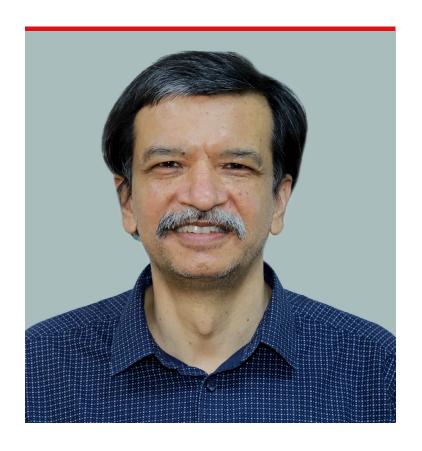


INDIAN INSTITUTE OF TECHNOLOGY DELHI



Quarterly

NEWSLETTER



WORD FROM THE Director

Dear Friends and Well-wishers of IIT Delhi,

I am happy to present the April 2022 Issue of the Institute newsletter to you.

This issue will give you glimpses of the achievements in academic and research areas, faculty awards, alumni contribution, international and corporate relations.

Your comments and suggestions are welcome to make the next issue of the newsletter more interactive.

Warm regards,

Rangan Banerjee Director, IIT Delhi

News & Events



QS World University Rankings by Subject 2022 - Five IIT Delhi Academic Programmes in Top 100

IIT Delhi has featured among the top 100 educational institutes in the world for five of its academic programmes under the Engineering and Technology category, as per the 12th QS World University Rankings by Subject 2022. The Institute's Electrical Engineering programme achieved 56th rank (overall score 77.5), Mechanical Engineering 64th (overall score 76.6), Computer Science 65th (overall score 71.0), Chemical Engineering 92nd (overall score of 74.5) and Civil Engineering was ranked in the 51-100 bracket (overall score 74.0).



World Class Indoor Sports Complex Built with Alumnus Saurabh Mittal's Support Inaugurated at IIT Delhi

A world class indoor sports complex spread over 2000 square meters was inaugurated at IIT Delhi. The indoor sports facility named 'Mittal Sports Complex' has been built with a generous support of 1995 batch Institute alumnus Mr Saurabh Mittal (B. Tech., Electrical Engineering). The indoor sports complex, which has number of sports facilities like badminton, squash courts and table tennis halls, was inaugurated by Saurabh Mittal and his parents Dr S K Mittal and Mrs Kusum Mittal in the presence of senior functionaries and students of IIT Delhi.



IIT Delhi, Delhi Jal Board Sign MoU to Address Water Security Issues

IIT Delhi has entered into an MoU with Delhi Jal Board (DJB), Govt. of NCT of Delhi, under which they will collaborate with each other to address water security related issues being faced by Delhi. Under the MoU, IIT Delhi and DJB will collaborate on identified Research & Development initiatives in the areas of Water Supply and Distribution; Wastewater Conveyance, Treatment, Recycle/Reuse and Disposal. Both sides will work towards development of policy and best practice initiatives for wastewater treatment and its reuse/recycling to achieve the goal of zero waste discharge into drains and River Yamuna



Career Fest 'PRAVRITTI 2022- Reshaping Chances to Choices' Organised

The Office of Career Services (OCS), IIT Delhi organised a two-day annual career fest 'PRAVRITTI 2022' on 18th and 19th April with the theme "Reshaping Chances to Choices". Most of the non-hiring events under PRAVRITTI were open to non-IIT Delhi students also in a virtual mode. The aim of the fest was to train students, assist them to connect with organizations and industry and enable them to gain a perspective on various career avenues so that they are able to make informed career decisions.



IHFC Collaborates with US' National Science Foundation for Research in Cobotics, AI

I-Hub Foundation for Cobotics (IHFC), the Technology Innovation Hub (TIH) of IIT Delhi has collaborated with the National Science Foundation (NSF), USA to expand frontiers in research and development work related to Cobotics and associated technologies especially Artificial Intelligence (AI) and Machine Learning (ML). The Department of Science & Technology (DST), Government of India, enabled this partnership in association with the Indian Embassy in Washington, USA, and the IHFC was identified as one of the most sought-after institutions for this collaboration.



