



DIRECTOR'S REPORT

Dr. Kailasavadivoo Sivan, Chief Guest of the Function, Members of the Board and the Senate, Degree recipients, Distinguished Guests, Colleagues, Ladies and Gentlemen.

It is a great pleasure for me to welcome you all to this special Golden Jubilee 50th Annual Convocation of Indian Institute of Technology Delhi, and to present to you a brief report highlighting our activities, achievements and future plans. We are highly honoured and pleased to have with us Dr. K. Sivan, Chairman, Indian Space Research Organisation and a distinguished aerospace scientist, who has kindly agreed to be the Chief Guest on this solemn occasion.

Dr. Kailasavadivoo Sivan, Secretary, Department of Space and Chairman, Space Commission has relentlessly worked in the field of Aeronautical Engineering, specifically in the area of Launch Vehicle Technology for the past 37 years to make India self-reliant in assured access to space.

Born on 14th April, 1957 in a farmer family in Sarakkalvilai village of Kanyakumari District, he completed his primary education in Tamil medium school. After completing B.Sc. Mathematics from Madurai University, he joined Madras Institute of Technology to pursue B.Tech. Aeronautics. Thereafter, he completed his M.E. in Aerospace Engineering from Indian Institute of Science, Bangalore and Ph.D. in Aerospace Engineering from Indian Institute of Technology, Mumbai.

He joined Vikram Sarabhai Space Centre on 29 October 1982 and since then has played a key role in the design and development of ISRO's launch vehicle programme. His major contributions are in reviving GSLV programme after back-to-back failure and

leading the Flight testing of SCRAMJET engine as well as technology demonstration flight of re-usable launch vehicle (RLV-TD).

He is the Chief Architect of 6D trajectory simulation software SITARA and Day of Launch-Wind Biasing (DOL-WB) strategy for ISRO's launch vehicles which are used in all ISRO's launch vehicle missions.

The Gaganyaan Programme was approved under his leadership. A new vertical on Human Spaceflight was added into ISRO's scope of activities and a new Human Spaceflight centre was established at Bangalore for managing human spaceflight programme.

He strongly believes that technology leaders of tomorrow have to be motivated and trained today. Yuvika summer vacation training programme targeting high school students was initiated to motivate students to take up science as a career option. In addition, he regularly interacts with student community for improving the awareness on space programme as well as motivating students for taking up career in R&D for National development.

Dr. K. Sivan is a Fellow of the Indian National Academy of Engineering (INAE), Aeronautical Society of India (AeSI), Systems Society of India (SSI) and Indian Systems Society for Science and Engineering (ISSE), Institution of Electronics & Telecommunication Engineers (IETE) and Indian National Science Academy.

At the outset, it is a great pleasure and privilege for me to share with you all that in the recently announced NIRF (National Institutional Rankings Framework), IIT Delhi has improved its rankings both in the Engineering as well as in the Overall



category. In the Engineering Category, IIT Delhi is now ranked No. 2 in the country for 2019. IIT Delhi has scored highest in Research and Professional Practice parameter with a score of 96.18 among the top engineering institutions. In the rankings published by India Today, IIT Delhi has been ranked #1 in 2019. Also, in the QS world university rankings, IIT Delhi secured an overall rank of 172 in 2019 and 182 in 2020 and in the Engineering category, IIT Delhi is ranked at No. 61 in the world. In the QS India rankings 2020, IIT Delhi ranks 3 in India, in 2019 IIT Delhi was ranked 4, an improvement by one rank. We have continuously improved our ranking in the last 3 years both in NIRF as well as in the Engineering category of QS World ranking. Also, in the Research Impact category of QS World ranking, IIT Delhi scored 80.6 marks out of 100, making it to the league of top research universities across the world.

As you all know, IIT Delhi has been bestowed with the status of Institution of Eminence (IoE) in 2018. Under the IoE status, the Institute has undertaken many new initiatives covering academic, research, administrative and infrastructural domains during the year. All these initiatives undertaken are making a good progress. Kudos to the entire faculty fraternity, students and staff for their outstanding contributions leading to the IoE recognition for the Institute. Let us realize that we stand on the shoulders of alumni, the retired faculty, the past leadership and the ex-employees of the institute, as well as our well-wishers. We have created a dedicated IoE website for information dissemination to external stake holders for the purposes of transparency and accountability. Interdisciplinary research for impactful research, internationalization for enhanced cultural diversity and Industry connect for bringing relevance & delivery to our research form the hallmark of IIT Delhi's IoE strategy. At IIT Delhi, we call it,

bringing unlike minds together; minds with different disciplinary backgrounds, different cultures and different attitudes. At IIT Delhi, we believe in hiring the best minds, give them the right platforms and resources and see them fly.

