

# ANNUAL REPORT

## 2020-2021

(April 1, 2020 - March 31, 2021)

DIAMOND JUBILEE

60 YEARS

IIT DELHI



# INDIAN INSTITUTE OF TECHNOLOGY DELHI

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# Annual Report

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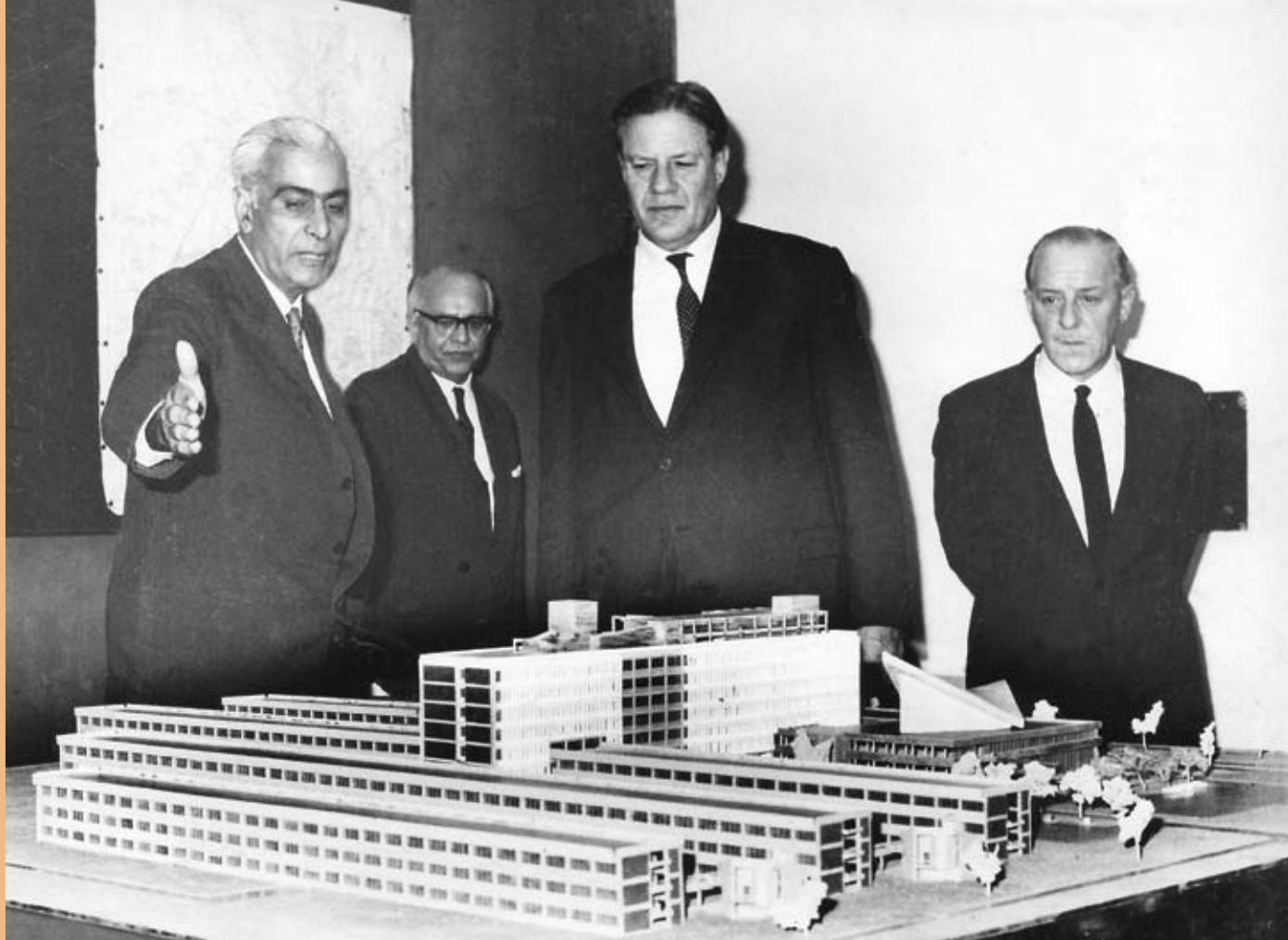


Indian Institute of Technology Delhi  
[www.iitd.ac.in](http://www.iitd.ac.in)



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## About us

### History

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

IIT Delhi, established as College of Engineering in 1961, was later declared an Institute of National Importance under the "Institutes of Technology (Amendment) Act, 1963", re-named as "Indian Institute of Technology Delhi", and accorded the status of a deemed university.

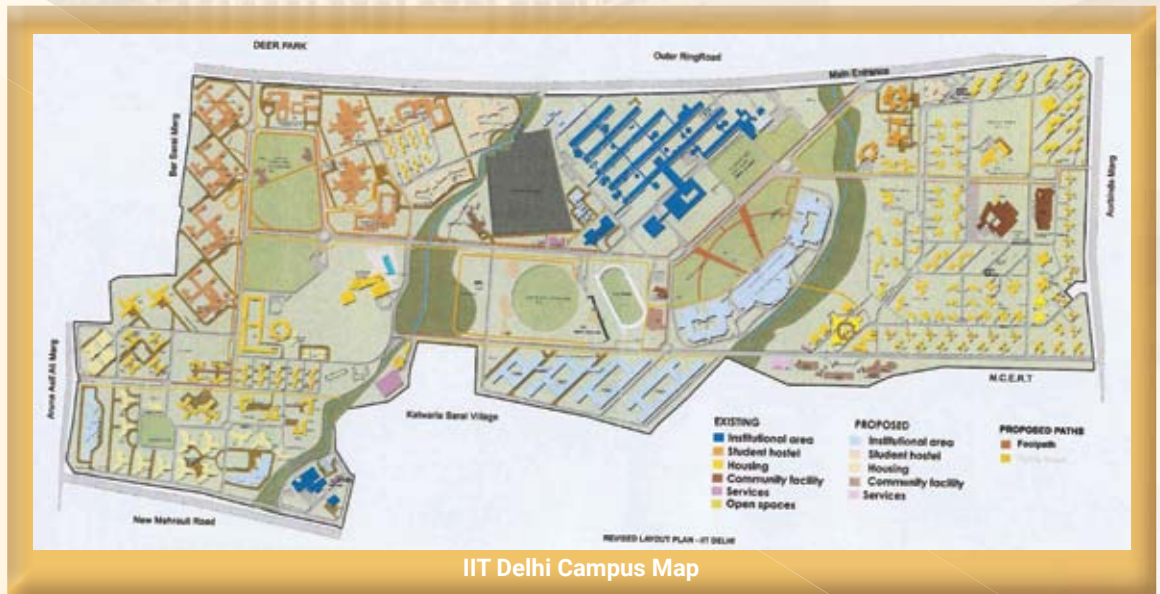
Presently, Indian Institute of Technology Delhi is one

of twenty-three IITs for higher education, research and development in science, engineering and technology, humanities and social sciences, and in management in India. The others are at Bhilai, Bhubaneswar, Bombay, Dhanbad, Dharwad, Gandhinagar, Goa, Guwahati, Hyderabad, Indore, Jammu, Jodhpur, Kanpur, Kharagpur, Madras, Mandi, Palakkad, Patna, Roorkee, Ropar, Tirupati, and Varanasi.

### Status

Indian Institute of Technology Delhi is an autonomous statutory organisation of the Government of India, functioning within the "Institutes of Technology Act, 1961" as amended by the "Institutes of Technology (Amendment) Act, 1963". It is accorded the status of a deemed university with powers to frame its own academic policy, to conduct its own examinations, and to award its own degrees. The Institute was declared as an "Institute of Eminence" by the Government of India in 2018.

IIT Delhi is one of the twenty-three Institutes of Technology coordinated by an apex body known as IIT Council with the Minister for Education of the Government of India as its Chairperson.



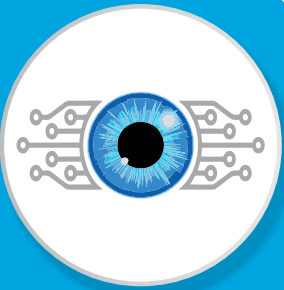
## Campus

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

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

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

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



## VISION

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



## MISSION

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



## VALUES

- Academic integrity and accountability.
- Respect and tolerance for the views of every individual.
- Attention to issues of national relevance as well as of global concern.
- Breadth of understanding, including knowledge of the human sciences.
- Appreciation of intellectual excellence and creativity.
- An unfettered Spirit of exploration, rationality and enterprise.





## *Message from the Director*

*Prof. V. Ramgopal Rao*

“ Indian Institute of Technology Delhi  
is **Ranked #1**  
in the country for **Startup founders**  
among alumni and ranked among  
the **top 10** Institutions in the World  
for **Unicorn** (Billion dollar valued  
companies) founders. ”

Indian Institute of Technology Delhi is pleased to release its Annual Report for the year 2020-2021 and I am delighted to share with you the highlights of our major activities, achievements, initiatives and future plans.

It is a great pleasure and privilege for me to share that IIT Delhi, in the MoE's NIRF (National Institutional Rankings Framework), has been ranked 2nd in Engineering category and 3rd overall for 2020. In addition, the Management School at IIT Delhi has been ranked 8th by the NIRF for 2020. Among the other domestic rankings, IIT Delhi is ranked 1st in the India Today's Best Colleges Survey and 2nd in the Outlook's Ranking. In QS Global subject rankings for the category Engineering & Technology, IIT Delhi has improved its ranking from 61 last year to 47 this year. IIT Delhi is among the only two Engineering institutions in the country ranked among the top 50 in the world for Engineering & Technology by QS. IIT Delhi has also consistently been ranked among the top 100 institutions in the world for the research impact, based on the citations/faculty data published by QS as part of its World University rankings. IIT Delhi is also ranked #1 in the country for Startup founders among alumni and ranked among the top 10 institutions in the world for Unicorn (Billion dollar valued companies) founders.

The Institute started its year-long celebration of Diamond Jubilee starting from 16th August, 2020. Diamond Jubilee is indeed a milestone for any institution and we wish to thank Hon'ble Vice President of India and Hon'ble Minister for Education for inaugurating the year-long Diamond jubilee celebrations on August 17, 2020. I congratulate every IIT Delhi community member, students, alumni, staff and faculty for achieving this unique milestone. Diamond Jubilee Logo and Strategy Document of the Institute were also released during the inauguration of this event. Our alumni and faculty teams worked closely with McKinsey to put together the 2030 Strategy document for the Institute which was released by the Hon'ble Vice President of India on Aug 17, 2020. An implementation team was also formed involving our alumni for the execution of the measures outlined in the Strategy document. Since the outbreak of COVID-19 pandemic globally, IIT Delhi has aligned itself for the immediate

needs of the society and health care. I would like to highlight the significant contributions made by the research community at IIT Delhi in the fight against the global pandemic. Researchers at IIT Delhi Kusuma School of Biological Sciences (KSBS) have developed a detection assay for COVID-19 which has now been approved by ICMR. The Corosure kit for coronavirus testing has been launched by the Hon'ble Minister of Education. The Corosure kit, priced at ₹399, is the cheapest Coronavirus testing kit yet in the market and is approved by the Drug Control General of India (DCGI) and the Indian Council of Medical Research. ETEX is an IIT Delhi start-up that has launched an affordable and effective face mask, KAWACH, for protecting and safeguarding people from the risk of COVID-19. IIT Delhi Researchers have Developed Web-Based Covid-19 Dashboard 'PRACRITI'- Prediction and Assessment of Corona Infections and Transmission in India. IIT Delhi researchers have developed affordable PPE coverall that reaches adequate levels of breathability.

IIT Delhi was awarded the Institute of Eminence (IoE) Status in 2018 for a period of five years and the institute has undertaken numerous initiatives and activities in this regard. IIT Delhi is among the first 3 Institutions recognized by Government of India as an Institution of Eminence in 2018 after an elaborate screening process. Kudos to the entire faculty fraternity, students and staff for their outstanding contributions leading to the IoE recognition for the Institute and the progress being made on the initiatives of the Institute under this status. 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. Various activities, programmes, and projects have been executed under IoE.

The collective vision of IIT Delhi is to be a leading academic institution in the world by advancing knowledge through high impact research and impart quality education to produce technologically adept and socially conscious professionals, and by catalyzing innovation-driven entrepreneurship, thereby addressing strategic goals of the nation and the needs of global society. Our endeavour 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.

In the financial year 2020-21, a total of 253 sponsored projects were sanctioned to the Institute with a total value of ₹206.18 Crores including 28 projects undertaken through FITT and IHFC. Industrial consultancy is another significant area of activity in the Institute. The nature and extent of the industrial consultancy projects undertaken by the Institute is an index of its credibility with the industry and other institutions. In the last financial year, a total of 342 consultancy projects were sanctioned with a total value of ₹34.11 Crores including 51 projects undertaken through FITT. Institute also received 19 high value projects valued more than ₹1 Crore each. The most prominent projects include Centre of Excellence for Advance Data Management System for Highways (NHAI); Daksh Centre of Excellence (CoE) for Law and Technology (Daksh Society of India); International Centre of Excellence for Computational and Biomedical Sciences (Open Health Systems Laboratory, USA) and Delhi Cluster: Delhi Research Implementation and Innovation (DRIIV) (Office of the Principal Scientific Adviser, Govt. of India).

The Institute is actively involved in collaborative research with national and international organisations and universities to remain at the forefront of scientific and technological developments. The Institute has undertaken 29 new collaborative sponsored research projects with international funding from USA, France, Sweden, Canada, South Korea, Denmark, China, Austria, Hungary, Norway, UK, Japan and Egypt.

A large number of collaborative Research Projects are under operation with various institutes and organisations from Austria, Australia, Belarus, Brazil, Canada, Denmark, Ethiopia, European Commission, France, Finland, Germany, Holland, Hungary, Ireland, Israel, Italy, Japan, Korea, Kuwait, Latvia, Netherland, Nepal, Poland, Portugal, Russia, Slovenia, Sweden, Sri Lanka, Switzerland, Taiwan, Tunisia, UK, USA, etc. Major research activities have also been undertaken in the areas of national importance.

IIT Delhi is also the National Coordinator for the flagship Unnat Bharat Abhiyan (UBA) programme of the Ministry of Education, which was originally conceived at IIT Delhi. UBA is currently active in

more than 2,600 higher educational institutions and engaged in more than 14,000 villages. It is managed by IIT Delhi through 45 Regional Coordinating institutes, located at least one in every state, and 13 subject expert groups. UBA is now a major initiative of the Ministry of Education, Govt. of India, which provides an opportunity for faculty and students of higher educational institutions to work with the people of rural India and identify development challenges and evolving appropriate solutions for accelerating sustainable growth in villages.

Established in the year 2016, Office of Corporate Relations (CR) has been actively strengthening the relations between IIT Delhi and industry. Backed by a team of professionals with varied industry experience, CR is actively engaged in catalyzing transfer of knowledge and emerging technologies from academia to industry. CR leverages the power of multiple-society connect initiatives to catalyze cross-disciplinary learning avenues and cross-cultural solution building. Corporate Relations aims to foster a sustainable environment for innovation, promotion of entrepreneurship, and towards building a responsive ecosystem to meet these demands in the global marketplace catering to various worldwide industries. CR team has helped the Institute in establishing critical research collaborations (through MoUs) in past one year.

The grants and funds are utilized in continuous upgradation of the Institute's infrastructure, be it academic blocks, research infrastructure, residential facilities or recreational facilities for the residents of the Institute campus and infrastructure development is a long continuous process. Many projects were executed, undertaken and are in different stages of progress/completion.

Our faculty members are among the finest in the country and are recognized internationally for their quality of research, teaching and curriculum development. They also contribute greatly for the development of the nation by being associated with a large number of decision-making bodies, providing crucial guidance and advice on policy matters and technical issues. Our distinguished faculty colleagues continue to make a difference to the world of Science, Engineering, Humanities, and Management and continue to earn

recognitions and awards which bring glory to the Institute. Many of them have been bestowed with honors, awards and elected as Fellows of several professional national and international bodies during the last one year.

In the financial year 2020-21, the Institute received ₹526.13 Crores as grant (₹492.38 Crores for Recurring Expenditure and ₹33.75 Crores for Non-Recurring Expenditure) under Scheme Code 0920 (support to IITs) from Ministry of Education. The Institute generated about 24.66% of the actual recurring expenditure through internal revenue generation from fees, sponsored research, consultancies and containing education programmes.

Major functions of the Office of Career Services (formerly Training and Placement), which is an important facilitation activity centre, includes arranging practical summer trainings, inviting and involving industries and organisations of repute with the aim of providing world class job opportunities to under graduate and post graduate students for suitable jobs in the industry and various private and public sector organisations. OCS also organizes pre-placement workshops, panel discussions, practice tests and career counselling talks by distinguished personalities from reputed technical, industrial, management and research organisations for the benefit of the students.

Apart from academics and research, our student community is vibrant and organizes and participate in various extracurricular activities through Student Affairs Council that includes Hostel Management, Recreational & Creative Activities, Sports Activities, Student Publications and Student Welfare. Interested students have opportunity to be involved in National Service Scheme (NSS), National Cadet Corps (NCC) and Student Counselling Service. Considering the current scenario, various activities were organized online.

To boost the diversity, exchange and internationalization among the student community, Institute is taking major steps. Indian Institute of Technology Delhi has signed a total of 16 academic and research MoUs with foreign Institutions/organisations and governments including Pohang University of science and technology (POSTECH), South Korea; Chalmers

University of Technology, Sweden; University of Northumbria at Newcastle, UK; University of Transport Technology, Taiwan; The Hebrew University of Jerusalem, Israel; Koc University, Turkey; Universiti Brunei Darussalam, Brunei; Kyushu Institute of Technology, Japan; University Technology, Malaysia; University of Leeds, UK; University Ghent, Belgium; Weizmann Institute of Science, Israel; Paderborn University, Germany; The Arctic University of Norway, Norway; Bar-Ilan University, Israel; National University Corporation Kyushu University, Japan.

Indian Institute of Technology Delhi lays great emphasis on interaction between the alumni and their alma mater. We are proud of our alumni and their achievements. The success of the alumni is one of the most important yardsticks by which we measure our achievements. The Alumni are a very valuable resource for the Institute, and increasingly, they have started to make a difference to the way things are done at IIT Delhi. The Alumni have directly contributed for instituting Chair Professorships, Young Faculty Incentive Fellowships and Student Awards and even for Infrastructure Development. The Institute has garnered excellent support for its vision and mission from its Alumni during the year. The Global Alumni Endowment Fund - the first of its kind in India, established by IIT Delhi, has given a fillip to our fundraising raising efforts. Various activities including reunions, fundraising campaigns, lectures etc. were organized with active involvement of our alumni.

51st Convocation of IIT Delhi was held on 7th November, 2020 with Hon'ble Prime Minister, Shri Narendra Modi, as the Chief Guest, who delivered the Convocation Address online. Hon'ble Minister of Education and Hon'ble Union Minister of State for Education graced the Convocation as Guests of Honour.

The Institute recognises the outstanding contributions made by the alumni in various areas by conferring the Distinguished Alumni Awards, Graduate of Last Decade (Gold) Awards and the Distinguished Alumni Service Awards each year at the Convocation to recognize their achievements and outstanding contributions to academics, business, profession and/or public service.

The Distinguished Alumni Awards were conferred on – Prof. H.V. Jagadish, B.Tech. Electrical Engineering (1981), Bernard A. Galler Collegiate Professor of Electrical Engineering & Computer Science at the University of Michigan and Prof. Nemkumar Banthia, M.Tech. Structural Engineering (1982), Canada Research Chair and Professor of Civil Engineering at the University of British Columbia for their contributions in Teaching and Research; Prof. Neville Pinto, B.Tech. Chemical Engineering (1980), President of the University of Cincinnati for his contributions in Academic Leadership, Mr. Yashish Dahiya, B.Tech. Textile Technology (1994), Co-Founder and Group CEO, PolicyBazaar.com and Mr. Deepinder Goyal, Integrated M.Tech. Mathematics and Computing (2005), Founder & CEO, Zomato for their contributions in Entrepreneurship domain. The Distinguished Alumni Service Awards were conferred on Mr. Vikram Gupta, B.Tech. Chemical Engineering (1993), Founder and Managing Partner, IvyCap Ventures for his contributions in establishing the Institute's Endowment Fund. This year we have added a new alumni category to recognize the young alumni who graduated in the last decade and have made extraordinary contributions in their fields. The maiden Graduates of Last Decade (GOLD) awards were conferred on - Prof. Sanjam Garg, B.Tech. Computer Science and Engineering (2008), Assistant Professor

at the University of California, Berkeley for his contributions in Teaching and Research and Mr. Pankaj Chaddah, B.Tech. Mechanical Engineering (2007), Co-Founder Zomato and Mindhouse for his contributions in Entrepreneurship domain.

More detailed information on the various activities, initiatives, programmes and achievements of the Institute during the period have been provided separately in this Annual Report.

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

Wishing IIT Delhi to reach new heights!

Jai Hind!

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

# Year in Review



IIT DELHI has been Ranked in the **First Position** by India Today and **Second Position** by NIRF amongst all the **ENGINEERING COLLEGES** in INDIA



Total STUDENTS on ROLL

10,640



PG STUDENTS on ROLL

2,841

UG STUDENTS on ROLL

4,354



FEMALE STUDENTS on ROLL

2,527



RESEARCH SCHOLARS on ROLL

3,445



Total GRADUATES

2,019

PG GRADUATES

848



UG GRADUATES

873



RESEARCH SCHOLAR GRADUATES

298



Total ADMISSION

3,357



POST GRADUATE ADMISSION

1,356

UNDER GRADUATE ADMISSION

1,197

RESEARCH SCHOLAR ADMISSION

804



FACULTY STRENGTH

694



NEW FACULTY MEMBERS JOINED

42



NON-ACADEMIC STAFF

571



FOREIGN STUDENTS Over 38 COUNTRIES

121

NEW ACADEMIC UNIT ESTABLISHED

01



Academic Unit



INTERNATIONAL MOUs

126



NATIONAL MOUs

32

## 2,085 RESEARCH ARTICLES PUBLISHED

by the faculty members and researchers of the Institute in International Journals



## 3,179 ARTICLES INDEXED in SCOPUS

An International Indexing Service in Science & Technology and Social Sciences



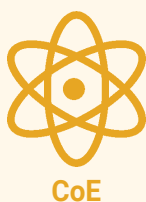
### 253

New **SPONSORED RESEARCH PROJECTS** with a **TOTAL FUNDING** of **₹206.18 CRORES**

## 342 CONSULTANCY JOBS with a TOTAL VALUE of ₹34.11 CRORES

## 29 COLLABORATIVE PROJECTS / CONSULTANCIES with INTERNATIONAL FUNDING

## 03 New CENTRE OF EXCELLENCE ESTABLISHED



CoE



Titles of **E-BOOKS** added under the **CENTRAL LIBRARY COLLECTION**

### 2,635

**PRINTED BOOKS** added under the **CENTRAL LIBRARY COLLECTION**



### 906



### 105

**GRADUATES** received the **AWARDS/MEDALS/CASH PRIZES** at the **51st CONVOCATION**



### 07

New **PROGRAMME** (02 UG, 04 PG, 01 PhD) **STARTED**



**TOTAL PLACEMENTS**  
**943**

**UNDER GRADUATE 578**

**POST GRADUATE 365**

# Administrative Organisation

## BOARD OF GOVERNORS AND ITS COMMITTEES

IIT Delhi is an autonomous organisation of the Government of India. Responsibility for the general superintendence, direction, and control of the affairs of the Institute is vested in the Board of Governors. The Board functions through its standing committees - the Finance Committee, the Buildings & Works Committee and other committees which may be constituted to consider specific issues. The composition of the Board of Governors as on 31st March, 2021 is as follows:

### Chairperson, Board of Governors



Dr. R. Chidambaram

### BoG Members

V. Ramgopal Rao

Sumant Sinha

Rakesh Ranjan

V.K. Tewari

U.P. Singh

S.B. Deepak

Sangeeta Kohli

Nalin Pant

Ashok K. Ganguli

T.C. Kandpal

Deepika Bhaskar (Ms.),  
(Secretary)

## ADMINISTRATION

The Director is the principal academic and executive officer of the Institute and is responsible for the proper administration of the Institute and for the imparting of instruction and maintenance of discipline therein. He is assisted in his day to day work by Deputy Director(s), Registrar, Deans, Associate Deans, and senior faculty of the Institute. The senior members of the administration as on 31st March, 2021 are as follows:

### Director



V. Ramgopal Rao

### Deputy Director (Operations)



T.C. Kandpal

### Deputy Director (Strategy & Planning)



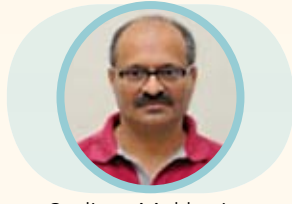
Ashok K. Ganguli



## DEANS



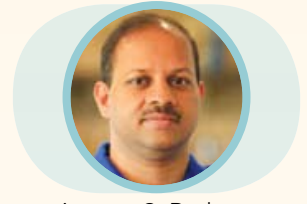
Shantanu Roy  
(Academics)



Sudipto Mukherjee  
(Faculty)



S.K. Khare  
(R&D)



Anurag S. Rathore  
(Corporate Relations)



K.C. Iyer  
(Infrastructure)



Arvind K. Nema  
(Student Affairs)



Naveen Garg  
(AA & IP)



P.V. Rao  
(Planning)

## ASSOCIATE DEANS



Anupam Shukla  
Academics (Curriculum)



K. Sreenadh  
Academics (PGR)



Pritha Chandra  
Academics (ONI)



Sukumar Mishra  
(R&D)



Subodh Kumar  
(Faculty)



Prमित K. Chowdhury  
(Student Events)



Reetika Kherra  
(Student Welfare)



Deepti Gupta  
(Hostel Mgmt.)



J.T. Shahu  
(Infra-Renovation)



Abhijit R. Abhyankar  
(Infra-Electrical)



B. Premchandran  
(Infra-Maintenance)

## REGISTRAR



Deepika Bhaskar

# Academic Units

The various academic units are listed below:



## Departments

- Applied Mechanics
- Biochemical Engineering and Biotechnology
- Chemical Engineering
- Chemistry
- Civil Engineering
- Computer Science and Engineering
- Design
- Electrical Engineering
- Humanities and Social Sciences
- Management Studies
- Materials Science and Engineering
- Mathematics
- Mechanical Engineering
- Physics
- Textile and Fibre Engineering



## Centres

- Applied Research in Electronics
- Atmospheric Sciences
- Automotive Research and Tribology
- Biomedical Engineering
- Energy Studies
- National Resource Centre for Value Education in Engineering
- Rural Development and Technology
- Sensors, Instrumentation and Cyber-Physical Systems Engineering



## Schools

- Amar Nath and Shashi Khosla School of Information Technology
- Bharti School of Telecommunication Technology and Management
- Kusuma School of Biological Sciences
- School of Public Policy
- School of Interdisciplinary Research
- School of Artificial Intelligence

An administrative head for each entity is selected for a period of two years (extendable by one more year). The Head manages the daily functions of her/his unit, after due consultation with the Professorial Committee, Faculty Board, Research Committee etc. A Department is engaged in teaching at all levels (B.Tech., M.Sc., MBA, M.Des., M.S. (R), M.Tech., PG Diploma, Pre-Ph.D.) and research activities, while a Centre/School is mainly focused on PG and Pre-PhD teaching, and on technology development and transfer in well-defined areas with group effort.

## Centres of Excellence

**Centres of Excellence (CoEs):** Various Centres of Excellences funded by Govt. organisations and Industries on specific research areas for demand driven innovations and translational research have been created in the institute through IRD mechanisms.

In the current period, the following new CoEs have been initiated:

**NHAI Centre of Excellence for Advanced Data Management System (ADMS) for Highways** has been established in September 2020 by the National Highways Authority of India (NHAI), New Delhi. NHAI Data Management Systems will be developed under four thematic research areas viz. Network Traffic Demand and Incident Management, Highway Safety, Highway Pavement Management System, and Project Management. Specific research projects have been sponsored in each thematic area to conduct research. Five (5) research projects are presently being pursued at the centre.

**DAKSH Centre of Excellence for Law and Technology** has been established in October 2020 with DAKSH

Society, Bengaluru. The centre aims to research various aspects of the legal system like Operation Research-based analysis of judicial data, technology, law and improving the effectiveness of the legal and judiciary system. Presently, the centre is implementing three (3) projects/consultancy activities at present.

**Centre of Excellence (CoE) on Personal Body Armour** has been inaugurated on October 21, 2020 by Dr. G. Satheesh Reddy, Secretary DDR&D and Chairperson, DRDO with Prof. V. Ramgopal Rao, Director IIT Delhi. The creation of the CoE has been at the behest of NITI Aayog under the initiative of the PMO for "Make in India – Personal Body Armour." This is a culmination of a joint research initiative of DRDO & IIT Delhi.

At IIT Delhi, CoEs are briefly categorised as Industry, Government and Institutes based. Under these three categories, currently, 20 CoEs are actively functioning to pursue focused research in specified research areas as follows:

Sr. No.	Name of CoE	Category	Sponsoring Agency	Coordinator	Present Status
1	Centre of Excellence for Research on Clean Air	Industry-Sponsored	Mr. Arun Duggal, Alumnus IIT Delhi	Prof. Sagnik Dey, Atmospheric Sciences	Active
2	DESMI Centre of Excellence on Waste to Wealth	Industry-Sponsored	DESMI, Denmark, Office of PSA, Gol and Vertiver Pvt. Ltd. India as Industry Partner	Prof. Satyananda Kar, Energy Studies	Active
3	Renew Power Centre of Excellence on Energy & Environment	Industry-Sponsored	Renew Power Ventures Pvt. Ltd.	Prof. N. Senroy, Electrical Engineering	Active
4	Yardi Centre of Excellence for Sustainable Infrastructure	Industry-Sponsored	Yardi Software India Private Limited	Prof. A.K. Jain, Civil Engineering and Prof. Ashu Verma, Energy Studies	Active
5	Industry Alliance on Artificial Intelligence (IAAI) – NOKIA as Industry Partner	Industry-Sponsored	NOKIA Solutions & Networks India Pvt. Ltd. and Others	Prof. Niladri Chatterjee, Mathematics	Active
6	DRDO - IIT Delhi Joint Advanced Technology Centre	Government-Sponsored	Defence Research & Development Organization	Prof. Sunil Kumar Khare, Dean R&D, IITD and Sh. M.H. Rahaman, JATC	Active
7	ISRO Space Technology Cell	Government-Sponsored	Indian Space Research Organization (ISRO)	Prof. A.D. Rao, Atmospheric Sciences	Active

8	Centre of Excellence on Smart Technology-Enabled Manufacturing	Industry & Government-Sponsored	Automation Industry Association (AIA) Dept. of Heavy Industry (GoI)	Prof. Sunil Jha, Mechanical Engineering	Active
9	Centre of Excellence in Protective Textiles	Government-Sponsored	Ministry of Textiles & Northern India Textile Research Association (NITRA)	Prof. R.S. Rengasamy, Textile & Fibre Engineering	Active
10	Centre of Excellence in Climate Modeling	Government-Sponsored	Department of Science & Technology	Prof. Saroj Kanta Mishra, Atmospheric Sciences	Active
11	Centre of Excellence in Biopharmaceutical Technology	Government-Sponsored	Department of Biotechnology, Ministry of Science & Technology	Prof. Anurag Singh Rathor, Chemical Engineering	Active
12	Center of Excellence on Computational and Biomedical Sciences	International Research Institute	Open Health Systems Laboratory (OHSL) the USA	Prof. S.K Khare Dean R&D	Active
13	Centre of Excellence in the areas of Bioinformatics and Computational Biology	Government-Sponsored	Department of Biotechnology	Prof. Aditya Mital, Biological Sciences	Active
14	Daksh Centre of Excellence for Law and Technology	Industry / NGO Sponsored	Daksh Society, India	Prof. Nomes Bhoj Kumar Bolia, Mechanical Engineering	Active
15	Centre of Excellence for Advanced Data Management System for Highways (ADM Highways)	Government-Sponsored	National Highways Authority of India (NHAI)	Prof. Geetam Tewari, Civil Engineering	Active
16	Centre of Excellence on Personal Body Armour	Government-Sponsored	Defence Research & Development Organization / NITI Aayog	Prof. Naresh Bhatnagar, Mechanical Engineering	Active
17	Center of Excellence on Biologically Inspired Robots and Drones (BIRD)	Government-Sponsored	Set up by IIT Delhi	Prof. Subodh, Computer Science & Engineering	Active
18	Centre of Excellence in Cyber Systems and Information Assurance	Government-Sponsored	Set up by IIT Delhi	Prof. Huzur Saran, Computer Science & Engineering	Active
19	DS CoE for Entrepreneurship Development	Industry-Sponsored	DS Group	Implemented by Dean (Corporate)	Active
20	Schlumberger Centre of Excellence on Oil Technology	Industry-Sponsored	Schlumberger BV	Prof. Jyoti Phirani, Chemical Engineering [Implemented by FIIT]	Active

**Centre of Excellence for Research on Clean Air** has been working in the areas related to air pollution and methodologies to improve the climate in Delhi NCR and India. Besides, the centre is committed to setting up a leading centre and a world-class research facility that

develops policy papers, scientific methodologies and technologies suited to the Indian context. The facility addresses wide-ranging issues related to pollution in Indian cities, focusing on Delhi NCR.

**DESMI Centre of Excellence on Waste to Wealth** intends

to work in Waste Management by using technological solutions to clean two urban drains in Delhi. The CoE will also demonstrate the effectiveness of multi-stakeholder collaborations across municipal corporations and private sector solution providers. The latest project is to collect the floating debris at the Babarpur drain in Delhi and convert the plastics into syngas through plasma pyrolysis.

**Renew Power Centre of Excellence on Energy & Environment** has set up a leading centre with world-class research facility for renewable energy applications suited to the Indian Scenario. The Centre also provides support to GoI on policy matters related to renewable energy sources. The faculty members of the institute are involved in currently operational projects.

**Yardi Centre of Excellence for Sustainable Infrastructure** undertakes studies and research in the areas related to energy conservation in buildings, and surveys of various types of buildings. It collects data on their energy consumption details and the present sources of energy. The results are intended to be used to devise methodologies for the future projection of consumption pattern.

**Industry Consortium on Artificial Intelligence** will help solve key challenges faced by industry and the country and connect AI practitioners across the globe.

**DRDO - IIT Delhi Joint Advanced Technology Centre** has been a pioneering centre for multidisciplinary basic and applied research in the research verticals (i) Advanced Ballistics, Special Structures, and Protection Technologies; (ii) Advanced Electromagnetic Devices and Terahertz Technologies; (iii) Brain-Computer Interface and Brain-Machine Intelligence; (iv) Photonic Technologies, Plasmonics and Quantum Photonics, (v) Smart and Intelligent Textile Technologies and other thrust areas.

**ISRO Space Technology Cell (STC)** has been set up with a motto to pursue advanced research in the areas of the Indian Space Programme. The activities of STC shall be directed to maximise the research potential, infrastructure, expertise, and experience already existent in ISRO and IITD. During this reporting period, eight (8) joint projects have been sanctioned by the ISRO, Bengaluru under the RESPOND programme of the ISRO.

**Centre of Excellence on Smart Technology-Enabled Manufacturing** aims to set up a Common Engineering Facilities Centre (CEFC) under the Department of Heavy Industry's Scheme on "Enhancement of Competitiveness in the Indian Capital Goods Sector". The infrastructure facilities (Cyber-Physical Lab and Cyber-Physical Factory) and CEFC will be known as a **SAMARTH (Smart Advanced Manufacturing and Rapid Transformation Hubs) Udyog**. The Cyber-Physical Lab for Smart Manufacturing Research and a Cyber-Physical Factory will be extending services like Awareness Building, ii) Prototyping, Simulation and Testing Services, iii) Consulting Services, iv) Site Integration

Services, v) Education and Training, vi) Skills Certification, and vii) Job work, research to promote innovation and adoption of Industry 4.0 solutions to make Indian industries globally competitive in Capital Goods Sector.

**Centre of Excellence in Protective Textiles** is a designated centres for infrastructure support comprising the facilities for all PROTECH segment of technical textiles. The Centre has Facilities for testing and evaluation of products of PROTECH segments, and IT infrastructure resources. These facilities would also impart training to relevant personnel from industry, Textile Research Associations and academic institutions.

**The Centre of Excellence in Climate Modeling** is mandated for an India-centric Climate Model (ICCM) through process improvements and region-specific customisation. The centre will also aim to simulate the regional climate of India. These simulations can be used for future climate projections at the district level to assess the impacts of climate change on agriculture, health, water resources, and the energy sectors.

**Centre of Excellence in Biopharmaceutical Technology** has been partnering with the Indian biotech industry in implementing technology solutions. It also aims to collaborate with the Indian regulators (CDSCO) to ensure that the manufacturers adopt the best practices. Additionally, it also examines and reports on the quality of Bio-therapeutics sold in the Indian market.

**International CoE on Computational and Biomedical Sciences** is an international centre at IIT Delhi. The OHSL, USA, in partnership with IITD, will work and support research on Computational and Biomedical Sciences. This partnership will also meet global and national challenges in translational research through advance knowledge in frontiers areas of supercomputing and biomedical science.

**Centre for Excellence in Bioinformatics and Computational Biology** has been established to develop the science and software for Genome to Drug Discovery and human resource training. Simultaneously, the Sanjeevini software suite developed at SCFBio earlier at IITD for computer-aided drug design is planned to port onto the National Supercomputing Mission (NSM) platform at CDAC Pune.

**Centre of Excellence on Biologically Inspired Robots and Drones** is a CoE instituted by the institute to develop, foster, and pursue research in Robots and Drones.

**The Centre of Excellence in Cyber Systems and Information Assurance** set up by the institute will conduct basic and applied research on Cyber Security, Cyber Systems, Information Assurance, Hardware Security, Embedded Systems Security, Wireless/Mobile Security, Critical Infrastructure Protection and Cyber Security Policy. The CoE, in collaboration with the Khosla School of Information Technology, has initiating M.Tech. programmes in three domain areas.

# Academic Profile

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

## Pedagogy

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

All academic affairs of the Institute are managed by Board of Educational and Research Planning (BERP), Board of Academic Programmes (BAP), and the Senate.

## Board of Educational and Research Planning (BERP)

Board of Educational & Research Planning (BERP) is one of the Boards appointed by the Senate to carry out duties and responsibilities such as formulation of educational policy at the Institute level, academic planning with regard to new activities and review of existing Academic Units, general policy for the allocation of intra-IIT budget, and faculty development and specialised training. The composition of the BERP as on March 31, 2021 is as follows:

Members of BERP		
V. Ramgopal Rao Director (Chairperson)	S.K. Khare Dean (R&D)	Anurag S. Rathore Dean (Corporate Relations)
T.C. Kandpal Dy. Director (Operations)	Arvind K. Nema Dean (Student Affairs)	S.D. Joshi Nominee of Senate
Ashok K. Ganguli Dy. Director (Strategy & Planning)	Naveev Garg Dean (AA&IP)	B.K. Panigrahi Nominee of Senate
Shantanu Roy Dean (Academics)	K.C. Iyer Dean (Infrastructure)	V.K. Vijay Nominee of Senate
Sudipto Mukherjee Dean (Faculty)	P.V. Rao Dean (Planning)	Atul Vyas Secretary

## Evaluation

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

The medium of instruction is English.

## Curriculum Development

The Senate of the Institute is constantly engaged in reviewing and approving new courses to improve the curriculum at the undergraduate and postgraduate levels. Under a new Academic Welfare Scheme introduced by the Institute for weak students, a special student advisor is identified in each department for students who need special help, at the beginning of each semester. Extra classes are conducted for such students and the student advisor closely monitors the attendance and performance of these students.

## Board of Academic Programmes (BAP)

The Board of Academic Programmes is tasked with the duty to formulate Institute-level academic policies and to co-ordinate as well as to review curricular activity including scholarships; courses; new programmes; time tabling; evaluation of academic performance of students; academic awards; practical training; PG admissions; and research activities of students. The composition of the BAP as on March 31, 2021 is as follows:

Members of BAP		
Shantanu Roy, Chairperson	Naveen Thayyil	Upasna Sharma (Ms.)
Vivek V. Buwa	S.P. Singh	Mukul Sarkar
Paresh Chokshi	Smita Kashiramka (Ms.)	Aditya Mittal
Subodh Kumar	P.V.M. Rao	Siddharth Pandey
Srikanta Bedathur	Jyoti Kumar	B.S. Panda
R. Ayothiraman	Suresh Neelakantan/ Sampa Saha (Ms.)	Anishya Madan (Ms.) K. Sreenadh
Shashank Bishnoi	Somnath Baidya Roy	Anupam Shukla
I.N. Kar	Neetu Singh (Ms.)	Pritha Chandra (Ms.)
Abhisek Dixit	Dibakar Rakshit	Rajiv K. Srivastava
S.S. Bagha	Ananjan Basu	Shaikh Zia Ahammad
Sanjeev Jain	J.K. Sahu	Abhishek Shringi
Saswata Bhattacharya	Deepak Kumar	Sakshi Taparia (Ms.)
Santanu Ghosh	Gufran S. Khan	Shalini Garjola (Ms.)
S. Wazed Ali	Sriram Hedge	Sachin Kumar Sharma
Mangala Joshi (Ms.)	Shouribrata Chatterjee	Daksh Kumar
S. Sivananthan	M.R. Ravi	Kartikey Karnatak
Amit Priyadarshi	Tapan K. Chaudhuri	Siddharth Choubay
T.R. Sreekrishnan	Abhishek Dixit	Suresh Kumar Gohar
Preeti Srivastava (Ms.)	Maya Ramanath (Ms.)	G.D. Bahuguna
S. Pradyumna	Hemant K. Kashyap	Atul Vyas, Secretary

## The Senate

The Senate, with the Director as its Chairperson, reviews and approves new courses, programmes, and all academic policies in the Institute. The composition of the senate is given in Appendix I.

The following programmes are currently offered by the Institute:

### Undergraduate Programmes\*

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

## Postgraduate Studies & Research (Masters Programmes)

M.Sc.	M.Tech.	M.S. (Research)	M.Des.
2 Years	2 Years*	2 Years*	2 Years
<ul style="list-style-type: none"> <li>• Chemistry</li> <li>• Cognitive Science</li> <li>• Economics</li> <li>• Mathematics</li> <li>• Physics</li> </ul>	<ul style="list-style-type: none"> <li>• Engineering Analysis &amp; Design</li> <li>• Biomedical Engineering</li> <li>• Chemical Engineering</li> <li>• Molecular Engg.: Chemical Synthesis &amp; Analysis</li> <li>• Construction Technology &amp; Management</li> <li>• Geotechnical &amp; Geoenvironmental Engineering</li> <li>• Structural Engineering</li> <li>• Water Resources Engineering</li> <li>• Construction Engineering &amp; Management</li> <li>• Rock Engineering of Underground Structures</li> <li>• Environmental Engineering &amp; Management</li> <li>• Transportation Engineering</li> <li>• Computer Science &amp; Engineering</li> <li>• Control and Automation</li> <li>• Communications Engineering</li> <li>• Power Electronics, Electrical Machines &amp; Drives</li> <li>• Computer Technology</li> <li>• Integrated Electronics &amp; Circuits</li> <li>• Power Systems</li> <li>• Thermal Engineering</li> <li>• Production Engineering</li> <li>• Industrial Engineering</li> <li>• Mechanical Design</li> <li>• Materials Engineering</li> <li>• Energy &amp; Environment Technology &amp; Management</li> <li>• Renewable Energy Technologies &amp; Management</li> <li>• Telecommunication Technology &amp; Management</li> <li>• VLSI Design Tools &amp; Technology</li> <li>• Radio Frequency Design &amp; Technology</li> <li>• Solid State Materials</li> <li>• Applied Optics</li> <li>• Atmospheric Oceanic Science Technology</li> <li>• Fibre Science &amp; Technology</li> <li>• Textile Engineering</li> <li>• Textile Chemical Processing</li> <li>• Energy Studies</li> <li>• Industrial Tribology &amp; Maintenance Engineering</li> <li>• Polymer Science &amp; Technology</li> <li>• Optoelectronics &amp; Optical Communication</li> <li>• Instrument Technology</li> </ul>	<ul style="list-style-type: none"> <li>• Applied Mechanics</li> <li>• Automotive Research &amp; Tribology</li> <li>• Biochemical Engineering &amp; Biotechnology</li> <li>• Chemical Engineering</li> <li>• Computer Science &amp; Engineering</li> <li>• Electrical Engineering</li> <li>• Civil Engineering</li> <li>• Mechanical Engineering</li> <li>• Telecommunication Technology &amp; Management</li> <li>• Biological Sciences</li> <li>• Information Technology</li> <li>• Materials Science &amp; Engineering</li> <li>• Sensors, Instrumentation and Cyber-Physical Systems Engineering</li> <li>• VLSI Design Tools &amp; Technology</li> </ul>	<ul style="list-style-type: none"> <li>• Industrial Design</li> </ul>

## Postgraduate Studies & Research (Masters Programmes)

M.B.A.	M.B.A.	PG D.I.I.T.	Joint PG Diploma <sup>#</sup>
2 Years (Full Time)	3 Years (Part Time)	1½ Years	1 Year
Management Systems	Technology Management	Naval Construction	Visionary Leadership in Manufacturing
Telecommunication Systems Management			

\*The duration of part-time programme is 3 years.

<sup>#</sup>Jointly with NITIE Mumbai.



## Doctorate Programmes

The Institute offers research opportunities for doctoral research in all its Departments/Centres/Schools. Creative and productive enquiry is the basic concept underlying the research work. In order to overcome any deficiency in the breadth of fundamental training or proper foundation for advanced work, special preliminary or pre-doctoral courses

are suggested by each department/centre/school. The award of Ph.D. is in recognition of high achievements, independent research and application of scientific knowledge to the solution of technical and scientific problems. The Institute lays special emphasis on India-centric research activities.

Departments/Centres/Schools	
Applied Mechanics	Applied Research in Electronics
Biochemical Engineering and Biotechnology	Atmospheric Sciences
Chemical Engineering	Automobile Research and Tribology
Chemistry	Biomedical Engineering
Civil Engineering	Energy Studies
Computer Science and Engineering	Rural Development and Technology
Design	National Resource Centre for Value Education in Engineering
Electrical Engineering	Sensor, Instrumentation and Cyber-Physical System Engg.
Humanities and Social Sciences	Amar Nath and Shashi Khosla School of Information Tech.
Management Studies	Bharti School of Telecommunication Technology and Mgmt.
Materials Science and Engineering	Kusuma School of Biological Sciences
Mathematics	School of Interdisciplinary Research
Mechanical Engineering	School of Public Policy
Physics	School of Artificial Intelligence
Textile and Fibre Engineering	Transportation Research & Injury Prevention Programme

## Joint Doctorate Programmes

The Institute also offers two Joint Ph.D. Programmes in collaboration with University of Queensland, Australia and National Yang Ming Chiao Tung University, Taiwan each.



## Major Academic Achievements

- IIT Delhi is ranked 3rd overall and 2nd in Engineering category in the National Institutional Rankings Framework (NIRF) for 2020, and 193rd in the QS World University Rankings for 2021. In the Asian region, IIT Delhi is ranked 43 by QS and ranked 47 by Times Higher Education.
- Programmes started at PG level:
  - Interdisciplinary M.Tech. Programme in Cyber Security.
  - M.S.(R) programme in the Centre for Automotive Research and Tribology (CART).
- Programmes started at UG level:
  - B.Tech. in Engineering and Computational Mechanics Programme in Department of Applied Mechanics.
  - B.Tech. in Materials Engineering in the Department of Materials Science and Engineering.
- A new School of Artificial Intelligence (ScAI) has been established. The School will admit Ph.D. students from Semester II, 2020-21.
- IIT Delhi was designated by Ministry of Education to serve as the National Coordinator in its two flagship programmes, the Prime Minister's Research Fellowship (PMRF) programme and the ASEAN-Ph.D. Programme.
- IIT Delhi has approved the Online Courses in Continuing Education Programme mode, under the name eVidya. This will provide access to a very large number of students and professionals for attending online courses at IIT Delhi.
- The IIT Delhi – NIT early admission to Ph.D. programme was initiated, and MoUs were signed with NIT Agartala, NIT Trichy and NIT Warangal. Selected students from NITs have already started their study in IIT Delhi. Discussions are on with several other NITs.
- Mid-Term Review of the curriculum was completed and the same was set for implementation in Academic Year 2020-21. The revised curriculum, which made minor modifications to the current curriculum, which is in place since 2013, has made the load distribution for students more uniform and made the overall curriculum more relevant and student friendly.
- To boost the diversity, exchange and internationalization among the student community, institute is taking small but steady steps. IIT Delhi has signed a total of 16 academic and research MoUs with foreign universities and governments this year with Loughborough University U.K, The Hebrew University of Jerusalem, Weizmann Institute of Science, University Ghent, Universiti Brunei Darussalam, Koc University, University of Northumbria at Newcastle.
- The Institute has signed five major collaborative MoUs viz (i) National Highways Authority of India (NHAI), New Delhi, (ii) Mastercard Technology Pvt. Ltd., Pune (iii) Institute of Liver & Biliary Sciences (ILBS), New Delhi and 25 project related MoUs:
  - i. Nov., 21 on Robotics sponsored by the Department of Science and Technology (DST), New Delhi, with the funds at the tune of ₹170 crores for five years for carrying out research in multi-disciplinary areas of Robot and Human interactions.
  - ii. An MoU has been signed between The National Highways Authority of India (NHAI) and IITD on 6th August 2020, for setting up a Centre of Excellence (CoE) on Advance Data Management System (ADMS) for Highways at IIT Delhi with the financial support of ₹15 crores for five years.
  - iii. M/s. Mastercard Technology Private Ltd. Pune has signed an MoU for research engagement in the area of Artificial Intelligence, Cyber Security, Data Science & Analytics, etc. towards Payment Technology aspects.



iv. Institute of Liver Biliary Sciences (ILBS), New Delhi, and Indian Institute of Technology Delhi (IITD) has signed an MoU on 22nd September 2020. The Institute shall pursue multi-disciplinary research in a few focused areas concerning Liver diseases and Artificial Intelligence (AI) and Machine Languages (ML), Sensor Development, Computational Biology, Big Data, etc.

- Indigram Labs foundation has signed an MoU with FITT, IIT Delhi to support startups in the Agritech sector.
- IIT Delhi has signed MoUs with National Institute of Technology (NIT), Sikkim and National Institute of Technology (NIT) Srinagar to foster academic and research collaboration in the areas of mutual interest. Under this MoU, NIT Sikkim and Srinagar's B.Tech. students would be eligible for direct admission to IIT Delhi's Ph.D. programmes without qualifying GATE or any other national level examination.
- MG Motor India and IIT Delhi's Centre for Automotive Research and Tribology (CART) have joined hands for groundbreaking research in the field of electric and autonomous vehicles.
- State-of-the-Art Atmospheric Observatory is being established by the Institute on its Campus in Sonipat. It will enable researchers find sustainable solutions to problems such as severe air pollution, erratic monsoon and extreme weather events associated with climate change.
- IIT Delhi and African-Asian Rural Development Organization have Signed an MoU for Agricultural and Rural Development.
- Indian Navy and IIT Delhi have Signed an MoU to Promote Collaborative and Cooperative Research.
- Michael and Susan Dell Foundation supported the students with mobile internet and device connectivity during ongoing COVID -19 pandemic.

