



Director's Report

Honourable Shri BVR Mohan Reddy, Smt. Sudha Murty, Dr. Tessy Thomas, Shri Pullela Gopichand, Dr. K Radhakrishnan, Honourable Chairman, Board of Governors of the Indian Institute of Technology Kanpur, Members of the Board of Governors, Members of the Academic Senate, all graduating students and their family members, members of faculty, alumni, staff and student community, invited dignitaries, guests, and members of the media: I heartily welcome you all to the Fifty Second Convocation of the Indian Institute of Technology Kanpur. I would also like to congratulate the graduating students and their families on this joyous occasion.

ACADEMIC ACTIVITIES

The academic session ending in May 2019 has been immensely rewarding, and it is a privilege for me to recount some of its major highlights.

It is a moment of pride for me to inform you that the total number PhD degrees being awarded at this Convocation is 208. The number is by far the highest in the history of our Institute.

To encourage outstanding scholars to join the doctoral programme directly after their bachelors programme, the Senate approved the provision for an additional masters degree to be awarded along with PhD, subject to the fulfillment of a defined set of academic requirements. I am delighted to inform you that 12 of our students are graduating in the first batch of MTech and PhD (Joint Degree) at this Convocation.

In all, 1626 degrees are being awarded at this Convocation and the details are reproduced below:

Degree	Number of Recipients
PhD	196
MTech and PhD (Joint Degree)	12
MTech	333
MBA	50
MDes	14
MS (By Research)	47
PGPEX-VLFM	38
MSc (5-Year)	1
MSc (2-Year)	118
Double Major	17
BTech-MTech (Dual Degree)	110
BTech-MDes (Dual Degree)	1
BTech-MS (Dual Degree)	3
MS-PD (MS part of Dual Degree)	9
BS-MS (Dual Degree)	52
BTech	551
BS	74
Total	1626

In keeping with the flexibility that IIT Kanpur academic programme is known for, 29 students are graduating with two Minors whereas 136 students are graduating with one Minor. This year one of our graduating students is graduating with 3 Minors.

Number of students completing one Minor: 136

Number of students completing two Minors: 029

Number of students completing three Minors: 001

Apart from this, by spending one additional year at the Institute, 166 undergraduate students are graduating with a Masters degree along with their Bachelors while 17 undergraduate students are graduating with a Second Major. As already stated, 12 postgraduate students are graduating with an additional Masters along with their PhD degree.

Of the 808 students in the bachelors and bachelors-masters dual degree programmes who are being awarded the degree today, 169 students are graduating with Distinction (CPI of 8.5 and above).

To keep pace with the evolving knowledge in science, technology and other areas, 04 new undergraduate courses and 42 new postgraduate courses were approved by the Senate in the Academic Year 2018-19.

ACADEMIC INITIATIVES

Several academic initiatives that are likely to impart strength to our academic programmes in the long run were undertaken this year while some others are still in the pipeline.

- **Academic Review 2020-21:** The Institute began the periodic review of its academic programmes in November 2018. This mammoth exercise, conducted once every decade, is expected to be completed by July 2021. The existing undergraduate and postgraduate programmes of the Institute and the associated curricula will be reviewed taking into account the requisite inputs from all the constituents of the academic community at IIT Kanpur. The existing academic administration and processes also come within the purview of this review. Since the postgraduate programmes of the Institute have undergone a major expansion over the last decade, in a significant break from the tradition, the ongoing academic review of the undergraduate and postgraduate programmes is being conducted by two distinct bodies.
- **Social Outreach:** The Institute has implemented some of the important socially relevant initiatives spearheaded by Government of India including supernumerary allocation of seats for the Girl Child and reservation for Economically Weaker Sections (EWSs). With JEE (ADVANCED)-2019, the supernumerary allocation of seats for the Girl Child touches 17%. The EWS reservation of 10% is being implemented across all our UG and PG programmes in a ratio of 4% (2019-20) and 6% (2020-21). With these initiatives in place, the enrollment in undergraduate and postgraduate programmes is going to augment significantly.
- **MTech and PhD (Joint Degree):** The Institute has initiated the award of additional Masters with PhD, whereby an additional MTech/MDes degree is awarded to students with the PhD degree subject to the fulfillment of academic requirements stipulated by the Senate. This provision was introduced by the Institute Senate for candidates who join the PhD programme directly after BTech/BS and other bachelors programmes. This year 12 PhD students will be graduating with an additional masters degree awarded on the basis of additional credits earned by these students through courses and dissertation work.

- **Incentives for PhD Students:** A series of measures were undertaken to incentivize the quality research at doctoral level. Notable among these is the financial support provided to the PhD students for presenting their work in reputed international conferences abroad. The provision was introduced in August 2018 and over 200 PhD students have since benefitted from it. This support is in addition to the travel grants for national conferences made available to the PhD students.

On the Anvil

- **Academic Rehabilitation Programme:** The Institute initiated efforts for an Academic Rehabilitation Programme (ARP) for undergraduate students who need additional support to maintain their academic performance at requisite levels. Through this initiative, we hope to create a sustainable academic and operational structure for remedial instructional programmes at the institute.
- **Department of Cognitive Science:** The proposal to establish a department of Cognitive Science (currently an Interdisciplinary Programme) is on the anvil. Research in various areas of cognitive science has huge potential in informing the stakeholders in varied arenas like education, defense services, human-computer interaction design, product design, mental health etc. Through this new department, we will be exploring pathways to collaborate with various industry partners, psychiatric clinics, and government agencies to take up problems from their fields and make our contribution to solving them.
- **Online Masters Programme:** A proposal for online Masters in specialized areas such as Data Structures, Financial Engineering, Telecom, Manufacturing and several others that are perceived as emerging areas or areas that are in acute need of re-training is under the Institute's consideration. The programme is being proposed with a special emphasis on the continuing education of those already employed in the industry

RESEARCH AND DEVELOPMENT

IIT Kanpur has registered steady growth in its research and development activities this year. Some of the highlights are mentioned below:

- 780 externally funded ongoing projects with a total sanctioned amount of Rs. 812.52 crore.
- 240 sponsored projects got sanctioned during 2018 - 2019 worth Rs. 158.74 crore.

- 125 consultancy projects got sanctioned during 2018 - 2019 of Rs. 20.61 crore.
- During the year 2018-19, total funds received for sponsored projects are Rs. 211 crore and for consultancy projects, Rs. 25 crore.

Leading Funding Agencies of the year:

50 Crore	38 Crore	20 Crore	17 Crore	12 Crore
 Government of India Ministry of Human Resource Development	 सत्यमेव जयते Department of Electronics and Information Technology Ministry of Communications and Information Technology Government of India		 सत्यमेव जयते Department of Sciences & Technology Government of India	 सत्यमेव जयते National Security Council

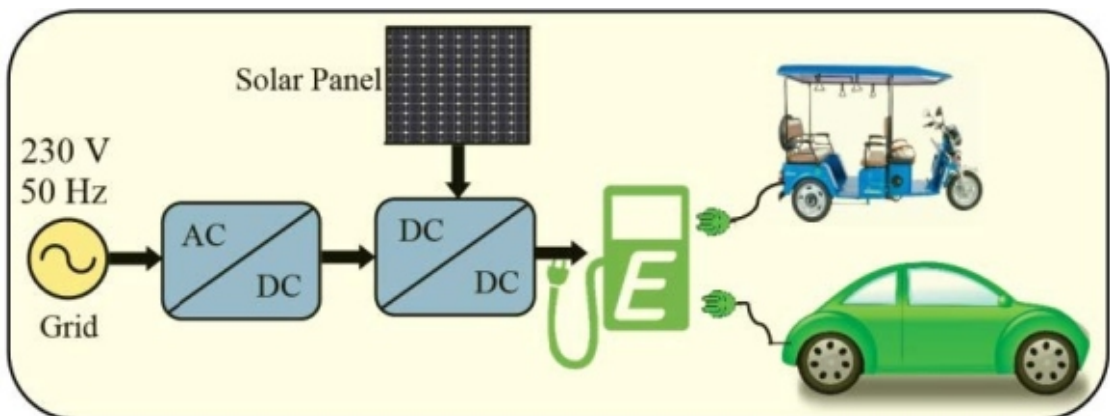
Leading Funding Industry Partners of the year:

 GAIL (India) Limited	 Uttar Pradesh Power Corporation Limited		 TATA CONSULTANCY SERVICES	
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MAJOR PROJECTS SANCTIONED

Some of the major projects sanctioned during 2018-19 are briefly described below:

Mix-Energy Source Electric Vehicle Charging System Design, funded by the Department of Science & Technology (Mission Innovation Scheme): India is planning to become 100 % EV by 2030 and it is a huge challenge for the distribution grid. This proposal aims to study the technical feasibility of this approach and proposes development of feasible, robust, and cost-effective technologies and methodologies to facilitate this plan, using a hybrid-energy-mix approach.



The primary objective of this proposal is to design Electric Vehicle chargers in the Indian context and study its impact on the distribution grid. The specific objectives are to design EV chargers with Input from multiple sources such as Grid and Solar PV and the study of impact of EV chargers on distribution grid.

Delhi Air Quality Experiment: A Paradigm Shift in Source Apportionment, funded by Central Pollution Control Board (CPCB): Understanding the sources of ambient Particulate Matter (PM) is important for cost effective emission reduction. However, the mixing of the different sources of emission together with atmospheric dynamics and topographical conditions makes the understanding of source-receptor linkage complex especially in winter season. Source apportionment of PM is performed using source-receptor modeling which needs prior information on the potential sources. However, filter based source apportionment studies have limitations as variations in concentrations and composition of aerosols in atmosphere are captured in low temporal resolution. Studies employing these methods in the past have shown very low contribution (<30%) from secondary organic aerosols (SOA) in the total organic concentration levels.

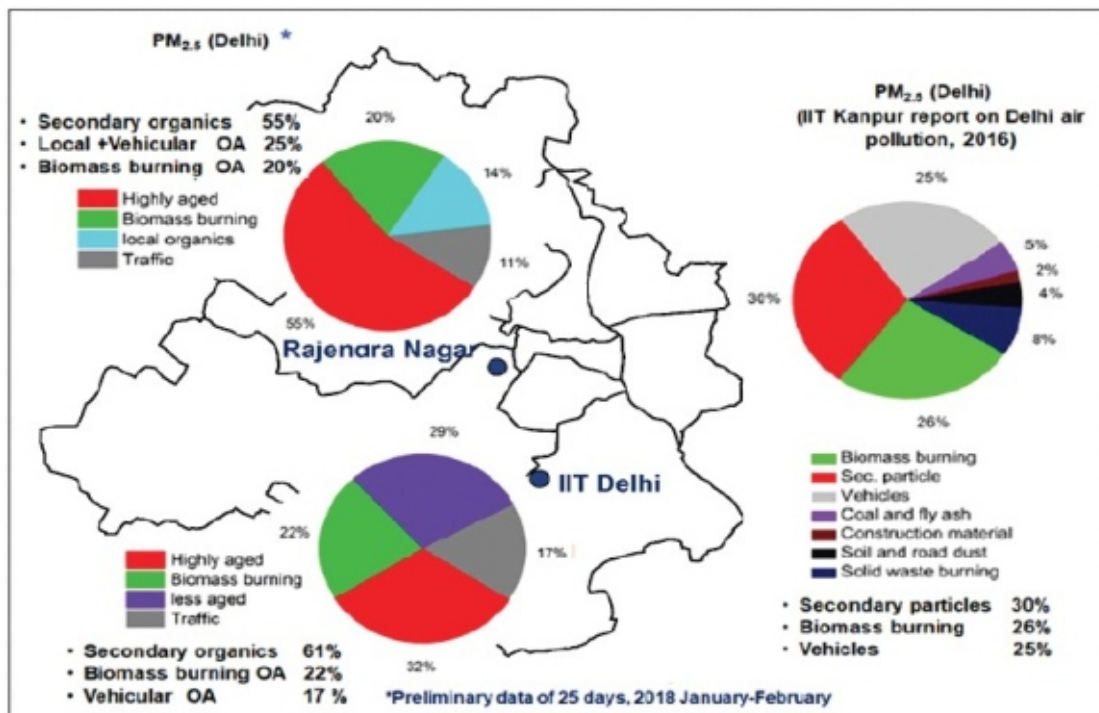
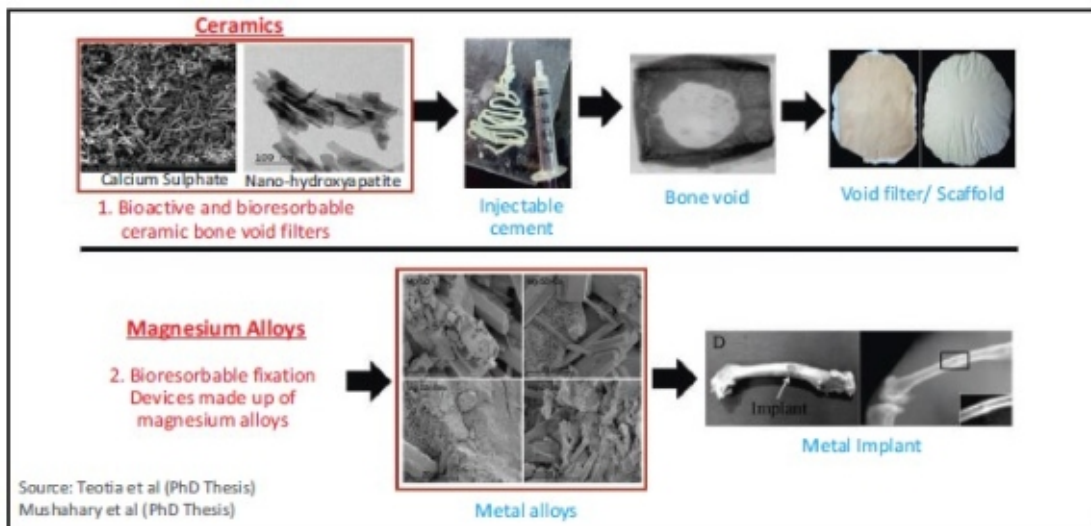


Figure : Sources of winter aerosols in Delhi. The figures on the left indicate the real-time source identification (unpublished data). The right hand side shows the source identification in Delhi using offline analysis.

Considering the fast physical and chemical transformation and transportation of the emissions in the atmosphere, the above mentioned study couples the real-time PM2.5 measurements from advanced online mass spectrometry instruments and offline analysis of filter samples (for more time and spatial coverage) using mass spectrometry techniques to understand the sources of aerosols in detail.

Fabrication of New Generation of Self-Resorbing Implants and Devices from Bioactive and Biodegradable Materials for Orthopedic Applications in association with Industrial Partner Ortho Regenics Pvt. Ltd. (ORPL), Hyderabad and funded by Ministry of Human Resource Development (MHRD) and Indian Council of Medical Research (ICMR): Bone injury is the most common medical condition in any accidental or occupational trauma situation. Presently, for bone fracture fixations, metal implants are made up of non-biodegradable materials and with high mechanical strength, this causes stress shielding of bone leading to bone loss and implant failure.

