph.D.	Shalini Gupta (Ms.), Ph.D.	Hemant Kumar Kashyap, Ph.D.
Maloy K. Singha, Ph.D.	T.R. Sreekrishnan, Ph.D.	Shaik Abdul Munawar, Ph.D.	<b>Assistant Professors</b>
Santosh Kapuria, Ph.D. (on-lien)	D. Sundar, Ph.D.	Sudip K. Pattanayek, Ph.D.	G.S. Lahu, Ph.D.
<b>Associate Professors</b>	<b>Associate Professors</b>	Jayati Sarkar (Ms.), Ph.D.	P.P. Ingole, Ph.D.
S. Pradyumna, Ph.D.	Ritu Kulshreshtha (Ms.), Ph.D.	M.A. Haider, Ph.D.	Tanmay Dutta, Ph.D.
Balaji Srinivasan, Ph.D.	Shilpi Sharma (Ms.), Ph.D.	M.K.C. Ramteke, Ph.D.	Kuntal Manna, Ph.D.
Sawan Suman, Ph.D.	Preeti Srivastava (Ms.), Ph.D.	<b>Assistant Professors</b>	Sayantana Paria, Ph.D.
Ajeet Kumar, Ph.D.	Ravi Krishnan Elangovan, Ph.D.	Gaurav Goel, Ph.D.	Sudipta Raha Roy, Ph.D.
M.R. Cholehari, Ph.D.	Shaikh Z. Ahammad, Ph.D.	Jyoti Phirani (Ms.), Ph.D.	Chinmoy Kumar Hazra, Ph.D.
Jayant Jain, Ph.D.	<b>Assistant Professors</b>	Divesh Bhatia, Ph.D.	<b>Emeritus Fellow</b>
Sitikantha Roy, Ph.D.	Ashish Misra, Ph.D.	Vikram Singh, Ph.D.	A.K. Singh, Ph.D.
Anurag Gupta, Ph.D.	Rohan Jain, Ph.D.	<b>Emeritus Fellow</b>	B. Jayaram, Ph.D.
<b>Assistant Professors</b>	<b>Emeritus Professors</b>	K.D.P. Nigam, Ph.D.	<b>Department of Civil Engineering</b>
Vikrant Tiwari, Ph.D.	G.P. Agarwal, Ph.D.	<b>Department of Chemistry</b>	<b>Professor and Head</b>
Samaresh Das, Ph.D.	M.N. Gupta, Ph.D.	<b>Professor and Head</b>	N.K. Garg, Ph.D.
Arjun Sharma, Ph.D.	<b>Department of Chemical Engineering</b>	<b>Professors</b>	<b>Professors</b>
Suresh Neelakantan, Ph.D.	<b>Professor and Head</b>	Ravi Shankar, Ph.D.	Manoj Datta, Ph.D.
Gaurav Singh, Ph.D.	K.K. Pant, Ph.D.	D.K. Bandyopadhyay, Ph.D.	B.J. Alappat, Ph.D.
<b>Adjunct Faculty (Naval Construction Wing)</b>	<b>Professors</b>	Anil Jacob Elias, Ph.D.	Suresh Bhalla, Ph.D.
Cdr. R. Vijaya Kumar	A.N. Bhaskarwar, Ph.D.	N.D. Kurur, Ph.D.	G.S. Benipal, Ph.D.
Lt. Cdr. Amit Ray	Vivek V. Buwa, Ph.D.	S.K. Khare	Bhagu Ram Chahar, Ph.D.
Capt. V.K. Satyam (Officer-in-charge)	S.K. Gupta, Ph.D.	Siddharth Pandey, Ph.D.	A.K. Jain, Ph.D.
Dharam Singh	S. Basu, Ph.D. (on deputation)	Nalin Pant, Ph.D.	Ashok Gupta, Ph.D.
LT. Cdr. S.K. Rao	Ratan Mohan, Ph.D.	A. Ramanan, Ph.D.	V.R. Guntari, Ph.D.
<b>Emeritus Fellow</b>	Rajesh Khanna, Ph.D.	N.G. Ramesh, Ph.D.	K.C. Iyer, Ph.D.
D.K. Sehgal		Jai Deo Singh, Ph.D.	R.R. Kalaga, Ph.D.

## Faculty in Position

Deo Raj Kaushal, Ph.D.	<b>Professors</b>	<b>Department of Electrical Engineering</b>	Abhishek Dixit, Ph.D.
A.K. Keshari, Ph.D.	Naveen Garg, Ph.D.	<b>Professor and Head</b>	Jun Bae Seo, Ph.D.
Mukesh Khare, Ph.D.	Rahul Garg, Ph.D.	S.D. Joshi, Ph.D.	Sumeet Agarwal, Ph.D.
Kumar Neeraj Jha, Ph.D.	Amit Kumar, Ph.D.	<b>Professors</b>	Anandrup Das, Ph.D.
Vasant A. Matsagar, Ph.D.	Anshul Kumar, Ph.D.	Abhijit R. Abhyankar, Ph.D.	Bhaskar Mitra, Ph.D.
Alok Madan, Ph.D.	S. Arun Kumar Ph.D.	Manav Bhatnagar, Ph.D.	S. Srirangarajan, Ph.D.
A.K. Nema, Ph.D.	M. Balakrishnan, Ph.D.	Ranjan Bose, Ph.D.	Manan Suri, Ph.D.
K.S. Rao, Ph.D.	S. Banerjee, Ph.D.	G. Bhuvaneshwari (Ms.), Ph.D.	R. Maheshwari, Ph.D.
Geetam Tewari (Ms.), Ph.D.	Prem Kumar Kalra, Ph.D.	S. Chaudhury, Ph.D.	Deepak Umakant Patil, Ph.D.
J.T. Shahu, Ph.D.	Subodh Kumar, Ph.D.	Shouribrata Chatterjee, Ph.D.	Lalan Kumar, Ph.D.
Rakesh Khosa, Ph.D.	Kolin Paul, Ph.D.	Swades K. De, Ph.D.	Debanjan Bhowmik, Ph.D.
<b>Associate Professors</b>	Huzur Saran, Ph.D.	Jayadeva, Ph.D.	Harshan Jagadeesh, Ph.D.
R. Ayothiraman, Ph.D.	Preeti Ranjan Panda, Ph.D.	I.N. Kar, Ph.D.	Vivek Venkataraman, Ph.D.
Shashank Bishnoi, Ph.D.	Sandeep Sen, Ph.D.	Subrat Kar, Ph.D.	Prathosh A.P., Ph.D.
T. Chakraborty (Ms.), Ph.D.	<b>Associate Professors</b>	M.J. Kumar, Ph.D.	Sumit Kumar Pramanick, Ph.D.
Arun Kumar, Ph.D.	Amitabh Bagchi, Ph.D.	Brejesh Lall, Ph.D.	Subhashish Datta, Ph.D.
Bappaditya Manna, Ph.D.	Mausam, Ph.D.	R.K. Mallik, Ph.D.	Soumya Shubhra Nag, Ph.D.
Dipti Ranjan Sahoo, Ph.D.	Vinay Joseph Ribeiro, Ph.D.	Sukumar Mishra, Ph.D.	Arpan Chattopadhyay, Ph.D.
Dhanya C.T. (Ms.), Ph.D.	Smruti R Sarangi, Ph.D.	B.K. Panigrahi, Ph.D.	Dhiman Mallick, Ph.D.
Gazala Habib (Ms.), Ph.D.	Aaditeshwar Seth, Ph.D.	Shankar Prakriya, Ph.D.	Ankesh Jain, Ph.D.
J. Uma Maheshwari (Ms.), Ph.D.	Parag Singla, Ph.D.	Sumantra Dutta Roy, Ph.D.	Amol Choudhary, Ph.D.
Arvind K. Swamy, Ph.D.	Ragesh Jaiswal, Ph.D.	Nilanjan Senroy, Ph.D.	<b>Emeritus Fellow</b>
<b>Assistant Professors</b>	Sorav Bansal, Ph.D.	Bhim Singh, Ph.D.	R.K.P. Bhatt, Ph.D.
Supratic Gupta, Ph.D.	Srikanta B. Jagannath, Ph.D.	M. Veerachary, Ph.D.	B. Bhowmik (Ms.), Ph.D.
Abhijit Ganguli, Ph.D. (on-lien)	<b>Assistant Professors</b>	<b>Associate Professors</b>	P.R. Bijwe, Ph.D.
Sumedha Chakma, Ph.D.	Maya Ramanath (Ms.), Ph.D.	Amit Kumar Jain, Ph.D.	V. Chandra, Ph.D.
Prashanth Vangla, Ph.D.	Subodh Vishnu Sharma, Ph.D.	Mashuq-un-Nabi, Ph.D.	Devi Chadha (Ms.), Ph.D.
Sri Harsha Kota, Ph.D.	Chetan Arota, Ph.D.	Anuj Dhawan, Ph.D.	V.K. Jain, Ph.D.
Arya V. (Ms.), Ph.D.	<b>Emeritus Fellow</b>	Madhusudan Singh	R.K. Patney, Ph.D.
<b>Emeritus Fellow</b>	Saroj Kaushik (Ms.), Ph.D.	Shubhendu Bhasin, Ph.D.	Surendra Prasad, Ph.D.
A.K. Gosain, Ph.D.	<b>Department of Design</b>	Abhishek Dixit, Ph.D.	<b>Department of Humanities &amp; Social Sciences</b>
B. Bhattacharjee, Ph.D.	<b>Professor and Head</b>	S. Janardhanan, Ph.D.	<b>Professor and Head</b>
Shashi Mathur, Ph.D.	P.V. Madhusudan Rao, Ph.D.	Saif Khan Mohammed, Ph.D.	Purnima Singh (Ms.), Ph.D.
K.G. Sharma, Ph.D.	<b>Assistant Professors</b>	Mukul Sarkar, Ph.D.	<b>Professors</b>
<b>Senior Programmer</b>	Srinivasan Venkataraman, Ph.D.	Saunak Sen, Ph.D.	Pritha Chandra (Ms.), Ph.D.
M. Malikharjuna Rao, M.E.	Jyoti Kumar, Ph.D.	<b>Assistant Professors</b>	Ravinder Kaur (Ms.), Ph.D.
<b>Department of Computer Science &amp; Engineering</b>	Sumer Singh, Ph.D.	T.P. Gandhi, Ph.D.	Angelie Multani (Ms.), Ph.D.
<b>Professor and Head</b>	Jai Dhariwal, Ph.D.		
Sanjiva Prasad, Ph.D.			