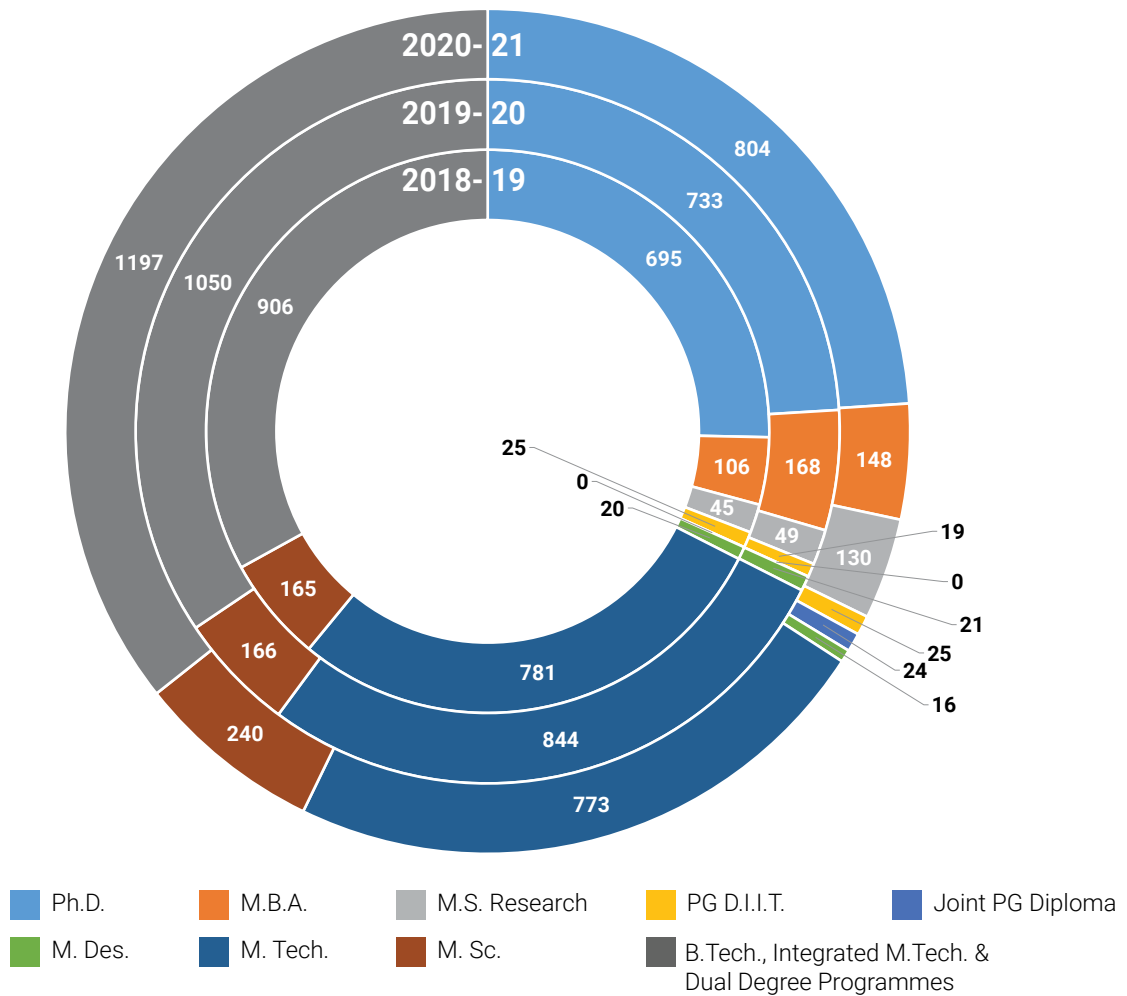
# Student Profile and Achievements

## ADMISSIONS

Academic programmes at IITD cover a wide range of science and engineering, humanities and social sciences, management, and policy disciplines. At the UG and PG levels, the intake has steadily increased over the last few years. During the year 2020-21, 1197 UG students joined the

Institute including 245 female students. The enrolment of postgraduate students during the year 2020-21 was 1356, these figures include 259 female students. 804 research scholars admitted during the period including 304 female students.

Admissions in the Last Three Years (2019-2021)



Programmes	2018	2019	2020
Ph.D.	695	733	804
M.B.A. (Full-time/Part-time)	106	168	148
M.S. (Research)	45	49	130
PG D.I.I.T. (Naval Construction)	25	19	25
Joint PG Diploma	0	0	24
M.Des.	20	21	16
M.Tech.	781	844	773
M.Sc.	165	166	240
B.Tech., Integrated M.Tech. & Dual Degree Programmes	906	1054	1197
<b>Total</b>	<b>2735</b>	<b>3054</b>	<b>3357</b>



## Admission Procedure and Relaxations

### Admission Procedure

**Undergraduate:** Admission to all Undergraduate Programmes is made through the Joint Entrance Examination (JEE) Advanced. All the candidates must simultaneously fulfil each and every one of the following five criteria to appear in JEE (Advanced):

- **Performance in JEE (Main):** Candidates should be among the top 2,50,000\* successful candidates (including all categories) in B.E./B.Tech. Paper of JEE (Main).
- **Age Limit:** Candidates should not be older than 25 years. Five years relaxation is given to SC, ST and PwD candidates
- **Number of Attempts:** A candidate can attempt JEE (Advanced) maximum of two times in two consecutive years.
- **Appearance in Class XII (or equivalent) Examination:** A candidate should have appeared for the Class XII (or equivalent) examination for the first time in either current or previous year with Physics, Chemistry and Mathematics as compulsory subjects.
- **Earlier Admission at IITs:** A candidate should NOT have been admitted in an IIT irrespective of whether or not he/she continued in the programme OR accepted an IIT seat by reporting at a reporting centre in the past. Candidates whose admission at IITs was cancelled after joining any IIT are also NOT eligible to appear in JEE (Advanced).

Candidates who have been admitted to a preparatory course in any of the IITs for the first time in last year can appear in JEE (Advanced).

The candidates who paid seat acceptance fee in previous but (i) did not report at any reporting centre OR, (ii) withdrew before the last round of seat allotment, OR, (iii) had their seat cancelled (for whatever reason) before the last round of seat allotment for IITs, during the joint seat allocation in previous year, are eligible to appear in JEE (Advanced).

**Postgraduate:** The admission to full-time M.Tech. programmes is made on the basis of performance in the Graduate Aptitude Test in Engineering (GATE) – an All India entrance test, and/

\* The total number of candidates can be slightly greater than 2,50,000 in the presence of "tied" ranks/scores in any category.

or interview at the Institute. A limited number of students are also admitted on part-time basis from amongst working professionals along with the regular full-time students, subject to their satisfying certain academic and experience requirements.

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

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

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

### Relaxations

The Institute is sensitive to the needs of the students belonging to the SC/ST/OBC/EWS communities and to those who are having disabilities (PwD). Special care and attention are paid to them. The following relaxations, in broad, are given to such candidates:

- For SC, ST and PwD candidates, relaxation of 5% marks or 0.5 CGPA (on ten-point scale) in the qualifying degree is provided for admission purpose.
- Five years relaxation in age is given to SC/ST/PwD candidates for admission to UG programmes.
- All SC, ST, PwD students get 100% tuition fee exemption.

**Reservation of Seats:** At IIT Delhi, the percentage of seats reserved for SC/ST/OBC/PwD/EWS candidates is as follows:

SC	ST	OBC	PwD	EWS
15	7.5	27	5	10

## Courses and Admissions

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

**Table I: Break-up of Admissions through Joint Entrance Examination during 2020-2021 according to the Various Disciplines**

Discipline	Sanctioned Strength	Actual Admissions
B.Tech. in Engineering and Computational Mechanics (AM1)	40	39
B.Tech. in Biochemical Engineering and Biotechnology (BB1)	72	68
B.Tech. in Chemical Engineering (CH1)	82	82
B.Tech. in Civil Engineering (CE1)	113	113
B.Tech. in Computer Science & Engineering (CS1)	99	99
B.Tech. in Electrical Engineering (EE1)	120	122
B. Tech. in Electrical Engineering (Power and Automation) (EE3)	65	65
B.Tech. in Materials Science & Engineering (MS1)	40	39
B. Tech. in Mathematics & Computer Applications (MT1)	89	89
B.Tech. in Mechanical Engineering (ME1)	95	93
B.Tech. in Production Engineering (ME2)	89	88
B.Tech. in Engineering Physics (PH1)	63	63
B.Tech. in Textile Technology (TT1)	116	111
M.Tech. in Mathematics & Computer Applications (5-year Integrated) (MT6)	33	33
B.Tech. and M.Tech. in Computer Science & Engineering (5-year Dual Degree) (CS5)	37	37
B.Tech. and M.Tech. in Chemical Engineering (5-year Dual Degree) (CH7)	56	56
<b>Total</b>	<b>1209</b>	<b>1197</b>

**Table II: Students Admitted to First Year of the M.Tech./M.Des./M.S.(R)/PG D.I.I.T./Joint PG Diploma/M.B.A./M.Sc. Programmes as on September 18, 2020 (the last date for late registration in 1st Semester 2020-2021)**

Programme	Students with Institute Assistantship	Others (including part-time students)	Total
<b>Master of Technology (M.Tech.)</b>			
<b>Applied Mechanics</b>			
Engineering Analysis and Design (AMA)	72	1	73
<b>Chemical Engineering</b>			
Chemical Engineering (CHE)	31	2	33
<b>Chemistry</b>			
Molecular Engg.: Chemical Synthesis and Analysis (CYM)	9	0	9
<b>Civil Engineering</b>			
Construction Engineering and Management (CET)	20	6	26
Construction Technology and Management (CEC)	0	30	30
Environmental Engineering and Management (CEV)	17	1	18

Table II contd.

Geotechnical & Geoenvironmental Engineering (CEG)	16	2	18
Rock Engineering & Underground Structures (CEU)	20	2	22
Structural Engineering (CES)	14	7	21
Transportation Engineering (CEP)	12	8	20
Water Resources Engineering (CEW)	20	3	23
<b>Computer Science and Engineering</b>			
Computer Science & Engineering (MCS)	26	3	29
<b>Electrical Engineering</b>			
Communications Engineering (EEE)	7	4	11
Computer Technology (EET)	18	5	23
Control & Automation (EEA)	15	1	16
Integrated Electronics & Circuits (EEN)	6	1	7
Power Electronics, Electrical Machines & Drives (EEP)	16	4	20
Power System (EES)	12	7	19
<b>Materials Science and Engineering</b>			
Materials Engineering (MSM)	3	0	3
Polymer Science and Technology (MSP)	13	0	13
<b>Mechanical Engineering</b>			
Industrial Engineering (MEE)	13	3	16
Mechanical Design (MEM)	24	1	25
Production Engineering (MEP)	15	0	15
Thermal Engineering (MET)	19	2	21
<b>Physics</b>			
Applied Optics (PHA)	27	0	27
Solid State Materials (PHM)	29	0	29
<b>Textile and Fibre Engineering</b>			
Fibre Science & Technology (TTF)	14	0	14
Textile Chemical Processing (TTC)	9	0	9
Textile Engineering (TTE)	16	0	16
<b>Applied Research in Electronics</b>			
Radio Frequency Design and Technology (CRF)	23	10	33
<b>Atmospheric Sciences</b>			
Atmospheric-Oceanic Science & Technology (AST)	5	1	6
<b>Biomedical Engineering</b>			
Biomedical Engineering (BMT)	10	1	11
<b>Energy Studies</b>			
Energy & Environment Technologies & Mgmt. (ESN)	17	10	27
Renewable Energy Technologies & Management (ESR)	0	19	19
<b>Interdisciplinary Programmes</b>			
Energy Studies (JES)	12	3	15

Table II contd.

Industrial Tribology & Maintenance Engineering (JIT)	2	2	4
Instrument Technology (JID)	20	2	22
Optoelectronics & Optical Communication (JOP)	20	3	23
Telecommunication Technology & Management (JTM)	3	0	3
VLSI Design Tools & Technology (JVL)	0	4	4
<b>Total</b>	<b>625</b>	<b>148</b>	<b>773</b>
<b>Master of Design (M.Des.)</b>			
Industrial Design (DDS)	13	3	16
<b>Master of Science (M.Sc.)</b>			
Chemistry (CYS)	0	66	66
Cognitive Science (HCS)	6	15	21
Economics (HES)	1	25	26
Mathematics (MAS)	0	65	65
Physics (PHS)	33	29	62
<b>Master of Science (Research) (M.S.(R))</b>			
Applied Mechanics (AMY)	7	2	9
Bharti School of Telecommunication Technology & Management (BSY)	5	2	7
Biochemical Engineering & Biotechnology (BEY)	7	1	8
Chemical Engineering (CHY)	3	2	5
Civil Engineering (CEY)	6	2	8
Computer Science & Engineering (CSY)	11	1	12
Electrical Engineering (EEY)	20	24	44
Materials Science & Engineering (MSY)	4	2	6
Mechanical Engineering (MEY)	16	2	18
Kusuma School of Biological Sciences (BLY)	1	0	1
Amar Nath and Shashi Khosla School of Information Technology (SIY)	3	3	6
Sensors, Instrumentation, and Cyber-Physical Systems Engineering (IDY)	3	3	6
<b>Master of Business Administration (MBA)</b>			
Management Systems (SMF)	0	94	94
Technology Management (SMN)	0	29	29
Telecommunication Systems Management (SMT)	0	25	25
<b>PG D.I.I.T.</b>			
Naval Construction (AMX)	0	25	25
<b>Joint PG Diploma</b>			
Joint Postgraduate Diploma for Visionary Leadership in Manufacturing (JPGDVLFM) (MVX)	0	24	24
<b>Total</b>	<b>764</b>	<b>592</b>	<b>1356</b>



**Table III : Research Scholars Admitted in both the Semesters of the Session 2020-2021**

Department/Centre/School	Semester-I			Semester-II			Total
	Institute Supported Scholars	Other Including Part Time Students	Scholars Supported from Other Sources	Institute Supported Scholars	Other Including Part Time Students	Scholars Supported from Other Sources	
Applied Mechanics	10	4	4	11	0	2	31
Biochemical Engg. & Biotechnology	10	0	8	0	0	2	20
Chemical Engineering	18	3	16	6	4	6	53
Chemistry	12	0	29	7	0	9	57
Civil Engineering	25	5	8	6	5	4	53
Computer Science & Engineering	5	0	0	1	2	0	8
Design	5	3	0	3	1	0	12
Electrical Engineering	27	11	15	7	6	3	69
Humanities & Social Sciences	20	3	25	4	1	2	55
Management Studies	7	8	11	9	2	6	43
Materials Science & Engineering	15	1	4	8	0	1	29
Mathematics	4	1	5	1	0	3	14
Mechanical Engineering	23	2	9	4	1	4	43
Physics	10	0	21	5	0	5	41
Textile and Fibre Engineering	14	0	3	9	2	1	29
Applied Research in Electronics	8	1	1	8	1	1	20
Atmospheric Sciences	11	1	1	2	3	0	18
Automotive Research and Tribology	2	0	2	2	0	1	7
Biomedical Engineering	12	0	1	2	0	2	17
Energy Studies	19	3	1	2	1	2	28
Rural Development & Technology	4	0	4	5	2	2	17
Sensors, Instrumentation and Cyber-Physical Systems Engineering	4	0	0	5	1	0	10
School of Artificial Intelligence	0	0	0	1	0	1	2
School of Biological Sciences	4	0	3	8	0	5	20
Bharti School of Telecommunication Technology & Management	1	3	8	1	1	1	15
Transportation Research & Injury Prevention Programmes	2	0	0	0	0	0	2
National Resource Centre for Value Education in Engineering	1	0	1	0	0	0	2
Amar Nath and Shashi Khosla School of IT	6	2	1	2	0	2	13
School of Interdisciplinary Research	8	4	17	4	1	7	41
School of Public Policy	4	0	0	0	0	0	4
University of Queensland - IIT Delhi Academy	14	0	4	9	0	2	29
IITD-NYCU Joint Degree Programme	0	0	2	0	0	0	2
<b>Total</b>	<b>305</b>	<b>55</b>	<b>204</b>	<b>132</b>	<b>34</b>	<b>74</b>	<b>804</b>

**Table IV :** Total number of M.Tech./M.S.(R)/M.Sc./M.B.A./PG D.I.I.T./Joint PG Diploma/M.Des. Students on Rolls in both the Semesters of the Session 2020-2021)

Programme	Institute Supported Students	Students Supported from Other Sources (Including Part-time)	Total
<b>Master of Technology (M.Tech.)</b>			
<b>Department of Applied Mechanics</b>			
Engineering Analysis and Design (AMA)	138	16	154
<b>Department of Chemical Engineering</b>			
Chemical Engineering (CHE)	63	8	71
<b>Department of Chemistry</b>			
Molecular Engg.: Chemical Synthesis and Analysis (CYM)	17	2	19
<b>Department of Civil Engineering</b>			
Construction Engineering and Management (CET)	34	13	47
Construction Technology and Management (CEC)	0	66	66
Environmental Engineering and Management (CEV)	37	4	41
Geotechnical & Geoenvironment Engineering (CEG)	30	5	35
Rock Engineering Underground Structures (CEU)	39	10	49
Structural Engineering (CES)	26	27	53
Water Resources Engineering (CEW)	21	17	38
Transportation Engineering (CEP)	30	3	33
<b>Department of Computer Science and Engineering</b>			
Computer Science & Engineering (MCS)	48	9	57
<b>Department of Electrical Engineering</b>			
Communications Engineering (EEE)	25	7	32
Computer Technology (EET)	41	9	50
Control & Automation (EEA)	38	1	39
Integrated Electronics & Circuits (EEN)	23	2	25
Power Electronics, Electrical Machines & Drives (EEP)	40	11	51
Power Systems (EES)	27	14	41
<b>Department of Materials Science and Engineering</b>			
Materials Engineering (MSM)	14	0	14
Polymer Science And Technology (MSP)	12	0	12
<b>Department of Mechanical Engineering</b>			
Industrial Engineering (MEE)	27	9	36
Mechanical Design (MEM)	51	8	59
Production Engineering (MEP)	30	0	30
Thermal Engineering (MET)	47	6	53
<b>Department of Physics</b>			
Applied Optics (PHA)	49	2	51
Solid State Materials (PHM)	45	6	51
<b>Department of Textile and Fibre Engineering</b>			
Fibre Science & Technology (TTF)	26	1	27
Textile Chemical Processing (TTC)	19	1	20
Textile Engineering (TTE)	35	1	36
<b>Centre for Atmospheric Sciences</b>			
Atmospheric-Oceanic Science & Technology (AST)	14	7	21
<b>Centre for Applied Research in Electronics</b>			
Radio Frequency Design and Technology (CRF)	43	26	69
<b>Centre for Biomedical Engineering</b>			
Bio-medical Engineering (BMT)	19	1	20

Table II contd.

<b>Centre for Energy Studies</b>			
Energy and Environment Technologies & Management (ESN)	26	16	42
Renewable Energy Technologies and Management (ESR)	0	41	41
<b>Interdisciplinary Programmes</b>			
Energy Studies (JES)	41	11	52
Industrial Design (JDS)	0	2	2
Industrial Tribology & Maintenance Engineering (JIT)	15	6	21
Instrument Technology (JID)	39	6	45
Opto Electronics & Optical Communication (JOP)	40	8	48
Polymer Science & Technology (JPT)	15	3	18
Telecommunication Technology and Management (JTM)	31	3	34
VLSI Design Tools and Technology (JVL)	0	15	15
<b>Master of Design (M.Des.)</b>			
Industrial Design (DDS)	33	3	36
<b>Master of Business Administration (MBA)</b>			
Management Systems (SMF)	0	200	200
Technology Management (SMN)	0	107	107
Telecommunication Systems Management (SMT)	0	50	50
<b>PG D.I.I.T.</b>			
Naval Construction (AMX)	0	44	44
<b>Joint PG Diploma Programme</b>			
Joint Postgraduate Diploma for Visionary Leadership in Manufacturing (JPGDVLFM) (MVX)	0	24	24
<b>Master of Science (M.Sc.)</b>			
<b>Department of Chemistry</b>			
Chemistry (CYS)	18	105	123
<b>Department of Humanities and Social Sciences</b>			
Cognitive Science (HCS)	6	14	20
Economics (HES)	0	8	8
<b>Department of Mathematics</b>			
Mathematics (MAS)	19	106	125
<b>Department of Physics</b>			
Physics (PHS)	40	89	129
<b>Master of Science (Research) (M.S.(R))</b>			
Applied Mechanics (AMY)	14	4	18
Biochemical Engineering & Biotechnology (BEY)	15	3	18
Chemical Engineering (CHY)	3	7	10
Civil Engineering (CEY)	7	4	11
Computer Science & Engineering (CSY)	13	6	19
Electrical Engineering (EEY)	34	53	87
Materials Science & Engineering (MSY)	4	2	6
Mechanical Engineering (MEY)	27	5	32
Sensors, Instrumentation, and Cyber-Physical Systems Engineering (IDY)	3	3	6
Bharti School of Telecommunication Technology & Management (BSY)	5	11	16
Kusuma School of Biological Sciences (BLY)	11	2	13
Amar Nath & Shashi Khosla School of Information Technology (SIY)	7	14	21
<b>Grand Total</b>	<b>1574</b>	<b>1267</b>	<b>2841</b>

**Table VI: Research Scholars on the Institute Rolls in both the Semesters of the Session 2020-2021**

Department/Centre/School	Institute Scholarships	Others Scholarships	Part-Time Students	Total
Applied Mechanics (AMZ)	62	13	16	91
Biochemical Engineering & Biotechnology (BEZ)	47	28	0	75
Chemical Engineering (CHZ)	120	74	34	228
Chemistry (CYZ)	68	131	6	205
Civil Engineering (CEZ)	168	54	75	297
Computer Science & Engineering (CSZ)	30	13	10	53
Design (DDZ)	15	5	8	28
Electrical Engineering (EEZ)	237	111	97	445
Humanities & Social Sciences (HUZ)	86	73	22	181
Management Studies (SMZ)	101	52	62	215
Materials Science & Engineering (PTZ) (formerly CPSE)	14	5	2	21
Materials Science & Engineering (MSZ)	48	15	4	67
Mathematics (MAZ)	40	40	4	84
Mechanical Engineering (MEZ)	129	54	29	212
Physics (PHZ)	83	154	27	264
Textile and Fibre Engineering Technology (TTZ)	70	23	4	97
Centre for Applied Research in Electronics (CRZ)	41	12	16	69
Centre for Artificial Intelligence (AIZ)	1	1	0	2
Centre for Atmospheric Sciences (ASZ)	36	23	12	71
Centre for Automotive Research and Tribology (CTZ)	4	1	0	5
Centre for Automotive Research and Tribology (ITZ) (formerly ITMMEC)	19	5	3	27
Centre for Biomedical Engineering (BMZ)	41	14	10	65
Centre for Energy Studies (ESZ)	69	10	18	97
Centre for Rural Development & Technology (RDZ)	72	37	28	137
Centre for Sensors, Instrumentation and Cyber-Physical Systems Engineering (formerly IDDC)	20	0	7	27
National Resource Centre for Value Education in Engg. (NRZ)	5	1	5	11
Transportation Research & Injury Prevention Prog. (TRZ)	9	0	4	13
Interdisciplinary Research (SRZ)	17	41	5	63
Kusuma School of Biological Sciences (BLZ)	40	44	1	85
Bharti School of Telecommunication Tech. & Mgmt. (BSZ)	34	19	20	73
Amar Nath and Shashi Khosla School of IT (ANZ)	26	10	14	50
School of Public Policy (PPZ)	8	0	5	13
IITD-QU Joint Degree Programme (QIZ)	41	16	0	57
IITD-NYCU Joint Degree Programme (TIZ)	10	7	0	17
<b>Total</b>	<b>1811</b>	<b>1086</b>	<b>548</b>	<b>3445</b>

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

Programme	FN		General		Gen-EWS		OBC		PwD		SC		ST		Total		Grand Total
	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	
P.G.	14	65	333	1277	15	119	73	551	3	21	39	224	32	75	509	2332	2841
Ph.D.	7	34	1041	1454	16	39	172	420	2	10	68	123	22	37	1328	2117	3445
<b>Total (a)</b>	<b>21</b>	<b>99</b>	<b>1374</b>	<b>2731</b>	<b>31</b>	<b>158</b>	<b>245</b>	<b>971</b>	<b>5</b>	<b>31</b>	<b>107</b>	<b>347</b>	<b>54</b>	<b>112</b>	<b>1837</b>	<b>4449</b>	<b>6286</b>
<b>B.Tech. (b)</b>	<b>-</b>	<b>1</b>	<b>318</b>	<b>1636</b>	<b>11</b>	<b>53</b>	<b>185</b>	<b>977</b>	<b>12</b>	<b>101</b>	<b>108</b>	<b>586</b>	<b>56</b>	<b>310</b>	<b>690</b>	<b>3664</b>	<b>4354</b>
<b>Total (a+b)</b>	<b>21</b>	<b>100</b>	<b>1692</b>	<b>4367</b>	<b>42</b>	<b>211</b>	<b>430</b>	<b>1948</b>	<b>17</b>	<b>132</b>	<b>215</b>	<b>933</b>	<b>110</b>	<b>422</b>	<b>2527</b>	<b>8113</b>	<b>10640</b>

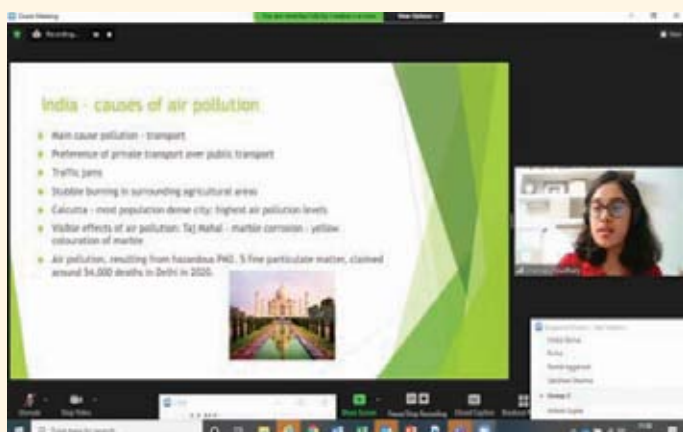
## INTERNATIONAL STUDENTS

The greatest strength of IIT Delhi is the diversity of both faculty and student body as well as the variety and number of course offerings, suitable for both research and capacity building.

Our emphasis on degrees that include industry experience and prepare students for the real world means students gain valuable skills and attributes that we know employers are looking for. As of now, we have 121 international postgraduate students from more than 38 different countries. Subsequently, we expect more students to get admission in IIT Delhi. To accomplish this, the Institute is promoting its postgraduate & International Ph.D. Fellowship Programme on a large scale through Embassy & Social Media.

- During pandemic, we interacted with our international students fortnightly to closely monitor their development and well being in month of May & June.
- A welcome cum orientation programme held on 25th September, 2020 & 2nd February, 2021 in which all newly-registered international students received a formal welcome to IIT Delhi. The purpose of this Orientation programme was to make them familiar with the Institute.
- An online meeting has been arranged for our international students with Dean of Student Affairs and Dean Alumni Affairs & International Programmes to discuss issues related to stay in hostels.

### Student Led Engagement with Newcastle University



IIT Delhi and Newcastle have enjoyed a long and successful partnership. To add a new dimension, IIT Delhi and Newcastle held a joint student-led virtual event on Friday 5th March focusing on sustainability challenges in the UK and India. This was the first such event itself.

It involved the participation of 6 students from each university, who are all studying courses related to sustainability and the environment.

Prof. Naveen Garg, Dean AAIP, Prof. Sri Harsha Kota from IIT Delhi and Professor Richard Davies (NU), PVC Global & Ms. Helen Adamson, Lecturer School of Environmental & Natural Science also joined the event to hear the student's presentations.

## SCHOLARSHIPS, ASSISTANTSHIPS, AND AWARDS

The Institute believes in the maxim that no deserving student, however weak in financial backing, should be denied the opportunity of education at IIT Delhi. To encourage and to provide financial incentives to meritorious students and assistance to the needy students of the Institute, individuals, trusts and organisations have been instituting scholarships, awards, etc. at the Institute.

**Assistantships/Fellowships:** The IRD provides support in the form of Gap Period Assistantship for both M.Tech./M.S.(R) and Ph.D students on completion of the projects from which they were drawing their fellowships/assistantships. These assistantships are provided to the students once the projects get over. M.Tech./M.S.(R) students are supported for a maximum gap period of six months, while Ph.D. students supported for a maximum gap period of one year. Total 20 students were supported in 2020-21, under this scheme.

**IRD Early-Doc Fellowships:** are provided to Ph.D. students after successful completion of Ph.D. Viva Examination. The main objective is to support the scholar in completing the manuscript writing related to thesis work, A monthly fellowship of ₹40,000/- per month (including HRA) is given to full-time Ph.D. students of IIT Delhi for a maximum period of 3 months, w.e.f. the date of their Ph.D. viva-voce examination. Total 81 IRD Early-Doc Fellowships were approved during Financial Year 2020-2021.

**DAAD Scholarship:** The 19th batch of 9 M.Tech. students have been sent to Germany under the DAAD Scholarship

Scheme to do part of their thesis research under the Indo-German collaboration programme during the period.

**Donor Awards:** In addition to scholarships and assistantships, the Institute also offers donor awards to the deserving candidates. During the period, 62 donor awards were distributed among 82 students.

### Scholarships and Financial Assistance to SC/ST

Students are given scholarships and financial assistance as detailed below:

- All SC/ST students are exempted from payment of tuition fees.
- Free messing (basic menu) and a pocket allowance of ₹250/- is provided in lieu of the merit-cum-means scholarship for the students having annual family income upto ₹4.5 lacs. However, they are required to pay the hostel seat rent as applicable from time to time.
- SC/ST students who fail in the examination for the first time continue to receive the free messing, subject to a maximum limit of five years.
- SC/ST students are loaned books from the book bank without payment of any loan fee. The books are, however, required to be returned at the end of each semester.

A gist of data showing the scholarships and assistantships offered to UG and PG students during the session 2020-2021 are given below in the tables.

**Table I : Number of Cash Prizes Merit-cum-Means Scholarships/Freeships offered to B.Tech./Dual Degree Students during the Session 2020-2021**

Class	Cash Prizes (SCHII028)	No. of Scholarships Awarded (SCHII035/SCHII059)	Free Mess Services (SCHII036)	Freeships for General/OBC/EWS (SCHOI305)	PG (SCHII057/SCHII058)	UG TA (SCHII060)	Sponsored Awards/Fellowships/Scholarships*
Year I	98	69	0	0	0	0	1
Year II	67	219	5	0	0	0	3
Year III	60	166	5	0	0	0	3
Year IV	47	182	10	0	0	49	3
Year V	08	0	4	0	62	0	0
Backlog	0	0	0	0	0	0	0
<b>Total</b>	<b>280</b>	<b>636</b>	<b>24</b>	<b>0</b>	<b>62</b>	<b>49</b>	<b>10</b>

**Table II : Assistantships to Dual Degree and Advanced Standing Students during the Session 2020-2021**

Course	No. of Assistantships Renewed (SCHII057/SCHII058)	No. of Assistantships Awarded (SCHII057/SCHII058)
Biochemical Engineering & Biotechnology (BB5)	08	13
Computer Science & Engineering (CS5)	0	13
Chemical Engineering (CH7)	0	19
Mathematics and Computing (MT6)	0	10
Advanced Standing	6	7
<b>Total</b>	<b>14</b>	<b>62</b>

Full time students pursuing M.Tech. / M.Des. / M.Sc. / M.S.(R) are eligible for Institute assistantship at the time of admission. However, for continuation of the assistantship they have to maintain a minimum SGPA (semester grade

point average) at the end of every semester. The table below shows the assistantship awarded to 2020 entry students and renewed to the existing students. A total of 764 new students were awarded assistantship in 2020-21.

**Table III : Assistantships Offered to the Students of M.Tech. / M.Des. / M.Sc. / M.S.(R) Programmes during the Session 2020-2021.**

Programme	No. of Assistantships Awarded (first year) 2020	No. of Assistantships Renewed (Old)
<b>Master of Technology (M.Tech.)</b>		
<b>Applied Mechanics</b>		
Engineering Analysis & Design (AMA)	72	66
<b>Chemical Engineering</b>		
Chemical Engineering (CHE)	31	32
<b>Chemistry</b>		
Molecular Engineering : Chemical Synthesis & Analysis (CYM)	9	9
<b>Civil Engineering</b>		
Construction Engineering and Management (CET)	20	17
Environmental Engineering and Management (CEV)	17	20
Geotechnical and Geoenvironmental Engineering (CEG)	16	15
Rock Engineering and Underground Structures (CEU)	20	19
Structural Engineering (CES)	14	18
Transportation Engineering (CEP)	12	10
Water Resources Engineering (CEW)	20	10
<b>Computer Science and Engineering</b>		
Computer Science & Engineering (MCS)	26	22
<b>Electrical Engineering</b>		
Communications Engineering (EEE)	7	19
Computer Technology (EET)	18	24
Control & Automation (EEA)	15	24
Integrated Electronics & Circuits (EEN)	6	17
Power Electronics Electrical Machines & Drives (EEP)	16	24
Power Systems (EES)	12	15
<b>Materials Science and Engineering</b>		
Materials Engineering (MSM)	3	11
Polymer Science & Technology (MSP)	13	0
<b>Mechanical Engineering</b>		
Industrial Engineering (MEE)	13	14
Mechanical Design (MEM)	24	30
Production Engineering (MEP)	15	16
Thermal Engineering (MET)	19	27
<b>Physics</b>		
Applied Optics (PHA)	27	22
Solid State Materials (PHM)	29	16
<b>Textile and Fibre Engineering</b>		
Fibre Science and Technology (TTF)	14	12

Table III contd. ....

Textile Chemical Processing (TTC)	9	11
Textile Engineering (TTE)	16	19
<b>Centre for Applied Research in Electronics</b>		
Radio Frequency Design and Technology (CRF)	23	20
<b>Centre for Atmospheric Sciences</b>		
Atmospheric-Oceanic Science & Technology (AST)	5	9
<b>Centre for Biomedical Engineering</b>		
Biomedical Engineering (BMT)	10	9
<b>Centre for Energy Studies</b>		
Energy and Environment Technologies & Management (ESN)	17	9
<b>Inter-Disciplinary Programme</b>		
Energy Studies (JES)	12	28
Industrial Tribology & Maintenance Engineering (JIT)	2	13
Instrument Technology (JID)	20	18
Optoelectronics & Optical Communication (JOP)	20	19
Polymer Science & Technology (JPT)	0	15
Telecommunication Technology and Management (JTM)	3	28
<b>Master of Design (M.Des.)</b>		
Industrial Design (DDS)	13	20
<b>Master of Science (M.Sc.)</b>		
<b>Chemistry</b>		
Chemistry (CYS)	0	18
<b>Humanities &amp; Social Sciences</b>		
Cognitive Science (HCS)	6	0
Economics (HES)	1	0
<b>Mathematics</b>		
Mathematics (MAS)	0	19
<b>Physics</b>		
Physics (PHS)	33	7
<b>Master of Science (Research) - M.S. (R)</b>		
Applied Mechanics (AMY)	7	7
Biochemical Engineering & Biotechnology (BEY)	7	8
Chemical Engineering (CHY)	3	0
Civil Engineering (CEY)	6	1
Computer Science & Engineering (CSY)	11	2
Electrical Engineering (EEY)	20	15
Materials Science & Engineering (MSY)	4	1
Mechanical Engineering (MEY)	16	11
Sensors, Instrumentation, and Cyber-Physical Systems Engineering (IDY)	3	0
Amar Nath and Shashi Khosla School of Information Technology (SIY)	3	4
Bharti School of Telecommunication Technology & Management (BSY)	5	0
Kusuma School of Biological Sciences (BLY)	1	10
<b>Total</b>	<b>764</b>	<b>830</b>



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

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

Department	Programme	Year	2019	2020
Chemistry	Chemistry (CYS)	Year I	09	14
		Year II	14	17
Humanities and Social Sciences	Cognitive Science (HCS)	Year I	0	6
		Year II	0	0
	Economics (HES)	Year I	0	1
		Year II	0	0
Mathematics	Mathematics (MAS)	Year I	12	17
		Year II	13	13
Physics	Physics (PHS)	Year I	14	17
		Year II	14	13
Total			76	98

The students pursuing Ph.D. are also eligible for assistantships. This year, additional 437 students were awarded assistantships. Assistantship to existing students continues provided, they show satisfactory progress. The table below gives a discipline wise break-up of assistantships awarded during the period.

**Table V : Institute Assistantships Awarded to Research Scholars during the Session 2020-2021**

Department/Centre/School	No. of Assistantship Awarded (2020 entry)	No. of Assistantships Renewed
Applied Mechanics (AMZ)	21	42
Biochemical Engineering & Biotechnology (BEZ)	10	38
Chemical Engineering (CHZ)	24	98
Chemistry (CZ)	19	51
Civil Engineering (CEZ)	31	140
Computer Science & Engineering (CSZ)	6	27
Design (DDZ)	8	7
Electrical Engineering (EEZ)	34	208
Humanities & Social Sciences (HUZ)	24	65
Management Studies (SMZ)	16	86
Mathematics (MAZ)	5	36
Material Science & Engineering (MSZ)	23	42
Mechanical Engineering (MEZ)	27	103
Physics (PHZ)	15	68
Textile and Fibre Engineering (TTZ)	23	47
Applied Research in Electronics (CRZ)	16	26
Artificial Intelligence (AIZ)	1	0
Atmospheric Sciences (ASZ)	13	25
Biomedical Engineering (BMZ)	14	27
Energy Studies (ESZ)	21	48
Automotive Research and Tribology (CTZ)	4	19
Sensors, Instrumentation and Cyber-physical System Engg. (IDZ)	9	11
Rural Development & Technology (RDZ)	9	65
Kusuma School of Biological Sciences (BLZ)	12	28
Amar Nath and Shashi Khosla School of Information Technology (ANZ)	8	18
Bharti School of Telecommunication Technology & Mgmt. (BSZ)	2	32
School of Public Policy (PPZ)	4	4
Interdisciplinary Research (SRZ)	12	5
Transport Res. & Injury Prevention Programme (TRZ)	2	7
National Resource Centre for Value Education in Engg. (NRZ)	1	4
IITD-QU Joint Degree Programme (QIZ)	23	20
IITD-NYCU Joint Degree Programme (TIZ)	0	11
<b>Total</b>	<b>437</b>	<b>1408</b>

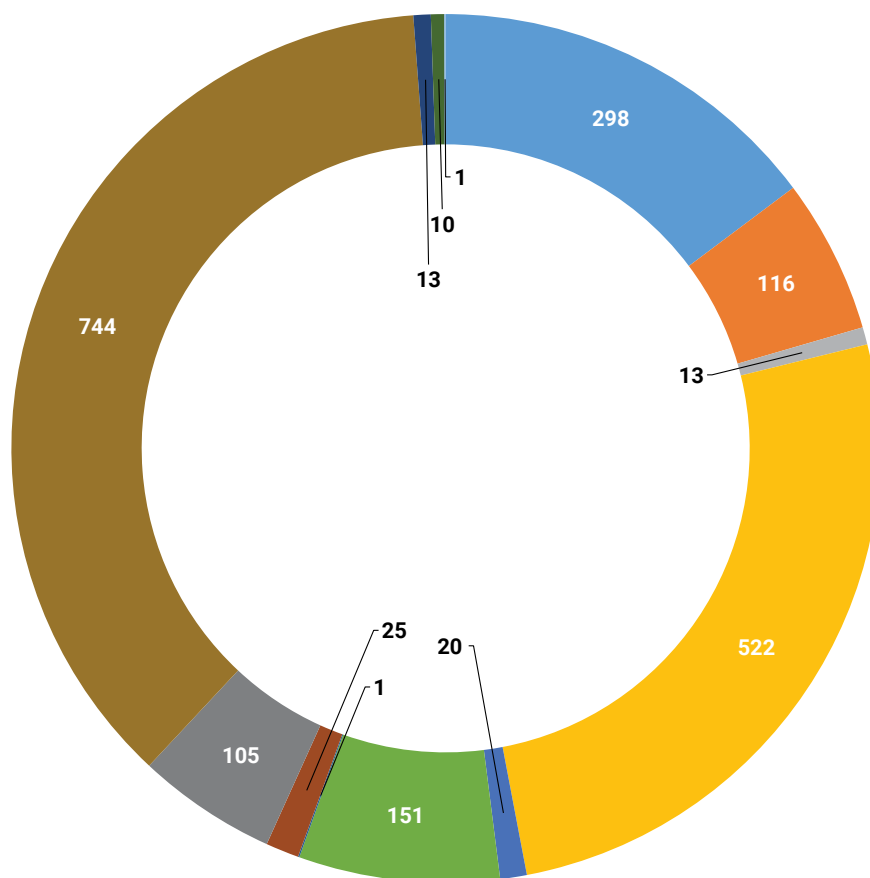
## ACADEMIC PERFORMANCE

IIT Delhi follows the credit system of performance evaluation, with proportional weighting of courses based on their importance. The total marks (usually out of 100) form the basis of grades, with a grade value (out of 10) assigned to a range of marks. Sometimes, relative grading is done

considering the overall performance of the whole class.

2019 candidates awarded of various degrees and diplomas of the Institute at the 51st Annual Convocation held on 7th November, 2020. Details of the same are given below:

**Degrees Awarded in the 51st Convocation (2020)**



- |                                                       |                                                                 |                                                                         |                                                |                                                      |                                                                                |
|-------------------------------------------------------|-----------------------------------------------------------------|-------------------------------------------------------------------------|------------------------------------------------|------------------------------------------------------|--------------------------------------------------------------------------------|
| <span style="color: blue;">■</span> Ph.D.             | <span style="color: orange;">■</span> M.B.A.                    | <span style="color: grey;">■</span> M.S. Research                       | <span style="color: yellow;">■</span> M. Tech. | <span style="color: blue;">■</span> M. Des.          | <span style="color: green;">■</span> M. Sc.                                    |
| <span style="color: darkblue;">■</span> D.I.I.T. (PG) | <span style="color: brown;">■</span> PG D.I.I.T. (Naval Const.) | <span style="color: darkgrey;">■</span> Dual Degree (B.Tech. & M.Tech.) | <span style="color: brown;">■</span> B.Tech.   | <span style="color: darkblue;">■</span> U.G. Diploma | <span style="color: darkgreen;">■</span> Advanced Standing                     |
|                                                       |                                                                 |                                                                         |                                                |                                                      | <span style="color: lightblue;">■</span> Integrated M.Tech. (Math & Computing) |

Programmes	2020
Ph.D.	298
M.B.A. (Full-time/Part-time)	116
M.S. (Research)	13
M.Tech.	522
M.Des.	20
M.Sc.	151
D.I.I.T (PG)	01
PG D.I.I.T. (Naval Construction)	25
Dual Degree (B.Tech. & M.Tech.)	105
B.Tech.	744
U.G. Diploma	13
Advanced Standing (B.Tech. & M.Tech.)	10
Integrated M.Tech. (Math & Computing)	01
<b>Total</b>	<b>2019</b>

Students received Medals in the 51st Convocations, held on 7th November, 2020.

## MEDALISTS

### President's Gold Medal



**Deepanshu Jindal**  
B.Tech. in Computer Science  
& Engineering

### Director's Gold Medal



**Aashi Agarwal**  
B.Tech. in Textile Technology

### Dr. Shankar Dayal Sharma Gold Medal



**Muskan Kularia**  
M.Tech. in Applied Optics

### Perfect Ten Gold Medals



**Muskan Kularia**  
M.Tech. in Applied Optics



**N Jayakrishnan**  
M.Tech. in Mechanical Design



**Himanshu Yadav**  
M.Sc. in Mathematics



**Venu Gopal Agarwal**  
M.S.(R) in Mechanical Engg.



**Hrit Roy**  
M.Sc. in Mathematics



**Shubham Choudhary**  
M.S.(R) in Electrical Engg.

### Silver Medals



**Simar Kaur Mattewal**  
B.Tech. and M.Tech.  
in Chemical Engg.



**Jashan Singh Suri**  
B.Tech. and M.Tech. in Biochemical  
Engg. and Biotechnology



**Siddhant Arora**  
B.Tech. and M.Tech. in  
Computer Science and Engg.



**Tarun Gupta**  
B.Tech. and M.Tech. in  
Mathematics and Computing



**Shreya Johri**  
B.Tech. in Biochemical  
Engg. and Biotechnology



**Ashutosh Raj**  
B.Tech. in Civil Engg.



**Amit Choudhary**  
B.Tech. in Chemical Engg.



**Khushal Sethi**  
B.Tech. in Electrical Engg.



**Salil Chandra**  
B.Tech. in Electrical Engg.  
(Power and Automation)



**Saksham Jain**  
B.Tech. in Mechanical Engg.



**Kshitij Gupta**  
B.Tech. in Production and  
Industrial Engineering



**Chahat Chawla**  
B.Tech. in Mathematics and  
Computing



**Swarnava Sanyal**  
B.Tech. in Engineering Physics



**Khushank Singhal**  
B.Tech. in Textile Technology

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

**Table I: Discipline-wise break-up of CGPA for the two Academic Semesters (Undergraduate Courses) [Academic Session 2019-2020 (2016 Entry Students)]**

Discipline	10.00-9.00	8.99-8.00	7.99-7.00	6.99-6.00	5.99-5.00	4.99-4.00	3.99-3.00	2.99-2.00	Less than 2.00	Total
<b>First Semester</b>										
Dual-Degree in Biochemical Engineering & Biotechnology (BB5)	0	3	4	3	1	0	0	0	0	11
Biochemical Engg. & Biotechnology (BB1)	1	3	13	11	6	0	0	0	0	34
Civil Engineering (CE1)	1	15	37	28	8	0	0	0	0	89
Chemical Engineering (CH1)	4	13	19	14	10	0	0	0	0	60
Dual Degree in Chemical Engg. (CH7)	2	7	12	8	9	0	0	0	0	38
Computer Science & Engg. (CS1)	16	20	15	18	1	0	0	0	0	70
Dual-Degree in Computer Science & Engg. (CS5)	2	6	6	7	1	0	0	0	0	22
Electrical Engineering (EE1)	15	23	25	9	5	0	0	0	0	77
Electrical Engg. (Power) & Automation (EE3)	1	10	18	12	2	0	0	0	0	43
Mechanical Engineering (ME1)	6	25	21	15	3	0	0	0	0	70
Production & Industrial Engg. (ME2)	3	9	16	14	8	0	0	0	0	50
Mathematics & Computing (MT1)	5	10	12	7	1	0	0	0	0	35
Dual-Degree in Mathematics & Computing (MT6)	3	5	6	2	1	0	0	0	0	17
Engineering Physics (PH1)	2	8	16	15	6	0	0	0	0	47
Textile Engineering (TT1)	1	16	30	27	11	0	0	0	0	85
<b>Total</b>	<b>62</b>	<b>173</b>	<b>250</b>	<b>190</b>	<b>73</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>748</b>
<b>Second Semester</b>										
Dual-Degree in Biochemical Engineering & Biotechnology (BB5)	0	3	4	3	1	0	0	0	0	11
Biochemical Engg. & Biotechnology (BB1)	1	6	13	19	5	0	0	0	0	34
Civil Engineering (CE1)	1	16	36	28	8	0	0	0	0	89
Chemical Engineering (CH1)	4	13	19	15	9	0	0	0	0	60
Dual-Degree in Chemical Engg. (CH7)	2	8	11	9	8	0	0	0	0	38
Computer Science & Engg. (CS1)	17	19	17	16	1	0	0	0	0	70
Dual-Degree in Computer Science & Engineering (CS5)	3	6	5	8	0	0	0	0	0	22
Electrical Engineering (EE1)	15	25	24	9	4	0	0	0	0	77
Electrical Engg. (Power & Automation) (EE3)	1	10	18	12	2	0	0	0	0	43
Mechanical Engineering (ME1)	6	25	23	15	1	0	0	0	0	70
Production & Industrial Engineering (ME2)	4	10	15	13	8	0	0	0	0	50
Mathematics & Computing (MT1)	5	11	11	7	1	0	0	0	0	35
Dual-Degree in Mathematics & Computing (MT6)	3	6	5	3	0	0	0	0	0	17
Engineering Physics (PH1)	2	8	16	18	3	0	0	0	0	47
Textile Engineering (TT1)	3	16	32	23	11	0	0	0	0	85
<b>Total</b>	<b>67</b>	<b>182</b>	<b>249</b>	<b>188</b>	<b>62</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>748</b>

**Table II : Academic Performance of 1st year Students of Postgraduate Programmes**

Department/Centre/School	Programme	No. of students admitted (2020)	No. of students qualified to continue*
<b>Master of Technology</b>			
Applied Mechanics	Engineering Analysis and Design (AMA)	73	73
Chemical Engineering	Chemical Engineering (CHE)	33	33
Chemistry	Molecular Engineering: Chemical Synthesis and Analysis (CYM)	9	8
Civil Engineering	Construction Engineering and Management (CET)	26	23
	Construction Technology and Management (CEC)	30	30
	Environmental Engineering and Management (CEV)	18	17
	Geotechnical & Geoenvironmental Engineering (CEG)	18	17
	Rock Engineering of Underground Structures (CEU)	22	22
	Structural Engineering (CES)	21	15
	Transportation Engineering (CEP)	20	19
	Water Resources Engineering (CEW)	23	23
Computer Science & Engineering	Computer Science & Engineering (MCS)	29	29
Electrical Engineering	Communications Engineering (EEE)	11	9
	Computer Technology (EET)	23	22
	Control and Automation (EEA)	16	15
	Integrated Electronics & Circuits (EEN)	7	7
	Power Electronics, Electrical Machines & Drives (EEP)	20	20
	Power Systems (EES)	19	19
Materials Science & Engineering	Materials Engineering (MSM)	3	3
	Polymer Science And Technology (MSP)	13	12
Mechanical Engineering	Industrial Engineering (MEE)	16	16
	Mechanical Design (MEM)	25	21
	Production Engineering (MEP)	15	14
	Thermal Engineering (MET)	21	21
Physics	Applied Optics (PHA)	27	27
	Solid State Materials (PHM)	29	29
Textile and Fibre Engineering	Fibre Science And Technology (TTF)	14	14
	Textile Chemical Processing (TTC)	9	8
	Textile Engineering (TTE)	16	16
Applied Research in Electronics	Radio Frequency Design & Technology (CRF)	33	33
Atmospheric Sciences	Atmospheric Oceanic Science & Technology (AST)	6	6
Biomedical Engineering	Biomedical Engineering (BMT)	11	11
Energy Studies	Energy and Environment Technologies & Mgmt. (ESN)	27	27
	Renewable Energy Technologies and Mgmt. (ESR)	19	19

Table II contd. ....

Interdisciplinary Programme	Energy Studies (JES)	15	14
	Industrial Tribology & Maintenance Engg. (JIT)	4	4
	Instrument Technology (JID)	22	22
	Optoelectronics & Optical Communication (JOP)	23	23
	Telecommunication Technology Management (JTM)	3	3
	VLSI Design Tools and Technology (JVL)	4	3
<b>Master of Science (Research)</b>			
	Applied Mechanics (AMY)	9	9
	Biochemical Engineering & Biotechnology (BEY)	8	8
	Chemical Engineering (CHY)	5	5
	Civil Engineering (CEY)	8	8
	Computer Science & Engineering (CSY)	12	12
	Electrical Engineering (EEY)	44	41
	Materials Science & Engineering (MSY)	6	5
	Mechanical Engineering (MEY)	18	18
	Centre for Sensors, Instrumentation and Cyber-Physical Systems Engineering (IDY)	6	6
	Amar Nath & Shashi Khosla School of Information Technology (SIY)	6	6
	Bharti School of Telecommunication Technology & Management (BSY)	7	7
	Kusuma School of Biological Sciences (BLY)	1	1
<b>Master of Design</b>			
	Industrial Design (DDS)	16	16
<b>PG D.I.I.T.</b>			
	Naval Construction (AMX)	25	25
<b>Joint PG Diploma</b>			
Mechanical Engineering	Postgraduate Diploma for Visionary Leadership in Manufacturing (JPGDVLFM) (MVX)	24	24
<b>Master of Science</b>			
	Chemistry (CYS)	66	66
	Cognitive Science (HCS)	21	20
	Economics (HES)	26	8
	Mathematics (MAS)	65	63
	Physics (PHS)	62	61
<b>Master of Business Administration</b>			
	Management Systems (SMF)	94	92
	Technology Management (SMN)	29	29
	Telecommunication Systems Mgmt. (SMT)	25	25
<b>Total</b>		<b>1356</b>	<b>1302</b>

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

# भारतीय प्रौद्योगिकी संस्थान दिल्ली

## INDIAN INSTITUTE OF TECHNOLOGY DELHI



### STUDENTS' RECOGNITIONS

IIT Delhi students regularly receive awards and recognitions in national and international forums. This year too, the students have performed immensely well. A department-wise distribution of these accolades is provided below:

#### Chemical Engineering

- Akshay Chenna, 'Prime Minister's Research Fellowship (PMRF)', MoE, Gol, 2020.
- Prashant Jadhao, Ramdayal Panda, Snigdha Mishra, 'Gandhian Young Technological Innovation (GYTI) Appreciation – 2020', Society for Research and Initiatives for Sustainable Technologies and Institutions, 2020. Guide: Prof. K. K. Pant.
- Nishant Beriwal, 'Prime Minister's Research Fellowship (PMRF)', MoE, Gol, 2020. Guide: Prof. Anil Verma.