I must say, our efforts in all these directions are bearing fruit. We made offers to 3 international faculty (non Indian origin) in the last few months and also admitted 7 times more international students this year compared to last year. We also started two new joint Ph.D. programs with top universities abroad, one with the University of Queensland in Australia and another with NCTU in Taiwan. Together, in both these joint Ph.D. programs we admitted 30 Ph.D. students in the last one year. Faculty visited various universities in the USA, Malaysia, Bangladesh, and Australia for attracting foreign students and faculty to IIT Delhi. We also launched a scheme for attracting foreign Ph.D. students to IIT Delhi by creating an International Ph.D. Fellowship Program (IPFP) with 500 fellowships. IPFP was launched with about 65 students joining the program in one semester this year. We also started a new M.Tech. programme in Renewable Energy Technologies & Management sponsored by the International Solar Alliance. In this M.Tech. programme we have students from 18 developing countries. Thanks to IIT Delhi's efforts, a program was also formally launched by MHRD and MEA to fund 1,000 scholars from Association of Southeast Asian Nations (ASEAN) to pursue Ph.D. in the Indian Institutes of Technology (IITs). IIT Delhi has been designated by MHRD as the national coordinating IIT for the ASEAN Ph.D. fellowship programme. Our goal is to have at least 20% of our Ph.D. students as international students or as part of these international joint Ph.D. programs over a period of time. IBM-IITD AI Horizons Network (Neuro-Symbolic Information Systems), Indo-Korea



Joint Network Centre on Robotics (Human-Centered Robotics), Indo-German Science and Technology Centre (Biotechnology for recovery from waste) are some of the other major research projects initiated with international partnerships.

Some of the major research initiatives undertaken by the Institute include – Faculty Interdisciplinary Research Program to enhance interdisciplinary and collaborative research across the Institute; Faculty Innovation and Research Driven Entrepreneurship (FIRE) for promotion of entrepreneurship culture among faculty; 1-2-3-4 Discover and Learn Projects Scheme to enhance research aptitude among undergraduate students and increase the component of ‘learning by research’; IRD Student Startup Action Scheme; Summer Undergraduate Research Award; IRD Early-Doc Fellowship Scheme to support Ph.D. students after the successful completion of Ph.D. viva-voce examination to complete the manuscript writing out of thesis work; Research Excellence Travel Award to top 20% of Ph.D. students who are within five years of their registration and have completed the comprehensive examination requirements, but not submitted thesis; Village internship program for students of IIT Delhi to give them an exposure to rural problems, multiple immersion programs etc. Also, thanks to the generous support of our alumni, we have 34 endowed chair positions for faculty and also created research excellence awards for our faculty who excel in research.

On the interdisciplinary research front, IIT Delhi has entered into MoUs with All India Institute of Medical Sciences (AIIMS), National Institute of Immunology (NII), Indian Council for Agricultural Research (ICAR), 5 CSIR laboratories (NPL, CEERI, AMPRI, IMMT, and CSIO) and the All India Institute of Ayurveda (AIIA). 95 new funded projects under the Faculty Interdisciplinary Research Program (FIRP) have

been sanctioned between faculty within the institute and with faculty from AIIMS, ICAR, NII etc. IIT Delhi is also taking major steps to connect with the industry. We have created a Dean (Corporate Relations) office and staffed it with professionals to give a boost to our industry interactions.

The Research output of the Institute has shown significant enhancement due to different initiatives for fostering interdisciplinary collaborations within the institute as well as with other institutions. In comparison to the average research funding of about ₹100 Crores per year in the period from 2014 to 2016, the research funding has shown 4 times increase to about ₹380 Crores per year in the period 2017-18 and 2018-19. About 300 new research projects and 290 industry consultancy projects have been undertaken in the year 2018-19 alone. The number of new research projects initiated per year has increased 2 times. We are expecting our sponsored R&D funding per year to cross ₹500 Crores in the next one or two years.

About 45 new student projects have been started this year with an objective of involving students towards fundamental research and entrepreneurship. With an objective of increasing its research focus in the areas importance to society and industry, IITD has set up Yardi Centre of Excellence (CoE) in sustainable infrastructure, a new CoE on waste to wealth (with DSEMI, Denmark and PSA office), Multi Industry Consortium on Artificial Intelligence (partnership with Nokia) and a CoE on Energy Storage Platform on Batteries (DST) in the last one year.

