



# INDIAN INSTITUTE OF TECHNOLOGY DELHI



Quarterly

May 2024 ISSUE

# NEWSLETTER

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# NEWS UPDATES



## Third Batch of STEM Mentorship Program for High School Girls Inaugurated

IIT Delhi's STEM Mentorship Program for high school girls in Classes 9 and 11 will unfold in three comprehensive phases. The "summer phase," which concluded on May 24, featured a 9-day workshop. Expert lectures, laboratory demonstrations, and hands-on problem-solving sessions immersed participants in STEM domains. In the subsequent "At the School" phase, from July to November 2024, participants will engage in the Sci-Tech Spins lecture series. The interaction sessions with IIT Delhi students will enrich their learning experience. The program will culminate in the "Winter phase" in January 2025 with lectures on leadership in STEM, entrepreneurship, and interactions with accomplished IIT Delhi alumni.

## IIT Delhi Abu-Dhabi Launches two UG Programmes

At its Abu Dhabi campus, IIT Delhi has launched two undergraduate courses, namely, B.Tech. in Computer Science and Engineering and B.Tech. in Energy Engineering. Scheduled to commence in the academic year 2024–25, the two UG programs will commence with a starting batch of 30 students each. Within each discipline, while 20 seats will be allocated through the merit list of the Combined Admission Entrance Test (CAET), a new examination being launched by IIT Delhi that is specifically customized for the UAE, up to 10 seats can be taken by students clearing the JEE Advanced examination.



## DMS Launches New Academic Program - 'Executive Master of Business Administration'

The intensive two-year Executive MBA program is set to begin in July 2024. The newly launched program is designed to meet the needs of mid-career executives who have over three years of experience and want to enhance their knowledge and skills, expand their network, and accelerate their career progression without taking a break.

## IIT Delhi Takes Multiple Initiatives for the Empowerment of Students with Disabilities

Installation of an accessible restroom for persons with disabilities at the main administrative building in the academic area to accommodate those who have mobility issues is the most recent inclusive endeavor. Along with this, accessible washrooms have been installed in other academic blocks as well. IIT Delhi has also acquired an accessible e-cart for the transport of students with disabilities around the campus. Making buildings on the campus accessible for students with disabilities has been a key priority, accomplished through the addition of ramps in classrooms, braille signage in lifts, braille name plates, and accessible hostel accommodations.



## QS World University Rankings by Subject 2024

The QS World University Rankings by Subject 2024 announced in April 2024 placed IIT Delhi among the top 50 institutions in the world in the broader subject area of Engineering and Technology with a rank of 45. The Institute is also ranked among the top 100 world institutions in the following eight specific subject areas. (i) Civil and Structural Engineering (Global Rank 39), (ii) Mechanical Engineering (Global Rank 50), (iii) Electrical and Electronic Engineering (Global Rank 55) and (iv) Computer Science and Information Systems (Global Rank 63) (v) Chemical Engineering (Global Rank 86), (vi) Material Sciences (Global Rank 89), (vii) Business and Management Studies (Global Rank 91) and (viii) Environmental Sciences (Global Rank 100). In Civil Engineering, Electrical, and Computer Science Engineering, IIT Delhi is in the top position in the country and holds the 2nd position in Mechanical Engineering and Chemical Engineering.

## AFMS and IIT Delhi Sign MoU for Collaborative Research and Training

The scope of this MoU signed in April includes undertaking research and innovation to develop novel medical devices and focusing on solving health issues specific to serving soldiers in varied terrains. Under the ambit of this MoU, faculty exchange program, joint academic activities, and the development of joint PhD programmes will also be planned. Lt. Gen. Daljit Singh, DG AFMS, said that AFMS is dedicated to providing the highest level of medical care to soldiers, and collaboration with institutes of national importance like IIT Delhi is a significant step towards this commitment.



# NEWS UPDATES



## Venture Studio: eDC IIT Delhi, Alumni Conduct an Entrepreneurship Course for Students

The Entrepreneurship Development Cell at IIT Delhi (eDC, IIT Delhi), in collaboration with some distinguished Institute alumni, conducted the first season of Venture Studio, an entrepreneurship course to support IIT Delhi students in their journey to build successful startups from scratch. The course was designed to empower the students with the knowledge and skills to enable them to become successful entrepreneurs. Drawing from a pool of over 350 registrations, 40 outstanding students from diverse academic backgrounds were selected to participate in the first season.

## IIT Delhi Faculty Appointed as Directors of Institutions of National Importance

Prof. Sunil Kumar Khare, Chemistry Department and former Dean, R&D, IIT Delhi, has been appointed as the Director of the Indian Institute of Science Education and Research (IISER) Kolkata. Prof. Sukumar Mishra, Electrical Engineering Department, and former Associate Dean, R&D, IIT Delhi, has been appointed as the Director of IIT (ISM) Dhanbad.

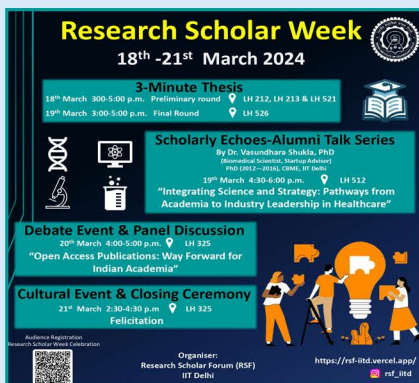


## International Women's Day: Talk titled "Rise to Shine: Embracing Challenges for Success" Organised

The event, held on March 6, 2024, took a poignant approach by addressing the specific mental health struggles encountered by women in their daily lives, be they students or working professionals. The event featured two distinguished speakers: Dr. Rachna Bhargava, a Professor of Clinical Psychology at the prestigious All India Institute of Medical Sciences (AIIMS), and Ms. Divyani Khurana, a dedicated Clinical Psychologist from the AIIMS Students' Wellness Centre. Both speakers brought a wealth of knowledge and experience to the discussion, providing valuable insights into the complexities of mental health struggles and practical strategies for overcoming them.

## Department of Humanities and Social Sciences Launches 'M.A. in Culture, Society, Thought'

The first of its kind MA program is envisaged as a two-year full-time degree program that focuses on the thematic of culture, society, and thought through the core disciplines of sociology, literature, and philosophy. The program will train and equip students for a variety of fields including research, academia, social work, think tanks, media and policymaking, among others, in government and non-governmental organisations, research institutes, social entrepreneurship organisations etc.