Student Festivals Tryst, Rendezvous and Kaizen Organised

After a gap of two years, various student-led festivals were once again organised at IIT Delhi in physical mode. The annual science and technology festival 'Tryst' was organised from April 15th to 17th, 2022. In association with various technical clubs and societies at IIT Delhi, Tryst presented a rich variety of events like Drone Racing League, Robotics Competition, Coding Hackathons etc. The Institute's social fest 'Kaizen' organised by NSS IIT Delhi was held from April 18th - 20th. The cultural fest Rendezvous was organised from 24th - 26th April.



HORIBA India, IIT Delhi Join Hands to Establish Research Center at the Institute's Chemistry Department

A new collaborative research center called HORIBA India-IIT Delhi Technical Center has come up at the Department of Chemistry, IIT Delhi to strengthen the industry-academia partnership for joint research. The center having a Laser Diffraction Particle Size Analyzer (LA 960), which measures the size of particles in the range of 10nm - 5000um, will be further expanded with dynamic light scattering nano-particle size analyzer and environmental science analytical techniques in due course of time.

Troop Comforts Ltd Signs MoU with IIT Delhi to Develop Smart Protective Clothing for Indian Security Forces

The TCL Group, a government of India enterprise under the Ministry of Defence with headquarter at Kanpur, produces Troop Comfort Items for defence and paramilitary forces. Under the MoU, IIT Delhi and TCL will work in the area of research and development of garments and equipment for the security personnel deployed in the high-altitude areas like Siachen Glacier, clothing for protection from ballistic weapons and development of sensor fitted garments.



Interactive Website of IIT-PAL Launched to Help High School Students Prepare for Competitive Exams

IIT-PAL (IIT-Professor Assisted Learning), an initiative of the Ministry of Education to provide free video lectures to class 11th and 12th students, was started with an aim to make their understanding of the science subjects better and to help self-studying students do well in competitive exams like JEE, NEET, IAT and others. To boost this effort, IIT-PAL's coordinating institute IIT Delhi launched an interactive IIT-PAL website (https://iitpal.iitd.ac.in/), which will act as a single platform where students across India can access video lectures that are telecast on the MoE's Swayam Prabha Channels and interact live with IIT professors.



Alumnus Dr. Amit Sinha Gifts Rs. 10 Crore Endowment to IIT Delhi

Dr. Amit Sinha (B. Tech., Electrical Engineering, 1998) has gifted an endowment of INR 10 crores (USD 1.34 million) to the Institute through the Amit & Deepali Sinha Foundation to support the establishment of various student fellowships, scholarships, and development programs, as well as faculty chairs in key technology fields. The endowment will establish a first of its kind full-ride fellowship (covering all education related expenses at the institute) at IIT Delhi for the top 5 undergraduate students joining the Institute each year, for all four years, based on their JEE Advanced ranks.



Institute Lecture Series

Prof. Nancy Kanwisher, Walter A. Rosenblith Professor of Cognitive Neuroscience, Brain and Cognitive Sciences, MIT delivered an Institute Lecture titled 'Functional Imaging of the Human Brain: A Window into the Architecture of the Mind' in April 2022.

Prof. Sunil Chopra, IBM Distinguished Professor of Operations Management and Information Systems at Northwestern University delivered an Institute Lecture titled 'Designing Resilient Supply Chains - The Role of Industry Commons in Building Resilience at Low Cost' in March.

Prof. Prajval Shastri, Professor Adjunct at the International Centre for Radio Astronomy Research, Australia delivered a Women's Day Institute Lecture titled 'De-gendering Science: What is the Way Forward?' in March.