Enhancing India’s Science, Technology and Innovation Policy Analysis Capabilities (Tata Education and Development Trust), Nanoelectronics Network for Research and Application (DST, MEITY), Building end to end 5G Test Bed (MEITY), Social Media Analytics for Security (National



Security Council Secretariat) are some of the major research projects undertaken this year. Joint Advanced Technology Center, created with funding from DRDO is making rapid strides with projects in 5 verticals being supported by JATC right now. IIT Delhi is also one of the three institutions identified by DST, Govt. of India for setting up a 'Sophisticated Analytical and Technical Help Institute' (SATHI) in our Sonapat campus with a funding of ₹125 crores. With the SATHI facilities and the institute's close to ₹100 crores investments made in the Central Research Facilities, IIT Delhi is on its way to creating the best in class research infrastructure in the country for advanced research.

We have also undertaken major steps to augment our educational offerings. In the last two years alone, we have created two new Departments (Dept. of Design & Dept. of Materials Science and Engineering), two new Schools (School of Public Policy & School of Interdisciplinary Research) and two new Centers (Center for Automotive Research & Center for Sensors, Instrumentation and Cyber Physical Systems Engineering). In the year 2020, IIT Delhi will be launching multiple new degree programs, which include a B.Tech. program in Material Engineering, a B.Des. program in Design, a new M.Sc. program in Economics and another M.Sc program in Cognitive Sciences among others which are currently in the planning stage. IIT Delhi has also announced the PG Diploma programme, through which a one year diploma will be offered by the Institute in specialized areas. Framework for Joint Diploma with a partner Institution is also approved. A new M.Tech. programme on Renewable Energy Technologies and Management for sponsored candidates was started by the Centre for Energy Studies, IIT Delhi. The programme is being sponsored by International Solar Alliance (ISA), and

administered by the National Institute of Solar Energy (NISE, Delhi). A new M.Tech. program in Energy & Environment Technologies and Management was also started by the Centre for Energy Studies. A new Master of Science (Research) program in Materials Science and Engineering and VLSI Design Tools and Technology were initiated this year. A new M.Tech. programme in Materials Engineering was also started by the department of Materials Science and Engineering. Our Board of Educational Research and Planning has also approved a new M.Tech program in Artificial Intelligence & Machine Learning.

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

During the year 2018-19, the Institute received ₹556.52 Crores as Plan Grant (₹479.81 Crores for Recurring Expenditure and ₹76.71 Crores for Non-Recurring expenditure). The income from internal accrual from the fees, interest and overheads on sponsored projects was to the extent of ₹117.06 Crores. Within the financial resources available to the Institute, a number of construction and development activities have been started to augment the Institute infrastructure. During the year 2018-19, the Institute also received ₹42.96 Crores from MHRD under Institution of Eminence (IoE) scheme. Institute also has been sanctioned ₹588.60 Crores

as an interest free loan from the Higher Education Finance Agency (HEFA) for the infrastructure needs.

Over the years, the Institute has built a strong research tradition, which can be seen by the impressive statistics in terms of various research indicators. Specifically, we have continuously improved on our credentials in research as evidenced by way of publications and Ph.Ds per faculty, which are among the highest for any institution in India and compare favorably with the best in the world. Total number of research publications of IIT Delhi indexed in Scopus database for November 2018 to October 2019 grew to 2791. Our target of continuously searching for and significantly increasing the intake of quality candidates into our Ph.D. programs is on the right course and we are seeing a robust growth in our Ph.D. graduation rate. This year, during this convocation, IIT Delhi is awarding 331 Ph.D. degrees, which demonstrates a consistent Ph.D. output of the Institute. It is noteworthy that over 54% of registered students at IIT Delhi are currently masters and Ph.D. students. Institute has over 2833 Ph.D. students on its rolls right now.

In order to jump start the research activities of newly joined faculty members, IIT Delhi provides a seed research funding to the new faculty upon joining the Institute to the tune of ₹50 lakhs or more when necessary. During the year, the Institute sanctioned the New Faculty Research Grant of a total of ₹967.58 lakhs to 57 faculty members as per their needs.

As the Research & Development activities are seeing a robust growth at IIT Delhi, our focus has also been to strengthen the “Relevance & Delivery” aspects of our research. IIT Delhi has been entrusted with the responsibility of being the nodal coordinating institution for the country by MHRD for the Unnat Bharat Abhiyan (UBA) programme of Govt. of India.