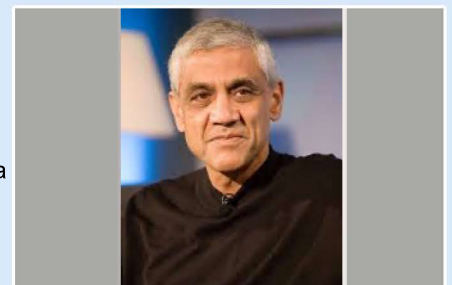


## Research Scholar Week Organised

The four-day Research Scholar Week (RSW), a pioneering initiative by the Research Scholar Forum, IIT Delhi, organised from March 18-21, marks a significant milestone in the Institute's commitment to foster academic excellence and holistic development. The RSW was designed with a focused intent to empower research scholars through well-being and work-life balance, boosting productivity, enhancing research visibility, and fostering a vibrant scholarly community.

## Interactive Session with Distinguished Alum Mr Vinod Khosla

IIT Delhi organized an interactive session with its distinguished alum, Mr. Vinod Khosla, as part of TRYST, the technical festival. Mr. Khosla, co-founder of Sun Microsystems and the founder of Khosla Ventures, answered multiple questions pertaining to his work, his life at IIT, his professional journey, and more importantly, his vision for the future.





# NEWS UPDATES



## Bill Gates Inspires IIT Delhi Students, Encourages Them to Apply Their Skills to Global Challenges

Mr. Bill Gates, Co-Chair, Bill & Melinda Gates Foundation, addressed and interacted with students at IIT Delhi on the topic 'Innovation for Public Good' in February 2024. During his address, Mr. Gates highlighted the critical role of emerging technologies in addressing persistent health and development challenges and the need for scalable, cost-effective solutions to ensure they can be equitably delivered. He emphasized India's work in vaccine manufacturing, AI for education, and digital public infrastructure and their contributions to driving global public good.

## Minister of State for Social Justice and Empowerment Inaugurates Office of SC/ST Cell

The Hon'ble Minister of State for Social Justice and Empowerment, Shri Ramdas Athawale, inaugurated the Office of the SC/ST Cell at IIT Delhi in February. The event began with a ribbon-cutting ceremony at the Office of the SC/ST Cell, followed by an address by the Chief Guest at the Seminar Hall.

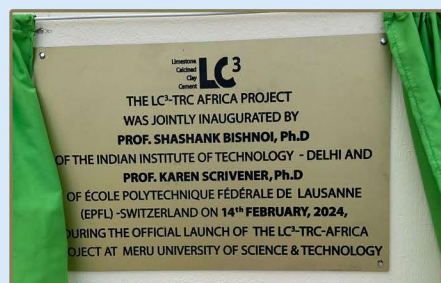


## Prime Minister Inaugurates Two Academic Complexes at IIT Delhi

The Hon'ble Prime Minister of India, Shri Narendra Modi, inaugurated the newly constructed Academic Complex East and Academic Complex West at IIT Delhi's Hauz Khas campus through video conferencing in February. This is the largest ever single-time construction activity for research and academic purposes in the history of IIT Delhi. The two multi-storey complexes are developed at a cost of Rs. 260 crores, with a plinth area of over 60,000 square meters and have come up as an addition to the existing academic area on the campus.

## Completion of Sequencing of 10000 Genomes of Indian Population: IIT Delhi Scientists Make Significant Contribution

The Union Minister of State (Independent Charge) for Science and Technology, Dr. Jitendra Singh, announced the "Completion of Sequencing of 10,000 Genomes of Indian Population" in February. Prof. D. Sundar (Principal Investigator) and Prof. Ishaan Gupta (Co-Principal Investigator) from IIT Delhi's Department of Biochemical Engineering and Biotechnology played a significant role as key data science partners in the 'GenomeIndia' project. PhD student at IIT Delhi, Nirmal Singh Mahar, also contributed significantly to the project.



## LC3-TRC Africa Project Mentored by IIT Delhi Researchers Inaugurated at Kenya's Meru University of Science and Technology

Researchers at IIT Delhi have been playing a leading role in bringing Limestone Calcined Clay Cement (LC3), a more sustainable cement with higher performance, to the market in India and internationally. An LC3-Technology Resource Centre (TRC) Africa Project at Kenya's Meru University of Science and Technology was jointly inaugurated by IIT Delhi's Prof. Shashank Bishnoi and Prof. Karen Scrivener, EPFL, Switzerland, in February 2024. The LC3-TRC Africa is an important addition, as it will help in the sustainable development of Africa and build capacity in the area of cement research there.

## R Systems International Ltd. and IIT Delhi Partner to Set Up a Centre of Excellence on Applied AI for Sustainable Systems

The Center of Excellence (CoE) on Applied AI for Sustainable Systems at IIT Delhi will include a cutting-edge research lab, the creation of an endowed faculty chair position, and the initiation of merit-based student scholarships. This initiative underscores the strategic priority of R Systems to promote innovation, enhance new-age skills, and develop deep tech. The work produced by this CoE is expected to enhance the research and development capabilities of both R Systems and IIT Delhi.



# NEWS UPDATES

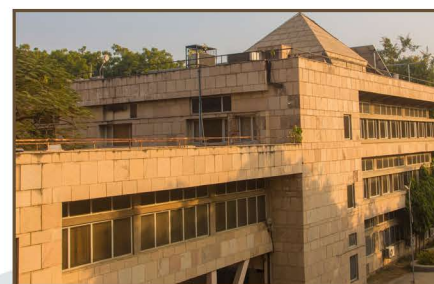


## Transformative Leadership in STEMM (TLS) Workshop for Ph.D. Scholars from SC/ST Community Held

The key aim of the three-day Transformative Leadership in STEMM (TLS) workshop was to encourage and empower the Ph.D. scholars to apply for faculty positions at IITs, NITs, and other HEIs. During the workshop organised in February, the students presented their research and gave a teaching demonstration, along with receiving feedback and mentoring from faculty. The students also engaged in an incubation-based group activity led by IHFC (Technology Innovation Hub of IIT Delhi). Various skill-building sessions were conducted in the workshop that addressed niche areas of the faculty application process.

## New Academic Program 'M.Sc. in Biological Sciences' Launched

Launched by the Kusuma School of Biological Sciences at IIT Delhi, M.Sc. in Biological Sciences' will commence from the academic year 2024-25. The program curriculum will have a strong emphasis on quantitative biology as a core topic to fill the gap in big data analysis and presentation in the current job market. The students will have an open basket of electives to choose from. The program will have a strong emphasis on "learning by doing", not by instruction. All core courses in the program have a practical or analytics-based component, not a single pure theory course is proposed.