A new generation biomaterial for orthopedic application with properties like Bioresorbable, Bioactive, and with Mechanical properties matching to bone are envisaged.



Strategic University Network to Revolutionise Indian Solar Energy (SUNRISE), funded by EPSRC (UK): SUNRISE is a joint UK-India project aimed at developing efficient, low-cost solar technologies and their deployment in rural India. The SUNRISE network unites 12 leading universities and several industrial collaborators from the UK and India in an equitable research collaboration. This international network aims to develop and implement the technology necessary to build a minimum of five solar-

powered building demonstrators in rural Indian villages.

Automated Synthesis of Motion Plans for Large- Scale Multi-Robot Systems from Complex Specifications, funded by Defence Research & Development Organisation (DRDO): The aim of the project is to accelerate the state-of-the-art in multi-robot motion planning in the following dimensions:

- Complexity in the specifications
- The size of the multi-robot system
- The complexity in the dynamics of the robots
- The capability of the robot in dealing with sensing uncertainty and dynamism in the environment.

The project aims to develop a software system powered by formal method techniques which will be able to produce reactive motion plans that are provably correct with respect to the specification, and can be installed in the robotic systems easily in the form of embedded software.

Continuos Monitoring of New Jubilee Railway Bridge: Instrumentation Design And Health Assessment, funded by Eastern Railways Zone-Indian Railways (ER-IR): The Project relates to the New Jubilee Bridge over the Hooghly river connecting Naihati and Bandel in West Bengal. The bridge provides a gateway to West Bengal, with many important trains running over it. The bridge is of unique construction, being a continuous arch-type bridge, first time in Indian Railways.



This project of complete instrumentation and continuous monitoring is a one-of-a-kind structural health monitoring project, taken up by the Railways for the first time in India. The instrumentation will involve a wide variety of state-of-the-art sophisticated sensors for real-time monitoring.

Center of Excellence for Defence Corridor, funded by Uttar Pradesh Expressways

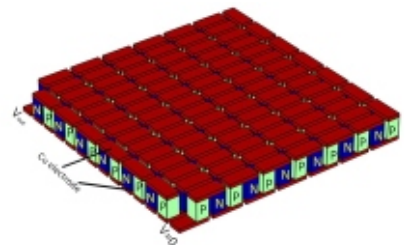
Industrial Development Authority (UPEIDA): In February 2018, the Government of India announced setting up of a defense corridor in Uttar Pradesh. It was envisaged that a number of defense equipment manufacturing units will be set up along the corridor resulting in significant expansion of the industrial base in the state. At the time,



Government of UP agreed to collaborate in the technological domain with the Institute as a technological partner of the government. The Institute is committed to developing relevant technologies in four domains, namely, Advanced Materials (wound-healing material, stealth material, etc.), UAVs (vertical takeoff and landing drones of different weight classes), Cyber Security (hardened OS, malware protection, etc.), and Electronics and Communications (long distance radars, etc.).

Development of Solid-State Thermoelectric Power Generator for Electricity Generation from Waste Heat In Steel Plant, funded by Science & Engineering

Research Board (SERB): The aim of this project is to design, fabricate and test thermoelectric (TE) modules for electricity generation from waste heat in Steel plant. In order to tap huge amount of waste heat generated in steel plant, it is required to develop highly efficient TE materials, which are stable chemically as well as thermally above 1000 K. The project intends to use recently developed novel perovskites-based oxides and nanocomposites to design TE generator. Furthermore, finite element modeling will be performed to optimize the size, geometry and other design parameters of TE legs in order to reduce energy loss for maximizing power output and efficiency. A state-of-the-art testing facility will be developed to evaluate the performance of TE generator especially at high temperature.



UAY-Biodegradable Polymers For Packing Applications, jointly funded by Ministry of Human Resource Development (MHRD) and Hindustan Unilever Limited: The project aims at developing biodegradable polymers for packaging of fast moving consumer goods (FMCG). The project aims to improve the strength and barrier properties of the otherwise weak and permeable natural polymers. The outcome of the project will be ecologically responsible packaging materials especially for single use products.

A list of some of the other sophisticated facilities established in the Institute during this year is given at the end of this report.

Centre for Technology for Sustainable Development

The BOG approved the proposal for the creation of a Centre for Technology for Sustainable Development at IIT Kanpur. The Center will leverage its research strength in key areas to address selected Sustainable Development Goals (SDGs) from the UN Charter to allow for development of technologies or solutions for UP/Indian Government. In particular, it is possible to provide leadership in the following areas of SDG mandate:

- Intervention for healthy lives and well-being
- Quality education and outreach
- Clean, accessible water and sanitation
- Sustainable and modern energy solutions
- Industries, innovation and infrastructure
- Climate action

Various departments at IIT Kanpur will be involved for achieving success and for creating impact in addressing challenges concerning Technology for Sustainable Development.

LEAP Program

The Institute organized Leadership for Academicians Programme (LEAP) in November 2018. LEAP is a MHRD funded leadership development training program intended for the second level leadership in major government-held technology institutes. The objective of the program is to prepare second tier academic heads who are potentially likely to assume leadership roles in the future.

Leading experts from the academia and industry delivered lectures covering different aspects of leadership. Brainstorming sessions were organised every day with non-hierarchical discussion among all participants, guest faculty and the organizing faculty. Participants also visited different research facilities and the establishment of IIT Kanpur.

Ranjit Singh Rozi Siksha Kendra

IIT Kanpur alumuns Late Dr. Ranjit Singh (BT/MME/1965) donated 1.9 Million Dollars to set up Ranjit Singh Rozi Siksha Kendra and Ranjit Singh Chair. The Kendra would work for technology interventions for enabling education at college and/or vocational training centers and for technology interventions for enabling job guarantees for the unemployed. This would be in line with IIT Kanpur Centre for Technology for Sustainable Development and would strive towards enabling Equitable Prosperity for all.

INDUSTRY COLLABORATION

IIT Kanpur is a premier technological institute in the country which engages in the state-of-the-art research in almost all fields of engineering and sciences. The focus is on generating new ideas, creating innovative solutions, and revealing basic principles of matter with an emphasis on using this knowledge for developing practical engineering and technological applications. In this process, the Institute works closely with industry partners with the objective of adding value to their products and services, the larger goal being to bring in novel solutions to the society at large.

Technopark@iitk

Since its inception, the Institute has successfully forged strong ties with the industry and R&D organizations. To further boost strategic partnerships with the industry, the Institute has started a new endeavor and that too a very significant one. IIT Kanpur Research and Technology Park Foundation is the institute's first research and technology park started to enable translational research and two-way flow of knowledge and resources between academia and industry. The park functions under the brand name of Technopark@iitk.



Technopark@iitk is a not-for-profit independent section 8 company registered on 7th February 2019 under the Companies Act, 2013. With the aim of becoming a hub of R&D activities spanning all industrial sectors and innovating in critical sectors of economy, Technopark@iitk offers intellectual capital, research infrastructure and physical spaces to industries to relocate their R&D centers and have both short- and long-term strategic collaboration with the faculty and students of IIT Kanpur. The facility was inaugurated formally on 8th April 2019 by the Chairperson, Board of Governors of IIT Kanpur, Dr. K. Radhakrishnan.

In a short span of time, Technopark@iitk has succeeded in establishing connect with the local industry. On 6th April 2019, it held its first local Industry-Academia Meet that was well attended by over forty big and small Kanpur-based industries like the Lohia Group, Injectoplast, Kanpur Fertilizer and Chemicals, MKU, VAAU Manpower Solutions and several other MSMEs. During the meet, several patents developed at IITK were exhibited which garnered huge attention from the participants. Currently, Technopark@iitk is hosting 6 noteworthy clients namely, VTOL, Promorph, Injectoplast, iSMRITI, Kanopy Solutions and E-Spin and is in dialogue with many national and international companies.



National Science Day

The Institute's Space Technology Cell (STC) organized a thematic programme to celebrate *National Technology Day* on 11th May 2019. For the year 2019, the theme of National Technology Day was "Space Technologies & ISRO." In keeping with this theme, STC invited two well-known scientists in the field of space technology for talks. The first talk was delivered by Dr. B.S Munjal, Space Applications Centre (SAC), ISRO who spoke on "Technology Applications in Space/Ground Segment of SATCOM Domain". This was followed by a talk by Dr. Mehul R Pandya, SAC, ISRO, who spoke on "Eye in Space for Earth and Planetary Observations". A number of students from the city attended the event.



To mark the celebration of National Science Day, the Cognitive Science Programme in coordination with the Dean, Research and Development Office has organized a one-day symposium titled: "Through the looking glass: Interdisciplinary Perceptions on Cognition" on 26th February 2019.

INNOVATION AND INCUBATION

During the year, 45 patents including 2 design patents were filed, and 24 previously filed patents were granted, besides getting 2 technologies licensed for commercialization. Amount received from licensed technologies during 2018-19 is Rs. 7.08 lakh.

To date, 32 design patents and 463 Indian patents have been filed, out of which 86 patents have been granted so far. Altogether, 57 technologies have been licensed for commercialization to date.

A total of 61 companies are currently incubated at Startup Innovation & Incubation Centre (SIIC), IIT Kanpur and 60 have graduated so far.

Notable recent achievements of the incubator are as follows:

- SIIC won the Platinum Award ISGF Innovation Awards 2018 under the category of Smart Incubator of the Year.
- Received second round of funding under NIDHI PRAYAS scheme of DST for Rs. 1.2 crore to support innovators/ early stage startups for prototype funding.
- DST sanctioned funds of Rs 5 crore under NIDHI Seed Support System for supporting physically incubated startups at SIIC.
- Under the Bio Ignition Grant of BIRAC, 7 innovators/startups were sanctioned funding support.
- Under the PRISM program of DSIR, 2 innovators were sanctioned funding for building their prototypes.
- Sanction of funds for Rs. 12 cr. under the India Agritech Incubation Network (IAIN), an initiative funded jointly by the Bill and Melinda Gates Foundation (BMGF) and the Tata Trusts. The initiative will be programme managed by CInI and Social Alpha along with IITK.

Notable recent achievements of a few Incubated Companies are as follows:

E-spin Nanotech Pvt. Ltd

- Appointed as water research expert and member of Center for Excellence in Produced Water Management (CEPWM) at University of Wyoming, USA.

Bioscan Research Pvt. Ltd

- Winner of Innocity Pitch 2018 at CIIE, IIM Ahmedabad
- Winner of India Israel Innovation Challenge 2018 in Healthcare
- Among top 4 startups in India by Lufthansa Runway to Success 2018
- Among top 10 women led deeptech startups by AICTE Canada India Acceleration Program 2018

- Among top 15 women led biotech startups by TIE-BIRAC WinER Award 2018
- Among Top 47 Product Innovations in India by Design Impact award of TATA Trust 2018
- BIRAC BIG Grantee 2018 Winner of CIIE Startpreneur Award 2018

Aarna Biomedical Products Pvt. Ltd.

- Selected to showcase Poorti at Rashtrapati Bhawan – Festival of Innovation
- In Top-8 Social Innovations out of 3000 (India Innovation Growth Program – Lockheed Martin, Tata Trusts and DST)

Incredible Devices Pvt. Ltd.

- Won Design Impact Awards 2018 by TITAN
- Winner of DST Lockheed Martin India Innovation Growth Programme
- Winner of MARICO Innovation Award 2018

HelpUsGreen- Kanpur Flowercycling Private Limited

- Winner of UN Young leader award
- Nominated for the Goalkeepers Awards by the Bill and Melinda Gates Foundation
- Recipient of BIRAC's Biotechnology Ignition Grant 2018
- Featured in Forbes's 30 under 30

Oxen Farm Solutions

- Winners of most influential CNBC Awaaz Entrepreneur viewer's choice Award in Social Enterprise category

SIIC Incubation model and the pipeline of incubates

SIIC has a strong pipeline from IIT Kanpur Ecosystem and Entrepreneurial Ecosystem outside of IIT Kanpur through various channels. These channels include outbound and inbound leads generation activities conducted by SIIC team throughout the year.

- New Faculty Entrepreneurship Policy along with new Faculty Evaluation Policy of IIT Kanpur
- Student Entrepreneurship Policy that offers deferred placement option to graduating student taking entrepreneurial route
- Tech Talk, i-Deathon, and various B-plan event organized by E-cell and Techkriti
- IITK KGMU Bio-Immersion Program and Startup Internship Programs
- Startup Master Class and Social Enterprises and Entrepreneurs organized by IITKAA which has received a mandate from NITI Ayog

- Fellowships and Grants to support early prototype development as an efficient channel for product based startup
- INVENT program has brought more than 40 technology-based social impact focused startups and it continues to bring some great startups for SIIC.
- SIIC also developed partnerships with Janhit Jagran Challenge and also with some similar programs where SIIC is incubation partner for technology-based applicants.

INTERNATIONAL ACADEMIC COLLABORATIONS

Recognizing the value of international cooperation, the Institute has signed MoUs and Joint degree programs with many foreign institutions for collaboration in academic and research activities.

The list includes La Trobe University from Australia; Heidelberg University from Germany; ECAM Lyon School of Engineering from France; The University of Pavia from Italy; Hokkaido University from Japan; The University of Tokyo from Japan; Chaoyang University from Taiwan; National Chiao Tung University from Taiwan; Tamkang University from Taiwan; Asian Institute of Technology from Thailand.



FINANCIAL RESOURCE MOBILIZATION

Out of the total amount of around Rs. 400 Million (\$5.7 Million @ Rs.70/\$) pledged by donors in the last 12 Months, a total of Rs. 166 Million (\$2.4 Million) has been received this year as compared to Rs. 14.06 Crore last year and the balance is expected to be received based on the milestones achieved as set by the donor in the next one year.