Till date, a network of 2244 Participating Institutions (PIs) with more than 11000 villages have been adopted under the Unnat Bharat Abhiyan. This year we have created 44 Regional Coordinating Institutions (RCIs) in the country (covering all the states) for smooth functioning/implementation of the programme in an effective manner. These institutes are IITs, NITs, central and state Universities. There are 11 Subject Expert Groups (SEGs) working on the subject specific problems for technical and management interventions/guidance to participating institutions in Agriculture, Water management, Rural energy, Craft and Artisans, Rural Sanitation, Ethos in technical education, School Education, Rural Infrastructure, Capacity Building, etc.

An MoU with DRDO for setting up a Joint Advanced Technology Centre was finalized and initially projects in 3 verticals were approved. JATC subsequently expanded to five verticals and more projects have been initiated. One set of JATC Labs have been made functional. Two sets of projects are being assessed.

The 15th OPEN HOUSE of IIT Delhi was held on 20th April 2019. Like in earlier years, the event received overwhelming response this year too. About 3500 students registered for the open house. In addition to invited lectures by IIT Delhi faculty for school students and a display of 300 posters by students, there were about 60 live demonstration of products and technologies. Demonstration of Glass blowing skills, robotic display, aero-modelling competitions were some of the other attractions.

IIT Delhi has registered around 33% increase in the total number of women candidates this year through JEE. The actual number increased from 139 in 2018 to 189 in 2019. PG and Ph.D. programs are continuously seeing an increase in number of women candidates which stands at around 28% at present.





IIT Delhi has by far the best eco-system for startups in the country. IIT Delhi alumni have created close to 600 startups, the highest in the country as compared to alumni of any other institute. Of the close to 30 unicorns created by Indians, 15 of them are by IIT Delhi alumni alone. IIT Delhi alumni led startups have created over 30 million jobs and raised USD 15 Billion in investments and have been the trend setters in the country as well as in other countries. We are further building upon this culture of innovation and wish to produce more and more job providers rather than job seekers. Institute has taken many new steps in this direction. Towards fostering innovation-led start-ups, FITT has enabled the establishment and operation of thriving incubators, namely; Technology Business Incubation Unit (TBIU), Biotechnology Business Incubation Facility (BBIF) in the IIT Delhi campus and the Sonipat Residential Incubator (SRI) at the IIT Delhi Technopark (ITEC), Sonipat. The TBIU is a flagship institute program designed primarily to promote partnership with new technology entrepreneurs and start-up companies, and also to serve a medium of technology transfer. During October 2018-19, 23 companies are resident at the TBIU and 9 in the BBIF. The Sonipat Residential Incubator which is operational since April, 2018 is also currently incubating 9 Startups. FITT provides co-share equipment facility to biotech start-ups. These companies are working in the technology domains of IT, Biotechnology, Engineering design, Cleantech etc. Out of the 102 companies admitted so far in the incubator since its inception in the year 2000, 47 companies have started their up-scaling/commercial operation after completing their incubation at the Institute and are reported to be successful and growing at a steady pace. IIT Delhi is targeting 100 residential startups in the next two years through creation of an Innovation Park on the campus.

IIT Delhi has launched a Platform for Harnessing Deep Technology (PHD) Startup incubator for creating an eco-system for Ph.D. graduates to start their entrepreneurship journey. This program is designed to support innovators and entrepreneurs to carry forward a promising deep technology idea and generate proof of concept to validate the idea. With the infrastructure, mentorship and funding support, the PHD incubator program is designed to help entrepreneurs working in deep technology domains to take a quantum leap towards commercialization. This program envisions to support deep technology ideas that may be high risk, but at the same time, have substantial market potential. In the first round, two deep tech startups have been incubated in the PHD incubator.

As part of our outreach activities, the institute has made significant efforts in the last one year to connect with the industry. The major initiatives and the activities of the Institute for collaboration with industry include the Postgraduate Executive Program in collaboration with NITIE, Mumbai in Visionary Leaders for Manufacturing; Common Engineering Facility Centre in collaboration with Automation Industry Association and active participation in the Uchhatar Avishkar Yojana and the IMPRINT schemes of MHRD. There are also 17 Centers of Excellence created with participation of external agencies and industries at IIT Delhi. IIT Delhi also has created a full-fledged Dean (Corporate Relations) office with professional staff managing it. The corporate relations team organized the institute's third annual flagship event, Industry Day 2019 on 21st September, 2019. Industry Day 2019 witnessed discussions and deliberations by illustrious speakers from Thermax, Reliance Industries, SEMI and many other thought leaders on the themes - Clean Energy for Sustainable Economy and Environment; Sustainable Medical