Prof. Umesh V Waghmare, Theoretical Sciences Unit, Jawaharlal Nehru Centre for Advanced Scientific Research, Bangalore delivered a National Science Day Institute Lecture titled 'Basic Science of Materials Enabling Technologies of Societal Relevance' on February 28th.

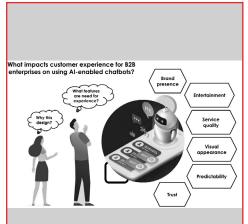
Research & Innovation



Technology Developed to Enable Use of Environment-Friendly Dimethyl Ether as Fuel in Automotive Vehicles

Researchers from the IIT Delhi's Department of Energy Science and Engineering (DESE), Indian Oil Corporation (IOC R&D), and Ashok Leyland Ltd. have developed a technology, which enables a diesel-powered automotive vehicle to run in flex fuel mode i.e. either 100% diesel or Dimethyl Ether (DME) plus Diesel mode. The project was funded by the Department of Science and Technology (DST), Government of India. Using this technology, the researchers converted a diesel-powered automotive vehicle into a flex fuel vehicle on a pilot basis. This flex fuel technology-based vehicle DOST was jointly flagged off on 8th April 2022 at IIT Delhi. Dimethyl Ether (DME) is one of the alternative fuels to compression ignition engines/vehicles as it has a higher cetane number (~58) than that of conventional diesel (51).

Read more: https://home.iitd.ac.in/show.php?id=111&in_sections=Press



How to Improve Customers' Chatbot Experience?

Businesses use Artificial Intelligence (AI) to imitate human-like conversations to meet consumers' requirements in real-time while being productive. But experiences from such interaction may vary from person to person. An IIT Delhi research team led by Prof Arpan Kumar Kar from the Department of Management Studies and research scholars Amit Kumar Kushwaha and Prashant Sinha conducted a study and listed out factors that play a key role in improving experience of customers who use AI-based chatbots in their day-to-day life for various purposes like registering complaint/ feedback, asking questions related to purchase etc and thus be taken into consideration while designing a chatbot. Their findings, published in Industrial Marketing Management, indicated that the customer experience is built from the chatbot's ability to predict a suitable recommendation in minimal time.

Read more: https://home.iitd.ac.in/show.php?id=101&in_sections=Press



Fabiosys Innovations Develops Technology to Manufacture Extremely Affordable and Highly Effective Antiviral Fabric

Fabiosys Innovations, a deep-tech healthcare startup incubated at IIT Delhi, has developed an extremely affordable high-performance medical textile Fabium®, which destroys $\sim 99.9\%$ of the bacteria and viruses within 30 minutes. Ordinary antimicrobial fabric products available in the market inhibit microbes in a span of 24 hours and that too with an unsatisfactory efficiency. This time span of 24 hours makes those antimicrobial fabric products impractical to be used in everyday life because a typical bacterium doubles itself in a span of around 20-30 minutes. Fabium® is developed using a technology called Hi-PAT, which makes it highly effective against bacteria, viruses, and fungi. Fabium starts working within seconds of contact with the pathogens and destroys $\sim 99.9\%$ of them within 30 minutes.

Read more: https://home.iitd.ac.in/show.php?id=92&in_sections=Press

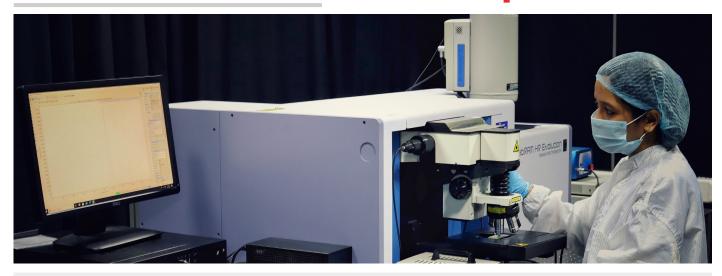


High Efficiency, Shadow-less, Portable Solar PV Towers Developed for Power Generation