#### Chemistry

- Syeda Warisul Fatima, 'Best Speaker Award', rapid fire oral research presentation, International Conference on Biotechnology for Sustainable Agriculture, Environment and Health (BSAEH-2021), held at Jaipur (Rajasthan), India, from 04 to 08 April, 2021. Guide: Prof S. K. Khare.
- Syeda Warisul Fatima, 'Best Poster Award', poster presentation, Workshop on Science Communication and Careers, India Alliance DBT, Regional College of Biotechnology, Faridabad, India, from 21 to 22 January, 2020. Guide: Prof S. K. Khare.

#### Civil Engineering

- Abhigna Bhatt, 'Superior Paper Award in Research Category', The International Conference on Futuristic Technologies, 2021. Guide: Prof. Arnab Banerjee.
- Ravinder, 'Prime Minister's Research Fellowship', 2020. Guide: Prof. N. M. Anoop Krishnan.
- Mohd Zaki, 'Prime Minister's Research Fellowship', 2021. Guide: Prof. N. M. Anoop Krishnan.
- Ravinder, 'Gandhian Young Technology Innovation Award', 2020. Guide: Prof. N. M. Anoop Krishnan.

#### Computer Science and Engineering

- Manas Joshi, 'Suresh Chandra Memorial Best IITD-CSE M.Tech. Award', IIT Delhi, 2020. Guide: Prof. Sayan Ranu, Prof. Amitabha Bagchi.
- Nikhil Goyal, 'BOSS Award for Best Experimental B.Tech./ M.Tech. Project', in Computer Science and Engineering, IIT Delhi, 2020. Guide: Prof. Sayan Ranu.

#### Electrical Engineering

- Divya Kaushik, 'Advances in Magnetism Award', American Institute of Physics, 2020. Guide: Debanjan Bhowmik.
- Priyank Mukeshkumar Shah, 'Amit Garg Memorial Research Award', Amit ji Memorial Trust, 2020. Guide: Prof. Bhim Singh.
- Nishant Kumar, 'IAS CMD Student Thesis Contest', IEEE Industry Application Society, 2020. Guide: Prof. Bhim Singh.

- Anjaneer Kumar Mishra, 'IAS CMD Student Thesis Contest', IEEE Industry Application Society, 2020. Guide: Prof. Bhim Singh.
- Priyank Mukeshkumar Shah, 'INAE Innovative Student Projects Award 2020', Indian National Academy of Engineering (INAE), 2020. Guide: Bhim Singh.
- Anjaneer Kumar Mishra, 'Best Industry Project Award (FITT Award)', FITT, IIT Delhi, 2020.
- Anjeet Kumar Verma, 'POSOCO Award-2021'. Guide: Prof. Bhim Singh.
- Priyank Mukeshkumar Shah, 'POSOCO Award-2021'. Guide: Prof. Bhim Singh.
- Tabia Ahmad, 'POSOCO Award-2021'. Guide: Prof. N. Senroy.
- Vedantham Lakshmi Srinivas, 'POSOCO Award-2021'. Guide: Prof. Bhim Singh.

#### Humanities and Social Sciences

- Shilpa Bandyopadhyay, 'Prof. Deepak Bhat Award', IAAP, 2021. Guide: Prof. Kamlesh Singh.
- Satheesha B., 'Robert S. McNamara Fellowship', World Bank, 2020. Guide: Prof. Jayan Jose Thomas.
- Angarika Rakshit, 'Fulbright Foreign Student Program Fellowship', 2021. Guide: Prof. Jayan Jose Thomas.

#### Management Studies

- Ankit Sharma, 'Sabita Karunes Memorial Award', IIT Delhi, 2020.

#### Materials Science and Engineering

- Prashant Mittal, 'Second Prize in International Image Competition titled "Beauty of the Nanoworld", Nanosurf, Switzerland, 2021. Guide: Prof. Nitya Nand Gosvami.
- Anubhav Kumar, 'Outstanding Short Talk Award', IUPAC-MACRO 2020+, 2021. Guide: Prof. Bijay P. Tripathi.
- Kanupriya Nayak, 'Short Talk', IUPAC-MACRO 2020+, 2021. Guide: Prof. Bijay P. Tripathi.
- Kanupriya Nayak, 'Oral Presentation in ICMMAP 2021', ICMMAP 2021. Guide: Prof. Bijay P. Tripathi.
- Biswajit Mishra, 'Virtual conference on Metal-Organic Frameworks and Open Framework Compounds', MOF-2020. Guide: Prof. Bijay P. Tripathi.

#### Mechanical Engineering

- Mohd. Shoaib, 'Newton Bhabha Ph.D. Placement Programme Selection', British Council, DST, 2021. Guide: Varun Ramamohan.

#### Textile and Fibre Engineering

- Rashi Agrawal, 'Best Poster Presentation', Bangalore India, 2020.
- Shubhrima Ghosh, 'Research Excellence Best Poster Award', Bio-Innovation for Environmental and Health Sustainable Developments.

- Nagender Singh, 'Gandhian Young Technological Innovation (GYTI) Award/Appreciation 2020', 'Society for Research and Initiatives for Sustainable Technologies and Institutions (SRISTI) and GYTI award Team', 2020. Guide: Prof. Javed Nabibaksha Sheikh.
- Ankit Singh, 'Best Industry Relevant M.Tech. Thesis Award', FITT, IIT Delhi, 2020. Guide: Prof. Javed Nabibaksha Sheikh.

#### Atmospheric Sciences

- Kumar Ravi Prakash, 'Prof. M. P. Singh Award', IIT Delhi. Guide: Prof. Vimlesh Pant.

#### Biomedical Engineering

- Ahana Banerjee, 'Dr. H. L. Bhalla Young Scientist Award', 19th International Symposium of Controlled Release Society, Indian Chapter, 2021. Guide: Prof. Jayanta Bhattacharyya.
- Tanu Bhardwaj, 'Dogra Educational Endowment Award', IIT Delhi, 2020. Guide: Prof. Sandeep K. Jha.
- Tanu Bhardwaj, 'Best Scholar Award in Biomedical Engineering', by International Multidisciplinary Research Foundation, 2020. Guide: Prof. Sandeep K. Jha.

#### Energy Studies

- Aditya Y. Joshi, Pranaynil Saikia, 'Best Paper Award of the International Conference on Futuristic and Sustainable Aspects in Engineering and Technology (FSAET-2020)', GLA University, 2020. Guide: Prof. Dibakar Rakshit.

#### Rural Development and Technology

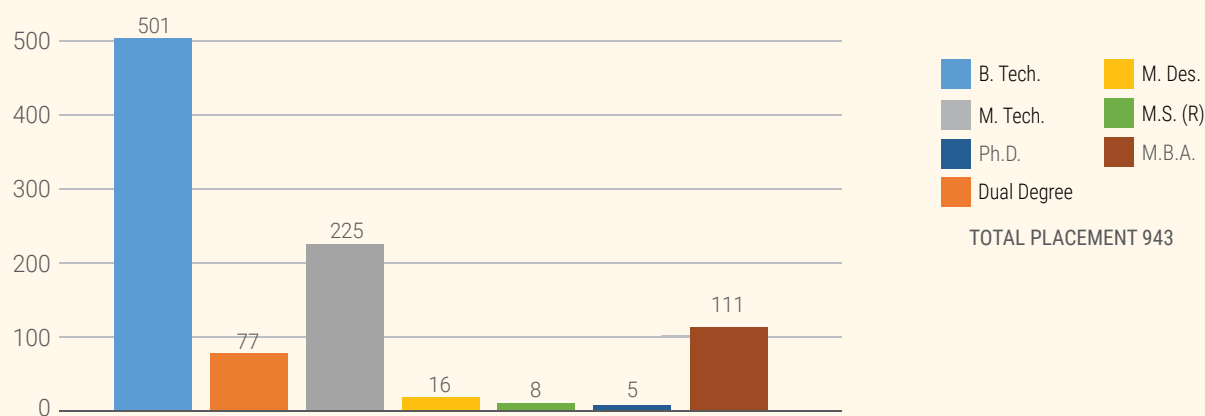
- Rahul Jain, 'Best Oral Presentation Award', Indo-Srilanka International Webinar 2021 on Global trends in Algal Research: Environmental Restoration, Biomass Valorization and Sustainability, 2021. Guide: Prof. Anushree Malik.
- Abhay Tiwari, 'Best Oral Presentation Award', International Conference on Advances in Biosciences and Biotechnology (ICABB 2021), 2021. Guide: Prof. Satyawati Sharma.
- Adya Isha, 'Swachhta Sarthi Fellowship 2021', office of PSA, Gol, 2021, Guide: Prof. V.K. Vijay.

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

- Ayushi Agarwal, 'Prime Minister's Research Fellow', PMRF, 2020. Guide: Prof. P. R. Panda.
- Arnab Kumar Mondal, 'Prime Minister's Research Fellow', PMRF, 2020. Guide: Prof. A.P. Prathosh, Prof. Parag Singla.
- Suman Muralikrishna, 'FITT Award', FITT, IIT Delhi. Guide: Prof. M. Balakrishnan.



## PLACEMENT 2020-21



## TRAINING AND PLACEMENT

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

Office of Career Services (OCS), IIT Delhi (formerly known as Training & Placement Unit) interacts with various industrial, management and research organisations in the country with the dual aim of ensuring that the students are given adequate technical exposure/industrial training (B.Tech., Dual and Integrated programmes and M.Des. Programme). OCS also facilitates all students (B.Tech., Dual and Integrated programmes, M.Tech., M.S.(R), M.Des., M.Sc. and Ph.D. programmes) to get employment in organisations whose functional requirements of high calibre engineers, scientists and managers are best met by graduate and post-graduate students of the Institute.

This year, the hiring processes were conducted in a virtual mode due to the unprecedented global situation. OCS facilitated these seamlessly and was acknowledged by stakeholders for organising the processes harmoniously.

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

OCS also organised Campus engagement programme, "Yukti - Building Relations" with the theme for this year as

"Careers in the Age of COVID-19". This innovative initiative was geared to helping students connect with and understand the culture of the company. It attempted to not only allow students to comprehend and compare different recruiters across sectors but also help them understand and build their own capabilities via competitions and workshops.

### Training/Internship

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

Training rules as per the new curriculum guidelines were implemented for the UG students (B.Tech. and Dual degree). Detailed instructions to students were also issued prior to the commencement of the training programme. It was also clarified to students that DPE norms would apply for availing NGU credits for internships. A total of 523 students availed internships through Institute processes. A gist of data regarding the summer practical training seats obtained is given in Tables-I to II.

**Table I: B.Tech./Dual Degree 2nd, 3rd, and 4th year Students Summer Training - 2021.**

B.Tech./Dual Degree	Seats-Obtained
2nd Year Students	23
3rd Year Students	344
4th Year Students	44

**Table II: MBA Students Summer Training - 2021.**

Discipline	Seats-Obtained
MBA	112

## Placement

A letter of invitation was sent to a large number of public and private sector organisations. A large number of them registered on the electronic system with their job profiles which were then made available to the students through the same web server. This vigorous drive resulted in job requisitions being obtained from industries from 422 Companies for 626 job profiles with selections on 373 profiles. 943 students were placed while a total of 1184 job offers were received (150 Pre-Placement Offers were received by students and 123 students got multiple jobs) by the Institute including DMS and OCS placements. Approximately 79.64 % students who availed OCS/DMS services got placed. The remaining opted for higher studies/research or are preparing for civil services or are working on their own startup ideas or got jobs through their own

contacts/efforts. The sector-wise distribution of Student Placements is given in Table III.

**Table III: Sector-wise Distribution of Student Placements**

Sector	Students Placed
Analytics	50
Consulting	80
Core (Technical)	310
Finance	41
Information Technology	258
Teaching & Research	4
Management	111
Other	89
<b>Total</b>	<b>943</b>

**Table IV: Discipline-wise Break-up of On-Campus Placement Position of B.Tech./Dual Degree and 5-year Integrated M.Tech. Students During 2020-21.**

Discipline	No. of Students Registered	No. of Effective Placements*	No. of Students with more than one job**
<b>(a) B.Tech.</b>			
Biochemical Engineering & Biotechnology	33	27	4
Civil Engineering	56	37	5
Chemical Engineering	66	60	5
Computer Science & Engineering	78	74	18
Electrical Engineering	65	61	9
Electrical Engineering (Power and Automation)	40	36	1
Mechanical Engineering	53	48	14
Production & Industrial Engineering	50	42	5
Mathematics & Computing	35	34	9
Engineering Physics	33	27	5
Textile Engineering	76	55	7
<b>(b) Dual / 5-Year Integrated M.Tech. Programmes</b>			
B.Tech. and M.Tech. in Biochemical Engg & Biotechnology	13	11	2
B.Tech. and M.Tech. in Chemical Engineering	34	23	5
B.Tech. and M.Tech. in Computer Science & Engineering	22	21	3
B.Tech. and M.Tech. in Mathematics & Computing	21	19	3
B.Tech. in Civil Engg. and M.Tech. in Geotech Engineering	1	1	0
B.Tech. in Mechanical Engg. and M.Tech. in Thermal Engg.	4	1	0
B.Tech. in Mechanical Engineering and M.Tech. in Computer Science & Engineering	1	1	0
<b>Total</b>	<b>681</b>	<b>578</b>	<b>95</b>

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

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

**Table V:** On-campus Placement Position of M.Tech. Students During 2020-21.

Programme	No. of Students Registered	No. of Effective Placements*	No. of Students with More than one job**
Engineering Analysis & Design	39	23	2
Atmospheric-Oceanic Science and Technology	3	1	0
Biomedical Engineering	3	1	0
Geotechnical and Geoenvironmental Engineering	2	0	0
Transportation Engineering	0	0	0
Structure Engineering	2	2	0
Construction Engineering & Management	3	0	0
Rock Engineering & Underground Structures	1	1	0
Environmental Engineering & Management	1	0	0
Water Resources Engineering	1	1	0
Chemical Engineering	11	7	0
Radio Frequency Design & Technology	19	15	4
Molecular Engineering: Chemical Synthesis & Analysis	2	0	0
Control & Automation	9	5	1
Communications Engineering	16	10	0
Integrated Electronics & Circuits	16	13	2
Power Electronics, Electrical Machines & Drives	13	9	1
Power Systems	3	1	0
Computer Technology	22	21	3
Energy & Environment Technologies and Management	8	5	0
Energy Studies	9	2	1
Instrument Technology	8	6	1
Industrial Tribology & Maintenance Engineering	6	4	0
Optoelectronics & Optical Communication	5	2	0
Polymer Science & Technology	8	5	0
Telecommunication Technology & Management	21	21	0
VLSI Design Tools & Technology	5	5	1
Computer Science & Engineering	19	19	4
Industrial Engineering	11	8	0
Mechanical Design	23	18	3
Production Engineering	10	3	0
Thermal Engineering	18	3	0
Materials Engineering	8	1	0
Applied Optics	1	1	0
Solid State Materials	0	0	0
Textile Chemical Processing	4	3	0
Textile Engineering	16	7	0
Fibre Science & Technology	5	2	0
<b>Total</b>	<b>351</b>	<b>225</b>	<b>23</b>

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

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

1. This data is for students who opted for placement through OCS and DMS. DMS runs its placement process separately.
2. Data on students finally joining the jobs opted on campus not available with OCS.
3. Ph.D. placements were also facilitated by OCS. PhD profiles were made available to organisations through OCS and scholars were subsequently contacted directly by organisations for further processes.

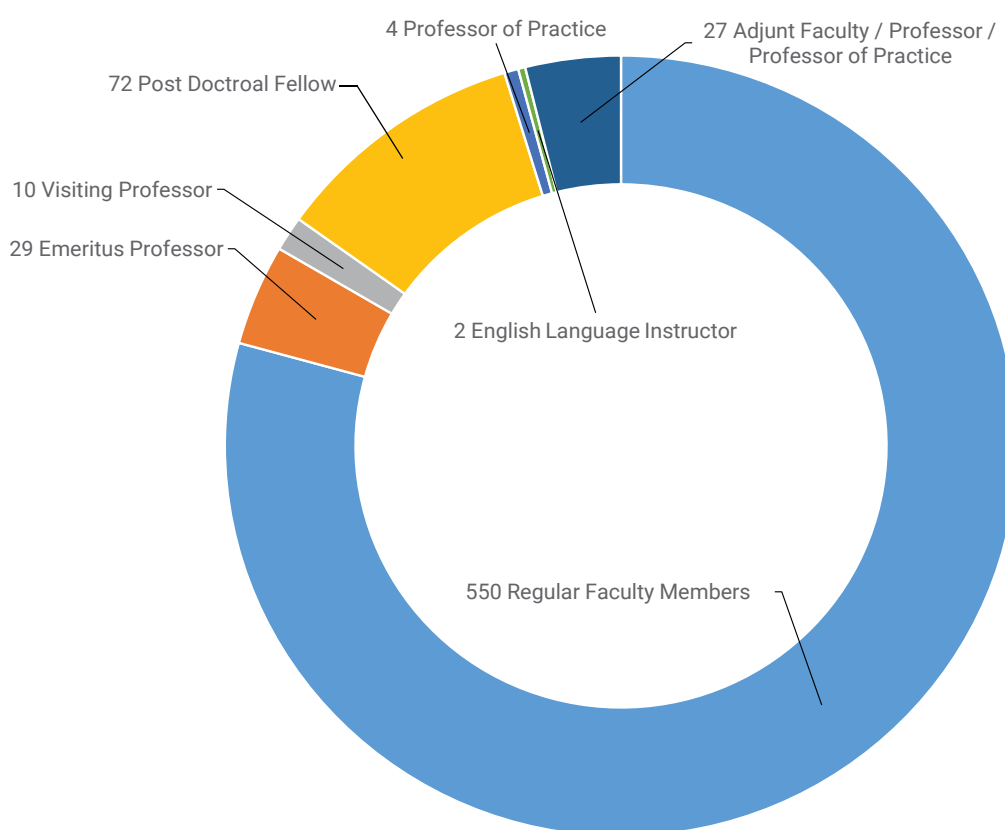
# Faculty Profile and Achievements

The quality of an academic institution primarily depends on its faculty. IIT Delhi faculty is one of the finest in the country and is recognized internationally for their quality of research, teaching and curriculum development. They also contribute greatly for the development of the nation by being associated with a large number of decision making bodies, providing crucial guidance and advice on policy matters and technical issues. Many of the faculty members serve on the editorial Boards of reputed journals, peer-review papers for publications, serve on committees for recruitment of professionals, and are on the boards of many institutions and organisations. 42 new

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

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

## Faculty Strength



Faculty Strength	Nos.
Regular Faculty Members	550
Emeritus Professor	29
Visiting Professor	10
Professor of Practice	4
English Language Instructor	2
Adjunct Faculty/Professor/Professor of Practice	27
Post Doctoral Fellow	72
<b>Total</b>	<b>694</b>

## TEACHING AND ACADEMIC STAFF IN POSITION

<b>Department of Applied Mechanics</b>	<b>Professors</b>	Jayati Sarkar (Ms.), Ph.D.
<b>Professor and Head</b>	Saroj Mishra (Ms.), Ph.D.	Shalini Gupta (Ms.), Ph.D.
Sanjeev Sanghi, Ph.D.	Sunil Nath, Ph.D.	Gaurav Goel, Ph.D.
<b>Professors</b>	Prashant Mishra, Ph.D.	Paresh Pravinchandra Chokshi, Ph.D.
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Puneet Mahajan, Ph.D.	Atul Narang, Ph.D.	Mohammad Ali Haider, Ph.D.
Santosh Kapuria, Ph.D.	Shilpi Sharma (Ms.), Ph.D.	Manojkumar Charandas Ramteke, Ph.D.
Maloy Kumar Singha, Ph.D.	<b>Associate Professors</b>	Divesh Bhatia, Ph.D.
Badri Prasad Patel, Ph.D.	Ritu Kulshreshtha (Ms.), Ph.D.	<b>Assistant Professors</b>
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<b>Associate Professors</b>	Ravi Krishnan Elangovan, Ph.D.	Hariprasad Kodamana, Ph.D.
Murali Raman Cholemari, Ph.D.	Shaikh Z. Ahammad, Ph.D.	Manjesh Kumar, Ph.D.
S. Pradyumna, Ph.D.	<b>Assistant Professors</b>	Mohan Kumar Singh Verma, Ph.D.
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Sawan Suman Sinha, Ph.D.	Rohan Jain, Ph.D.	<b>Visiting Professor</b>
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Vikrant Tiwari, Ph.D.	<b>Visiting Professor</b>	<b>Professor and Head</b>
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Kshitij Gupta, Ph.D.
<b>Professor of Practice</b>
Bhupinder Godara, M.Tech.

<b>Adjunct Faculty</b>
Deepak Kumar Gupta, Ph.D.
<b>Department of Physics</b>
<b>Professor and Head</b>
Ratanamala Chatterjee (Ms.), Ph.D.
<b>Professors</b>
Mukesh Chander, Ph.D.
Bodh Raj, Ph.D.
M.R. Shenoy, Ph.D.
R.K. Varshney, Ph.D.
A.K. Shukla, Ph.D.
Joby Joseph, Ph.D.
Varsha Banerjee (Ms.), Ph.D.
Pankaj Srivastava, Ph.D.
Sujeet Chaudhary, Ph.D.
Dalip Singh Mehta, Ph.D.
Hitendra Kumar Malik, Ph.D.
P. Senthilkumaran, Ph.D.
Amruta Mishra (Ms.), Ph.D.
Aloka Sinha (Ms.), Ph.D.
Santanu Ghosh, Ph.D.
Gaddam Vijaya Prakash, Ph.D.
Jitendra Pratap Singh, Ph.D.
Neeraj Khare, Ph.D.
Sankalpa Ghosh, Ph.D.
Rajendra Singh, Ph.D.
V. Ravishankar, Ph.D.
Amita Das (Ms.), Ph.D.
<b>Associate Professors</b>
Kedar Bhalchandra Khare, Ph.D.
Pranaba Kishor Muduli, Ph.D.
Rajendra Singh Dhaka, Ph.D.
Saswata Bhattacharya, Ph.D.
Sunil Kumar, Ph.D.
Sujin B. Babu, Ph.D.
<b>Assistant Professors</b>
Amartya Sengupta, Ph.D.
Joyee Ghosh (Ms.), Ph.D.
Pintu Das, Ph.D.
Rahul Suresh Marathe, Ph.D.

Bhaskar Kanseri, Ph.D.
Rohit Narula, Ph.D.
Brajesh Kumar Mani, Ph.D.
Vikrant Saxena, Ph.D.
Pradipta Ghosh, Ph.D.
Aditya Narain Agnihotri, Ph.D.
Folke Tobias Florus Toll, Ph.D.
Sujit Manna, Ph.D.
Vishal Kumar Vaibhav, Ph.D.
Bodhaditya Santra, Ph.D.
Deepak Kumar, Ph.D.
Suprit Singh, Ph.D.
Kaustuv Manna, Ph.D.
Manisha Thakurathi (Ms.), Ph.D.
Abhishek Muralidhar Iyer, Ph.D.
<b>Emeritus Professors</b>
Anurag Sharma, Ph.D.
Ajit Kumar, Ph.D.
Arun Kumar, Ph.D.
G.B. Reddy, Ph.D.
<b>Visiting Professors</b>
R.K. Soni, Ph.D.
Mukesh Chander, Ph.D.
Yoshiro Azuma, Ph.D.
<b>Department of Textile and Fibre Engineering</b>
<b>Professor and Head</b>
R.S. Rengasamy, Ph.D.
<b>Professors</b>
Ashwini K. Agrawal, Ph.D.
Kushal Sen, Ph.D.
R. Chattopadhyay, Ph.D.
B.K. Behera, Ph.D.
Bhuvanesh Gupta, Ph.D.
Deepti Gupta (Ms.), Ph.D.
R. Alagirusamy, Ph.D.
Manjeet Jassal (Ms.), Ph.D.
Mangala Joshi (Ms.), Ph.D.
Apurba Das, Ph.D.
Bhupendra Singh Butola, Ph.D.
Abhijit Majumdar, Ph.D.

Amit Rawal, Ph.D.
Sourabh Ghosh, Ph.D.
Dipayan Das, Ph.D.
<b>Associate Professors</b>
Samrat Mukhopadhyay, Ph.D.
Bhanu Nandan, Ph.D.
Rajiv K. Srivastava, Ph.D.
Md. S. Wazid Ali, Ph.D.
<b>Assistant Professors</b>
Javed Nabibaksha Sheikh, Ph.D.
Bipin Kumar, Ph.D.
Vijaykumar Narayandas Baheti, Ph.D.
<b>Emeritus Professor</b>
S.M. Ishtiaque, Ph.D.
<b>Centre for Applied Research in Electronics</b>
<b>Professor and Head</b>
Arun Kumar, Ph.D.
<b>Professors</b>
Ananjan Basu, Ph.D.
Monika Aggarwal (Ms), Ph.D.
<b>Associate Professors</b>
Mahesh P. Abegaonkar, Ph.D.
Samaresh Das, Ph.D.
<b>Assistant Professors</b>
Prabhu Babu, Ph.D.
Ankur Gupta, Ph.D.
Pushpraj Singh, Ph.D.
Kirti Dhawaj, Ph.D.
Rahul Mishra, Ph.D.
<b>Emeritus Professors</b>
R. Bahl, Ph.D.
S.K. Koul, Ph.D.
<b>Centre for Atmospheric Sciences</b>
<b>Professor and Head</b>
Krishna M. Achutarao, Ph.D.
<b>Professors</b>
A.D. Rao, Ph.D.
Manju Mohan (Ms.), Ph.D.
<b>Associate Professors</b>
Sagnik Dey, Ph.D.

Vimlesh Pant, Ph.D.
Saroj Kanta Mishra, Ph.D.
Dilip Ganguly, Ph.D.
Somnath Baidya Roy, Ph.D.
<b>Assistant Professors</b>
Sandeep Sukumaran, Ph.D.
Ravi Kumar Kunchala, Ph.D.
Sarvesh Kumar Dubey, Ph.D.
<b>Emeritus Professor</b>
Maithili Sharan, Ph.D.
<b>Centre for Automotive Research &amp; Tribology</b>
<b>Professor and Head</b>
B.K. Panigrahi, Ph.D.
<b>Professors</b>
Jayashree Bijwe, Ph.D.
V.K. Agarwal, Ph.D.
<b>Associate Professor</b>
Deepak Kumar, Ph.D.
<b>Assistant Professors</b>
Shahab Fatima (Ms.), Ph.D.
Akhil Garg, Ph.D.
Krishna Raj Ramachandran Potti, Ph.D.
<b>Emeritus Professor</b>
Naresh Tandon, Ph.D.
<b>Centre for Biomedical Engineering</b>
<b>Professor and Head</b>
Naresh Bhatnagar, Ph.D.
<b>Associate Professors</b>
Sandeep Kumar Jha, Ph.D.
Dinesh Kalyanasundaram, Ph.D.
Neetu Singh (Ms.), Ph.D.
Anup Singh, Ph.D.
Harpal Singh, Ph.D.
<b>Assistant Professors</b>
S.M.K. Rahman, M.Tech.
Amit Mehndiratta, Ph.D.
Deepak Joshi, Ph.D.
Jayanta Bhattacharyya, Ph.D.
Arnab Chanda, Ph.D.
Sachin Kumar B., Ph.D.
Biswarup Mukherjee, Ph.D.

<b>Emeritus Professor</b>
Veena Koul (Ms.), Ph.D.
<b>Adjunct Faculty</b>
Tomohika Kisaka, Ph.D.
Delphine Dean, Ph.D.
<b>Computer Services Centre</b>
<b>Professor and Head</b>
K. Narayanan, M.Sc.
<b>Senior System Managers</b>
Pravanjan Kumar Baboo, Ph.D.
Sriram Hegde, Ph.D.
Pardeep Kumar Gupta, M.Tech.
<b>System Managers</b>
Pragya Jain (Ms.), Ph.D.
Sunil Kak, M.Tech.
Ram Lal, Ph.D.
Rajesh Bhatt, Ph.D.
Gopal Krishan, B.Tech.
M. Mallikharjuna Rao, Ph.D.
Raj Kumar Chauhan, M.C.A.
Ajay Guleria, Ph.D.
<b>System Architects</b>
Manish Agarwal, Ph.D.
Gaurav Munjal, B.Tech.
Jaya (Ms.), M.Tech.
<b>Senior Manager</b>
N.C. Kalra, M.Tech.
<b>Educational Technology Services Centre</b>
<b>Professor and Head</b>
Amit Gupta, Ph.D.
<b>Centre for Energy Studies</b>
<b>Professor and Head</b>
K.A. Subramanian, Ph.D.
<b>Professors</b>
T.C. Kandpal, Ph.D.
Vamsi Krishna Komarala, Ph.D.
<b>Associate Professors</b>
Ramesh Narayanan, Ph.D.
S.K. Tyagi, Ph.D.

R. Uma (Ms.), Ph.D.
Bibhuti Bhusan Sahu, Ph.D.
Ashu Verma (Ms.), Ph.D.
Dibakar Rakshit, Ph.D.
Sandeep Kumar Pathak, Ph.D.
<b>Assistant Professors</b>
Satyananda Kar, Ph.D.
Supravat Karak, Ph.D.
K. Ravi Kumar, Ph.D.
Kaushik Saha, Ph.D.
Sumit Kumar Chattopadhyay, Ph.D.
Rahul Goyal, Ph.D.
Debaprasad Sahu, Ph.D.
Vipin Kumar, Ph.D.
Subendu Dutta, Ph.D.
<b>Emeritus Professors</b>
A. Ganguli, Ph.D.
S.C. Kaushik, Ph.D.
T.S. Bhatti, Ph.D.
Viresh Dutta, Ph.D.
<b>Centre for Rural Development &amp; Technology</b>
<b>Professor and Head</b>
Anushree Malik (Ms.), Ph.D.
<b>Professors</b>
Satyawati Sharma (Ms.), Ph.D.
Vijayaraghavan M. Chariar, Ph.D.
Vivek Kumar, Ph.D.
V.K. Vijay, Ph.D.
<b>Associate Professors</b>
Jatindra Kumar Sahu, Ph.D.
Priyanka Kaushal (Ms.), Ph.D.
Hariprasad P., Ph.D.
Kavya Dashora (Ms.), Ph.D.
<b>Assistant Professors</b>
Ajay Saini, Ph.D.
Ram Chandra, Ph.D.
Pooja Ghosh (Ms.), Ph.D.
<b>Emeritus Professor</b>
Santosh Satya (Ms.), Ph.D.
S.N. Naik, Ph.D.

<b>Centre for Sensors, Instrumentation &amp; Cyber-physical System Engineering (SeNSE)</b>
<b>Professor and Head</b>
Subrat Kar, Ph.D.
<b>Associate Professor</b>
Gurfan Sayeed, Ph.D.
<b>Assistant Professors</b>
Satish Kumar Dubey, Ph.D.
Jasleen Lugani (Ms.), Ph.D.
<b>Emeritus Professors</b>
D.T. Shahani, Ph.D.
Chandra Shakher, Ph.D.
<b>National Resource Centre for Value Education in Engineering</b>
<b>Professor and Coordinator</b>
Rahul Garg, Ph.D.
<b>Bharti School of Telecommunication Technology and Management</b>
<b>Professor and Coordinator</b>
Swades De, Ph.D.
<b>Amar Nath &amp; Shashi Khosla School of Information Technology</b>
<b>Professor and Coordinator</b>
Preeti Ranjan Panda, Ph.D.
<b>School of Artificial Intelligence</b>
<b>Professor and Head</b>
Mausam, Ph.D.
<b>School of Biological Sciences</b>
<b>Professor and Head</b>
James Gomes, Ph.D.
<b>Professors</b>
Tapan Kumar Chaudhuri, Ph.D.
Aditya Mittal, Ph.D.
Chinmoy Sankar Dey, Ph.D.
Amitabha Mukhopadhyay, Ph.D.
Bishwajit Kundu, Ph.D.
<b>Associate Professors</b>
Vivekanandan Perumal, Ph.D.
Archana Chugh (Ms.), Ph.D.
Manidipa Banerjee (Ms.), Ph.D.

<b>Assistant Professors</b>
Ashok Kumar Patel, Ph.D.
Tapan Kumar Nayak, Ph.D.
Shilpi Minocha (Ms), Ph.D.
Anita Roy (Ms.), Ph.D.
Manoj Balakrishna Menon Saurabh Raj, Ph.D.
<b>School of Public Policy</b>
<b>Professor and Head</b>
Ambuj D. Sagar, Ph.D.
<b>Assistant Professors</b>
Upasana Sharma (Ms.), Ph.D.
Soutrik Basu, Ph.D.
Nandana Sengupta (Ms.), Ph.D.
Abhishek Malhotra, Ph.D.
Rohit Chandra, Ph.D.
Kaveri K. Iyechettira (Ms.), Ph.D.
<b>Professor of Practice</b>
Sanjay Mitra, Master in Public Administration
<b>School of Interdisciplinary Research (SIRE)</b>
<b>Professor and Coordinator</b>
Rajendra Singh, Ph.D.
<b>Interdisciplinary / Transportation Research and Injury Prevention Programme (TRIPP)</b>
<b>Professor and Coordinator</b>
Kalaga R. Rao, Ph.D.
<b>Central Workshop</b>
<b>Professor and Head</b>
D. Ravi Kumar, Ph.D.
<b>Interdisciplinary Opto-Electronics &amp; Optical Communication Research Programme</b>
<b>Professor and Coordinator</b>
G.V. Prakash, Ph.D.
V. Venkataraman, Ph.D.
<b>Central Library</b>
<b>Librarian &amp; Head</b>
Nabi Hasan, Ph.D.
<b>Deputy Librarian</b>
Neeraj Kumar Chaurasia, Ph.D.

## NEW APPOINTMENTS

42 new faculty members have joined the Institute during the period from April 1, 2020 to March 31, 2021. These new additions to the faculty have enhanced the competence in several emerging areas, while bringing new energy into academic endeavours.

New Faculty Joined	
<b>Narsing Kumar Jha,</b> Applied Mechanics	<b>Kusum Meena,</b> Mechanical Engineering
<b>Souvik Chakraborty,</b> Applied Mechanics	<b>Prithviraj Mukhopadhyay,</b> Mechanical Engineering
<b>Somnath Ghosh,</b> Chemical Engineering	<b>Abhishek Muralidhar Iyer,</b> Physics
<b>Biswarup Chakraborty,</b> Chemistry	<b>Deepak Kumar,</b> Physics
<b>Abhijnan Chakraborty,</b> Computer Science & Engineering	<b>Kaustuv Manna,</b> Physics
<b>Abhilash Jindal,</b> Computer Science & Engineering	<b>Manisha Thakurathi,</b> Physics
<b>Keerti Choudhary,</b> Computer Science & Engineering	<b>Suprit Singh,</b> Physics
<b>Nikhil Balaji C.R.,</b> Computer Science & Engineering	<b>Rahul Mishra,</b> Applied Research In Electronics
<b>Venkata Vivek Kumar Koppula,</b> Computer Science & Engineering	<b>Kirti Dhawaj,</b> Applied Research In Electronics
<b>Vireshwar Kumar,</b> Computer Science & Engineering	<b>Krishna Raj Ramachandran Potti,</b> Automotive Research and Tribology
<b>Charu Monga,</b> Design	<b>Akhil Garg,</b> Automotive Research and Tribology
<b>Gourab Kar,</b> Design	<b>Sachin Kumar B.,</b> Biomedical Engineering
<b>Soutik Betal,</b> Electrical Engineering	<b>Bibhuti Bhusan Sahu,</b> Energy Studies
<b>Mustafijur Rahman,</b> Electrical Engineering	<b>Subhendu Dutta,</b> Energy Studies
<b>Sandeep Kumar,</b> Electrical Engineering	<b>Vipin Kumar,</b> Energy Studies
<b>Vivek G. Nair,</b> Management Studies	<b>Pooja Ghosh,</b> Rural Development & Technology
<b>Divya Nayar,</b> Materials Science & Engineering	<b>Jasleen Lugani,</b> Sensors, Instrumentation and Cyber-physical System Engineering (SeNSE)
<b>Shib Shankar Banerjee,</b> Materials Science & Engineering	<b>Saurabh Raj,</b> Biological Sciences
<b>Ashutosh Rai,</b> Mathematics	<b>Abhishek Malhotra,</b> Public Policy
<b>Biswajyoti Saha,</b> Mathematics	<b>Rohit Chandra,</b> Public Policy
<b>Vivek Mukundan,</b> Mathematics	<b>Kaveri K. Iychettira,</b> Public Policy

## FACULTY AWARDS AND RECOGNITIONS

IIT Delhi distinguished faculty colleagues continue to make a difference to the world of Science, Engineering, Humanities and Management, and continue to earn recognition and awards, which bring glory to the Institute. Their achievements are regularly recognized by national and international bodies. A department wise distribution of faculty awards and recognitions for the last year is given below:

### Chemical Engineering

- Prof. K.K. Pant, 'INAE Fellow', INAE, 2020.
- Prof. K.K. Pant, 'FNASc', NASI Prayagraj, 2020.
- Prof. K.K. Pant, 'Fellow Indian Desalination Association', InDA Mumbai, 2021.
- Prof. Sreedevi Upadhyayula, 'Class of 66 Chair Professorship', IIT Delhi, 2020.
- Prof. Sreedevi Upadhyayula, Class of 66 Chair Professorship, 'Member of Proposal Screening Committee for DST and DST-SERB', 2020-21.
- Prof. Sreedevi Upadhyayula, 'Class of 66 Chair Professorship', 'Member of Expert Committee', to suggest suitable legislative framework for development of Chemicals and Petrochemicals', DST and DST-SERB, 2020-21.
- Prof. K.K. Pant, 'Leadership for Academicians Programme (LEAP)', IIT Kanpur, 2021.
- Prof. K.K. Pant, 'Applied Research Award (Best Research Award)', IIT Delhi, 2021.

### Chemistry

- Prof. Siddharth Pandey, 'Prof. P.C.P. Bhatt Basic Research Award', IIT Delhi, 2021.
- Prof. S.K. Khare, 'American Chemical Society (ACS) Fellow 2020', American Chemical Society, 2020.

### Civil Engineering

- Prof. N.M. Anoop Krishnan, 'INAE Young Engineer Award', Indian National Academy of Engineering, India, 2020.
- Prof. N.M. Anoop Krishnan, 'BRNS Young Scientist Award', Board of Research in Nuclear Sciences, India, 2021.

### Computer Science and Engineering

- Prof. Srikanta Bedathur, 'ECIR Test of Time Award', The 42nd European Conference on Information Retrieval Lisbon, Portugal, 2020.
- Prof. Preeti Ranjan Panda, 'Editor-in-Chief', IEEE Embedded Systems Letters Journal, IEEE Council on EDA, 2021.

- Prof. Sayan Ranu, 'Outstanding Reviewer Award', International Conference on Web Search and Data Mining (WSDM), 2021.
- Prof. Sayan Ranu, 'Associate of Indian Academy of Sciences', Indian Academy of Sciences, 2020.
- Prof. Parag Singla, 'Know Dis Machine Learning Award', Know Dis Data Science, 2020.
- Prof. Smruti Sarangi, 'Qualcomm Faculty Award', Qualcomm, 2021.
- Prof. Smruti Sarangi, 'Associate Editor', Elsevier JSA, Elsevier, 2020.
- Prof. Naveen Garg, 'Elected a Fellow Indian National Academy of Engineering', 2020.

### Electrical Engineering

- Prof. Subrat Kar, 'Pandit Deendayal Upadhyay Telecom Award'.
- Prof. B.K. Panigrahi, 'Fellow', The National Academy of Sciences, India (NASI), Prayagraj.
- Prof. Bhim Singh, 'Internation Solar Alliance Kalpana Chawla Award'.
- Prof. A.R. Abhyankar, 'Member of Global Future Council on Clean Electrification', World Economic Forum.
- Prof. Bhim Singh, 'Eminent Engineer Award for the year 2020', Institute of Engineers (India).
- Prof. I.N. Kar, 'Fellow', The Indian National Academy of Engineering (INAE).
- Prof. Jayadeva, 'Fellow', The Indian National Academy of Engineering (INAE).
- Prof. Sumit Kumar Pramanick, 'INAE Young Engineer Award', Indian National Academy of Engineering (INAE), 2020.
- Prof. Bhim Singh, 'INAE Outstanding Teacher Award', Indian National Academy of Engineering (INAE), 2020.
- Prof. Bhim Singh, '2020 IEEE IAS Outstanding Educator/Mentor Award', IEEE IAS Society.
- Prof. Manan Suri, 'Associate of the Indian Academy of Sciences', Bangalore, Indian Academy of Sciences.

### Humanities and Social Sciences

- Prof. Jayan Jose Thomas, 'China-India Visiting Scholars Fellowship', Asian Century Foundation, Ashoka University, 2021.
- Prof. Jayan Jose Thomas, 'Chairperson of the Expert Committee', Initiatives in Healthcare Industry in Kerala, Kerala State Planning Board, Government of Kerala, 2020.

### **Materials Science and Engineering**

- Prof. Leena Nebhani, 'Faculty Research Award', Early Career Category, IIT Delhi, 2021.
- Prof. Lakshmi Narayan R., 'Outstanding Reviewer Award', Acta Materialia, Elsevier, 2020.
- Prof. Sangeeta Santra, 'Editorial Board Member', Superconductor Science and Technology, SuST Journal.
- Prof. A.K. Ghosh, Celligo Natural Fibres Pvt. Ltd., 'Tech. based Start-up Award', "Ph.D. Incubation Programme for Deep Innovation and Technology", IIT Delhi.

### **Mechanical Engineering**

- Prof. Shaurya Shriyam, 'ASME CIE Best Dissertation Award', ASME, 2021.
- Prof. Sujeet Kumar Sinha, 'Top 2% scientists from India in Mechanical Engineering', Stanford University scientists, 2020.
- Prof. Varun Ramamohan, 'Invited paper', Healthcare applications track, Winter Simulation Conference (WSC), WSC organizing committee, 2020.

### **Textile and Fibre Engineering**

- Prof. Bipin Kumar, 'Faculty Entrepreneurship and Mentoring Award', IIT Delhi Alumni Association, 2020.

### **Biomedical Engineering**

- Prof. Amit Mehndiratta, 'Technology Translation Award (TETRA)', Science and Engineering Research Board, 2021.
- Prof. Neetu Singh, 'Janaki Ammal-National Women Bioscientist Award', Department of Biotechnology (DBT).

### **Energy Studies**

- Prof. Dibakar Rakshit, 'Fellowship of The Institution of Engineers (India)', The Institution of Engineers (India), 2020.
- Prof. Vipin Kumar, 'Guest Associate Editor', Frontiers in Nanotechnology, 2020.
- Prof. Vipin Kumar, 'Topic Editor', Frontiers in Nanotechnology, 2020.

### **Rural Development and Technology**

- Prof. Kavya Dashora, 'First prize for best innovation in Innovate 4SDG challenge', United Nations Development Programme (UNDP), 2020.

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

- Prof. Manik Varma, 'Fellow', NASI.
- Prof. Preeti Ranjan Panda, 'Editor-in-Chief', IEEE Embedded Systems Letters Journal, IEEE Council on EDA, 2020-2021.

# Performance of Academic Units

## PUBLICATIONS

During the period under report, international bibliographic databases have indexed 2085 research articles published by faculty members and researchers of the institute in international journals including 3179 articles indexed in Scopus, an international indexing service in Science & Technology and Social Sciences. The faculty members have also presented a similar number of papers in national and international conferences. Besides, they have also published many books and conducted several continuing education programmes. The Institute supported participation of faculty members to international and national conferences this year. Many more participated with financial support from sponsored projects, and other funding agencies.

IIT Delhi is proud to recognize the world-class publications produced by its faculty members. This year, the faculty members published multiple books, edited volumes, book chapters, journal articles and conference proceedings. Details of publications published during the period are given below:

### Books Authored/Co-Authored

#### Chemical Engineering

- Sreedevi Upadhyayula, Gul Afreen, 2020, '*Friedel-Crafts Alkylation of Aromatics with Alcohols and Transalkylation Reactions: From Solid Acid Catalysts to Green Ionic Liquids*', Europe, Eliva Press SRL.

#### Chemistry

- M.N. Gupta, S.K. Khare, Rajeshwari Sinha, 2021, '*An Overview of Interactions between Microorganisms and Nanomaterials*'. Interfaces between Nanomaterials and Microbes, Taylor and Francis, Singapore, CRC Press.

#### Humanities and Social Sciences

- Farhana Ibrahim, 2021, '*From Family to Police Force: Security and Belonging on a South Asian Border*', Ithaca, N.Y, Cornell University Press.

#### Textile and Fibre Engineering

- Jinlian Hu, Bipin Kumar, Jing Lu, 2020, '*Handbook of Fibrous Materials*', Germany, Wiley-VCH Verlag GmbH & Co. KGaA.

### Edited/Written Volumes

#### Chemical Engineering

- Sreedevi Upadhyayula, Amita Chaudhary (Ed.). 2021.

*Advanced Materials and Technologies for Wastewater Treatment*, USA (Eds.), CRC Press, Taylor & Francis Group.

- K.K. Pant, S.K. Gupta, E. Ahmad (Ed.). 2021. '*Catalysis for Clean Energy and Environmental Sustainability – Biomass Conversion and Green Chemistry*', In Biomass Conversion and Green Chemistry - Volume 1, Springer Nature Switzerland AG, Springer International Publishing.
- K.K. Pant, S.K. Gupta, E. Ahmad (Ed.). 2021. '*Catalysis for Clean Energy and Environmental Sustainability -Petrochemicals and Refining Processes*', In Petrochemicals and Refining Processes - Volume 2, Springer Nature Switzerland AG, Springer International Publishing.
- K.K. Pant, D. Pant, A.K. Nadda, A.K. Agarwal (Ed.). 2021. '*Advances in Carbon Capture and Utilization*', In Advances in Carbon Capture and Utilization, Springer Nature Singapore Pvt. Ltd., Springer Singapore.

#### Civil Engineering

- Shashank Bishnoi (Ed.). 2020. '*Calcined Clays for Sustainable Concrete*', In Calcined Clays for Sustainable Concrete, Heidelberg, Germany, Springer.

#### Design

- Subir Dey (Ed.). 2020. '*COMIN20 - International Conference in Indian Comics*', New Delhi, Department of Design, IIT Delhi.

#### Humanities and Social Sciences

- Farhana Ibrahim, Tanuja Kothiyal (Ed.). 2021, '*South Asian Borderlands: Mobility, History, Affect*', Cambridge, Cambridge University Press.

#### Textile and Fibre Engineering

- Jinlian Hu, Bipin Kumar, Jing Lu (Ed.). 2020, '*Handbook of Fibrous Materials*', Germany, Wiley-VCH Verlag GmbH & Co. KGaA.

### Chapters in Edited Volumes

#### Chemistry

- Siddharth Pandey (2021). *Lactic Acid Bacteria for Production of Platform Chemicals: A Dark Horse in the Field of Industrial Biotechnology*, Dr. Ram Prasad (Ed.), Advances in the Domain of Environmental Biotechnology.

Environmental and Microbial Biotechnology, (pp.3-25), Singapore, Springer.

- Siddharth Pandey (2021). *Introduction to the Microbial World*, In M.N. Gupta, S.K. Khare, Rajeshwari Sinha (Ed.), *Interfaces Between Nanomaterials and Microbes*, (pp.1-16), Singapore, CRC Press.
- Bhawna, (2021). *Spectroscopic Techniques Using Ionic Liquids*, *Ionic Liquids in Analytical Chemistry*, in press, Elsevier.
- Abhra Sarkar, (2020). *Thermosolvatochromism: Absorbance Probe Response within Neat and Aqueous Ionic Liquids*, In Dr. Hari Shankar Biswas, Dr. Adity Sarbajna, Dr. Sandeep Poddar & Dr. Amiya Bhaumik (Ed.), *Modern Approaches in Chemical and Biological Sciences*, (pp 1-10), Malaysia, Lincoln University College.

#### Civil Engineering

- Susan N. James, Arya Vijayanandan, (2020). *Treatment of Nutrient Laden Wastewater Using Simultaneous Nitrification and Denitrification*, In D.K. Ashish, J. Brito, S.K. Sharma (Ed.), *3rd International Conference on Innovative Technologies for Clean and Sustainable Development*, ITCSD 2020, RILEM vol. 29, (pp. 63-75), Switzerland, Springer International Publishing.

#### Electrical Engineering

- Satnesh Singh, S. Janardhanan, (2021). *Discrete Stochastic Sliding Mode with Functional Observation*, In Axaykumar Mehta and Bijnan Bandyopadhyay (Ed.), *Emerging Trends in Sliding Mode Control - Theory and Application*, 1st Ed, (pp. 119-144), Singapore, Springer.
- Niraj Choudhary, S. Janardhanan, Indra Narayan Kar, (2020). *Lambert W Function Approach to Analysis and Stabilization of Time-Delay Systems*, In Mohammad - Hassan Khooban Tomislav Dragicevic (Ed.), *Control Strategy for Time-Delay Systems Part-I : Concepts and Theories*, 1st Ed, (pp. 315-346), Cambridge, Massachusetts.

#### Materials Science and Engineering

- Jayant Jain, (2020). *Mechanical Properties of High-Entropy Alloys Focusing on Tensors: An in situ Neutron Diffraction Investigation from Room to Elevated Temperature*. In Francisca Caballero (Ed.), *Encyclopedia of Materials: Metals and Alloys*, Elsevier.
- Meenakshi Verma, Sampa Saha, (2021). *Innovative particulate systems for food packaging* (accepted), Elsevier publisher.
- Shivangi Sharma, Aiswarya T.T Ifra, Sampa Saha, (2020). *Biocompatible polymers and its applications*, In Muhammad Hasanuzzaman (Ed.), *Reference Module in Materials Science and Materials Engineering*, Elsevier publisher.

- Aiswarya T.T, Sampa Saha, (2020). *Biocompatible Anisotropic designer particles*, In Amit Kumar, Neha Mulchandani, Vimal Katiyar (Ed.), *Advances in Sustainable Polymers: Synthesis, Fabrication and Characterization*, Chapter 7 (pp. 216-236), Singapore, Springer publisher.

#### Mathematics

- A.N. Jha, G. Tiwari, N. Chatterjee, (2020). *Road Accidents in EU, USA and India: A critical analysis of Data Collection Framework*. In Kapur P., Singh O., Khatri S., Verma A. (Ed.), *Strategic System Assurance and Business Analytics. Asset Analytics (Performance and Safety Management)*, (pp. 419-444), Singapore, Springer.
- Niladri Chatterjee, Tanya Aggarwal, Rishabh Maheshwari, (2020). *Sarcasm Detection Using Deep Learning-Based Technique*, In Basant Agarwal, Richi Nayak, Namita Mittal, Srikanta Patnaik (Ed.), *Deep Learning-Based Approaches for Sentiment Analysis*, (pp.237-258), Singapore, Springer Nature.

#### Mechanical Engineering

- A.R. Khan, M.R. Ravi, A. Ray, (2021). *Effect of Natural Gas Blend Enrichment with Hydrogen on Laminar Burning Velocity and Flame Stability*, *Sustainable Development for Energy, Power, and Propulsion*, (pp.135-160), Singapore, Springer.
- Krishna Kishore M., Aravindan S., Ravi Kumar D., (2020), *Wire + Arc Additive Manufacturing of Metals: State of the Art and Challenges*, In K.R. Balasubramanian and V. Senthilkumaran (Ed.), *Additive Manufacturing Applications for Metals and Composites*, (pp.106-126), IGI Global Publishers.