Technologies; Emerging Nano and Advanced Materials; Sustainable Environment; and Make in India. More than 25 hands-on products were demonstrated. The event also showcased over 130 industrially relevant posters by our Ph.D. students. Another special feature was a session on 'Women in Science' that discussed the need for gender parity in various science disciplines by women personalities from various fields. This was followed by a Deep Tech Panel Discussion. 'Research Café' sessions were also held on the sidelines to facilitate interaction between IITD research scholars and Chief Executive Officers of Industry.

FITT manages the Institute's IPs and IPRs. Over 800 patents have been filed by IIT Delhi faculty and students so far. During the FY 2018-19, 115 IPs were filed and 10 licensing deals were closed. FITT has been at the forefront in managing several innovation and entrepreneurship programs in the country. It acts as a nodal agency / partner in implementing several schemes of Govt bodies like Ministry of Electronic and Information Technology MietY's seed support in the broad area of ICT under the "Technology Incubation and Development of Entrepreneurs" (TIDE) scheme; BIRAC's Biotechnology Ignition Grant (BIG) scheme etc. In association with Pfizer, FITT is implementing a unique PPP program - Pfizer IIT Delhi Innovation and IP Program, thereby providing financial grant support : i) Upto ₹60 lakhs to healthcare based innovators/start-ups for incubation and ii) ₹3 lakhs for IP protection for selected applicant.

FITT also manages a few investment support schemes eg NIDHI-Seed Support System (NIDHI-SSS) program of DST wherein FITT provides upto ₹1 Cr funding to incubatee start-ups: so far nine incubatees have been supported by seed funding to the tune of ₹3.24 crores. Similarly, FITT invests in biotech startups under BIRAC's SEED and LEAP

support program to the tune of ₹30L and ₹100L, respectively. For the last three years FITT has been promoting the Women Entrepreneurship and Empowerment (WEE) program supported by the Department of Science and Technology (DST) at IIT Delhi. The Deferred Placement Policy (DPP) offered by IIT Delhi is being implemented by FITT for students who opt out of placement in order to inculcate their start-up idea. A student must opt for deferred placement in the final semester of the pre-final year and is eligible to sit for placement after two years if their start-up is not successful. Selected innovative ideas are eligible for incubation at the TBIU. In the year 2018-19, six applicants were shortlisted under DPP.

The alumni of the Batch of 1969 have signed an MoU with IIT Delhi on February 18, 2019 to establish an annual award named the "Batch of 1969 Innovation Fellow (Award)". To set up a special fund for this Award, the Batch of 1969 has collectively contributed over ₹1 Cr with an aim to promote a spirit of innovation and entrepreneurship among the graduating students at IIT Delhi.

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

MHRD, vide their letter dated 14.2.2019, conveyed their approval for formation of a Section 8 Company, to be operated by a Consortium of IITs, viz., IIT Delhi, IIT Madras and IIT Kharagpur, for the purpose of undertaking accreditation activities. Further necessary action is in progress in coordination with the other two IITs.

Our faculty members are among the finest in the country and are recognized internationally for



their quality of research, teaching and curriculum development. They also contribute greatly for the development of the nation by being associated with a large number of decision making bodies, providing crucial guidance and advice on policy matters and technical issues. 47 new faculty members and 42 Post Doctoral Fellows have joined the Institute in the last one year.

The Institute has also created new faculty positions, viz., Professor of Practice and Adjunct Professor of Practice to induct suitable candidates as faculty with industrial background from the academic Session 2019-20 for teaching, research and development. These appointments will be on the same lines as that of the Visiting Professors and Adjunct Faculty respectively within the overall sanctioned strength of the academic/faculty positions.