Some Notable Contributions: (All Figures are in Millions)	Pledged (Rs.)	Recd (Rs.)	Balance (Rs.)	Pledged (\$)	Recd (\$)	Balance (\$)
Mehta Foundation Endowment	175.00	0.00	175.00	2.50	0.00	2.50
Ranjit Singh Endowment	133.00	21.00	112.00	1.90	0.30	1.60
BVR Mohan Reddy Family Endowment	10.00	10.00	0.00	0.14	0.14	0.00
1963 Batch Fund (YOP 1968)	7.29	7.29	0.00	0.10	0.10	0.00
1997 Batch Fund (YOP 2001)	3.93	3.93	0.00	0.06	0.06	0.00
1994 Batch Fund (YOP 1994)	1.10	1.10	0.00	0.02	0.02	0.00
1968 Batch Fund (YOP 1973)	1.13	1.13	0.00	0.02	0.02	0.00
Mr. & Mrs. Gian Singh Bindra Chair	1.04	1.04	0.00	0.01	0.01	0.00
Neelam and Anil Singh Scholarship	1.25	1.25	0.00	0.02	0.02	0.00
Next Generation Broadcasting Chair	6.22	6.22	0.00	0.09	0.09	0.00
Opportunity School Building	10.69	10.69	0.00	0.15	0.15	0.00
Physics Dept Travel Grant award	2.06	2.06	0.00	0.03	0.03	0.00
Sudarshan Kasturia Memorial Scholarship	0.55	0.55	0.00	0.01	0.01	0.00
Ram Sahai, Vidyawati and Tara Ghate's Scholarships	3.24	3.24	0.00	0.05	0.05	0.00
Shanti and Ramkishore Sahai Scholarship	0.68	0.68	0.00	0.01	0.01	0.00
Bishamber and Anguri Gupta Scholarship	0.68	0.68	0.00	0.01	0.01	0.00
Durga Devi Memorial Scholarship	0.92	0.92	0.00	0.01	0.01	0.00
Kent RO Systems Ltd.	12.50	6.25	6.25	0.18	0.09	0.09
Total	371.29	78.04	293.25	5.30	1.11	4.19

ALUMNI IMPACT

A. Selected Notable achievements in the field of science and technology by our alumni:

Our alumni have been proud recipients of various honours and awards in various categories during F.Y. 2018-19 as per the following details:

Category of Award	Number of Awards
Academic Awards	50
Industrial Awards	4
Government Awards	2

Some of the major achievements are as follows:

Award	Name of Alumni	Award Endowed by
Shanti Swarup Bhatnagar Prize 2018	Dr. Nitin Saxena (BT/PhD/CSE/2002/2007) Dr. Amit Agrawal (BT/ME/1996) Dr. Amit Kumar (BT/CSE/1997)	The Council of Scientific & Industrial Research (CSIR)
Fellowship	Dr. Kapil Hari Paranjpe (MSc5/MTH/1982) Dr. Anil K. Jain (BT/EE/1969)	The World Academy of Sciences (TWAS)
Fellowship	Dr. Ratnesh Kumar (BT/EE/1987) Dr. Upmanu Lall (BT/CE/1976) Dr. Manvendra K. Dubey (MSc5/CHM/1979)	The American Association for the Advancement of Science (AAAS)
National Women Bi-scientist Award 2018	Dr. Ruchi Anand (MSc2/CHM/1998)	Department of Biotechnology, New Delhi
Fellowship	Dr. Debabrata Goswami (MSc2/CHM/1988) Dr. Siddharth Ramachandran (BT/MME/1991)	SPIE, the international society for optics and photonics
Fellowship	Dr. Justin R. David (MSc5/PHY/1994) Dr. Amit Kumar (BT/CSE/1997)	Indian Academy of Sciences (IASc)
Irving Langmuir Prize 2019	Dr. Devarajan Thirumalai (MSc5/CHM/1977)	American Physical Society
Google Brain Fellowship	Mr. Archit Sharma (BT/EE/2018)	Google
Research Excellence Award 2018, IEEE Computer Society's 2019 Computer Pioneer Award	Dr. Jitendra K. Malik (BT/EE/1980)	International Joint Conference on Artificial Intelligence (IJCAI), IEEE Computer Society
Fellowship	Dr. Veena Sahajwalla (BT/MME/1986)	Australian Academy of Science
Indian Police Medal	Mr. Avi Prakash (BT/AE/1994)	Govt. of India
Honorary Doctorate in Science	Dr. Ashutosh Sharma (BT/CHE/1982)	State University of New York (SUNY), Buffalo

B. Notable entrepreneurial endeavours by some of our alumni:

Name of the Alumni	Entrepreneur in the field of
Mr. Deepanshu Malviya (BT/MME/2006)	Co-founder of Gurgaon based startup 'Shuttl'. The company has raised Rs. 48.3 crore from Sequoia Capital, LightSpeed Venture Partners & Times Internet.
Mr. Gautam Chokhani (BS/ECO/2015) Mr. Aman Tiwari (BT/EE/2015) Mr. Ameya Sathe (BT/MSE/2016)	Founder of Vaultra Energy Solutions. The company bags the prestigious National Entrepreneurship Award 2018 in the Renewable Energy and Waste Management Category, organised by the Ministry of Skill Development and Entrepreneurship.
Mr. Abhinav Jain (BT-MT/CSE/2009) Mr. Aditya Gupta (BT/CSE/2008)	Co-founder of Mumbai-based Shop101, a mobile storefront and commerce platform for sellers, has received Rs 34 crore funding from Stellaris Venture Partners.
Mr. Kapil Raizada (BT/CHE/1993)	Founder of RailYatri, a travel startup, raises Series B funding from Omidyar Network. Launched in 2013, The company uses deep-analytics technology to make predictions that will help travellers make smart decisions for their travel.
Mr. Sachin Sinha (BT/ME/1997)	Founder and CEO of IQLECT Software Solutions, raises \$2.5 million in a bridge round of funding. IQLECT is a Bengaluru-based big data analytics firm that has built a hardware-software converged platform to collect, process and visualise data in real time and offers a platform-as-a-service on cloud that can also be shipped as a converged box.
Mr. Ashwani Gaur (BT/EE/2008)	Founder of HRBOT, an AI-driven recruitment platform. The company was selected in top 10 startup to be part of google's 2nd Batch of Launchpad Accelerator Program.
Mr. Vishwajeet Sinha (BT/CHE/2005) Mr. Piyush Dhamidharka (MSc5/MTH/2014)	Co-founder of Oxen Farm Solutions. The company has been voted the most influential CNBC Awaaz Entrepreneur viewer's choice Award in Social Enterprise category. The company is providing advanced combined harvesting machinery on pay per use and tech enabled format.
Mr. K. Sri Harsha (BT-MT/CE/2015) Mr. Sagar Setu (BT-MT/AE/2013)	Co-founder of Kritsnam Technologies. The company bags the 'Best Start-Up Award' in the category- Social Impact at MeltingPot2020 innovation Summit. Kritsnam Technologies is a company in the field of IoT with focus on water resource management solutions

Mr. Onkar Prasad (MT/IME/2013)	Founder of Promorph Solutions (EmpowerU). The company has been selected as one of the top 100 finalists at Maharashtra Startup Week 2019. EmpowerU is an Analytical Platform for Real-time Monitoring of Quality of Education & Effective Governance of Higher Education Institutions & Government Schools.
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C. Notable Professional Achievements by our alumni:

Name of the Alumni	Position
Dr. Archana Shukla (PhD/HSS/1989)	Appointed Director of Indian Institute of Management (IIM) Lucknow.
Dr. Vijay K. VijayRaghavan (BT/MT/CHE/1975/1977)	Appointed Head of Prime Minister's Science, Technology & Innovation Advisory Council (PM-STIAC) set up by PMO India.
Dr. Krishnamurthy Subramanian (BT/EE/1994)	Appointed the new Chief Economic Advisor to the Finance Minister for a period of three years.
Mr. Radha Krishna Mathur (BT/ME/1975)	Appointed the Advisor to the Chief Minister of Tripura Shri Biplab Kumar Deb.
Dr. Dheeraj Sanghi (BT/CSE/1986)	Appointed Director of the Punjab Engineering College.
Dr. Ajay Bhushan Pandey (BT/EE/1983)	Appointed the Union Revenue Secretary.
Mr. Ram Sewak Sharma (MSc2/MTH/1977)	Reappointed the Chairman of Telecom Regulatory Authority of India (TRAI).
Dr. Inder K. Bhat (MT/PhD/ME/1982/1987)	Appointed the Chancellor of Manav Rachna University.



INSTITUTE FACULTY

Recruitment

In the past one year, the Institute has offered 77 faculty positions against a rigorous selection from 899 applicants. Out of these, 34 new faculty members and an Engineer have joined the Institute. The appointments per department are mentioned below:

Department	Number of New Faculty
Aerospace Engineering	1
Biological Sciences and Bioengineering	3
Chemical Engineering	1
Chemistry	7
Civil Engineering	4
Earth Sciences	1
Electrical Engineering	1
Humanities and Social Sciences	3
Mathematics & Statistics	6
Mechanical Engineering	3
Physics	4
Samtel Centre for Display Technologies	1

During this period, we have also made 42 offers of post-doctoral fellowships, 08 visiting faculty, 07 adjunct faculty, and 01 Distinguished Honorary Professor.

Awards and Honours

Our faculty have played a significant role in pushing the frontiers of knowledge. This has been duly recognized in the form of various awards and honors, including fellowships of professional societies and editorships of international journals.

I am extremely happy to share with you the wonderful news that papers authored by Dr. Arun Shukla (BSBE) and Dr. S.N. Tripathi (CE) are published in prestigious journals named Nature Structural and Molecular Biology and Nature Communications respectively.

Professor Arun K. Shukla (BSBE) has been selected for the Swarnajayanti Fellowship in Life Sciences by the Department of Science and Technology, Govt. of India. Professor Animangsu Ghatak (CHE) has been elected Fellow of the Indian National Academy of Engineering, India. Professor Nishith Verma (CHE) has been awarded the Fulbright-

Nehru Academic and Professional Excellence Fellowship to conduct research and teaching at Stony Brook University, New York. Professor J. K. Bera (CHM) has been awarded the J. C. Bose National Fellowship by Science and Engineering Research Board (SERB), a statutory body of DST, Government of India. Professor Manas K. Ghorai (CHM) has been elected a Fellow of the Indian Academy of Sciences (FASc), India. Professor Debabrata Goswami (CHM) has been elected a Fellow of The Institute of Physics (IOP), UK. Professor Manabendra Chandra (CHM) has been selected for Young Faculty Research Fellowship by MEITY, Govt. of India. Professor Yogesh Singh Chauhan (EE) has been selected for the Swarnajayanti Fellowship in Engineering Sciences by Department of Science and Technology, Govt. of India. Professor Aditya K. Jagannatham (EE) with his students Mr. Suraj Srivastava and Ms. Saumya Dwivedi, Department of Electrical Engineering, have been selected for the Qualcomm Innovation Fellowship (QInF) 2018-2019. Professor Rajiv Sinha (ES) has been selected for COFUND Senior Research Fellowship by Durham University, UK. Professor Subhas C. Misra (IME) Engineering, has been elected a Fellow by the British Computer Society London. Professor Subhas C. Misra (IME) Engineering, has been elected Fellow of the Institution of Electronics and Telecommunication Engineers, UK. Professor Mohua Banerjee (Math) has been nominated a Fellow of the International Rough Set Society (IRSS). Professor Avinash K. Agarwal (ME) has been admitted Fellow of The Royal Society of Chemistry (FRSC). Professor Avinash Agarwal (ME) has been elected Fellow of the National Academy of Sciences, India (NASI). Professor Anshu Gaur (MSE) has been selected for Visvesvaraya Young Faculty Research Fellowship, Digital India Corporation, MeitY, Govt. of India.

Professor Sathesh Mariappan (AE) has been selected for the INAE Young Engineer Award, India. Professor D. P. Mishra (AE) has been conferred the National Design Award in Mechanical Engineering-2018 for his outstanding contribution in the field of engineering design by the Institution of Engineers, India. Professor D. P. Mishra (AE) has been chosen for the Excellence in Aerospace Award (2017) by The Aeronautical Society of India. Professor Arun Shukla (BSBE) has been chosen Rajib Goyal prize for young scientists. Professor Arun Shukla (BSBE) has been selected one of the recipients of the National Bioscience Award of DBT, New Delhi. Professor Arun Shukla (BSBE) has been selected for the Professor Rita Mulherkar Lecture Award by the Indian Society of Cell Biology. Professor Arun Shukla (BSBE) has been selected for the Shakuntala Amir Chand Prize 2017 by the Indian Council of Medical Research (ICMR). Professor Arun Shukla (BSBE) has been selected for the Young Researcher Award of the Lady Tata Memorial Trust. Professor Ashutosh Sharma (CHE) has been selected to receive a State University of New York Honorary Doctorate in Science. Professor Raju Kumar Gupta

(CHE) has been selected for the Young Scientist Award by the Council of Science and Technology, Uttar Pradesh. Professor Sandeep Verma (CHM) has been chosen for the Goyal prize. Professor Debabrata Goswami (CHM) has been honored by the International Society for Optics and Photonics (SPIE) as SPIE Fellow (2019). *Inorganica Chimica Acta*, a prominent international journal of Inorganic Chemistry, has published a special issue in honor of Professor R. N. Mukherjee (CHM) on the occasion of his 65th birthday. Professor Debabrata Goswami (CHM) has been awarded the 2018 ICO Galileo Galilei Award by the International Commission for Optics. Professor J. N. Moorthy (CHM) has been selected for the Silver Medal of the Chemical Research Society of India (CRSI). Professor S. P. Rath (CHM) has been selected for the C N R Rao National Prize in Chemical Sciences instituted by C N R Rao Educational Foundation and Chemical Research Society of India (CRSI) for promotion of Chemical Research. Professor Vinod K. Singh (CHM) has been awarded the Professor Subramania Ranganathan Memorial Medal (2018) of Indian National Science Academy. Professor Salil Goel (CE) has been selected for the Young Geospatial Scientist 2018 award and the Rachapudi Kamakshi Memorial Gold Medal. Professor Tarun Gupta (CE) has been selected for the INAE Innovator Entrepreneur Award 2018. Professor Sachchida Nand Tripathi (CE) has been awarded 2018 UP Ratna Award, Government of Uttar Pradesh. Professor Nitin Saxena (CSE) has been awarded the S. S. Bhatnagar Prize (2018) in Mathematical Sciences. The award recognizes his outstanding work on the Polynomial Identity Testing Approach in the field of Complexity Theory. Professor Mainak Chaudhuri (CSE) has been honoured by Intel Corp Technology Excellence Award as an expression of Intel India's gratitude for his exemplary contribution, commendable collaboration, and purposeful engagement with Intel India. Professor S. C. Srivastava (EE) has received the Malaviya Award for Excellence in Power Systems 2018. Dr. Santanu Mishra (EE) has received the 2018 Premium Award for best paper in IET Power Electronics. Professor Yogesh Singh Chauhan (EE) has been chosen for the CNR Rao Faculty Award. Professor Ketan Rajawat (EE) has been selected for INSA Medal for Young Scientist 2018. Professor R. R. K. Sharma (IME) received the Quarterly Franklin Membership award given by Editorial Board of London Journals Press (UK) 2019 for impactful research contribution in management and industrial engineering. Professor Monica Katiyar (MSE) has been selected for this year's Metallurgist of the Year Award from the Ministry of Steels and Mines, Government of India. Professor Tanmoy Maiti (MSE) has been awarded 2019 Early Career Scholars in Materials Science by Journal of Materials Research, MRS. Professor Krishanu Biswas (MSE) has been selected by the Electron Microscopy Society of India (EMSI) for Excellence in Microscopy award 2018. Professor Shalabh (Math) has been selected for the Vigyan Ratna Award by the Council of Science and Technology, UP under the category of Science Awards. Professor Somnath Jha (Math) has been

awarded the INSA Medal for Young Scientist 2018. Professor K. Muralidhar (ME) has been recommended by ASTFE Honours and Awards Committee to become a Fellow of The American Society of Thermal and Fluids Engineers (ASTFE) in recognition of his outstanding contributions to the field of Thermal and Fluids Engineering. Professor Gautam Biswas (ME) has been conferred Honorary Doctorate by Aristotle University of Thessaloniki, Greece. Professor P. Venkitanarayanan (ME) has been selected for the prestigious 2019 F. Zandman award of the Society of Experimental Mechanics based in CT-USA. Professor Mahendra Verma (PHY) received the Dr. A. P. J. Abdul Kalam Cray HPC award on 21st April 2018 at NIAS Bangalore. Professor Amit Agarwal (PHY) has been awarded the “IPAN. S. Satya Murthy Memorial Award in Physics-2016” of the Indian Physics Association. The full lists of awards received by the faculty as well as students are given at the end of the report.