## Faculty in Position

V. Sanil, Ph.D.	<p style="text-align: center;"><b>Department of Management Studies</b></p> <p><b>Professor and Head</b></p> <p>M.P. Gupta, Ph.D.</p> <p><b>Professors</b></p> <p>Kanika T. Bhal (Ms.), Ph.D.</p> <p>Ravishankar, Ph.D.</p> <p>Sushil, Ph.D.</p> <p>S.S. Yadav, Ph.D.</p> <p>Mahim Sagar, Ph.D.</p> <p>S.P. Singh, Ph.D.</p> <p>Seema Sharma (Ms.), Ph.D.</p> <p><b>Associate Professors</b></p> <p>P. Vigneswara Ilavarasan, Ph.D.</p> <p>Shveta Singh (Ms.), Ph.D.</p> <p>Harish Choudhary, Ph.D.</p> <p>Jitendra Madan, Ph.D.</p> <p>A.K. Kar, Ph.D.</p> <p>Smita Kashiramka (Ms.), Ph.D.</p> <p>A.K. Dube, Ph.D.</p> <p><b>Assistant Professors</b></p> <p>Shuchi Sinha (Ms.), Ph.D.</p> <p>Sanjay Dhir, Ph.D.</p> <p>Neeru Chaudhary, Ph.D.</p> <p>Manish Kumar Singh, Ph.D.</p> <p><b>Emeritus Fellow</b></p> <p>P.K. Jain, Ph.D.</p>	Leena Nebhani (Ms.), Ph.D.	Ananta Kumar Majee, Ph.D.
C.A. Tomy, Ph.D.		Bijay Prakash Pripathi, Ph.D.	Aparajita Dasgupta (Ms.), Ph.D.
<b>Associate Professors</b>		Nitya Nand Goswami, Ph.D.	Biplab Basak, Ph.D.
Vibha Arora (Ms.), Ph.D.		Suresh Neelakantan, Ph.D.	<p style="text-align: center;"><b>Department of Mechanical Engineering</b></p> <p><b>Professor and Head</b></p> <p>P.V. Madhusudhan Rao, Ph.D.</p> <p><b>Professors</b></p> <p>Naresh Bhatnagar, Ph.D.</p> <p>S.K. Saha, Ph.D.</p> <p>Anoop Chawla, Ph.D.</p> <p>Ashish K. Darpe, Ph.D.</p> <p>S.G. Deshmukh, Ph.D. (on-lien)</p> <p>J.K. Dutt, Ph.D.</p> <p>Sanjeev Jain, Ph.D.</p> <p>Sangeeta Kohli (Ms.), Ph.D.</p> <p>D. Ravi Kumar, Ph.D.</p> <p>Sudipto Mukherjee, Ph.D.</p> <p>P. Venkateswara Rao, Ph.D.</p> <p>M.R. Ravi, Ph.D.</p> <p>Anjan Ray, Ph.D.</p> <p>S.R. Kale, Ph.D.</p> <p>S.P. Singh, Ph.D.</p> <p>P.M.V. Subbarao, Ph.D.</p> <p>Harish Hirani, Ph.D. (on-lien)</p> <p>S. Aravindan, Ph.D.</p> <p>S.V. Modak, Ph.D.</p> <p>Pulak Mohan Pandey, Ph.D.</p> <p>Prabal Talukdar, Ph.D.</p> <p>R.K. Pandey, Ph.D.</p> <p>Sujit Kumar Sinha, Ph.D.</p> <p>Sunil Jha, Ph.D.</p> <p>Sudarsan Ghosh, Ph.D.</p> <p>B. Premachandran, Ph.D.</p> <p><b>Associate Professors</b></p> <p>Nomesh B. Bolia, Ph.D.</p> <p>Amit Gupta, Ph.D.</p> <p><b>Assistant Professors</b></p> <p>Subhra Datta, Ph.D.</p>
Reetika Khera (Ms.), Ph.D.		Nirat Ray (Ms.), Ph.D.	
Stuti Khanna (Ms.), Ph.D.		Ankur Goswami, Ph.D.	
Arjun Ghosh, Ph.D.		<b>Emeritus Fellow</b>	
Saptarshi Mukherjee, Ph.D.		Veena Choudhary (Ms.), Ph.D.	
M. Wakankar, Ph.D.		S.N. Maiti, Ph.D.	
Bharati Puri (Ms.), Ph.D.		<p style="text-align: center;"><b>Department of Mathematics</b></p> <p><b>Professor and Head</b></p> <p>K. Sreenadh, Ph.D.</p> <p><b>Professor</b></p> <p>N. Chatterjee, Ph.D.</p> <p>S. Dharmaraja, Ph.D.</p> <p>Subiman Kundu, Ph.D.</p> <p>Aparna Mehra (Ms.), Ph.D.</p> <p>B.S. Panda, Ph.D.</p> <p>R.K. Sharma, Ph.D.</p> <p>S.C. Sekhara Rao</p> <p>A. Tripathi</p> <p><b>Associate Professors</b></p> <p>Anima Nagar (Ms.), Ph.D.</p> <p>Mani Mehra (Ms.), Ph.D.</p> <p>Sivanathan Sampath, Ph.D.</p> <p>Ritumoni Sarma, Ph.D.</p> <p><b>Assistant Professors</b></p> <p>Harish Kumar, Ph.D.</p> <p>N. Shravan Kumar, Ph.D.</p> <p>Amit Priyadarshi, Ph.D.</p> <p>V.V.K. Srinivas Kumar, Ph.D.</p> <p>P.V. Viswanathan, Ph.D.</p> <p>Vikas Vikram Singh, Ph.D.</p> <p>Kamana Porwal (Ms.), Ph.D.</p> <p>Punit Sharma, Ph.D.</p> <p>Minati De (Ms.), Ph.D.</p> <p>Surjeet Kour (Ms.), Ph.D.</p> <p>Shiv Prakash Patel, Ph.D.</p>	
J.J. Thomas, Ph.D. (on lien)			
Kamlesh Singh, Ph.D.			
Farhana Ibrahim (Ms.), Ph.D.			
Simona Sawhney (Ms.), Ph.D.			
Richa Kumar (Ms.), Ph.D.			
Debasis Mondal, Ph.D.			
Sarbeswar Sahoo, Ph.D.			
Mahuya Bandyopadhyay (Ms.), Ph.D.			
<b>Assistant Professors</b>			
Ankush Agarwal, Ph.D.			
Arudra Venkata Burra, Ph.D.			
Divya Dwivedi (Ms.), Ph.D.			
Naveen Thayyil Kamaluddin, Ph.D.			
Samar Husain, Ph.D.			
Saurabh Bikas Paul, Ph.D.			
Paroma Sanyal (Ms.), Ph.D.			
Varsha Singh (Ms.), Ph.D.			
Yashpal Ashokrao Jogdand, Ph.D.			
Ashwini J. Vaidya, Ph.D.			
Sumitava Mukherjee, Ph.D.			
<b>Adjunct Faculty</b>			
Bijoy H. Boruah, Ph.D.			
<b>English Language Instructor</b>			
Rajiv Ranjan Mahto, Ph.D.			
Anuradha Vashisth (Ms.), Ph.D.			

Naresh Varma Datla, Ph.D.	<b>Associate Professors</b>	Sourabh Ghosh, Ph.D.	<b>Centre for Atmospheric Sciences</b>
Jitendra P. Khatait, Ph.D.	Kedar Khare, Ph.D.	Bhuvanesh Gupta, Ph.D.	<b>Professor and Head</b>
Supreet Singh Bahga, Ph.D.	Pranaba Kishor, Ph.D.	Deepti Gupta (Ms.), Ph.D.	Manju Mohan (Ms.), Ph.D.
Devendra Kr. Dubey, Ph.D.	K.B. Khare, Ph.D.	S.M. Ishtiaque, Ph.D.	<b>Professor</b>
Krishna K. Agrawal, Ph.D.	P.K. Muduli, Ph.D.	Manjeet Jassal (Ms.), Ph.D.	A.D. Rao, Ph.D.
<b>Emeritus Fellow</b>	<b>Assistant Professors</b>	Mangla Joshi (Ms.), Ph.D.	<b>Associate Professors</b>
Kiran Seth, Ph.D.	Amartya Sengupta, Ph.D.	Abhijit Majumdar, Ph.D.	Sagnik Dey, Ph.D.
Sunil Pandey, Ph.D.	Joyee Ghosh (Ms.), Ph.D.	R.S. Rangasamy, Ph.D.	Krishna Achuta Rao, Ph.D.
<b>Visiting Faculty</b>	Pintu Das, Ph.D.	Amit Rawal, Ph.D.	Somnath Baidya Roy
A.D. Gupta, M.Tech.	R. Suresh Marthe, Ph.D.	Kushal Sen, Ph.D.	Vimlesh Pant, Ph.D.
<b>Department of Physics</b>	Sujin B. Babu, Ph.D.	<b>Associate Professors</b>	<b>Assistant Professors</b>
<b>Professor and Head</b>	R.S. Dhaka, Ph.D.	B.S. Butola, Ph.D.	Sandeep Sahnay, Ph.D.
Anurag Sharma, Ph.D.	S. Bhattacharya, Ph.D.	S. Mukhopadhyay, Ph.D.	Saroj Kanta Mishra, Ph.D.
<b>Professors</b>	Sunil Kumar, Ph.D.	Bhanu Nandan, Ph.D.	Dilip Ganguly, Ph.D.
Varsha Banerjee (Ms.), Ph.D.	Bhaskar Kanseri, Ph.D.	Rajiv K. Srivastava, Ph.D.	Sandeep Sukumaran
Mukesh Chander, Ph.D.	Rohit Narula, Ph.D.	<b>Assistant Professors</b>	Ravi Kumar Kunchala, Ph.D.
R. Chatterjee (Ms.), Ph.D.	Brajesh Kumar Mani, Ph.D.	Md. S. Wazid Ali, Ph.D.	<b>Emeritus Fellow</b>
Sujeet Chaudhary, Ph.D.	Vikrant Sexena, Ph.D.	Javed Nabibaksha Sheikh, Ph.D.	Maithili Sharan, Ph.D.
Santanu Ghosh, Ph.D.	Pradipta Ghosh, Ph.D.	<b>Emeritus Fellow</b>	S.K. Dash, Ph.D.
Joby Joseph, Ph.D.	Aditya Narain Agnihori, Ph.D.	V.K. Kothari, Ph.D.	<b>Centre for Biomedical Engineering</b>
H.K. Malik, Ph.D.	Folke Tobias Florus Toll, Ph.D.	<b>Centre for Applied Research in Electronics</b>	<b>Professor and Head</b>
Neeraj Khare Ph.D.	Sujit Manna, Ph.D.	<b>Professor and Head</b>	Veena Koul (Ms.), Ph.D.
B.R. Mehta, Ph.D.	<b>Emeritus Fellow</b>	Ananjan Basu, Ph.D.	<b>Professor</b>
Dalip Singh Mehta, Ph.D.	Arun Kumar, Ph.D.	<b>Professor</b>	Harpal Singh, Ph.D.
G.V. Prakash, Ph.D.	B.D. Gupta, Ph.D.	Arun Kumar, Ph.D.	<b>Assistant Professors</b>
M.R. Shenoy, Ph.D.	D.K. Pandya, Ph.D.	<b>Associate Professors</b>	S.K. Jha, Ph.D.
J.P. Singh, Ph.D.	Ajit Kumar, Ph.D.	Mahesh P. Abegaonkar, Ph.D.	Neetu Singh (Ms.), Ph.D.
Aloka Sinha (Ms.), Ph.D.	G.B. Reddy, Ph.D.	Monika Aggarwal (Ms), Ph.D.	Anup Singh, Ph.D.
R.K. Soni, Ph.D.	<b>Department of Textile Technology</b>	<b>Assistant Professors</b>	Amit Mehndiratta, Ph.D.
A.K. Shukla, Ph.D.	<b>Professor and Head</b>	Prabhu Babu, Ph.D.	S.M.K. Rahman, M.Tech.
R.K. Varshney, Ph.D.	B.K. Behera, Ph.D.	Samaresh Das, Ph.D.	Dinesh Kalyanasundaram, Ph.D.
Pankaj Srivastava, Ph.D.	<b>Professors</b>	Ankur Gupta, Ph.D.	Deepak Joshi, Ph.D.
P. Senthilkumaran, Ph.D.	Ashwini K. Agrawal, Ph.D.	Pushpraj Singh, Ph.D.	Jayanta Bhattacharyya, Ph.D.
V. Ravishankar, Ph.D.	R. Alagirusamy, Ph.D.	<b>Emeritus Fellow</b>	<b>Emeritus Fellow</b>
Sankalpa Ghosh, Ph.D.	R. Chattopadhyay, Ph.D.	R. Bahl, Ph.D.	Sneh Anand (Ms.), Ph.D.
Amruta Mishra (Ms.), Ph.D.	Apurba Das, Ph.D.	S.K. Koul, Ph.D.	
Rajendra Singh, Ph.D.	Dipayan Das, Ph.D.		
Amita Das, (Ms.) Ph.D.			