#### Textile and Fibre Engineering

- Hema Garg, Jayashree Mohanty, Suman Thakur, Harishkumar Narayana, Bipin Kumar, (2020). *Shape Memory Polymer Nanocomposites for Textiles*, In Mangala Joshi (Ed.), *Nanotechnology in Textiles*, (pp.869-900) (1st edition).
- Priyanka Gupta, Harishkumar Narayana, Pramod Shanker, Bipin Kumar, Ning Pan, (2020). *Shape memory polymers for design of smart stocking*, In Amit Gefen (Ed.), *Innovations and Emerging Technologies in Wound Care*, (pp.141-154).
- Anupam Chowdhary, Satyaranjan Bairagi, Bipin Kumar, Syed Wazed Ali, (2020). *Composite Electrospun Nanofibers for Energy Scavenging Applications*, In Mangala Joshi (Ed.), *Nanotechnology in Textiles*, (pp.471-505) (1st edition).
- Mangala Joshi, *Self-Cleaning Textiles Based on Superhydrophobic Nanocoatings*, *Nanotechnology in Textiles Advances and Developments in Polymer*



Nanocomposites, (pp.729-758), 1st Edition, Boca Raton, Jenny Stanford Publishing.

### Atmospheric Sciences

- Prasad K. Bhaskaran, A. D. Rao, Tad Murty, (2020). *Tropical Cyclone-Induced Storm Surges and Wind Waves in the Bay of Bengal*, In Prashant K. Srivastava, Sudhir Kumar Singh, U.C. Mohanty, Tad Murty (Ed.), *Techniques for Disaster Risk Management and Mitigation*, John Wiley & Sons, Inc.

### Energy Studies

- R. Saxena, S.F. Ali, D. Rakshit, (2021). *PCM Incorporated Bricks: A Passive Alternative for Thermal Regulation and Energy Conservation in Buildings*, In Fernando Pacheco-Torgal, Lech Czarnecki, Anna Laura Pisello, Luisa F. Cabeza, Claes-Göran Granqvist (Eds.), *Eco-Efficient Materials for Mitigating Building Cooling Needs*, (pp.303-328), Cambridge, Woodhead Publishing.
- P. Saikia, S. Ramanathan, D. Rakshit, (2020). *Performance Assessment and Parametric Study of Multiple Effect Evaporator*, In Manaswita Bose, Anish Modi (Ed.), *Proceedings of the 7th International Conference on Advances in Energy Research*, (pp. 559-574), Springer, Singapore.
- A. Agrawal, D. Rakshit, (2020). *Review on thermal performance enhancement techniques of Latent Heat Thermal Energy Storage (LHTES) system for Solar and Waste Heat Recovery applications*, Monograph on Solar Energy, Springer, Singapore.
- D. Sood, P. Saikia, M. Pancholi, D. Rakshit, (2021). *Performance Analysis of Vacuum Insulation Panels using Real Gas Equation for Mitigating Solar Heat Gain in Buildings*, Monograph on Solar Energy, Springer, Singapore.
- Rajeev Awasthi, Shubham Jain, Ram Kumar Pal, K. Ravi Kumar, *Solar Thermal Power Generation*, In S.N. Singh, P. Tiwari, S. Tiwari (Ed.), *Fundamentals and Innovations in Solar Energy*, 1st Edition (ISBN 978-981-336-456-1), Springer Nature India Pvt. Ltd.
- Shubham Jain, Sumeet Kumar Dubey, K. Ravi Kumar, Dibakar Rakshit, *Thermal Energy Storage for Solar Energy*, In S.N. Singh, P. Tiwari, S. Tiwari (Ed.), *Fundamentals and Innovations in Solar Energy*, 1st Edition (ISBN 978-981-336-456-1), Springer Nature India Pvt. Ltd.

### Rural Development and Technology

- Koushalya S., Vasantharaja R., Hariprasad P., Thilini U.A., Malik A., (2021). *Recent advances in production of nutritional products from algal biomass*, In C.P. Vimal (Ed.), *Algae and aquatic macrophytes in cities:*

bioremediation, biomass, biofuels and bio products, Communicated, Elsevier.

- Dalvi V. S., Patil K., Nigam H., Jain R., Pabbi S., Malik A., (2021). *Environmental resilience and circular agronomy using cyanobacteria grown in wastewater and supplemented with industrial flue gas mitigation*, In R.P. Rastogi (Ed.), *Ecophysiology and Biochemistry of Cyanobacteria*, Communicated, Springer.
- Koushalya S., Vishwakarma R., Malik A., (2020). *Unraveling the diversity of algae and its biomacromolecules*, In D. Surajit and D. Hirak (Ed.), *Microbial and Natural Macromolecules*, (pp. 179-204), Elsevier, Academic Press.
- Nidhi Hans, Falguni Pattnaik, Anushree Malik, Sonil Nanda, Vivek Kumar, Ajay K. Dalai, S.N. Naik, (2021). *Algal-Derived Physiologically Active Nutraceuticals, dietary supplements, vitamins, carotenoids, fatty acids and other novel products*, In Dr. Ajay K. Dalai, Dr. Vaibhav V. Goud, Dr. Sonil Nanda and Dr. Venu B. Borugadda (Ed.), *Algal Biorefinery - Developments, Challenges and Opportunities*, Communicated, Routledge (Taylor & Francis Group).
- Ghosh P., Shah G., Sahota S., Singh L., Vijay V. K., (2020). *Biogas Production from Waste: Technical Overview Progress and Challenges*, In Lakhveer Singh, Abu Yousuf, Durga Madhab Mahapatra (Ed.), *Bioreactors: Sustainable Design and Industrial Applications in Mitigation of GHG Emissions*, (pp. 89-104), Elsevier.
- Ghosh P., Sengupta S., Singh L., Sahay A., (2020). *Life cycle assessment of waste-to-bioenergy processes: a review*, In Lakhveer Singh, Abu Yousuf, Durga Madhab Mahapatra (Eds.), *Bioreactors: Sustainable Design and Industrial Applications in Mitigation of GHG Emissions*, (pp. 105-122), Elsevier.
- Shah G., Singh D., Sahota S., Ghosh P., (2020). *Towards Waste Valorization: A Promising and Sustainable Approach of Waste Management*, In Anoop Singh, Shaili Srivastava, Dheeraj Rathore, Deepak Pant (Ed.), *Environmental Microbiology and Biotechnology*, (pp.19-34), Springer.
- Thakur I.S., Gupta J., Ghosh P., (2020). *Biological Degradation and Detoxification of Toxic Contaminants in Leachate*, In M.H. Fulekar, Bhawana Pathak (Ed.), *Bioremediation Technology Hazardous Waste Management*, (pp. 1-12), CRC Press.
- Shah G., Sahota S., Vijay V. K., Pant K. K., Ghosh P., (2021). *Recent developments in pressure swing adsorption for biomethane production*, In Nabin Aryal, Lars Ditlev Mørck Ottosen, Deepak Pant (Ed.), *Emerging Technologies and Biological Systems for Biogas Upgrading*, (pp. 93-116), Academic Press.

- Kapoor R., Ghosh P., Vijay V.K., (2021). *Factors affecting CO<sub>2</sub> and CH<sub>4</sub> separation during biogas upgrading in a water scrubbing process*, In Nabin Aryal, Lars Ditlev Mørck Ottosen, Deepak Pant (Ed.), *Emerging Technologies and Biological Systems for Biogas Upgrading*, (pp. 73-91), Academic Press.
- Nanda S., Pattnaik F., Borugadda V.B., Dalai A.K., Kozinski J.A., Naik S.N., (2021). *Catalytic and Noncatalytic Upgrading of Bio-Oil to Synthetic Fuels: An Introductory Review*, In Dalai A.K., Dadyburjor D.B., Zheng Y., Duan A., Roberts W.L., Nanda S. (Ed.), *Catalytic and Noncatalytic Upgrading of Oils*, (pp. 1-28), ACS Publications.
- Khan M.A., Sharma A., Yadav S., Sharma S., (2020). *Rhizospheric Microbes as Potential Tool for Remediation of Carbofuran: An Overview*, In Sharma S.K., Singh U.B., Sahu P.K., Singh H.V., Sharma P.K. (Ed.), *Rhizosphere Microbes, Microorganisms for Sustainability*, (pp. 557-571), Vol. 23, Singapore, Springer.
- Singh G., Yadav S., Chowdhary K., Sharma S., (2021). *Role of Microbes in Plastic Degradation*, In Prasad R., Kumar V., Singh J., Upadhyaya C.P. (Ed.), *Recent Developments in Microbial Technologies. Environmental and Microbial Biotechnology*, (pp. 281-299), Singapore, Springer.
- Cosoveanu A., Chowdhary K., Cabrera R., Sharma S., (2021). *Role of Phytohormones-Producing Fungal Endophytes in Plant-Microbial Interactions Under Stress*, In Ravindra H. Patil, Vijay L. Maheshwari (Ed.), *Endophytes: Potential Source of Compounds of Commercial and Therapeutic Applications*, (pp. 195-223), Springer.
- Rathore H., Prasad S., Sharma S., (2020), *Screening of Bioactive Compounds of Pleurotus sajor-caju Extracted Using Supercritical CO<sub>2</sub> Fluid Extraction Technique*, In Monika Thakur, V.K. Modi (Ed.), *Emerging Technologies in Food Science*, (pp. 239-246), Singapore, Springer.
- Dashora K., Javed Z., Mishra M., Tripathi G.D. (2021). *Role of fungal secondary metabolites in plant protection*, In Joginder Singh and Praveen Gehlot (Ed.), *New and Future Developments in Microbial Biotechnology and Bioengineering*, (pp. 39-46), Elsevier.
- Ram Chandra, Adya Isha, Subodh Kumar, Sameer Ahmad Khan, Paruchuri Mohan Venkata Subbarao, Virendra Kumar Vijay, Anuj Kumar Chandel, Ved Prakash Chaudhary, (2020). *Potentials and Challenges of Biogas Upgradation as Liquid Biomethane*, In Nagamani Balagurusamy, Anuj Kumar Chandel (Ed.), *Biogas Production - From Anaerobic Digestion to a Sustainable Bioenergy Industry*, (pp. 307-328), Singapore, Springer.

#### School of Public Policy

- Rohit Chandra, (2020). *India's Coal Industry and CIL in Historical Perspective*, In Rahul Tongia, Anurag Sehgal, Puneet Kamboj (Ed.), *Future of Coal in India: Smooth Transition or Bumpy Road Ahead?*, Chennai, Notion Press.
- Rohit Chandra (with others), (2021). *Changing Role of State-Owned Enterprises*, In Jose Gomez-Ibanez and Zhi Liu (Ed.), *Infrastructure Economics and Policy: International Perspectives*, New York, Columbia University Press.

#### School of Interdisciplinary Research

- Hema Garg, Jayashree Mohanty, Suman Thakur, Harishkumar Narayana, Bipin Kumar, (2020). *Shape Memory Polymer Nanocomposites for Textiles*, In Mangala Joshi (Ed.), *Nanotechnology in Textiles*, (pp. 869-900) (1st edition).
- Priyanka Gupta, Harishkumar Narayana, Pramod Shanker, Bipin Kumar, Ning Pan, (2020). *Shape memory polymers for design of smart stocking*, In Amit Gefen (Ed.), *Innovations and Emerging Technologies in Wound Care*, (pp. 141-154).
- Anupam Chowdhary, Satyaranjan Bairagi, Bipin Kumar, Syed Wazed Ali, (2020). *Composite Electrospun Nanofibers for Energy Scavenging Applications*, In Mangala Joshi (Ed.), *Nanotechnology in Textiles*, (pp. 471-505) (1st edition).

## MAJOR PROJECTS UNDERTAKEN

### Applied Mechanics

- Multifunctional Lightweight Structures Laboratory, IOE, ₹500.00 Lakhs, Prof. Maloy K. Singha.

### Chemical Engineering

- Solid Waste Management under Delhi Research Implementation and Innovation (DRIIV), Office of the Principal Scientific Adviser, GoI, ₹119.76 Lakhs, 3 years, Prof. K.K. Pant.
- Insights into the structural tuning of bifunctional catalyst for carbon-neutral fuel production from second-generation biomass, MFIRP, IRD, IITD Funded, ₹50 lakhs total (₹10 lakhs Indian side), 2 years 6 months, Prof. Sreedevi Upadhyayula.
- Identification of solid recovered fuel and optimization of process for the production of hydrogen through gasification (Mentor to Dr. Kunwar Pal for NPDF Fellowship), Science and Engineering Research Board (SERB) India, ₹22.36 Lakhs, 2 years, Prof. K.K. Pant.
- E-waste Recycling: Development of Green and Sustainable Technology for Recovery of Metals from Electronic Waste (MFIRP IITD & UCL Project), IRD, IIT Delhi, India, ₹5.00 Lakhs, 1 year, Prof. K.K. Pant.
- Investigating Uncharted 2D Catalytic Materials for Lignocellulosic Biomass Transformation into High-Value Platform Chemicals and Fuel, Science and Engineering Research Board (SERB) India, ₹46.23 Lakhs, 3 years, Prof. K.K. Pant.
- Synthesis of Artificial Sweeteners and High Value Chemicals from Biorenewable Resources using Noble Metal Aerogel Catalysts, Science and Engineering Research Board (SERB) India, ₹55.49 Lakhs, 3 years, Prof. K.K. Pant.
- Catalyst Development for Methanol and DME Production via CO<sub>2</sub> Hydrogenation, GAIL (India) Limited, Noida India, ₹90.28 Lakhs, 2 years, Prof. K.K. Pant.

### Civil Engineering

- Development of functional admixtures for application to sustainable cements, Chryso SAS (IU), France, ₹60.00 Lakhs, 3 years, Prof. Shashank Bishnoi.
- Low Carbon Cement - Phase III, Swiss Agency for Development and Cooperation, ₹109.00 Lakhs, 2 years, Prof. Shashank Bishnoi.

### Electrical Engineering

- Development of Indigenous Simulation Model for Design and Validation of Traction Power Supply

System (ISIMTRAC), High Speed Railways Innovation Center (HSRIC) Trust India, ₹143.00 Lakhs, 3 years, Prof. A.R. Abhyankar.

- Neurocomputing and Cognitive Intelligence, Ministry of Electronics and Information Technology India, ₹231.00 Lakhs, 3 years, Prof. Tapan K. Gandhi.

### Materials Science and Engineering

- Solvent properties and biomolecular stability in the intracellular environment: molecular origin of crowding effects, Department of Science & Technology India (INSPIRE faculty research grant), ₹35.00 Lakhs, 5 years, Prof. Divya Nayar (PI).
- Investigation of macromolecular crowding effects on self-assembly of functionalized nanoparticles using high performance computing, DST- National Supercomputing Mission, ₹17.01 Lakhs, 2 years, Prof. Divya Nayar (PI) IIT Delhi, Prof. Sandeep Reddy (IIT Kharagpur, CoPI).
- Fracture and Fatigue of bulk metallic glass composites with transformable  $\beta$ -Ti dendritic reinforcements, Department of Science & Technology India, ₹33.00 Lakhs, 2 years, Prof. Lakshmi Narayan R.
- Tribo-printing of self-healing and self-lubricating hybrid nano-coatings for energy efficient tribological applications, Department of Science & Technology India, ₹48.22 Lakhs, 3 years, Prof. N.N. Gosvami, Prof. Leena Nebhani.
- Macroporous polymeric gels reinforced with organically modified silica for water disinfection: synthesis, antimicrobial activity, nanoscale mechanical characterization, Department of Science & Technology India, ₹45.91 Lakhs, 3 years, Prof. Leena Nebhani, Prof. N.N. Gosvami.
- A bottomup nanotechnological framework for visualization and control of tribocatalysis for reducing friction and wear induced energy and material losses, and reduced emissions in lubricated engineering components, FIRP, IIT Delhi, ₹10 Lakhs, 3 years, Prof. N.N. Gosvami, Prof. J.P. Singh.
- Nanotribological studies to explore a bottom up framework for efficient and defect free chemical mechanical planarization/polishing of single crystal semiconductor wafers, SSPL, DRDO, ₹9.90 Lakhs, 1 year, Prof. N.N. Gosvami.
- Corrosion and wear resistant advanced coatings based on high entropy alloys for mining equipments, Ministry of Mines, ₹27.55 Lakhs, 3 years, Prof. J. Jain, Prof. N.N. Gosvami.

- Bio-inspired textured surfaces for directionally reduced sliding friction fabricated by glancing angle deposition, *DST- Nano Mission*, ₹67.00 Lakhs, 3 years, Prof. J.P. Singh, Prof. N.N. Gosvami.

### Mathematics

- MATRICS research, SERB-DST, Prof. Surjeet kaur. Modelling and validation of dinucleotides in the human genome, *FIRP 2019, IIT Delhi*, 3 years, Prof. Vikas Vikarm Singh.
- Establishment of CoE, *IAAI NOKIA Systems and Solutions*, 2 years, Prof. Niladri Chatterjee.
- Valuing Variable Annuities with Lifelong Guarantees, *DST-SERB, India*, 3 years, Prof. S. Dharmaraja.
- Existence and multiplicity results for nonlocal elliptic and parabolic problems, *DST- SERB, India*, 3 years, Prof. K. Sreenadh.
- DST-FIST project, Computational Lab for Mathematics, *DST-FIST*, 3 years, HOD, Mathematics.
- Average and Relevant Sampling in Reproducing Kernel subspace of Mixed Lebesgue Space, *DST, India*, 3 years, Prof. Sivananthan sampath.
- India Development Fund (IDF) of budget AUD 9,970, *University of Sydney*, 2 years, Prof. Biplab Basak.
- Fourier algebras on ultraspherical hypergroups, *DST- SERB*, 3 years, Prof. N. Shravan Kumar.
- Stable Numerical Schemes for Relativistic Fluid and Plasma Flows, *DST-SERB*, 3 years, Prof. Harish Kumar.
- Image of locally finite and locally nilpotent derivations over the polynomial algebra, *DST-SERB*, 3 years, Prof. Surjeet Kour.
- Pseudo-differential Calculus on the Affine Group, *DST- SERB*, 3 years, Prof. Aparajita Dasgupta.
- Functional Classes and Hyperbolic equations on Hilbert Spaces, *DST-SERB*, 3 years, Prof. Aparajita Dasgupta.
- Study of new types of continued fractions and applications, *DST-SERB*, 3 years, Prof. Ritumoni Sarma.
- Matching and Its Variations: Structural and Algorithmic Study, *DST-SERB*, 3 years, Prof. B.S. Panda.
- Some Approximation Theoretic Aspects of Fractal Functions on the Sierpinski Gasket and other Fractal Domains, *DST-SERB*, 3 years, Prof. P. Viswanathan.
- Robustness Analysis of Port-Hamiltonian Systems and their Applications in Power Network, *IIT Delhi*, 2 years, Prof. Punit Sharma.
- Stochastic Analysis for Power Optimization in 5G Wireless Networks, *AIRTEL*, 3 years, Prof. S. Dharmaraja.
- High Accuracy Computational Electrodynamics for solving 21st Century Problems, *VAJRA grant, DST*, 3 years, Prof. Harish Kumar.
- Investigations on Multivariate Constrained Approximation with Fractal Functions and Its Applications in Geometric Modelling, *DST-SERB*, 3 years, Prof. P. Viswanathan.

### Mechanical Engineering

- Air Pollution Source Apportionment, Dispersion and Transport, *MHRD, IRD*, ₹975.00 Lakhs, 5 years, Prof. Mayank Kumar.
- Interventions to Improve Performance of Combustion Systems in MSMEs, *Petroleum Conservation Res. Association India*, ₹24.93 Lakhs, 2 years, Prof. Krishnakant Agrawal.
- Improved Smart Vending Cart for Fresh Fruits and Vegetables Science, Technology and Innovation Hub in IIT Delhi, New Delhi District, *Department of Science and Technology (DST) India*, ₹25.38 Lakhs, 1 year, Prof. S.K. Saha.
- Verification and Vetting of CFD Analysis of Smoke Ventilation at Goa International Airport, *Megawide Construction DMCC*, Goa India, ₹1.56 Lakhs, 1 year, Prof. M.R. Ravi.
- Endorsement/Certification of CFD report for the Expansion of Rajiv Gandhi International Airport at Hyderabad, *Larsen & Toubro Limited, Chennai India*, ₹10.16 Lakhs, 1 year, Prof. M.R. Ravi.
- Development of Improved Furnaces for Handtool Clusters in Jalandhar and Nagaur, *United Nations Industrial Development Organization Austria*, ₹35.40 Lakhs, 1 year, Prof. M.R. Ravi.
- Design And Development of a Low Cost Artisan-Friendly Gas Furnace Prototype to Be Piloted in the Bell Metal Cluster of Odisha, *All India Artisans and Craftworkers Welfare Association India*, ₹16.20 Lakhs, 1 year, Prof. M.R. Ravi.
- Pressurized Drop Tube Furnace Experiments towards Obtaining High-Pressure Kinetics of Indian Coals and Coal Blends, *SERB*, ₹49.28 Lakhs, 3 years, Prof. Mayank Kumar.
- Reliability Analysis of Grinding Tools, *IRD*, ₹10.00 Lakhs, 2 years, Prof. Prithviraj Mukhopadhyay.
- Combating Environmental Pollution through Internationalization of Curriculum in India and Germany, *UGC-DAAD*, ₹312.00 Lakhs, 4 years, Prof. Ashish K. Darpe.
- Automation Solutions for The Metal Scrap Handling Industry, *MTC Group*, ₹14.16 Lakhs, 2 years, Prof. Varun Ramamohan, Prof. S.K. Saha.

- Case Flow Management in India via Simulation Modeling, *DAKSH Centre of Excellence for Law and Technology*, ₹43.75, 2 years, Prof. Shaurya Shriyam.
- Novel Lipid-Filled High Strength Polymer Composite for Highly Functional Joint Prosthesis Application, *DST-JSPS*, ₹04.36 Lakhs, 2 years, PI: Prof. Sujeet Kumar Sinha, CoPI: Prof. Devendra Kumar Dubey.
- Development of Indigenous Simulation Model for Design Validation of OHE Pantograph Interaction, *NHSRCL*, ₹138.00 Lakhs, 3 years, PI: Rama Krishna K, CoPI: Prof. S.K. Saha, Prof. A.K. Darpe, Prof. S.P. Singh.

### Textile and Fibre Engineering

- High Performance Composite Fibres, *Ministry of Textiles*, ₹275.00 Lakhs, Prof. Manjeet Jassal, Prof. Ashwini Agrawal.

### Biomedical Engineering

- A wearable system for quantitative assessment and recovery prediction during gait restoration in Parkinsons and Cerebral Ataxia Patients, *Department of Science and Technology (DST)*, ₹54.06 Lakhs, Prof. Deepak Joshi (PI), Prof. Dinesh Kalyanasundaram (Co-PI).
- Development of robotic platform with real-time perturbations to assess neuromuscular response in Virtual Reality (VR), *IRD, IIT Delhi*, ₹10.00 Lakhs, Prof. Deepak Joshi (PI).
- Development of magnetic growth rod for scoliosis patients, *Indian Council for Medical Research (ICMR), India*, ₹51.53 Lakhs, Prof. Dinesh Kalyanasundaram (PI).
- Development of dispersion coating and preforming device for biomedical composites, *Department of*

*Science and Technology (DST)*, ₹47.40 Lakhs, Prof. Dinesh Kalyanasundaram (Co-PI).

- Low power ultrasound imaging system for real-time activity monitoring, *IRD, IIT Delhi*, ₹10.00 Lakhs, Prof. Biswarup Mukherjee (PI).
- Integrated Sonomyography and Soft haptics-based Intuitive Control of Upper-Extremity Prosthetic Devices, *IRD, IIT Delhi*, ₹10.00 Lakhs, Prof. Biswarup Mukherjee (PI).
- Fully integrated PCR microchip development, *FITT, IIT Delhi*, ₹50.00 Lakhs, Prof. Sandeep K. Jha (PI).

### Energy Studies

- Design and Demonstration of Sustainable Building Infrastructure, *YARDI*, ₹670.00 Lakhs, 2 years, Prof. Dibakar Rakshit (Co-Principal Investigator).
- Sustainable Technologies for Distributed Level Application and Energy Support to Rural Development (STAR) -(ITPAR Phase-IV), *Department of Science & Technology ITPAR*, ₹180.00 Lakhs, 3 years, Prof. Dibakar Rakshit (Principal Investigator).
- Plasma Pyrolysis Plant at IIT Delhi, *IoE funds*, ₹300.00 Lakhs, Plasma Lab.
- Equipment Grant (Mass Spectrometer), *FIST, DST*, ₹187.00 Lakhs, Head, CES.

### Rural Development and Technology

- Hydrogenotrophic Anaerobic Biotechnological System for Enrichment of Biogas (HABSEB) Technology for Power and Vehicular Fuel Applications (Indo-Hungarian Joint Project), *Department of Science & Technology India*, ₹42.42 Lakhs, 3 years, Prof. Ram Chandra.



## CONFERENCES/SEMINARS/WORKSHOPS/LECTURES

A department wise list of conferences, Seminars, Workshops, and Lectures organised by the Academic units of the Institute during the period is given below:

### Conferences

#### Computer Science and Engineering

- 'ALGOSENSORS', organised by Amitabha Bagchi (co-chair), University of Pisa, from 7 to 11 September, 2020.
- 'ICVGIP 2020', organised by Chetan Arora, Parag Chaudhuri, Subranshu Maji, from 18 to 22 December, 2020.

#### Design

- 'ComelN - International Conference on Indian Comics', organised by Prof Subir Dey, Online, from 5 to 6 December, 2020.

#### Mechanical Engineering

- 'Sheet Metal Forming: Current Trends in Sheet Metal Forming (SMF 2020)', organised by Prof. D. Ravi Kumar, jointly with Sheet Metal Forming Research Association (SMFRA), Online, from 18 to 19 December, 2020, Altair Engineering Pvt. Ltd.; Autoform; ESI Pvt. Ltd.; Erichsen; ABS Instruments.

#### Biomedical Engineering

- '4th International Conference on Clinical Spine & Orthopedic Biomechanics', organised by Prof. Dinesh Kalyansundaram, jointly with Indian Spinal Injury Center, New Delhi and Hamburg University of Technology, Germany and University of Toledo, USA, Online, from 16 to 18 April, 2021.

#### Energy Studies

- 'Characterization Techniques for Smart Materials', CCS University Hisar, India, from 15 to 16 January, 2021.
- 'Emerging Trends in Physics and its Applications in Agriculture', CCS University Hisar, India, on 29 January, 2020.

### Seminars

#### Chemical Engineering

- 'Renewables in India & Jasvipul Chawla, ReNew Power', organised by the Department, Webinar, on 10 December, 2020.
- 'Emerging energy scenario: Catalysis challenges', organised by Prof. K.K. Pant, Webinar, on 9 January, 2021.
- 'ACS International Student Chapter IIT Delhi Webinar Series on Analytical Instrument', organised by Prof. K.K. Pant, Webinar, from 27 July to 30 August, 2020.

#### Chemistry

- 'Chemistry of Nanostructured Materials: Synthesis, Characterization, and Applications (QIP)', organised by Prof. Pravin P. Ingole, Prof. Ashok K. Ganguli, Prof. Sameer Sapra and Prof. Soumik Siddhanta, from 9 to 11 November, 2020.

#### Computer Science and Engineering

- Prof. Vijay Raghunathan (Purdue University, USA), 'Hardware Primitives for IoT Security', organised by Prof. Vinay Ribeiro, Department of CSE, IIT Delhi, Online, on 12 May, 2020.
- Prof. Ashutosh Sabharwal (Earnest Dell Butcher Professor of Engineering Department of Electrical and Computer Engineering, Rice University, USA), 'Empowering 3Rs of Research via Open Wireless Platforms & Testbeds', organised by Prof. Vinay Ribeiro, Online, on 14 May, 2020.
- Dr. Nikhil Balaji (Oxford University), 'Algorithms for linear dynamical systems', organised by Prof. Sanjiva Prasad, Online, on 16 June, 2020.
- Venkata Koppula (Postdoctoral Researcher, Weizmann Institute of Science) 'Recent Progress in Code Obfuscation', organised by Prof. Sanjiva Prasad, Online, on 29 June, 2020.
- Shikhar Vashishth (Postdoctoral Researcher at Microsoft Research) 'Neural Graph Embedding Methods for Natural Language Processing', organised by Prof. Sanjiva Prasad, Online, on 06 August, 2020.
- Prof. Sambuddho Chakravarty (Assistant Prof., CSE Dept., IIIT Delhi), 'Internet (Anti-)Censorship – Privacy, Anonymity and the Whole Nine Yards', organised by Prof. Aaditeshwar Seth, Online, on 20 November, 2020.
- Swaprava Nath (Assistant Prof., CSE Dept., IIT Kanpur), 'Economics and Computation', organised by Prof. Sanjiva Prasad, Online, on 26 November, 2020.
- Dr. Sajin Koroth (Simon Fraser University, Canada), 'Communication complexity based approaches to formula lower bounds and lifting theorems', organised by Prof. Ragesh Jaiswal, Online, on 28 November, 2020.
- Dr. Suryajith Chillara, 'On computing multilinear polynomials using depth four circuits of bounded individual degree', organised by Prof. Ashish Chiplunkar, Online, on 02 December, 2020.
- Prof. Ken Ono (Thomas Jefferson Professor of Mathematics at the University of Virginia), 'Why Does Ramanujan, the Man Who Knew Infinity, Matter?', organised by Prof. Amit Kumar, online, on 21 December, 2020.

- Prof. Rajendra Bhatia (Professor, the Ashoka University and a Bhatnagar Fellow of the CSIR), *'The Marvelous Number Pi'*, organized by Prof. Amit Kumar, online, on 22 December, 2020.
- Utsav Banerjee (EE & CS at Massachusetts Institute of Technology), *'Efficient Cryptographic Hardware Architectures for Secure Embedded Systems'*, organised by Prof. Sanjiva Prasad, online on 18 January, 2021.
- Kumar Madhukar (Tata Research Development and Design Center), *'Evaluating Programming Assignments with Hypersafety Verification'*, organised by Prof. Sanjiva Prasad, online, on 20 January, 2021.
- Dr. Vikas Dhiman (Postdoc at University of California, San Diego) *'Safe robots that learn'*, organised by Prof. Sanjiva Prasad, online, on 3 March, 2021.

### Design

- *'Women in Design Research'*, organised by the Department, Online, on 8 March, 2021.

### Mechanical Engineering

- *'Composition and Trends of Particulate Matter in the Eastern United States in Winter'*, by Viral Shah (Harvard), organised by Prof. Mayank Kumar, GPS Webinar, on 28 October, 2020.
- *'Finding simplicity in complex fluid flows, by Clancy Rowley (Princeton)'*, organised by Prof. Mayank Kumar, GPS Webinar, on 25 November, 2020.
- *'Connecting Crop Productivity, Residue Fires and Air Quality over Northern India'*, by Hiren Jethva, NASA, organised by Prof. Mayank Kumar, GPS Webinar, on 27 January, 2021.
- *'Emerging brain-robot interfaces for hand exoskeleton-based rehabilitation therapy for stroke patients'*, organised by Prof. Kaushik Mukherjee, GPS Webinar, on 4 August, 2021.
- *'Laser material processing'*, organised by Prof. Kaushik Mukherjee, GPS Webinar, on 7 July, 2021.
- *'Computational prediction of hemodynamical and biomechanical alterations induced by aneurysm dilatation and endovascular repair in aorta'*, organised by Prof. Kaushik Mukherjee, GPS Webinar, on 18 November, 2020.

### Energy Studies

- *'Studies on plasma sources, the importance of plasma diagnostics, and their utilities for materials processing'*, organised by the Centre, Online, from 29 December to 1 January, 2021.

### School of Interdisciplinary Research.

- *'Interdisciplinary Aspects of Modern Ion Accelerators and their use in Research and Industry'*, organised by Prof. Rajendra Singh, online, on 3 September, 2020.
- *'The Quantum and the butterfly effect: Recent perspectives'*, organised by Prof. Rajendra Singh, online, on 17 February, 2021.
- *'Strengthening the Pillars of Nanomedicine to Combat Cancer'*, organised by Prof. Rajendra Singh, online, on 12 March, 2021.

### Workshops

#### Computer Science and Engineering

- *'SAT-SMT 2020'*, organised by Prof. Subodh Sharma, Online, from 11 to 13 December, 2020.
- *'ISLA'*, organised by Prof. Sanjiva Prasad, Online, from 18 to 23 December, 2020.
- *'ICLA 2021'*, organised by Prof. Sanjiva Prasad, Online, from 4 to 7 March, 2021.
- *'FILA 2020'*, organised by Prof. Abhijnan Chakraborty, Online, on 10 December, 2020.

#### Electrical Engineering

- *'Brain mapping and Artificial Intelligence'*, organised by Prof. Tapan Gandhi, from 11 to 20 March, 2021.

#### Management Studies

- Short term certificate programme on *'Case Teaching and Case writing'*, organised by Prof. Mahim Sagar, on 3 July, 2020.

#### Materials Science and Engineering

- *'Mechanical testing at small length scales'*, organised by Prof. Lakshmi Narayan R., online from 20 to 21 October, 2021

#### School of Public Policy

- *'Symposium on Air Pollution Measurement and Analysis Systems (APMAS): Global Perspectives and Approach for India'*, organised by School of Public Policy and the World Bank, Online, from 14 to 15 January and from 18 to 20 January, 2021.
- *'Workshop on Deep Decarbonization in India'*, organised by School of Public Policy and The Harvard Kennedy School, Online, from 27 to 30 July, and from 3 to 4 August, 2020.

### Lectures

#### Chemistry

- *'The Origins of the Lithium Battery and Future Challenges/ Opportunities'*, speaker Prof. M. Stanley Whittingham, Binghamton University, USA, organised by the

- Department, Online, on 17 September, 2020, Sponsor: Authorcafe.
- *'Tips to Sail and not to sink while navigating through the ocean of research'*, Speaker Prof. Raghavan B. Sunoj, IIT Bombay, organised by the Department, Online, on 13 August, 2020, Sponsor : Authorcafe.
  - *'Challenging issues of light harvesting in nanoscale systems'*, speaker Prof. Amitava Patra, INST, Mohali, organised by the department, Online, on 1 October, 2020, Sponser : Authorcafe.
  - *'Publish or Perish'*, speaker Dr. Adam Weingarten, Associate Editor, Springer Nature, organised by the Department, Online, on 15 October, 2020, Sponser: Authorcafe.
  - *'Molecular Hopper Crystals and Electon Beam Actuation'*, speaker Prof. T.P. Radhakrishnan, University of Hyderabad, Pratidhwani, organised by the Department, Online, on 29 October, 2020, Sponser: Authorcafe.
  - *'Discovering oxide perovskites with simultaneous cation redox-activity using first-principles for solar thermochemical applications'*, speaker Prof. Sai Gautam Gopalakrishnan, IISc. Bangalore, organised by the Department, Online, on 12 November, 2020, Sponsor : Authorcafe.
  - *'Molecular simulations of metal oxide-water interfaces'*, speaker Prof. Anabelle Selloni, Princeton University, USA, Pratidhwani, organised by the Department, Online, on 3 December, 2020, Sponsor : Authorcafe.
  - *'The Phase Behavior of Supercooled water: A computational perspective'*, speaker Prof. Pablo G. Debenedetti, Princeton University, USA, organised by the Department, Online, on 17 December, 2020, Sponsor : Authorcafe.
  - *'C-H functionalization by cooperative catalysis'*, speaker Prof. Yoshiaki Nakao, Kyoto University, Japan, organised by the Department, Online, on 4 March, 2021, Sponsor : Authorcafe.
  - *'Cats but not rats? Hominids but not hamsters? A study into the molecular mechanism of type 2 diabetes using 2D IR spectroscopy'*, speaker Prof. Martin Zanni, University of Wisconsin Madison, USA, organised by the Department, Online, on 1 April, 2021, Sponsor : Authorcafe.
  - *'The Science of Art: Technical studies in art, archaeology and conservation'*, speaker Prof. Satish Pandey, National Museum Institute, New Delhi, Pratidhwani, organised by the Department, Online, on 29 April, 2021, Sponsor : Authorcafe.
  - *'Rational Use of Chemistry for Designing Substrate Independent and scalable superhydrophobic coatings'*, speaker Prof. Uttam Manna, IIT Guwahati, organised by the Department, Online, on 13 August, 2020, Sponsor : Authorcafe.
  - *'Why do proteins have to be so big?'*, speaker Prof. Sudipta Maiti, TIFR Mumbai, Pratidhwani, organised by the Department, Online, on 24 September, 2020, Sponsor : Authorcafe.
  - *'Dynamic molecular crystals: The bigger picture'*, speaker Prof. Pance Naumov, New York University Abu Dhabi, Pratidhwani, organised by the Department, Online, on 8 October, 2020, Sponsor : Authorcafe.
  - *'Supramolecular Polymers: A dynamic world beyond molecules'*, speaker Prof. Subi J. George, JNCASR, India, Pratidhwani, organised by the Department, Online, on 22 October, 2020, Sponsor : Authorcafe.
  - *'Chemical catalyst turns "trash" into "treasure" making C-H bonds reactive'*, speaker Prof. Huw M.L. Davies, Emory University, USA, Pratidhwani, organised by the Department, Online, on 5 November, 2020, Sponsor : Authorcafe.
  - *'Non-equilibrium phenomena on the nano-scale and other things I thought I understood'*, speaker Prof. Daan Frenkel, University of Cambridge, UK, organised by the Department, Online, on 26 November, 2020, Sponsor : Authorcafe.
  - *'Computational catalysis applied on hydrogenation and carboxylation reactions'*, speaker Prof. Kathrin H. Hopmann, The Arctic University of Norway, organised by the Department, Online, on 10 December, 2020, Sponsor : Authorcafe.
  - *'Studying Dyslexia: From Phenotype to the genes and heir manifestations'*, speaker Prof. Subrata Sinha, AIIMS, New Delhi, Pratidhwani, organised by the Department, Online, on 7 January, 2021, Sponsor : Authorcafe.
  - *'Observing strong coupling in plasmonic cavities at the single emitter limit'*, speaker Prof. Gilad Haran, Weizmann Institute of Science, Israel, organised by the Department, Online, on 11 February, 2021, Sponsor : Authorcafe.
  - *'Targeted materials synthesis-failures of concept'*, speaker Prof. Martin Jansen, Max-Planck Institute for Solid state research, Germany, organised by the Department, Online, on 11 March, 2021, Sponsor : Authorcafe.
  - *'Medium matters: Dynamics of molecules in a confined space'*, speaker Prof. Vaidyanathan Ramamurthy, University of Miami, USA, organised by the Department, Online, on 20 May, 2021, Sponsor : Authorcafe.
  - *'Magnetolectric nanorobot- A revolutionary nanoscale device for targeted treatment'*, speaker Prof. Soutik Betal, IIT Delhi, Pratidhwani, organised by the Department,



Online, on 10 June, 2021, Sponsor : Authorcafe.

- '*Crystal Engineering of adaptive smart materials: From Mechanical Bending to Self-healing*', speaker Prof. C. Malla Reddy, IISER Kolkata, organised by the Department, Online, on 15 July, 2021, Sponsor : Authorcafe.

### Computer Science and Engineering

- '*Internet (Anti-)Censorship – Privacy, Anonymity and the Whole Nine Yards*', speaker Prof. Sambuddho Chakravarty, IIT Delhi, organised by Prof. Aaditeshwar Seth, online, on 20th November, 2020.
- '*Exploring Memory Models using the Alloy Analyzer*', speaker Prof. John Wickerson, Imperial College London, organised by Prof. Subodh Sharma, online, on 17 December, 2020.
- '*Algorithmic Analysis in Model Checking Using Alloy*', speaker Prof. Stephen Siegel, University of Delaware, organised by Prof. Subodh Sharma, online, on 14 December, 2020.

### Design

- '*Why Universal Design?*', speaker Prof. V. Ravishankar, Director NID Assam, organised by the Department of Design, Online, on 3 December, 2020.
- '*Pollinating Pathways for Social Design*', speaker Jiten Thukral and Samir Tagra, organised by the Department, Online, on 28 November, 2020.
- '*Design of Healthy Workplaces*', speaker Prof. Gourab Kar, organised by the Department, Online, on 23 October, 2020.
- '*Art of Designing Medical Devices*', speaker Amit Sharma and Nitin Sisodia, organised by the Department, Online, on 27 October, 2020.
- '*Game Design*', speaker Prof. Uday Athavankar, organised by the Department, Online, on 10 October, 2020.

### Humanities and Social Sciences

- '*Information processing and cross-linguistic universals*', speaker Prof. Ted Gibson, organised by Prof. Samar Husain, Cognitive Science Colloquium.
- '*Cultural artifacts as both reflecting and affecting cognition*', speaker Douglas Medin, organised by Prof. Purnima Singh, Cognitive Science Colloquium.
- '*"Butterfly effects" in perceptual development*', speaker Pawan Sinha, organised by Prof. Pritha Chandra, Cognitive Science Colloquium.

### Management Studies

- '*Macroeconomic Environment of Business*', speaker Mr. Rajiv Arora, organised by Prof. Seema Sharma, online, Semester-II 2020-21.

- '*Macroeconomic Environment of Business*', speaker Mr. Himanshu Kumar, organised by Prof. Seema Sharma, online, Semester-II 2020-21.

- '*Corporate Innovation & Entrepreneurship*', speaker Prof. Sidharth Tripathy, organised by Prof. Seema Sharma, online, Semester-II 2020-21.

- '*Venture Financing & Teaming*', speaker Prof. Sidharth Tripathy, organised by Prof. Seema Sharma, online, Semester-II 2020-21.

- '*Microeconomic Environment of Business*', speaker Prof. Abhijit Das, organised by Prof. Eri Ikeda, online, Semester-II 2020-21.

- '*International Economic Policy*', speaker Prof. Abhijit Das, organised by Prof. Eri Ikeda, online, Semester II 2020-21.

- '*International Economic*', speaker Prof. Yasuyuki Murahasihas, organised by Prof. Eri Ikeda, online, Semester-II 2020-21.

- '*Advertising and Sales Promotion*', speaker Mr. Ravi Soni, organised by Prof. Harish Chaudhry, online, 2020-2021.

- '*Strategic Management*', speaker Dr. Dharendra Mani Shukla, organised by Prof. Sanjay Dhir, online, Semester-I 2020-21.

- '*Business Communication*', speaker Prof. Anita Lal, organised by Prof. Shuchi Sinha, online, Semester-I 2020-21.

- '*Introduction to social network analysis for behavioral and management science*', speaker Dr. Pradip Swarnakar, organised by Prof. P. Vigneswara Ilavarasan, online, Semester-I 2020-21.

- '*Security Analysis and Portfolio Management*', speaker Mr. Ankur Garg, organised by Prof. Sonali Jain, online, Semester-I 2020-21.

- '*Financial Accounting and Compliance for startups*', speaker Mr. Bhaswat Agarwal, organised by Prof. Shveta Singh, online, Semester-I 2020-21.

- '*Current and Emerging Issues in Finance (Entrepreneurial Finance)*', speaker Mr. Bhaswat Agarwal, organised by Prof. Shveta Singh, online, Semester-I 2020-21.

- '*Strategic Alliance*', speaker Dr. Dharendra Mani, organised by Prof. Sanjay Dhir, online, Semester-I 2020-21.

- '*Strategic Management*', speaker Dr. Ansh Gupta, organised by Prof. Sanjay Dhir, online, Semester-I 2020-21.

### Materials Science and Engineering

- '*Static and Dynamic Wetting: From basics to Current Research*', speaker Dr. Günter K. Auernhammer, Leibniz-Institut für Polymerforschung Dresden E.V., organised by Prof. B.P. Tripathi, on 28 October, 2020.

- *Electron Microscopy: From Basics to Current Research*, speaker Dr. Peter Formanek, Leibniz-Institut für Polymer forschung Dresden E.V., organised by Prof. B.P. Tripathi, on 16 December, 2020.

#### Biomedical Engineering

- *Magnetolectric Nanorobot: A revolutionary nanoscale device for targeted treatment*, speaker Prof. Soutik Betal, Assistant Professor, Department of Electrical Engineering, Indian Institute of Technology Delhi, organised by Prof. Neetu Singh, Centre for Biomedical Engineering, IIT Delhi, CBME Committee Room, on 24 February, 2021.

#### Energy Studies

- *Basic Design Consideration for Solar Thermal Energy Systems*, speaker K. Ravi Kumar, organised by National Institute of Solar Energy, Gurugram, from 22 to 26 February, 2021.
- *Challenges and Opportunities in Solar Thermal Energy Systems*, speaker K. Ravi Kumar, organised by Department of Mechanical Engineering, K.S.R. Institute for Engineering and Technology, Tiruchengode, on 11 January, 2021.
- *Sustainable Solar Energy Solutions for Industrial Process Heating Applications*, speaker K. Ravi Kumar, organised by Department of Mechanical Engineering, Mangalore Institute of Technology and Engineering, Moodbidri, from 23 to 27 November, 2020.
- *Solar Thermal Energy Systems and Its Applications at Short Term Courses on Energy and Its Applications*, speaker K. Ravi Kumar, organised by Department of Chemical Engineering National Institute of Technology Srinagar, Jammu & Kashmir, from 8 to 12 September, 2020.
- *Research Opportunities and Challenges in Solar Thermal Power Generation*, speaker K. Ravi Kumar, organised by Department of Electrical and Electronics Engineering, Kumaraguru College of Technology, Coimbatore, on 18 July, 2020.
- *Hydropower Need, Role and Challenge of Hydropower in Large Scale RE integration*, speaker Prof. Rahul Goyal, organised by Dr Yogesh Chandra Sharma Prof. (HAG)

Department of Chemistry, IIT (BHU) Varanasi, from 01 to 05 March, 2021.

#### Centre for Sensors, Instrumentation and Cyber-Physical Systems Engineering

- *Optical nanoantenna: design, fabrication and applications*, International Webinar, speaker Prof. Satish K. Dubey, organised by the Centre, 2020.
- *Optoelectronic Sensing in Clinical Diagnostics*, International Webinar, 'Modern Trends in Experimental Research: Optics and Imaging in Healthcare', speaker Prof. Satish K. Dubey, The M.S. University of Baroda, Vadodara, organised by the Centre from 21 to 24 May, 2020.
- *Short course on 'Freeform Optics: Manufacturing and Characterisation Technologies*, speaker Gufran S. Khan, Optical Society of America, OSA, organised by the Centre, on 27 June, 2021.
- *Fabrication and metrology of specialized optics for space and defense applications*, speaker Gufran S. Khan, SAG talk series, ISRO, organised by the Centre, on 14 October, 2020.
- *Diamond turning of freeform surfaces for optical applications: Current Status and Challenges ahead*, speaker Gufran S. Khan, CMTI Bangalore, organised by the Centre, from 31 July to 1 August, 2020.
- *Development of Specialized Optics for Strategic applications*, speaker Gufran S. Khan, Instrument Society of India (ISOI), IISc Bangalore, organised by the Centre, from 28 to 29 December, 2020.
- *Diffraction Optics in Optical Engineering: Design, Fabrication and Metrology*, speaker Gufran S. Khan, OSA student chapter, CSIO Chandigarh, organised by the Centre, on 9 May, 2020.

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

- *Internet (Anti-) Censorship – Privacy, Anonymity and the Whole Nine Yards*, speaker Prof. Sambuddho Chakravarty IIT Delhi, organised by Prof. Aaditeshwar Seth, online, on 20 November, 2020.

## DISTINGUISHED VISITORS TO THE ACADEMIC UNITS

### Management Studies

- Shobhit Kumar, Director for IoT, Data & Analytics NTT Data Services, Webinar, on 8 January, 2021.
- Janak Shah, Co-Founder The Money Roller, Webinar, on 24 November, 2020.
- Gaurav Wadhwa, CFO Prudential Financial, Webinar, on 18 October, 2020.
- Ankit Jindal, Central Goods and Services Tax inspector Ministry of Finance, Govt. of India, Webinar, on 30 August, 2020.
- Amit Sethiya, Head Marketing (CMO) SYSKA Group, Webinar, on 16 January, 2021.
- Sai Venkateshwaran, Partner and Hear - CFO Advisory KPMG India, Webinar, on 17 January, 2021.
- B.L. Dewangan, VP Business Excellence JSW Steel, Webinar, on 21 March, 2021.
- Asmita Satyarthi, Executive Director Global Sustainability Network (GSN), Webinar, on 9 March, 2021.
- Sanjoy Shaw, HR Director, South Asia Givudan, Webinar, on 28 February, 2021.
- Geetika Bangia, Lead - PR & Corporate Communications Philips India, Webinar, on 21 January, 2021.
- Vijaya Bommireddipalli, Director, Risk Advisory Deloitte USI, Webinar, on 27 March, 2021.
- Mr. Manoj Madhusudanan, Ex-Director, Human Resources, Asia Pacific Pearson VUE, Webinar, on 1 May, 2020.
- Mr Vishal Bansal, Marketing Manager Philips, Webinar, on 3 May, 2020.
- Mr. Yuvaraj Srivastava, Head of dunnhumby India dunnhumby, Webinar, on 9 May, 2020.
- Mr. Yashaswi Kumar, Talent Acquisition Lead HP, Webinar, on 9 May, 2020.
- Mr. Sumit Jasoria, Group CHRO MakeMyTrip, Webinar, on 22 May, 2020.
- Mr. Madhavan Seshadri, CEO Knappily, Webinar, on 23 May, 2020.
- Ms. Simin Askari, Managing Director Meero, Webinar, on 24 May, 2020.
- Mr. Varun Sakhuja, Senior VP Virtusa, Webinar, on 30 May, 2020.
- Mr. Aviral Jain, Vice President - Corporate HR DS Group, Webinar, on 30 May, 2020.
- Mr. Shrikant Lonikar, Director of Innovation Management Mastercard Labs, Webinar, on 31 May, 2020.
- Mr. Gaurav Mehta, Managing Director Duff & Phelps, Webinar, on 5 June, 2020.
- Ms. Gaurika Tandon, CHRO Pernod Ricard South Asia, Webinar, on 6 June, 2020.
- Mr. Sitaram Kandi, CMO Girnar Soft, Webinar, on 6 June, 2020.
- Mr. Rohit Mahajan, Head - Learning & Engagement Bennett Coleman and Co. Ltd. (Times Group), Webinar, on 6 June, 2020.
- Mr Meetul Patel, Vice President - Human Resources Tata Motors, Webinar, on 11 June, 2020.
- Mr. Prasun Kumar, Sales Director Intuitive, Webinar, on 12 June, 2020.
- Ms. Dipanwita Chakraborty, Executive Director - Strategic Growth Microsoft India, Webinar, on 13 June, 2020.
- Mr. Ashok Ramachandran, Head - Marketing and Revenue Magicbricks.com, Webinar, on 13 June, 2020.
- Mr. Ram Rangarajan, Regional Director Cargill, Webinar, on 13 June, 2020.
- Mr Aditya Kulkarni, President & CEO India & South Asia Schindler Group, Webinar, on 15 June, 2020.
- Mr. Vijay Gole, Vice President Stryker, Webinar, on 19 June, 2020.
- Mr. Saurabh Goel, Director- City Logistics Flipkart, Webinar, on 20 June, 2020.
- Mr. Hitesh Aggarwal, Head HR Birla White, Webinar, on 20 June, 2020.
- Mr. Manmohan Bhutani, President Havells India Ltd., Webinar, on 21 June, 2020.
- Mr. Hari Natarajan, Transformation and Organization Effectiveness Manager IPM India, Webinar, on 24 June, 2020.
- Mr. Rohit Vishal Gupta, Chief Operations Officer ACS Group (American CyberSystems), Webinar, on 3 July, 2020.
- Mr. Nikhil Kamath, Vice President Tiger Analytics, Webinar, on 4 July, 2020.
- Mr. Anurag Chadha, Head of HR Wipro GE Healthcare in South Asia, Webinar, on 7 July, 2020.
- Ms. Hemant Sandu, Co-founder and CIO Zerodha and True Beacon, Webinar, on 12 July, 2020.
- Mr. Ranvijay Lamba, Head B2B, Bakery and Food Service Cargill, Webinar, on 15 July, 2020.
- Mr. Saurabh Jain, Managing Director- India & Middle East Veneklasen Associates, Inc, Webinar, on 17 July, 2020.