STUDENT ACTIVITIES

Students' Gymkhana, IIT Kanpur has strived to provide a platform for the students to hone their skills in extracurricular activities, and has become one of the most robust student-driven bodies in the nation. Believing in the importance of societal and humane engagements for the holistic development of an individual, it has always been supported by the Institute in pursuing cultural activities, sports or exploring technical opportunities and other possible avenues to help students explore their interests. Here are some of the highlights over the last year:

Entrepreneurship Cell

Entrepreneurship Cell (E-Cell), IIT Kanpur is a non-profit student's organization dedicated to promoting the spirit of entrepreneurship amongst the campus community.

Throughout the academic year, E-Cell conducts a plethora of events, lectures and workshops with **eSummit** as the annual flagship entrepreneurial event of IIT Kanpur. This year, eSummit'18 hosted several prominent entrepreneurs, industrialists, and businessmen including Dr Mahesh Gupta (Chairman & Managing Director, Kent RO), Sandeep Jain (GeeksForGeeks Founder), P.S. Jayakumar (CEO & Managing Director of Bank of Baroda) and many more. Also, several workshops and competitions were conducted as part of this event which witnessed significant participation from all across the country.

E-Cell also conducted **Startup Master Class** (SMC) and **Social Entrepreneurs and Enterprises** (SEE) in association with Alumni Association – these events had around 100 Speakers, a number of competition and workshops and 1500+ attendees. E-Cell

also conducted a week-long event named '**Business Week**' where a number of competitions were conducted, and monthly '**Campus Hangouts**' were organized to enhance entrepreneurial know-how of our students.

Vox Populi

Vox Populi, the student's journalism cell of the institute continued its growth towards achieving excellence and upholding the spirit of journalism on campus. The body in last one year furthered its reach on

Facebook from about 7,000 to over 15,000. It also launched itself across new online platforms.



Vox Populi, through its efforts during the General Elections' 19 did justice to its responsibility in this regard. Investing for the first time in investigative journalism, the body's efforts to bring out the malpractices in the elections were commendable. They also carried out an extensive study of the 'Mental Health Issues' on campus.

Community Welfare Cell

The Community Welfare Cell is a student group that is committed to learning, understanding and helping the society within the institute as well as in its vicinity. The different wings of the Cell worked on several important aspects catering to the well-being of the Community some of these are:

Prayas works in the field of education for the marginalized sections of society. Apart from regular classes held for the underprivileged children of the workers in the institute, the wing organized the Prayas Premier League, an annual function, a cultural week, a science week and a picnic.

Prakriti worked in the field of environmental awareness, social innovations, and impact assessment. The group organized a paper collection drive, a tree plantation drive (in which 50 trees in hall 6 and 150 trees in hall 13 were planted), and a clothes distribution and cleanliness drive.

Media and Cultural Council

Comprising over 14 clubs and hobby groups, the highlights of the Media and Cultural Council this year were:

- Students' Opinion Society organised "**Policy Conclave**" from 24th to 27th of January, 2019. It was the first of its kind to be held at IIT Kanpur. It was an intra campus event

designed only for the campus community of IIT Kanpur.

- Fine Arts and Design Club organised wall painting, in Baikunthpur village under **Unnat Bharat Abhiyan (UBA)**, where school students were encouraged to paint walls, with messages of 'save earth' and 'save water'.
- **EK Bharat Shreshtha Bharat (EBSB)**: It is an initiative by the MHRD of India to promote the spirit of national integration, celebrate the Unity and Diversity of our Nation and to create an environment which promotes learning between the states by sharing its cultural heritage. Media & Cultural council organised EBSB cultural days of more than ten pairing states of India.

Science and Technology Council

Several events were conducted under the Science and Technology Council. Please include:

7th Inter IIT Tech Meet - IIT Bombay

The 7th Inter IIT Tech Meet was held in IIT Bombay during 18-20 December 2018. IIT Kanpur participated with a contingent of about 50 students in all the competitive and non-competitive events. Being appreciated at the non-competitive events, we also bagged medals in 6 (**5 Silver and 1 Bronze Medals**) in 9 competitive events.

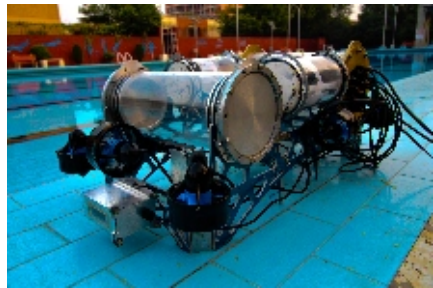


Participation in Techkriti 2019 and TechFest 2018:

Several students participated in Techkriti 2019 and TechFest 2019 in various competitive events and with the aid provided by the council, they won on several platforms.

Student Autonomous Underwater Vehicle(SAVe) 2019 – NIOT

In the sixth edition of Student Autonomous Underwater Vehicle (SAVe) 2019 competition conducted by National Institute of Ocean Technology (NIOT), held at IIT Madras, AUV-IITK won the **First Runner up trophy**.



iGEM 2018, Boston

The team represented IIT Kanpur at the Giant Jamboree to be held at Hynes Convention Center, Boston, MA from 24-28th October 2018 and won a **Silver Medal** for the institute.



MegaATV Championship 2019



Team IITK Motorsports participated in MegaATV Championship 2019 held at Querim Beach, Goa during 18th-20th March and secured **13th position overall out of 100 participating teams**.

Three other teams are set to represent IIT Kanpur in their respective international competitions during the summer session itself.

Council Activities for Student Body

The five clubs and six hobby groups associated with the council organised several lectures and workshops for the student body on Motor Control, PID, IoT, Computer Hardware, etc. to broaden their interests.



Games and Sports Council

IIT Kanpur successfully hosted a number of non-club workshops including archery, ultimate, golf, fencing, kabaddi, horse riding and a District Football Championship on the campus. Adventure club has increased its activities, the highlights being reaching the Khardung La top by cycle and completion of long distance runs like Garwal Ultra Run (74

km) and others. All the clubs carried out their club activities throughout the year to engage the campus community in games and sports.

Inter IIT Sports Meet

IIT Kanpur participated in 54th Inter IIT Aquatics Meet held at IIT Guwahati this year securing the **silver medal in Water Polo** (Men) and overall 3rd position in Women's swimming.



The entire contingent participated in the coveted 53rd Inter IIT Sports Meet held at IIT Guwahati. We managed to score 6th position among the 23 IITs which participated. We stood 6th in the Men's category and 5th in the Women's category. We got silver medals in cricket, basketball (men) and Water polo and 3rd position in Athletics (men), Weightlifting and Swimming (women). Our chess team also showcased its talent at 4th Inter IIT chess meet held at IIT Guwahati this year.

Festivals

The overriding objective of large-scale events of the Institute such as Antaragni (the cultural festival), Techkriti (the technical and entrepreneurship festival) and Udghosh (the sports festival) is to infuse a sense of richness and purpose in the lives of students. All these social, cultural and sporting activities play a crucial role in the transformation of students into complete human beings. These festivals have vastly improved participation

levels, both from within the Institute and also from students from other national and international institutions. The revenues generated for conducting these festivals saw an impressive growth last year, which is a tribute to the managerial and logistic skills of our students.

Antaragni

The cultural festival, Antaragni reached new heights in its 53rd edition where the team successfully managed a festival, with a footfall of over 1.25 lakh.

The theme of the festival was 'enRoute Nirvana,' and lasted from 25th to 28th October 2018. These four days were flooded by magnificent performances by students from around 250 colleges of the country, accompanied by showcases by national and international artists of varied styles and artforms.



The festival started off with performance by the band, The Local Train. This was followed by a performance from the world renowned DJ Quintino. The festival also included a melodious performance from 'The Jesus of Guitar' - Guthrie Govan which led us to the final night, concluded by the performance of Amit Trivedi.

IIT Kanpur successfully hosted a number of non-club workshops including archery, ultimate, golf, fencing, kabaddi, Horse riding and a District Football Championship on the campus. Adventure club has increased its participation, with the highlights being reaching the Khardung La top by cycle and completion of long distance runs like Garwal Ultra Run (74 km) and others. All the clubs carried out their club activities throughout the year to engage the campus community in games and sports.

Techkriti



The technical and entrepreneurship festival, Techkriti saw its silver jubilee edition with Techkriti '19.

With the theme of 'Forging the Matrix', representing the endless possibilities and plethora of opportunities for everyone to forge their elevated self, the festival 'Forged the Matrix' with its 25th Edition.

Apart from the various technical exhibitions and

competitions, Techkriti '19 witnessed various Tech-Talks. To name a few,

- Anjali Joshi (Vice President, Product Management, Google)
- Michael Berry (Theoretical Physicist, University of Bristol)
- Jay Vijayan (CEO and founder, Tekion Corp., former CIO at Tesla)
- Peter Atkins (Founding Chairman, IUPAC)
- Michael Foreman (Former NASA Astronaut)

The silver jubilee edition also witnessed the technical summit on the theme Industry 4.0; the fourth industrial revolution that heralds the revolution in data automation and data exchange, for the the first time in India by any institution. The technical extravaganza comprised enlightening workshops, talks and panel discussions with various distinguished personalities.

Techkriti presented interactive session by Girliyapa, Comedy Night Show by Zakir Khan, the much awaited Bollywood Night by Benny Dayal and awe-inspiring and thrilling performance by Nucleya and KTM bike stunt show.

Udghosh

The 2018 edition witnessed more than 60,000 people with more than 2100 participants from more than 200 colleges all across India. With the introduction of new events like Tae-kwon-do, Women's football and Women's Squash and newer initiatives like Udaan (sports for differently abled), which were received well by the community.



This year Udghosh invited famous Football freestylers from Poland : Dawid Krzyżowski and Pawel Skora. Apart from sports, Udghosh also witnessed Indian-Rock concert (Indian Ocean) and Comedy Night by Aakash Gupta and Nishant Tanwar, Talks by Mira Erda (First female Formula Racer), Ira Singhal and Youtubers from Filter Copy. The festival also included performances of Mallkambh artists and concluded with the symphonic voice of Bollywood Singer Amit Mishra.

COUNSELLING SERVICE

Overview and Team Strength

The Counselling Service (CS) primarily provides emotional, academic and financial assistance to students. The CS tries to bring the human touch in a highly competitive academic environment and lends a helping hand to those students who are in emotional, academic or financial distress, thereby trying to create a home away from home.

CS consists of a team of professional counselors, psychiatrists and a group of student volunteers dedicated towards the welfare of the student community. Currently, there are 3 professional counselors, 1 assistant counselor and 3 psychiatrists who regularly visit the Institute.

The student team comprises an undergraduate wing and a postgraduate wing. The UG wing has 5 core team members. They have 13 assistant coordinators and 6 guidance team members. Further there are approximately 140 student guides, 115 academic mentors and 3 volunteers, whereas the PG wing has 8 Core Team members and 75 volunteers.

Sessions by the Counselors and Psychiatrists

Students typically meet the counselors in two modes – they sometimes approach the counselors of their own volition or they are referred to the CS by their friends, faculty members, psychiatrists or the doctors at the Health Centre. Students with academic difficulty are also encouraged to meet the counselors for relief. In the 2018-19 session, 1872 counselor sessions were held.

The psychiatrists typically visit the campus at least twice a month. If the need arises, then, they visit more often. One of the psychiatrists visits the Health Center every Saturday, and, many of the students in need consult him there. In times of an emergency, the student is directly sent to the psychiatrist's clinic, along with an attendant. All the activities related to a psychiatrist's visit are coordinated by the Counselling Service.

The Counselling Service started two new initiatives in the 2018-19 session. The first was the de-addiction clinic, which addresses the problems of students facing any kind of addictions. The second was a mental health initiative titled "Samvad." Numerous programs were held over the calendar year under the banner of Samvad. The programs have had a lot of impact on the community.

Financial Assistance

Through the STUDENTS BENEVOLENCE FUND (SBF), the Counselling Service provides financial assistance to needy students in the form of scholarships. This is available for those financially needy students, who have been unable to acquire any other financial assistance from the institute. The SBF scholarship is Rs.1500 per month and given for a period of 9 months. Apart from this, SBF Loans are also available to those who are in dire need of money.

Academic Assistance

Academic assistance is provided to students facing difficulty in coping with the academic load. The support exists both at an individual level as well as at a group level and is free of cost.

- Remedial Classes: Remedial classes are organized by academic mentors (senior students) to help academically deficient students.
- Study Hours: For underperforming students, study hours are organized by academic mentors during the week before the examinations.
- Technical Terminology Classes: To help the students facing difficulty in understanding technical terms in English, the Technical Terminology Classes are organized towards the beginning of the semester where these technical terms are explained to them in their native language. These are mostly attended by students not proficient in English.

Support to Students under Probation

The Counselling Service provides emotional as well as academic support to the students on academic probation/warning. This year the students in AP/WR were allotted a guide from the operations or guidance team, whose responsibility was to look after his/her allotted counselee and also to act as a link between the student and the counselor. Individual counseling sessions are offered by the counselors to improve the academic performance as well as to resolve emotional issues. A session for the first year students in probation/warning was conducted by the counselors in which they motivated them to

perform better. This had a positive impact on the students.

Orientation Programme

Each year, the Orientation Program is organized for the freshmen before the beginning of the new academic session in July, to acquaint them with the facilities, services, personnel, rules and regulations of the institute and to facilitate a smooth transition into life at the institute. A similar session is again organized the PG team in December.

The core team members, student guides, student volunteers attached to the Counselling Service help the newcomers in this process. The students are also introduced to the Institute Counselors, whom they are encouraged to approach whenever they are confronted with any issues. This time the orientation program was held from the 23rd to the 28th July 2018 with students reporting on the 22nd July.

Gymkhana Presentations, sessions with the counselors, group activities and wing competitions were organized as part of the Orientation Program. To tackle the issue of substance abuse, a session to sensitize the students was conducted by the psychiatrist Dr. Mahendru. This session was followed by an interactive session, where the students raised concerns regarding this issue. A series of talks by some alumni of the institute were also organized during the orientation program and they were very inspiring to the incoming batch of students and were well received. There were talks by the doctors at the Health Center as well during the orientation program.