Our distinguished faculty colleagues continue to make a difference to the world of Science, Engineering, Humanities and Management and continue to earn recognitions and awards which bring glory to the Institute. Many of them have been bestowed with honors, awards and elected as Fellows of several professional national and international bodies during the last one year. Some of the notable recognitions received by our faculty in the last one year include the following:

- Prof. Bhim Singh, Department of Electrical Engineering, has been awarded NPSC Award for Academic Excellence for the year 2018. He has also received Life Time Achievement: “Sulochana and Col. A. Krishnaswami VRC, VSM Faculty Research Award”.
- Prof. D. Sundar, Department of Biochemical & Biotechnology has been elected as a Fellow of the “Biotech Research Society of India (BRSI)”.
- Prof. Amit Kumar, Department of Computer Science & Engineering, has been awarded for the Shanti Swarup Bhatnagar Prize in the Mathematical Sciences category for 2018.
- Prof. Bipin Kumar, Department of Textile and Technology has been selected for the “IEI Young Engineers Award 2018-19” in Textile Engineering discipline.
- Prof. Rajendra S. Dhaka, Department of Physics received “Young Achiever Award” from BRNS during DAE-SSPS 2018.
- Prof. Ranjan Mallik, Deptt of Electrical Engg, has been awarded Basic Research: “Prof. P.C.P. Bhatt Faculty Research Award”.
- Prof. P.V. Madhusudan Rao, Department of Mechanical Engineering has been awarded Applied Research: “Prof. K.L. Chopra Faculty Research Award”. He has also been elected Fellow of the American Society of Mechanical Engineers (ASME).
- Prof. M. Suri, Department of Electrical Engineering and Prof. Neetu Singh, CBME have been awarded jointly for Early Career: “Veena Arora Faculty Research Award”.
- Prof. Neeraj Khare, Department of Physics, has been awarded the MRSI Medal by Materials Research Society of India, IISc Bangalore.
- Prof. Ashiwini Kumar Agrawal, Department of Textile Technology, has been awarded the “Abdul Kalam Technology Innovation National Fellowship” by Indian National Academy of Engineering (INAE).
- Prof. Sanjiva Prasad, Department of Computer Science & Engineering, has been selected as “Editor-in-Chief” of the ACM Book series.



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- Prof. M. Balakrishnan, Department of Computer Science & Engineering, has been awarded the “ACM Eugene L Lawler award for 2018” for humanitarian contributions within Computer Science and Informatics for research, development, and deployment of cost-effective embedded-system and software solutions addressing mobility and education challenges of the visually impaired in the developing world.
- Dr. Manik Varma of Microsoft Research, who is an adjunct professor of the department received the 2019 Shanti Swarup Bhatnagar award.
- Prof. M. Ali Haider, Department of Chemical Engineering has been awarded “Amar Dye-Chem Award” for “Excellence in Basic Research and Development in Chemical Engineering” by Indian Institute of Chemical Engineers, Dec. 2018. He has also awarded “Hari Om Ashram Prerit Research Award on Renewable Energy” by Sardar Patel Renewable Energy Research Institute.
- Prof. Preeti Ranjan Panda has been awarded Technovation 2018 award in the Techno Mentor category.
- Professor Ashok Kumar Ganguli, Department of Chemistry received the Silver medal of the Chemical Research Society of India (CRSI) in February, 2019. Prof. S.K. Khare of the department has been awarded the Fellowship of National Academy of Agricultural Sciences, India 2019; Royal Society of Chemistry, United Kingdom, 2018; Biotech Research Society of India, 2018; and Academy of Microbiological Sciences, India, 2018. He has also been awarded Malaviya Memorial Award for Teaching-(Biotech Research Society, India) 2018.
- Prof. Sukumar Mishra, Department of Electrical Engineering has been selected for the IETE-Bimal Bose Award-2019 for his significant contribution to the development of multifunctional inverter for photovoltaic (PV) systems to enhance their penetration in the Indian grid.
- Prof. Swades De, Department of Electrical Engineering has been selected for the IETE-Ram Lal Wadhwa Award-2019 in recognition of his contribution to cross-layer design and optimization towards resource-efficient and energy sustainable communication systems and networks.
- Prof. (Ms.) Kamlesh Singh, Department of Humanities & Social Sciences has been selected for “Rajbhasha Gaurav Award” for her book in Hindi on ‘Gyan-Vigyan’ for the Citizens of India. She has also been awarded “Shane J.Lopez award for Professional Contributions in Positive Psychology” by Section on Positive Psychology, American Psychological Association.
- Prof. Manav Bhatnagar, Department of Electrical Engineering has been awarded “Hari Om Ashram Prerit Dr. Vikram Sarabhai Research Award 2017”.
- Prof. Anurag Sharma, Department of Physics has been awarded “JC Bose fellowship”.
- Prof. Neetu Singh, CBME received the NASI Scopus Young Scientists Award, 2019 - Women In Science.
- Prof. Ashwini K. Agrawal, Textile and Fiber Engineering Department has been awarded Abdul Kalam Technology Innovation National Fellowship 2019 by Indian National Academy of Engineers. Prof. Javed N. Sheikh of the department has been awarded Fellowship of Society of Dyers and Colourists (FSDC), U.K. Prof. Bipin Kumar of the department has been awarded IEI Young Engineer Award 2018-19 by Institute of Engineers. Prof. R. Alagirusamy of the department has been awarded The Institution of Engineers Award



on the occasion of the thirty second national convention of Textile Engineers, Jan-2019. Prof. Amit Rawal of the Department has been awarded Fulbright-Nehru Professional Fellowship to initiate collaboration with MIT, Cambridge, USA.