- Dr. Anuj Dhariwal, Managing Director and the Country Head Arcesium, Webinar, on 17 July, 2020.
- Mr. Vaibhav Khandelwal, Vice President Paytm, Webinar, on 18 July, 2020.
- Mr. Ram Padmanabha, Director- Global Head of Scouting & Venturing Novozymes, Webinar, on 22 July, 2020.
- Mr. Archak Pattanaik, Co-founder and CTO Shadowfax, Webinar, on 24 July, 2020.
- Mr. Surjo Sen, Vice President - Product Management Publicis Sapient, Webinar, on 25 July, 2020.
- Ms. Smita Negi, Senior Manager - Supply Chain Sustainability Puma, Webinar, on 25 July, 2020.
- Mr. Umesh Madhyan, Executive Director, Risk Management JP Morgan Chase & Co, Webinar, on 25 July, 2020.
- Mr. Beas Dev Ralhan, Global Senior Director Stryker, Webinar, on 25 July, 2020.
- Ms. Varsha Suresh, Associate Vice President Logistics Hindustan Coca-Cola Beverages Pvt Ltd, Webinar, on 26 July, 2020.
- Mr. Ahmed Aftab Naqvi, Chief Executive Officer and Co-Founder Next Education India Pvt. Ltd., Webinar, on 28 July, 2020.
- Mr. Hrishikesh Trivedi, Associate Vice President - Process Assurance & Audit Wipro Limited, Webinar, on 30 July, 2020.
- Mr. Saurabh Jain, CEO & Co-founder Gozoop Online Pvt. Ltd, Webinar, on 1 August, 2020.
- Mr. Nand Kishore Chaudhary, Associate Director Cognizant, Webinar, on 1 August, 2020.
- Mr. Gaurav Gupta, Vice President Finance MobiKwik, Webinar, on 1 August, 2020.
- Mr. Gaurav Joshi, Chairman and Managing Director Jaipur Rugs, Webinar, on 2 August, 2020.
- Dr. Sumit Mitra, National HR Business Partner - Jardiance & Combinations Boehringer Ingelheim, Webinar, on 3 August, 2020.
- Mr. Abhishek Srivastava, Head, Risk Technology Elenjical Solutions, Webinar, on 5 August, 2020.
- Mr Parag Sharma, CEO Tesco, Webinar, on 5 August, 2020.
- Mr. Vikas Kharbanda, Co-founder and CTO MBAtrek Private Limited, Webinar, on 7 August, 2020.
- Mr. Vikas Patel, Founder and CEO O2 Power, Webinar, on 8 August, 2020.
- Mr. Frederick Correa, Partner Arthur D. Little, Webinar, on 9 August, 2020.
- Mr. Amit Kumar, Manager - Strategy & Business Design Deloitte, Webinar, on 10 August, 2020.
- Mr. Mitesh Shah, Senior Associate Vice President Human Resources VANS Skilling & Advisory (Vans Group), Webinar, on 11 August, 2020.
- Mr. Inderjit Camotra, Chief Operating Officer Arcelor Mittal, Webinar, on 13 August, 2020.
- Mr. Manish Upadhyay, Head of finance BookMyShow, Webinar, on 13 August, 2020.
- Ms. Jayati Roy, Executive Director Centrum India, Webinar, on 14 August, 2020.
- Mr. Pankaj Chandra, Co-founder Liquid eLearning Services Pvt. Ltd, Webinar, on 14 August, 2020.
- Mr. Rahul Garg, Director HR Barco, Webinar, on 15 August, 2020.
- Mr. Ankit Tomar, Senior Vice President & Head Special Project - Sales NDTV, Webinar, on 16 August, 2020.
- Mr. Dharmesh Srivastava, Senior Audit Manager, Group Internal Audit - Group Risk & Corporate Credit Risk Standard Chartered Bank, Webinar, on 21 August, 2020.
- Mr. Sarajit Jha, Co-Founder and CTO Bizongo, Webinar, on 22 August, 2020.
- Mr. Rajesh Hurkat, Vice President-Supply Chain Agro Tech Foods Limited (ConAgra Foods), Webinar, on 23 August, 2020.
- Mr. Arssh Kharbanda, Chief - Business Transformation & Digital Solutions Tata Steel, Webinar, on 24 August, 2020.
- Mr. Vishwanadh Raju, Senior Director HR Mattel, Inc, Webinar, on 25 August, 2020.
- Mr. Aditya Pal Singh, HR Leader IBM India, Webinar, on 25 August, 2020.
- Mr Tarun Dara, Global Head of Talent Acquisition AXISCADES, Webinar, on 25 August, 2020.
- Mr. Mohit Sharma, Head Talent Acquisition India Informatica, Webinar, on 25 August, 2020.
- Ms. Priya Mohan, CEO The Explorers Lab, Webinar, on 25 August, 2020.
- Mr. Chinmay Ojha, Head - Talent Acquisition Société Générale Global Solution Centr, Webinar, on 26 August, 2020.
- Ms. Aparna Saroagi, Startup Sense Venture Highway LLP, Webinar, on 26 August, 2020.
- Mr. Arunesh Kuma, Associate Director, Strategy EY - Parthenon, Webinar, on 27 August, 2020.
- Mr. Kaushik Das, Head-NWM Risk Controls RBS, Webinar, on 30 August, 2020.

- Mr. Ankit Jindal, Senior Human Resources Manager GSK Pharmaceutical, Webinar, on 30 August, 2020.
- Mr. Sutanu Chowdhury, Global Learning Partner Siemens India, Webinar, on 30 August, 2020.
- Mr. Bhaskar Sen, Central Goods and Services Tax Inspecto Ministry of Finance, Government of India, Webinar, on 31 August, 2020.
- Mr. Narasimha Murthy, CHRO Spencer's Retail, Webinar, on 2 September, 2020.
- Mr. Abhishek Gupta, HR Leader FIITJEE, Webinar, on 3 September, 2020.
- Mr. Sameer Saxena, Supply Chain Leader Metro Cash & Carry, Webinar, on 3 September, 2020.
- Mr. Sarthak Prakash, Chief Marketing Officer Edelweiss Tokio Life Insurance, Webinar, on 4 September, 2020.
- Mr. Anubhav Saxena, India Real Estate Services Marsh & McLennan Companies, Webinar, on 6 September, 2020.
- Ms. Aparna Pathak, Senior Sourcing Manage GE Power, Webinar, on 6 September, 2020.
- Mr. Lokesh Bahet, R&D President Pidilite, Webinar, on 6 September, 2020.
- Ms. Ruchee Anand, Diversity and Inclusion Leader Novartis, Webinar, on 7 September, 2020.
- Mr. Vijay Balakrishnan, Regional Account Manager - India & SAARC Cisco Meraki, Webinar, on 9 September, 2020.
- Mr. Madhav Das, Director, Talent and Learning Solutions, India LinkedIn, Webinar, on 10 September, 2020.
- Mr. Vishwanadh Raju, Group Chief Data Officer Michelin, Webinar, on 11 September, 2020.
- Mr. Aditya Pal Singh, Zeta Global Senior Director, Webinar, on 11 September, 2020.
- Mr. Siddharth Siba, Global Head of Talent Acquisition AXISCADES, Webinar, on 12 September, 2020.
- Mr. Aditya Adyar, Head Talent Acquisition India Informatica, Conclane Named HORIZON'20, on 13 September, 2020.
- Mr. Arnab Goswami, Senior Director PwC Qatar, Conclane Named HORIZON'20, on 13 September, 2020.
- Mr. Praveen Kamath Kumbala, Head HR Piramal Realty, Conclane Named HORIZON'20, on 13 September, 2020.
- Mr. Karan Barua, GM HR Lear Corp, Conclane Named HORIZON'20, on 13 September, 2020.
- Mr. Farhat Umar, General Manager & HR Head - Global Delivery & Enablement Wipro Limited, Conclane Named HORIZON'20, on 13 September, 2020.
- Ms. Komal Singh, Strategic HRBP Aditya Birla Fashion & Retail, Conclane Named HORIZON'20, on 13 September, 2020.
- Mr. Sameer Tamhane, Sr Vice President-Group HR Head MANKIND PHARMA LTD, Conclane Named HORIZON'20, on 13 September, 2020.
- Mr. Vinay Trivedi, Senior HR Business Partner - APAC & India InMobi, Conclane Named HORIZON'20, on 13 September, 2020.
- Mr. Frederick Correa, Sr. VP Human Resources IPCA, Conclane Named HORIZON'20, on 13 September, 2020.
- Mr, Amit Jain, Head HR Tone Tag, Conclane Named HORIZON'20, on 13 September, 2020.
- Ms. Rajita Singh, Senior AVP - HR Darashaw, Conclane Named HORIZON'20, on 13 September, 2020.
- Ms. Sonali Majumdar, AVP - HR and Training PeopleStrong, Conclane Named HORIZON'20, on 13 September, 2020.
- Mr. Jagdish Mitra, Head HR Broadridge, Conclane Named HORIZON'20, on 13 September, 2020.
- Mr. Guhan Ramanan, Head - Human Resources Safari Industries India Ltd, Conclane Named HORIZON'20, on 13 September, 2020.
- Ms. Raksha Agrawal, Chief Strategy Officer and Head of Growth Tech Mahindra, Conclane Named HORIZON'20, on 13 September, 2020.
- Mr. Sandeep Batra, President, Business Transformation Neeyamo, Conclane Named HORIZON'20, on 13 September, 2020.
- Ms. Radha Shriharsha, Head Talent Acquisition SAP, Conclane Named HORIZON'20, on 13 September, 2020.
- Mr. Tejas Gokhale, Group President and CHRO Landmark Group, Conclane Named HORIZON'20, on 13 September, 2020.
- Mr. Mukesh Kumar, Director HR Mearsk, Webinar, on 13 September, 2020.
- Mr. Nitin Jain, Vice President, HR Vodafone, Webinar, on 14 September, 2020.
- Mr. Sameer Mathur, President, National Head – Roads & Highways Yes Bank, Webinar, on 16 September, 2020.
- Mr. Ashwin Mittal, Co-founder OfBusiness and CEO at O'AgriFarm, Webinar, on 17 September, 2020.
- Mr. Sanjay Awasthi, Senior Principal Accenture Strategy & Consulting, Webinar, on 20 September, 2020.
- Mr. Pankaj Jasal, CEO Course5i, Webinar, on 21 September, 2020.
- Mr. Saurabh Uboweja, Vice President – Supply Chain Valvoline In, Webinar, on 23 September, 2020.

- Dr. Amit Tripathi, IT Director Dell International Services, Webinar, on 23 September, 2020.
- Mr. Abhishek Gautam, Founder & Managing Partner BOD, Webinar, on 26 September, 2020.
- Ms. Parul Singhh, Divisional Head, IndoLife Super Specialities Indofil Industries Limited, Webinar, on 26 September, 2020.
- Mr. Nitin Bhatia, Procurement Manager Nestle, Webinar, on 26 September, 2020.
- Mr. Abhishek, Head - Marketing & Communication Praxis Global Alliance, Webinar, on 28 September, 2020.
- Rohit Saroj, Deputy General Manager- CSR and Affirmative Action TATA Motors, Conclave Named Saksham, on 11 August, 2020.
- Anuj Agarwal, Chief Operating Officer ICICI Foundation, Conclave Named Saksham, on 11 August, 2020.
- Kumar Anurag Pratap, Digital Inclusion & Sustainability Leader Capgemini, Conclave Named Saksham, on 11 August, 2020.
- Sarvashish Roy, Head of CSR Bandhan Bank, Conclave Named Saksham, on 11 August, 2020.
- Rachana Iyer, Head of CSR IDFC First Bank, Conclave Named Saksham, on 11 August, 2020.
- Kanika Pal, Lead – Sustainable Community Development (Prabhat), South Asia Hindustan Unilever Limited, Conclave Named Saksham, on 11 August, 2020.
- Kuldeep Tripathi, Head – Sustainable Development and CSR Partnership PruVisor Management Consulting Pvt. Ltd., Conclave Named Saksham, on 11 August, 2020.
- Asmita Satyarthi, Director/Advisor to CEO Wockhardt Foundation, Conclave Named Saksham, on 11 August, 2020.
- Harsh Pandey, Assistant Manager-CSR Bharat Petroleum Corporation Limited, Conclave Named Saksham, on 11 August, 2020.
- Ankur Chaturvedi, Head of International Supply Chain and Projects Emami Ltd., Conclave Named Opera, on 9 January, 2021.
- Gaurav Bhatia, Associate Director, Supply Chain Cipla, Conclave Named Opera, on 9 January, 2021.
- Karan Singla, Operations Head Rebel Foods, Conclave Named Opera, on 9 January, 2021.
- Manoj Kothari, VP & Head of Supply Chain - Godrej Africa, USA & Middle East Godrej Consumer Products Ltd., Conclave Named Opera, on 9 January, 2021.
- Mayank Gupta, COO Zopper, Conclave Named Opera, on 9 January, 2021.
- Vickram Srivastava, Head of Planning - Supply Chain Management Ipca Laboratories Ltd., Conclave Named Opera, on 9 January, 2021.
- Arindam Sen, Director HCL Technologies, Conclave Named Opera, on 9 January, 2021.
- Ashish Mathur, SVP ValueFirst Digital Media, Conclave Named Opera, on 9 January, 2021.
- Bitan Datta, MD & Partner BCG, Conclave Named Opera, on 9 January, 2021.
- Movin Jain, Product Manager - Leading Payments Product PhonePe, Conclave Named Opera, on 9 January, 2021.
- Nitin Sethi, VP, Digital IndiGo, Conclave Named Opera, on 9 January, 2021.
- Rahul Rajpal, Director Global Partner Operations, Google Ads Google, Conclave Named Opera, on 9 January, 2021.
- Rajesh V Thachil, Director Strategy & Business Operations Paypal, Conclave Named Opera, on 9 January, 2021.
- Venkatesh Narayanan, Head of Group Digital Operations FLSmidth, Conclave Named Opera, on 9 January, 2021.
- Rajiv Sikka, CEO IndianOil Adani Gas Limited, Conclave Named BII - Welcome and Inaugural Session, on 20 March, 2021.
- Kartikeya Sarabhai, Director Centre for Environment Education, Conclave Named BII - Keynote Session 1, on 20 March, 2021.
- Aruna Roy, National President National Federation of Indian Women, Conclave Named BII - Keynote Session 2, on 20 March, 2021.
- Alok Bansal, Co-founder & Director PolicyBazaar, Conclave Named BII - Ideas Forum, on 20 March, 2021.
- Ira Singhal, Joint Director Dept. of Social Welfare, Conclave Named BII - Ideas Forum, on 20 March, 2021.
- Kishore Jayaraman, President Rolls Royce, India & South Asia, Conclave Named BII - Ideas Forum, on 20 March, 2021.
- Ankit Mehrotra, Co-Founder & CEO Dineout, Conclave Named BII - Udyamita : The Entrepreneurship Conclave, on 20 March, 2021.
- Arjun Satya, Co-Founder, Head of Product, M360 Times Internet, Conclave Named BII - Udyamita : The Entrepreneurship Conclave, on 20 March, 2021.
- Shreya Shrivastava, Co-Founder PsychX, Conclave Named BII - Udyamita : The Entrepreneurship Conclave, on 20 March, 2021.
- Saumya, Co-Founder Kheyti, Conclave Named BII - Udyamita : The Entrepreneurship Conclave, on 20 March, 2021.

- Delzaad Deolaliwala , Co-Founder & Director Bombay Hemp Company, Conclave Named BII - Udyamita : The Entrepreneurship Conclave, on 20 March, 2021.
- Rajan Singh, Founder Concept Owl, Conclave Named BII - Udyamita: The Entrepreneurship Conclave, on 20 March, 2021.
- Prasun Kumar, CMO Magic Bricks, Conclave Named BII - Samajika: The Media Marketing Conclave, on 21 March, 2021.
- Vikasdeep Katyal, Director Marketing Unilever, Conclave Named BII - Samajika: The Media Marketing Conclave, on 21 March, 2021.
- Suryadeep Verma, CMO Comviva Technologies, Conclave Named BII - Samajika: The Media Marketing Conclave, on 21 March, 2021.
- Suraj Das, Head Marketing - VanHeusen Aditya Birla Fashion and Retail Ltd., Conclave Named BII - Samajika: The Media Marketing Conclave, on 21 March, 2021.
- S. D. Shibulal, Co-founder Infosys and Axilor Ventures, Conclave Named BII - Keynote Session 2, on 21 March, 2021.
- Lalit Singh, Managing Director McGraw Hill India, Conclave Named BII - Keynote Session 2, on 21 March, 2021.
- Achala P. Jethmalani, AVP Mirae Asset Capital Markets Pvt. Ltd., Conclave Named BII - Samvaad: The Economics Conclave, on 21 March, 2021.
- Nalini Gulati, Economist International Growth Center, Conclave Named BII - Samvaad: The Economics Conclave, on 21 March, 2021.
- Rahul Bajoria, Chief Economist - India & Antipodeans Barclays Investment Bank, Conclave Named BII - Samvaad: The Economics Conclave, on 21 March, 2021.
- Rajani Sinha, Chief Economist & National Director Knight Frank, Conclave Named BII - Samvaad: The Economics Conclave, on 21 March, 2021.
- Sameer Narang, Chief Economist and Head Strategic Planning Bank of Baroda, Conclave Named BII - Samvaad: The Economics Conclave, on 21 March, 2021.
- Sachchidanand Shukla, Chief Economist Mahindra & Mahindra, Conclave Named BII - Samvaad: The Economics Conclave, on 21 March, 2021.
- Ankita Pathak, Economist Edelweiss Financial Services, Conclave Named BII - Samvaad: The Economics Conclave, on 21 March, 2021.
- Rajni Thakur, Chief Economist RBL Bank, Conclave Named BII - Samvaad: The Economics Conclave, on 21 March, 2021.
- Manish Maheshwari, Managing Director Twitter India, Conclave Named BII - Individual Talk, on 21 March, 2021.

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

- Prof. Israel Koren, Department of CS, University of Massachusetts, Amherst, Three seminar presentations and research discussions.

## NEW COURSES DEVELOPED

Following are the new courses that were introduced into the IIT Delhi curriculum this year. A department-wise distribution is provided below:

### Applied Mechanics

- APL745 Deep Learning for Mechanics
- APL737 Advanced Design of Machine Elements
- APL707 Integral Equations

### Chemical Engineering

- CLL729 Colloids and Aerosols

### Civil Engineering

- CVL868 Waves Through Periodic Structures and Metamaterials
- CVL869 Probabilistic Structural Dynamics

### Electrical Engineering

- ELL809 Multi-Channel Signal Processing

### Materials Science and Engineering

- MLL760 Materials Simulation Methods using High Performance Computing
- MLL702 Thermodynamics of Materials
- MLL711 Mechanical Behavior of Materials
- MLL736 Tribology and Surface Engineering of Materials
- MLL748 Solid-state diffusion and kinetics

### Textile and Fibre Engineering

- TXL786 Technology of Textile Coating and Lamination

### Biomedical Engineering

- BML880 Healthcare Wearable's: Design and Applications
- BML714 Advanced Neuromechanics
- BML774 Soft Tissue Mechanics: Modeling and Characterization
- BML713 Pharmaceuticals, Efficacy and Delivery

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

- SIV810 Special Module in Cyber Security

- SIV812 Special Module in Computer Forensics
- SIV814 Special Module in Application Security
- SIL618 Computer Architecture
- SIL771 Special Topics in Cyber Security
- SIL773 Digital Watermarking and Steganography
- SIL775 Biometric Security
- SIL777 Secure Programming Methodologies
- SIL779 Data Privacy
- SIL781 Secure Hardware-Based Systems Design

### Public Policy

- CLL788 Process Data Analytics
- SPL704 Introduction to Public Policy and Science, Technology, and Innovation
- SPL705 Public Institutions in India: Theory and Practice
- SPL706 Science, Technology, Innovation and Sustainable Development
- SPL709 Principles of Economics for Public Policy
- SPL703 Research Methods for Public Policy
- SPL708 Statistics for Public Policy
- SPL707 Tools for Policy Analysis
- SPL711 Modelling Complex Adaptive Systems for Policy Analysis
- SPL712 Comparative Industrial Policy
- SPL720 Energy and Infrastructure Finance: A Public Policy Lens
- SPL722 Managing the Energy Transition
- SPL721 Perspective on Climate Change: Implications for Policy
- SPL740 Causal Inference and Impact Assessment
- SPL741 Analysis of Socio-Economic Data for India
- SPL730 Science, Technology & Innovation Policy and Agriculture



## QIP/CEP/GIAN PROGRAMMES ORGANISED

### Applied Mechanics

- '*Mechanics of Composite Materials*', organised by Prof. Gaurav Singh, from 14 to 18 October, 2020, Sponsored by TEQIP-III.
- '*Introduction to Nonlinear Finite Element Method*', organised by Prof. S. Pradyumna, from 1 to 5 December, 2020, Sponsored by TEQIP-III.

### Chemistry

- '*Chemistry of Nanostructured Materials: Synthesis, Characterization and Applications (QIP)*', organised by Prof. Pravin P. Ingole, Prof. Ashok K. Ganguli, Prof. Sameer Sapra, Prof. Soumik Siddhanta, from 9 to 11 November, 2020.

### Management Studies

- '*Customised Programme for Middle Level Manager on Indian Oils Leadership Competency Framework*', organised by Prof. Kanika T. Bhal, Prof. Sanjay Dhir, from 19 to 24 October, 2020, Sponsored by IOCL.

- '*Executive Programme in Data Decision Science Consulting*', organised by Prof. Arpan, Prof. S.P. Singh, from 6 February to 9 May, 2021, Open Participants.
- '*Operations Research in Business and Engineering Concepts Applications and Methods*', organised by Prof. Prassanna R., Prof. S.P. Singh, from 14 to 18 December, 2020, Sponsored by TEQIP Participants.

### Mathematics

- '*Linear Algebra and Applications*', organised by Prof. Surjeet Kaur, on 16 December, 2020.
- '*Operation Research and Its Applications*', organised by Prof. Vikas Vikram Singh, from 7 to 11 December, 2020.

### Rural Development and Technology

- '*Fundamentals of anaerobic digestion and compressed biogas technology*', organised by Dr. Ram Chandra, Prof. V.K. Vijay, Prof. P.M.V. Subbarao, from 26 to 28 November, 2020, Sponsored by TEQIP/CEP.



## NEW EQUIPMENT INSTALLED

### Applied Mechanics

- 'Workstation', Installed at office of Prof. Souvik Chakraborty (Block IV, 342- C).
- 'PIV Camera Schleimpflug Mount', Installed at Gas Dynamic Lab.
- 'Computer Workstation Model: Tyrono Camereo SS400TIA-54', Installed at CFD & Computational Lab.

### Chemical Engineering

- 'BET Surface Analyzer under FIST Project', installed at Central Instruments facility in the dept. Lab.
- 'Fixed Bed Reactor and Analytical Equipment for Mercury Removal', installed at Energy and Environment Lab.
- 'High Pressure Fixed Bed Reactor', installed at Energy and Environment Lab.
- 'Battery Cyclers', installed at Sustainable Environergy Research Lab (SERL).

### Civil Engineering

- 'Concrete Rheometer', installed at Materials Research Laboratory.
- '20 Channels Data Acquisition System', installed at Structures Lab.
- 'Fluorescence Spectrophotometer', installed at Environmental Lab.
- 'High temperature Differential Scanning Calorimeter', installed at M3L.

### Computer Science and Engineering

- 'GPU Server X2', installed at Vision and Graphics Lab.

### Electrical Engineering

- 'Tyrono Computer Server Redefining Paradigm DDR4 SDRAM with E CC Intel Xeon', installed at Department Lab.
- 'Power SIM Software Professional Network License Perpetual for 1 user Designing Software version 2.0', installed at Department Lab.
- 'Reactive Ion System for Integration with Glove Box', installed at Department Lab.
- 'Opal-RT Real Time Simulator for Cyber Security Test Bed with Hypersim Softward', installed at Department Lab.
- 'Chrome Make Regenerative Grid Simulator', installed at Department Lab.
- 'UHV Vaccum System for Pulsed Laser Deposition with Provision of Baking the Chamber', installed at Department Lab.
- 'BI Directional Grid Simulator', installed at Department Lab.
- 'Probe Station Model BD-6 Compatible for DC and RF Measurement', installed at Department Lab.
- 'Hioki make Power Analyzer with Motor Analysis', installed at Department Lab.
- 'Excimer Laser for Pulsed Laser Deposition', installed at Department Lab.
- 'Nanonex NX-B200 Thermal and UV Nanoimprint System', installed at Department Lab.

- 'RF Load Pull Equipment make Maury Microwave Corp USA', installed at Department Lab.
- 'NH Research USA make AC/DC 3PH Grid Simulator with Hioki (Japan) make 3PH PQA as Auxiliary Equipment', installed at Department Lab.
- 'Gases for operation, all gases (Premix Configuration in 49 Lit Cylinders 2 Nos) required for operation with Gas Regulators', installed at Department Lab.
- 'Impedance Analyzer Model 6510B', installed at Department Lab.
- 'Mulit Tank System includes 3 Tanks, Mechanical Support, Leave sensors', installed at Department Lab.
- 'PW 6001 Power Analyzer DC to 2 MHz', installed at Department Lab.
- 'SCADA System', installed at Department Lab.
- 'Programmable Optical Filter C Band, FC/APC Connector', installed at Department Lab.
- 'CMS 356 Voltage and Current Amplifier', installed at Department Lab.

### Materials Science and Engineering

- 'Olympus Optical Microscopes (Teaching and Research Models) TX-200L & LHC-201', installed at PG and UG Teaching Labs.
- 'Linear Drive for Tribological Testing', installed at Department Lab.
- 'Spray Dryer for Nanoparticle Synthesis', installed at Department Lab.
- 'Turbo Molecular Pump', installed at Department Lab.
- 'GPC', installed at Polymer Characterization Lab II.
- 'GC-MS', installed at Polymer Characterization Lab II.

### Mechanical Engineering

- 'Potential Aerosol Mass Reactor', installed at Department Lab.

### Textile and Fibre Engineering

- 'Dry Box', installed at SMITA Lab.
- 'GCMS', installed at SMITA Lab.
- 'Microwave Reactor', installed at SMITA Lab.

### Biomedical Engineering

- 'BIOPAC MP160 Wireless EMG Acquisition', installed at Medical Imaging Lab.
- 'Fatigue Testing Machine', installed at Device Testing Lab.
- 'Microwave Sintering Machine', installed at Device Testing Lab.

### Energy Studies

- 'dSPACE Microlab Box', installed at Renewable Energy Based Microgrid Laboratory.
- 'Opel RT', installed at Electric Power and Renewable Energy Systems Lab.

### Rural Development and Technology

- 'HPLC', installed at Environmental Biotechnology Lab.

# Central Facilities

## CENTRAL LIBRARY

The IIT Delhi Library System comprises of a Central Library and about 32 Unit Libraries of departments, centres, schools, etc., that collectively support the teaching, research, and extension programmes of the Institute. The library currently has over 9000 registered members, however, anyone in IITD can avail of the library facilities.

The library has ICT based facilities and services. It has a state-of-the-art Computer Lab for regular users of the library, participants in Training, Workshops and Examinations.

The Central Library has a substantial collection pertaining to physical sciences, engineering, technology, biotechnology, computer science, information technology, social sciences, management, etc.

As per the record, the tentative collection of the library as on 31st March 2021 is as follows:

Books	1,88,145
Journals (Bound Volume)	1,05,765
Theses	6,479
Online Electronic Journals/Conference Proceedings/Patents/Standards/Manuals, etc. (Directly subscribed + available through eSS Consortia)	60,000 (Approx.)
Databases	20

The Book Bank holds multiple copies of selected textbooks for making these available to the students for the entire period of a semester, free of cost. Students can draw upto six books over and above for the whole semester.

The Institute has access to over 60,000 full-text electronic journals/proceedings/standards and over 20 databases/bibliographic databases from several publishers and aggregators through the Direct subscription/access through the eShodh Sindhu consortium.

The Central Library has access to eBooks from several publishers/aggregators, e.g., Bloomsbury, Cambridge University Press, De Gruyter, Elsevier eBooks and Major Reference Works, E-Text Books (Miscellaneous), Lectures Notes in Computer Science, Mathematics and, McGraw Hill Education, Pearson, Springer, Taylor and Francis eBooks and Major Reference Works, Wiley, World Scientific, SAGE Bhasha (Hindi), etc. Apart from the above eBooks, two eBook collections, "World eBook Library" and "South Asian Archives," are also available through the National Digital Library of India (NDL). Other library facilities and services include IIT Delhi Faculty Profiling System (IRINS), Library App for Single Window Search, Discovery Service/Single Window Search, eNewClipping Service, Ask the

Librarian, Reader's Assistance, Circulation of Books and Library Membership, Inter-Library Loan (ILL) and Resource Sharing Facility, Photocopying, Scanning, Digital Printing, and Binding Facility, Text Books Facility (Print and Online), Theses Consultation Facility, Institutional Repository, Remote Login, User-Centric Workshops/Trainings/Talks/Outreach programmes, etc.

Central Library, in collaboration with INFLIBNET and IIT Delhi CSC, is providing a Remote Login facility to all its authorized users from anywhere in the world using VPN and Shibboleth based access. Individual Password-based access is also being provided wherever agreed by the Publishers to access the E-Resources.

As an extraordinary achievement, the Central Library has been declared as the National Resource Centre for Library and Information Science of India by the Ministry of Education, Govt. of India for offering the Annual Refresher Programme In Teaching (ARPIT) from the year 2019-20 with Dr. Nabi Hasan, Librarian & Head as the Coordinator/PI. The programme achieved overwhelming success, and currently has 3187 learners globally.

For further information about the Central Library and its Services, you may visit: <https://library.iitd.ac.in> or download the Handbook <https://library.iitd.ac.in/pdf/LibraryHandbook.pdf> or explore the short Orientation Video: <https://www.youtube.com/watch?v=XqTnzmJvPOI&t=1s>.

## HINDI CELL

The Hindi Cell in IIT Delhi organises various activities for progressive use of Hindi in the Institute. This includes the promotion of official work in the language, the monitoring of internal progress of the Institute regarding use of Hindi, submission of quarterly progress reports, and preparing inspections by the Ministry of Education, Rajbhasha Vibhag, Ministry of Home Affairs and Parliamentary Committee on Official Languages.

### Activities of Hindi Cell during the period of 2020-21:

- Online Workshop on "Rajbhasha ke Pragami Prayog Hetu Karyashala" was held on 14 September, 2021 for New Staff members (Group 'B' & 'C') and Hindi Nodal officer of the Institute.
- Hindi Pakhwara was organized during the 14-30 Sep., 2020. A Number of activities were organized during the Hindi Pakhwara.
- Online Workshop on "Kanthast tatha Hindi e-Tools per takniki Karyashala" was held on 30 March, 2021 for New Staff members (Group 'B' & 'C') and Hindi Nodal officer of the Institute.

## CENTRAL RESEARCH FACILITY

A Central Research Facility is of utmost importance in any academic institution where state-of-art analytical and high-end instruments are managed by qualified personnel to provide scientific and technical services to faculty, research students and project students. Such a facility represents a key commitment for preserving and raising the efficiency of research to the international standards. In this connection, apart from upgrading and procuring new facilities at the main campus in Hauz Khas, an independent building at the Sonipat Campus has been built to house the most modern equipment to service UG/PG students and researchers (from academia and industries). A number of facilities are already available to external academic and research institutions, industries, and organizations of the country.

### List of new equipment purchased in CRF in the last one year

With the support of HEFA and SATHI funding, many new facilities have been approved/procured for CRF in the last one year. These facilities are as follows:

- Circular Dichroism Spectrometer combined with Stopped Flow and other accessories
- Nano Tracking Analyzer
- Helium cooled Cryo Probe
- 300 KV Cryo Electron Microscope
- 400 MHZ NMR with liquid and solid probe
- Multichannel DAC & Lockin Amplifier
- Test Bench for EV motor simulator
- E motor Dyno
- Load Pull 7 RF measurement system
- UV-Vis-MIR absorption and PL spectrometer
- Light sheet Fluorescence Microscopy (LSFM)
- Multiplexed Confocal with Live cell Imaging
- High throughput screening Microscopy

- STED Microscope

The installations of most of the facilities, which were procured in the previous year, have either been completed or underway in IIT Delhi Hauz Khas and Sonipat campuses.

The following instruments have been recently installed and are either available or will be available to the users very soon:

- X-ray Diffraction (XRD) with sample stage for Low Temperature (temperature range is from 12 to 315K)
- Small-angle X-ray scattering (SAXS) system with tensile stage heating/cooling module
- Thermal series comprising of Modulated Differential scanning Calorimeter; Modulated Thermogravimetric Analyzer with DTA and DSC; Dynamic Mechanical Analyzer (DMA) and Thermomechanical Analyzer (TMA)
- Fourier-transform infrared spectroscopy (FTIR) Advanced Spectrometer (MID, FAR, NIR, ATR)
- Cryogen free Physical Property Measurement System (PPMS) with 14 Tesla superconducting magnet
- Femto Second Laser Cutting System having laser source for cutting and ablation of polymers and thin metals; wavelength of laser source  $1035\pm 5$  nm; pulse energy of maximum 80  $\mu$ J and pulse width of <400fs.
- Ion Milling System along with Ultrasonic Disc Cutter with Stereo Optical Microscope; Disc Grinder; Dimple Grinder-II with Auto-terminator & with Stereo Microscope; TEM Cross Section Kit; Disc Punch and Minitom Low Speed Diamond Saw
- High performance Multipoint BET Surface Area Analyzer with Chemisorption Facility
- Single-Shot Full Resolution Motorized Digital Holographic Microscope (DHM) system
- Cryogenic Prober

### CRF Facility at Sonapat



- DC and Noise measurement system
- Universal Testing Machine (Static & Dynamic UTM)
- Rheometer system having separate motor & transducer technology with Peltier plate system (Environmental Control Box)

Installation of the following instruments is underway:

- X-ray Photoelectron Spectroscopy (XPS)
- Electron Paramagnetic Resonance Spectrometer with X, Q-band, and CW-ENDOR and Dual Mode Resonator
- TOF-SIMS

## EDUCATIONAL TECHNOLOGY SERVICES CENTRE

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

The Centre has a modern video studio and recording and editing facilities. Multiple studio-classrooms are available for on-line recording of courses. Non-linear editing set up and streaming servers are available for post-production and video streaming respectively. ETSC uses the Sony ANYCAST system and the New Tek Tricaster system in the Video Studio and in two lecture theatres for non-linear editing and recording. Video conferencing facilities have been installed in two lecture theatres and in the Conference Room of ETSC. The facility is being used for faculty interviews, meetings and distance education.

Some of the new initiatives of the ETSC include projects

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

In addition, courses for Annual Refresher Programme in Teaching (ARPIT) have been recorded, edited and uploaded on SWAYAM. These courses will be treated as Faculty refresher course for career advancement scheme (CAS) for promotion. During the lockdown period due to COVID-19 pandemic, ETSC has played a major role in reaching out to students by managing on line classes, conducting VCs and meetings.

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

## IIT HOSPITAL

The Institute has a 14 bedded hospital centrally located in the campus, which provides facilities for OPD treatment and IPD care. The Hospital is managed by a team of full time 10 Allopathic Doctors and 04 Allopathic Contract Doctors from Apollo Life. The Hospital has AYUSH facility with one full time Homeopathic doctor and one visiting Ayurvedic doctor from All India Institute of Ayurveda, New Delhi (AIIA). For Dental procedures, a qualified dentist is available. The Hospital provides specialist consultation on appointment basis for ENT, Ophthalmology, Psychiatry, Orthopedics and super specialist consultation in Endocrinology, Cardiology and Neurology. Specialist Services are provided by esteemed senior faculty members of All India Institute of Medical Sciences (AIIMS).

The Hospital offers following facilities:

- OPD Facility (Allopathy)
- AYUSH: Homeopathic and Ayurvedic
- Dental Facility
- Ward/Indoor Facility

- Minor OT
- Physiotherapy
- Laboratory Services
- Pharmacy
- ECG Services
- Ambulance Services
- Specialist OPD Services

Hospital Statistics 2020-21	
Patients Attended in OPD	73,512
X-Ray till 26th July, 2020	105
Patients Admitted	34
Physiotherapy	2,225
Surgical Dressing	1,106
Dental Treatment	2,793
Pathology Lab Test	20,869
ECG	754

## COMPUTER SERVICES CENTRE

The main objectives of the Computer Centre are to:

- Provide round the clock computing and networking facilities to serve a user population of 12000+ users consisting of UG students, PG students, Research Scholars, Faculty & Staff of the Institute and also to visiting faculty and students.
- Implement and maintain system & application software.
- Implement and manage the Institute Network.
- Computational lab facility to students for the conduct of UG/PG lab courses & exam.
- Impart Introductory and advanced instructions to users.
- Work on cutting edge technology & provide Services to users based on new technology.
- Provide support both in development & administration of ERP related module implementation.
- Provide training to Institute employees.

### Computing Facilities

The Centre is equipped with 144 HP/CISCO UCS blade servers out of which 112 Blade Servers are used for Cloud computing with 200 TB of virtualized storage and 32 blade servers with 130 TB of storage for user homes and infrastructure use like email, proxy, web services etc. CSC also has around 425 Desktop computers under Windows & Linux environment connected over a switched fast Ethernet. Uninterrupted Power Supply is provided through 2x80 KVA MGE UPS system and DG set. The High-Performance Computing (HPC) facility in the Data Centre consists of 405 CPU nodes and 201 GPU nodes with 678 TB of Home space and 3430 TB of Scratch space.

### Network Services

The Institute LAN is a state-of-the-art switched network with dual redundant connectivity with a 10 Gbps backbone. The core and distribution network are deployed using single-mode fiber. The passive design consists of three rings of 12 tubes of 12 core fibers, one each for the east campus, the central academic campus, and the west campus. Each ring passes through both the primary data center site (DC) and the secondary disaster recovery site (DR). The infrastructure for internet access, firewall, and core switches are deployed in a redundant active-active cluster configuration. IIT Delhi is connected to the National Knowledge Network (NKN) with 10 Gbps dual connectivity from Power Grid and RailTel. The connectivity includes virtual routing service, Internet Connectivity, and connectivity with other Institutes connected on the NKN backbone.

The access network, consisting of approximately 475 plus edge switches for end-user connectivity through UTP cabling in the departments, hostels, and blocks. Network access is provided to every student, faculty, staff, and guest.

The facility has been extended to each lab, classroom, seminar hall, office, room in guesthouses.

Internet and Intranet access is available in faculty/officer homes via GPON over fiber (750+ houses) and ADSL connectivity over internal telephone lines. The centralized Wi-Fi access through 1400+ wireless access points is available in the whole academic, hostel area, guesthouses, RCA, and Hospital, etc. The IITD wired and wireless network is also extended to IITD's Sonipat campus through a point-to-point link.

Many network services, including mail, web, VPN, NTP, HPC, domain name, anti-virus, is being provided over this network.

### Facilities/Services

- All Services are authenticated and authorized using a central Kerberos system.
- The email facility is provided to all students, staff and faculty with webmail interface "Round cube".
- Baadal is a Cloud computing environment that provides virtualized computing resources for academic and scientific environments. Some of the main features of Baadal are: Dynamic Resource scheduling and power management; Facilities for suspend, resume, shutdown, power off, power on, specifying resource requirement of VM; and Dynamic resource utilization monitoring.
- The Data Center (DC) consists of Cisco UCS B200 : Five chassis with 40 blade servers – 16 blades each with 2x12 Cores Intel(R) Xeon(R) CPU E5-2695 v2 @ 2.40GHz with 128 GB RAM, 8 blades each with 2x14 cores CPU E5 with 256 GB RAM and 16 blades each with 2x18 cores CPU Intel Xeon Gold 6140 with 256 GB RAM.
- The Disaster Recovery Data Centre (DRDC) is situated in the SIT building. The DRDC has also been built by IBM and can support a total IT load of 60 KW. The DRDC has the same hardware configuration as Data Centre (DC).
- The CSC provides Infrastructure Services through Virtualization technology.
- The CSC has Microsoft Volume Licensing EES agreement for the Campus under which Microsoft software such as Windows Server, Windows OS, MS Office, Office365 are available for use.
- The Centre also has the following third-party software packages: MATLAB, Mathematica, Ansys, COMSOL, LabView, Material Studio, Intel Parallel Studio, PGI Compilers, Origin lab Pro. available on the CSC webpage.
- The Centre also maintains local repositories of several popular open-source software.
- The CSC has configured moodle a public domain course management software, for use by faculty and students for the courses running during the semester.

- IIT Delhi is also a part of Eduroam, a global WIFI roaming programme across academic campuses through ERNET India.
- Own Cloud/Next Cloud, a file and document sharing utility similar to the popular drop box is also provided for user community. The utility supports storing and sharing of files, images, music and documents, contacts, calendars, tasks etc.
- To facilitate downloads of data files through non-standard ports, download Server: download.iitd.ac.in can be used. and to facilitate download of huge data for Research, proxy server xen03.iitd.ac.in (Research proxy) can be used. The faculty has been authorized to provide download permissions to their students from the webpage.
- Virtual web hosting facility can be used for securely hosting all websites of the form http://xyz.iitd.ernet.in which are not maintained by CSC. In addition, CSC maintains large number of websites including IITD main websites and some departmental websites.
- User web pages is available for the use of faculty and Ph.D. students for hoisting their webpages on the server web.iitd.ac.in.
- To provide Internet access to the visitors, the faculty and officers have been authorized to create user account for their visiting faculty/ students.
- To facilitate limited access within IITD, CSC has a separate web server privatweb.iitd.ernet.in where users can have their personal web pages.
- VPN facility is provided to the users for accessing IITD internal network from outside IIT Delhi. The faculty have been authorized to create cert-keys for their own use and their advisees from the VPN webpage on the CSC website.
- Network Time Protocol (NTP) servers are synchronized with standard internet time servers with time drift less than a few milliseconds and can be used by all users.
- MRTG and RRD Health Graphs have been provided to see the Status Reports of the various System activities/ Services.
- SLA ticketing systems- SLA for Networking & SLA for Software have been provided for resolving User problems pertaining to Network and Software issues.
- The webteam has updated the templates of multiple academic units, and is maintaining them. Notable

websites are School of Public Policy, Department of Electrical Engineering, and Department of Materials Science. Institute Newsletters have also been designed.

- Support for on-line classes using Impartus and MS Teams software.
- LMS (Moodle) and Gradescope setup for exam and other communication to students.
- Special Graduation 2019-2020 made with new set of rules during the pandemic time.
- Support for Virtual Annual Convocation 2020.
- App for Student's notification for Office for Career Services.

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

- Medical Reimbursement
- Online File Movement
- Student No Dues
- Hostel Onboarding Post Lockdown
- Student Graduation
- Student Gradesheet/Consolidated/Provision Report
- DGPA Calculation
- Student Security Deposit Refund
- Form 16 Download
- Student Form A Verification Online
- Student Hostel Allocation
- Faculty Publication
- Student General Request
- Hospital System
- HAG Application
- Extension of Chair Application
- Covid19 Donation
- Covid 19 Patient Details
- Student E-Certification Portal
- Bulk Email
- Covid19 Contact Tracing
- PDA Payment
- Vendor Payment (old SO and PFC cases)
- Estate Billing

# Research and Development

## ACADEMIC AND SPONSORED RESEARCH

### Academic Research

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

The principal source of academic research, however, continues to be through Ph.D. research projects. With a total of 3445 students enrolled for a research degree during the year under review, the emphasis on and commitment to academic research is evident. During the two semesters of 2020-21, 804 candidates were admitted out of which 437 were full-time Institute scholars with the remaining 367 belonging to other categories like sponsored, part-time etc. A total of 298 theses were approved for the award of Ph.D. degree.

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

Year	No. of Publications	No. of Citations	h-index
2021	2,555*	2,432	13
2020	1,120	355	6
2019	2,736	4,482	17
2018	2,683	12,449	31
2017	2,515	17,680	42

Source\*: Scopus

### Sponsored Research

Apart from the teaching and the academic programmes leading to the award of a degree, the Indian Institute of Technology Delhi (IIT Delhi) also strives for excellence in research on cutting edge areas on developing research and development projects through sponsored projects and consulatncies sponsored by national and international agencies, industries and other organisations.

### Industrial Research and Development Unit (IRD)

Industrial Research & Development (IRD) Unit has been expressly set up in the institute to provide specialised administrative and managerial support for the operation

of Sponsored Research Projects, Consultancy Jobs and other R&D activities. Over the years, the institute has set up many modern laboratories and supports infrastructure development through these projects. In recent past IRD has further exapanded its horizon to support and inetranally fund (i) Interdsiciplinary research projects within institute as well as with other National and International institutions of par excellence (ii) schemes have also been initiated to inculatate research culture among the undergraduate students and (iii) start-up research project schemes for post gardauate students and faculty members.

### IRD Support To Faculty

**Research Grant for New Faculty Member:** The IRD provides a one-time grant of Rupees One Lac to each new faculty member who joins the institute. This grant has been given to forty-one (41) new faculty members during the Financial Year 2020-2021 to initiate new projects.

**Equipment Matching Grant:** The Equipment Matching Grant allows a new faculty to purchase equipment sanctioned under a project. Faculty can avail of the grant within two years of joining, with a ceiling of ₹30 Lacs or an amount equivalent to the funds sanctioned by the funding agency for the equipment under the project, whichever is lower. Equipment Matching Grants to the tune of ₹459 Lacs have been sanctioned to twenty-three (23) new faculty members during the financial year 2020-21.

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

**SREA1:** Assistance for formulating/writing major research project proposals involving multiple faculty members from IIT Delhi or involving multiple Institutes with IIT Delhi as the Coordinating Institute. The funds proposed for IIT Delhi should be ₹5 Crore or more. The IRD also provides financial assistance for hiring a Project Consultant for two months during project preparation.

**SREA2:** For a sponsored research project with a funding of ₹2.5 - 5 Crores, the IRD provides top-up funds required for hiring one Principle Project Officer for the project duration.

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



### **Project Administrative Assistants (PAA)**

IRD Unit also implemented a scheme of providing Project Administrative Assistant (PAA) to a group of five (5) PIs who have ongoing projects. These PAAs are assigned for secretarial support to the PIs in project-related administrative and office work. At present more than 100 Principal Investigators (PIs) are utilising the facility. Further, one extra PAA is also allocated to departments or centres on request. The department or the centre can assign the PAA to a newly joined faculty who do not have any project.

### **IRD Schemes**

#### **Faculty Interdisciplinary Research Project (FIRP)**

- The FIRP scheme aims to enhance interdisciplinary and collaborative research within in the institute. Selected projects are given an initial grant of ₹10 Lacs with duration of two years. It is expected that the joint research team will submit at least one research project to an external funding agency on the completion of the first year. So far, the IRD has funded total 108 FIRP projects.

In the previous calls, eighty-six projects were sanctioned under the FIRP calls of 2016 and 2017. Key outcomes from these projects are:

- Thirty-four (44) research papers have been published in high impact journals.
- Eighty-eight (48) research papers have been presented at various national and international conferences.
- Eleven (11) patents have been processed for filing through FITT
- Three (3) technologies have been transferred.
- FIRP projects have received four (4) academic/research awards.
- The IRD has funded total 108 FIRP projects over the years.

The IRD had made an expenditure of about ₹5.46 Cr for FIRP Call-2016 & 2017, while about ₹34 Cr has been generated from the ten (10) externally funded projects to the FIRP Principal Investigators as a spinoff from the leads generated through the IRD FIRP scheme. About 21 projects are under review.

In the current period of COVID pandemic, a short term FIRP on COVID-19 was launched to meet the challenge. Five short-term projects having high potential leads on Covid-19 related research have been supported with ₹2.5 Lakh for one year. A RT\_PCR based probe free detection kit has been developed under this initiative. The product COROSURE has been commercialized.

A fast track FIRP on Locust Control Initiative 2 Project proposals have been funded with ₹5 Lakh for one year under fast track research on long term solution for locust invasion in the country.

The objective of FIRP Call-2020 is to enhance interdisciplinary and collaborative research interest in the institute. After

three successful calls of FIRP, FIRP Call-2020 is aimed to encourage and facilitate research interactions between the faculty member of Sciences depts with Engineering & other disciplines. The IRD supported twenty-two joint project proposals by the faculty members.

**Multi-institutional Faculty Interdisciplinary Research Project (MFIRP):** In order to meet current global research challenges, IRD has initiated the multi-institute faculty interdisciplinary projects (MFIRP) joint research scheme with National and International institutions of eminence.

Under this scheme, funding is provided for joint MFIRP projects from a team of faculty members from two or more institutions. There will be at least two (2) PIs (one from each institute), and the total grant will be ₹20 Lakhs for two years, equally shared by IIT Delhi and the partnering institution(s). So far, the IRD has sponsored 106 MFIRP projects.

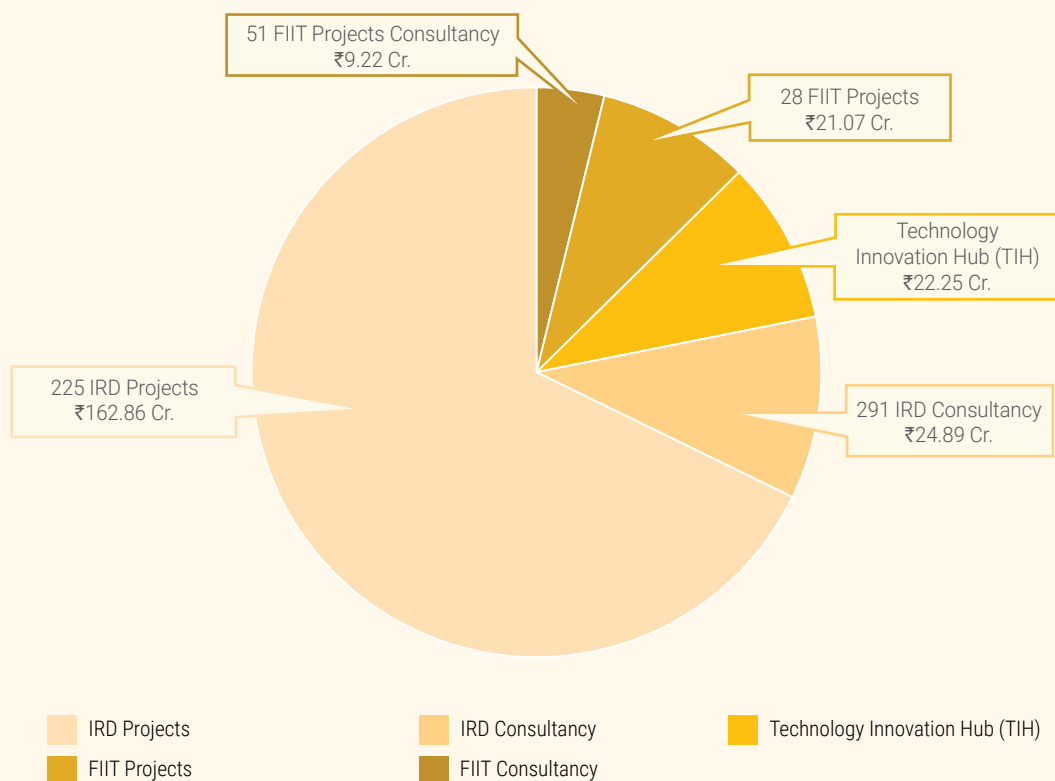
**MFIRP AIIMS-IITD:** Faculty members from IIT Delhi and the All India Institute of Medical Sciences (AIIMS), Delhi, formed teams to build a more robust Health Care system by Engineering and Technology interventions through 'cross-institutional interactions' between the two premier institutes. Forty-seven projects are currently operational under this scheme to alleviate some of the challenges of the Health Care sector. The IRD carried out an interim review of twenty-four projects of the 2018 call on February 20, 2020. Many research publications and few successful sponsored projects have been obtained based on the leads in these projects.

Total 23 new projects were approved under the IITD-AIIMS Call-2019 for support in the area of Artificial Intelligence and Robotics for Health Care, Point of Care Diagnostics, Design and Development of Biomedical Devices, and Sensors & Biocompatible Materials. The interim review of these projects is planned in August 2021.

**MFIRP ICAR-IITD:** To harness the advances of science for the welfare of society and agriculture sector, the faculty members from the Indian Council of Agricultural Research (ICAR) and IIT Delhi formed a cross-functional team. Under this initiative, ten projects are operational to meet the agriculture sector's challenges and develop advanced technologies. A review of ongoing projects was conducted on the virtual platform on January 22, 2021. Despite the COVID situation, teams work well obtained good leads with some good publications. A few teams were successful in obtaining joint project funding from external funding agencies.