<b>Computer Services Centre</b>	R. Uma (Ms.), Ph.D.	<b>Emeritus Fellow</b>	<b>School of Biological Sciences</b>
<b>Professor and Head</b>	<b>Assistant Professors</b>	D.T. Shahani, Ph.D.	<b>Professor &amp; Co-ordinator</b>
Huzur Saran, Ph.D.	Sandeep Kumar Pathak, Ph.D.	Chandra Shakher, Ph.D.	Tapan Kr. Choudhari, Ph.D.
Arun Kumar S., Ph.D. (Associate Head)	Dibakar Rakshit, Ph.D.	<b>Centre for Rural Development &amp; Technology</b>	<b>Professors</b>
<b>Sr. System Managers</b>	Ashu Verma (Ms.), Ph.D.	<b>Professor &amp; Head</b>	James Gomes, Ph.D.
K. Narayanan, M.Sc.	Debaprasad Sahu, Ph.D.	V.K. Vijay, Ph.D.	C.S. Dey, Ph.D.
Pradeep K. Gupta, M.Tech.	Satayananda, Ph.D.	<b>Professors</b>	Seyed E. Hasnain, Ph.D.
Sriram Hegde, Ph.D.	Supravat Karak, Ph.D.	V.M. Chariar, Ph.D.	Aditya Mittal, Ph.D.
<b>System Manager</b>	K. Ravi Kumar, Ph.D.	Anushree Malik (Ms.), Ph.D.	Bishwajit Kundu, Ph.D.
Rajesh Bhat, Ph.D.	Kaushik Saha, Ph.D.	S.N. Naik, Ph.D.	Amitabha Mukhopadhyay, Ph.D.
R.K. Chauhan, M.C.A.	Sumit Kumar Chattopadhyay, Ph.D.	Satyawati Sharma (Ms.), Ph.D.	<b>Associate Professors</b>
Sunil Kak, M.Tech.	<b>Emeritus Fellow</b>	<b>Associate Professors</b>	Manidipa Banerjee (Ms.), Ph.D.
Ram Lal, Ph.D.	A. Ganguly, Ph.D.	Vivek Kumar, Ph.D.	Archana Chug (Ms.), Ph.D.
Gopal Krishan, M.Sc.	S.C. Kaushik, Ph.D.	Priyanka Kaushal (Ms.), Ph.D.	Vivekanandan Perumal, Ph.D.
Pragya Jain (Ms.), Ph.D.	R.P. Sharma, Ph.D.	<b>Assistant Professors</b>	<b>Assistant Professors</b>
Pravanjan Kumar Baboo, Ph.D.	T.S. Bhatti, Ph.D.	Hari Prasad P., Ph.D.	Ashok Kumar Patel, Ph.D.
Ajay Guleria, Ph.D.	<b>Industrial Tribology, Machine Dynamics &amp; Maintenance Engineering Centre</b>	Kavya Dashona (Ms.), Ph.D.	Tapan Kumar Nayak, Ph.D.
<b>System Architects</b>	<b>Professor and Head</b>	Jitendra Kumar Sahu, Ph.D.	<b>School of Public Policy</b>
Manish Agarwal, Ph.D.	Jayashree Bijwe (Ms.), Ph.D.	Ram Chandra, Ph.D.	<b>Professor &amp; Co-ordinator</b>
Gaurav Munjal, B.Tech.	<b>Professors</b>	<b>Emeritus Fellow</b>	Ambuj D. Sagar, Ph.D.
Jaya (Ms.), M.Tech.	Naresh Tandon, Ph.D.	Santosh Satya (Ms.), Ph.D.	<b>Assistant Professors</b>
<b>Senior Manager</b>	V.K. Agarwal, Ph.D.	<b>National Resource Centre for Value Education in Engineering</b>	Upasana Sharma (Ms.), Ph.D.
N.C. Kalra, M.Tech.	<b>Assistant Professors</b>	<b>Professor &amp; Coordinator</b>	Soutrik, Ph.D.
<b>Educational Technology Services Centre</b>	Deepak Kumar, Ph.D.	Sangeeta Kohli (Ms.), Ph.D.	<b>Interdisciplinary / Transportation Research and Injury Prevention Programme (TRIPP)</b>
<b>Professor &amp; Head</b>	Sahab Fatima (Ms.), Ph.D.	<b>Bharti School of Telecommunication Technology and Management</b>	<b>Professor and Co-ordinator</b>
Sanjeev Sanghi, Ph.D.	<b>Emeritus Fellow</b>	<b>Professor &amp; Coordinator</b>	S.R. Kale, Ph.D.
<b>Centre for Energy Studies</b>	O.P. Gandhi, Ph.D.	<b>Professor &amp; Head</b>	<b>Central Workshop</b>
<b>Professor and Head</b>	<b>Instrument Design &amp; Development Centre</b>	Naresh Bhatnagar, Ph.D.	<b>Interdisciplinary Opto-Electronics &amp; Optical Communication Research Programme</b>
<b>Professors</b>	<b>Chief Design Engineer (SG) and Head</b>	<b>Professor and Co-ordinator</b>	M.R. Shenoy, Ph.D.
Viresh Dutta, Ph.D.	P.V. Madhusudan Rao, Ph.D.	Sanjiva Prasad, Ph.D.	
K. Vamsi Komarala, Ph.D.	<b>Assistant Professors</b>		
K.A. Subramanian, Ph.D.	Gurfan Sayeed, Ph.D.		
<b>Associate Professors</b>	Satish Kumar Dubey, Ph.D.		
Ramesh Narayanan, Ph.D.			
S.K. Tyagi, Ph.D.			



# New Appointments

(April 1, 2018 - March 31, 2019)

44 new faculty members have joined the Institute this year. These new additions to our faculty have enhanced our competence in several emerging areas, while bringing new energy into our academic endeavours.

## New Appointments

New Faculty Joined	
Gaurav Singh, Applied Mechanics	Sumitava Mukherjee, Humanities & Social Sciences
Anurag Gupta, Applied Mechanics	Nirat Ray (Ms.), Materials Science & Engineering
Rohan Jain, Biochemical Engineering & Biotechnology	Ankur Goswani, Materials Science & Engineering
Sudipta Raha Roy, Chemistry	Punit Sharma, Mathematics
Chinmoy Kumar Hazra, Chemistry	Minati De (Ms.), Mathematics
Prashanth Vangla, Civil Engineering	Surjeet Kour (Ms.), Mathematics
Sri Harsha Kota, Civil Engineering	Shiv Prakash Patel, Mathematics
Arya V. (Ms.), Civil Engineering	Ananta Kumar Majee, Mathematics
Srikanta B. Jagannath, Computer Science & Engineering	Aparajita Dasgupta (Ms.), Mathematics
Chetan Arota, Computer Science & Engineering	Biplab Basak, Mathematics
Jai Dhariwal, Design	Krishna K. Agrawal, Mechanical Engineering
Sumit Kumar Pramanick, Electrical Engineering	Amita Das (Ms.), Physics
Subhashish Datta, Electrical Engineering	Aditya Narain Agnihori, Physics
Soumya Shubhra Nag, Electrical Engineering	Folke Tobias Florus Toll, Physics
Arpan Chattopadhyay, Electrical Engineering	Sujit Manna, Physics
Dhiman Mallick, Electrical Engineering	Sumit Kumar Chattopadhyay, Energy Studies
Ankesh Jain, Electrical Engineering	Sahab Fatima (Ms.), Industrial Tribology, Machine Dynamics & Maintenance Engineering
Amol Choudhary, Electrical Engineering	Priyanka Kaushal (Ms.), Rural Development & Technology
Neeru Chaudhary (Ms.), Management Studies	Ram Chandra, Rural Development & Technology
Manish Kumar Singh, Management Studies	Tapan Kumar Nayak, Kusuma School of Biological Sciences
Mahuya Bandyopadhyay (Ms.), Humanities & Social Sciences	Amit Mukhopadhyay, Kusuma School of Biological Sciences
Ashwini J. Vaidya (Ms.), Humanities & Social Sciences	Soutrik, School of Public Policy

# 9. Student Activities

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# Student Activities

(April 1, 2018 - March 31, 2019)

Considerable efforts are made to see that students lead a balanced campus life in harmony with their teachers and fellow students. To ensure that freshers settle down in their new surroundings comfortably, a Freshers' Orientation Programme was organized at the beginning of the academic session. Counselling Service provides counselling to students on adjustment problems or for the problems arising from financial hardship, and emotional/psychological problems affecting academic pursuits.

Outside the classrooms, facilities for a variety of cocurricular activities, sports, games, student publication etc. are provided for the overall growth and development of students' potentialities and initiative with an emphasis on responsible student leadership.

The pace and mode of student life on the campus is planned and implemented by the following student bodies:

1. Student Affairs Council (SAC) and its five Boards, i.e.,
  - (a) Board for Hostel Management (BHM)
  - (b) Board for Recreational & Creative Activities (BRCA)
  - (c) Board for Sports Activities (BSA)
  - (d) Board for Student Publications (BSP)
  - (e) Board for Student Welfare (BSW)
2. National Service Scheme (NSS)
3. National Cadet Corps (NCC)
4. Student Counselling Service (SCS)
5. Student-Teacher Interaction Committee (STIC)
6. National Sports Organization (NSO)
7. Co-curricular and Academic Interaction Council (CAIC)

## 1. STUDENT AFFAIRS COUNCIL (SAC)

The Students Affairs Council has been quite active. Regular meetings took place between the various representatives of SAC, to ensure that all facts of student issues were discussed. SAC representatives also interacted with student members of senate and other SAC committees to ensure wider participation of students in the affairs of the institute. Many student related issues were discussed. Maintenance problems of hostels and the institute, the no dues process for students, library and computer related issues, as well as safety and security issues were also resolved. Openness in the decision making process of various boards and improvements in the student election process were other matters that were discussed. Another important issue that was raised at SAC

was the need for improved student teacher interaction. A student Mentorship Programme to provide consulting of first year students was enhanced. The process of restructuring of Boards and constitution review of the student bodies was also started by SAC. The two standing committees of the SAC, namely the Coordination Committee and the Executive Committee contributed as usual in tackling of various issues referred to them.

### (a) Board for Hostel Management (BHM)

BHM is moving forward with a vision to set IIT Delhi on a path of sustainability, to ensure good quality and hygienic food in the hostels and providing a good work environment to BHM staff.

### Initiatives

#### Constitutional Changes

- Currently, BHM G.Sec. does not have a dedicated team to take care of any institute level Initiatives and work of BHM, which puts a tremendous load on him/her. Hostel Secretaries cannot be expected to take up such initiatives at the institute level because of their commitments to their respective hostel. The introduction of the Secretary - BHM & Representatives aims to solve this problem, to help carry out Institute level initiatives in a more streamlined way.
- Secondly, Current Eligibility Criteria: Candidates for the post of General Secretary should either have been a House Secretary for at least one year prior to their candidature (and should not have been removed from office) or should be amongst the newly elected House Secretaries.

Drawbacks: It is very much needed that the Chief student representative of the board has been a part of it for at least one year prior to his candidature. Newly elected house secretaries are eligible for contesting as General Secretary which itself gets finalized just two days before the election day. A person who is BHM general Secretary also serves as a House secretary of one of the hostels since General Secretary and House Secretary both have fair enough workload and in order to manage both simultaneously either of them is compromised.

Proposed Changes : A candidate contesting for General Secretary must have served as a Mess Secretary, Maintenance Secretary, House Secretary or BHM Secretary for at least one year prior to their Candidature (and should not have been removed from office).

### BHM Employee Incentivization Scheme

To ensure greater employee satisfaction and enjoyment of work, more time spent focusing on the job and less time

complaining. An incentive program for the BHM Staff (Mess & Garden) is being worked upon and it has almost been finalized. The act of recognizing desired behavior increases the repetition of the desired behavior, and therefore productivity.

### Sustainability/Garden Trophy

Every hostel has its garden (though of varying size & shape). In order to promote serious efforts for the development and beautification of the same keeping the environmental concerns like waste management, plastic use, etc at the same time ensuring this development to be sustainable and environment-friendly, we propose this competitive activity with a year-long regular monitoring of following key factors by a committee which will then decide the top three performers who will be awarded trophies on BHM Dinner Night.

It is something being worked upon for the past 5 years, with no results to show for. Finally, this year the initial steps for implementation are being taken.

### RFID Based Attendance System

It is something being worked upon for the past 3 years, with no results to show for. Finally, this year the tender has been uploaded and we foresee getting it being implemented by the beginning of the IInd semester of 2019-20.