- Prof. K.K. Pant, Department of Chemical Engineering has been selected for the coveted honour of 'Fellow Award' of the Biotech Research Society, India (BRSI - www.brsi.in) for the year 2019.
- Dr. Nabi Hasan, Librarian, received the Royal Society of Chemistry's Biennial Librarians Choice Award for Dynamic Librarian 2019 and the SLP-SLA Asian Fellow Award 2019.
- Prof. V. Ramgopal Rao, Director, IIT Delhi has been selected for Shri Om Prakash Bhasin Award 2018 in the field of Engineering including Energy and Aero Space. The award carries an amount of Rupees One Lakh with a citation and plaque by Shri Om Prakash Bhasin Foundation for Science & Technology.

Infrastructure becomes a key element for sustenance of the rapid progress institute is making in all of its activities. Institute has also crossed the 10,000 student enrolment mark this year in 2019. We have ongoing infrastructure projects with an investment of over ₹750 crore on the campus right now. These include one fully air-conditioned boys hostel with a capacity of 896, one fully air-conditioned girls hostel with a capacity of 320, one faculty housing complex with a total of 154 flats, one sports complex, two engineering blocks with a total area of 7,25,000 sq.ft, a 2,04,000 sq.ft. science and innovation park and one married students hostel with 103 flats. All these projects will be completed between December 2019 to August 2020. Once completed, these facilities are expected to significantly ease the space constraints on the campus. We have multiple new infrastructure

projects which will be starting this year. We are also looking at a public-private partnership model for the running of our hostels this year. We believe, this will greatly enhance the efficiency of our hostel operations. While the Government has supported us with generous funding for infrastructure for which we are grateful, our alumni have extended significant support to the Institute. Our alumni have given donations to help us take some of our important projects forward, in addition to instituting Chairs and the Young Faculty Incentive Fellowships, both of which help us to reward our bright faculty for their outstanding performance. Our student placement activities are also seeing a robust trend. We have renamed our Training & Placement office as "Office of Career Services" keeping in tune with the activities undertaken by them. During the period for the placement process in the last one year, requisitions were obtained from 484 companies for 611 job profiles with selections on 304 profiles as a result of which 942 students were placed. A total of 1043 job offers were received (many students got multiple jobs). 46 students got selected for opportunities abroad. Approximately 87% students who registered for T&P services got placed through T&P. The remaining opted for higher Studies/research or are preparing for civil services or are working on their own startup ideas or got jobs through their own contacts/efforts.

On the human resources front, in order to enhance the efficiency of our employees, many training programs are regularly conducted including Executive Development programs for the officers. To encourage the employees to work in Hindi and also in compliance with the direction of the government, special training programmes were also conducted for use of Hindi in official transactions. The Institute is in an advanced stage of implementing the ERP System for a paperless work environment



to automate its operations in all the functional areas. It has already implemented some modules online. The recruitment process for staff is in full swing as per the Recruitment Rules approved by the Board of Governors which will equip the Institute with adequate manpower for efficient functioning.

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

Our alumni are among the most distinguished in the world. At IIT Delhi, we have put in place various structures through which they can contribute to the institute activities. Alumni engagements are managed through Dean of Alumni Affairs & International programs. A monthly newsletter has been started covering the activities of Alumni, Faculty and Students. During this period 11 editions of the newsletters have been brought out. A number of campaigns seeking the support of the Alumni have been launched on Alumni Portal as well as on other platforms. This apart, mentorship opportunities are now available for the Institute students on the portal. A number of students have benefitted out of this. The portal is also being used by Alumni and others for advertising interesting job opportunities for students as well as Alumni. This portal is one of the most effective ways of engaging with our alumni.