**MFIRP NII-IITD:** In the area of immunology and molecular biology, five joint research projects are currently operational between the National Institute of Immunology (NII) and IIT Delhi. The review of these projects was conducted on a virtual platform on January 20, 2021. Successful leads were obtained in some projects, some of which also successfully attracted external funding.

## TRENDS & STATISTICS OF RESEARCH FUNDING



Distribution of Sponsored Projects and Consultancies

### Highlights of IRD activities in 2020-21:

Some important highlights about research are:

- Total 595 sponsored projects and consultancies with total funding of ₹240.29 Crores were undertaken through the IRD, the FITT and the TIH Units.
- New Faculty grant has been given to 41 new faculty members (₹41 lacs).
- The Equipment Matching grant has been given to 23 faculty members (₹4.59 Crores)
- Under Faculty Interdisciplinary Research Project (FIRP) scheme, 29 projects were selected for IRD support this year.
- Under the Multi-institutional Faculty Interdisciplinary Research Project (MFIRP) scheme, 19 projects were selected for IRD support this year.
- Student Startup and Discover & Learn schemes have been sanctioned this year to 8 students.
- Under the Research Excellence Travel Award (RETA), 9 students have been granted RETA this year.
- Under the Research Scholar Travel Award (RSTA), 158 students have been granted RSTA this year.
- Total 69 Project Administrative Assistants (PAA) have been attached to faculty members of the institute this year.

Under MFIRP Scheme Call-2020, two research projects having potential lead in COVID-19 related research areas have been funded by both Institutes with ₹2.5 Lakh from each institute for the project duration of 6 months.

Under IITD-NII (National Institute of Immunology) joint MoU, researchers from IIT Delhi were allowed to use the state-of-the-art animal house facility of NII.

**MFIRP Clemson University, USA-IITD:** Three (3) collaborative research projects on disease management are ongoing jointly between Clemson University, South Carolina and IIT Delhi. The progress of these projects were reviewed in expert committee meeting held on February 19, 2021. Some interesting leads have been reported out of these projects.

**MFIRP UCL-IITD:** Four (4) collaborative research projects between the University College London (UCL) - IIT Delhi are ongoing in the area of Advanced Materials, Biotechnology, global health and well-being, and sustainable urban design & waste management. The interim review of the project was conducted in May 2021.

**Under IITD-UCL MoU:** Five (5) IITD doctoral students were supported for participation in UCL Medical Image Computing Summer School (MediCSS) from July 6-10, 2020.

**UCL-IITD joint call for MFIRP proposals 2020:** Six (6) project proposals were approved in Prosthetic Devices, E-waste Recycling, Cyber Security, Thermo Electric Generation (TEG enabled) Cookstoves in Rural Communities & Sustainable environment.

**MFIRP NCYU previously, NCTU, Taiwan-IITD:** Eighteen (18) collaborative projects between National Yang Ming Chiao Tung University (NYCU) and IIT Delhi in the area of artificial intelligence, Internet of things (IoT), cybersecurity, electrical and electronics, Renewable Energy/Clean Energy, Biotechnology, drug development and biomedical devices are currently operational. The project progress review was conducted between February 23-26, 2021, on a virtual platform.

**MFIRP AIIA-IITD:** IIT Delhi and All India Institute of Ayurveda (AIIA), New Delhi, have come together to work on seven (7) collaborative projects on studying therapeutic benefits of herbal formulations, wellness; developing 'dhoopan-yantra'. The projects emanate from the MoU signed earlier between the two institutions for interdisciplinary research in Ayurveda and engineering science principles.

**MFIRP RCB-IITD:** UNESCO-Regional Centre of Biotechnology (RCB) and IIT Delhi jointly announce for call for project proposals in the areas of Infectious Disease Biology, Molecular Medicine, Cancer Biology & Therapeutics, Agricultural Biotechnology, Systems & Synthetic Biology and Structural Biology in Jan 2021. Four (4) project proposals were selected for seed funding based on their merit in biotechnology, structural biology, molecular medicine and therapeutics.

## IRD Students Schemes

**Student Startup Action & Discover & Learn (1-2-3-4) Schemes:** To enhance research aptitude among undergraduate & graduate students and increase 'learning by research' IRD Student Startup Action & Discover & Learn (1-2-3-4) schemes were launched from the year 2016 onwards. From the time the schemes were launched, eighteen (18) IRD Student Startup action projects involving about forty (40) students and thirty-two (32) Discover & Learn (1-2-3-4) projects involving about 130 students are in progress in various research areas of national interest.

## IRD Students Scheme of Call 2020

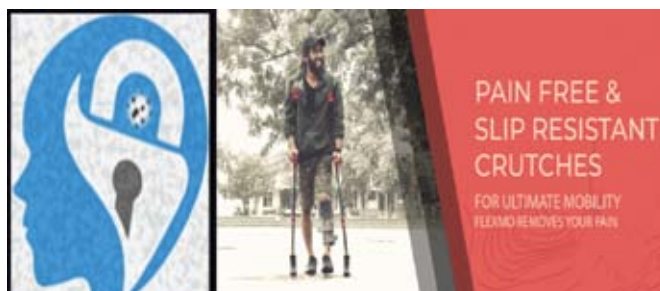
This year's sanctioned projects include 'On-line, Wide-range, Low-cost Sensor for Biomass Concentration', 'Control and Data Acquisition for Cold Atom Quantum Technology', 'Managing Safety at construction sites using digital technology', 'Develop an application for semantic tagging of video sequences for stochastic modelling of reactive systems' and 'Digitization in Healthcare'.

Under the Student Startup Action scheme, three projects 'Blockchain implementation of Health Electronic Records (HER)', 'Spirited AI', and 'Develop energy-efficient permanent magnets and switched reluctance motors for two-wheeler electronic vehicles (EVs)' projects have been sanctioned for IRD support.

## Significant Achievements from IRD Student Startup Projects

The Student Start-Up projects led to Start-up companies:

- Suxma System Pvt. Ltd. based on Mastitis detector device - developed under the scheme. (Faculty Mentor: Prof. Subrata Kar, Department of Electrical Engineering).
- Flexmov Clutch Startup based on improved design of clutches (assistive device). (Faculty Mentor: Prof. Jitendra Prasad Khatiat, Department of Mechanical Engineering).
- CYRAN (Cyber Raksha with Advanced Nano-electronics) - the AI-based Solutions incorporated with MCA, Govt. of India (Faculty Mentorship: Prof. Manan Suri, Department of Electrical Engineering).



- Silov Solutions Pvt. Ltd. based on smart DC home, DC-DC converters with an inbuilt solar charge controller (Faculty Mentorship: Prof. Sukumar Mishra, Department of Electrical Engineering).

- VECROS Technologies Private Limited on developing drones with server-based cloud app to monitor and scale the drone operations (Faculty Mentorship: Prof. Shubhendu Basin, Department of Electrical Engineering).
- Under PIN: An ERP-CRM Software for Academic Research Laboratories (Faculty Mentorship: Prof. Madhusudhan Singh; Department of Electrical Engineering and & Prof. Ramamohan, Department of Mechanical Engineering).
- Designed and developed a laboratory-scale prototype of the solar PV based charging system under the mentorship of Prof. Bhim Singh; Department of Electrical Engineering.

**Summer Undergraduate Research Award (SURA):** The objective of the SURA scheme is to encourage Research & Development activities among undergraduate students. The students are encouraged to take the initiative in identifying, studying and analysing problems and formulating solutions.

**Research Excellence Travel Award (RETA):** Highly meritorious Research Scholars (full-time as well as part-time) working full-time on IRD/FITT projects are awarded Research Excellence Travel Award (RETA) amounting to ₹1,50,000/- from IRD promotional funds. RETA can be used only for a single conference travel. Total 9 students have been granted RETA this year.

**Research Scholar Travel Award (RSTA):** All Research scholars can be awarded a travel grant under the Research Scholar Travel Award (RSTA) up to a maximum of ₹80,000/- from IRD Research Promotion Fund, over and above the initial grant of ₹20,000/- provided by the institute. Total 158 students have been granted RSTA this year.

### National Research Projects

**Uchhatar Avishkar Yojana (UAY):** Twelve (12) UAY projects, including nine from phase I and three III from Phase II, are administratively managed by the IRD. Out of the nine phase I projects, seven have been completed, and two are in progress with tenure extension. Out of the three projects of phase II, one project is completed, and two are in progress. These projects receive fifty per cent funding from the Ministry of Human Resource Development (MHRD). The remaining part is funded equally by the industry and the respective ministry under the Government of India (GoI). The implementation of these projects is being managed by the IRD.

**Impacting Research Innovation and Technology (IMPRINT):** Twenty (20) IMPRINT projects, including twelve IMPRINT Scheme-1 projects and eight IMPRINT Scheme-2 projects, are administratively managed by IRD. Out of the twelve projects of IMPRINT Scheme-I, three projects have been completed. These projects are funded by the MHRD, DST-SERB, DRDO or ICMR and the respective ministry.

The IRD conducted project review, enabled project tenure extension, and facilitated the preparation and submission of expenditure statements and utilisation certificates.

**Grand Challenge Projects:** In 2018, IRD initiated to fund Grand Challenge projects to establish new research platforms to strengthen the interface between the Institute's R&D activities and some societal challenges faced by the country. Four (4) projects in the areas of Air Pollution Control, Electric Vehicles, MBE growth for 2D materials for sensors and optoelectronic devices and antibacterial diagnostic solutions have been funded. The progress of these projects was reviewed on the annual by the external experts on March 5, 2021. The Experts appreciated the efforts of all Principal Investigators and their teams for selecting relevant problems and handling them effectively. The output of these projects was rated 'Very Good.'

Similarly, under Grand Challenge – 2020, the IRD also extended support to promote in-house inter-disciplinary research between Humanities and Social Sciences groups of the Institute interfacing with Engineering and Sciences. This effort led to eight competitive research supported for a sum of up to ₹50 Lakh for a period of 3 to 5 years.

**Scheme for Promotion of Academic and Research Collaboration (SPARC)** programme was initiated by the Ministry of Education (MoE) for research collaboration and academic exchanges between institutions in India and other advanced Nations. IIT Kharagpur is the Nodal Implementing agency of the programme.

In the first call (2018-19), IIT Delhi received the sanction, and financial support for implementing sixteen projects involving fourteen faculty members from nine departments and centres. There are under implementation through IRD.

In the second phase, more than 60 proposals have been submitted by the faculty members again (call July/August 2019). The result of the evaluation for these proposals is awaited.

**Students I4 Challenge:** IIT Delhi-IRD organised the 'Students I4 Challenge: Ideation at Isolation; Implementation at Institution' for its students amid suspension of academic activities due to COVID-19. The students (UG, PG & Doctoral) were invited to participate in the I4 Challenge', which required them to find modern solutions to challenges in innovation, design & society.

A total of 28 challenges/problems were floated by the IITD faculty members across different disciplines. About 100 students/teams participated and submitted very innovative and brilliant solutions.

The solutions were evaluated by the respective faculty member who floated the challenge. Each challenger evaluated and recommended one best solution for their challenge. A Certification of Appreciation was given to the student(s) recommended for the best solution. These best solutions were further assessed by experts in respective

areas (excluding the challenger) for selecting the top five solutions. These five students/teams were awarded the cash prize of Rs. 10,000 from IRD.

**Institute - IRD Monthly Webinar Series** was launched to present significant COVID research carried out by IITD faculty members.

The following webinars were delivered during this period and have been uploaded to the institute website.

- (i) 'A diagnostic assay for COVID-19 developed by IIT Delhi' by Prof. Vivel Perumal, KSBS, May 2020.
- (ii) 'Kawach mask -a service to the nation (making India proud)' by Prof. Bipin Kumar, Department of Textile and Fibre Engineering in June 2020.
- (iii) 'PRACRITI – A Web-based Dashboard for Prediction of Corona Transmission in India' by Prof. N.M. Anoop Krishnan, Department of Civil Engineering and joint faculty, Department of Materials Science & Engineering in July 2020.
- (iv) 'SARS-CoV-2 Virus-like particles as potential vaccine candidates and model systems for virus assembly' by Prof. Manidipa Banerjee, KSBS, August 2020.
- (v) 'EGCG from Green Tea and a ferin from Aswagandha as a Potential Inhibitor of SARS-CoV-2 Main Protease' by Prof. Shashank Deep from the Department of Chemistry, November 2020.

The IRD Unit has been inviting senior programme officers from various funding agencies for interactions with faculty members to create awareness about these agencies' schemes and programmes.

- (i) **Schemes and Programmes of the DBT by Dr. Arun Kumar Rawat, Former Advisor, DBT:** Dr. Arun Kumar Rawat, Advisor, Department of Biotechnology (DBT), New Delhi, interacted with faculty members and made a comprehensive presentation encompassing multiple research funding schemes from DBT and Biotechnology Industry programs Research Assistance Council (BIRAC).
- (ii) **Schemes and Programmes of IGSTC by Mr. R Madhan, Director, IGSTC:** Mr. R. Madhan, Director, Indo-German Science and Technology Centre (IGSTC), Gurugram, spoke on the schemes and programmes of IGSTC

and the sponsored research activities. A large number of faculty members and researchers participated in this webinar.

- (iii) **Schemes and Programmes of DST by Dr. Anita Agarwal, Scientist-F, DST:** Dr. Anita Agarwal from DST interacted with the IITD faculty and presented a webinar on March 12, 2021. Dr. Agarwal explained various schemes of the Technology Development Board (TDB) of DST, they are funding research projects in Waste Management Technologies, Advanced Manufacturing Technologies, Science and Heritage Research Initiative, Agro technologies, and Biomedical Devices.

**University College of London, UK (UCL) -IITD Webinar series:** A successful informative IITD-UCL (University College of London) joint webinar series was held between September 15-23, 2020. This was attended not only by students and researchers from IIT D and other institutions.

The welcome note was given by Prof. Monica Lakhanpaul (Vice-Provost South Asia, UCL) and Prof. Sunil Khare (Dean R&D, IITD). The Inauguration of the series was done by Prof. Ashok Kumar Ganguli (DDS&P, IITD) & Prof. Rebecca Shipley (Director Institute of Healthcare Engineering, UCL).

In this joint webinar series, the eminent researchers from IITD & UCL shared their researches on the six key themes

1. Assistive Technology by Prof. P.V.M. Rao (IITD) & Prof. Cathy Holloway (UCL)
2. Robotics by Prof. Subir Kumar Saha & Prof. Amit Mehndiratta (IITD) and Dr. Rui Lourerio (UCL)
3. PPE by Prof. Bipin Kumar (IITD), Dr. Peter Sculley & Prof. Mark Midownik (UCL)
4. Diagnostics by Prof. Vivekanandan Perumal (IITD)
5. Artificial Intelligence by Prof. Manan Suri & Prof. Pratosh A.P. (IITD) and Dr. Yipeng Hu (UCL)
6. Imaging by Prof. Amit Mehndiratta (IITD) and Dr. Joe Jacob (UCL)
4. International Collaboration in Disability Innovation by Prof. PVM Rao (IITD) & and Prof. Cathy Holloway (UCL) & UCL & IITD Ph.D. Students Tigimanshu Bhatnagar (UCL), Anchal Sharma & Vikas Upadhyay (IITD).



## Research Projects & Consultancy

Total 595 sponsored projects and consultancies with total funding of ₹240.29 Crores were undertaken through IRD, Foundation for Innovation and Technology Transfer (FITT) and Technology-Innovation Hub (TIH) Units, in the financial year 2020-21.

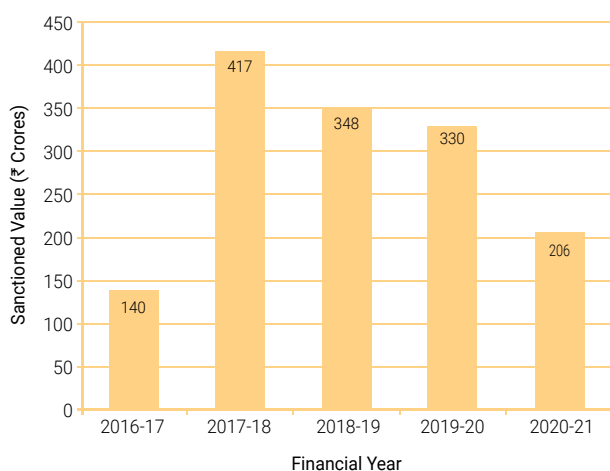
**Table I: Statistics of Sponsored Research Project**

Sponsored Research Projects		
Financial Year	Number of Projects	Value (Rupees Cr.)
2016-17	158	140.21
2017-18	282	417.19
2018-19	317	347.52
2019-20	280	329.61
2020-21	253	206.18*

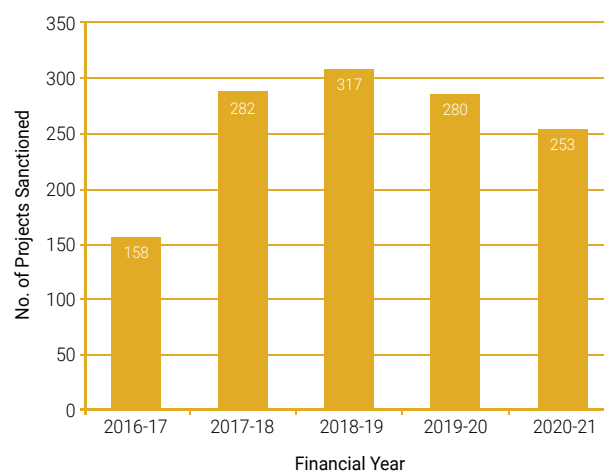
\* (IRD) 162.86 Cr. + (FIIT) 21.07 Cr. + (TIH) 22.25 Cr. = 206.18

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

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



**Fig. 2: Number of Projects Sanctioned**



**Table II: Financial Outlay of Some of the Major Projects during 2020-21 (with sanctioned value ₹100 Lacs and above)**

Project Title	Sponsoring Agency	Sanctioned Funds (₹ Lacs)
Centre of Excellence (CoE) for Advance Data Management System for Highways (ADMS Highways)	National Highways Authority of India	1,503.36
Daksh Centre of Excellence (CoE) for Law and Technology	Daksh Society, India	1,500.00
International Centre of Excellence for Computational and Biomedical Sciences (ICECBS)	Open Health systems Laboratory the USA	1,000.00
Delhi Cluster: Delhi Research Implementation and Innovation (DRIIV)	Office of the Principal Scientific Adviser, Govt. of India	993.65
An integrated study on emission inventory development, source apportionment and carrying capacity of the environment for Durgapur and Asansol Raniganj, West Bengal	West Bengal Pollution Control Board India	445.13
Material characterisation of brain tissue and development of tissue-device interaction-based neurosurgical simulation tool	Indian Council of Medical Research	426.47

Table II contd.....

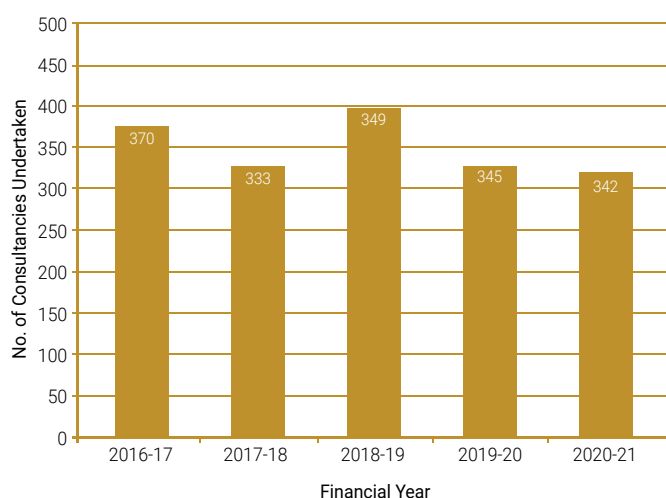
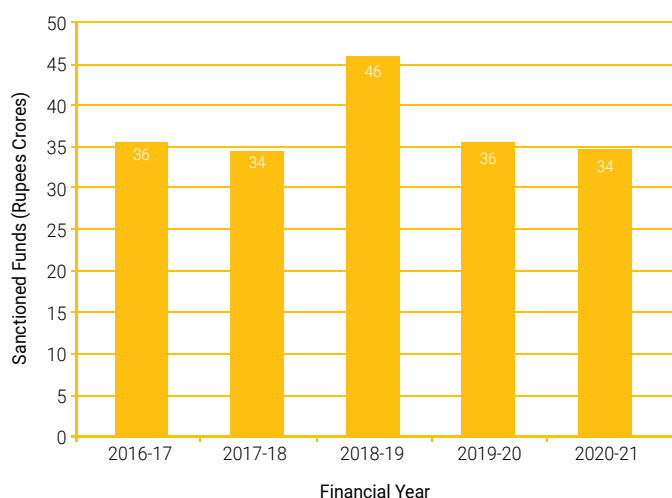
COVID 19 Vaccine Roll out Institutional Management Partner	Bill & Melinda Gates Foundation, United States	370.00
Development of Dental Implants for Advanced and Critical Applications (Joint project WITH maids- Maulana Azad Institute of Dental Sciences)	NMITLI, PPD Council of Scientific & Industrial Research (CSIR) India	343.49
Scientific Management of Natural Resources for Sustainable Development in UBA Clusters of Shivalik Region	Department of Science & Technology, India	295.29
Neurocomputing and Cognitive Intelligence	Ministry of Electronics and Information Technology, India	231.31
Establishment of a Centre of Excellence in the area of Bioinformatics and Computational Biology at IIT Delhi, with the theme as Development of Genome to Hit (Dhanvantari) pipeline: Genome => Gene=> Protein=> Drug	Department of Biotechnology, India	214.19
CSC sponsored design and innovation lab at Department of Design	CSC e-Governance Services India Limited, India	187.83
Strengthening Energy and Environmental Research and Teaching Infrastructure through the FIST Programme	Department of Science & Technology, India	184.00
Development of Indigenous Simulation Model for Design and Validation of Traction Power Supply System (ISIMTRAC)	High-Speed Railways Innovation Center (HSRIC) Trust, India	143.99
Development of Indigenous Simulation Model for Design Validation of OHE Pantograph Interaction	High-Speed Railways Innovation Center (HSRIC) Trust, India	138.00
RE(Pd/Pt)Bi Thin films: A Multifunctional Experimental Platform for exploring Topological Quantum phenomena & Magnetism (under Thematic Unit of Excellence (TUE) in Quantum Materials)	Department of Science & Technology, India	115.39
Improving Crop Dynamics and Land-atmosphere Interaction in the Community Land Model for Major Indian agro-ecosystems	Space Application Centre, ISRO, India	108.00
Establishment of Centre of Excellence under Industry Alliance on Artificial Intelligence	NOKIA Solutions and Networks India Pvt. Ltd., India	103.81
Establishment and application of an AQM model for the Indo-Gangetic Okain (IGP-AQMmod)	The World Bank	100.88

### Consultancy Jobs

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

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

Financial Year	Consultancy Jobs (IRD)		Technology Development Projects / Contract Research (FITT)		TOTAL
	No. of Projects Sanctioned	Sanctioned Value in ₹ Cr.	No. of Projects Sanctioned	Sanctioned Value in ₹ Cr.	Sanctioned Value in ₹ Cr.
2016-17	318	20.36	52	16.02	36.38
2017-18	282	22.18	51	12.08	34.26
2018-19	292	26.86	57	18.87	45.73
2019-20	278	19.02	67	16.93	35.95
2020-21	291	24.89	51	9.22	34.11



## COLLABORATIVE RESEARCH

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

During the year under report, the Institute has undertaken 29 new Collaborative Sponsored Projects with International funding, some of them with sanctioned value of ₹50 lacs and above are mentioned below:

**Table IV : International Sponsored Research Projects undertaken during the year 2020-21 (with sanctioned value of ₹50 lacs and above)**

Project Title	Sponsoring Agency/ Collaborating Institute(s)	Sanctioned Funds (₹ Lacs)	Principal Investigator / Department
International Centre of Excellence for Computational and Biomedical Sciences (ICECBS)	Open Health systems Laboratory, USA	1,000.00	Prof. Sunil Kumar Khare <i>Department of Chemistry</i>
COVID 19 Vaccine Rollout: Institutional Management Partner	Bill & Melinda Gates Foundation United States	370.00	Prof. Sushil <i>Department of Management Studies</i>
Establishment and application of an AQM model for the Indo-Gangetic Okain (IGP-AQMmod)	The World Bank	100.88	Prof. Sagnik Dey <i>Centre for Atmospheric Sciences</i>
Modelling and Simulation of Local Liquid Distribution in Trickle Bed Reactors	IFP Energies nouvelles (IFPEN) France	61.55	Prof. Vivek Vitthal Buwa <i>Department of Chemical Engineering</i>
Development of functional admixtures for application to sustainable cements	Chryso SAS (IU), France	60.00	Prof. Shashank Bishnoi <i>Department of Civil Engineering</i>
Topology and Magnetism in Novel Quantum Materials	International Multilateral Regional Cooperation Division, Department of Science and Technology, India Collaborating Institute: Chalmers University of Technology, Sweden	55.98	Prof. Ratanamala Chatterjee <i>Department of Physics</i>
Large Area Microbolometer Uncooled Focal Plane Arrays for Thermal Imaging	International Bilateral Cooperation Division, Department of Science & Technology, India & IC-IMFACTS, Canda Collaborating Institute: University of Ottawa, Canada	54.80	Prof. Madhusudan Singh <i>Department of Electrical Engineering</i>



## CONSULTANCY ASSIGNMENTS WITH INTERNATIONAL ORGANISATIONS

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

During the year under report, the institute has undertaken two new consultancy jobs with International funding.

### International Consultancy Jobs undertaken during the year 2020-21

- "Development of an Air Quality Emission Inventory Framework for India" (₹23.46 lac), Sponsored by Centre for Research on Energy and Clean Air, Finland, CI: Prof. Harsha Kota, Department of Civil Engineering.
- "Technical consultant in IPR proceedings for Galderma Laboratories LP" (₹9.69 lac), Sponsored by Galderma Laboratories L.P. Washington, United States, CI: Prof. Biswarup Mukherjee, Centre for Biomedical Engineering.

**Table V:** The membership of the Industrial Research & Development (IRD) Board for the academic session 2020-2021 is hereby notified as under:

<b>Chairperson</b>	
<i>Dean, R&amp;D</i>	<i>Prof. Sunil Kumar Khare</i>
<b>Members</b>	
<i>Ex-Dean, R&amp;D</i>	<i>Prof. B.R. Mehta</i>
<i>Dean (Faculty)</i>	<i>Prof. S. Mukherjee</i>
<i>Associate Dean, R&amp;D</i>	<i>Prof. Sukumar Mishra</i>
<b>Representatives of Department / Centre / School</b>	
<i>Department of Applied Mechanics</i>	<i>Prof. Sawan S. Sinha</i>
<i>Department of Biochemical Engineering &amp; Biotechnology</i>	<i>Prof. D. Sundar</i>
<i>Department of Chemical Engineering</i>	<i>Prof. Vivek V. Buwa</i>
<i>Department of Chemistry</i>	<i>Prof. Sameer Sapra</i>
<i>Department of Civil Engineering</i>	<i>Prof. J.T. Shahu</i>
<i>Department of Computer Science &amp; Engineering</i>	<i>Prof. S. Arun Kumar</i>
<i>Department of Design</i>	<i>Prof. Sumer Singh</i>
<i>Department of Electrical Engineering</i>	<i>Prof. Nilanjan Senroy</i>
<i>Department of Humanities &amp; Social Sciences</i>	<i>Prof. Yashpal Ashokrao</i>
<i>Department Management Studies</i>	<i>Prof. Shveta Singh (Ms.)</i>
<i>Department of Mathematics</i>	<i>Prof. Niladri Chatterjee (Ms.)</i>
<i>Department of Mechanical Engineering</i>	<i>Prof. A.K. Darpe</i>
<i>Department of Physics</i>	<i>Prof. Pankaj Srivastava</i>
<i>Department of Textile &amp; Fibre Engineering</i>	<i>Prof. Sourabh Ghosh</i>

Table V contd.....

<i>Department of Materials Science &amp; Engineering</i>	<i>Prof. B.P. Tripathi</i>
<i>Centre for Applied Research in Electronics</i>	<i>Prof. Ananjan Basu</i>
<i>Centre for Atmospheric Sciences</i>	<i>Prof. Sagnik Dey</i>
<i>Centre for Biomedical Engineering</i>	<i>Prof. Dinesh Kalyanasundaram</i>
<i>Computer Services Centre</i>	<i>Dr. P.K. Baboo</i>
<i>Educational Technology Services Centre</i>	<i>Prof. Kolin Paul</i>
<i>Centre for Energy Studies</i>	<i>Prof. Vamsi Krishna Komarala</i>
<i>CINT</i>	<i>Prof. J. Bijwe (Ms.)</i>
<i>Sensors, Instrumentation and Cyber-physical Systems Engineering</i>	<i>Prof. Subrat Kar</i>
<i>Centre for Rural Development &amp; Technology</i>	<i>Prof. Vivek Kumar</i>
<i>National Resource Centre for Value Education in Engg.</i>	<i>Prof. Nomesch Bolia</i>
<i>Kusuma School of Biological Sciences</i>	<i>Prof. Manidipa Banerjee (Ms.)</i>
<i>Bharti School of Telecommunication Technology &amp; Management</i>	<i>Prof. Swades De</i>
<i>Amar Nath &amp; Shashi Khosla School of Information Technology</i>	<i>Prof. Aaditeshwar Seth</i>
<i>School of Public Policy</i>	<i>Prof. Abhishek Malhotra</i>
<i>School of Interdisciplinary Research</i>	<i>Prof. Samaresh Das</i>
<i>School of Artificial Intelligence</i>	<i>Prof. Mausam</i>
<b>Outside Technical Experts from Industry</b>	
<i>Dr. Arvinder Singh, Country Manager (India) Human Diagnostics GmbH, 618, DLF Galleria, Gurugram Pin: 122009 India</i>	<i>Mr. R.P. Gaikawai, MD and Chairperson, Hi-Tech Bio Science India Ltd. (HTBS Group), Pune</i>
<i>Dr. Shailja V. Gupta, Sr. Advisor, Scientist H, Office of the Principal Scientific Advisor to Govt. of India, New Delhi</i>	<i>Mr. Ambar Srivastava, MD and Founder, Wrig Nanosystems Pvt. Ltd., 170, Patparganj Industrial Area, New Delhi - 110092</i>
<i>Mr. Vishesh Jain, Vice President, Goldman Sachs, 82-333, SLS Splendor, Bengaluru 560103</i>	<i>Mr. Yogesh Andlay, Managing Director, Nucleus Software Engineers P. Ltd., B 15, Sector-9 Noida-201307 (U.P.)</i>
<i>Dr. T. Rajamannar, Executive Vice President, Advisor to MD Head, High Impact Innovation Sustainable Health Solutions, Sun Pharmaceuticals Industries Ltd., Near R. C. Patel Estate, Pratham Avenue, Akota, Vadodara, Gujrat 390020</i>	<i>Mr. Lekh Bajaj, Founder &amp; CEO Coach For Mind, Shobha Niwas 248 A, First floor, Munirka Village, New Delhi 110067</i>
<b>Managing Director FITT</b>	
<i>Dr. Anil Wali</i>	
<b>Special Invitee</b>	
<i>Joint/Deputy Registrar (Accounts)</i>	
<i>Deputy/Assistant Registrar (Stores)</i>	
<i>Assistant Registrar (IRD Accounts)</i>	
<b>Secretary</b>	
<i>Assistant Registrar (IRD)</i>	<i>Mrs. Rama Sharma</i>

## FOUNDATION FOR INNOVATION AND TECHNOLOGY TRANSFER (FITT)

Foundation for Innovation and Technology Transfer (FITT) at IIT Delhi has been the vanguard of knowledge transfer activities from academia since its inception in 1992. This techno-commercial organisation from academia is counted amongst the successful such organisations. FITT provides superior programme management services and is steadily increasing its operational landscape. The varied roles of FITT can be seen in enabling innovations and technopreneurship, business partnerships, technology development, consultancy, collaborative R&D, technology commercialisation, development programmes, corporate memberships etc. These roles are necessitated by the key agenda of the Foundation to showcase the Institute's "intellectual ware" to industry, and thereby unlock its knowledgebase and inculcate industrial relevance in teaching and research at IIT Delhi.

FITT is a DSIR approved Scientific and Industrial Research Organisation (SIRO), by virtue of its charter to implement, inter-alia, industrial R&D projects. During Financial Year 2020-2021, 76 technology development and transfer projects worth ₹28.69 crores have been contracted at FITT.

FITT manages the Institute's IPs and IPRs. Over 1000 patents have been filed for IIT Delhi. During the last financial year 2020-2021, 155 patents were filed and 25 technology transfer deals were signed. To augment its outreach and technology commercialization efforts, FITT also engages with specialist outside agencies. Besides enabling regular industry academia meetings, FITT organized a number of visits by IIT Delhi faculty to industrial units in order to assess their R&D needs so as to initiate industry-relevant R&D programs at the Institute. FITT has been instrumental in organising several visits by overseas companies and delegations, enabling dialogue between the visiting delegates and academic community of the Institute.

### Technology Transfer at FITT



*Technology transfer of "LED based UVC-Disinfection System for use in Escalators or Moving Walkways for Handrail Sanitization" to Olive Led at FITT office in the presence of PI- Prof. Harpal Singh, CBME, IIT Delhi, Mr. Shyam S. Jindal, CA, MD-Olive Exports and Dr. Anil Wali, MD FITT, August, 2020.*



*Technology transfer of "Aqua Silver" PI- Prof. Ashwini K. Agarwal to Nanoclean Global in the presence of Dr. Anil Wali, MD FITT IIT Delhi and Mr. Prateek Sharma, MD, Nanoclean Global Pvt. Ltd. at FITT, January 20, 2021.*

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

For the promotion of innovation and entrepreneurship among the graduating students at IIT Delhi, the alumni of the Batch of 1969 have signed an MoU with the Institute to establish an annual award named the "Batch of 1969 Innovation Fellow (Award)". This award is executed and managed by FITT. During the second edition of this award in 2020, Mr. Vishwanath Hebhi, CHEME was shortlisted for his project on "Low cost therapy for snakebite treatment in rural India".

Towards fostering innovation-led start-ups, FITT has enabled the establishment and operation of thriving incubators on the campus - Technology Business Incubation Unit (TBIU) and Bio-technology Business Incubation Facility (BBIF). The TBIU is a flagship Institute programme designed primarily to promote partnership with new technology entrepreneurs and start-up companies, and also serve as a medium of technology transfer. During the last financial year there were 35 companies resident at the incubator. FITT provides co-share equipment facility to bio-tech start-ups. These companies are working in the technology domains of IT, Biotechnology, Engineering design, Cleantech etc. Out of 130 companies/innovators admitted so far in the incubator since its inception in the year 2000, more than 45 companies have started their up-scaling/commercial operation after completing their incubation and are reported to be growing at a steady pace.

## FITT startups Clensta and E-TEX launched Anti-viral Kit



On the occasion of Gandhi Jayanti, E-TEX and Clensta have together launched an antiviral protection kit for masses. This antiviral kit consists of a Clensta protection lotion and hand sanitizer; E-TEX Kawach Antiviral T-Shirt and Kawach Mask.



FITT Startups Vizara and Cyran displayed innovations during Parliamentary committee members visit on August 31st, 2020 at IIT Delhi.

### Start-up Entries (2020-2021)

- Silov Ecobiz
- Creatara
- Carditek
- Sicuremi
- Chakar Innovation

### Start-up Exits (2020-2021)

- Annavarani
- Clensta
- Soulmachine
- Flexmotiv
- Luminasic
- Phase Labs

- Dr. Rupesh Chaturvedi
- Dr. Devendra Dubey
- Md. Imteyaz Alam

FITT has been at the forefront in managing several innovation and entrepreneurship programmes in the country. As a nodal agency in several Government schemes, FITT administers the Technology Incubation and Development of Entrepreneurs" (TIDE 2.0) programme of - Ministry of Electronic and Information Technology (MietY) – for strengthening technology start-ups in selected areas of national concern by leveraging emerging technologies. BIRAC has selected FITT as one of the eight BIG Partners in the country under the Biotechnology Ignition Grant (BIG) Scheme to support start-ups and scientist entrepreneurs from research institutions towards commercialization of research results by providing early stage grants for development and maturation of their discoveries/inventions into marketable products. FITT is in association with Pfizer, for implementation of the Pfizer IIT Delhi Innovation and IP Programme, thereby providing financial grant support:

- i) Upto ₹60 lakhs to healthcare based innovators/ start-ups for incubation.
- ii) ₹3 lakhs for IP protection for selected applicant.

Under the NIDHI-Seed Support System (NIDHI-SSS) programme of DST, introduced in the year 2017, FITT provides funding to incubatee start-ups upto ₹1 crore. So far 25 incubatees have been supported by seed funding to the tune of ₹7 crores.

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 2020-2021, four applicants have been shortlisted under DPP.

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

Sona Comstar in association with FITT have launched the Sona-Comstar-IIT Delhi Innovation Programme (SCIDIP) for safe, clean and eco-friendly mobility. This is a CSR initiative of Sona Comstar for supporting development of innovative solutions from startups in this area.

Power System Operations Corporation Ltd. (POSOCO), in association with FITT has been implementing the POSOCO Power System Awards (PPSA) since 2013. PPSA is a part of the CSR initiatives of POSOCO, which aims to reward excellence in the area of power system and its related fields. During the 9th edition of this award- PPSA-2021,

15 awardees were shortlisted in Doctoral category and 15 awardees in the Master category.

The Defence Innovation Organisation has signed an MOU with FITT to foster innovation & technology development in Defence and Aerospace. Nominated as an iDEX partner incubator, FITT is to mentor entrepreneurs and MSMEs to create, deploy and commercialise technologies and products for the Indian military and defence PSUs.

#### Defence India Startup Challenge – Edition 4



iDEX- DOI launched the 4th edition of DISC by Hon'ble Shri Rajnath Singh, Minister of Defence, GOI on September 29, 2020.

To encourage the spirit of entrepreneurship, FITT has instrumented the FIRE programme - Faculty Innovation and Research-driven Entrepreneurship. The programme envisions commercialization of the technologies developed at IIT Delhi through creation of Faculty-led Enterprises. Technologies and concepts backed by strong scientific evidence that may lead to a commercially viable solution shall be supported under this programme.

To help entrepreneurs working in deep technology domains

and further commercialization, FITT has launched the Platform for Harnessing Deep Technologies (PHD) Incubator Programme. The idea is to support innovators and entrepreneurs to carry forward a promising deep technology idea and generate proof of concept to validate the idea. Further details on application is available on: [fitt-iitd.in](http://fitt-iitd.in)

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

FITT has been implementing BIRAC's SPARSH- the Social Innovation programme for Products: Affordable and Relevant to Societal Health. This programme is aimed at the promotion and development of innovative solutions to society's most pressing social problems. Under this programme, shortlisted innovators are provided with a mini kick start grant of ₹5 lakhs and a monthly fellowship of ₹50,000/- along with technical support.

The AIC IIT Delhi Sonipat Innovation Foundation a Section 8 company created by FITT and IIT Delhi at the I-TEC, IIT Delhi Sonipat Campus under the Atal Innovation Mission (AIM) of the NITI AAYOG is ready to take off following the receipt of the first tranche of funding from the AIM. AIM is supporting the AIC for creating a world class incubation facility with over 10,000 sqft of space and state-of-the-art physical infrastructure, in terms of capital equipment and operating facilities for incubatee start-ups. Apart from this, business planning support, access to sectoral experts for mentoring and seed capital, industry partnerships, training and other relevant components required for supporting innovative start-ups will be provided.



FITT startup Geliose Mobility Private Limited, launched HOPE - an electric scooter on March 23, 2021. This vehicle comes with a portable charger and a portable Li-ion battery that can be charged through a normal socket found at every home eliminating the requirement of charger in your parking place.

# Collaborations

Global outlook of Indian education is certainly a game changer in this age of faster growth and economic opportunity. International collaboration by Indian Institutions is prominent in higher education, which has remarkably transformed the higher education ecosystem. With premier institutions like IIT Delhi working on a student-centric learning development model, it becomes imperative to have a holistic and integrated outlook. This means, institutions have to enhance the learning outcomes for its students. While the enrolment numbers in higher education in the country have increased to the largest in the world, this magnitude has also amplified competition, making differentiated and impactful deliverables of education mandatory. One such driving force of institutional development is Internationalization of education and increasing international collaborations.

## Indian Institute of Technology Delhi (IITD) and National Yang Ming Chiao Tung University (NYCU), Taiwan

The Indian Institute of Technology Delhi (IITD), and the National Yang Ming Chiao Tung University (NYCU), Taiwan, have established academic cooperation through MoUs signed in the year 2018 and 2019. The IIT Delhi – National Yang Ming Chiao Tung University Liaison Office at IIT Delhi has become functional since the year 2019. In 2020-21, three new students enrolled in the JDP taking the total to seventeen enrolled students now. Academic Cooperation through MoU signed between IIT Delhi and NYCU-Taiwan continued in the year 2020-2021.

- The National Chiao Tung University (NCTU), Taiwan and the National Yang Ming University (NYMU), Taiwan, merged to become a new entity National Yang Ming Chiao Tung University (NYCU).
- The coordination office at IIT Delhi became fully functional.
- Eighteen (18) Joint Projects are operational under the NYCU-IIT Delhi Collaborative Project proposal MFIRP scheme.
- Seventeen (17) Joint Ph.D. students are pursuing coursework and research work at the respective institutions.
- The NYCU-IITD Joint Webinar was organised to monitor the progress of the Joint-Doctoral Programme (JDP) students' progress in December 2020.

## UQ – IITD Academy of Research (UQIDAR)

The Two globally renowned institutions, IIT Delhi (IITD), an Institution of Eminence in India, and, The University of Queensland (UQ), Australia with a QS World University Ranking of 47, through their joint-venture research academy -- the UQ IIT Delhi Academy of Research (UQIDAR), aim to train a large number of PhD research students, jointly supervised by professors at both UQ and IITD.

Since 2020, UQIDAR has been actively engaged with industry in India and Australia. One of the key differentiators of the UQIDAR is partnership with industry to jointly address the Grand Challenges. The UQIDAR is interested in developing strong sponsorships and partnerships with industry across diverse sectors and Energy is one of them. Energy is undoubtedly critical focus and is of deep interest due to the enormous challenges it poses today with increasing demand on one hand and climate change on the other.

Renew Power - one of the important companies in the Energy sector in India, has sponsored two UQIDAR PhD students. A feather in the cap of the UQIDAR was the Energy Workshop held in April 2021. The unique workshop attracted more than 100 delegates from India and Australia. Several industries that had participated in the Energy workshop have shown interest to partner with the UQIDAR.

By the end of the academic session 2020-2021, UQIDAR students' strength grew to 50. UQIDAR students are central to all the development activities and varied events were organized during 2020-2021 to bring out their academic and technical skills, such as, for example, the 3MT competition, held on 19th November 2020. 3MT is an academic competition that challenges Ph.D. Scholars to present the summary of their thesis in just 3 minutes to a larger audience.

Under the UQIDAR guidelines, students at IIT Delhi (the i-students) have to visit UQ after completion of 1st year in IIT Delhi as part of their enrolment as Ph.D. scholars. Three students visited UQ in early 2020 and carried out their research work till the year end. During this period, a Leadership team of 5 members, headed by the Director, IITD, also visited UQ.

The UQIDAR's new office was inaugurated by the Director, IIT Delhi on 19th January, 2021. The office is now fully operational.

## MoU & Research Collaborations

- **Strategic partnership between United Nations World Food Programme (UNWFP) and IIT Delhi** has been initiated as per the MoU signed by the Director, IIT Delhi and Mr. Bishow Parajuli, Country Director of World Food Programme India. Prof. Nomesch Bolia will coordinate the activity in a project mode.
- **The National Highways Authority of India (NHAI)** partnered with IITD for collaborative research to improve the Road infrastructure ecosystem. The MoU was signed on August 6, 2020, by Prof. V. Ramgopal Rao, Director, IIT Delhi, and Mr. Asheesh Sharma, IAS Member Finance, NHAI, in the presence of Dr. Sukhbir Singh Sandhu, Chairman, NHAI, for setting up a Centre of Excellence (CoE) on Advance Data Management System (ADMS) for Highways at IIT Delhi. Prof. Geetam Tiwari will coordinate the activity.
- **Odisha University of Agriculture & Technology (OUAT), Bhubaneswar & IIT Delhi signed an MoU** on August 12, 2020, to strengthen research & education in cutting-edge agriculture and allied subjects. The partnership will find solutions for farmers' problems using Precision agriculture, Nanotechnology, Geo-spatial technology, and Biotechnology. The MoU was signed by Prof. V. Ramgopal Rao, Director, IIT Delhi, and Dr. Pawan Kumar Agrawal, Vice-Chancellor, OUAT, Bhubaneswar.
- **MoU signed with M/s. Mastercard Technology Private Ltd and IIT Delhi** on September 3, 2020, for research engagement in Artificial Intelligence, Cyber Security, Data Science & Analytics, towards Payment Technology aspects.
- **The Institute of Liver and Biliary Sciences (ILBS), Delhi and IIT Delhi** signed an MoU on September 21, 2020, to establish 'ILBS-IITD Collaborative platform' for the use of Artificial Intelligence, Bio-sensor technology, Computational biology and Big Data, Material Sciences, 3D Bio-printing, regenerative tissue growth, nano-science and effective drug delivery in liver & biliary diseases.
- **IIT Delhi and UNESCO- Regional Centre of Biotechnology (RCB), Faridabad** signed an MoU to establish "RCB-IITD Collaborative Platform" for initiating wide-ranging collaborations involving academics, research, and human resource development. The MoU was signed by Prof. V. Ramgopal Rao, Director, IIT Delhi, and Dr. Sudhanshu Vрати, Executive Director, RCB, on November 25, 2020.
- **IIT Delhi and CSC Academy:** The Common Services Centres (CSC), under the Ministry of Electronics and Information Technology, has partnered with IIT Delhi

to promote design and innovation among the Village Level Entrepreneurs (VLEs) managed by CSCs across the country. The MoU was signed by Prof. V. Ramgopal Rao, Director, IIT Delhi, and Dr. Dinesh Tyagi, Managing Director, CSC SPV, on December 28, 2020. As per the MoU, a design & innovation lab will be set up at the Department of Design, IIT Delhi.

- **The Indian Navy and IIT Delhi:** Furthering the Indian Navy and IIT Delhi relationship on research in the underwater domain of Naval Electronic Systems, an MoU was signed on February 2021. The MoU, will boost the research in the areas of strategic importance to the Indian Navy.



- **Ashoka University, Haryana and IIT Delhi:** IIT Delhi and the Ashoka University, Haryana signed an MoU for collaborative research and education in the sciences, engineering and humanities and social sciences. The MoU further paves for active partnership between Ashoka University and the IIT Delhi Sonipat campus.
- **The Hebrew University of Jerusalem, Israel and IIT Delhi:** IIT Delhi and the Hebrew University of Jerusalem, Israel (HUJI) signed an MoU in January 2021 to support collaborative and interdisciplinary education and research activities. Researchers will get seed funds from their respective institutes besides opportunities for student exchange programmes .. On the research front, this MoU will specifically facilitate the use of complementary expertise for joint research projects in the areas of science, biomedical science, environment, and chemistry.



- FITT signed MoU with Nayara Energy and Gexcon towards the establishment of a Centre of Excellence in Process Safety & Risk Management on November 4, 2020 at the Senate Room, IIT Delhi.



- MoU between Indigram Labs Foundation and FITT was signed for supporting innovators and further strengthening of the start-up ecosystem on October 5, 2020.



- Mr. Pravir Krishna, M.D., TRIFED and Dr. Anil Wali, MD, FITT have signed an MoU to collaborate and enhance the income growth of tribals through the commercial production and sale of Mahua- Nutra-beverage, a value added product made out of Mahua on March 17, 2021.





- FITT has signed an MOU with MG Motors to collaborate on “Research on Connected, Electric, Autonomous Mobility” on March 15, 2021.
- Hyundai Motor India signed MoU with FITT: Extends Kona Electric SUV for research and training, January 20, 2021.



### Memorandum of Understandings (MoUs) Signed by the Institute

In order to have close cooperation in the field of Teaching and Research, the Institute has signed MoUs/Agreements with institutions/organisations in India and abroad. Currently there are 126 MoUs with foreign Institutions/Organisations and 32 MoUs with Indian Institutions/Organisations. The objectives of these MoUs include exchange of students and faculty, joint research activities and fellowships for training at doctoral and postdoctoral level etc.

During the period, 16 MoUs were signed with the foreign Institutions/Organisations:

S.No.	Name of the Institution	Country
1	Pohang University of science and technology (POSTECH)	South Korea
2	Chalmers University of Technology	Sweden
3	University of Northumbria at Newcastle	UK
4	University of Transport Technology	Taiwan
5	The Hebrew University of Jerusalem	Israel
6	Koc University	Turkey
7	Universiti Brunei Darussalam	Brunei
8	Kyushu Institute of Technology	Japan
9	University Technology, Malaysia	Malaysia
10	University of Leeds	UK
11	University Ghent	Belgium
12	Weizmann Institute of Science	Israel
13	Paderborn University	Germany
14	The Arctic University of Norway	Norway
15	Bar-Ilan University	Israel
16	National University Corporation Kyushu University	Japan

## INTERNATIONAL VISITORS

### International Visitors (Including both offline and online meetings)

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

- Meeting with Prof. Richard Davies, Pro Vice Chancellor Global New Castle University was held on 21st May, 2020.
- Meeting with Mr. Oran Shagrir, Vice President for International Affairs HUJI-Jerusalem held on 8th June, 2020 to discuss possibilities of research/teaching collaboration
- Participation in joint session of group of higher education institutions with H.E. Mr. Emmanuel Lenain, Ambassador of France held on 11th June, 2020 to reflect an Indo-French academic exchanges and contemplate future strategies for cooperation
- Meeting with Prof. Avraham Yaron & Dr. Iris Good from Weizmann Institute, Israel held on 23th June, 2020 to discuss possibilities of research/teaching collaboration
- Meeting with Auckland University Delegation on 17th July, 2020.
- Meeting with Mr. Anupam Yog from National University of Singapore on 20th July, 2020.
- Meeting with Delegation from UTM Malaysia on 20th July, 2020.
- Meeting with Delegation from Koc University, Turkey on 20th July, 2020.
- Meeting with Delegation from Northumbria University London, UK on 11th August, 2020
- Meeting with Delegation from Saudi Arabia on 25th August, 2020.
- Meeting with Dr. Rajeev Shorey, University of Queensland - IIT Delhi Academy of Research (UQIDAR) on 11th September, 21st September and 30th September, 2020.
- Meeting with Meshal Aleisa, Director, Ministry of Communication and information Technology, Saudi Arabia on 3rd November, 2020.
- A 2 members delegation from University of Guyana visited the Institute on 3rd December, 2020.
- MoU signing ceremony with UTM, Malaysia led by Prof. Mohd. Fadhil Md. Din, Director of Campus Sustainability, UTM, Malaysia on 16th December, 2020.
- Meeting with Ambassador H.E. Yerlan Alimbayev and Ms. Laila Salykova (Director of International cooperation department of Astana IT University), Kazakhstan on 30th December, 2020.
- Online meeting with 3 member delegation led by Prof. dr.ir. H.W.J. (Herman) Russchenberg of TU Delft, Netherlands on 28th January, 2021.
- Online meeting with Delegation from American University in Cairo, Egypt on 1st February, 2021.
- Online meeting with Delegation from Hebrew University Jerusalem, Israel on 2nd February, 2021.
- Online meeting with Delegation from Newcastle University, UK on 3rd February, 2021.
- Online meeting with Delegation from University of British Columbia, Canada on 3rd February, 2021.
- Online meeting with Delegation from Kyoto University, Japan on 8th February, 2021.
- Online meeting with Delegation from IMT Lille Douai, France on 16th February, 2021.
- Meeting with H. E. Freddy Svane, Ambassador, Denmark on 1st March, 2021.
- Online meeting with Delegation from University Brunei Darussalam, Brunei on 3rd March ,2021.
- Online meeting with Delegation from Princess Nourah Bint Abdul Rahman University (PNU), Saudi Digital Academy (SDA), Saudi Arabia on 16th March, 2021.
- Online meeting with Delegation from National Tsing Hua University, Taiwan on 17th March, 2021.
- Online meeting with Delegation from Imperial College London, United Kingdom on 19th March, 2021.
- Meeting with Delegation from Institute of Engineering, Tribhuvan University, Nepal on 31st March, 2021.