Other Activities

Throughout the year, several programs were conducted by the CS. A food fest and a zumba session were organized during the course of the year. Amongst other activities, a lantern lighting session and a cleanliness drive were also held. Numerous activities were conducted during the mental health awareness week in September 2018.

Skill Enhancement Workshops/Classes

1. English Conversation Classes: English Conversation Classes are organized during the semesters for the students who face difficulty in understanding and communicating in English. These classes are free of cost and are open to all the students.

Sessions on Other Broad Issues

1. Explore your department: This session was organized for the second and third-year

undergraduate students with the aim of helping them explore and get a better understanding of their respective departments.

2. Session on Study Techniques: A session designed to help students learn better study techniques.
3. Intern Gyan: Senior students share their experiences and knowledge about the various possible opportunities available to their immediate junior batches through this platform.
4. ESO/SO awareness Session: ESO/SO session was organized primarily to guide the first year students who were going to take ESOs and SOs for the first time.

SURGE Program

IIT Kanpur launched an 8-week SURGE (Students-Undergraduate Research and Graduate Excellence) program in the summer of 2006. Under this program, a small number of selected undergraduate students from top engineering colleges from all over India are given an opportunity to explore research and to experience the academic atmosphere of IIT Kanpur. Students in second and third year of their academic program are selected from a large pool of applicants. The students get selected on the basis of their academic record, their research proposal and their technical achievements.

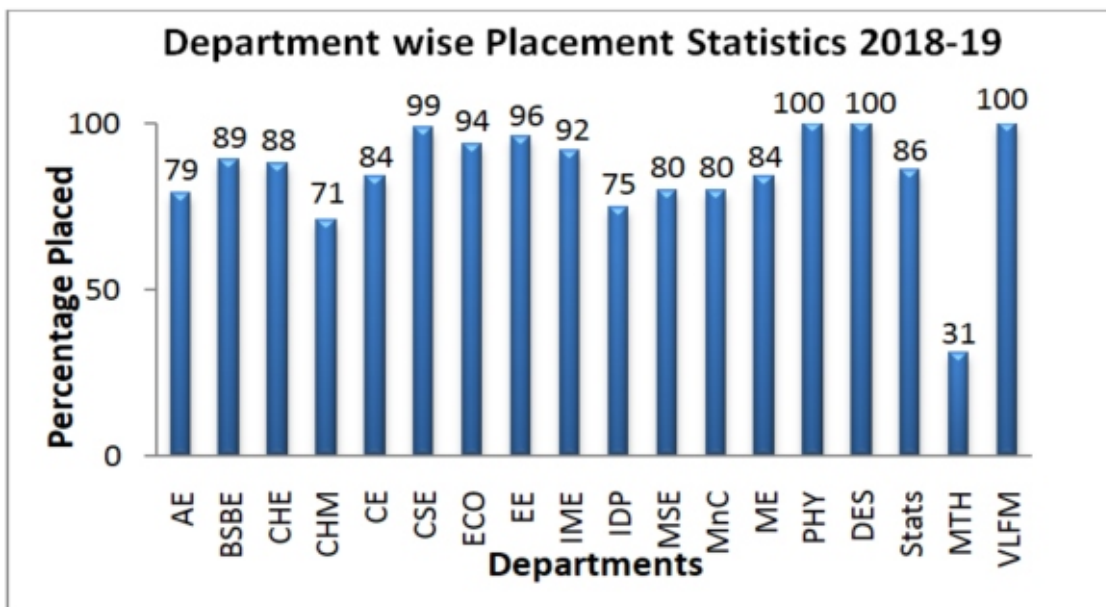
No.	Particulars	SURGE 17	SURGE 18
01.	No. of Applications	1200	2000
02.	No. of Participants	103	123
03.	No. of Faculty members from IIT Kanpur mentoring	73	85

Under the SURGE program, students undertake short-term intensive research projects and push their intellectual abilities beyond those driven by the classroom.

STUDENT PLACEMENT

1041 students registered with Student Placement Office for Campus Recruitment Drive 2018-19. As with previous years, recruitment drive for the academic year 2018-19 was held in two phases. Phase 1 of recruitments officially started on 1st of December and extended till 15th December 2018. Approximately 294 recruiters visited our campus during Phase 1 to hire students for full time employment. 44 top tier firms from various sectors visited our campus for recruitment on December 1st where an unprecedented 238 job offers were made to IITK students. Based on hiring numbers, the top recruiter for

placement season was Intel Corporation who visited campus on day one and hired 34 students. Other top recruiters for the season were HSBC, EXL Services, OYO and Reliance Jio Infocomm Ltd. Phase 2 of recruitments started in January and extended till May 2019. More than 324 companies visited IITK campus for recruitment during the two phases of placements. A summary of department-wise placement record for the current placement season is included in figure above.



Approximately 88.4 percentage of the graduating batch (920 out of the 1041 registered students) were placed through Student Placement Office during the academic year 2018-19. This includes students at both UG and PG levels. Approximately 90.3 percentage of registered students in B. Tech and B.S. degree programs (437 out of 484) were placed during the current placement season. UG placement count given above also includes 95 Pre-Placement Offers (PPO's) extended to IITK students as part of academic internship provided through Student Placement Office. Approximately 86.7 percentage of registered PG students (483 out of 557) were also placed through SPO during campus recruitment drive.

EPILOGUE

I feel immensely happy that I am a part of this special day of your life and congratulate you with all my heart on this momentous occasion. As a fellow alumnus, I must say that this day becomes even more special considering that you are graduating from an eminent institute like ours.

The institute has not only trained you to be world-class scientists, engineers and researchers but has also taught you to be creative and sensitive individuals aware of your responsibilities towards our society. As you chart your professional career, I urge you to be deeply conscious of how privileged you have been to study in the IIT system and of your responsibility to pay back to the society and the nation. Be ready to work hard and sacrifice for a prosperous new India. As Swami Vivekananda had said, “Be Moral, Be Brave, Have faith in yourselves; All power is within you and you can do anything and everything. While you possess the energy of youth, rouse yourselves and aspire for working for the welfare of humanity.”

I am very confident that these formative years spent at IITK will empower you to steer your life to the path of success. May the Almighty bless you and lead you all to the fulfilment of your aims. I wish you all the best in your professional career and assure you that IIT Kanpur will always be there to support you . Stay in touch with your Alma Mater and enhance its glory and fame wherever you go!

For a new beginning and for a new India !



Books published

1. Optimal Space Flight Navigation - An Analytical Approach, Ashish Tewari (AE), Birkhauser, Boston, U.S.A., 2019, ISBN: 9783030037888.
2. Adeno-associated Virus Vectors in Gene Therapy In Gene and Cell Therapy: Biology and Applications (eds), Jayandharan G. (BSBE), Springer, Singapore, 2018.
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4. Pollutants from Energy Sources, R. A. Agarwal, A. K. Agarwal, Tarun Gupta, N Sharma (CE), Springer, 2019.
5. Design of housing for faculty and staff: an overview, Kathpalia, Rajiv; Hoof, Sonke; Sudhir K. Jain, Shobhit Tayal, Palanthandalam-Madapusi, Harish, Greene, Marjorie and Kethineedi, Mouli (CE), 2018, ISBN: 978-81-934412-5-1.
6. Aqueous Phase Adsorption: Theory, Simulations and Experiments, Jayant K. Singh, Nishith Verma (CHE), Taylor & Francis/CRC Press, FL, USA.
7. Efficiency and Budget Balance in General Quasi-linear Domains, Swaprava Nath (CSE), journal Games and Economic Behavior.
8. Computational Intelligence: Theories, Applications and Future Directions-Volume I (ICCI-2017), Nishchal K. Verma, A. K. Ghosh (EE/AE), Springer, 2019, ISBN 978-981-13-1131-4.
9. Computational Intelligence: Theories, Applications and Future Directions-Volume II (ICCI-2017), Nishchal K. Verma, A. K. Ghosh (EE/AE), Springer, 2019, ISBN 978-981-13-1134-5.
10. Basic Electronics: Problems & Solutions, K. Vasudevan (EE), Ane Books Pvt. Ltd., New Delhi, 2018.
11. Analog Communications: Problems & Solutions, K. Vasudevan (EE), Ane Books Pvt. Ltd., New Delhi, 2018.
12. English for Engineers, N. P. Sudharshana, C. Savitha (HSS), New Delhi: Cambridge University Press, 2018, ISBN: 978-110-87-1644-4.
13. Revised Bridge Course: Teachers' Handbook, N. P. Sudharshana (HSS), Dept of Education, Govt of Madhya Pradesh, 2018a.
14. Revised Bridge Course: Students' Handbook, N. P. Sudharshana (HSS), Dept of Education, Govt of Madhya Pradesh, 2018b.
15. Human Adjustment Processes, Braj Bhushan, A. Bajpai (HSS), Ane Books Pvt. Ltd., New Delhi, 2018, ISBN-10: 9386761947, ISBN-13: 978-9386761941.
16. Faith and Social Movements: Religious Reform in Contemporary India, Anindita Chakrabarti (HSS), Cambridge University Press, 2018, ISBN: 978-1-107-16662-2.
17. Advances in Information Technology/Systems and manufacturing Systems, R. R. K.

Sharma (IME), LAP LAMBERT Academic Publishing, Germany, 2018, ISBN-13: 978-613-87800-0; ISBN-10: 6139878004.

18. Relating organizational variables to functional areas of the firm, R. R. K. Sharma (IME), Lap Lambert Academic Publishing, Germany, 2018, ISBN: 978-613-897-3.
19. Relating personality, culture and information systems, innovation to strategy, R. R. K. Sharma (IME), Lap Lambert Academic Publishing, Germany, 2018, ISBN: 978-3-659-88509-9.
20. Articles in operations and supply chain management, R. R. K. Sharma (IME), Lap Lambert Academic Publishing, 2018, ISBN: 978-613-9-91751-8.
21. Research Topics in Organizational Variables: Strategy, Structure and Systems, R. R. K. Sharma (IME), Excel publishers New Delhi, 2018, ISBN: 9-789-388-237116.
22. Research Topics in Organizational Variables: Strategy, Structure and Systems: Part 2, R. R. K. Sharma (IME), Excel publishers New delhi, 2019, ISBN: 978-93-88237-41-3.
23. Regulatory Framework for Long-Term Demand Forecasting and Power Procurement Planning, Anoop Singh, ManvendraPratap, Abhishek Das, Piyush A. Sharma, Kamal K. Gupta (IME), Centre for Energy Regulation, 2018, ISBN 978-93-5321-969-7.
24. Modeling Transport Phenomena in Porous Media with Applications, Malay K Das, PP Mukherjee, K. Muralidhar (ME), Springer International Publishing, 2018, ISBN 978-3-319-69864-9.
25. Air Pollution and Control, Nikhil Sharma, Avinash K Agarwal, Peter Eastwood, Tarun Gupta, Akhilendra P Singh (ME), Springer, Singapore.
26. Coal and Biomass Gasification, Santanu De, Avinash K Agarwal, V S Moholkar, Thallada Bhaskar (ME), Springer, Singapore.
27. Physics of Buoyant Flows -From Instabilities to Turbulence, Mahendra Verma (PHY), World Scientific, Singapore.

Fellowships

1. Professor Arun K. Shukla (BSBE) has been selected for the Swarnajayanti Fellowship in Life Sciences by Department of Science and Technology, Govt. of India.
2. Professor Animangsu Ghatak (CHE) has been elected as Fellow of the Indian National Academy of Engineering, India.
3. Professor Nishith Verma (CHE) has been awarded the Fulbright-Nehru Academic and Professional Excellence Fellowship to conduct research and teaching at Stony Brook University at NY.
4. Professor J. K. Bera (CHM) has been awarded the J. C. Bose National Fellowship by

Science and Engineering Research Board (SERB), a statutory body of DST, Government of India.

5. Professor Manas K. Ghorai (CHM) has been elected as a Fellow of the Indian Academy of Sciences (FASc), India.
6. Professor Debabrata Goswami (CHM) has been elected a Fellow of The Institute of Physics (IOP), UK.
7. Professor Manabendra Chandra (CHM) has been selected for Young Faculty Research Fellowship by MEITY, Govt. of India.
8. Professor Ashis K. Patra (CHM) has been selected for HRSMC Fellowship by Holland Research School of Molecular Chemistry, Netherlands.
9. Professor Madhav Ranganathan (CHM) has been selected for Tec21 Grant for visiting researcher to LIPhy, Grenoble, France
10. Professor Raju Kumar Gupta (CHE) has been selected for P. K. Kelkar Young Faculty Research Fellowship by IIT Kanpur.
11. Professor Yogesh Singh Chauhan (EE) has been selected for the Swarnajayanti Fellowship in Engineering Sciences by Department of Science and Technology, Govt. of India..
12. Professor Aditya K. Jagannatham (EE) with his students Mr. Suraj Srivastava and Ms. Saumya Dwivedi, Department of Electrical Engineering, have been selected for the Qualcomm Innovation Fellowship (QInF) 2018-2019.
13. Professor M Jaleel Akhtar (EE) has been selected for IETE fellowship by IETE, INDIA.
14. Professor Rajiv Sinha (ES) has been selected for COFUND Senior Research Fellowship by Durham University, UK.
15. Professor Santanu Misra (ES) has been selected for PK Kelkar Young Faculty Fellowship by IIT Kanpur.
16. Professor Subhas C. Misra (IME) Engineering, has been elected as a Fellow by the British Computer Society London.
17. Professor Subhas C. Misra (IME) Engineering, has been elected Fellow of the Institution of Electronics and Telecommunication Engineers, UK.
18. Professor Mohua Banerjee (Math) has been nominated as a Fellow of the International Rough Set Society (IRSS).
19. Professor Shalabh (Math) has been selected for fellowship from Indian Academy for Mathematical Modeling and Simulation (IAMMS).
20. Professor BVR Kumar (Math)) has been selected for FIAMMS fellowship by Indian Academy for Mathematical Modeling and Simulation (IAMMS)
21. Professor Avinash K. Agarwal (ME) has been admitted as Fellow of The Royal Society of Chemistry (FRSC).

22. Professor Avinash Agarwal (ME) has been elected as Fellow of the National Academy of Sciences, India (NASI).
23. Professor Anshu Gaur (MSE) has been selected for Visvesvaraya Young Faculty Research Fellowship, Digital India Corporation, MeitY, Govt. of India.