The fund raising for the Institute objectives saw a major growth. Apart from the contributions made to the endowment fund, Institute has received contributions for specific initiatives to the tune of ₹23.50 Crore. A commitment of close to ₹16.4 Crore has also been obtained during this period. As a part of its outreach initiatives, the Institute celebrated its Golden Jubilee Reunion (Batch 1968 and 1969), Alumni Day, Silver Jubilee Reunion (Batch 1994),

Pearl Reunion (1984 Batch) in December 2018. These Reunions played an important role in further deepening the bond of mutual love and respect that has existed between the Institute and its Alumni.

Hon'ble President of India Shri Ram Nath Kovind launched the IIT Delhi Endowment fund on 31st October 2019. IIT Delhi alumni will contribute to this fund which will be operated on the lines of such funds being run by the leading universities of USA like Harvard and Stanford. The fund already has a commitment of ₹255 crores and it is expected to touch ₹1,000 crores by the end of 2020. The final goal is to set up an endowment model at IIT Delhi that will achieve the target corpus of USD 1 Billion over a period of seven years. The fund will have a transparent structure and corporate governance model that will work towards building a relation of trust and credibility with its alumni through better communication, professionally managed team structure and periodic reporting.

A governing Board of Advisors for the fund which will consist primarily of alumni and the IIT Delhi administration (Director and Dean Alumni Affairs). The earnings from the fund will be utilized under the guidance of this Governing Board of Advisors for IIT Delhi. The prominent donors are: Binny Bansal, Sachin Bansal, Sandeep Singhal and Kavita Iyer Singhal, Vikram Gupta and partners from Iyycap Ventures, Amarjit Bakshi, Saurabh Mittal, Arun Duggal, Neeraj Arora, Sujeet Kumar, Sashi Reddy, Amar Sawhney, Ranu Vohra, Surendra Jain, Gautam Kumra, Gaurav Kushwaha, Sujeet Kumar and Jassi Chadha. All of them have contributed/committed anywhere from 5 crores to 100 crores for the Endowment fund in the two months. Institute thanks them immensely for their contributions.

The Institute recognizes the outstanding contributions made by the alumni in various areas by conferring the



Distinguished Alumni Awards and the Distinguished Alumni Service Awards each year to recognize their achievements and outstanding contributions to academics, business, profession and/or public service. This year the Distinguished Alumni Awards will be conferred on Mr. Binny Bansal, Co-founder Flipkart, B.Tech. 2005 (CSE) for his outstanding contributions in Entrepreneurship; Prof. Srinivasan Keshav, University of Waterloo, B.Tech. 1986 (CSE) for his outstanding contributions in Teaching and Research and Dr. Mohit Aron, Founder Cohesity & Co-founder Nutanix, B.Tech. 1995 (CSE), for his outstanding contributions in Entrepreneurship. The Distinguished Alumni Service Awards will be conferred on Mr. Arun Duggal, Chairman ICRA, MCF Ltd., IARC, B.Tech. 1967 (Mechanical Engg.) and Mr. Amarjit Singh Bakshi, MD Central Park, Bakshi group, B.Tech. 1967 (Civil Engg.) for their significant efforts and contributions made towards the development and progress of the Institute.

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

Finally, I conclude by conveying my heartiest congratulations and best wishes to each one of the 2,042 graduates receiving their degrees and diplomas, and the 113 graduates receiving the awards/medals/cash prizes for their special achievements at the 50th Convocation of the Institute. It is noteworthy to mention that 331 Ph.D. students are receiving their Ph.D. degrees at this Convocation.

We are confident that your stay with the Institute has enabled you to continue the process of lifelong learning and to take up challenging careers. We are also confident that you will provide the leadership the country and the world expects from you. We wish you success in whatever you choose to be. Keep in touch with your alma mater, support it in whatever way you can, and keep the IIT Delhi flag flying high. I am sure that you would work for a better world where science and technology are used in socially responsible ways, and in harmony with the nature. We wish to see you become job providers and not remain as job seekers forever. Institute will always be your second home. After your parents, it will be the institute which will cherish your successes. Do not also forget that your education here was subsidized anywhere from 100% to 70% from the tax payer's money, the money that could have gone to provide food for a hungry child. You need to pay back your debt at some point in time. That is the only way a country such as India can nourish and sustain excellence in her higher educational Institutions.

I am also happy to inform you all that IIT Delhi and ISRO have signed an MoU today for creation of a Space Technology Cell (STC) at IIT Delhi for strengthening research collaborations between our two institutions.

I once again thank our Chief Guest, Dr. K. Sivan and all the distinguished guests for being with us on this solemn occasion.

Thank you.

Jai Hind.

V. Ramgopal Rao

Director, IIT Delhi

November 2, 2019