### Digitalization

A webpage of the BHM has been created, and it will be hosted on the IIT Delhi web within 3 to 5 days.

BHM and SAC are combinedly working on the implementation of the Digital Notice board in each and every hostel. On the e-Notice board, the hostels will be allowed to subscribe to the channel of their interest be it newsletter of research being done at IIT Delhi or various boards and clubs, etc.

### BHM Night Mess

Night messes of some hostels were not able to match the standards of the good food outlet regarding hygiene and taste. So BHM decided to run night mess for those particular hostels in the same fashion as other night mess run. BHM night mess for the hostels will be up and running ASAP.

### Intra-college Internships & Projects

In December, we will be launching an intra-college project, in which one will be provided all the sales & cost data of a particular IIT Delhi food outlet. The participant will have to analyze that data and come up with suitable recommendations to improve outlet profits.

Apart from this, another project - to design the interiors of common areas of hostels, in collaboration with the newly formed Department of Design, is being tried out in Vindhychal Hostel.

Also, we are giving special focus to providing students real-life experience from any technical activities going on in the campus such as the construction of new buildings.

### Outlets & Facilities

Digital feedback and monitoring systems are being thought about. Each outlet will have a device installed at the billing counter for collecting feedback and students having a valid bill can fill a 30-second feedback form.

Sanitary Pad Vending machines have been installed in the institute area.

### Social

Waste Segregation, donation of surplus mess food (consumable), reduction of plastic use, and initiatives for reducing electricity & water wastage are being launched. We are collaborating with NSS, BSP & BRCA to achieve our goals better.

### The Wardens / House Masters during 2018-19

Hostel	Warden
Aravali	Prof. R. Abhijit Abhyankar
Girnar	Prof. D. Sundar
Himadari	Prof. Paroma Sanyal (Ms.)
Jwalamukhi	Prof. Ravi P. Singh
Kailash	Prof. Joyee Ghosh (Ms.)
Karakoram	Prof. M.C. Ramteke
Kumaon	Prof. Rajendra Singh Dhaka
Nalanda	Prof. A.K. Saroha
Nilgiri	Prof. D. Kalayansundram
Satpura	Prof. S.K. Pattanayek
Shivalik	Prof. B. Sujin Babu
Udaigiri	Prof. S.R. Sarangi
Vindhychal	Prof. Ashok Patel
Zanskar	Prof. Saif K. Mohammed

### (b) Board for Recreational and Creative Activities (BRCA)

#### Dramatics Club

- There was a massive participation from the freshers in Inter-Hostel Street Play where more than 150 freshers participated, which is double of what was in the previous year.
- This year the club performed 13 Plays throughout the year and secured 1st position ("MouseTrap") in Natika Vatika and 2nd & 3rd position in Swaang.
- Inter IIT'19 - The club secured the first position in Street Play competition ("Bhookh").

## Student Activities

- Alchemy Theater Group, the first professional theatre society in the last 10 years formed by our very own seniors.



### Fine Arts and Crafts Club

- Some students who were on campus during summer break visited NGMA and participated in the workshops of NGMA.
- Students of the club contributed in the wall paintings on metro stations of magenta line in collaboration with 'The New Art' and DMRC during summer vacations 2018.
- Gandhiji Wall Painting in Hockey field of IIT Delhi was undertaken.
- Delhi College Awards (March 2019) - FACC, IIT Delhi has been nominated for the Delhi College Awards by the Education Tree. Online rounds are going on.



### Hindi Samiti

- HS was made competitive inter hostel wise. And in the end of this session we gave the inter hostel trophies to top 3 hostels
- For the first time HS conducted YUVA SANSAD (Hindi youth parliament event) in RDV18 which witnessed a very good participation.
- Our flagship event, Kavi Sammelan featuring Prof. Waseem Barelvi and Arun Gemini was very successful this year too.

- With only 3 events of our club in Inter-IIT and smallest club contingent of 6 members, HS secured 1st position in kavyanjali and 1st and 2nd positions in stand up comedy.

### Literary Club

- A new library in SAC with a repository of 800+ books, including fiction, nonfiction, vernacular, and novels was inaugurated thus developing a reading culture in IITD.
- A Pan - Institute creative blog was created by merging BROCA's Penny For Thoughts and BSP's Bittersweet thus providing the IITD community a common platform for expressing their creative ideas.
- Lit club secured the first position in Literary and Speaking arts events with podium finishes in Slam Poetry, Word Games and Creative Writing.

### Music Club

- A dedicated Freshers band was created and an organic structure for forming bands adopted. The focus was shifted to creating original Compositions.
- The club put up countless performances throughout the year like Udbhav, the PG band performed at the IEEE conference at hotel Pullman, 4 of our members produced and released 2 songs for the artist Ashish Pratap Singh this year, 5 of our members and an alumni performed at a profession gig - Raat ke Humsafar, Music Clubs performance won first prize at Kaizen - Fest of NSS.
- Inter IIT was a great learning experience for the Club. 1st in solo singing. 3rd in Band competition which was worth 100 points alone.



### Dance Club

- The Western Group Dance Society (VDefyn) maintained its stronghold on Delhi's dance circuit winning various competitions like 1st place in Zakir Hussain College, Nift and Jamia Millia Islamia, 2nd in Gargi college, DTU, 3rd at Rendezvous IITD.
- The Choreography team (Ensemble) won the competition held at Rendezvous IITD and Qualified for finals in Mood'1.



### Wellness Club

- “Yoga Competition” was conducted for the first time in the IITD campus.
- “Run for Yoga”, “Soulful Musical Evenings” were conducted under International Yoga Day celebrations which aimed to increase the awareness about health and yoga.

### SPIC MACAY

- Formal Inclusion of SPIC MACAY Workshops into Rendezvous for the first time allowed interaction and cultural exchange of various SPIC MACAY Chapters across the region.
- One of the trips was dedicated to the Bharatpur Bird Sanctuary in Rajasthan; and the other excursion was made to the historical monuments of the Taj Mahal and the Agra Fort in the city of Agra, Uttar Pradesh.

### Debating Club

- Implemented a new structure called House System, which involved clubbing hostels together to form 4 houses. The objective was to have hostels with rich debating culture help in building enthusiasm in the weaker hostels.
- Implemented a Challenge Debate system. This meant that any house could challenge a different house to a debate. These debates would be scored at the end.



### Quizzing Club

- We successfully organised eight quizzing events, during Rendezvous with a decrease in budget and an increase in participation compared to last year.
- The club achieved second place in Inter IIT Cultural fest in Quizzing Events and fourth place in Nihilanth which was organised at IIM-Calcutta.

- We switched to a more environment friendly scheme of conducting prelims via presentations as opposed to printing questions which was held earlier. This also allowed us to increase the variety of questions in prelims.
- Special cross-hostel workshops were held by the representatives of the club to increase the inclusivity of freshers and identify the talent early.
- A total of just half of the budget proposed was actually spent leading to savings of about 60,000 rupees with BRCA.
- There was an increased participation in all quizzes, of about 25% compared to last year. This shows the ground level work done by the representatives of the club.

### Photography and Films Club

- Excellent Performance at the inter IIT level
- Successful events in RDV more than 1000 participants and 500+ entries
- Expansion of inventory
- Campus participation has increased by a decent value
- Increase in Social Outreach (>650 followers on insta, 60k+ subscriber on youtube)

### (c) Board for Sports Activities (BSA)

Sports and games are essential components of human resource development and help in promoting good health and spirit of healthy competition, which, in turn, has a positive and deep impact on the holistic development of personality of the Youth- a potential source of energy, enthusiasm and inspiration. Sports, being practical way of education, facilitate recreation, foster social harmony, inculcate discipline and dedication in general life. Board for Sports Activities (BSA) had been looking after this important component for the development of sports environment in the campus.

### Introduction

The Board for Sports Activities is a constituent body of the Student Affairs Council. It is responsible for the coordination of the various sports activities in the institute. It ensures that adequate facilities are given to sportspersons and provides a forum for the students and staff to discuss and formulate policy towards the betterment of sports activities in the campus. The BSA consists of the following members

- President, BSA
- Vice-President, BSA
- Game/Club Presidents
- All Institute Team Captains and Vice-Captains
- All Club Secretaries
- Sports Officer
- Sports Secretaries of Student Hostels

## Student Activities

- General Secretary, BSA
- Deputy General Secretary, BSA
- Immediate past General Secretary, BSA

### Facilities

Our facilities include, a cricket field with four turf wickets, four flood-lit cricket practice pitches, flood-lit hockey and football grounds, three flood-lit volleyball and two basketball courts, eight flood-lit tennis courts (four synthetic and four clay courts), tennis practice wall, two squash courts, one badminton hall, two table tennis halls with synthetic flooring, one weight-lifting hall, Olympic size swimming pool, kid's pool, two multi-gyms, a flood-lit stadium with 400 meters athletics track, flood-lit jogging track and ancillary arrangements for all the games. Construction of a new multipurpose hall with facilities for badminton, table tennis and squash courts is under progress. A team comprised of Sports Officer, Dy. & Assistant Sports Officers, part-time coaches and ground staff help the students in their regular sporting activities ensuring that all facilities are being properly maintained and utilized.

### Notable Achievements

- **53rd Inter IIT Sports Meet (December 2018):** The IIT Delhi contingent was declared the Overall Champions (OC) for men and women contingent combined with a comfortable margin and also won General Championship (GC) for Men.
- **Notable Achievers of the contingent in the Inter-IIT meet:** Athletics (Men) - 1st position overall; Athletics (Women) - 1st Position overall; Cricket - Gold; Football - Gold; Volleyball (Men) - Gold; Basketball (Men) - Gold; Basketball (Women) - Silver; TT (Women) - Silver; Aquatics - Overall 3rd; Hockey - Bronze; Badminton (Men) - Bronze; Squash - 4th; Lawn Tennis (Men) - 4th.
- **Sportech 2019 (March):** Sportech this year was the proud host of 1500 participants making up 160 different teams from 45 colleges.

IIT Delhi also left its mark in Sportech by performing extraordinarily well and ensuring a good and healthy tournament for all. IIT Delhi won the overall championship in Sportech too, a fitting end to an eventful year for the sports fraternity of this institute.

### (d) Board for Student Publications (BSP)

The Board for Student Publications has successfully completed the following major work in the academic session 2018-19.

#### Semester 1

- **Print Publications:** 1. Inception, the fresher's magazine, was distributed at the beginning of the semester to the incoming UG freshmen. It helped in increasing their familiarity with the IIT examination and administrative

system and the extra-curricular options available here. 2. Inquirer (Vol. 1) was published which contained articles Forex ke Fundae, IITD - Institute of Eminence, issues regarding Timble attendance app etc.

- **Literati:** Organised in September, it had events like Creative Writing Workshop, Keynote Lectures and Panel Discussions by eminent people like Paranjay Guha Thakurta and Rajdeep Sardesai. It invited literary enthusiasts from around the city. Literature Quiz, Treasure Hunt and Spellathon were some of the competitive events which invited enthusiastic participation from students.

#### Semester 2

- **Print Publications:** 1. Muse (Vol 1) was published which contained the creative poems and stories from students and Professors of IITD. 2. Elemental, the technical magazine of IITD, was published which had articles on some recent tech developments Gene Edited Babies, Bone Conduction Technology etc.
- **Administrative:** BSP planned to start a biweekly newsletter, which will be in addition to the semesterly Inquirer, to counter the problems of few newsletters, lack of need for volunteers, which lead to low circulation. So, a proposal for BSP stalls, where these bi weekly newspapers can be placed, was proposed in SAC and approval was taken for the same. The finer details like the vendor, exact locations etc. are in the process of finalisation.
- **Round the Year Work:** The Board has been active in covering all the major institute events such as Convocation, Institute Day, Industry Day etc. Others like House Days, All Boards Night, BHM dinner, Inter IIT etc were also appropriately covered. In addition to this, numerous online series like 2nd year internships, 3rd year internships, Fresher's series, Research of the Month, Guest Editorials etc were done throughout the year.