## WIPO Fellows

Dr. Atwau Pius, MBBS from Mbarara University, Uganda, and Opinde Peter Ochieng, BSc, in Mechanical Engineering from Dedan Kimathi University, Kenya, have joined as WIPO (World Intellectual Property Organization) fellows at IIT Delhi's Centre for Biomedical Engineering. The fellows, to be mentored by Prof. Deepak Joshi, CBME, aspire to enhance healthcare accessibility and productivity in the developing world.

## IIT Delhi Foundation Day Institute Lecture

Prof. Pawan Sinha, an esteemed IIT Delhi alumnus and professor of Neuroscience in the Department of Brain and Cognitive Sciences at the Massachusetts Institute of Technology (MIT) delivered the IIT Delhi Foundation Day Institute Lecture titled "India as Karmabhumi for Science and Service" on January 25, 2024.



## NSS IIT Delhi Launches an In-house-developed Mobile App

The in-house-developed mobile app named 'NSS IIT Delhi' is designed to revolutionize youth engagement and social impact. With the help of the App, IIT Delhi students who like to be NSS volunteers can now register, find projects near them, track their volunteer hours, and connect with fellow volunteers – all on a user-friendly platform. The App is true to the spirit of IIT Delhi and is inclusive of campus life as well. It has a map of the campus with live tracking and the numbers of all the important contacts, like the Institute's Security Control Room, Hospital, Ambulance and many more.

## Bharat Electronics Ltd., FITT-IIT Delhi Sign MoU

An MoU was signed between BEL and FITT-IIT Delhi in January for collaboration in specific areas. The collaboration was envisaged and facilitated by the Office of Naval Projects of the Indian Navy at IIT Delhi to facilitate the translation of ongoing research in Deep Tech at the Institute. BEL and IIT Delhi would be jointly working on core technology development, with use cases in significant areas of interest to the Indian Navy.



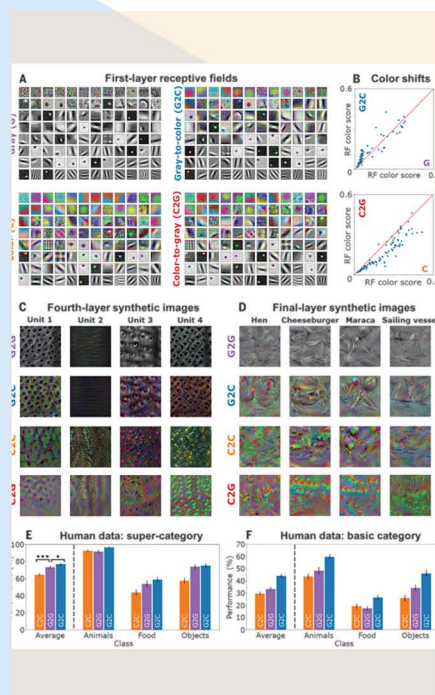
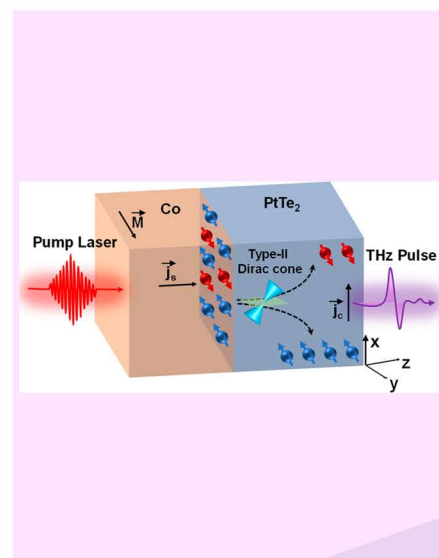


# RESEARCH & INNOVATION

## Highly Efficient Terahertz Radiation Source for Beyond 6G Technology Developed

Researchers at IIT Delhi have developed a novel device capable of producing high-intensity radiation at frequencies beyond the capabilities of current 6G communication technologies. This significant advancement was achieved by the research group led by Assistant Professor Rahul Mishra and Prof. Samaresh Das at the Center for Applied Research in Electronics (CARE), IIT Delhi, in collaboration with Professor Yang Hyunsoo from the National University of Singapore. Ms Pinki Yadav, a research scholar at IIT Delhi, spearheaded the design and fabrication of this pioneering device, with critical measurements conducted at NUS. Dubbed a spintronic terahertz (THz) emitter, the device operates through a bilayer system composed of ferromagnetic and non-magnetic materials. The team at IIT Delhi innovated by developing a semimetal material in their laboratory using platinum, which was then paired with a layer of cobalt. This combination enables the device to generate high-intensity pulses at the terahertz frequency range, nearing 10<sup>12</sup> Hz. The culmination of this research was published in ACS Nano Letters, a prestigious journal by the American Chemical Society renowned for its focus on nanomaterials and devices.

(Read more: [https://home.iitd.ac.in/show.php?id=54&in\\_sections=Research](https://home.iitd.ac.in/show.php?id=54&in_sections=Research))



## Early Visual Experience is Crucial for Later Usage of Color Cues

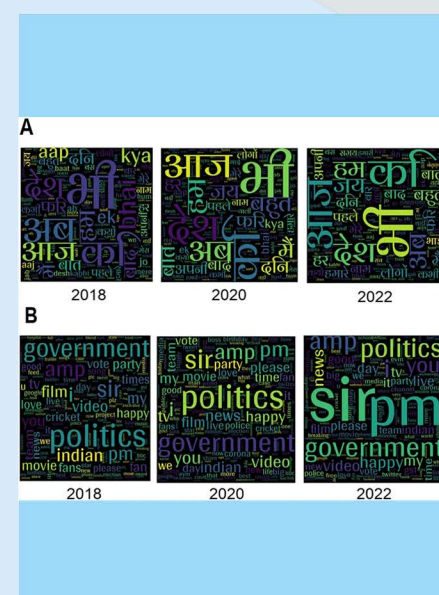
Human visual recognition is remarkably robust to chromatic changes. In a study titled “Impact of early visual experience on later usage of color cues” published in Science journal researchers from IIT Delhi, MIT, Dr. Shroff’s Charity Eye Hospital, provide a potential account of the roots of this resilience based on observations with 10 congenitally blind children who gained sight late in life. Several months or years following their sight-restoring surgeries, the removal of color cues markedly reduced their recognition performance, whereas age-matched normally sighted children showed no such decrement. This finding may be explained by the greater-than-neonatal maturity of the late-sighted children’s color system at sight onset, inducing overly strong reliance on chromatic cues. Simulations with deep neural networks corroborate this hypothesis. These findings highlight the adaptive significance of typical developmental trajectories and provide guidelines for enhancing machine vision systems. “Our findings are significant from three perspectives: 1. They help explain a pattern of deficits observed in newly sighted children, 2. They provide an account for why normal visual development proceeds in the way that it does, and 3. They suggest that the performance of AI vision systems can be improved by incorporating insights from human development”, said Dr. Tapan Gandhi, professor in Electrical Engg. and Cadence Chair Professor of Automation & AI).