## DISTINGUISHED VISITORS



*A 2 members delegation from University of Guyana visited the Institute on 3rd December, 2020.*



*A 2 members delegation from Tribhuvan University Nepal 31st March, 2021.*

# Corporate Relations

Corporate Relations at IIT Delhi, aims to build collaborations that link the industry to our research community while creating scalable solutions for the local and global community. Our faculties are actively involved in industry collaboration projects. Many of our faculty are co-founders of startups and have successfully transferred technologies to the industry. Our research community is actively working with more than 200 corporate houses on diverse R&D activities.

Our partnerships are focussed on merging science and engineering innovations at the Institute with the rigor and implementation capabilities of the industry to create effective solutions.

Our team actively engages in fostering industry engagements to facilitate the transfer of knowledge and emerging technologies from Academia to Industry. We strive to build bridges through these collaborative activities to provide a platform for our faculty and research scholars to transform academic research that commences from classrooms and laboratories into technologies and products that can make a positive difference to the society.

## Initiatives by Corporate Relations during the period:

### Story 1

**Inaugural Online Event: JETRO & IIT Delhi:** Corporate Relations, IIT Delhi organized an inaugural online event in collaboration with JETRO (Japan External Trade Organization) on 18th Nov 2020. 150+ participants from various Japanese companies witnessed this event. This event aimed to introduce IIT-Delhi to Japanese Industry/Businesses and extend co-operation/partnership in specific areas/domains etc. going forward. This is the key to enhance and develop the IIT-Delhi and JETRO initiative of encouraging growth bilaterally. This event led to the another two events focussed on healthcare and automobile industries.



**Online Event with Automobile Industry: JETRO & IIT Delhi:** Corporate Relations, IIT Delhi organised an online event with JETRO (Japan External Trade Organization) on 18th Dec 2020 themed around the automotive sector. This event envisaged to provide a glimpse of the initiatives happening in IIT Delhi around Autonomous Electrical Vehicle Technologies, AI/connected cars, security, and IoT and explore possible collaborations with Japanese companies. This endeavour targeted to provide a single platform to discover key collaboration frontiers across industry and academia in automotive domain, for redefining the business horizons by providing an innovation space for cutting edge technology.

**Online Event for Healthcare: JETRO & IIT Delhi:** An online event was organised on February 5th, 2021, themed around the Healthcare sector in the areas of Medical Devices, Vaccine Development, Imaging, Biotherapeutics etc. 50+ audience mainly Japanese companies attended the event

from JETRO side and 11 faculty from different disciplines and 2 start-ups presented their work to collaborate with Japanese companies.

### Story 2

**PHD Startup Incubator Programme:** IIT Delhi has a thriving PHD startup incubator programme on techno entrepreneurship to provide a viable support mechanism that can attract interested early-stage career scientists/engineers who are interested in an innovation-driven entrepreneurial journey. The program envisions successful deep science/technology start-ups, involving technically qualified professionals (preferably doctorates), to enable a robust ecosystem to catalyze robust tech ventures. The present proposal by FITT, IIT Delhi, aims to be a flagship support program for nurturing high technology start-ups in the country. As part of the IIT Delhi ecosystem, Corporate Relations has been instrumental in initiating successful Industry-Academia collaborations and we leveraged its network, branding, and goodwill for promoting PHD Startup incubator program in March 2021 and aims to do it persistently.

### Story 3

**Clifford Chance Business Services – Covid Collaboration:** As the number of COVID-19 cases continue to rise, the demand for protective gear is also increasing. Indian Institute of Technology, Delhi, has come up with several products for this purpose, and one such has received support from Clifford Chance Business Services.

Prof. Arnab Chanda (CBME) has developed COVLOCK, a special design for a face shield. COVLOCK addresses the critical need to manufacture facial protection equipment which can effectively inhibit person-to-person transmission of the contagious virus with respiratory droplets, produced when an infected person coughs or sneezes, via mouth, nose, or eyes. It is an innovative ergonomic face shield which can be comfortably worn for prolonged hours just like a pair of glasses. Rapid prototyping will be employed to mass manufacture COVLOCK at IIT Delhi and bring it to the frontline workers and masses at an ultra-low cost.

Clifford Chance Business Services is funding the production and distribution of 10,000 pieces of COVLOCK.

### Story 4

**MSDF and IIT Delhi Collaboration for Student Support: Michael and Susan Dell Foundation** - The COVID-19 pandemic has affected educational systems worldwide, leading to the total closures of schools, universities and colleges. Most governments around the world have temporarily closed educational institutions in an attempt to contain the spread of Virus. At IIT Delhi, Senate in its meeting has mandated that Semester II, 2019-20, and Semesters I & II, 2020-21, are to be completed online, in view of the prevailing COVID-19 pandemic. It is estimated that a small number of students do not have required access to online learning resources hence Dell Foundation is in process of helping out students with device and data connectivity so that their studies are not hampered. The total grant was to the tune of ₹70 Lakhs.

### Story 5

**Tie up with Dholera Industrial City Development Limited, Gujrat:** Dholera Industrial City Development Limited (DICDL) entered into an agreement with corporate relations and funded three research projects to the tune of ₹2.3 Crore. These projects are related to: Road pavement lead by Prof. B. Manna, Geothermal by Prof. Tanusree Chakraborty and Piezoelectric energy harvesting by Prof. Suresh Bhalla, from civil engineering department.

### Story 6

**Huawei:** Huawei Technologies signed for three sponsored research projects. Total funding is ₹1.45 Crore Huawei Day organized in the year 2019, led to these research collaborations.

### Story 7

**Activities Related to CSR:** CSR redefines the role of the corporates over and above their old philanthropic practices to their ability of giving back to the society, driving prosperity and creating sustainable solutions. Corporate relations office is engaged in a multitude of projects and infrastructure building activities under our CSR umbrella. We offer collaboration opportunities on stimulating social improvement projects, skills development (education and training), adoption of knowledge (innovation and technology transfer), promotion of entrepreneurship (start-ups and spin-offs), as well as enhancing the IITD infrastructure to build a desirable ecosystem for all. Continuing their strong relationships with IIT Delhi following organisations contributed CSR funds for various research projects:

- **Global Vectra Helocorp Ltd.:** ₹18.58 Lakhs towards environmental related activities, support toward economically weak students/girl students, skill development and business incubators.
- **Hitech:** ₹22 Lakhs towards chair position.
- **Agilent:** ₹50 Lakhs towards COE Pharmaceutical Technology.
- **Resil Chemicals:** ₹18 Lakhs toward SMITA research lab to develop sustainable and innovative solutions for the society.
- **Cookson India Pvt. Limited:** ₹5.5 Lakhs for scholarship for meritorious students.
- **Northern Benevolent Fund:** Contributed CSR grant for doing research projects in the areas of Urban Water Management to address Water Security of NCT Delhi and Screening and Identification of Potential Therapeutic Molecules against COVID-19.
- **Springer Nature** has extended support in setting up office of Accessible Education. The main objective of the office is to ensure equal opportunities in all aspects to every student with disability (SwD) on the campus. The office will be providing various resources and appropriate services to the students. Springer has agreed to contribute ₹7 Lakhs to start with, under their CSR initiative.
- **Micron Technology India:** As a part of their CSR activities, Micron Technology India has provided funding for one of IIT Delhi's projects on COVID-19. Lead by Prof.

Jayadeva, the project uses AI techniques for detection of COVID19 patients from X-Ray and CT Scan images. An amount of ₹22 Lakhs was received in the month of January 2021, and has paved way for embarking on a longer term collaboration between the two entities.

- **Tower Research Capital India Scholarship Award:** An online Hacker Rank test for Tower Research Capital India Scholarship was conducted in the month of December 2020. Students of 2nd and 3rd year from three different disciplines i.e., Computer Science and Engineering, Mathematics and Electrical Engineering attempted this test. Kalash Gupta, 4th year student – Computer Science & Engineering and Saptarshi Dasgupta, 3rd year student – Computer Science & Engineering successfully qualified the test and were awarded with Tower Research Capital India Scholarship ₹2 Lakhs/Annum. Eligibility will be evaluated every year and fresh selections would be made. Based on their 2nd and 3rd year CGPA, they will be awarded scholarships for 3rd and 4th year, respectively. Tower Research Capital had associated with IIT Delhi to set up a merit scholarship for undergraduate students under Corporate Social Responsibility Programme (CSR). The objective is to give Scholarship for students entering in 3rd & 4th year undergraduate students of ₹2 Lakh per student which will be used to support tuition fees per academic year. They will be evaluated on 2nd year and 3rd year performance to avail scholarship.

### Story 8

**Healthcare Related Collaborations:** Following funding received for healthcare related projects from:

- **TCS:** ₹32.62 Lakhs for pharma project led by Prof. Anurag S. Rathore.
- **Sam Circle:** ₹20.22 Lakhs for pancreas cancer detection through imaging led by Prof. Anurag S. Rathore.
- **Unilever:** ₹25.42 Lakhs for Investigating the mechanism of inactivation of non-enveloped viruses using biochemical and in-silico approaches, project by Prof. Manidipa Banerjee.

### Story 9

**TCS and Corporate Relations Ongoing Collaborations:**

- IIT Delhi faculty Dr. Manan Suri signed a consultancy project with TCS (TCS lab: Embedded Device and

Intelligent Systems, Kolkata) on June 11th, 2021 in the area of research which include Cognitive Robotics, SNN-based algorithms, corrections, improvement, modification on new algorithms, Implementing and testing the algorithms on BindsNet for Neuromorphic platforms.

- TCS Research Scholar Programme Cycle 16\_IIT Delhi - On 15th July 2020, TCS selected two scholars in TCS Research Scholar Programme Cycle 16, Mr. Dishant Goyal (Guide: Prof. Ragesh Jaiswal, Department of Computer Science and Engineering) and Mr. Kolluru Sai Keshav (Guide: Prof. Mausam, Department of Computer Science and Engineering).

### Story 10

**Advisory Board of Corporate Relations:** A seven (7) member advisory board of corporate relations formed in June 2021. The board will provide strategic advice to CRO to help maximise the impact of Industry engagement programmes - review and refine new initiatives taken up by CRO. The board will also help implement global best practices that enable acceleration of research programmes, establishment and growth of world-class research centres, encouragement of innovation and entrepreneurship, among others. The first virtual meeting was held on 4th June where all the members interacted with the team and got an overview of Corporate Relations as it stands today. Prof. Anurag S. Rathore (Dean -CR) also discussed briefly the vision and expectations from the advisory members.

S. No.	The Board Members
1	Mr. Venkata N. Padmanabhan Deputy Managing Director, Microsoft Research India
2	Prof. Soumitra Dutta Professor, Cornell University
3	Ms. Punita Kumar Sinha Board Member and Investment Professional
4	Mr. Vishvesh Prabhakar Managing Director, Accenture
5	Mr. Abheek Singhi Senior Partner and Managing Director, BCG
6	Mr. Vinay Piparsania CEO, IIT Delhi Endowment Management Foundation
7	Mr. Ajay Bhardwaj CEO, Anthem Biosciences Private Limited



# Endowment Fund

## IIT Delhi Endowment Fund (Progress)

Post the launch of the IIT Delhi endowment fund, till date the Institute has been able to collect ₹ 69 crores of the committed funds. An Endowment Board has been constituted which will take the major decisions regarding the fund. The endowment bye-laws have been approved by the Board of Governors of IIT Delhi in its meeting held on 20th March 2020.

The decisions of the Endowment Board shall be implemented through the "IIT Delhi Endowment Management Foundation", which is a Section 8 company duly incorporated for the purpose under the provisions of the Companies Act, 2013. Mr. Vinay Piparsania, an IITD alum from the Class of 85 has been appointed as the first CEO of the foundation. The Endowment management foundation will also be responsible for raising funds from alumni donors and nurture donor relationships including providing them regular updates on the utilization of their

contributions. A new 501(c)(3) organization "IIT Delhi Endowment foundation (IITDEF)" has been set up in the US for collecting contributions to the endowment fund from donors based in the US.

Having announced launching IIT Delhi's Endowment Fund in October 2019, the Institution on 18th February opened its doors to its new Endowment Centre and Management Foundation office. The special ceremony was presided over by Prof. V. Ramgopal Rao, Director, IIT Delhi; Mr. Arun Duggal, Chairperson, IIT Delhi Endowment Foundation and Prof. Naveen Garg, Dean, Alumni Affairs and International Programmes.

Strategically located at the Institute's iconic main administrative building on IIT Delhi campus, the Endowment Centre provides a distinct showcase of how the contributions of its distinguished alumni are supporting the advancement and realisation of the Institute's aspirations for the future.



# Alumni Affairs

## DISTINGUISHED ALUMNI AWARD/GRADUATE OF LAST DECADE/ALUMNI SERVICE AWARD

IIT Delhi lays great emphasis on a strong and vibrant relationship with its alumni. The Institute is proud of its alumni and their achievements.

To recognize the outstanding contributions made by the alumni in areas of academics, teaching & research, corporate business development, profession and/or public service, the Institute confers the Distinguished Alumni Award each year. This is the highest honour conferred by the Institute on its alumni. For the year under report, the prestigious award was conferred upon the following at the 51st Convocation of the Institute.



**Prof. Neville G. Pinto**

*Distinguished Alumni Award*

B.Tech. in Chemical Engineering (1980),  
President of the University of Cincinnati



**Prof. H.V. Jagadish**

*Distinguished Alumni Award*

B.Tech. in Electrical Engineering (1981),  
Bernard A. Galler Collegiate Professor of Electrical  
Engg & Computer Science at University of Michigan.



**Prof. Nemkumar Banthia**

*Distinguished Alumni Award*

M.Tech. in Structural Engineering (1982),  
Canada Research Chair and Professor of Civil  
Engineering at the University of British Columbia



**Mr. Yashish Dahiya**

*Distinguished Alumni Award*

B.Tech. in Textile Technology (1994),  
Co-Founder and Group CEO, PolicyBazaar.com





**Mr. Deepinder Goyal**

*Distinguished Alumni Award*

Integrated M.Tech. in Mathematics and Computing (2005),  
Founder & CEO, Zomato



**Mr. Pankaj Chadda**

*Graduates of Last Decade (Gold) Award*

B.Tech. in Mechanical Engineering (2007),  
Co-Founder Zomato and Mindhouse



**Prof. Sanjam Garg**

*Graduates of Last Decade (Gold) Award*

B.Tech. in Computer Science & Engineering (2008),  
Assistant Professor at the University of California,  
Berkeley



**Mr. Vikram Gupta**

*Distinguished Alumni Service Award*

B.Tech. in Chemical Engineering (1993),  
Founder and Managing Partner, IvyCap Venture

## INTERACTION WITH ALUMNI

- **Interaction with Alumni:** As a part of a Webinar talk series, on 29th January, 2021 by alumnus of 1993 Batch, Mr. Vikram Gupta, Founder and Managing Partner IvyCap Ventures and Prof. Smita Kashiramka, Associate Professor, IIT Delhi. This Webinar around the topic financial skills required by entrepreneurs was also moderated by an Alumnus Dr. Anju Gupta, Co-founder & President, IvyCap.
- **Annual Donation Campaign: Giving March:** This year the Alumni Affairs office under the leadership of the Dean, Prof. Naveen Garg once again launched a campaign for fundraising from Alumni all around the globe and India. The month of March was observed as the giving month and the campaign was called the "Giving March". This is the month we encourage our alumni to reaffirm their pledge to support their Alma mater, to which we owe a lot.
- The money raised from this campaign will be added to the IIT Delhi Endowment Fund. As you all are perhaps aware, we had launched an Endowment fund in October 2019 with an ambitious target and all these contributions big or small will be added to the same endowment.
- **Chairs/Awards/Scholarships:** This year though the Pandemic slowed down the whole world, but our Alumni helped the institute constantly. It was a good year as we were able to add seven new professor chairs and many awards and scholarships were also instituted for the benefit of the students. We appreciate our Alumni even coming together in these tough times to support their Alma-Mater.

## ALUMNI CONTRIBUTION

The Alumni are a very valuable resource for the Institute, and increasingly, they have started to make a difference to the way things are done at IIT Delhi. The Alumni have directly contributed for instituting Chair Professorships, Young Faculty Incentive Fellowships and Student Awards and even for Infrastructure Development.

The Institute has garnered excellent support for its vision and mission from its Alumni during the year.

Some of the contributions from the Alumni in the previous year are listed below and are gratefully acknowledged:

HEAD	CONTRIBUTION (IN ₹)
<b>BATCHES AND REUNIONS</b>	<b>2,60,004.00</b>
Silver Jubilee 1993 Batch Fund	2,60,004.00
<b>CHAIR</b>	<b>6,34,55,437.71</b>
1979 Ruby Reunion	1,87,636.37
Chaturvedi Fellowship	1,00,00,000.00
Hi Tech Chair	21,00,000.00
Janaki and K A Iyer Chair	12,50,000.00
Mehra Professorial Chair	3,63,000.00
Mr. Manish Singhal	85,00,000.00
Nick Mckeown Chair in Computer Science	1,00,00,000.00
Pankaj Gupta Chair in Privacy & Decentralization	1,00,00,000.00
Prof. Ishwar Chandra Goyal Chair Professor	24,86,586.16
Prof. Soumitra Dutta Chair	19,70,181.86
Prof. Ajoy K. Ghatak Chair	1,00,04,568.00
Ramachandran Jaikumar Chair for Decision Sciences	35,00,000.00
Vaidya Soalapurkar Chair	25,93,465.32
Yes Bank Chair	5,00,000.00
<b>ALUMNI ENDOWMENT FUND</b>	<b>40,93,79,200.20</b>
Global Alumni Endowment Fund	40,93,79,200.20
<b>OTHER CAMPAIGNS</b>	<b>1,88,48,336.80</b>
CS&E Research Acceleration Fund	10,21,041.26
CSE/Chandruka Doctoral Grant	9,62,869.08
Each One Teach One	1.00
Giving March	9,16,835.00
Giving Week 2020	7,30,171.21
IIT Delhi Benevolent Fund	15,11,178.00

Table contd.....

IIT Delhi fights Covid	1,01,617.00
Incubator for Bioanalytical Characterisation	90,00,000.00
Miscellaneous Donations	1,25,676.71
Prof. Kasturi lal Chopra Endowment Fund(for Lab)	17,03,501.00
School of Artificial Intelligence	15,00,000.00
Stay-Con	15,446.55
CSE TBO Group New Faculty Fellowship	12,60,000.00
<b>SCHOLARSHIP AND AWARDS</b>	<b>1,59,86,393.45</b>
CSR Cookson India Pvt Ltd Scholarship	5,50,000.00
Dr. P.N. Kapur & Mrs. Pushpa Kapur Memorial Award	50,000.00
Microsoft Scholarship	1,20,000.00
Mudit Sharma Medal & Award	1,00,000.00
NBCC Award	25,000.00
P.C.P. Bhatt Faculty Research Award	5,00,000.00
Prof. Amiya Basu Prize and Award	8,340,610.45
Prof. D. S. Varma Award	10,00,000.00
Prof. K. L. Chopra Faculty Research Award	5,00,000.00
S. M. Shah Scholarship	5,27,557.00
Shiv Sharan Sharma Award	5,00,000.00
Shri Ambar Bajpai Memorial Financial Aid	15,00,000.00
SHRMT Jwala Devi-Sita Ram Kaushik Award	3,40,000.00
Solochana & Col. A. Krishnaswamy	7,50,000.00
Sumant Sinha Sustainability Leadership Award	10,80,000.00
Suman Upma Memorial Gold Award	1,03,226.00
<b>Total</b>	<b>50,79,29,372.16</b>

# Student Affairs

The year 2020-21 has brought a totally different experience for all of us from previous years due to the Covid-19 pandemic being faced all around the world. We as Student Affairs, have adapted ourselves accordingly to many new work ways and have been making consistent efforts so that students can lead a balanced life in harmony with their teachers, fellow students and family. This time, the freshers did not join the campus like previous years at the beginning of the semester. Some of them joined later. It was ensured that they settle down in their new surroundings comfortably. Online Freshers' Orientation Programme was organized at the beginning of the academic session. Counselling Service provided counselling to students on problems faced due to the pandemic life and for the problems arising from financial hardship, and emotional/psychological problems affecting academic pursuits. Outside the classrooms, facilities for a variety of co-curricular activities, online events, games, student publication etc. have been provided. We also provided hardware for online class support to needy students. More than 200 tablets and 400 4G dongles have been given already.

All activities done under Student Affairs are with the intention for giving academic support and for overall growth and development of students' potentialities and initiative with an emphasis on responsible student leadership.

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

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

## 1. STUDENT AFFAIRS COUNCIL (SAC)

The Students Affairs Council remains active throughout the year. SAC representatives do regular meetings to ensure that all facts of student issues are discussed. The representatives interact with student members of senate and other SAC committees for wider participation of students in the affairs of the institute.

In the year 2020-21, many student related issues are

resolved and new initiatives have been taken. Some of them are listed here:

**RFID Messing System:** To enable students to choose from a variety of mess options under flexible messing and to enable restricted access (through card), this is planned to be provided with a mobile application that provides a booking system for the messes.

**BUS Tracking System-LOCONAV:** To increase the utility of the buses in the campus the bus tracking system will be available to track the real-time location of buses at IIT Delhi.

**IITD Notification APP:** This app is under development. It will be the one-point stop for all the notifications of various board/club/council activities like events/announcements etc.

**Academic Affairs:** Two SAC secretaries were appointed to work alongside the CAIC general secretary for resolving academic issues and help students in difficulties.

**Information Cell Portal:** This will act as an extension of the currently existing e-Certification portal in terms of CV verification. This will be the central repository for all the ECAs, PORs, Projects and interns that a student does in the whole term at IIT.

**Project Portal:** This is under development. The idea of this portal is to encourage students to explore a career in research by engaging in research projects under professors, streamline the current procedure by which students get projects thereby benefiting all stakeholders.

**YULU Cycle/Cycle Clearing:** Yulu has recently started its operations in IIT Delhi with 150 Yulu moves and 65 Yulu miracles with several affordable plans especially for students with zero self-ownership, hassle-free signup and 24-hour service. New cycle stands have also been added to 6 different locations within the campus.

For unattended/unclaimed cycles a sustainable Cycle Management Initiative is under proposal.

**Alumni-Student Interaction:** To increase Alumni interaction with students as well as the institute, threefold proposal has been proposed and discussed with Dean Alumni as well. It is like:

- *My Imprint:* Based on the idea of graduating batch students giving a last gift to the institute. The project will be funded by donations from the graduating batch.
- *Alumni-Student Festival:* Organising a fest on the lines of Rendezvous, where various cultural events and competitions take place for students and Alums to participate.
- *Student-Alumni Mentorship Programme:* This project is in the works since 2 years with BSW taking the lead. In future AAIP may take up this as well.

**International Research Opportunities:** Here idea is to facilitate Undergraduate and Postgraduate students by providing them with a complete database for research-related opportunities. Discussions will be followed with the OCS Team and faculty coordinator to finalize steps to be taken further.

#### Work done by various boards of SAC-

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

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

Various major initiatives taken in this year are given here:

**Constitutional Changes:** Position of BHM Deputy General Secretary is proposed in SAC. This is to help the newly introduced BHM Secretaries and BHM Representatives, so the BHM General Secretary can work well with House, Mess and Maintenance Secretaries without any other interruption and load from General Secretary will decrease.

**BHM Night Mess, Outlets & Facilities:** BHM runs night mess for some of the hostels. This is to provide the students with infrastructural sound night messes, where they can eat while working and have least disturbance possible. Other outlets presently running in the campus are Delhi-6 and Masala Mix.

**Central Vendor Purchase Scheme:** To prevent the variation in rates of procured fruits, vegetables, and dairy products for all the messes from different vendors, BHM contacted one vendor for purchase of materials for all the hostel messes. This led to uniform mess bills across all hostels and purchase from single vendor also led to decrease in the price of materials.

**Smart Anaaj Initiative:** To improve the quality of nutrition in basic grains, the Smart Anaaj Initiative has been started.

**Structural Audit:** An audit was conducted through BHM by an external agency to find out the problems at structural levels in the hostels. Soon work on report will be started.

**BHM Employee Incentivization Scheme:** To ensure greater employee satisfaction and enjoyment of work, more time spent focusing on the job and less time complaining. An incentive programme for the BHM Staff (Mess & Garden) is being worked upon. Also, training, Health checkup camps are being conducted.

**COVID-19 related facilities inside hostels:** Hostels have been equipping with gadgets, sanitizers, disinfectants and other necessary materials. Due to less number of students in hostels, some of the messes are closed but to maintain social distancing and avoid crowding in Mess area, meals are being transported from the operational mess to other hostels.

Standard Protocol for handling COVID cases in the hostels have been designed and followed for any case found to be suspect or tested positive. All the students onboarding in hostels are kept on 07 days' quarantine and all meals are served to them in disposables in their room only. Students who test positive are shifted immediately to the isolation facility in the campus before moving to the Govt.

Covid centers. The facility is properly cleaned with basic amenities and all necessary Covid related things like water steamers, medicines, oximeters are provided are provided. Doctors from IIT Hospital talk to these patients twice a day. Vaccination facility is made available to hostel staff.

#### The Wardens / House Masters during 2020-21

Hostel	Warden
Aravali	Prof. Seshan Srirangarajan
Girnar	Prof. Anoopkrishnan Naduvath Mana
Himadri	Prof. Priyanka Kaushal (Ms.)
Jwalamukhi	Prof. Vivek Kumar
Kailash	Prof. Joyee Ghosh (Ms.)
Karakoram	Prof. Manojkumar Charandas Ramteke
Kumaon	Prof. Sri Harsha Kota
Nilgiri	Prof. Dinesh Kalyanasundaram
Nalanda	Prof. Dipti Ranjan Sahoo
Satpura	Prof. Hariprasad Kodamana
Shivalik	Prof. Sujin B Babu
Udaigiri	Prof. Jayant Jain
Vindhyachal	Prof. Prashanth Vangla
Zanskar	Prof. Sumedha Chakma

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

BRCA saw a smooth transition to the virtual mode with all its events being planned virtually, BRCA overall championship was organised this year too in an online mode at inter hostel level with fresh initiatives from all the cultural clubs. We saw greater enthusiasm among residents of various hostels with enhanced retention of senior year students too in most BRCA clubs owing to the healthy competitive spirit. Significant numbers of informal events, both at the level of individual clubs as well as cross club, were carried out simultaneously to ensure greater amalgamation of students with BRCA activities.

**Virtual Classes:** Literary Club held its online poetry workshop to introduce attendees to the forms and nuances of poetry. It was attended by over 60 people and preceded the flagship poetry event - Verses vs Verses. Dance Club organized online Zumba classes in collaboration with Abhyaas Dance Studio, every Tuesday and Saturday 4-5 p.m. during the pandemic lockdown. These online classes got an excellent response from all age groups.

**Rendezvous 2021:** The annual cultural festival was organized in virtual mode between 18th to 21st April, 2021, with several new initiatives being taken. Students not only from India but from all over the world participated in the fest. Rendezvous witnessed performances by noted artists like Vishal Dadlani, Anuv jain, Malvika Manoj, Baadal, Ali Tareeq, Yahya Bhootwala, Sainee raj, Arun gemini, etc. making it one of India's biggest college cultural festivals.

Few changes were done in the structure of Rendezvous this year. The finance of RDV was transferred to FITT, making the entire finances more authentic.



**Events Organized in the academic year:** Wide range of events have been organized in this session including internal, external, competitive and non-competitive, informal and freshers' events. The major highlights being street play competition, inter hostel group dance, mixtape, b-roll challenge, andaaz-e-bayaan etc. Contingents from Dance, Dramatics and Music clubs visited various inter college events and brought laurels to IIT Delhi.

**A glimpse of some club-wise events:**

#### **Fine Arts and Crafts Club**

- "Workshop week" - Indian artists were invited to conduct the workshops (Madhubani art by Arti Jha, Digital art by Rahul Kunwar, Comic art by abhisree, Watercolour painting by Deepak Sharma and Pen Rendering art) on alternate days in the last week of February.
- A Charcoal Painting Workshop, Paid art classes, Art Competition in collaboration with Wellness Club, Inter-hostel events, namely, Monochrome Painting competition, Still-life Sketching competition, Charcoal Painting Competition and Kilkari competition were held during the tenure.
- External events (open to all) like Rangoli competition, Blasphemy (Caricature Art Competition) and Inked Souls (Tattoo art Competition) were organized during Rendezvous'21. A collaborative Book Launch Event with LITERIA Insight was held in the 1st week of May.
- Significant improvement in the social media presence of FACC-Azure, with the launch of its own website and increased followers count in its instagram page.

#### **Hindi Samiti**

- Hindi Samiti organized a total of 12 events and hosted the second edition of IIT Delhi MUN with 5 committees.
- Short story writing, creative writing, parody making, workshops for freshers were organised. Also participated in external competitions organized by NSUT, DU etc.
- Second Edition of Hindi Samiti Magazine was released which is for the first time for any BRCA Club.
- Our flagship event and the most renowned event after the pronites, The Kavi Sammelan witnessed the highest audience (Around 5k) which is the highest for any BRCA Club at RDV'21 and was held virtually.

#### **Music Club**

- Produced a song for Gandhi Jayanti, completely remotely gathering 5000+ views on Instagram. Organized online competitions with high involvement of fresher students.
- Managed to produce almost an hour worth of music videos in form of competition submissions and group projects.

#### **Wellness Club**

- Regular Yoga session were conducted for everyone in campus Mon-Fri with the help of Bhartiya Yog Sansthan.
- Meditation Workshop with help of The Heartfulness Organization, Webinar Events on "Time management" with help from Akshaya Patra Foundation, "Science and spirituality" with help from Art of Living were conducted among others.

#### **Debating Club**

- To introduce freshers to Debating, conducted a fresher-only tournament 'Stalwarts'. Also conducted online debating event, Vivaad, Eloquence, workshops on important debating aspects to increase the knowledge base of the debating community within IIT Delhi. Also conducted House Spars specially for people who had never debated earlier, giving them an opportunity to overcome their hesitation to speak and cultivating the ability of critical analysis and convincing power in them.
- In collaboration with NSS, hosted Perspective Parliamentary Debate, giving opportunity to discuss socially sensitive issues.
- Conducted one of the biggest tournaments in the national debating circuit, the 15th edition of IIT-PD hosted in online mode for the first time with an astounding participation of 80 teams from across national and international colleges.

#### **Dance Club**

- The Western Group Dance Society (VDefyn) and Choreography Group Dance Society (Ensemble) once again represented IIT Delhi at various national level competitions including Springfest, IIT Kharagpur, IIIT Hyderabad, Rev Up, etc.
- Hostel and Institute workshops were conducted frequently. Organised online Zumba classes in collaboration with Abhyaas Dance Studio. Fresher only

event Offbeat was organized to introduce to the club activities. A special workshop series was conducted to introduce various dance form technicalities to the second yearites. Organized and reel making campaign with Three Degree Originals with name 'Work On Me Challenge'. These got fabulous response from the students and others.

#### **Photography and Films Club**

- Conducted online Fresher's league throughout the academic. It drew great attention and participation from the freshers. A guest workshop by Jitendra Chaturvedi (renowned Photographer) was done too.
- Conducted Create3.0, the third annual design marathon in collaboration with BSP and Design Club. Also organized 2 design workshops by Debjyothi Saha (Associate Producer, ESPN) and Sahil Dev (Renowned Illustrator).
- As participation in team competitions were not feasible in an online mode, the club encouraged members to participate in individual competitions. Our social media presence has also increased with the instagram and Youtube Channel.
- PFC conducted 5 All India level competitions in association with RDV'21 with sponsors like Mahindra Racing and TIAAN. Participated in Delhi Photography Club and conducted a workshop on composition in photographs during RDV.

#### **Quizzing Club**

- QC IIT Delhi has set up a fully functional website (qciitdelhi.org) to serve as an information bulletin with appropriate access for IITD students and otherwise. Also, increased social media presence by initiating Question-of-the-day series as well as Story quizzes on Instagram. Reach has increased by roughly two-fold in this term.
- The League system of intramural quizzing was revised to shift some focus on individual merit rather than teamwork, due to easy elusion of participation in online mode. Changes in League structure led to a recorded increase in PG participation. Highest ever count of freshers to be involved in the club, with 250+ students taking up amateur quizzing and currently 30+ freshers involved in professional quizzing (compared to past years' average counts of 7-10 per year).
- The club's archives of both external and internal quizzes, defunct since 3 years, were revamped and are now fully functional.

#### **Events:**

- Collaborated with BSP, BSA, Physics & Astronomy Club (PAC), and twice with BSW to host 5 intramural events to raise awareness about concerned and related topics. Collaborated with the India Quiz Foundation externally to host an event to dispel social myths.
- Apart from collaborations, QC IITD hosted 9 pan-India events, 8 as part of Rendezvous '21 with the introduction of a Diversity & Inclusion Quiz to increase

awareness about the LGBTQA+ lifestyle, struggles and legacy with the hope that this is carried forward. Total headcount of all such events exceeded 400.

- Further, QC IITD conducted 16 intramural events including the League and Inter-Hostel Competitive quizzes introducing some new variants of professional quizzing. The final League quiz is scheduled towards the end of 2020-21 sem 2. Uneven distribution of freshers over several hostels accounted for by clubbing appropriate hostels for fair representation. This was only for the club to comply with the merit system of the BRCA overall championship.
- QC IITD members attended over 50 nationwide events, with winning podium positions in over 25 events across 15+ quizzing fests.
- Introduced anti-cheating and faster checking methods to adapt to the online mode of quizzing, with some such methods being taken up by other quizzing societies. Also handed out club hoodies to members.

#### **Literary Club**

- Literary Club smoothly transitioned to online functioning and conducted more than 7 events throughout the year on national and institute level aside from the ones in Rendezvous 2021. Multiple creative writing and poetry writing competitions were held. Some are-
  - 'Dear Babu' creative writing related to Gandhi.
  - 'Verses vs Verses' poetry writing competition.
  - Anime quiz and slam poetry evening.
- Literary Club IITD in collaboration with BSP rolled out IIT's first formal platform for publishing literary content curated by the institute junta. The website: <https://www.literaryartsiid.com/>
- House system that was put in place last year, was continued Lit events like JAM were also held by the reps in their respective hostel fests.

#### **Dramatics Club**

- Some online events were organized to keep the students engaged like Parody Making to showcase the out of the box talent.

#### **SPIC MACAY**

- Spic Macay society Delhi conducted various events, interaction with artists, concerts, movie screening which we streamed for IIT Delhi students and encouraged to take part in it. In online mode many events were not possible and logistics arrangement was also hard. So there were not many events from our side.
- We introduced to freshers about our club and encouraged them to be a part of it and know about the work that we do.

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

Sports and games are essential components of human resource development and help in promoting good health and spirit of healthy competition, which, in turn, has a

positive and deep impact on the holistic development of personality of the Youth- a potential source of energy, enthusiasm and inspiration. Board for Sports Activities (BSA) had been looking after this important component for the development of sports environment in the campus.

Being the constituent body of the Student Affairs Council, it is the responsibility of BSA to ensure that adequate facilities are given to sports persons. It provides a forum for the students and staff to discuss and formulate policy towards the betterment of sports activities in the campus.

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

**BSA Fantasy League:** With over 600+ participants and three weeks of fun filled teaming ups of desired teams and competing with batch mates, BSA Fantasy League came out as no less than a saviour in the ongoing academic stress. Also, the number of participants glued to the BSA website at the end of every match's midnight to know their leader boards.

**Yoga Sessions:** The board of sports activities organised yoga sessions by Yogacharya Ankit Garg for a month long period to help the people struggling to do various asanas. They transitioned smoothly and within the span of a week, they were doing good. The sessions were conducted in various time slots to cater to as many people as possible. More than 1000 people registered for the event making it a huge success.

**Monthly Blitz Arena:** For the first time, BSA organised monthly Blitz Arena tournament for chess players in IITD.

**IITD Fresher's online Chess Tournament:** Freshers Online Chess Tournament was a huge success for BSA in terms of the participant turn-out. Tournament was in arena format held on Lichess platform in online.

**Valorant:** BSA hosted its first-ever e-sports tournament with three days of intensive Valorant action. The tournament had been split into two parts: Singles Deathmatch and Team Custom. (to accommodate the lone-wolfs of e-gaming) With nearly 200 participants.

**Republic Day Cricket:** On January 26, 2021, the first cricket match between the students of IIT Delhi and the professors was held. The all-inclusive student team consisted of a diverse group of people from within the BSA family.

**Freshers League:** Exclusively for freshers, BSA organized

a whole series of 10 days, namely, fresher's league- power packed, IPL Auction, Chess, Freshathon, Fitness Challenge, Skipping challenge, Cricket Quiz, Trick Shot Challenge, and reached the finishing line with Know your Contingent. It was our enthusiastic freshers who made these 10 days as exciting as a ride on a rollercoaster. Students got to know about the sports culture of IITD Contingent despite being from different sports teams, how we work together and ace it in every situation. With approximately 600+ entries in freshers league in different challenges, freshers have proved themselves.

**Know Your Contingent:** The much-awaited Freshers' League culminated into the 'Know Your Contingent' sessions with all 13 institute sports' teams. These sessions presented a golden opportunity for the dejected freshers to catch a glimpse of what wonderful experiences await them in BSA. Gsec panel Discussion, was organized by BSA in association with AAIP with a panel consisting of ex BSA Gsecs. The talk was a huge success.

**NSO Hours:** The National Sports Organization (NSO) is an effort at refreshing the students' bodies, give them a break from academic rigour and enabling them to try their hand at new sports. BSA came up with a Virtual Marathon- THE RUN TOWARDS GRADUATION, an exciting running event where one could compete and display their running skills among friends. BSA brought up this 1-Month long event for the Final-Year Students.

**Esport Week:** The Esports Week was power packed with five fantastic games; COD Mobile, CS:GO, Valorant, Mini Militia and Scribble. The IITD community witnessed over 300+ esports athletes competing for gaining key positions in the Esports scoreboard.

**WIN India 2.0:** BSA with two more IITs of Kanpur and Madras have planned a PAN IIT level sports meet in a virtual mode which was open for all students, faculties, alumni of all 23 IITs. It was a full week fest which included Chess, Virtual Marathon, Cyclothon, Esports, Yoga sessions, Meditation, Guest lectures, and Sports analytics workshop. It was an unofficial meet.

**Chess Inter-hostel:** A 10 day long Inter-hostel was conducted in an online mode among 13 hostels. It was an alternative to the conventional inter-hostel competition in offline mode.

A youtube live stream session of chess was conducted by BSA in collaboration with Aditya and the guest was Mr. Vaibhav Sethia, a renowned youtuber and comedian.

**BSA Semester Magazine:** monthly magazine got introduced this year. It was uploaded on social media pages of BSA and on its website. It included updates on BSA activities and major sporting events across the world. This magazine was full of humour and fun facts of Inter.

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

The Board for Student Publications has successfully completed the following major work in the academic session 2020-21.

#### Journalism, Opinion, and Student Issue Coverage

**Journalism:** to bring awareness and thought provoking



discussions on pertinent issues, we published several journalistic analyses of organizations, policies and the way of life at IIT Delhi.

**Issues with Office of Career Services-** The BSP conducted an examination of the working of the Office of Career Services, and recommendations were put forth. The analysis led OCS to make changes in their functioning.

**Supernumerary Scheme at Work:** we talked to undergraduate students from all the years to understand how supernumerary scheme reshaped not only the society here at IIT Delhi, but also has broken down barriers in encouraging more girls in taking admission at the IITs. The analysis was also published by The Wire.

**Casual Casteism:** In follow-up to our last-year's survey on casual casteist remarks, we sought to understand what were the fixes and best practices that IITD could implement in its system and what could student bodies do in their different roles. Few scholars and stakeholders were interviewed, to set recommendations that were presented at the semester SAC meeting. BSP also undertook the celebration of Ambedkar Jayanti in the institute this year, along with a panel discussion on the topic of 'Casteism in Urban Spaces' at our annual litfest, Literati.

**Uninvited: A Series of Stories:** This newly started series interviews students in their final semester who have received enviable job offers despite being considered underdogs in the field. The motivation behind the series is to break the chain of insecurity that plagues many IIT Delhi students ever since they enter the super-competitive college atmosphere. Through the stories, we attempt to break some of the misconceptions among students and inspire them to work hard and pursue their interests.



**The Venture, Ink:** The Venture, Ink is an initiative started this year by BSP to celebrate the start-up culture that has begun to take over the definition of what is IITD. The series takes up 1 startup at a time and instead of concentrating on the start-up itself and what it does, it is aimed to cover the journey of the founders.

**Opinion Editorials:** A new addition to our work this year, BSP for the first time started accepting opinion submissions from the IITD community, with the result that BSP published content that was not only journalistic and analytical in nature, but also opinions, written by and for the community members. Some of the pieces published were quite insightful and helped people open up to different viewpoints. Some of them are: Bringing Compassion to Campus, The Eternal Dance, Gender and GenZ: Equity Hiring, Plagiarism by Prof Sarangi, 'I cheat because I have to' and 'Holier than thou'.

**Student Issue Coverage:** BSP covered the viewpoint of the student community on various topics including pandemic impact, in its editorials. Some major ones are- The Fault in our Senate (decisions on academic relaxations in view of the second wave of the coronavirus), The Pandemic

Convocation (connect with students from the graduating batch and SAC attempted to understand opinions regarding Convocation), Bluffington of the Week (series on Instagram consists of a less than 40-word sarcastic but humorous quip).

### Literati Festival

<https://www.bspiitd.com/literati2020>

**Literati:** the signature litfest of the Indian Institute of Technology Delhi – it has grown into one of the largest gatherings of its kind. Like each year, we had a number of speakers grace the event from the media, activism and writing space, but unlike any other Literati, the 2020 edition was held completely online and attracted attention from colleges far and away. The competitions and performing arts segment of the festival also saw huge participation from colleges all over the country. The festival was held on 22nd -24th January, 2021.

Speakers invited for for the Literati Annual Lecture:

- Dr. Pratap Bhanu Mehta (Former Vice Chancellor of Ashoka University, Noted Academician in Political Science).
- Mrs. Karuna Nundy (Advocate, Supreme Court of India) for a talk on "Freedom and Flourishing: New Year in Law and Rights".
- Mr. Raj Kamal Jha (Editor-In-Chief, Indian Express) for a Tete-a-Tete, moderated by Abhinandan Sekhri (Co-Founder, NewsLaundry).
- Mrs. Manisha Pande (Executive Editor, NewsLaundry and Host of TV Newsance) for a Keynote Lecture.
- Panel Discussion on Casteism in Urban Spaces by Cynthia Stephen, Beena Pallical and Divya Malhari.

**Online Book Fair:** An online book fair was organized for the IIT Delhi community, where students, faculty and staff members could navigate a catalogue of more than 2,00,000 books and place orders for them at discounted prices, which were then delivered straight to their doorstep.

**Competitions:** Various competitions have been organized throughout the year. Some of them are:

- **Lit Fair:** Lit Fair is a one-of-its-kind pitch competition, where budding and aspiring authors and poets can pitch their ideas before a jury, and they stand a chance to get published and win exciting prizes. This year we had 3 respected publishers from the field as a part of our jury for the competition- Mr. Ravinder Singh (Bestselling Author of I Too Had a Love Story), Mrs. Trisha De Niyogi (MD, Niyogi Publishing) and Mrs. Srishti Singh (Author, Poet).
- **Word Games:** WordCrypt is a place where etymology enthusiasts can come and enjoy themselves, it is a word games competition full of crosswords, anagrams, rebuses, pyramids, adages and more. The event saw a participation of more than 200 teams from IIT Delhi and outside.
- **Spelling Bee Competition:** The 2020 edition of Literati saw a unique Hindi Spelling Bee event organized for the first time.

- **BSP Trophy Structure:** The BSP trophy structure was revamped and one new competition was introduced this year. The current competitions include Gazettale (magazine-designing competition), CREATE (a 3-day long designing marathon), Comicraze (Comic-making competition) and Bluffington Post (a sarcastic quip and joke-making competition).

**Encouraging Creativity and Expression:** BSP's one of the key responsibilities include stimulating the IIT community towards pursuits of writing and providing avenues for the writers who wish to get their writing published, able to be seen by the entire IITD community. This year, BSP implemented several initiatives to be able to address this portion of its mandate more effectively.

- **Literary Arts IITD:** In collaboration with the Literary Club of the BRCA, BSP has developed a portal where writings submitted to the two nodal bodies for creative pursuits (BSP and the Literary Club), can be published for the entire community to view, to provide an opportunity for budding writers for IITD to get an audience. The website was launched after a semester-long effort in March 2021 and will be operational from AY 2021-22. [www.literaryartiitd.com](http://www.literaryartiitd.com)
- **Vernacular Publishing:** Publishing in the vernacular language is an important aspect to foster inclusivity in the IITD community. BSP started publishing poems and short stories in the vernacular languages, namely Bengali, Telugu, Marathi, Gujarati and Urdu, apart from Hindi. This area also now has a dedicated section on our website where writers can get viewed by website visitors.
- **Muse:** Muse is the semesterly creative magazine published by the BSP, which consists of the best stories and poems crowd sourced from the student, faculty and staff community. BSP received 100+ entries for this year's edition, where the entrants were supposed to write on the theme of "Life in the Pandemic". The magazine shall be released by the start of May.

**Social Media and Website Upgrade:** A very large part of BSP's activities relies on its reach to the student community through social media platforms like Instagram and Facebook. Our Facebook page is currently followed by 12000+ people and Instagram page by 3000+ followers. A significant amount of time has been spent in revamping our tools for reaching out and rethinking what can be done better.



The BSP website has been redesigned to make it more accessible and easier to navigate. A new domain is purchased [bspiitd.com](http://bspiitd.com), which made it easier to access and the customized layout of the various pages. Pages handle vernacular language content as well. [www.bspiitd.com](http://www.bspiitd.com)

**IITD Freshers Interaction and Inception Magazine:** To facilitate online connection and interaction between freshers, BSP moderated a page on Instagram where freshers could submit a short intro and a few photographs

or videos of themselves doing some activity, which were then posted for the fresher community to see. The page received more than 200 entries and reached almost 90% of the incoming batch, with more than 1200 followers from the freshman year.

BSP also published its yearly publication Inception for the incoming freshers. This magazine acts as a guide to navigating first year life and the lingo, clubs, courses and various avenues IITD has to offer.

The BSP passed through an update in its constitution, last revised in the year 2013, which resulted in the post of Deputy General Secretary to be created for AY 2021-22 apart from other minor tweaks.

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

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

#### Mentorship under BSW:

**Mentor Orientation and Training Session:** A mentor orientation of 500-600 potential applicants was conducted online by 14 best mentors and 5 members of the core team to about what was expected of them. Video was created from experiences of past mentors and then shared with freshers and upcoming mentors. This year a new division of department head mentors was introduced including the best mentors for each department (total 11).

**Mentor Feedback:** To know whether freshers are doing well with their mentors and are satisfied with them, mentor feedback was taken during NLN sessions. This helped in keeping the mentorship program more efficient.

**Evening Games for Freshers:** Evening games were organized for freshers. An ice-breaking activity for helping them to open up and interact with their fellow companions, Interesting games such as scribble, codenames, etc and an online campus tour using Google earth and a fun quiz were also organized during the event. The event saw a huge turnover of over 1000 Freshers with 2500+ views on post-event publicity.



**Know your Hostel Mentors:** Due to online semester, students had minimal idea about their hostel seniors. To avoid unwanted tips by random seniors, we organized a series where we introduced the students to all the mentors

of their respective hostels.

**Piazza:** Piazza was introduced as a discussion forum to ease the doubt-clearing process to ensure all academic mentorship related activities were in one-place. Different mentors were allotted to manage Piazza each week and clear the pending doubts.

**First-year course directory:** A central directory was created in this academic session to keep all the academic materials necessary for first-year courses. We ensured that it was maintained by the academic mentors and kept it up-to-date as a one-stop portal for any resources.

**Student Language Mentors:** Introduced the enhanced teaching methodology, we specified the topics to each mentor and performed the rotation of mentees covering the entire domain of fundamentals in a total of 3 phases observing over 200 students as language mentees.

**British Council - English Language and Communication Skills:** Onboarding of British Council had set in more professionalism and had a very positive impact on freshers by highly improving their communication skills. It also gave assistance to Ph.D. and M.Tech. students in the presentation and writing down their journals, and thesis as many of them struggled on this dimension in spite of having a very solid research background.

**Hindi Workbook:** Directed towards fundamentally clarifying the concepts and stepping up their language skills, we drafted the Hindi WorkBook for the Freshers, which can be accessed even before the beginning of sessions and they can get started on it.

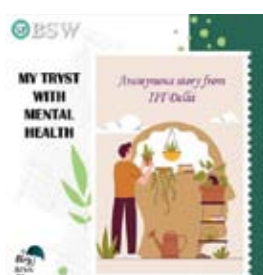
#### Operations under BSW:

**Mental Health During COVID-19 - Coping Together:** It was the first online webinar related to lockdown that induced mental health issues. The speaker, Nivida Chandra, motivated us to have hope and to not give up during these tough times. The event saw huge participation with 100+ attendees.

**Monday Musings:** Weekly posts were uploaded on our social media handles to act as a constant reminder to everyone about different aspects of mental health and keeping ourselves happy mentally. We got good feedback from the student community and other followers of the page about these posts as they were spreading positivity in their life.

**World Mental Health Day 2020:** Many students were facing a lot of issues during the online semester which increased the burden on everyone. So, we collaborated with the World Federation of Mental Health to organize Global Mental Health Fest 2020. We strategically planned and organized interactive activities on our Instagram page where people were answering how they are dealing to keep themselves mentally well. We published interactive and informative posts in order to sensitize people. We also organized a social media campaign where we asked everyone to show gratitude towards anyone or anything which is making them happy and their life smoother.

**My Tryst With Mental Health:** This series was aimed to inspire people to accept that it's okay if everything is not



okay and normalize taking help, which is sometimes a very difficult thing for many. This series brings stories from our own peers and alumni who went through immense hardships and misery only to rise and grow from that phase.

#### **She said, He said, They said:**

'She said, He said, They said' was a webinar aimed at talking about the common doubts, unpopular opinions and questions on gender. This session was a step in making ourselves free from the clutches of doubts and common misconceptions.

**How to be resilient in the Virtual Era:** This event was conducted in collaboration with NSS. This webinar was aimed at discussing the various facets of 'new normal'. It took us through the challenges and opportunities in the virtual era and acquainted us with the coping skills required to be honed for a better quality of life.

**Darpan:** An IGTV Video series in collaboration with Hindi Samiti IITD. Here, poems were released which were meant to let people know happiness can be found even in the darkest of times, if one only remembers to turn on the light. The poems focused on uplifting and encouraging the students who were feeling low due to various reasons. We got a combined 2500+ views on these videos and a lot of thankful comments. Special thing about this series was that poems were written and narrated by students of IITD.

**Session with professors:** This was organized keeping in mind that there's a huge communication gap between students and professors. The aim was to create awareness among professors about the problems that every other student faces. The session was quite good with a lot of discussion on the problems and the best possible solutions for them.



**Gatekeeper Workshop:** This was a suicide prevention workshop organized in collaboration with SPIF which was conducted in two parts. Mentors were taught on how to understand if someone is having suicidal thoughts and if they identify them, what should be their next steps to approach this.

**International Thank You Day:** A social media campaign to spread positivity all around, students showed gratitude to people who added value in any way to their life. There were a huge number of responses which were posted on social media handles as stories.

**Revamping Webpage:** Webpage was redesigned to help the whole student community in these tough times with additions made a mental health test curated by YourDost. Usually people find their problems small and avoid taking professional help. So, we created a new webpage for stress management tips and better management of their academics in the virtual era. We tried to provide assistance in coping up with academics and clearing misconceptions about academics for the freshers.

**Yayavar:** An open mic night was organized keeping in mind the second wave of Covid-19 and the harsh environment it brought with itself. The event was focused to bring out the hidden gems in our campus and to motivate them to open up to everyone, using their songs, poetry, prose, etc. The event was a success, observing over 20 entries and numerous audience members, who came together to have a memorable evening.