### (e) Board for Student Welfare (BSW)

The Board for Student Welfare, IIT Delhi is a student body set up with an intention to look after the Welfare of the Student Community. BSW has always been dedicated towards helping the Student Community in every aspect of life in IIT Delhi. The Board adheres to a principle of making itself the organisation of the Students, for the Students, and by the Students.

### Orientation

The orientation for the incoming UG students started on the 20th of July with the Director addressing the students and parents in the Dogral Hall. It was followed by a briefing from the Student Counselors and the Security Head. Later in the evening, the students were invited to the evening games inside LHC where they played different games in various groups. The second day of the orientation was lined up with 3 events - Session with mentors, where the student

## Student Activities

mentors informed them about all the academic details and the rules and regulations here, Department Orientation, where professors from their departments spoke about various aspects of their department, and Registration, where students did all the paperwork and were finally registered as students of IIT Delhi. Next weekend, Tour of Stalls was organized to give a glimpse of various clubs and boards here at IIT to the freshers.

The role of BSW team in organizing the orientation was lauded and appreciated by many parents and was acknowledged by the Director himself on his facebook page.

### STIC Dinner

The annual STIC (Student Teacher Interaction Council) dinner was organized on 5th and 6th of September. It was a fun filled night which strives to initiate interactions between the students and the faculty here. Students were free to interact with them on any topic which can be informal too and resolve all the conflicts with the professors over some amazing dinner. The event went smoothly, and was met with appreciation and admiration by both the students and teachers who graced the event.

### Delhi-Darshan

BSW organized the much-awaited Delhi Darshan on the 3rd & 4th of August. It was a tour across Delhi, relishing the beauty of the city involving indelible bus-rides, exciting ice-breakers for freshers and memories they could cherish forever. A minimal cost of ₹400 was taken from them. It included 2 meals and all travel + ticket expenses.

We visited the Qutub Minar, the Lotus Temple and finally spent some quality time at Lodhi Gardens.

"It was a day filled with games and fun activities" - said a fresher, who said that she hadn't had such a great weekend with friends for a long time.

This enthusiasm and positivity of students is what drives us, at BSW, to endeavour and make IIT a homely environment for all.

### My Ways Workshop

This event was organized in association with MyWays. It was an innovative workshop to help students make decisions keeping in mind one's own skill set and choices. This includes small decisions like which clubs to join in colleges or schools, what internship to apply for, which courses or streams to take up, which college to choose, whether to go for higher studies or for a job and many more.

### Your DOST Safe Cast

This event was organized in association with Your DOST. It was conducted on September 10, 2018 which also marks the World Suicide Prevention Day. The Event was basically just the screening of YourDOST Safe Cast Episode 1.



### Student Alumni Mentorship Event

The first ever student alumni mentorship event conducted in IITD. It was held in Seminar Hall on 14th September, 2018. The basic aim of the event was to connect students with alumni mentors across different career avenues. The speakers for the event were Professor Sanjeev Sanghi, Dean of Alumni Affairs, Pawan Gupta the co-founder of Curofy and Pulkit Garg the Assistant Secretary at the Ministry of Home Affairs. They assisted the students through their immense experience and vast knowledge.

### Foreign Intern Ke Fundae

It was held in LH111 on 9th October, 2018. It was an interactive session where seniors from all the branches shared their experiences as well as tips and tricks on how to bag a foreign intern. They also told about CV making, finding universities or programs, mailing the professors and all other formalities involved along with some additional hacks owing to their personal experiences.

### Benefits of MBA

Organized in association with Wiziuz Careers, this event gave students an insight into the MBA industry. It had an informative and enlightening talk by Mr. Praveen Sharma, a noble alumnus of Harvard University, who obtained an incredible score of 790 in GMAT and has been associated with the MBA industry since 2009.

### Minor Degree Ke Fundae

This session aimed to inform the 1st year and 2nd year students about the importance and advantages of obtaining a minor degree in their field of interest. This was an interactive session, organized with the help of all the departmental societies as well as the 3rd and 4th-year students of IIT Delhi who are currently pursuing a minor degree. During this event first-year students were able to clear any doubts they have, regarding the minor degree such as how to plan their courses to obtain the required credits, how to manage their time



along with their core courses, the benefits a minor degree can have in the future, etc.

### **The Happiness Wall**

Students and teachers all around the campus were given a chance to share their happy thoughts and put it up on the "Happiness Wall". It was a resolution to bring a change and help build a friendly, non-judgemental and supportive campus atmosphere for ourselves and for everyone around.

### **Book Camp**

This camp was conducted to help students of IIT Delhi to buy old/new books from the vendors who were invited by BSW Team. These vendors provide books to IIT Delhi Students on less rates compared to Nominal Rates in the market.

### **Camerathon**

Camerathon is an event conducted by BSW. This event is for freshers. It is a team event. Teams comprise of 3-4 members. It is sort of a treasure hunt competition. It helps students explore the campus and know more about it. While doing so they also need to burn their brain cells and really dig deep into clues. The clues lead to specific places or person in the campus where one has to go and click a photograph with the person or the place and upload it in a drive. They have to complete the whole task in a given time. Each clue has a different difficulty level and points are given accordingly. The Scoreboard is made according to points of each team. Winners are also given some prizes.

### **Rex Karamveer Awards**

BSW in collaboration with the Rex foundation organized this event to felicitate people who have in some way served the society. The event, which took place on the 12th of October in Dogra Hall, was attended by delegates from all over India as well as selected students from IIT Delhi. The event had an opening session, followed by a workshop by Jerry sir- the founder of the Rex Foundation. Lunch was served to all the attendees. The aim of the workshop was to instill sense of confidence in the social entrepreneurs of new India. The attendees or 'Rexters' were then given the Karamveer Chakra – an award recognized by the UN.

## **2. NATIONAL SERVICE SCHEME (NSS)**

The National Service Scheme IIT Delhi, with a volunteer base of over 2000 students and faculties, believes in growing together with the society. NSS has currently over 30 projects in domains of Education, Environment, Health, Society and Innovation where the students step up in lending a helping hand to the lesser privileged and mark a contribution towards a greener and cleaner Earth. The projects aim at generating empathy in volunteers while serving the society.

With projects like Vidya, Bachpan and Aarohan, we have catered to 100+ children in an age group of 8-18 towards

academic as well as personal skill development. The projects like Animal Care and Green Warrior tend to create sustainable campus with a friendly human-animal interaction. We have organized over six Blood Donation Camps with 750+ donations along with camps for Stem Cell Donation. NSS have impacted 250+ families with sessions about government policies and individual rights at Munirka (NSS has reached to more than 300 underprivileged) and for construction workers and guards in IITD. The biannual Collection Drives in Winters and Summers led to donation of 3.5+ truckload of clothes to Goonj NGO and to flood victims.

The debate on topics like Nationalism, Terrorism, Human Rights, Corruption and Value Education for a better World Order tend to actively engage young minds. The celebration of pride was a very unique week-long event organized by volunteers of NSS IITD with an aim to create an inclusive society. Kaizen 2k19 was an agglomerate of Lectures, Competitions, Workshops and a Convention aimed to bring together and provide a platform to over 1000 social change makers.

## **3. NATIONAL CADET CORPS (NCC)**

The National Cadet Corps is an organization aiming at the development of leadership, character, comradeship, spirit of sportsmanship and the ideal of service, among the youth in educational institutions. The motto of NCC is "Unity and Discipline".

## **4. STUDENT COUNSELLING SERVICES (SCS)**

The aim of Student Counselling Services (SCS) of IIT-D is to support the students to enhance their efficiency and output to perform better and to cope with various distresses they experience and to address and satisfy issues of parents regarding their wards and addressing problems of any IITD faculty and staff as per their requirement.

Three components of SCS are firstly, the initial problem which is to be addressed by the counsellors which is subsequently followed by support through psychological therapies and assessment done by the counselors and the referrals by the counsellors to a psychiatrist and other medical intervention if required and thirdly, the follow up sessions with the students and staff.

Counselling in SCS involves therapies based on cognitive, behavioral, rational, emotive, supportive, existential and interpersonal and intrapersonal and personality domains of an individual.

With ample opportunities and service to all our stakeholders, we endeavor to be the change that we wish to see.

### **Common Psychological problems brought at SCS:**

The primary problems that individuals come up with and the SCS deals with, that disturb the individual's emotional, psychological, mental and physical well-being, thus leading to poor coping are stress and anxiety, academic concerns,

depression, forms of eating disorders, anger and low self-esteem, adjustment problems (at personal, family, friends and social levels), relationship issues, peer pressures, time management, coping with issues, problem solving, decision making, personality orientation of self and that of others (social schemas), interpersonal and intrapersonal communication skills, suicide ideations, addictions (smoking, alcohol, drugs, video gaming), cyber bullying, somatoform disorders, issues pertaining to body image and sexuality.

### **5. STUDENT-TEACHER INTERACTION COMMITTEE (STIC)**

STIC (Student-Teacher Interaction Committee) made available funds for Student-Teacher Interactions organised by individual faculty for their respective courses. Also many departments organised dinners involving all their students and faculty by utilizing STIC funds for various courses.

### **6. NATIONAL SPORTS ORGANIZATION (NSO)**

The National Sports organisation is a classification in the scheme of education formulated in furtherance of setting a climate of sports consciousness and improvement of physique among the youth during their period of education. Sports is included in the curriculum at IITD.

### **7. CO-CURRICULAR AND ACADEMIC INTERACTION COUNCIL (CAIC)**

The council is a joint committee of undergraduate students, postgraduate students and faculty that provides feedback to the Board of Undergraduate Studies on all academic and allied matters. By means of suitable dialogues with appropriate authorities, it also tries to solve local as well as general problems of students that are co-curricular and academic in nature.

# 10. Social Responsibility

(April 1, 2018 - March 31, 2019)

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# Social Responsibility

(April 1, 2018 - March 31, 2019)

## RELAXATIONS TO SC/ST/OBC/PD STUDENTS AND STAFF

IIT Delhi is sensitive to the need of the students belonging to the SC/ST community and to those who are having disabilities. Special care and attention are paid to them.

### Relaxation in Admissions

Admission to the first year of the four-year B.Tech., dual degree programmes is made through the Joint Entrance Examination (JEE) Advanced and five year which is held in May and is common for all the IITs.

- The minimum qualifying marks for SC/ST candidates are specially prescribed at a lower level than those for the general category of students.
- The age limit is also relaxable in their case by five years.

### Reservation of Seats

At IIT Delhi, the percentage of seats reserved for SC/ST/OBC/PD candidates is as follows :

	B.Tech.Dual Deg. & Int. M.Tech.	M.Sc.	M.Tech.	M.Des.	M.B.A.
SC	15	15	15	15	15
ST	7½	7½	7½	7½	7½
OBC	27	27	27	27	27
PD	5	5	5	5	5

### Persons with Disabilities (PD)

For any category of disability (viz., locomotor, visual, speech and hearing), benefit is given to those candidates who have at least 40% permanent physical impairment in relation to a bodypart/system/extremity/extremities/wholebodyetc. The candidates in this category are required to produce a certificate.

### SCHOLARSHIPS AND FINANCIAL ASSISTANCE

All SC/ST students are given scholarships and financial assistance as detailed below:

- All SC/ST Students are exempted from payment of tuition fee.
- Free messing (basic menu) and a pocket allowance of ₹250/- per month in lieu of the merit-cum-means scholarship for the students having annual family income upto ₹4.5 lacs. However, they will pay the hostel seat rent as applicable from time to time.

- SC/ST students who fail in the examination for the first time continue to receive the free messing subject to a maximum limit of five years.
- SC/ST students are loaned books from the book bank without payment of any loan fee. The books are, however, required to be returned at the end of each semester.

### PREPARATORY COURSE

A one-year preparatory course is also run for SC/ST/PD candidates. Candidates admitted to this programme are amongst those who appeared for the JEE (Advanced) but were unsuccessful in qualifying for admission. The number admitted to this programme varies from year to year depending upon the number of SC/ST/PD candidates who were successful in gaining regular admission with the total number of candidates admitted to the regular B.Tech.