An IIT Delhi research team led by Physicist Prof. Dalip Singh Mehta has developed high efficiency, shadow-less (solar panels at bottom are not shadowed by the top panels) and auto rotating Solar PV towers for photovoltaic power generation in a given area throughout the day. The developed 'non-mechanical' and 'mechanical' tracking solar PV towers with reflection concentration are viable for all Indian seasons of the year with high energy density (energy per footprint area, kWh/m2). Moreover, the 'mechanical' tracking Solar PV tower is portable i.e. the entire unit can be mounted on a truck, made functional and taken anywhere to generate power. Space saving 'non-mechanical' and 'mechanical' tracking solar PV towers of 3kW and 5kW capacity, developed by the IIT Delhi scientists, are scalable to higher capacity with the concept of solar tower array (green energy field).

Read more: https://home.iitd.ac.in/show.php?id=94&in_sections=Press

Industrial Research and Development



Sponsored Projects & Consultancy Jobs Undertaken Through IRD Unit During January-March 2022

- 104 Sponsored projects with a total sanctioned value of Rs. 109 Cr
- 88 Consultancy jobs with a total sanctioned value of Rs. 7.48 Cr

High Value Sponsored Projects (Sanctioned Value Rs. 1 Cr and Above) Undertaken Through IRD Unit During January-March 2022

- ICMR-IIT Delhi National Center for Medical Device Manufacturing and Testing Facility (Sponsoring Agency- ICMR; Sanctioned Fund- Rs 50 Cr)
- ICMR-National Centre for Assistive Health Technology (Sponsoring Agency- ICMR; Sanctioned Fund- Rs 8.78 Cr)
- Fixing the Leak: Advancing STEM Innovation and Inclusion in India, One Woman Scientist at a Time (Sponsoring Agency- Co-Impact -New Venture Fund, USA; Sanctioned Fund- Rs 3.75 Cr)
- Combating environmental pollution through the internationalization of education in Germany and India (COMPOLL) (Sponsoring Agency- University Grants Commission; Sanctioned Fund- Rs 3.12 Cr)
- Maintaining the Indigenous 5G Test Bed (Department of Telecommunications; Sanctioned Fund- Rs 2.35 Cr)
- OCRs and Applications in Indian Languages (Sponsoring Agency- Ministry of Electronics and Information Technology; Sanctioned Fund- Rs 1.86 Cr)
- Development of suitable design of Bridge Transition system for 25T & 32.5T axle load for freight (up to 100 km) and passenger traffic (up to 160 km) for Indian Railways (Sponsoring Agency- Research Designs & Standards Organization (RDSO) Lucknow, Ministry of Railways; Sanctioned Fund- Rs 1.49 Cr)
- Design and development of lower-limb exosuit with wearable sensors for real-time estimation of joint torque from physiological signals (Sponsoring Agency- I-Hub Foundation for Cobotics; Sanctioned Fund- Rs 1.29 Cr)
- Development of a high-sensitive magnetic field sensor for proximity detection (Sponsoring Agency- I-Hub Foundation for Cobotics; Sanctioned Fund- Rs 1.29 Cr)
- Self-powered Sensor System for Soft Robotics and Human-Machine Interaction (HMI) (Sponsoring Agency- I-Hub Foundation for Cobotics; Sanctioned Fund- Rs 1.29 Cr)
- Signal processing and learning for efficient detection, localization and tracking by cognitive radars (Sponsoring Agency- I-Hub Foundation for Cobotics; Sanctioned Fund- Rs 1.29 Cr)
- Development of a Rural Bio Resources Complex in Tribal Districts of Western Odisha for Primary Processing and Value Addition of Horticultural and Non-Timber Forest Produce (Sponsoring Agency- Department of Biotechnology; Sanctioned Fund- Rs 1.11 Cr)
- Distributed Adaptive Coverage Control of Network of Drones Theory to Practice (Sponsoring Agency- I-Hub Foundation for Cobotics; Sanctioned Fund- Rs 1.05 Cr)