(Research paper: <https://www.science.org/doi/10.1126/science.adk9587>)

## Social, Economic, and Demographic Factors Drive the Emergence of Hinglish Code-Mixing on Social Media

Published in Humanities and Social Sciences Communications (Nature Publications), a research paper titled “Social, economic, and demographic factors drive the emergence of Hinglish code-mixing on social media” explores the rise of Hinglish, a fusion language derived from monolingual Hindi and English, on social media platform ‘X’ (formerly Twitter) from 2014 to 2022. Analyzing over 260,000 posts on X, IIT Delhi and IIIT Delhi researchers found that Hinglish helps users engage more effectively with a broader audience, with Bollywood significantly boosting its popularity. The study highlights socio-economic factors, such as living standards and internet activity, as key drivers of Hinglish adoption. It also notes that code-mixing varies by context, being most common in political tweets. The paper underscores Bollywood’s role in spreading Hinglish and identifies challenges for natural language processing (NLP) technologies, which struggle with code-mixed languages. “Our paper shows Hinglish as a dynamic language shaped by socio-economic conditions and cultural influences, emphasizing its growing importance in modern digital communication”, said Prof. Tanmoy Chakraborty, Electrical Engg., IIT Delhi.

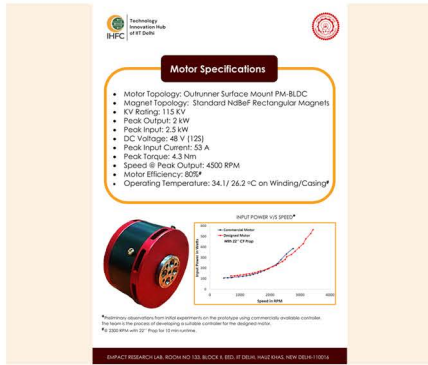
(Research paper- <https://www.nature.com/articles/s41599-024-03058-6>)



# RESEARCH & INNOVATION

## 2kW Brushless PM Motor Tailored for UAV Applications Developed

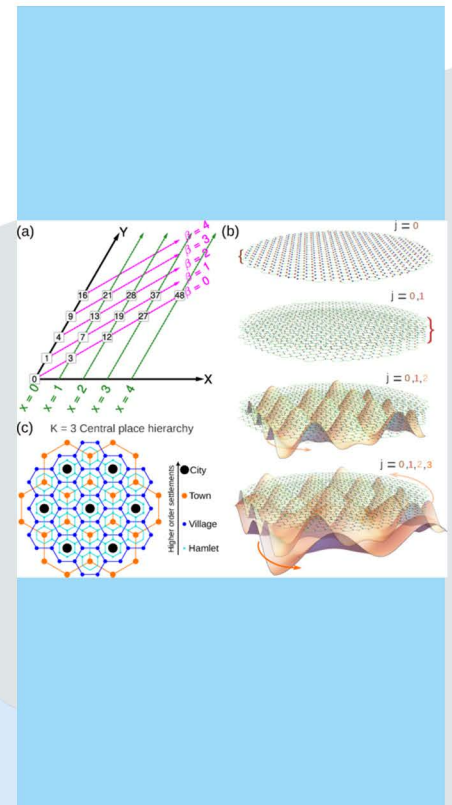
Prof. Amit Kumar Jain, Electrical Engineering, and his team from the EMPACT Research Lab at IIT Delhi have successfully designed and developed a 2kW Brushless PM Motor tailored for UAV applications. Initial tests indicate improved efficiency at higher speeds, the utilization of cost-effective rectangular-shaped magnets, and enhanced cooling capabilities. This collaborative effort, involving Dr. Durgesh Banchhor (Post Doc Fellow) and Vaibhav Bhardwaj (PhD Scholar), underscores the dedication and hard work behind this project. Noteworthy is the support from IHFC IIT Delhi, emphasizing the importance of financial backing in advancing such technological endeavours.



## A Twist in the Saga of Fractals

Moiré means watered textile. This is created when two layers of fabrics are pressed again each other to create a wavy colour pattern, and has been known in silk industry for more than a century. Essentially this moiré pattern is an interference pattern that emerges when once two or more lattices are overlaid on each other but with a relative twist or displacement between them. They manifest in a whole range of fields spanning textiles, architecture, optics etc. Material world become fascinated in such pattern a little more than a decade back when it was understood that if a two dimensional crystal such as graphene (discovered in 2005 and Nobel prize on Physics was awarded to it in 2011), was placed one atop another and relatively twisted, it changes its properties drastically and can possibly even make it superconducting under ambient condition. The field which is now popularly known as “Twistronics” (Electronics of twisted electrons), registered an explosive growth with the experimental confirmation of the above idea in 2018 by an experimental group in MIT. The idea was generalised to a large class of twisted layered materials which form a special class of so called van der Waals structures, now also known as moiré materials. Investigators in the Physics Department IIT Delhi (Prof. Sankalpa Ghosh, Prof. Rohit Narula, Ph.D. student Mr. Deepanshu Agarwal) have uncovered an unexpected manifestation of fractal geometry in the electronic properties of such moiré materials. The work was published in Physical Review B published by American Physical Society, and selected as “Editor’s suggestions”.