Dual Degree Integrated M.Tech. programmes as well as the preparatory course being limited to the above indicated percentage. Preparatory course students undergo zero level courses in Physics, Chemistry, Mathematics and English.

Candidates who successfully complete the preparatory course are eligible to seek admission during the following academic year against the vacant SC/ST/PD seats of the current year. Alternately, in case they desire a discipline of their choice, they must reappear for the JEE (Advanced) in the subsequent year. SC/ST Preparatory course students are also eligible to receive free messing and pocket allowance on the basis of the same norms as for regular undergraduate students belonging to SC/ST category.

### OTHER FACILITIES

- Reduction in the academic load in subsequent semester in case they do not maintain the required semester grade point average (SGPA).
- Tutorial type remedial courses with half the normal credits.
- Special courses during the summer vacations to make up for the credit requirements due to reduced load during the regular semesters.
- Counselling service to help such students to better adjust to campus life and environment.

### CONCESSIONS ALLOWED TO STAFF

I.I.T. Delhi follows the Government of India rules governing reservation for Scheduled Castes/Scheduled Tribes, OBC and Physically Handicap persons. Appointments made in respect of these categories during the year under report are given below:

No. of Candidates Appointed					
Groups	Scheduled Castes	Scheduled Tribes	OBC	PD	Total
A	0	0	1	0	1
B	0	1	1	0	2
C	12	2	17	0	31
D	0	0	0	0	0
<b>Total</b>	12	3	19	0	34

**SUMMER RESEARCH FELLOWSHIP PROGRAMME**

The main objectives of this programme are - to help inculcate research culture among the faculty members of educational institutions outside the IIT system, to provide orientation towards research through interaction with the mentors and other research students and exposure to the facilities and labs, with a view to eventually motivate them to undertake higher studies and research activities within or outside IIT Delhi. The feedback received from both the fellows and the mentors so far has been quite positive and encouraging. Under the Summer Faculty Research Fellowship Programme of the Institute organized under the CEP, 98 faculty fellows joined this year and they come from 86 different colleges/Institute representing 16 states of the country. They have been associated with a total of 58 faculty mentors. They spent about six weeks during the summer and worked with IIT faculty mentors.

**COMMITMENTS IN SUSTAINABILITY AND ENVIRONMENT**

The Institute has rolled out initiatives to make the campus more Sustainable and Environment friendly. The Institute has taken measures in this direction by addressing different major aspects – Biodiversity, Energy, Water Conservation and Minimizing Waste. "In regard of this, the institute has constituted a dedicated and independent "Green Office" consisting of members knowledgeable in environmental issues, green technologies and practices besides Sustainable IIT Delhi student organization. The purpose of Green Office and Sustainable IITD is to "track, monitor and steer the institute towards green practices."

An active team is dedicated towards implementing solutions and bringing about sustainable changes by translating research into action on campus. In order to maintain sustainability, Institute has been indulged with various activities throughout the year. Institute laying great emphasis on Solar Energy & Horticulture, and has been actively focusing on underground Water Pumping, Water Management, Waste management.

**COMMUNITY**

The Institute is indulged in nation building activities through

various events and projects which are aimed towards the benefit of community. We share the belief that such activities are almost always means of great satisfaction and joy The Institute has a volunteer base of around 2000 students belonging to various disciplines and degrees of IIT Delhi. The Institute works on a diverse range of social issues broadly under five domains - Education, Environment, Health, Social Innovation and Society.

IIT Delhi has been Contributing to the country through various channels, one of in this chain is RuTAG.

The RuTAG IIT Delhi was established in January 2009. IIT Delhi has been allocated to coordinate the RuTAG activities in the states of Uttar Pradesh, Madhya Pradesh, Chhattisgarh, Rajasthan, Haryana, and Delhi. The idea is to identify technology needs of the region, available technology solutions, problems encountered in adopting the existing technology at the grassroots, identify R&D institutions which can improve the technology, assessment of the existing technology, find out solutions to overcome the technological problems, and adapt a rural technology through R&D institutions to suit specific conditions using local resources.

Activities of RuTAG during the period:

- "Design and development of efficient and less polluting Potters Kiln in Unch, Bharatpur", P.I. – Prof. M.R. Ravi and Prof. Sangeeta Kohli, Department of Mechanical Engineering, IIT Delhi.
- RuTAG IIT Delhi demonstrated technologies of all RuTAG Centers at PHD Chamber exhibition at Mahindra College, Patiala on April 11, 2018.
- Mr. Davinder Pal Singh and Mr. Mangal Sharma visited Sundarban, West Bengal during March 24, 2018 – April 02, 2018 to install two treadle pumps improved by IIT Delhi.
- Mr. Davinder Pal Singh, Mr. Ashish and Mr. Mangal Sharma visited Bharmour, Himachal Pradesh to test newly developed Comb and Cutter and Handpiece for Sheep Hair Shearing Device during May 17-24, 2018.
- Metallic Loom for Carpet Weaving P.I. – Prof. S.K. Saha, Dept. of Mechanical Engineering, IIT Delhi, Collaborating NGO – Rajasthan Carpet and Woolen Products Development Society (R.C.W.P.D.S), Jaipur, Rajasthan.
- "Development of More Ergonomic and Efficient Street Sizing System for Chirala Handloom Cluster", P.I. – Prof. Samrat Mukhopadhyay, Dept. of Textile Technology, IIT Delhi, Collaborating NGO – Rastra Chenetha Jana Samakhya (RCJS), Chirala, Prakasam, Andhra Pradesh.
- "Design Improvement of Tulsi Mala Making Device", P.I. – Prof. Subir Kumar Saha, Dept. of Mechanical Engineering, IIT Delhi Collaborating NGO – Human Social Welfare, Moh. Ganesh Ganj Lalla Wala Nohara, Hathras.

# 11. Alumni Contribution

(April 1, 2018 - March 31, 2019)

The Alumni are a very valuable resource for the Institute, and increasingly, they have started to make a difference to the way things are done at IIT Delhi. The Alumni have directly contributed for instituting Chair Professorships, Young Faculty Incentive Fellowships and Student Awards and even for Infrastructure Development.

The Institute has garnered excellent support for its vision and mission from its Alumni during the year.

Some of the contributions from the Alumni in the previous year are listed below and are gratefully acknowledged:

Contributor	Contribution in Rupees	Contribution For
Alumni of 1997 Batch	9,77,509.91	Batch of 1997 Donation
Alumni of 1967 Batch	3,41,288.00	Golden Jubilee 1967 Batch Donation
Alumni of 1982 Batch	3,18,458.00	1982 Pearl Reunion Endowment Fund
Alumni of 1983 Batch	75,91,872.00	1983 Pearl Reunion Endowment Fund
Alumni of 1984 Batch	47,77,686.00	1984 Pearl Reunion Endowment Fund
Alumni of 1994 Batch	1,86,77,436.00	1994 Silver Jubilee Reunion Endowment Fund
Alumni of 1969 Batch	1,05,22,822.00	1969 Golden Jubilee Reunion Endowment Fund
Mr. Gagan Hasteer (Alumni of Batch 1994)	98,14,870.00	Usha Hasteer Chair
Multiple Donors	79,84,788.00	Anshul Kumar Professorial Chair
Alumni of 1966 Batch	20,03,186.00	Class of 66 Batch Endowed Chair Professorship
Multiple Donors	18,09,000.00	HI-Tech Chair
Mr. Ajay Gupta (Alumni)	96,45,162.00	Prof. Kishan & Pramila Gupta Chair
Prof. Soumitra Dutta	18,86,633.00	Soumitra Dutta Chair
YES Bank	5,00,000.00	YES Bank Chair
Vikendrit Technologies Pvt. Ltd.	18,00,000.00	Consen Sys Blockchain Chair
Tek Travels Pvt. Ltd. (Mr. Gaurav Bhatnagar Alumni)	16,00,000.00	TBO Group Fellowship for Women
Multiple Donors	50,00,000.00	Tower Research Capital Scholarship
Mr. Anshuman Goyal	7,57,892.00	G.P. Goyal Doctoral Fellowship Grant
Mr. Ramesh C. Kapur (Alumni)	58,71,063.00	<ul style="list-style-type: none"> <li>• Ramesh &amp; Chanda Kapur Scholarship</li> <li>• Manohar Lal and Indravati Kapur Scholarship</li> <li>• Bihari Lal and Lajvanti Batra Scholarship</li> </ul>
Mr. B.P. Jain	20,00,059.00	Bimal Saroj Charitable Society Scholarship
INOX Air Products Pvt. Ltd. (Mr. P.K. Jain Alumni)	20,00,000.00	INOX Scholarship
Ramboll India Pvt. Ltd.	5,20,000.00	Ramboll Subvention Program
Mr. Prakash Singh	4,00,000.00	Himalyan Scholarship
Mr. Mohit Jain	20,00,000.00	Pushpa Sankhla Scholarship
Mr. Rajesh Goel (Alumni)	4,00,000.00	Surbhi Goel Scholarship

## Alumni Contribution

Mr. Kartikeya Gupta	1,50,000.00	Nitin Gupta Award
Mr. K. Ananth Krishnan (Alumni)	30,00,000.00	<ul style="list-style-type: none"> <li>• Sulochana and Colonel A. Krishnaswami Vrc VSM &amp; Bar FLRA</li> <li>• Prof. K.L. Chopra for Basic Research Faculty Research Award</li> <li>• Prof. P.C.P. Bhatt Faculty Research Award for Applied Research</li> <li>• Janaki and K.A. Iyer Chair</li> </ul>
Mr. Arun Duggal (Alumni)	5,00,000.00	Arun Duggal Award
Mr. Saurabh Mittal	7,95,00,000.00	Mittal Sports Complex
Mr. Amarjit Bakshi (Alumni of 1966 Batch)	1,00,00,000.00	General Purpose
INOX Air Products Pvt. Ltd. (Mr. P.K. Jain Alumni of 1972 Batch)	30,52,680.00	INOX Lab
Multiple Donors	24,82,634.00*	IIT Giving Week 2019
Multiple Donors	9,48,900.00	IIT Delhi Giving Day
Multiple Donors	16,97,678.63	IITD CS&E Research Acceleration Fund
Mr. Diwakar Bhargava (Alumni)	17,56,022.00	Department of Nuclear Engineering
Tower Research Capital Market Pvt. Ltd.	40,00,000.00	<ul style="list-style-type: none"> <li>• CSR Tower Research Capital Market Pvt. Ltd.</li> </ul>
Various Alumni	50,620.01	<ul style="list-style-type: none"> <li>• STAY-CON</li> </ul>
Multiple Donors	2,40,053.00	<ul style="list-style-type: none"> <li>• Miscellaneous</li> </ul>
<b>Total</b>	<b>20,65,78,713.00</b>	

\* Out of this, ₹12,72,943/- has been received in the Institute.



# 12. Financials

(April 1, 2018 - March 31, 2019)

The Institute is financed by the Department of Higher Education, Ministry of Human Resource Development, Government of India. During 2017-2018, the Institute received a grant of ₹65,400.20 lakhs from the Ministry of Human Resource Development to meet its yearly expenses. The Institute receives funds for sponsored research projects and for consultancy assignments being undertaken by the Institute from several funding agencies and Industries. The financial year of the Institute corresponds with that of Govt. of India i.e. 1st April to 31st March. The accounts of the Institute are annually audited by the Director General of Audit & Central Revenue of India. The 117<sup>th</sup> Finance Committee of the Institute (shown in the box on the side) in its meeting held on 2-12-2018 recommended Plan (Normal) under (OH-35) Revised Estimates for ₹49,200 lakhs for the year 2018-2019 and Budget Estimates for ₹50,600 lakhs for the year 2019-2020 respectively and Plan under (OH-31 & OH-36) Revised Estimates for ₹65,697 lakhs for the year 2018-19 and Budget Estimates for ₹65,751 lakhs for the year 2019-20.

The following are the details for the financial year 2017-2018 and 2018-2019:

## FINANCE COMMITTEE

(As on 31.3.2019)

**V. Ramgopal Rao, Chairperson (Officiating)**

Prashant Agarwal

Anil Kumar

Nalin Pant

Devinder Singh

Kanika T. Bhal (Ms.)