Awards and Honours

1. Professor Sathesh Mariappan, Department of Aerospace Engineering, has been selected for the INAE Young Engineer award, India.
2. Professor D. P. Mishra, Department of Aerospace Engineering, has been conferred the National Design Award in Mechanical Engineering-2018 for his outstanding contribution in the field of engineering design by the Institution of Engineers, India.
3. Professor D. P. Mishra, Department of Aerospace Engineering, has been chosen for the Excellence in Aerospace Award (2017) by The Aeronautical Society of India.
4. Professor Arun Shukla, Department of Biological Sciences and Bioengineering, has been chosen Rajib Goyal prize for young scientists.
5. Professor Arun Shukla, Department of Biological Sciences and Bioengineering, has been selected as one of the recipients of the National Bioscience Award of DBT, New Delhi.
6. Professor Arun Shukla, Department of Biological Sciences and Bioengineering, has been selected for the Professor Rita Mulherkar Lecture Award by the Indian Society of Cell Biology.
7. Professor Arun Shukla, Department of Biological Sciences and Bioengineering, has been selected for the Shakuntala Amir Chand Prize 2017 by the Indian Council of Medical Research (ICMR).
8. Professor Arun Shukla, Department of Biological Sciences and Bioengineering, has been selected for the Young Researcher Award of the Lady Tata Memorial Trust.
9. Professor Ashutosh Sharma, Department of Chemical Engineering, has been selected to receive a State University of New York Honorary Doctorate in Science.
10. Professor Raju Kumar Gupta, Department of Chemical Engineering, has been selected for the Young Scientist Award by the Council of Science and Technology, Uttar Pradesh.
11. Professor Sandeep Verma, Department of Chemistry, has been chosen for the Goyal prize.
12. Professor Debabrata Goswami, Department of Chemistry, has been honored by the International Society for Optics and Photonics (SPIE) as SPIE Fellow (2019).
13. Inorganica Chimica Acta, a prominent international journal of Inorganic Chemistry, has published a special issue in honor of Professor R. N. Mukherjee, Department of Chemistry, on the occasion of his 65th birthday.

14. Professor Debabrata Goswami, Department of Chemistry, has been awarded the 2018 ICO Galileo Galilei Award by the International Commission for Optics.
15. Professor J. N. Moorthy, Department of Chemistry, has been selected for the Silver Medal of the Chemical Research Society of India (CRSI).
16. Professor S. P. Rath, Department of Chemistry, has been selected for the C N R Rao National Prize in Chemical Sciences instituted by C N R Rao Educational Foundation and Chemical Research Society of India (CRSI) for promotion of Chemical Research.
17. Professor Vinod K. Singh, Department of Chemistry, has been awarded the Professor Subramania Ranganathan Memorial Medal (2018) of Indian National Science Academy.
18. Professor Salil Goel, Department of Civil Engineering, has been selected for the Young Geospatial Scientist 2018 award and the Rachapudi Kamakshi Memorial Gold Medal.
19. Professor Tarun Gupta, Department of Civil Engineering, has been selected for the INAE Innovator Entrepreneur Award 2018.
20. Professor Sachchida Nand Tripathi, Department of Civil Engineering, has been awarded 2018 UP Ratna Award, Government of Uttar Pradesh.
21. Professor Salil Goel, Department of Civil Engineering, has been selected for the Young Geospatial Scientist 2018 award and the Rachapudi Kamakshi Memorial Gold Medal.
22. Professor Nitin Saxena, Department of Computer Science and Engineering, has been awarded the S. S. Bhatnagar Prize (2018) in Mathematical Sciences. The award recognizes his outstanding work on the Polynomial Identity Testing Approach in the field of Complexity Theory.
23. Professor Mainak Chaudhuri, Department of Computer Science and Engineering, has been honored by Intel Corp Technology Excellence Award as an expression of Intel India's gratitude for his exemplary contribution, commendable collaboration, and purposeful engagement with Intel India.
24. Professor S. C. Srivastava, Department of Electrical Engineering, has received the Malaviya Award for Excellence in Power Systems 2018.
25. Professor Santanu Mishra, Department of Electrical Engineering, has received the 2018 Premium Award for best paper in IET Power Electronics.
26. Professor Yogesh Singh Chauhan, Department of Electrical Engineering, has been chosen for the CNR Rao Faculty Award.
27. Professor Ketan Rajawat, Department of Electrical Engineering, has been selected for INSA Medal for Young Scientist 2018.
28. Professor R. R. K. Sharma, Department of Industrial and Management Engineering, received the Quarterly Franklin Membership award (Membership ID#RA87720)

given by Editorial Board of London Journals Press (UK) 2019 for impactful research contribution in management and industrial engineering. London Journals Press (UK) is an internationally acclaimed publication organization and an accreditation authority for research standards.

29. Professor Monica Katiyar, Department of Materials Science and Engineering, has been selected for this year's Metallurgist of the Year Award from the Ministry of Steels and Mines, Government of India.
30. Professor Tanmoy Maiti, Department of Materials Science and Engineering, has been awarded 2019 Early Career Scholars in Materials Science by Journal of Materials Research, MRS.
31. Professor Krishanu Biswas, Department of Materials Science and Engineering, has been selected by the Electron Microscopy Society of India (EMSI) for Excellence in Microscopy award 2018.
32. Professor Shalabh, Department of Mathematics and Statistics, has been selected for the Vigyan Ratna Award by the Council of Science and Technology, UP under the category of Science Awards.
33. Professor Somnath Jha, Department of Mathematics and Statistics and Dr. Ketan Rajawat, Department of Electrical Engineering, have been awarded the INSA Medal for Young Scientist 2018.
34. Professor K. Muralidhar, Department of Mechanical Engineering, has been recommended by ASTFE Honors and Awards Committee to become a Fellow of The American Society of Thermal and Fluids Engineers (ASTFE) in recognition of his outstanding contributions to the field of Thermal and Fluids Engineering.
35. Professor Gautam Biswas, Department of Mechanical Engineering, has conferred Honorary Doctorate by Aristotle University of Thessaloniki, Greece.
36. Professor P. Venkitanarayanan, Department of Mechanical Engineering, has been selected for the prestigious 2019 F. Zandman award of the Society of Experimental Mechanics based in CT-USA.
37. Professor Mahendra Verma, Department of Physics, received the Dr. A. P. J. Abdul Kalam Cray HPC award on 21st April 2018 at NIAS Bangalore.
38. Professor Amit Agarwal, Department of Physics, has been awarded the "IPA N. S. Satya Murthy Memorial Award in Physics-2016" of the Indian Physics Association.

Appointments

1. Professor Sandeep Verma, Department of Chemistry, has joined as Secretary, Science and Engineering Research Board, New Delhi (a statutory body of DST, Ministry of Science and Technology, Government of India).
2. Professor J.N. Moorthy, Department of Chemistry, has joined as the Director of IISER Trivandrum

3. Professor Kantesh Balani, Department of Materials Science and Engineering, has been selected as the 2018 ASM-IIM Visiting Lecturer for giving talks in US and Canada under the banner of the American Society of Metals, International.

Editorship/Membership

1. Professor R. Sankararamakrishnan, Department of Biological Sciences and Bioengineering, has been invited to be in Editorial Board Member of Scientific Reports, a Nature Publishing Group.
2. Professor Jayandharan G. Rao, Department of Biological Sciences and Bioengineering, has been selected by the American Society of Gene and Cell Therapy to serve in their Physical Delivery, Therapeutics & Vector Development Committee for the term, May 2019 to May 2022.
3. Professor Jayandharan G. Rao, Department of Biological Sciences and Bioengineering, has been invited to be a part of the education and outreach committee of the International Society of Thrombosis and Hemostasis, USA for a second term [2018-2020].
4. Professor V. Shankar, Department of Chemical Engineering, has been invited to be in Journal of non-Newtonian Fluid Mechanics, Elsevier.
5. Professor Raju K. Gupta, Department of Chemical Engineering, has been invited to join the Editorial Board of Elsevier journal 'Solar Energy' as an Associate Editor. He will be mainly looking after Chemical Processes, Photocatalysis and Solar Environmental Applications.
6. Professor S. P. Rath, Department of Chemistry, has been invited to join the Editorial Board of the journal Chirality. Chirality publishes scientific work on the role of molecular asymmetry in both biologically active and non-biologically active molecules in respect to their pharmacological, biological, and chemical properties. It is published by Wiley, USA.
7. Professor Basker Sundararaju, Department of Chemistry, has been invited to serve as an associate editor of the Journal of Heterocyclic Chemistry (JHC). JHC is a peer-reviewed scientific journal summarizing progress in the field of heterocyclic chemistry. It is published by Wiley-Blackwell (United States).
8. Professor Basker Sundararaju, Department of Chemistry, has been invited to serve as an Early Career Advisory Board Member of ACS Catalysis, American Chemical Society.
9. Professor Sandeep Verma, Department of Chemistry, has been invited by ChemBioChem to serve on its Editorial Advisory Board.
10. Professor Jitendra K Bera (CHM) has been invited to join as an Associate Editor of Applied Organometallic Chemistry, AOC, Wiley Inter science.
11. Professor Debabrata Goswami, Department of Chemistry, has been invited to serve

as an academic editor of the Journal 'PLoS ONE'.

12. Professor Sachchida Nand Tripathi, Department of Civil Engineering, has been appointed the Associate Editor (atmospheric sciences) of The Journal of Indian Geophysical Union.
13. Professor Nihar Ranjan Patra, Department of Civil Engineering, has been invited as a member of Editorial Board of Indian Geotechnical Journal (2019).
14. Professor Priyanka Ghosh, Department of Civil Engineering, has become the member of Editorial Review Board in International Journal of Geotechnical Earthquake Engineering (2018)
15. Professor Nischal Verma, Department of Electrical Engineering, has been included in Editorial Board as an Associate Editor of IEEE Transactions on Neural Networks and Learning Systems for the year 2019.
16. Professor Nischal Verma, Department of Electrical Engineering, has been appointed as an Associate Editor of IEEE Computational Intelligence Magazine for a fourth term.
17. Professor Nishchal Verma, Department of Electrical Engineering, has been included as one of the Guest Editors of IEEE Access for a Special Section on Advances in Prognostics and System Health Management.
18. Professor Ketan Rajawat, Department of Electrical Engineering, has been appointed as an Associate Editor of IEEE Communication Letters.
19. Professor M. Jaleel Akhtar, Department of Electrical Engineering, has been appointed as the Editor of IETE Technical Review, Taylor & Francis.
20. Professor Rajiv Sinha, Department of Earth Sciences, joins as a Member of Editorial Board of journal Earth Surface Processes & Landforms, Wiley Interscience.
21. Professor Arbind K Lal, Department of Mathematics & Statistics, joins as a Member of Editorial Board of journal Proceedings-Mathematical Sciences, Springer.
22. Professor K. Muralidhar, Department of Mechanical Engineering, joins as the Editor-in-Chief of Journal of Flow Visualization and Image Processing.
23. Professor Bishakh Bhattacharya, Department of Mechanical Engineering, joins the International Journal of Systems Science as an Associate Editor.
24. Professor Sameer Khandekar, Department of Mechanical Engineering, will guest editor a special issue of Microgravity Science and Technology entitled Heat pipe systems for thermal management in space.
25. Professor Kantesh Balani, Department of Materials Science & Engineering, joins as the Editor-in-Chief of the journal Nanomaterials and Energy, ICE Publication.
26. Professor Kallol Mondal, Department of Materials Science & Engineering, joins as the Editor of Scientific Reports, Nature Publishing Group.
27. Professor Sudeep Bhattacharjee, Department of Physics, has been invited to join

the Editorial Board as a founding member of Plasma Research Express (PREX), a new journal of Institute of Physics (IOP), for a period till 31st December 2020.

28. Professor Amit Dutta, Department of Physics, has been invited to join as Member of Editorial Board of European Physical Journal B, Springer.

Student Awards (Undergraduate)

1. Mr. Indra Kanshana (AE) received the Best Student Presentation Award for his paper at FMFP-2018 held at IIT Bombay, Mumbai, India during December 10-12, 2018.
2. Mr. Sourav Sinha (AE) won the Vertical Flight Foundation Scholarship of the Vertical Flight Society, USA for 2019 in MS category.
3. Ms. Siddhi Singh (BSBE) received the Outstanding Poster Presentation Award in the 48th Annual Conference of Endocrine Society of India held in Bhubaneswar during November 15-18, 2018.
4. Ms. Krutika Kalkal (CE) received the Young Researcher Award for her presentation at the USMCA (New Technologies for Urban Safety of Megacities in Asia) 2018 International Conference held at the International Institute of Information Technology Hyderabad during December 12-14, 2018.
5. Mr. Anshul Yadav (CE) and Ms. Shubhangi Singh (CE) won the UNIGIS award for the Best Student Presentation at the Geospatial Capacity Building Session 2019 as a part of Geosmart India 2019 Conference held in New Delhi during February 11-13, 2019.
6. Mr. Sayash Kapoor (CSE) received the Best Technical Paper Award at ACM Conference on Fairness, Accountability and Transparency 2019 held during January 29–31, 2019.
7. Mr. Pawan Kumar Patel (CSE) won the Silver Medal in the category Information and Communication Technologies in the Computer Programming contest at the National Abilympics 2018 organized by the National Abilympics Association of India.
8. A team comprising of Mr. Tushar Gupta, Mr. Madhukant, Mr. Pratyush Varshney, and Mr. Nilesh Vasita (CSE) secured the Third Position in the Embedded Security Challenge Cyber Security Awareness Week 2018 organized at IIT Kanpur. All except Pratyush are in the BTech Programme. Pratyush is from the MSR programme.
9. Mr. Abhinay Natti (CSE) and Mr. Dheeraj Athrey Bammidi (CSE) secured the first position in the CSEDM Data Challenge held as part of the CSEDM Workshop (2nd Educational Data Mining in Computer Science Education Workshop) held at LAK 2019, Arizona State University, Tempe AZ, USA on March 5, 2019.
10. Mr. Arjun Gupta, Ms. Shreya Shree, Mr. Manish Chauhan and Ms. Ayushree Gupta (EcoS) won the National Round of 'RBI Policy Challenge 2019' held at the RBI

Headquarters in Mumbai.