(Research paper: <https://journals.aps.org/prb/abstract/10.1103/PhysRevB.109.125302>)



(Labs @ IIT Delhi)



# INDUSTRIAL RESEARCH AND DEVELOPMENT

## Sponsored Projects & Consultancy Jobs Undertaken Through IRD Unit

(January - March 2024)

- 80 Sponsored Research Projects with a total sanctioned value of ₹ 85.52 Crores
- 8 Miscellaneous Projects with a total sanctioned value of ₹ 16.27 Crores
- 93 Consultancy Jobs with a total sanctioned value of ₹ 6.54 Crores

### High Value Sponsored Projects (with sanctioned value Rs. 1.00 Cr. and above)

Title	Sponsoring Agency	PI/Department	Sanctioned Funds (Rs. Crores)
Edu-23-00013 IIT Delhi for Textile Technology / Fibre Science under National Technical Textiles Mission (NTTM) (for Equipment & Training)	National Technical Textiles Mission, Ministry of Textiles India	Prof. R Alagirusamy, Textile & Fibre Engineering	15.50
Developing & setting up 5G private network infrastructure and implementing multiple 5G and beyond use cases at THDCIL campus.	THDC India Limited, India	Prof. Krishna Kumar Sirohi, Bharti School of Telecommunication Technology & Management	9.50
R Systems Centre of Excellence	R Systems International Ltd. India	Prof. Srikanta Bedathur Jagannath, Computer Science & Engineering	8.95
EdTech Tulna: Awareness, Engagement and Empowerment of Public and Institutions for adoption of Education Technology Products	Omidyar Network Fund Inc. (IU) United States	Prof. Mahim Sagar, Management Studies	6.60
High-quality single crystal growth of nonlinear crystals for quantum communications	Directorate of Futuristic Technology Management, DRDO, India	Prof. Kaustuv Manna, Physics	5.55
Expansion and Scale-up of Medtech Innovation Training Programme: School of International Biodesign (SiB): Phase-V (Five Years: 2022-2026) [BT/PR42130/BIO/144/7/2021]	Department of Biotechnology, Ministry of Science & Technology Government of India.(India)	Prof. Deepak Joshi, CBME	3.89
AI for cyber security under NSM	Ministry of Electronics and Information Technology, India	Prof. Manan Suri, Electrical Engineering	3.71
Human assist mules Khacchar	THDC India Limited, India	Prof. Sudipto Mukherjee, Mechanical Engineering	3.64
From the lab to real-world: Towards an ecological valid understanding of inhibitory control	DBT Wellcome Trust India Alliance	Prof. Sumitash Jana, Humanities & Social Sciences	3.64
Indigenous development of meltblowing system for fabrication of waste plastic bottle derived nonwoven	National Technical Textiles Mission, Ministry of Textiles India	Prof. Sumit Sinha Ray, Textile & Fibre Engineering	3.38
Robust and Packaged Sensors & Sensor Systems for Smart Electronic Textiles	DRDO, India	Prof. Anuj Dhawan, Electrical Engineering	2.97
Development of AQI sensors for ATMAN	Robotics Society of India IIT Kanpur, India	Prof. Krishna B Balasubramanian, Material Science & Engineering	2.33
Transitioning to Sustainable and Climate Friendly E-Mobility in India	Deutsche Gesellschaft fur Internationale Zusammenarbeit (GIZ) GmbH, Germany	Prof. Nezamuddin, Civil Engineering	2.09
Identification of key ligands/ligand complexes on Plasmodium falciparum merozoite using Cryo-EM, proteome and immunological approaches-A step towards the development of an efficacious malaria blood stage vaccine	Wellcome Trust/DBT India Alliance India	Prof. Manidipa Banerjee, School of Biological Sciences	1.90
Orally Ingestible Targeted Radical Polymerization (TRAP) Microdevices for Non-Invasive Sampling of the Upper Gastrointestinal Tract	ICMR, India	Prof. Sarvesh Kumar Srivastava, CBME	1.22
Low-cost Wearable Sensor System for Mapping Plantar Pressure in the Assessment of Diabetic Foot Ulcers	ICMR, India	Prof. Dhiman Mallick Electrical Engineering	1.14

# INDUSTRIAL RESEARCH AND DEVELOPMENT

## High-Value Consultancy Jobs (with sanctioned value Rs. 0.25 Cr. and above)

Title	Sponsoring Agency	PI/Department	Sanctioned Funds (Rs. Crores)
Impact Assessment of Ministry of Education's Innovation Cell	All India Council For Technical Education, New Delhi India	Prof. M.P. Gupta, Management Studies	0.37
Financial, Technical and Justified Cost Investigation of Estimate Design. Supply. Install. Implement and Maintenance of ICT (Information and Communication Technologies) Components for Noida Safe City Project of Noida	New Okhla Industrial Development Authority, Noida India	Prof. Sukumar Mishra, Electrical Engineering	0.43
Evaluation of Suitability of Dredged Soil as Backfill in Marin Infrastructure Project Site at Koteshwar, Bhuj and Recommendation of Remedial Measures	Central Public Works Department, Gujarat India	Prof. R. Ayothiraman, Civil Engineering	0.30
Construction of Govt. Medical College & Hospital at Jhanjharpur, District Madhubani, Bihar	Bihar Medical Services & Infrastructure Corporation Limited, Patna India	Prof. Kumar Neeraj Jha, Civil Engineering	0.25

## Other Significant Research Activities



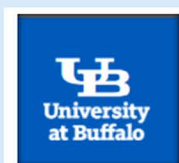
### TU Delft-IIT Delhi Joint Project Meeting

A review meeting of five joint projects between TU Delft & IIT Delhi was conducted on 27th February 2024. A significant progress in terms of four international journal publications, presentation of three papers in conferences, co-supervision of three PhD students and two Master students, as well as grant of two extramural joint projects and submission of joint project proposal to external funding agency was the major outcome of this joint research collaboration.



### NYCU-IIT Delhi Joint Project Meeting

An interim project review of the ongoing 17 projects between National Yang-Ming Chiao Tung University (NYCU), Taiwan and IIT Delhi was conducted on 20th February 2024. Significant research progress in terms of 23 international publications, 10 conference papers, supervision of 12 joint doctoral students, and nine project proposals have been submitted to external funding agencies.



### UB-IIT Delhi Joint Project Meeting

A review of the ongoing 10 projects between the University of Buffalo and IIT Delhi was conducted on 8th March 2024. About four international journal publications, two papers at the conferences, five joint project proposals have been submitted to the external funding agencies and a total of six research scholars, including three PhD scholars, are supervised under this joint research collaboration.



### Call for TU Delft-IITD Joint Projects Call-2024

The 3rd Call for joint collaborative research proposals between Delft University of Technology (TU Delft) and IIT Delhi was announced on 29th February 2024. Proposals were invited from research areas, namely; Climate, Energy & Sustainability, Healthcare and MedTech (Medial Implants), Microelectronics and Semiconductors (Terahertz Communications), Quantum Technology, and Smart Materials and Manufacturing.

## MEMORANDUM OF UNDERSTANDING (MoU)



### MoU With Hebrew University of Jerusalem, Israel (HUJI)

IIT Delhi renewed the MoU for a Collaborative Research Grant Program with Hebrew University of Jerusalem, Israel (HUJI). The MoU originally signed in January 3, 2021, was renewed on 28th March 2024 for another five years further to strengthen the joint collaborative research between the two institutions.