K.C. Iyer

M. Balakrishnan

Ashok Gupta

Mohd. Shamim

Sandeep Chatterjee, Secretary

## PLAN (Non Recurring) OH-35

**Detailed Statement showing the Actual Receipt and Expenditure for 2017-18, 2018-19 along with Revised Estimates and Budget Estimates 2019-20**

Head of Income	Actuals 2017-18 (₹ in Lakhs)	Budget Estimates 2018-19 (₹ in Lakhs)	Revised Estimates 2018-19 (₹ in Lakhs)	Actuals 2018-19 (₹ in Lakhs)	Budget Estimates 2019-20 (₹ in Lakhs)
<b>A. Receipt</b>					
Plan Grant from MHRD carryforward	(-) 3,875.66	-		7,725.22	
Plan Grant from MHRD (Normal)	16,800.00	50,500.00	49,200.00	7,671.00	50,600.00
Special Plan Grant from MHRD	10,500.00	-		3,000.00	
Special Plan Grant under IOE Scheme				4229.34	
Grant Receivable from MHRD	2,774.78	-		-	
Over spent to be adjusted with Corpus Fund				8,059.62	
<b>Total A</b>	<b>26,199.12</b>	<b>50,000.00</b>	<b>49,200.00</b>	<b>3,0685.18</b>	<b>50,600.00</b>
<b>B. Expenditure</b>					
Normal Development Activities & Increase of Students Intake (including new hostel) New Courses Modernisation & Thrust Areas					
(i) Non-Recurring	15,699.12	50,500.00	49,200.00	19,533.65	50,600.00
Commitments against L.C.'s for the year 2017-2018 Special Plan Grant	10,500.00	-		11,151.53	
<b>Total B</b>	<b>26,199.12</b>	<b>50,500.00</b>	<b>49,200.00</b>	<b>3,0685.18</b>	<b>50,600.00</b>



**Detailed Statement showing the Actual Receipt and Expenditure for 2017-18, 2018-19 alongwith Revised Estimates and Budget Estimates 2019-20**

Head of Expenditure	Actuals 2017-18 (₹ in Lakhs)	Budget Estimates 2018-19 (₹ in Lakhs)	Revised Estimates 2018-19 (₹ in Lakhs)	Actuals 2018-19 (₹ in Lakhs)	Budget Estimates 2019-20 (₹ in Lakhs)
<b>Major Works</b>					
On Going Schemes	12,131.20	20,000.00	17,000.00	5,806.96	20,000.00
Repair & Maintenance on Buildings	-	1,000.00	1,500.00	1,123.64	1,500.00
Fresh Schemes/Projects	-	20,000.00	20,000.00	-	20,000.00
Teaching Equipment/Computerization	2,538.80	6,000.00	6,000.00	5,767.31	5,000.00
Office General Equipments, Hospital Equipments/ Furniture and Fixtures & Institute Level Network	519.45	1,700.00	1,700.00	891.32	1,800.00
Motor Vehicles	-	-	-	-	-
Research Funds, Central Facilities & Thrust Areas	292.31	300.00	300.00	288.15	300.00
Library Books & Journals	217.36	1,500.00	2,700.00	2613.82	2,000.00
Web Based Academic Systems	-	-	-	-	-
Institute Level Network	-	-	-	-	-
World Class Institutions Scheme (IOE)				1,942.45	
Science Park				1,100.00	
<b>Total</b>	<b>15,699.12</b>	<b>50,500.00</b>	<b>49,200.00</b>	<b>19,533.65</b>	<b>50,600.00</b>

**PLAN (Recurring) OH-31 & OH-36**

**Detailed Statement showing the Actual Receipt and Expenditure for 2017-18, 2018-19 along with Revised Estimates and Budget Estimates 2019-20**

Head of Income	Actuals 2017-18 (₹ in Lakhs)	Budget Estimates 2018-19 (₹ in Lakhs)	Revised Estimates 2018-19 (₹ in Lakhs)	Actuals 2018-19 (₹ in Lakhs)	Budget Estimates 2019-20 (₹ in Lakhs)
Institute Income	10,812.86	9,823.00	10,252.00	11,705.54	10,302.00
Normal Grant from MHRD	38,100.20	48,232.00	54,445.00	47,981.00	55,449.00
Special Grant under IoE Scheme	-	-	-	66.66	-
Special Grant under P.M. Research Fellowship	-	-	-	181.30	-
<b>Total</b>	<b>48913.06</b>	<b>58,055.00</b>	<b>64,697.00</b>	<b>59,934.50</b>	<b>65,751.00</b>

**PLAN (Recurring) OH-31 & OH-36**

**Detailed Statement showing the Actual Receipt and Expenditure for 2017-18, 2018-19 along with Revised Estimates and Budget Estimates 2019-20**

Head of Expenditure	Actuals 2017-18 (₹ in Lakhs)	Budget Estimates 2018-19 (₹ in Lakhs)	Revised Estimate 2018-19 (₹ in Lakhs)	Actuals 2018-19 (₹ in Lakhs)	Budget Estimates 2019-20 (₹ in Lakhs)
Pay & Allowances	24,149.25	29,200.00	26,385.00	26,380.22	27,385.00
Pension	6,389.98	10,105.00	12,500.00	10,165.95	11,000.00
Institute Scholarship	5,038.08	6,200.00	7,000.00	5,333.64	7,000.00
Academic Expenses	1,136.97	1,600.00	1,500.00	1,271.56	1,600.00
Educational Expenses	1,105.38	1,200.00	1,100.00	1,329.12	1,200.00
Estate Maintenance	7,190.01	7,400.00	8,500.00	7,154.90	8,500.00
Office Contingencies, Misc. & Commitments/Provisions	2,200.65	2,350.00	2,576.00	3,062.08	2,680.00
HEFA Loan Repayments	-	-	5,886.00	3,643.00	5,886.00
HEFA Loan Interest Repayments	-	-	250.00	147.07	500.00
Expenditure under IoE Scheme	-	-	-	64.22	-
Expenditure under P.M. Research Fellowship	-	-	-	104.91	-
<b>Total</b>	<b>47,210.32</b>	<b>58,055.00</b>	<b>65,697.00</b>	<b>58,656.67</b>	<b>65,751.00</b>

## INCOME

Detail Statement showing the Actual Income for 2017-18, 2018-19 along with Revised Estimates and Budget Estimates 2019-20

Head of Income	Actuals 2017-18 (₹ in Lakhs)	Budget Estimates 2018-19 (₹ in Lakhs)	Revised Estimates 2018-19 (₹ in Lakhs)	Actuals 2018-19 (₹ in Lakhs)	Budget Estimates 2019-20 (₹ in Lakhs)
<b>Academic Receipts</b>	4,424.29	4,200.00	4,500.00	5,270.65	4,500.00
<b>Receipt-Central Administration</b>					
Interest on Investments/Savings Account	1,798.72	1,000.00	1200.00	2,452.85	1,200.00
Charges for use of Staff Cars and Buses	17.80	20.00	17.00	16.99	17.00
Application Fee	44.41	100.00	50.00	83.53	50.00
Sponsored Project/Consultancy and CEP	43.22	50.00	50.00	-	50.00
<b>Works &amp; Building</b>					
Licence Fee	262.43	325.00	320.00	285.57	320.00
Seat Rent	631.10	625.00	700.00	912.18	750.00
Water & Electricity	543.69	500.00	450.00	481.31	450.00
Hospital & Medical	2.52	3.00	3.00	89.76	3.00
Guest House	253.68	250.00	240.00	291.53	240.00
Joint Entrance Exam	433.74	450.00	432.00	367.55	432.00
GATE	2,004.18	2,000.00	2,000.00	1,125.47	2,000.00
Joint Admission Test for M.Sc.	147.35	150.00	160.00	154.22	160.00
Misc./Other Receipts (including sale of obsolete equipments)	205.73	150.00	130.00	173.88	130.00
<b>Total</b>	<b>10,812.86</b>	<b>9,823.00</b>	<b>10,252.00</b>	<b>11,705.54</b>	<b>10,302.00</b>

## INTERNAL AUDIT

Internal Audit is an independent, objective assurance and consulting activity designed to add value and improve an organization's operations. Internal Audit Section is functioning independently as per Revised Audit System (w.e.f.01/12/2011) directly under the control of the Director, supported by Joint Registrar (Audit). The section conducts the Internal Audit of the Departments/Centres/Sections and suggests measures to strengthen Internal Control. The Internal Audit Section also renders advise on various financial as well as administrative/service matters as per needs of the Institute. During the financial year 2018-19, 44 units have been internally audited.



# Appendix I

## SENATE

(As on 31.03.2019)

V. Ramgopal Rao (Director): Chairperson	Anoop Chawla	S.D. Joshi	Aparna Mehra (Ms.)
Ashok Gupta (Dy. Director, Operations)	Ashish K. Darpe	R.R. Kalaga	B.R. Mehta
M. Balakrishnan (Dy. Director, Strategy & Planning)	Apurba Das	S.R. Kale	D.S. Mehta
Abhijit R. Abhyankar	Manoj Datta	Prem Kumar Kalra	Saroj Mishra (Ms.)
Ashwini K. Agrawal	S. Dharmaraja	T.C. Kandpal	Sukumar Mishra
V.K. Agarwal	S.G. Deshmukh	Santosh Kapuria	Prashant Mishra
Babu J. Alappat	Swades K. De	I.N. Kar	Aditya Mittal
R. Alagirusamy	Anupam Dewan	Subrat Kar	Subodh V. Modak
S. Aravindan	Chinmoy Sarkar Dey	Ravinder Kaur (Ms.)	Ratan Mohan
S.K. Atreya	J.K. Dutt	Dev Raj Kaushal	Manju Mohan (Ms.)
R. Bahl	Anil Jacob Elias	Saroj Kaushik (Ms.)	Sudipto Mukherjee
D.K. Bandhopadhyay	Naveen Garg	A.K. Keshari	S. Nagendran
S. Banerjee	A.K. Ganguli	Rajesh Khanna	Atul Narang
Varsha Banerjee (Ms.)	Anup K. Ghosh	Mukesh Khare	K. Narayanan
Ananjan Basu	Santanu Ghosh	S.K. Khare	R.B. Nair (Ms.)
S. Basu	N.K. Garg	Neeraj Khare	S.N. Naik
Kanika T. Bhal (Ms.)	Rahul Garg	Rakesh Khosa	Sunil Nath
Suresh Bhalla	James Gomes	Veena Koul (Ms.)	Arvind K. Nema
A.N. Bhaskarwar	A.K. Gosain	Sangeeta Kohli (Ms.)	Pulak Mohan Pandey
B. Bhattacharjee	V.R. Gunturi	S.K. Koul	Raj Kumar Pandey (ITMMEC)
T.S. Bhatti	Pradeep K. Gupta	Anshul Kumar	Raj Kumar Pandey (ME)
Naresh Bhatnagar	Bhuvanesh Gupta	D. Ravi Kumar	B.K. Panigrahi
B.K. Behera	Deepti Gupta (Ms.)	Subodh Kumar	Kolin Paul
Bijoy H. Boruah	M.P. Gupta	S. Kundu	B.P. Patel
Vivek Vithal Buwa	S.K. Gupta (Ch.E.)	Ajit Kumar	Sudip Pattanayak
G. Bhuvanewari (Ms.)	S.E. Hasnain	Amit Kumar	Sanjiva Prasad
Jayashree Bijwe (Ms.)	Sriram Hegde	Arun Kumar (Phy.)	B.S. Panda
V.S. Bisaria	Harish Hirani	Arun Kumar (CARE)	Preeti Ranjan Panda
Ranjan Bose	S.M. Ishtiaque	Bishwajit Kundu	Sunil Pandey
B.R. Chahar	K.C. Iyer	Sunil Kumar	Siddharth Pandey
Mukesh Chander	Joby Joseph	S. Arun Kumar (CS&E)	K.K. Pant
V.M. Chariar	Josemon Jacob	N.D. Kurur	Nalin Pant
N. Chatterjee	A.K. Jain	Brejesh Lall	G.V. Prakash
Ratnamala Chatterjee (Ms.)	Sanjeev Jain	Alok Madan	Shankar Prakriya
R. Chattopadhyay	M. Jagadesh Kumar	Puneet Mahajan	Rajesh Prasad
Santanu Chaudhury	Manjeet Jassal (Ms.)	Anushree Malik (Ms.)	A. Ramanan
Sujeet Chaudhary	B. Jayaram	Hitendra K. Malik	N.G. Ramesh
Tapan Kumar Chaudhuri	Jayadeva	Ranjan Kumar Mallik	A.D. Rao
Pramit Kumar Chowdhury	Neeraj Kumar Jha	Shashi Mathur	K.S. Rao
	Mangla Joshi (Ms.)	Mausam	P.M.V. Subbarao
	Sunil Jha	Vasant Annasaheb Matsagar	P.V. Rao

contd. ....