11. Mr. Vipul Bajaj (EE), Mr. Saumya Shah (EE), and Ms. Ishika Singh (CHE) won the Grand Prize at the national level competition Deloitte Techno Utsav 2.0. They were adjudged as the best team out of over 9,500 students from 52 campuses across India.
12. Mr. Vipul Bajaj (EE), Mr. Saumya Gaurang Shah (EE), and Ms. Ishika Singh (ChE) won the Grand Prize at the national level competition Deloitte Techno Utsav2.0 being adjudged as the best team after competing with over 9,500 students from 52 campuses across India.
13. Mr. Pragya Shukla (MSP) and Ms. Shikha Awasthi, a Joint Doctoral student at the Institute bagged the Research Ratna Award in Surface Engineering Section at Research under Literal Access at Trichy, Tamil Nadu on February 26, 2019.
14. Mr. Kunjal Shah (PHY) had his publication selected as a Featured Article in the journal 'Physics of Fluids.
15. Mr. Chitres Guria (PHY) was awarded First Position in the Oral Presentation (Physics) for his paper presented in the Research Conclave 2019 held at IIT Guwahati during March 14-17, 2019.
16. Team IGVC (Mr. Aalap Shah, Mr. Hemanth Bollamreddy, Mr. Harsh Sinha, Mr. Deep Parikh, Mr. Abhishek Yadav, Mr. Vaibhav Agarwal, and Mr. Vardhan Gupta) were awarded the NVIDIA GPU Grant award.
17. Team Daksh (Mr. Harsh Sinha, Mr. Aalap Shah, Mr. Hemanth Bollamreddy, Mr. Abhishek Yadav, Mr. Vaibhav Agarwal, Mr. Vardhan Gupta, Mr. Apurva Nandan, Mr. Aryan Choudhary, Mr. Faizan Siddiqui, Mr. Kishan Shukla, Mr. Nitik Jain, Mr. Shivam Kumar, and Mr. Tushar Singhal) scored multiple positions at IGVC (Intelligent Ground Vehicle Competition) held at Rochester, Michigan from June 7-10, 2019. The team competed with 36 other international teams.
18. Mr. Arpit Gupta, Mr. Parv Mor, and Mr. Hritvik Taneja (CSE) stood first in the "unlimited storage category" at the value prediction championship organized at the annual flagship conference of computer architecture, ISCA (International Symposium on Computer Architecture).

Student Awards (Postgraduate)

1. Mr. Anil Kumar Singh (PHY) received Flat Chem Elsevier Best Poster Award in the 8th edition of largest European conference and exhibition in Graphene and 2D Materials, Graphene-2018, held at Dresden during June 26-29, 2018.
2. Mr. Anjani Kumar Pandey (CHM) received the Best Poster Award in 23rd CRSI National Symposium in Chemistry (CRSI-NSC-23) held at IISER Bhopal during July 13-15, 2018.
3. Mr. Dibya Jyoti Sivananda (PHY) received the Best Poster Award, at the National

Conference on Quantum Condensed Matter (Q-Mat 2018) which was held in IISER Mohali during July 25 - 27, 2018.

4. Mr. Aman Nikhil (BSBE) was awarded Springer Nature Best Oral Presentation certificate for his oral presentation at the International conference on Bio Materials, Bio Engineering and Bio Theranostics (BioMET2018) organized by Centre for Biomaterials Cellular and Molecular Theranostics at VIT, Velloreduring July 24-28, 2018.
5. Mr. Shubham Katiyar (ME) was awarded the Speaker of the Day Award in 5th International Conference on Computational Methods for Thermal Problems, (ThermaComp) 2018 held at the Indian Institute of Science Bangalore from July 9-11, 2018.
6. Ms. Anjali Dwivedi (ME) was awarded the "Ronald W. Lewis Award - Runner Up" in 5th International Conference on Computational Methods for Thermal Problems (ThermaComp) 2018 held at the Indian Institute of Science Bangalore from 9-11 July 2018.
7. Mr. Vinayak A Drove (IME) received the Best Creative Idea for Entrepreneurship award at the Summer Entrepreneurship Camp in Taiwan
8. Mr. Burra Gunasekhar (BSBE) received prestigious EMBO Short-term Fellowship to work on a collaborative research project at the University of Sussex, UK.
9. Mr. Priyank Rastogi (EE) received the Best Research Oriented Paper for the IETE-SK Mitra Memorial Award for his paper published in IETE Journal of Research March-April 2017 issue.
10. Mr. Anuj Kumar More (MTH-STATS) received the Best Student Paper Award for his paper presented at the International Joint Conference on Rough Sets (IJCRS 2018) held during August 20-24, 2018, at QuyNhon, Vietnam.
11. Dr. Saptarshi Ghosh (EE) was selected for the conferment of INAE Innovative Student Projects Award 2018 at Doctoral Level for his PhD thesis.
12. Dr. Abhijit Chandra Roy (CHE) was selected for the INAE Innovative Student Projects Award 2018 at the Doctoral Level for his PhD thesis.
13. Ms. Annwasha Dutta (PHY) had her research article published in the Proceedings of the National Academy of Sciences (PNAS).
14. Mr. Shashank Sharma (ME) received the Best Poster Award for his poster presented at COMSOL 2018, Bangalore.
15. Ms. Pradhi Rajeev (CE) and her team received the Poster Competition Award in the International Aerosol Conference (IAC), 2018 held in St. Louis, USA from September 2-7, 2018.
16. Ms. Kajal Chaudhary (MSP) received the Best Poster Award in OSI-ISO-2018 Conference held at IIT Kanpur during September 19 – 22, 2018.
17. Mr. Saifilzhar (CE) was awarded the Outstanding Poster Presentation Award by the

American Geophysical Union and Chinese Academy of Science at the AJM 2018 Xian, China.

18. Mr. Vipul Bhatia (BSBE) won the Best Poster Award with a cash prize at the UK-India Cancer Bioinformatics Workshop 2018 held at the Advanced Centre for Treatment, Research and Education in Cancer (ACTREC), Tata Memorial Centre, Mumbai during October 28-31, 2018.
19. Dr. Virender (BSBE) has been awarded the Sailife-NOST Best Thesis Award 2018 of the National Organic Symposium Trust.
20. Dr. Abhijit Mal (CHM) has been awarded the Sailife-NOST Best Thesis Award 2018 of the National Organic Symposium Trust.
21. Mr. Ambuj Kumar Gautam (ME) received the Excellent Paper Award for his paper at the 12th International Collaboration Symposium on Information, Production and System 2018, held in the IPS Waseda University, Japan.
22. Dr. Sarvesh K. Pandey (CHM) was selected for the "Best Thesis Award - 2019" in Chemical Sciences. The award was presented at the Indian Society of Chemists and Biologists (ISCB) 25th ISCB International Conference (ISCB-2019) held in Lucknow during January 12 – 14, 2019.
23. Mr. Akash Aggarwal (ME) received the Best Poster Award in the 7th International Conference on Solidification Science and Processing (ICSSP-2018) held in Thiruvananthapuram during November 19-22, 2018.
24. Ms. Nabodita Sinha (BSBE) won the Second Prize for Poster Presentation in Basic Nanosciences at the 3rd International Nanobiotech Conference 2018 at AIIMS New Delhi.
25. Ms. Suneeti Mishra (CE) won the First Prize in Poster Presentation at the "Conference of Indian Aerosol Science and Technology Association-2018" held at IIT Delhi during 26-28 November, 2018.
26. Mr. Abhishek Sharma (EE) was awarded the AP-RASC (URSI Asia-Pacific Radio Science Conference) 2019 Young Scientist Award instituted by the International Union of Radio Science (URSI) for his submission to the 2019 URSI Asia-Pacific Radio Science Conference (AP-RASC 2019), New Delhi March 09-15, 2019.
27. Dr. Debdeep Sarkar (EE) was awarded the AP-RASC-2019 (URSI Asia-Pacific Radio Science Conference AP-RASC-2109) Young Scientist Award instituted by the International Union of Radio Science (URSI) for his paper presented at 2019 URSI Asia-Pacific Radio Science Conference (AP-RASC 2019), New Delhi, March 09-15, 2019.
28. Dr. Suchita (PHY) was the co-recipient of the Best Thesis Award of the Indian Laser Association in 2018. She was awarded at the DAE-BRNS National Laser Symposium (NLS 27) held during December 3-6 at RRCAT, Indore.
29. Ms. Shweta Sharma (CHE) received the Best Poster Award at the Complex Fluids Symposium (CompFlu) 2018 held at IIT Roorkee.

30. Dr. Soumava Mukherjee (EE) received the Best Paper Award at IEEE-INAE Workshop on Electromagnetics 2018 (IIWE 2018) held from 6-8 December 2018 at Thiruvananthapuram.
31. Dr. Soumava Mukherjee (EE) was selected for the AP-RASC (Asia-Pacific Radio Science Conference) 2019 Young Scientist Award instituted by the International Union of Radio Science (URSI).
32. Ms. Alekha Tyagi (MSP) received the Best Presentation Award in the "International Conference of Soft Materials (ICSM) 2018", held at MNIT Jaipur during December 09-14, 2018.
33. Mr. Rajesh Kumar (PHY) received the Best Poster Award in the 14th International Conference on Fiber Optics and Photonics - PHOTONICS 2018 held at IIT Delhi during December 12-15, 2018.
34. Mr. Ajitesh Singh (CHM) received the Best Poster Award in the 14th International Conference on Fiber Optics and Photonics - PHOTONICS 2018 held at IIT Delhi during December 12-15, 2018.
35. Mohd. Ali Abbas Zaidi (BSBE) received the Best Poster Award at the Biennial Meeting of the Indian Society of Developmental Biologists 2018, organized at IIT Kanpur during December 11 - 15, 2018.
36. Ms. Kritika Gupta (CHM) received the Best Poster Award in 9th Asian Biological Inorganic Chemistry (AsBIC9) Conference held in Singapore.
37. Ms. Aditi Kumawat (CE) was awarded the Best Presenter Award at the Indian Geotechnical Conference (IGC-2018) held in Bengaluru during December 13-15, 2018.
38. Dr. Keerti Choudhary (CSE) was awarded the 2018 ACM India Doctoral Dissertation Award for her PhD thesis titled "Compact and Efficient fault tolerant structures for Directed Graphs".
39. Mr. Debapratim Dhara (EE) received the Dr. Sudhakar Rao Best Student Paper Award at the 2018 IEEE Indian Conference on Antenna and Propagation (InCAP-2018) held at Hyderabad on December 16 -19, 2018.
40. Ms. Gaurangi Gupta (EE) was awarded the "Dr Sudhakar Rao Best Female Student Paper Award" at the 2018 IEEE Indian Conference on Antenna and Propagation (InCAP-2018) held at Hyderabad on December 16 -19, 2018.
41. Mr. Prasannabalaji Sundaram (AE) had his research article selected as a Featured Article in the journal Physics of Fluids.
42. Mr. Ravi Shakya (AE) had his research article selected as Featured Article in the journal Physics of Fluids.
43. Mr. Eshan Ghosh (BSBE) was selected as a co-recipient of Dr. J Nagaraju Memorial Research Awards in Life Sciences-2018.
44. Ms. Arpita Haldar (PSE) received the Best Oral Presentation Award in the

International Conference on Optoelectronic and Nano Materials for Advanced Technology, held in Kochi (Kerala) during January 3-5, 2019.

45. Mr. Nitish Kumar Gupta (PSE) received the Best Oral Presentation Award in the International Conference on Optoelectronic and Nano Materials for Advanced Technology, held in Kochi (Kerala) during January 3-5, 2019.
46. Mr. Arijeet Mitra (ES) received the 'Raman Charpak Fellowship, 2018' for research and training in CRPG-CRNS, Nancy, France.
47. Mr. Nidhish Raj (AE) won First Runner Up Prize for Best Student Project in Aero India 2019, Bangalore for a design that can be used for payload / medicine delivery, surveillance and Air Taxi etc.
48. Mr. Tathagata Bandyopadhyay (CE) received the Second Prize for Outstanding presentation at the National Environmental Conference 2019, organized by IIT Bombay.
49. Ms. Annwasha Dutta (PHY) was selected for the Best Young Investigator Presentation in the International Conference on Multiscale Simulation & Mathematical Modelling of Complex Biological Systems – MSMM 2019”, jointly organized by Jawaharlal Nehru University (JNU) and Rice University, USA, held at JNU Delhi during January 30-February 01, 2019.
50. Ms. Soumita Boral (ES) received the Augmenting Writing Skills for Articulating Research" (AWSAR) 2018 Award from DST for her story on nutrient dynamics of Ganga River.
51. Ms. Meenaxi Sharma (PHY) received the Augmenting Writing Skills for Articulating Research (AWSAR) 2018 Award from DST for her popular science story.
52. Mr. Arka Ghosh (BSBE) received the "Augmenting Writing Skills for Articulating Research" (AWSAR) 2018 Award from DST for his popular science story.
53. Ms. Ayesha Nanda (PHY) received the Best Poster Presentation Award for her poster at the International Conference on Photonics, Metamaterials and Plasmonics (PMP-2019) held at the Jaypee Institute of Information Technology (JIIT), Noida during February 14 - 16, 2019.
54. Ms. Sucharita Maji (HSS) received the Best Paper Award for her paper in the 2nd Indian Congress of Industrial and Organisational Psychology held at M S University, Baroda during February 23 - 24, 2019.
55. Mr. Vipul Bhatia (BSBE) bagged the Best Oral Roche Scholar-In-Training Award at the 38th Annual Convention of Indian Association for Cancer Research at PGIMER, Chandigarh held during March 1-3, 2019.
56. Ms. Sakshi Goel (BSBE) received the Second Best Poster Presentation Roche Scholar-In-Training Award at the 38th Annual Convention of Indian Association for Cancer Research at PGIMER, Chandigarh held during March 1-3, 2019
57. Mr. Nishat Manzar (BSBE) received the Second Best Poster Presentation Roche

Scholar-In-Training Award at the 38th Annual Convention of Indian Association for Cancer Research at PGIMER, Chandigarh held during March 1-3, 2019

58. Mr. Bidhan Hazra (CHM) received the Best Poster Award for his presentation at the 16th Theoretical Chemistry Symposium (TCS 2019) organized at BITS Pilani, Pilani Campus, during February 13-16, 2019.
59. Mr. Banshi Das (CHM) received the 'Best Poster Award' for his presentation at the conference "Dynamics at the Interface of Chemistry and Biology" held at IISc Bangalore during February 18-20, 2019.
60. Ms. Nidhi Sorout (CHM) received the 'Best Poster Award' for her presentation at the conference "Dynamics at the Interface of Chemistry and Biology" held at IISc Bangalore during February 18-20, 2019.
61. TEAM NIRATYAYA (Ms. Shreyasi Som, Mr. Sai Sowmya Nagam, Mr. Atul Kumar Soni, Mr. Avinash Kumar, Mr. Rakesh Kumar Panda and Mr. Shivam Kumar Srivastva) (EE) won the Software Edition Smart India Hackathon (SIH) 2019 held at Kochi.
62. Mr. Abhinav Gupta (CHM) received PCCP (Physical Chemistry Chemical Physics) Best Poster Prize at the Workshop and Symposium on Advanced Simulation Methods: DFT, MD and Beyond (ASM-2019) held at Indian Institute of Technology Delhi, during March 6-9, 2019.
63. Ms. Nidhi Sorout (CHM) received PCCP (Physical Chemistry Chemical Physics) Best Poster Prize at the Workshop and Symposium on Advanced Simulation Methods: DFT, MD and Beyond (ASM-2019) held at Indian Institute of Technology Delhi, during March 6-9, 2019.
64. Ms. Deepika (CHM) received PCCP (Physical Chemistry Chemical Physics) Best Poster Prize at the Workshop and Symposium on Advanced Simulation Methods: DFT, MD and Beyond (ASM-2019) held at Indian Institute of Technology Delhi, during March 6-9, 2019.
65. Mr. Chirag Kumar (EE) received the Best Oral Presentation Award at the Research Conclave'19 held at IIT Guwahati from March 14-17, 2019.
66. Ms. Ruchi Tripathi (EE) received the Best Poster Presentation Award at the Research Conclave'19 held at IIT Guwahati from March 14-17, 2019.
67. Ms. Rima Bhattacharya (HSS) was selected for a Scholarship to participate in the 2019 session of the Institute for World Literature, an apex body for World Literature, at Harvard University, during July 1-25, 2019.
68. Mr. Rajorshi Ray (HSS) was selected to attend the 2019 Summer Doctoral Programme at the Oxford Internet Institute (OII).
69. Mr. Sumanta Ghosh (CSE) had a research article published in the Proceedings of the National Academy of Sciences (PNAS).
70. Ms. Tiasa Bal (HSS) received a Scholarship to attend the Six-week 2019 Session of

School of Criticism and Theory (SCT) at Cornell University.