### MoU with Bharat Petroleum Corporation Ltd (BPCL)

An umbrella MoU was signed between IIT Delhi and Bharat Petroleum Corporation Ltd. (BPCL), Mumbai, on 26th March 2024 for pursuing collaborative research activities between the two organizations for a period of ten years. The aim of such engagement would be to generate new knowledge in cutting-edge research and also to promote academic growth by offering state-of-the-art undergraduate, post-graduate, and doctoral programs. At the initial stages, the research groups shall be led by BPCL, the Corporate R&D Centre at Greater Noida and the Department of Chemical Engineering, IIT Delhi, in a collaborative mode of research & technology development.



# ALUMNI RELATIONS

## Alumni Reunions

The beginning of the year has been full of joy and nostalgia, as cherished memories were revisited and friendships rekindled. The Office of Alumni Relations, the Endowment Office, and the Alumni Association at IIT Delhi organised reunions for the batches of 1969, 1970, 1980, and the Chemistry Department.

Alumni from various walks of life reunited after years apart, embracing the opportunity to reconnect and reminisce about their college years. These gatherings are not only meant for alumni to relive the past but also serve as an inspiration for current students. The Office of Alumni Relations is planning to organise 12 reunions in 2024–25.



(March 15, 2024: 1969-74 Batch Reunion - <https://youtu.be/2MPBvOy4Jr4>)



(March 1, 2024: 1965-70 Batch Reunion - <https://youtu.be/teoQu9dmYwk>)



(January 19, 2024: 1975-80 Batch Reunion - <https://youtu.be/-1JlxjTZjE>)



(March 2-3, 2024: Chemistry Dept. Reunion - <https://youtu.be/8HKQa1rSz8E>)

# ALUMNI RELATIONS

## Record Contributions from Reunion Batches

Alumni Batch Funds represent a deeply cherished tradition for alumni to give back to their alma mater. In FY 23–24, IIT Delhi experienced an unprecedented surge in pledges and donations, thanks to the remarkable support from numerous reunion batches. Notable contributors include the 1973 (undergraduate and Masters), 1980, 1981, and 1998 batches, and the alumni from the Chemistry Department, among others. With over 170 alumni actively participating in batch funds already and more expected to join, the collective impact is profoundly felt. A standout achievement comes from the Class of 1998, whose recent Silver Jubilee reunion marked the creation of the largest-ever batch fund in IIT Delhi's history. This milestone batch remains committed to bolstering contributions, aiming to establish a multi-million dollar batch fund in the near future.

## Newly Instituted Scholarships, Awards & Chairs (January-March 2024)

Scholarship Title	Donor	Purpose
Satish Chandra Pushpa Agarwal Scholarship	Mr. Rakesh Agarwal	Scholarship of Rs 1 lakh to one B. Tech. student
N K Securities Research Scholarship	N K Securities Research Pvt Ltd	Scholarship of Rs 2 lakh to five B. Tech. students
Sarla and Ratan Gupta Scholarship	Mr. Roopak Gupta	Scholarship of Rs 1 lakh to 3rd year undergraduate B. Tech/Dual degree students
Nikunj Agarwal Memorial Scholarship	Mr. Sharad Agarwal	Scholarship of Rs 1 lakh to one student of B.Tech. Mathematics and Computing
Rishi and Anika Gupta Scholarship	Mr. Roopak Gupta	Scholarship of Rs 1 lakh to 3rd year B Tech./Dual degree female students
Nirmal Parshad Jain Scholarship	Mr. Arun Jain	Scholarship of Rs 1 lakh to one 2nd year B.Tech. student
Prasad and Shyamala Akkineni Scholarship	Mr. Rakesh Akkineni	Scholarship to one student of 4th year with highest CGPA in 3rd year in the income slab of Rs 5-9 lakhs
Shri Surendra Narayan Scholarship	Mr. Sanjiv Narayan	Scholarship of Rs 1 lakh to one B.Tech. 2nd year student in Electrical Engineering

Awards	Donor	Purpose
Umapati Mitra Award	Upayan Mitra, B.Tech (Mech) 2008 and Sanjay Mitra, Professor of Practice, SOPP	To give award to student with the highest GPA in the Master's programme in public policy.
Shrimati Pavitra Devi Award	Mr. Sheel Aditya (Electrical Engg. 1974 batch)	To give award of Rs. 35,000 to a UG student, preferably a girl student, to promote academic excellence together with noteworthy contribution to promotion of Hindi language.

Chairs	Donor	Purpose
Batch of 1980 Chair Professor	Batch of 1980	To promote excellence and leadership in teaching, research and development in the fields of Science, Engineering, Management, Humanities or Social Sciences.
The Rockefeller Foundation Chair	The Rockefeller Foundation	To promote and facilitate research on the pressing issues of the vulnerable regions and work on suggestions for effectively implementing long term as well as short term solutions to detrimental effects of climate change.
IHFC Chair Professor (Two Chairs)	I-Hub Foundation for Cobotics	To promote excellence and leadership in teaching, research and development in the fields of Cobotics, Collaborative Robotics, and associated technology domains including (but not limited to) Medical Robotics, Manufacturing, Automation, Sensing and Communication, Artificial Intelligence, Machine Learning etc.



# CORPORATE RELATIONS

## Initiatives by Corporate Relations Office

(January- March 2024)

### Research Collaborations

❁ **Flipkart signs MoU with IIT Delhi:** Flipkart Internet Private Limited has forged a strategic research partnership with IIT Delhi. The collaboration aims to delve into the realm of Persona-aware user embedding in e-commerce.

❁ **Total Energies:** An MoU was signed with Total Energies to develop advance cooling technology for battery pack. The partnership will focus on exploring cutting-edge research and innovation in multiple facets of battery thermal management.



❁ **Nav Urja Nirma [“Nirman”]: Building a Future in Renewable Energy:** The Nav Urja Nirma, a collaborative talent development initiative between IIT Delhi and Indian Oil, signifies a transformative step towards building a sustainable future in renewable energy. This program has been meticulously designed by the Institute’s Department of Energy Science and Engineering to empower Indian Oil participants with the latest insights and skills in the field of renewable energy.



❁ **Dr. Lal Path Labs** inked an MoU with IIT Delhi for developing tools to dissect the mutational landscape of genomic disorders in India.