**Mental Health during the Second Wave:** A series of posts were uploaded on Instagram to divert students' minds during the second major wave of Covid-19.

- A-Z ways to cope
- Productive things to do while Social Distancing
- Self-care and Wellness during Covid-19

**Aluminescence:** One of BSW's Alumni mentorship initiatives that commenced this year is a series called Aluminescence. We invited our alumni from various career fields to join us for an interactive and informative session where they conveyed the students how to enter their fields, the prerequisites, the scope and future prospects in their field and how their day-to-day life goes on.



**Career and Placements Portal:** Students are generally searching for sources to prepare for intern and placements season. They look for books, courses, videos, tips and tricks. To solve this issue, we created this portal where we have documented interviews with seniors who've been placed at



top-notch companies or have secured outstanding PPOs. Now, students can refer to great advice regarding anything they want to at any time they need it. The site has a great response with over 3000 visits already.

**Alumni Mentorship Clinic and Mentor Allotment:** In this initiative, we organized sessions for students targeted at particular fields. These sessions were moderated by a counsellor and addressed by Alumni of related fields. This led to a very fruitful discussion on the field and increased student awareness. Emphasis was also given on the students who were still unsure about their career choices by organising special sessions for them. To help students get streamlined and more focused towards their goals in life, BSW has initiated Alumni mentor allotment. It would be a one-on-one mentorship with an



alumnus of their preferred career field who would guide and assist them with their ideas and thoughts and help them with any problems that they may have.

**Forex ke Fundae:** To help students seeking guidance regarding the procedure and interviews for Foreign Exchange, organized a session to help the sophomores by providing them insightful experiences of their seniors from various departments.

**Foreign Intern ke Fundae:** This session was organized to better guide sophomores on how to apply for Foreign Internships on their own or through some application processes. A panel of experienced seniors was invited who shared their stories and memories with the students and helped them understand the way to bag an intern by guiding them.

**MBA Mock Interviews and Session:** A new initiative was started this year to provide assistance to MBA aspirants by mapping them with IIM scholars who graduated from IIT Delhi.

**Office of Accessible Education:** This initiative was started to cater the needs of differently abled persons. It aims at providing a comprehensive and accessible environment to make a student's journey at IIT Delhi comfortable and hassle-free. Special assistance varying from academics to infrastructure requirements are taken care of. Students are registered with the office and appropriate support is provided. Some of them are listed below:

- A-Z Assistive technology resources (Hardware and Software)
- Study material in accessible format
- Scribe and compensatory time provision during the examination

- eRikshaw for moving across the IITD campus
- Training of various assistive technologies

**Tour of Stalls:** To make the Freshers aware about the functioning of the BRCA clubs, Technical clubs under CAIC and the various Boards, an event named Tour of Stalls was organized. Student representatives from the clubs and boards introduced themselves and explained their functioning to the Freshers.

**Speranza:** It is the annual youth festival organized by BSW to introduce Freshers to the thrilling side of IIT Delhi by organizing a plethora of events and activities. Events and competitions filled with fun and joy and memories were organized that they will cherish for lifetime.

Details of various events organized are as follows:

- **Campus Hack:** Organized in collaboration with DevClub, this was a virtual campus wide hackathon where people battled in a competition to develop a bot.
- **IPL Auction:** Organized the simulation of IPL auction as a competition between different teams with really interesting twists. A cricket quiz was conducted among 350+ teams initially where 8 teams were then shortlisted for the final round.
- **Valorant Gaming:** A 3 day gaming competition for all the gamers with exciting prizes for the final winners. This saw participation from 20 teams and nail biting games were streamed on youtube for the student community anchored by a professional valorant player.
- **Case-o-Mania:** This was a business case competition observing over 400 participants who were supposed to submit their solutions to a case which was ideated by the team members. The 10 finalists presented their solutions in front of a panel which included consultants from McKinsey.
- **Meme Fest:** Memes were invited on specific themes along with video rendition where participants submitted their own rendition of the trending meme videos.
- **Mr. and Ms. Fresher:** Freshers over 400 participated to showcase their talent and a girl and guy were crowned as Mr. and Ms. Fresher 2021.
- **La Grace:** A modeling competition was conducted where girls and boys walked the imaginary ramps and gave short introductions. The entries were judged on the metrics of confidence, grace and creativity.



- **Quiz:** A quiz conducted for all the freshers in collaboration with the Quizzing club which saw an attendance of over 200 teams. The quiz was focused on being highly inclusive so that majority students can participate and enjoy.
- **Comedy Night:** This was the final event of the fest with one of our alumni performing. The final performance was by Devesh Dixit which saw a participation of more than 1000 students.

**Loans Information Session:** There are many students who don't know the details regarding the loans and subsidies provided to them after their enrollment as an IIT Delhi student. So, to make the students aware of the loans and facilities that they can avail, we organized an SBI loans information session with the branch manager of the IIT Delhi SBI branch who gave the necessary details regarding several loans and subsidies available. Further, we shared details relating to the loans provided by Canara bank too to help the students with the process.

**Laptop Donation Drive:** This was organized to request students to donate their spare or used laptops. It was targeted to help the underprivileged freshers.

**Let's Meme:** A meme workshop was organized in collaboration with IITD OnAir and Mement. The event was aimed to be a stress-buster and achieved its motive of working as a diversion from the hectic schedule. It saw participation in huge numbers, especially from the Freshers.

**Cylinder Arrangement:** An initiative taken by Prof. Deepti Sahoo, a Civil Engineering professor, in which cylinders which were present in the labs at IITD were donated to the government to use as oxygen cylinders. Labs of over 10 departments were contacted by volunteer students of BSW. 105 cylinders could be collected and were given.



**Contacting Covid Victims and Spreading Awareness among all:** Covid positive students in campus were contacted to provide regular medical support through doctors and administrative support including food and other facilities at the isolation centres. Covid related awareness and norms are being spread through regular posts related to mental health, physical health.

## 2. NATIONAL SERVICE SCHEME (NSS)

The National Service Scheme IIT Delhi, with a volunteer base of over 2000 students and faculties, believes in growing together with the society. It aim at generating empathy in

volunteers while serving the society. NSS has currently over 30 projects in various domains given below:

### Education Domain

This year in cumulative we reached out to 1400+ students from class 3rd to 12th for teaching and mentoring them through its 6 projects. During delivering the knowledge the team used the platforms like Whatsapp, Zoom & Gmeet keeping pandemic over mind. Glimpse of projects:

- **Vidya Teaching Project-** prime focus is to teach students from classes 3rd to 10th and inculcate the fundamental concepts of all subjects, especially Mathematics and Science. This year regular classes were held in the two semesters and Winter vacations too, with an adequate number of volunteers throughout the year. Apart from this, the team in collaboration with the Munirka Project team prepared 400+ homework assignments for classes III-X for Mathematics and Science in Hindi and English.
- **Aarohan-** with prime focus to teach students from 10th - 12th to excel in engineering background, the team developed a repository of free online resources to clear their concepts and obtain JEE level education for free. In collaboration with Saraswati Sewa Foundation regular classes were conducted for over 90 students.
- **Bachpan Project-** aims to provide education to the children of workers in IIT Delhi. But in the online semester, classes were conducted for children of the workers at volunteer's homes, such as maid's kids etc.
- **Food4Thought-** In collaboration with Food4Thought Foundation, regular online classes were run with aim to recreate the joy of reading, especially in the early childhood and provide underprivileged kids with ample opportunities to get interested in reading books.
- **Kilkari Project-** an Initiative to provide basic education to every child who to ensure their overall development through recreational activities and moral education, classes were conducted for students from class 2nd to 8th, during the summer vacation.
- **NAB RK Puram-** aims to assist the visually impaired students from NAB(National Association for Blind), in their education and provide help in extra-curricular activities. Conducted regular doubt clearing sessions for the students.
- **NEEM School Project-** with aim to develop good moral character and conduct in slum children of age group 6-14, in collaboration with the White Swan Foundation, created a repository of stories, skits and activities to learn English.
- **She Codes Project-** to motivate girls to take up engineering and computer sciences as their future career, this project included 860+ girls over 23 schools to teach basic animation to excite them towards computer science and coding.
- **Teach for India-** In collaboration with Teach for India classes, conducted regular classes for the underprivileged kids during the second semester.
- **Camp K12-** conducted an 8 hour session programme for kids to learn coding through our innovative design

technique by IIT instructors and course curriculum developed by MIT graduates.

- **Super School Initiative (SSI)-** in collaboration with a young NGO, taught over 20 students regularly for the first semester, later merged the classes with VIDYA teaching project.

### Health Domain

NSS IITD has diligently worked in assisting people in as many ways as possible, some of which are given below:

- **Blood Donation-** The team arranged blood donors, plasma donors, oxygen cylinders and other resources to help people in the need of hour. In collaboration with Covid India, helped Sewa Foundation and covidresources.in in creating their database of Covid resources.
- **Mental Health-** webinars were organized to help the students about stress management and meditation. Short interactive articles by the students were encouraged to reach as many people as possible, with the sole aim of providing them respite from strenuous times.
- **Substance Abuse Project-** to sensitize the public over the harms of smoking/alcohol/drug consumption, the team brought out a series of informative posts, survey, quiz, movie screening and events were conducted.

### Environment Domain

Due to the unique opportunity at hand, NSS IITD team focused on bringing about sensitization towards the environment on an individual level.

- **Climate Crusade Project:**
  - Created a carbon footprint calculator for the college students and faculty, which also provides key information on how to reduce your carbon footprint via easy steps. <http://nss.iitd.ac.in/CO2/>
  - Conducted interviews of esteemed environmentalists to obtain their views on Environmental Impact Assessment and posted out an informative video on the same.
  - A regular series of informative posts on Instagram and Facebook, known as Fact of Friday, has been running for the entire year.
  - Mash It Up - through this project, the volunteer learned how to recycle paper, and create handmade paper and other ornamental stuff from the waste.
  - Conducted a series of webinars, called Parivartan, with esteemed environmentalists such as Ms. Medha Patkar, Ms. Sumaira Abdulali etc.
  - Conducted a Waste to Wonder volunteering, where the students learned how to create their own compost pits.
  - Conducted two quizzes, Climate Quizade and Tropicon, aimed at increasing the knowledge of the students about our environment.
- **Green Warriors-** conducted a volunteering opportunity called Green Up, which taught volunteers on how to get involved in gardening and create a mini garden of your own.
- **Nature Lovers-** Conducted a webinar on environmental

awareness and hosted two activities aimed at reducing the plastic waste and converting the waste into useful.

- **Animal Care**- In collaboration with HIS, during lockdown, arranged food and medicines for the dogs and cats in the campus. Also conducted online webinar on the same, and hosted a vegan recipe challenge for the students.

#### Society Domain

- **Eduride Volunteering**- during JEE Mains and Advanced 2020, NSS IITD assisted 200+ students in arranging a means of transport for them to be able to go to their examination centers.
- **Gender Mainstreaming**- aims to spread awareness about the issues regarding gender discrimination by promoting a safe and inclusive environment for all in the campus. Created video series to promote discussion over issues faced by men that are considered taboo in our society.
- **NSS IITD Blog**- A new website for Blog got introduced for publishing articles on key social issues. The blog has been received very well by the students. <https://nssiitd.wordpress.com>
- **Self-arranged internship**- We have assisted 20+ students in finding self-arranged internships aimed at creating a social impact
- **Science Seeds**- a volunteering opportunity where the students created videos for simple yet informative science experiments that can be performed by anyone at home.
- **Old Age Home**- students became pen pals of the residents from old age home, and share handwritten letters with them.

#### Kaizen 2021

Kaizen, the annual social festival of NSS IIT Delhi is a platform to recognize the continuous improvements in our society initiated and accelerated by the combined efforts of all socially motivated student bodies and NGOs across India and abroad. We recognised the online platform as an opportunity, and hosted Kaizen from 2nd to 5th April 2021, with over 500 attendees from all over the country. We hosted the following:

- Inaugural Event, Udaan - focused on the journey of leaders who brought about changes in society.
- Hosted three guest lectures, with each focusing on a different topic.
- Panel Discussion on the innovative solutions for sustainable living and interactive workshops like storytelling workshops, waste management workshop, design workshop and more. Also hosted several competitions, like Climate Science Olympiad, Slam Poetry competition, Creative Writing Competition, Social Innovation Challenge, and a Climate Action Plan competition prepared by the Green Warrior team.

### 3. NATIONAL CADET CORPS (NCC)

National Cadet Corps is an organization aiming at the development of leadership, character, comradeship, spirit of sportsmanship and the ideal of service, among the youth

in educational institutions. The motto of NCC is "Unity and Discipline".

### 4. STUDENT COUNSELLING SERVICES (SCS)

SCS supports the students to enhance their efficiency and output to perform better and to cope with various distresses. They also address problems of IITD faculty and staff as per their requirement.

Three components of SCS are firstly, the initial problem which is to be addressed by the counsellors which is subsequently followed by support through psychological therapies and assessment done by the counselors and the referrals by the counsellors to a psychiatrist and other medical intervention if required and thirdly, the follow up sessions with the students and staff.

Counselling in SCS involves therapies based on cognitive, behavioral, rational, emotive, supportive, existential and interpersonal and intrapersonal and personality domains of an individual.

#### SCS activities during COVID-19 (April 2020-March 2021)

Sensitization training and mental wellness session were organized with support from psychiatrist from AIIMS, New Delhi for faculty.

The well being and orientation sessions were conducted online with first year students (hostel wise) and BSW student representatives. The counselors contacted students in person through messages regarding their well-being, and this effort was greatly appreciated by students and they felt cared for.

SCS prepared newsletters on positive mental health and wellness and shared necessary links for all student, faculty and staff. Specific counselling for covid positive patients done on morale boosting, anxiety management and covid care counselling done for many students and staff of IITD.

In this year total of 247 new students came in for counselling and total 448 follow ups took place in the past year till March 2021.

### 5. STUDENT-TEACHER INTERACTION COMMITTEE (STIC)

STIC (Student-Teacher Interaction Committee) made available funds for Student-Teacher Interactions organized by individual faculty for their respective courses. Also many departments organized other events involving all their students and faculty for various courses.

### 6. NATIONAL SPORTS ORGANIZATION (NSO)

NSO is a classification in the scheme of education formulated in furtherance of setting a climate of sports consciousness and improvement of physique among the youth during their period of education. Sports is included in the curriculum at IITD.

### 7. CO-CURRICULAR AND ACADEMIC INTERACTION COUNCIL (CAIC)

The council is a joint committee of undergraduate students, postgraduate students and faculty that provides feedback to the Board of Undergraduate Studies on all academic and allied matters. By means of suitable dialogues with appropriate authorities, it also tries to solve local as well as general problems of students that are co-curricular and academic in nature.

# Academic Outreach

The Academic Outreach Initiatives at the Indian Institute of Technology Delhi attempts at building meaningful interfaces with academic peers and the society at large. All Outreach initiatives at the Institute are deeply informed by our obligations to both these communities. We use the Outreach platform to share the results of our scientific work with different sections of the society, while also continuously learning and improvising on our own research queries, and methodologies, based on the feedback received from them.

Academic Outreach Activities During the Period								
S. No.	Event Description	Date of Event	IIT Delhi Faculty	Topic	Time	Venue	Target Audience with Strength of Audience	Collaboration
1	Webinar on Nano Technology	07.08.2020	Prof. Ashok K. Ganguli, Department of Chemistry	Nano technology and its application	4.00 p.m. to 5.00 p.m.	ZOOM Platform, Pushpa Gujral Science City	Students, Teachers, Research Scholars Strength: 170 (Zoom platform + PGSC YouTube Channel)	Pushpa Gujral Science City
2	Science Fest (Innovative Project Model Display Competition for School Students)	28.11.2020	Prof. Soumik Siddhanta, Department of Chemistry	Small world, big ideas: the future of nano technology	10.00 a.m. to 11.00 a.m.	ZOOM Platform, Pushpa Gujral Science City	Students & Teachers Strength: 230 (Zoom platform + PGSC YouTube Channel)	Pushpa Gujral Science City jointly with Grassroots Innovations Augmentation Network (GIAN)
3	Expert Talk	08.02.2021	Prof. Neetu Singh, Centre for Biomedical Engineering	Engineering new materials for drug delivery: a chemist's perspective	11:00 a.m. to 12:00 p.m.	Cisco Webx platform , IIT Delhi (40 min talk+ 20-mins. Q&A session)	B. Pharm/Ph.D. and Faculty Members (80)	Chitkara University, Himachal Pradesh
4	Expert Talk	25.02.2021	Prof. Vivekanandan	Viruses' interaction with the host cells	11:00 a.m. to 12:00 p.m.	Cisco Webx platform , IIT Delhi (40 min talk+ 20-mins. Q&A session)	B. Pharm/Ph.D. and Faculty Members (80)	Chitkara University, Himachal Pradesh
5	INNO-Tech 2021 (Innovative Project Model Display Competition for Professional College Students)	19.03.2021	Prof. Shouribrata Chatterjee, Department of Electrical Engineering	Wireless and radio frequency circuits: from maxwell to the modern cell phones	4.00 p.m. to 5.00 p.m.	ZOOM Platform, Pushpa Gujral Science City	Polytechnic/ Engineering Students Strength: 200 approx. (Zoom platform + PGSC YouTube Channel)	Pushpa Gujral Science City



Table contd.....

6	Nurturance Programme for National Talent Search Examination Awardees 2020	22-26, March 2021	Prof. Rajendra Dhaka, Department of Physics	4 sessions of 60 mins each per day were conducted by professors of different streams including lab sessions.	10:15 a.m. to 5:00 p.m.	Online on Microsoft Platform	NTSE Awardees 2020 of Delhi (15)	NTSE Awardees 2020 of Delhi.
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### Continuing Education Programme / Quality Improvement Programme / Technical Education Quality Improvement Programme - IIT Delhi

To cater to the needs of the rapidly transforming needs to the technological, business and regulatory landscape, IIT Delhi conducts several bespoke training programmes every year. We have a dedicated CEP/QIP office that organizes a wide spectrum of training activities with world class mentors while connecting with industry professionals.

We offer customized skill development courses and diverse lecture series programmes to serve professional specific and company specific needs. The course programmes have different levels to serve different experience levels of corporate executives and designed to incorporate a balanced mix of theoretical, lab sessions, and real-life case studies. A range of short term courses, long term courses and various certificate programmes are conducted as a part of such outreach programmes with durations ranging from three days to six months. The five broad verticals of the activities include:

#### Continuing Education Programme (CEP):

Outreach programmes offered to diverse organizations to take advantage of formal course work, conferences or seminars to address their training needs, to remain updated in their fields, learn new skills, change careers or enhance their marketability or improve their businesses and organization's performance. The programmes help to increase the efficiency, employee retention, gain their loyalty, and ultimately boost organizational productivity. IIT Delhi offers open-enrolment certificates courses and professional development programmes. The diverse programmes are designed in consideration with the industry requirements and delivered by our internationally acclaimed faculty members and the practicing professionals, selected for their industry expertise.

Committed to the cause of making quality education accessible to all, CEP IIT Delhi has recently launched several online CEP Certificate Programme for Indian as well

as International participants.

IIT Delhi is the first leading national institute in India to develop and roll out the policy framework for large scale deployment of Online Certificate programmes, with empaneled service providers in the educational space, on virtual platforms.

Scope of online CEP Certificate Programme is to cater to the needs of Industry, Open participants at National and International level.

#### Quality Improvement Programme (QIP):

Endeavor to improve the quality of technical education in the country and upgrade the skills of Faculty members of the AICTE approved degree-level engineering institutions and National Institutes of Technology (NITs) of the country through degree programmes, short term courses. The programme is now being implemented and monitored by the National QIP Coordination Committee (NQCC), funded by AICTE (A Statutory Body of the Government of India).

#### Technical Education Quality Improvement Programme (TEQIP):

TEQIP is to improve quality of technical education and enhance existing capacities of the institutions to become responsive to the global economic and technological developments. This focusses on improving quality of Engineering Education in existing institutions especially for Low Income States and Special Category States (SCS) and providing support to strengthen technical universities. TEQIP is a phased activity sponsored by National Project Implementation Unit (NPIU), A Unit of MoE, Govt. of India for Implementation of World Bank Assisted Projects in Technical Education. Recently the third phase i.e. TEQIP-III has been concluded in March 2021.

#### Online Summer Fellowship Research Programme (SFRP):

A fully sponsored programme under TEQIP-III for the full-time UG/PG student of TEQIP –III Engineering and Science Institutes and Colleges to facilitate and orient the student to execute an innovative research and development project

under the guidance of IIT Delhi faculty during May-July 2020.

#### Global Initiative of Academic Networks (GIAN):

GIAN is a new programme in Higher Education aimed at tapping the talent pool of scientists and entrepreneurs, internationally to encourage their engagement with the institutes of Higher Education in India. The programme arranges Guest Lectures by international renowned experts to augment the country's existing academic resources, accelerate the pace of quality reform, and elevate India's scientific and technological capacity to global excellence.

#### Indian Technical and Economic Cooperation (ITEC):

In ITEC Programme (fully funded by the Government of India) and its sister programme SCAAP (Special Commonwealth African Assistance Programme), 161 countries in Asia, Africa, East Europe, Latin America, the Caribbean as well as Pacific and Small Island countries are invited to share the Indian developmental experience acquired over six decades of India's existence as a free nation.

#### Summer Faculty Research Fellow Programme (SFRF):

IIT Delhi invites faculty fellows from various Engineering and Science Institutes and Colleges other than IIT Delhi to come and spend the summer (06 to 08 weeks during May-July of every year) for pursuing research under the guidance of a faculty mentor of IIT Delhi. The objective is to facilitate and orient the faculty fellows to undertake research. The SFRF programme works as a catalyst for those who are considering higher studies (Masters/Ph.D.) at IIT Delhi in the near future.

Programmes and activities conducted by CEP/ QIP, IIT Delhi are enriched with a rigorous yet interactive course design

to help participants stay abreast with latest global business trends. These programmes allow Corporates/Industries/ PSUs to strengthen the technical skills of their employees through elite trainers and thereby revitalize the work force. We are the right partner in your journey towards creating a talented and better skilled workforce!

#### Activities conducted during the period (2020-21):

##### A.

Total Number of Activities	32
Total Number of Participants benefited	870

##### B.

Summer Faculty Research Fellow Programme-2020 (Six weeks)	
Number of Faculty Fellow Joined	115
Number of College participated	85
Number of State participated	25
Number of Faculty Mentor of IIT Delhi Involved	66

##### C.

Summer Fellowship Research Programme-2020 (Six weeks)	
Number of Faculty Fellow Joined	96
Number of College participated	41
Number of State participated	22
Number of Faculty Mentor of IIT Delhi Involved	45

for more details please visit: <http://cepqip.iitd.ac.in>



# Infrastructure Development

## Creation of World Class Institution

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

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

In order to achieve the aspirations for higher global ranking it is vital that the IIT rethink and revitalize its approach to its infrastructure. Changes are required at all stages of estate development, including Specification and Prioritization, Delivery and Quality Management and Maintenance.

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

## Physical Infrastructure: Completed and in Progress

All infrastructure related activities are managed by the Building & Works Committee. Salient features of these projects along with their progress status are given below.

1. Construction of Engineering Blocks 99B & 99C
2. Construction of Research and Innovation Park
3. Construction of Faculty Flats
4. Construction of Boys Hostel 'E'
5. Construction of New Girls Hostel
6. Construction of Nalanda Married Research Scholar Apartments
7. Construction of Indoor Sports Complex
8. Construction of Golden Jubilee G.H. Keswani Research Centre

## Construction of Engineering Blocks 99B & 99C

CPWD has awarded the work of construction of Engineering Blocks to M/s. NCCL. The work is in full swing and about 90% of work has been completed at site and tentative date for completion of project is 31/12/2021 (date of completion has been re-scheduled due to COVID-19 pandemic). These two blocks are being constructed on either side of Lecture Hall Complex. These blocks shall provide additional area for Labs, Workshops, and Faculty rooms etc. The approximate

floor area of the Engineering Block 99B & 99C is 37,416 sq m. & 30,362 sqm. respectively.

## Construction of Research and Innovation Park

The main purpose of this project is to facilitate state of the art facilities for R&D activities. This building consists of 2 basements, a ground floor and 6 upper floors. The work was assigned to NBCC and project has been completed on 31/03/2021.

## Construction of Faculty Flats

Construction of 154 faculty flats in six (6) towers has been completed by NBCC on 31/03/2021.

## Construction of Boys Hostel 'E'

A boys hostel with 856 seated capacity, fully air conditioned, is being built. The G+7 storied building has a built up area of 24,450 Sqm (approx.). About 90% of the work has been completed by CPWD and tentative date for completion is 30/11/2021 (date of completion has been re-scheduled due to COVID-19 pandemic).

## Construction of New Girls Hostel

A girls hostel with 323 seated capacity, fully air conditioned, is being built. The G+7 storied building has a built up area of 11,696 Sqm (approx). About 45% of the work has been completed by CPWD and tentative date for completion is 30/11/2021 (date of completion has been re-scheduled due to COVID-19 pandemic).

## Construction of Indoor Sports Complex

Construction of Indoor Sports Complex has been assigned to CPWD. This project has been taken up with alumni contribution by 1995 batch alumnus, Mr. Saurabh Mittal. The construction work is in progress and about 95% complete with tentative date of completion as 31/10/2021 (date of completion has been re-scheduled due to COVID-19 pandemic).

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

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

## Physical Infrastructure in Planning Stage

The Institute has initiated proposals for development of additional infrastructure for the increased intake of Student/Faculty, due to EWS quota and IoE Status of IIT Delhi. The next phase of works has been assigned to RITES for development of architectural design and construction. The projects covered under the additional infrastructure are as under:

**i. Faculty Housing**

05 Blocks of residential accommodation with 105 No. of dwelling units is to be constructed with total built up area of 22,050 Sqm.

**ii. Mini Academic Complex**

Mini Academic Engineering complex namely Blocks-102A1 & 102A2 are to be constructed with B+G+6 floor with built up areas of 55,000 Sqm. & 40,000 Sqm. respectively.

**iii. Academic Block**

Another academic Block 103 is being planned after demolition of a few old type 'A' quarters in dilapidated condition with construction of B+G+7 floors. Approximately built up area will be 28,000 Sqm.

**iv. Staff Housing**

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

**v. Construction of Additional Hostels**

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

**vi. Construction of Nalanda Accommodation (Phase-II)**

Phase-II of Nalanda Research Scholar accommodation is likely to be started very soon. The phase-II will cater for 142 numbers additional flats for married research scholars.

**vii. Rehabilitation/Augmentation network of sewerage, water supply and drainage.**

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



Faculty Flats : Concept Render



Faculty Flats : Work in Progress



R & I Park : Concept Render



R & I Park : Work in Progress

The Institute is financed by the Department of Higher Education, Ministry of Education, Government of India. During 2019-2020, the Institute received a grant of ₹692.58 Crore from Ministry of Education to meet its yearly expenses. The Institute also receives funds for sponsored research projects and for consultancy assignments being undertaken by the Institute from several Funding agencies and Industries. The Financial Year of the Institute corresponds with that of Government of India i.e. 1<sup>st</sup> April to 31<sup>st</sup> March. The accounts of the Institute are annually audited by the office of the Director General of Audit (Home, Education & Skill Development) on behalf of the Comptroller & Auditor General of India.

The 122<sup>nd</sup> Finance Committee of the Institute in its meeting held on 13-08-2021 recommended the Revised Estimates for 2020-21 and Budget Estimate for 2021-22 as under:

## FINANCE COMMITTEE

(As on 31.3.2021)

**R. Chidambaram**, *Chairperson*  
**V. Ramgopal Rao**, *Director*  
**Prashant Agarwal**, *Nominee of Central Govt.*  
**Anil Kumar**, *Nominee of Central Govt.*  
**S.B. Deepak**, *IAS, BoG Nominee*  
**Nalin Pant**, *BoG Nominee*  
**T.C. Kandpal**, *Special Invitee*  
**A.K. Ganguli**, *Special Invitee*  
**P.V. Rao**, *Special Invitee*  
**J.T. Shahu**, *Special Invitee*  
**Mohd. Shamim**, *Special Invitee*  
**Deepika Bhaskar (Ms.)**, *Registrar & Secretary*

Scheme Code	Object Head	Particulars	Revised Estimates for 2020-21 (₹ in Crore)	Budget Estimates for 2021-22 (₹ in Crore)
		<b>Support to IITs</b>		
0920	OH - 31	Pension & Pensionary Benefits	115.00	125.00
		Scholarship & Non-Salary	204.43	267.00
	OH - 35	Creation of Capital Assets	97.00	152.00
	OH - 36	Salary	318.64	377.35
		<b>World Class Institutions (IoE)</b>		
3254	OH - 31	General	77.58	30.53
	OH - 35	Creation of Capital Assets	40.25	76.27
		<b>P. M. Research Fellowship</b>		
3268	OH - 31	Fellowship & Contingency	7.55	20.08
		<b>Asean Fellowship</b>		
	OH - 31	Fellowship	3.89	15.26

### OH-35 (Non Recurring)

Detailed Statement showing the Actual Receipt and Expenditure for 2019-20, 2020-21 along with Revised Estimates and Budget Estimates 2021-22

Head of Receipt	Actuals 2019-20 (₹ in Crore)	Budget Estimates 2020-21 (₹ in Crore)	Revised Estimates 2020-21 (₹ in Crore)	Actuals 2019-20 (₹ in Crore)	Budget Estimates 2021-22 (₹ in Crore)
<b>A. Receipt</b>					
Plan Grant from MoE carryforward	111.52	-	-	63.00	-
Grant Receivable from MoE	-	-	-	-	-
Plan Grant from MoE (Normal) Support to IITs (0920)	70.00	150.00	97.00	33.75	152.00
Research Park from MoE (9026)	20.00	40.00	40.00	20.00	-
Special Plan Grant from MoE under IoE Scheme (3254)	40.00	40.25	40.25	77.40	76.27
<b>Total (A)</b>	<b>241.52</b>	<b>230.25</b>	<b>177.26</b>	<b>194.15</b>	<b>228.27</b>
<b>B. Expenditure</b>					
Normal Development Activities & Increase of Students Intake (including new hostel) New Courses Modernisation & Thrust Areas					
(i) Non-Recurring	73.48	150.00	97.00	62.61	152.00
(i) Non-Recurring (Other)	105.03	80.25	80.25	136.89	76.27
Commitments against L.C.'s for the year 2019-2020 Plan (Normal)	63.00	-	-	(5.35)	-
<b>Total (B)</b>	<b>241.51</b>	<b>230.25</b>	<b>177.25</b>	<b>194.15</b>	<b>228.27</b>

### OH-35 (Non Recurring)

Detailed Statement showing the Actual Receipt and Expenditure for 2019-20, 2020-21 along with Revised Estimates and Budget Estimates 2021-22

Head of Expenditure	Actuals 2019-20 (₹ in Crore)	Budget Estimates 2020-21 (₹ in Crore)	Revised Estimates 2020-21 (₹ in Crore)	Actuals 2020-21 (₹ in Crore)	Budget Estimates 2021-22 (₹ in Crore)
<b>Major Works</b>					
On Going Schemes	3.29	31.00	10.00	4.89	30.00
Repair & Maintenance on Buildings	14.76	50.00	25.00	2.12	50.00
Fresh Schemes/Projects	-	-	-	-	-
Teaching Equipment/Computerization	27.78	30.00	30.00	32.52	35.00
Office General Equipment, Hospital Equipment/ Furniture and Fixtures & Institute Level Network	7.99	14.00	10.00	6.97	12.00
Motor Vehicles	-	-	-	-	-
Research Funds, Central Facilities & Thrust Areas	2.61	3.00	2.00	1.19	3.00
Library Books & Journals	17.05	22.00	20.00	14.92	22.00
Web Based Academic Systems	-	-	-	-	-
Institute Level Network	-	-	-	-	-
<b>Total</b>	<b>73.48</b>	<b>150.00</b>	<b>97.00</b>	<b>62.61</b>	<b>152.00</b>
World Class Institutions Scheme (IOE)	17.86	40.25	40.25	109.12	76.27
Science Research Park	36.76	40.00	40.00	22.24	-
Equipment out of Special Grant	50.41	-	-	5.53	-
<b>Total</b>	<b>105.03</b>	<b>80.25</b>	<b>80.25</b>	<b>136.89</b>	<b>76.27</b>

### OH-31 & OH-36 (Recurring)

Detailed Statement showing the Actual Receipt and Expenditure for 2019-20, 2020-21 along with Revised Estimates and Budget Estimates 2021-20

Head of Receipt	Actuals 2019-20 (₹ in Crore)	Budget Estimates 2020-21 (₹ in Crore)	Revised Estimates 2020-21 (₹ in Crore)	Actuals 2020-21 (₹ in Crore)	Budget Estimates 2021-22 (₹ in Crore)
Institute Income	123.09	121.37	117.50	135.20	120.20
Grant from MoE OH-31 & OH-36 Support to IITs (0920)	535.94	675.35	638.07	492.38	769.35
<b>Total (A)</b>	<b>659.03</b>	<b>796.72</b>	<b>755.57</b>	<b>627.58</b>	<b>889.55</b>
HEFA Loan Interest (0920)	5.75	-	-	14.98	20.00
Special Plan Grant from MoE under IoE Scheme (3254)	19.10	77.58	77.58	68.25	30.53
Special Grant under P.M. Research Fellowship (3268)	1.79	-	7.55	4.64	20.08
Special Plan Grant under ASEAN Ph.D. Fellowship Programme (3840)	-	-	3.89	1.10	15.26
<b>Total (B)</b>	<b>26.64</b>	<b>77.58</b>	<b>89.02</b>	<b>88.96</b>	<b>85.87</b>
<b>Total (A+B)</b>	<b>685.67</b>	<b>874.30</b>	<b>844.59</b>	<b>716.55</b>	<b>975.42</b>

### OH-31 & OH-36 (Recurring)

Detailed Statement showing the Actual Receipt and Expenditure for 2019-20, 2020-21 along with Revised Estimates and Budget Estimates 2021-22

Head of Expenditure	Actuals 2019-20 (₹ in Crore)	Budget Estimates 2020-21 (₹ in Crore)	Revised Estimates 2020-21 (₹ in Crore)	Actuals 2020-21 (₹ in Crore)	Budget Estimates 2021-22 (₹ in Crore)
a. Pay & Allowances	249.02	323.35	318.64	249.43	377.35
b. Pension & Pensionary Benefits	96.54	125.00	115.00	94.28	125.00
c. Institute Scholarship	71.48	70.00	75.00	78.70	100.00
d. Academic Expenses	13.67	16.00	10.00	11.30	15.00
e. Educational Expenses	12.95	15.00	10.00	7.62	15.00
f. Estate Maintenance	75.62	100.00	83.43	57.15	107.00
g. Office Contingencies, Misc. & Commitments/ Contractual Service Charges/Provisions	19.48	26.00	26.00	20.77	30.00
h. Young Faculty Incentive Fellowships	-	1.00	-	-	-
i. Joint Entrance Examination	3.29	4.00	4.00	14.32	4.00
j. Graduate Aptitude Test in Engineering	8.65	16.00	10.00	14.45	10.00
k. Joint Admission Test to M.Sc.	1.38	1.80	1.80	0.21	1.80
l. HEFA Loan Repayment	55.65	58.86	58.86	27.24	58.86
m. HEFA Interest Repayment	6.48	-	-	14.98	20.00
n. Expenditure under IoE Scheme	21.87	40.25	40.25	52.84	76.27
o. Expenditure under P.M. Research Fellowship	2.39	-	4.95	3.20	15.08
p. Expenditure under P.M. Research Fellowship (Admin. other Expenses)	-	-	2.60	0.36	5.00
q. Expenditure under ASEAN Ph.D. Fellowship Programme	-	-	1.26	-	8.24
r. Expenditure under Annual Research Grant	-	-	0.58	-	4.83
s. Expenditure under Secretriary Expenses	-	-	2.05	-	2.19
<b>Total</b>	<b>638.47</b>	<b>797.26</b>	<b>764.42</b>	<b>646.85</b>	<b>975.62</b>

## INCOME

Detail Statement showing the Actual Income for 2019-20, 2020-21 along with Revised Estimates and Budget Estimates 2021-22

Head of Expenditure	Actuals 2019-20 (₹ in Crore)	Budget Estimates 2020-21 (₹ in Crore)	Revised Estimates 2020-21 (₹ in Crore)	Actuals 2020-21 (₹ in Crore)	Budget Estimates 2021-22 (₹ in Crore)
<b>Academic Receipts</b>	62.42	60.00	63.00	68.04	65.00
<b>Receipt-Central Administration</b>					
Interest on Investments/Savings Account	19.27	15.00	12.00	28.06	12.00
Charges for use of Staff Cars and Buses	0.19	0.17	0.20	0.22	0.20
Application Fee	0.45	1.00	1.00	1.78	1.00
Sponsored Project/Consultancy and CEP	0.44	0.50	0.50	-	0.50
<b>Works &amp; Building</b>					
Licence Fee	3.06	3.20	3.30	2.14	3.50
Seat Rent	9.62	10.00	10.00	8.71	10.00
Water & Electricity	5.42	5.00	5.50	3.83	6.00
Hospital & Medical	0.89	1.00	1.00	0.97	1.00
Guest House	3.08	3.00	3.00	1.24	3.00
Joint Entrance Exam	3.43	4.00	4.00	7.88	4.00
GATE	11.09	15.00	10.00	9.41	10.00
Joint Admission Test for M.Sc.	1.73	2.00	1.50	0.68	1.50
Misc./Other Receipts (Including sale of obsolete equipment)	2.00	1.50	2.50	2.24	2.50
<b>Total</b>	<b>123.09</b>	<b>121.37</b>	<b>117.50</b>	<b>135.20</b>	<b>120.20</b>

### INTERNAL AUDIT

Internal Audit is an independent, objective assurance and consulting activity designed to add value and improve an organisation's operations. Internal Audit Section is functioning independently as per Revised Audit System (w.e.f. 01/12/2011) directly under the control of the Director, supported by Assistant Registrar (Audit). The section conducts the Internal Audit of the Departments/Centres/Sections and suggests measures to strengthen Internal Control. The Internal Audit Section also renders advise on various financial as well as administrative/service matters as per needs of the Institute. During the financial year 2020-21, 31 units have been internally audited.





## Appendix I

(As on 31.03.2021)

V. Ramgopal Rao (Director): Chairperson	A.N. Bhaskarwar	Neeraj Kumar Jha	Mahim Sagar
T.C. Kandpal (Dy. Director, Operations)	A.K. Saroha	Vasant Annasaheb Matsagar	P. Vigneswara Ilavarsan
Ashok K. Ganguli (Dy. Director, Strategy & Planning)	Vivek Vitthal Buwa	Sanjiva Prasad	Surya Prakash Singh
Shantanu Roy	Anil Verma	Huzur Saran	Shveta Singh (Ms.)
K.C. Iyer	Rajesh Khanna	S. Arun Kumar	Kanika Tandon Bhal (Ms.)
S.K. Khare	Sreedevi Upadhyayula (Ms.)	Kolin Paul	R.K. Sharma
Sudipto Mukherjee	Sudip Kumar Pattanayek	Amit Kumar	Amitabha Tripathi
Arvind K. Nema	Suddhasatwa Basu (On lien)	Sandeep Sen	S.C.S. Rao
Naveen Garg	Anil Jacob Elias	M. Balakrishnan	B.S. Panda
P.V. Rao	Ravi Shankar	Mausam	S. Kundu
Anurag Singh Rathore	Jai Deo Singh	S. Banerjee	N. Chatterjee
Sukumar Mishra	D.K. Bandhopadhyay	Amitabha Bagchi	S. Dharmaraja
Pramit K. Chowdhury	Nalin Pant	Jayadeva	Aparna Mehra (Ms.)
Deepti Gupta (Ms.)	Siddharth Pandey	M. Jagadesh Kumar	S.G. Deshmukh
Reetika Khera (Ms.)	N.D. Kurur	S.D. Joshi	Anoop Chawla
Anupam Shukla	N.G. Ramesh	Ranjan Kumar Mallik	Sanjeev Jain
K. Sreenadh	V. Haridas	Ranjan Bose	S.K. Saha
Pritha Chandra (Ms.)	Shashank Deep	I.N. Kar	Anjan Ray
Abhijit R. Abhyankar	Sameer Sapra	Santanu Chaudhury	S.P. Singh
J.T. Shahu	S. Nagendran	M. Veerachary	J.K. Dutt
B. Premachandran	Pramit Kumar Chowdhury	Shankar Prakriya	Harish Hirani
Subodh Kumar	Nidhi Jain (Ms.)	Manav Bhatnagar	M.R. Ravi
Sanjeev Sanghi	A. Ramanan	Brejesh Lall	P.M.V. Subbarao
S.V. Veeravalli	G.V. Ramana	Nilanjan Senroy	Naresh Bhatnagar (Mech. Engg)
Anupam Dewan	Ashok Gupta	Sumantra Dutta Roy	Raj Kumar Pandey
Santosh Kapuria	Alok Madan	Shouribrata Chatterjee	Ashish K. Darpe
B.P. Patel	N.K. Garg	Angelie Multani (Ms.)	Subodh V. Modak
Maloy Kumar Singha	A.K. Jain	Sanil V.	Sujeet K. Sinha
Puneet Mahajan	A.K. Keshari	Ravinder Kaur (Ms.)	S. Aravindan
D. Sundar	Geetam Tiwari (Ms.)	Purnima Singh (Ms.)	Pulak Mohan Pandey
Sunil Nath	V.R. Gunturi	Vibha Arora (Ms.)	Prabal Talukdar
Prashant Mishra	B.R. Chahar	Kamlesh Singh (Ms.)	Sunil Jha
T.R. Sreekrishnan	Rakesh Khosa	Farhana Ibrahim (Ms.)	Sangeeta Kohli (Ms.)
Atul Narang	R. Ayothiraman	Jayan Jose Thomas	Sudarsan Ghosh
Shilpi Sharma (Ms.)	Suresh Bhalla	Seema Sharma (Ms.)	Josemon Jacob
K.K. Pant	R.R. Kalaga	Sushil	Rajesh Prasad
	Dev Raj Kaushal	Ravi Shankar	Bhabani Kumar Satapathy
	B.J. Alappat	M.P. Gupta	Ratnamala Chatterjee (Ms.)

contd. ....

M.R. Shenoy	Gaddam Vijay Prakash	Arun Kumar	Vivek Kumar
V. Ravishankar	Joby Joseph	Ananjan Basu	Subrat Kar
Rajendra Singh	B.R. Mehta	Monika Aggarwal (Ms.)	B.K. Panigrahi
Neeraj Khare	R.S. Rengasamy	Krishna Mirle Achutarao	Jayashree Bijwe (Ms.)
Pankaj Srivastava	B.K. Behera	A.D. Rao	Rahul Garg
Sujeet Chaudhary	Bhuvanesh Gupta	Manju Mohan (Ms.)	P.R. Panda
P. Senthilkumaran	R. Chattaopadhyay	K.A. Subramanian	Swades De
D.S. Mehta	R. Alagirusamy	Vamsi Krishna Komarala	Ambuj D. Sagar
Hitendra K. Malik	Manjeet Jassal (Ms.)	Amit Gupta	James Gomes
R.K. Varshney	Mangla Joshi (Ms.)	Naresh Bhatnagar (CBME)	Tapan Kumar Chaudhuri
Aloka Sinha (Ms.)	Apurba Das	Harpal Singh	Aditya Mittal
Varsha Banerjee (Ms.)	Dipayan Das	Pardeep K. Gupta	Chinmoy Sankar Dey
J.P. Singh	Abhijit Majumdar	P.K. Babu	Amitabha Mukhopadhyay
Santanu Ghosh	Sourabh Ghosh	Sriram Hegde	Bishwajit Kundu
A.K. Shukla	Amit Rawal	Anushree Malik (Ms.)	JR/DR/AR ( <i>Academics</i> )
Amruta Mishra (Ms.)	Bhupendra Singh Butola	Satyawati Sharma (Ms.)	Deepika Bhaskar (Ms.)
Sankalpa Ghosh	A.K. Agrawal	V.K. Vijay	( <i>Registrar &amp; Secretary</i> )
Amita Das (Ms.)	P.V. Madhusudhan Rao	V.M. Chariar	

### EXECUTIVE COMMITTEE OF THE SENATE (ECS)

(As on 31.03.2021)

V. Ramgopal Rao <i>Chairperson</i>	Ratnamala Chatterjee (Ms.)	<b>Special Invitees</b>
Ashok K. Ganguli	R.S. Rengasamy	
T.C. Kandpal	Josemon Jacob	
Shantanu Roy	P.V.M. Rao	
Sudipto Mukherjee	Subrat Kar	
S.K. Khare	Arun Kumar	
Naveen Garg	Krishna A. Rao	
Arvind K. Nema	Naresh Bhatnagar	
P.V. Rao	K. Narayanan	
K.C. Iyer	K.A. Subramanian	
Anurag Singh Rathore	B.K. Panigrahi	
Sanjeev Sanghi	Anushree Malik (Ms.)	
D. Sundar	Rahul Garg	
K.K. Pant	Amit Gupta	
Anil Jacob Elias	Swades De	
G.V. Ramana	P.R. Panda	
Sanjiva Prasad	James Gomes	
Jayadeva	Ambuj D. Sagar	
Angelie Multani (Ms.)	Rajendra Singh	
Seema Sharma (Ms.)	Mausam	
S. Dharmaraja	Nabi Hasan	
S.G. Deshmukh	Deepika Bhaskar (Ms.) ( <i>Registrar</i> ): <i>Member-Secretary</i>	
		D. Ravi Kumar
		Pankaj Srivastava
		Subodh Kumar
		Sukumar Mishra
		Pramit K. Chowdhury
		Deepti Gupta (Ms.)
		Reetika Khera (Ms.)
		Anupam Shukla
		K. Sreenadh
		Pritha Chandra (Ms.)
		Abhijit R. Abhyankar
		J.T. Shahu
		B. Premachandran
		Anishya Madan (Ms.)
		Anil Wali
		Nalin Pant
		Neeraj Kumar Chaurasia
		Mahim Sagar
		Anil Verma
		Sameer Sapra

# Administrative and Other Staff

## Appendix II

(As on 31.03.2021)

Administration	
Deepika Bhaskar (Ms.)	Registrar
M.K. Gulati	Joint Registrar (Legal)
Kalyan Kumar Bhattacharjee	Joint Registrar (FAA, E-I, R&I, Planning)
Atul Vyas	Joint Registrar (Academics, Publication Cell)
Mohd. Shamim	Deputy Registrar (Main Accounts)
N. Bhaskar	Deputy Registrar (Director's Office, Health Unit, Vigilance, Nodal Officer for Public Grievance/PG Portal, Gender Grievance & Related Work)
Alan V. Sinate	Assistant Registrar (Store Purchase Section)
Raj Kumar Gupta	Assistant Registrar (Accounts)
Mukesh Chand	Assistant Registrar (IRD Accounts)
Debranjana Mukherjee	Assistant Registrar (Accounts)
Sanjay Pande	Assistant Registrar (E-II)
Amitabh Mukherjee	Assistant Registrar (Audit)
S.K. Gohar	Assistant Registrar (Academics)
Rama Sharma (Ms.)	Assistant Registrar (IRD)
Mukesh Khandelwal	Institute Engineer (on deputation)
G.K. Taneja	Executive Engineer
Anuj Gaur	Executive Engineer
Ashok Kumar	Executive Engineer
Ashish Kumar Vinodiya	Executive Engineer
Raju Ram Parihar	Assistant Executive Engineer
Rafat Jamal	Assistant Executive Engineer
V.K. Bharaj	Assistant Executive Engineer
Prem Kumar	Assistant Executive Engineer
Brahm Prakash	Assistant Executive Engineer
Pradip Karmarkar	Assistant Executive Engineer
Prem Singh Rawat	Assistant Executive Engineer
Virbhan Singh	Assistant Executive Engineer
Anishya Obhrai Madan (Ms.)	Industrial Liaison Officer
Shiv Prakash Yadav	Public Relations Officer
Deepak Negi	Sports Officer
Shachi Mathur (Ms.)	Student Counsellor
Sandeep Sharma	Security Officer

contd. ....

Bhupender Singh	Principal Technical Officer
Uday Dadwal	Technical Officer

### Administrative Computerisation Support Service

K. Narayanan	Head
Pardeep Kumar Gupta	Senior System Manager (SG)
S.R. Hedge	Senior System Manager (SG)
P.K. Baboo	Senior System Manager (SG)

### Student Counselling Service

Reetika Khera (Ms.)	Head
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### Professors-in-Charge of Different Sections

J.T. Shahu	Professor-in-Charge (Guest Houses & Halls)
Nalin Pant	Professor-in-Charge (EHLS Unit)

### Office of Career Services

Anishya Obhrai Madan (Ms.)	Head
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### Hindi Cell

Neeraj Kumar Chaurasia	Head
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### Library

S.P. Singh	Chairperson (Advisory Committee for Library)
Nabi Hasan	Librarian & Head

### IIT Hospital

Lily Khosa (Ms.)	Chief Medical Officer (SAG), (Additional charge, Head, Hospital Services)
Ajay Kumar Jain	Chief Medical Officer (SAG)
Renu Misuriya (Ms.)	Chief Medical Officer (SAG)
Mahesh Kumar Sagar	Chief Medical Officer (SAG)
Anila Khosla (Ms.)	Chief Medical Officer (SAG)
P.K. Rajesh	Chief Medical Officer
Md. Ashafaque Hussain	Chief Medical Officer
Sayed Yasmeen Raunaq (Ms.)	Senior Medical Officer
L. Pangerlemba	Senior Medical Officer
Rajlaxmi Borah (Ms.)	Medical Officer
Shalini Singh (Ms.)	Medical Officer (Dental) (on contract)
Abhishek Gupta	Medical Officer

## Other Committees

### Appendix III

(As on 31.03.2021)

Building and Works Committee	
V. Ramgopal Rao, <i>Chairperson</i>	T.C. Kandpal
P.S.N. Rao	Ashok K. Ganguli
S. Ramanujam	J.T. Shahu
Rajendra Kalla	Abhijit R. Abhyankar
K.N. Rai	B. Premachandran
Sarvagya Kumar Srivastava	Mukesh Khandelwal
Anil Kumar Jain	Deepika Bhaskar (Ms.), <i>Secretary</i>
K.C. Iyer	

Advisory Committee for Library	
S.P. Singh, <i>Chairperson</i>	Saroj K. Mishra
Gaurav Singh	Deepak Joshi
Atul Narang	Ramesh Narayanan
Jayati Sarkar (Ms.)	S. Fatima (Ms.)
Haridas V.	Pushpapraj Singh
R.R. Kalaga	K. Narayanan
Rijurekha Sen (Ms.)	Ajay Saini
Sumeet Agarwal	Shalini Gupta (Ms.)
Divya Dwivedi (Ms.)	C.S. Dey
Neeru Chaudhry (Ms.)	Anmol Choudhary
Surjeet Kour (Ms.)	Saswata Bhattacharya
Krishna Kant Agarwal	Soutrik Basu
Bhaskar Kanseri	Mangala Joshi (Ms.)
Amit Rawal	Sumer Singh
Subir Dey	Neeraj Kumar Chaurasia
L.N. Ramasubramanian	Nabi Hasan, <i>Secretary</i>

contd. ....

Computer Users' Committee	
K. Narayanan, <i>Chairperson</i>	Sarvesh K. Dubey
Souvik Chakraborty	Anup Singh
Ashish Misra	Ramesh Narayanan
Gaurav Goel	Manish Agarwal
Hemant Kashyap	Prabhu Babu
Anoop Krishnan	Kavya Dashora (Ms.)
Maya Ramanath (Ms.)	Akhil Garg
A.P. Prathosh	Shouribrata Chatterjee
Ashwini Vaidya	Satish Kumar Dubey
Agam Gupta	Manidipa Banerjee (Ms.)
Harish Kumar	Manish Agarwal
K. Ramakrishna	Gopal Krishen
Saswata Bhattacharya	Pragya Jain (Ms.)
Dipayan Das	Reetika Khera (Ms.)
Srinivasan Venkataraman	Ajay Guleria, <i>Secretary</i>
Divya Nayar (Ms.)	







# Indian Institute of Technology Delhi

Hauz Khas, New Delhi-110 016 (India)

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