S.C.S. Rao	Mukul Sarkar	Maloy Kumar Singha	Sushil
Anurag Singh Rathore	Huzur Saran	Aloka Sinha (Ms.)	N. Tandon
M.R. Ravi	Anil Kumar Saroha	Sujeet K. Sinha	Prabal Talukdar
V. Ravishankar	P. Senthilkumaran	Bhim Singh	Geetam Tiwari (Ms.)
Anjan Ray	Jagdish T. Sahu	A.K. Singh	Amitabha Tripathi
G.B. Reddy	Kushal Sen	Harpal Singh	C.A. Tomy
R.S. Rengasamy	Sandeep Sen	Jai Deo Singh	Sreedevi Upadhyayaula (Ms.)
P.K. Roychoudhury	Ravi Shankar (Chy.)	J.P. Singh	V. Upadhyay
Shantanu Roy	Ravi Shankar (DMS)	Purnima Singh (Ms.)	Sanil V.
Sumantra Dutta Roy	Maithili Sharan	S.N. Singh	R.K. Varshney
Nilanjan Senroy	Anurag Sharma	S.P. Singh	M. Veerachary
Subir Kumar Saha	R.K. Sharma	R.K. Soni	S.V. Veeravalli
Dipti Ranjan Sahoo	Satyawati Sharma (Ms.)	K. Sreenadh	V.K. Vijay
Ambuj D. Sagar	M.R. Shenoy	A.K. Srivastava	S.S. Yadav
Sanjeev Sanghi	Anupam Shukla	Pankaj Srivastava	Sandeep Chatterjee (Registrar): Secretary
Sameer Gupta	A.K. Shukla	T.R. Sreerishnan	

**EXECUTIVE COMMITTEE OF THE SENATE (ECS)**

(As on 31.03.2019)

		SPECIAL INVITEES
V. Ramgopal Rao, Chairperson	Anurag Sharma	D. Ravi Kumar
M. Balakrishnan	B.K. Behera / Ashwini K. Agarwal	Ashwini K. Agarwal / Pankaj Srivastava
Ashok Gupta	Huzur Saran / Prem K. Kalra	S.K. Khare
Bhim Singh	Viresh Dutta / T.C. Kandpal	James Gomes / Bishwajit Kundu
Sandeep Sen / Sudipto Mukherjee	Shouri Chatterjee	A.K. Saroha / A.K. Nema
B.R. Mehta	Jayashree Bijwe (Ms.)	Sangeeta Kohli (Ms.)/Angelie Multani (Ms.)
Sanjeev Sanghi	Josemon Jacob	Joby Joseph
T.R. Sreerishnan / Rajesh Khanna	V.K. Vijay	Shantanu Roy
V.K. Agarwal / K.C. Iyer	Rahul Garg	Bishwajit Kundu / Abhijit R. Abhyankar
Kanika T. Bhal (Ms.)	Brejesh Lall	Deepti Gupta (Ms.)
S.V. Veeravalli / Puneet Mahajan	P.R. Panda	Anurag Singh Rathore
Atul Narang	Tapan K. Chaudhuri / James Gomes	Subrat Kar
Rajesh Khanna / K.K. Pant	Ambuj D. Sagar	S. Dharmaraja
Ravi Shankar / A.K. Ganguli	A. Ramanan	Anil Wali
N.K. Garg	Nabi Hasan	K.K. Pant
S. Arun Kumar / Sanjiva Prasad	P.V.M. Rao	Nalin Pant
S.D. Joshi	Ananjan Basu	K. Narayanan
Purnima Singh (Ms.)	Manju Mohan (Ms.)	Anishya Madan (Ms.)
M.P. Gupta	Veena Koul (Ms.) / Harpal Singh	
K. Sreenadh	A.K. Ghosh	
S.K. Saha / P.V. Rao	Sandeep Chatterjee (Registrar): Member-Secretary	

## Appendix II

# ADMINISTRATIVE AND OTHER STAFF

(As on 31.03.2019)

ADMINISTRATION	
Sandeep Chatterjee	Registrar
M.K. Gulati	Joint Registrar (Audit)
Kalyan Kumar Bhattacharjee	Joint Registrar (FAA, E-II, E-I, Manpower Training, R&I)
Atul Vyas	Joint Registrar (Academics, Publication Cell)
Mohd. Shamim	Deputy Registrar (Main Accounts)
N. Bhaskar	Deputy Registrar (Director's Office, Health Unit, Legal, Vigilance, Nodal Officer for Public Grievance/PG Portal, Gender Grievance & Related Work)
V.K. Vashistha	Assistant Registrar (IRD)
Alan V. Siante	Assistant Registrar (Store Purchase Section)
Raj Kumar Gupta	Assistant Registrar (Accounts)
Mukesh Chand	Assistant Registrar (SAS)
Ramesh Kumar Thareja	Assistant Registrar (E-II, Recruitment Cell) On contract
S.N. Tiwari	Assistant Registrar (Conference, CDN, Hindi Cell)
Debranjana Mukherjee	Assistant Registrar (R&D Accounts)
Sanjay Pande	Assistant Registrar (Alumni Affairs & Intl. Programmes, PIO, RTI)
Amitabh Mukherjee	Assistant Registrar (Accounts)
S.K. Gohar	Assistant Registrar (Academics)
Rama Sharma (Ms.)	Assistant Registrar (IRD)
Mukesh Khandelwal	Institute Engineer (on deputation)
G.K. Taneja	Executive Engineer
K.M. Vijay Kumar	Executive Engineer
Anuj Gaur	Executive Engineer
Rafat Jamal	Assistant Executive Engineer
V.K. Bharaj	Assistant Executive Engineer
Prem Kumar	Assistant Executive Engineer
Brahm Prakash	Assistant Executive Engineer
Ashok Kumar	Assistant Executive Engineer
Raju Ram Parihar	Assistant Executive Engineer
Pradip Karmarkar	Assistant Executive Engineer
Prem Singh Rawat	Assistant Executive Engineer
Anishya Obhrai Madan (Ms.)	Industrial Liaison Officer
Shiv Prakash Yadav	Public Relations Officer
Deepak Negi	Sports Officer
Shachi Mathur (Ms.)	Student Counsellor
Sandeep Sharma	Security Officer

## Administrative and other Staff

contd. ....

### ADMINISTRATIVE COMPUTERISATION SUPPORT SERVICE

Huzur Saran	Head
K. Narayanan	Senior System Manager (SG)
Pardeep Kumar Gupta	Senior System Manager (SG)
S.R. Hedge	Senior System Manager (SG)

### STUDENT COUNSELLING SERVICE

Sangeeta Kohli (Ms.)/Angelie Multani (Ms.)	Head
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### PROFESSORS-IN-CHARGE OF DIFFERENT SECTIONS

Rakesh Khosa	Professor-in-Charge (Guest Houses & Halls)
Nalin Pant	Professor-in-Charge (EHLS Unit)

### TRAINING AND PLACEMENT

S. Dharmaraja	Head
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### HINDI CELL

S.S. Yadav/Seema Sharma (Ms.)	Head
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### LIBRARY

K.K. Pant	Chairperson (Advisory Committee for Library)
Nabi Hasan	Librarian

### IIT HOSPITAL

Lily Khosa (Ms.)	Chief Medical Officer (SAG), (Additional charge, Head, Hospital Services)
Ajay Kumar Jain	Chief Medical Officer (SAG)
Renu Misuriya (Ms.)	Chief Medical Officer (SAG)
Mahesh Kumar Sagar	Chief Medical Officer (SAG)
Anila Khosla (Ms.)	Chief Medical Officer (NFSG)
P.K. Rajesh	Senior Medical Officer
Md. Ashafaque Hussain	Senior Medical Officer
Sayed Yasmeeen Raunaq	Senior Medical Officer
L. Pangerlemba	Senior Medical Officer
Rajlaxmi Borah (Ms.)	Medical Officer (on contract)
Shalini Singh (Ms.)	Medical Officer (Dental) (on contract)

## Appendix III

### OTHER COMMITTEES

(As on 31.03.2019)

BUILDING AND WORKS COMMITTEE	
V. Ramgopal Rao, Chairperson	P.S.N. Rao
S. Ramanujam	V.K. Agarwal / K.C. Iyer
Rajendra Kalla	Deepti Gupta (Ms.)
K.N. Rai	Bishwajit Kundu / Abhijit R. Abhyankar
Ashok Khurana	M. Balakrishnan
Mukesh Khandelwal	Ashok Gupta
K.J. Singh	Sandeep Chatterjee, <i>Secretary</i>

ADVISORY COMMITTEE FOR LIBRARY	
K.K. Pant - Chairperson	Vivekanandan Perumal
B.P. Patel	Seshan Srirangarajan
Atul Narang	Divya Choudhary (Ms.)
Jyoti Phirani (Ms.)	Faraz Mazar
A. Ramanan	Ankush Shaw
R.R. Kalaga	Rahil Choudhary
Naveen Garg	Seema Sharma (Ms.)
Shubhendu Bhasin	Vivek V. Buwa
Naveen Thayyil	Rahul Garg
Mahim Sagar	Divya Dwivedi
S. Sivananthan	Harish Choudhary
S.P. Singh	Amruta Mishra (Ms.)
Vikrant Saxena	Mangla Joshi (Ms.)
Bhanu Nandan	T.S. Bhatti
Sumer Singh	N. Tandon
Sampa Saha	Samaresh Das
Krishna Achuta Rao	J.K. Sahu
Harpal Singh	Aaditeswar Seth
K.A. Subramanian	Aditya Mittal
S. Fatima (Ms.)	Ranjan K. Malik
Pushpraj Singh	Anupma (Ms.)
Kavya Dashora (Ms.)	Lokesh Kumar Badyal

## Other Committees

contd. ....

Amit Gupta	Dhruv Gupta
Sumer Singh	Aryaman
Amit Kumar	S.S. Yadav
Sumeet Agrawal	Nabi Hasan, <i>Member-Secretary</i>

### COMPUTER USERS' COMMITTEE

Huzur Saran / Prem Kumar Kalra, Chairperson	Dinesh Kalyanasundaram / Sandeep Jha
Arjun Sharma / Gaurav Singh	Ramesh Narayanan / D. Sahu
D. Sundar	Mahesh Abegaonkar / Prabhu Babu
Gaurav Goel	J.K. Sahu / Kavya Dashora (Ms.)
Hemant Kashyap	Ashok Patel
D.R. Sahoo	Satish Kumar Dubey
Subodh Sharma / Mausam	Deepak Kumar
Sumeet Agarwal	Upasna Sharma (Ms.)
Sourabh B. Paul	Prathosh A.P.
Arpan Kumar Kar / Harish Chaudhry	Gopal Krishan
Harish Kumar	Pragya Jain (Ms.)
D. Dube	Sanyam Agarwal / Aishwarya Singh (Ms.)
Sujin B. Babu	Yash Agarwal / Harsh Gupta
Sourabh Ghosh	Arshdeep Singh Goindi / Nishad Singh
Srinivasan Venkataraman	Smarthveer Sidana / Akhil Kumar
Jayant Jain	Sangeeta Kohli (Ms.)
Dilip Ganguly	Sunil Kak, <i>Member-Secretary</i>