❁ **Suzuki India Foundation** executed an MoU with IIT Delhi to analyze the entire lifecycle of industrial projects across various states, pinpointing delays and cost overruns, identifying underlying causes, and proposing solutions to enhance manufacturing competitiveness regionally.

### CSR Collaborations

❁ **ITC Limited:** While continuing partnership with IIT Delhi, ITC Limited started phase 2 of R&D project on plastic biodegradation with focus on Polyethylene (PE) and Polypropylene (PP).

❁ **Israel Aerospace Industries (IAI)** - A global leader in defense and commercial aerospace, IAI signed its first ever Corporate Social Responsibility agreement with IIT Delhi. This project aims to leverage monocular RGB cameras to enhance the navigation precision of drones during critical mission stages, such as trajectory planning and reaching designated destinations, enabling efficient delivery of essentials in challenging terrains.



❁ **Max Healthcare Foundation** – The Corporate Social Responsibility arm of Max Healthcare has partnered with IIT Delhi to implement an Integrated Approach to Pond Rejuvenation for Sustainable Ecosystems through their Corporate Social Responsibility (CSR) initiatives. This collaboration aims to restore and conserve ponds, integrating them into sectoral development plans and sustainable development goals.

❁ **Novus Hi-Tech Robotic Systemz** as part of their CSR commitment to enhance the academic and research capabilities in the areas of robotics, artificial intelligence and machine learning contributed Novus Carry, an autonomous mobile robot to IIT Delhi. This engagement will foster innovation and academic excellence.

❁ **Scholarship by NK Securities Research Limited-** This collaboration is geared towards offering scholarships to deserving B.Tech. students at IIT Delhi.

❁ **Antara Assisted Care Services Limited**, wholly owned subsidiary of Max India Ltd, an integrated service provider for senior care needs, inked an MoU to develop offerings tailored specifically for the senior demographic. The collaboration will span various projects, including the development of mobility-assisting products and cognitive enhancement games to combat age-related issues like dementia.



❁ **Citadel Securities** has signed an MoU for research on Machine Intelligence. This partnership will enable the DSIRe Lab at IIT Delhi to acquire additional computing capabilities, empowering researchers to develop more expansive models capable of delivering highly accurate predictions in the field of Machine Intelligence.



❁ **QIAGEN India Private Limited** - Through its Corporate Social Responsibility (CSR) contribution, Qiagen India Private Ltd. has collaborated with IIT Delhi to advance research in the field of biomedical engineering and contribute to innovative solutions for managing diseased blood samples.

❁ **Dentsply India Private Limited** has partnered with IIT Delhi to develop a novel multi-purpose exoskeleton for upper-body rehabilitation of spinal cord injury (SCI) patients using 3D printing.

# INTERNATIONAL CONNECT

## Foreign Dignitaries @ IIT Delhi

### March

- Ms. Christina Egelund, Minister of Higher Education and Science, Denmark

### February

- Ambassador Demeke Atnafu, Dr. Bayissa Leta Danno (President of Ambo University), Ethiopia

- 9-member delegation from University of Canterbury

- New Zealand Universities Delegation: On February 12 and 13, 2024, a delegation from the Universities of Canterbury, Waikato, Lincoln University, and Auckland, under the leadership of H.E. David Pine, the New Zealand High Commissioner, visited IIT Delhi to strengthen the research collaboration with faculty members in the field of energy. An introductory meeting with the University of Canterbury delegates was conducted on February 12, 2024, followed by a brainstorming session on Industry Connect and a roadmap for the future of Green Hydrogen. On February 13, 2024, an academic symposium of the delegates and faculty members of IIT Delhi was held in the area of 'Renewable



- HUJI Delegation: Prof. Oron Shagrir, Vice President (International Affairs), along with the four other high-level delegates from the Hebrew University of Jerusalem, Israel (HUJI), visited IIT Delhi on February 5, 2024, to discuss opportunities for future collaboration. The meeting covered topics such as collaborative research for product realization, a faculty exchange program for large grant proposals, faculty, student, and post-doc visits, a joint summer/winter school, and collaboration between academia and industry on specific research areas of shared interest. Energy: Taking an Ecosystem Approach to STEM Learning' along with the presentation of the joint project between IIT Delhi and NZ.



- Dr. Sandra den Otter, Vice-Provost, Global Engagement, Queen's University, Canada
- 8-member delegation (US Congressional Staffers) from USA
- 14-member delegation from Association of American Universities (AAU)
- 4-member delegation from NEDO Japan
- 5-member delegation from Innopolis University, Russia

### January

Mr. Tiit Riisalo, Minister of Economic Affairs & IT, Estonia

Dr. Havidán Rodríguez, President of the University at Albany, New York

Mr. Wilfredo González Vidal, First Deputy Minister, Ministry of Communications, CUBA

Prof Lisa Roberts, President and Vice-Chancellor, University of Exeter

4-member delegation from University of New Brunswick, Canada

**Memorandum of Understanding (MoU):** Many of the above meetings led to the signing of MoUs and agreements with universities and partner organizations as mentioned below.

- Ministry of Dominican Republic
- Emlyon Business School, France
- University of Exeter, United Kingdom
- University at Albany, New York
- University of Informatics Sciences (UCI), Cuba



# AWARDS & EXCELLENCE

## IIT Delhi Faculty Research Awards 2023

Sulochana & Colonel A Krishnaswami VrC, VSM Lifetime Achievement Award

Prof. Neeraj Khare, Physics



## Prof. P.C.P. Bhatt Basic Research Award

Jointly Awarded to:



Prof. D. Sundar

Biochemical Engineering and Biotechnology

Prof. Manav Bhatnagar

Electrical Engineering



## Prof. K.L. Chopra Applied Research Award

Jointly Awarded to:



Prof. D.S. Mehta

Physics

Prof. Swades Kumar De

Electrical Engineering



## Mrs. Veena Arora Early Career Award



Prof. N.M. Anoop Krishnan

Civil Engineering



Prof. Supreet Singh Bahga

Mechanical Engineering



Prof. Arnab Chanda

Biomedical Engineering



Prof. Prabhu Babu

Applied Research in Electronics

## Prof. Anurag Sharma

Emeritus Professor, Optics and Photonics  
Optica's Esther Hoffman Beller Medal 2024



## Prof. Seema Sharma

Management Studies

International Women's Day Award 2024 in Research and Development Category by Indian Council for UN Relations



## Prof. Ankesh Jain

Electrical Engineering

SSCS Reviewer Reward 2023 by IEEE Solid State Circuits Society



## Prof. Jayant Jain

Materials Science and Engineering

Distinguished Alumnus Award 2023 by NIT Raipur



# AWARDS & EXCELLENCE

## Prof. Lucinda Elizabeth Doyle

Biochemical Engineering & Biotechnology  
Honoured as a Europe India 40 Leader by Europe India Centre for  
Business and Industry