71. Mr. Parvraj Bharatesh Pachore (EE) stood as 1st Runner-up in 'Student Innovation Pavilion, GRIDTECH 2019', an event organized by POWERGRID with the support of Ministry of Power in New Delhi during April 3-5, 2019.
72. Ms. Poonam Sundriyal (ME) won a Symposium Grant Award in the Battery and Energy Technology Joint General Session in the ECS 235th Conference held recently in Dallas, Texas, USA during May 26-30, 2019.
73. Mr. Vinayak Drave (IME) has been invited to deliver talk on engineering education in India and Chair a session in upcoming 3rd European IEOM conference to be held on July 23 – 26, 2019 in Pilsen, Czech Republic.
74. Ms. Meha Mishra (HSS) has received a Travel Grant from Association of Symbolic Logic (ASL) to participate in the 12th Panhellenic Logic Symposium being held in Greece from June 26-30, 2019. She has also been invited as a guest researcher in the University of Konstanz and University of Hamburg.
75. Mr. Shubham Maurya (BSBE) has received a Travel Grant to deliver a Platform Presentation at the XXVII Congress of the International Society of Thrombosis and Haemostasis and 65th Annual Scientific and Standardization Committee (SSC) Meeting to be held in Melbourne, Australia from July 6 – 10, 2019.
76. Mr. Debasish Ghorui (HSS) won an all India merit award for excellence in art at a recent art workshop organized by the Tourism, Art, Culture, Sports and Youth Affairs Department, government of Jharkhand and sponsored by the Eastern Zonal Cultural Centre, Government of India.
77. Mr. Kawshik Ray (HSS) was selected for the ASLE Travel Award for 2019 biennial conference of ASLE (Association for the Study of Literature and Environment) to be held in UC Davis, California.
78. Ms. Kamini Singh (IME) was awarded DAAD scholarship for the Indo-German Centre for Sustainability (IGCS) Summer School on Smart Grids: Electricity Networks as the Backbone of a Carbon Neutral Society.
79. Ms. Arpita Gupta (HSS) has been awarded the David B. Feinsilver Award to travel and participate in the ISPS (International Society for Psychological and Social Approaches to Psychosis) 2019 Conference to be held in Rotterdam from August 28 2019 – September 1, 2019.
80. Ms. Sangita Dey (MTH & STATS) won the Best Poster Award at the International Conference on Differential Equations and control problems: Modeling, Analysis and computations held during Jun 17-19, 2019 at IIT Mandi.

Major Projects Sanctioned

1. Strategic University Network to Revolutionise Indian Solar Energy (EPSRC)
2. Manipulation of Structure, Composition and Properties of CuO Ceramics and Thin

- Films to Achieve Near Room Temperature Multiferroism for Device Applications (SERB)
3. Combination of EGFR Targeting Aptamers and Chemotherapeutic Agent in a Single Stimuli-Responsive Drug Delivery System for Improved Treatment of Triple Negative Breast Cancer (DBT)
 4. A Study of Time Effects on Behaviour of Pile-Raft Foundations (BRNS)
 5. Virtual Lab Phase III (MHRD)
 6. Mixed Explosives Biodegradation for Remediation of Contaminated Ground Water (UGC)
 7. Thermal Infrared Technologies for Supporting Environmental Assessment and Decision Making in the Ganges Basin (STFC)
 8. Targeting Nexus of Metabolic and Neurodegenerative Disorders: Application in Lafora Disease and Islet Amyloid Deposits (SERB)
 9. Mix-Energy-Source Electric Vehicle Charging System Design (DST)
 10. Elucidation of Active Site Dynamics, Function and Receptor Binding of Insulin at the Single Molecular Level (SERB)
 11. Rural Technology Action Group (PSA)
 12. Construction of a Combined Recoil Ion Momentum and Electron Energy Spectrometer to Study Collision Induced Excitation and Fragmentation of Molecules and Clusters (SERB)
 13. Scientific Validation of Ayurvedic Formulation Medicines Recommended for Mitigation of Cancer Anorexia Cachexia Syndrome (CACS) in The Drosophila Tumour Model (SERB)
 14. Fundamental Process Engineering to Minimize Re-Oxidation of Steel During Teeming via a Ladle Shroud Leading to Improved Castability and Cleanliness (MOS)
 15. EIL-ENGSUI/SIIC (EIL)
 16. Improved Description of The Water Cycle in the Upper Ganga Catchment Using Isotopic, Geochemical Data and Model Simulations (MOES)
 17. Theoretical Studies of Hydrogen Bond Fluctuation and Time Dependent Infrared and Terahertz Spectroscopy of Aqueous Solutions of Complex Molecular Solutes (SERB)
 18. Wind Tunnel Model Design, Fabrication & Testing of Flying Wing Configuration (ADE)
 19. HDFC Bank CSR (HDFC)
 20. Double Sn² Cascade for Biomimetic Total Synthesis of Anti-Diabetic Natural Products Chlorabietol A-C and Callistrilones A, B (SERB)
 21. Electric Field Controlled Spin Dynamics In Nanomagnets (DST)

22. Developing A Compact Graphene Based Hall Sensor for Monitoring Steel Structures Under Stress in Advanced Materials (DST)
23. Identification of the Molecular Mechanism (S) by which Bmp Signaling Regulates the Migration of Mouse Cortical Neurons (DBT)
24. Delhi Air Quality Experiment: A Paradigm Shift in Source Apportionment (CPCB)
25. ICME National Hub-TCS Grant Project (TCS)
26. Development and Demonstration of Fibre-Optic Sensor-Based System for Aircraft Loads and Usage Monitoring (SERB)
27. Development of Energy Harvesting Device with Giant Power Density (~10 MW/SCM) Using Thin Film Multiferroic Composites (SERB)
28. Preparation of Cost-Effective Transition Metal Oxides-Dispersed Graphitic Nanocomposite-Based Electrodes of A Microbial Fuel Cell for Simultaneous Bioelectricity Generation and Cod Reduction in Waste water (SERB)
29. Skin-Friction Drag Reduction Through Control of the Turbulent Boundary Layer on Axisymmetric Bodies (NRB)
30. Automated Synthesis of Hot Ion Plans for Large Scale Multi-Robot Systems from Complex Specifications (DRDO)
31. Sparc: Development of 3d Printable Bone And Nerve Guiding Drug Eluting Composite Implants for Vertebral/Spine Trauma in Infection/Tuberculosis and Cancer (MHRD)
32. SPARC: Vibration Absorption Using Metamaterial Based Composites (MHRD)
33. SPARC: Deployment of Low-Cost Multi-Rotor Mini-UAVS for Early Detection of Crop Diseases and Development of an Optimal System for Management of Farming Activities (MHRD)
34. SPARC: Machine Learning for Lattice Quantum Chromodynamics (MHRD)
35. Development of A Non-Invasive Drug Delivery System for the Treatment of Posterior Eye Diseases (DBT)
36. Direct 3D Bioprinting Strategies to Study Articular Cartilage Development and Regenerative Therapy for Osteoarthritis (DBT)
37. Structural Basis of Activation, Signalling and Regulation of the Human Complement Receptor, C5ar1: A GPCR Drug Target in Sepsis and Inflammation (DBT)
38. Towards Realization of Additive Manufacturing of Aerospace Structural Component in India (SERB)
39. Technology Demonstrator of An Infra-Red Camouflage Screen Based on Large Area Metamaterials (SERB)
40. Experimental and Theoretical Investigations of Complex Rheological Behaviors in Time Dependent (Aging) Soft Materials (SERB)

41. Design and Development of Textile Based Metamaterial Absorber for Radar Stealth (SERB)
42. Passive Stall Control of Turbo Machinery Blades Using Leading Edge Tubercles (SERB)
43. Development of Amorphous Metal Oxy-Nitride Semiconductors for TFTS (SERB)
44. Michael Initiated Ring Closing Reactions: Enantioselective Synthesis of Highly Substituted Spiro-Cyclopropanes (SERB)
45. Low Altitude Long Endurance (LALE) Unmanned Aerial System (UAS) for Surveillance, Reconnaissance and Asset Monitoring (GAIL)
46. Stability Analysis, Protection and Coordinated Control of Networked Microgrids (DST)
47. The Development of Very High Resolution CFS Model Based on Icosahedral Grid (IITM)
48. Continuous Monitoring of Sampreeti Setu (New Jubilee Bridge): Instrumentation, Design And Health Assessment (ER-IR)
49. Femtosecond Laser Approaches to Quantum Information and Computation Towards a Perfectly Secure Channel for Robust and Scalable Information Processing (MEITY)
50. Delhi Air Quality Experiment: A Paradigm Shift in Source Apportionment (IIT Kanpur Part) (CPCB)
51. Xact 625i Ambient Metals Monitoring Systems (CPCB)
52. Delhi Air Quality Experiment: A Paradigm Shift In Source Apportionment (CPCB)
53. Center of Excellence for Defence Corridor (UPEIDA)
54. Development of Solid-State Thermoelectric Power Generator for Electricity Generation from Waste Heat in Steel Plant (SERB)
55. Advanced Control and Protection of Intelligent Dc Microgrids (SERB)
56. Fabrication of New Generation of Self Resorbing Implants and Devices from Bioactive and Biodegradable Materials for Orthopaedic Applications (MHRD, ICMR, ORPL)
57. Addressable Peptide-Polymer-Electrospun Nanofibers for Cell Sorting Diagnostics and Delivery (MHRD)
58. Biodegradable Polymers For Packing Applications (MHRD)
59. Aircraft Engine Combustor Design for Improved Operability, Durability, Pattern Factor and Emissions (MHRD, GE)

Labs/ Facilities developed

1. Stem Cell Research Facility (SCRF) was established with Institute funding to

accelerate research in tissue regeneration and artificial organoids at AIC. PI: Professor Sandeep Verma (CHM).

2. Drum composting facility created for biodegradable municipal solid waste management of IIT Kanpur campus from Institute funds. PI: Professor Abhas Singh (CE).
3. State of the art laboratories continue to be developed at the SCDT-National Centre for Flexible Electronics.
4. ICME National Hub. PI: Professor Amarendra K. Singh (MSE).

Software developed

1. Developed a physics based helicopter comprehensive analysis software called CARMA(AE).
2. A physics-based software for flight dynamic analysis of helicopters has been developed with blade model having full flap-lag-torsion degrees of freedom, unsteady aerodynamics and dynamic inflow. This software has been transferred to Aeronautical Development Establishment (ADE) for its application in Naval Rotary Unmanned Aerial Vehicle Project(NRUAV) (AE).
3. TreadWill: automated delivery of cognitive behavioral therapy for depression (BSBE).

Technologies developed

1. Fully autonomous rotary winged unmanned aerial vehicle (RUAV) of 10 kg class has been developed at IIT Kanpur and the onboard autopilot software developed for autonomous control and navigation to this class of RUAVs has been transferred to HAL RWR & DC Bangalore. PI: Professor Abhishek (AE).
2. General purpose multi-platform / vehicle autopilot NAAVIK (Navigation for Autonomous Aerial Vehicles by IIT Kanpur) for autonomous control and navigation of fixed and rotary wing UAVs (AE).
3. A new high efficiency helicopter design has been developed which employs a novel method for anti-torque balancing of helicopter by employing dissimilar coaxial rotors (AE).
4. Innovative internal combustion engine powered high endurance variable pitch quadrotor Unmanned Air Vehicle has been developed and demonstrated (AE).
5. Variable pitch quadrotor tailsitter UAV for payload delivery: a proof of concept prototype has been developed and flight tested, a proposal has been submitted to HAL RWR&DC Bangalore (AE).
6. A novel low cost high efficiency Vertical Axis Wind Turbine (VAWT) with dynamic blade pitching (resulting in low startup speed and high power coefficient) suitable for

low wind areas have been developed and demonstrated (AE).

7. Developed and demonstrated the flight of world's first Remote Controlled Boomerang UAV called "Sudarshan", a patent has been filed on this design (AE).
8. Designed a prototype development of hand launched(10kg class)fixed wing UAV for Tata Advisory Systems Limited(TASL). PI: Professor A. K. Ghosh (AE).
9. Solar UAV fixed wing; the design has been taken over by VTOL Aviation.). PI: Professor A. K. Ghosh (AE).
10. Designed and developed as flight tested a scale model of ADA, Stealth aircraft (Ghatak). PI: Professor A. K. Ghosh (AE.)
11. Designed and developed code to analyse stability aspects of super cavitating projectile (under water) NSTL Vishakhapatnam (AE).
12. A non-invasive nanoparticle-based sustained release ocular drug delivery system for the treatment of anterior and/or posterior eye diseases. PI: Professor D.S. Katti (BSBE).
13. Smartphone-based field monitoring tool for hexavalent chromium detection in groundwater: Developed in collaboration with Industry partners as part of the ongoing IMPRINT project this is the first smartphone-based tool that can successfully measure hexavalent chromium in water. Both laboratory and field trials in contaminated waters have been successful and having resulted in real-time monitoring of contaminated sites near Kanpur. PI: Professor Abhas Singh (CE).
14. Decentralized water treatment unit for chromium(VI) removal from contaminated groundwater: As part of the ongoing IMPRINT project. PI: Professor Abhas Singh (CE).
15. An integrated off-line smart air sampler with user-centric design. PI: Professor Tarun Gupta (CE).
16. Synthesis of a physical eco-friendly mixture of carbon microfibers and nanofibers for simultaneous scavenging of chromium from soil and increasing nutrient uptake in plant as a biofertilizer. PI: Professor Nishith Verma (CHE).
17. Cell Separation Technology based on Explicit Cell Surface Markers – Indian Patent (together with Professor S Ganesh and Professor S Patil, and student co-workers). PI: Professor Sandeep Verma (CHM).
18. Tax stamp labels (FlexE).
19. Heater jackets (FlexE).
20. Conductive pens (FlexE).
21. Solar cells on paper (FlexE).
22. Pig iron as sacrificial anode and corrosion resistant coating. PI: Professor Kallol Mondal (MSE).