## Prof. Leena Nebhani

Materials Science and Engineering

Prof. K. Kishore Memorial Award 2021-22 by Society of Polymer Science India



## Prof. Priyanka Verma

Chemistry

Young Researcher Award by International Association of Catalysis Societies



## Prof. Amit Rawal

Textile and Fibre Engineering

Awarded The King Carl XVI Gustaf Professorship in Environmental Science by  
Royal Swedish Academy of Sciences



## Prof. Manabendra Saharia

Civil Engineering

Received 2024-25 Fulbright Kalam Climate Fellowship



## Prof. Supravat Karak

Energy Science and Engineering

Awarded "Japan Society for the Promotion of Science Invitational Fellowship" for  
2024



## Prof. Jayanta Bhattacharyya

Biomedical Engineering

Selected for ICMR-DHR International Fellowship for Young Biomedical Scientists  
2023-24



## Prof. Mani Mehra

Mathematics

Elected as Fellow of The National Academy of Sciences, India



## Prof. Mausam

Computer Science & Engineering

Elected as Fellow of Association for Advancement of Artificial Intelligence



## Prof. Santosh Kapuria

Applied Mechanics

Elected as Vice-President of International Society of Mechanical System Dynamics  
for 2023-2026



## Prof. Sampa Saha

Materials Science and Engineering

Joined Editorial Board of a Wiley journal, Applied Research



## Prof. Neel Kanth Kundu

Applied Research in Electronics

Selected as an Associate Editor for IET Quantum Communications journal





# CONTINUING EDUCATION PROGRAMME

The Continuing Education Programme (CEP), IIT Delhi, a statutory body for conducting certificate programmes and issuing certificates, administered the below activities in the quarter ending March 2024.

A. 18 programmes (05 online CEP under eVIDYA@IITD initiative; 13 programmes under BG-192) were notified in the quarter.

B. 20 programmes, with 1,858 enrolled participants listed below, are ongoing and under academic delivery.

S.No	Programme Title (Department/ Centre/ School)	Sponsored/ Open Participation
1	Advance Programme in Electric Vehicle (EV) Technology (Chemical) (Batch-6)	Open Participation (Online)
2	Advanced Certification in Data Science and Decision Science (Management Studies) (Batch-3)	Open Participation (Online)
3	Advanced Certification Programme in Persuasive UX Strategy (Design) (Batch-1)	Open Participation (Online)
4	Artificial Intelligence and Machine Learning for Industry (ScAI) (Batch-2)	Open Participation (Online)
5	Data Science & Machine Learning (ScAI) (Batch-7)	Open Participation (Online)
6	Design Thinking and Innovation (CRDT) (Batch-6)	Open Participation (Online)
7	Digital Marketing (Management Studies) (Batch-6)	Open Participation (Online)
8	Executive Certificate Programme in Applied Data Science using Machine Learning & Artificial Intelligence (Mathematics) (Batch-1)	Open Participation (Online)
9	Executive Management Programme in Advanced Strategic Management (Management Studies) (Batch-1)	Open Participation (Online)
10	Executive Programme for Tech Product Management (Management Studies) (Batch-1)	Open Participation (Online)
11	Executive Programme in Digital Marketing (Management Studies) (Batch-1)	Open Participation (Online)
12	Executive Programme in Human Resource Management (Management Studies) (Batch-2)	Open Participation (Online)
13	Fundamentals of EVs and Charging Infrastructure (CART) (Batch-1)	Open Participation (Online)
14	Management Development (Management Studies)	Sponsored (Interarch Builders Pvt. Ltd.)
15	Professional Certificate Programme in FinTech (Management Studies) (Batch-2)	Open Participation (Online)
16	Project Management (Management Studies) (Batch-7)	Open Participation (Online)
17	Project Management (Management Studies) (Batch-8)	Open Participation (Online)
18	Quantum Computing and Machine Learning (Electrical) (Batch-3)	Open Participation (Online)
19	Quantum Computing and Machine Learning (Electrical) (Batch-4)	Open Participation (Online)
20	Visionary Leaders for Manufacturing (Mechanical) (Batch-6)	Open Participants (On-Campus)

C. 17 programs benefiting 1034 participants, listed below, have been completed.

S.No	Programme Title (Department/ Centre/ School)	Sponsored/ Open Participation
1	Artificial Intelligence and Machine Learning, Big Data Analysis (Mechanical)	Sponsored (CRIS)
2	Data Science & Machine Learning (ScAI) (Batch-6)	Open Participation (Online)
3	Data Science and Machine Learning for IAS Officers (ScAI) (Batch -1)	Sponsored (LBSNAA)
4	Data Science and Machine Learning for IAS Officers (ScAI) (Batch -2)	Sponsored (LBSNAA)
5	Design Thinking and Innovation (CRDT) (Batch-5)	Open Participation (Online)
6	Design Thinking Workshop for CEO Club Employees at Nippon India (Design)	Sponsored (Nippon India)
7	Energy Systems, Security and Net Zero Emission (CRDT)	Sponsored (ITEC)
8	Executive Programme for Advanced Product Management (Management Studies) (Batch-2)	Open Participation (Online)
9	Executive Programme in Advanced Project Management (Management Studies) (Batch-2)	Open Participation (Online)
10	Executive Programme in Brand Management (Management Studies) (Batch-1)	Open Participation (Online)
11	Executive Programme in Operations Management and Analytics (Management Studies) (Batch-4)	Open Participation (Online)
12	Lab to Market (Management Studies)	Sponsored (IHFC, New Delhi)
13	Machine Learning and Deep Learning (Electrical) (Batch-2)	Open Participation (Online)
14	Metamaterials (Civil)	Open Participants (On-Campus)
15	Nurturing Future Leadership Programme (Management Studies)	Sponsored (MEA, New Delhi)
16	Sales and Marketing (Management Studies) (Batch-1)	Open Participation (Online)
17	Training Programme on Renewable Power Generation and Applications- Phase -1 (Energy Sciences)	Sponsored (IOCL)



## **#IITDelhi on Social Media:**

 : <https://twitter.com/iitdelhi>

 : <https://facebook.com/IITDelhi/>

 : <https://linkedin.com/school/iitdelhi/>

 : <https://instagram.com/iitdelhi/>

 : <https://www.youtube.com/c/IITDelhiOfficial>

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