Multi-Institutional Faculty Interdisciplinary Research Project (MFIRP)

New Zealand Universities-IITD Joint call



New Zealand (NZ) Universities and IRD, IIT Delhi announced a joint call for proposals to support collaborative and interdisciplinary education and research initiatives. Both institutions will be contributing matching funds for research leading to sustainable development programmes with impactful outcomes. These projects will be executed through the MFIRP scheme of the IRD Unit. Proposals have been invited from all fields, especially those where synergism was evident between the institutions including Cancer genomics, MedTech, Robotics & Automation (particularly in agriculture) and Wastewater treatment.

HUJI- IITD Second Joint Call



The Hebrew University of Jerusalem, Israel (HUJI) and IRD, IIT Delhi announced the second joint call for proposals under MFIRP programme. The call is open for all the research areas of mutual interest to both institutions, preferably in inter-disciplinary research areas. Five joint proposals will be funded under the call for a period of two years. An important yardstick of the success of each project will be the submission of a joint project proposal to an external funding agency.

ILBS-IITD Projects Selection



Following an MoU and a joint call for proposals in areas of research such as the use of Artificial Intelligence in Bioscience specific to Liver & Biliary Disease, Biosensor, Computational Biology & Bio-informatics, Device Design & Fabrication suitable for Diagnostics, etc. and Biomedical Science & Engineering, joint projects were selected for seed funding within the ambit of the MFIRP scheme of the IRD. These include (i) 'Oral microbiome as a predictor of eventual progressive liver disease' and (ii) '3D Bioprinted liver for drug screening'.

MoU & Research Collaborations



The University of Waterloo, Canada and IIT Delhi signed an MoU in March 2022, for collaboration in research and academic programs, development of joint research activities, mobility of faculty and students. And development of articulated or shared courses, programs, or degrees.



GMR Power and Urban Infra Ltd., Mumbai and IIT Delhi signed an MoU in February 2022 for establishing the GMR Centre for Excellence on New Energy Technologies at IIT Delhi. The CoE will undertake research & academic activities in the areas of new energy technologies. Prof. P.V. Subba Rao, Head, CRDT will be the coordinator of the CoE.



Tata Steel Limited and IIT Delhi signed an MoU in February 2022 for pursuing collaborative research and other R&D activities in the area of Advanced Materials

Startups and Patents

Twenty-one new patents were filed, and two new Startups were incubated at IIT Delhi.

- Intellicon Technologies Pvt. Ltd. It has been set up to accelerate indigenous product development. The startup was founded by Mr. Vaibhav Agarwal and Mr. Arnab Mitra under the mentorship of Prof. Bhim Singh, Electrical Engineering, IIT Delhi.
- Careform Labs Pvt. Ltd. Established by Mr. Pramod Priya Ranjan and Dr. Nachiket Thakur, this is a first-of-its-kind design lab committed to undertaking projects aligned with the United Nations Sustainable Development Goals. The company has developed Onpery an innovative, easy-to-use menstrual cup, which is an award-winning product.

IRD Workshops and Webinars



A workshop on digital healthcare was organized on March 30, 2022. IIT Delhi faculty members working in the area of digital healthcare presented their research and interacted with Mr. Rizwan Koita, Founder & CEO of Koita Foundation for possible research and academic collaborations.



An online webinar was organized for the faculty of the Delft University of Technology (TUD) and IIT Delhi on March 28, 2022, where faculty members from both sides shared the key focus areas of their work.

Awards & Excellence

Received SERB-TETRA Award

Awarded 'Young Technologist of the Year Award' by IEEE Delhi Section



Prof. Manan Suri

Electrical Engineering Dept., IIT Delhi



Prof. Sampa Saha

Materials Science and Engineering Dept., IIT Delhi

Selected for SIGCHI Social Impact Award 2022



Prof. Aaditeshwar Seth

Computer Science and Engineering Dept., IIT Delhi

Received Qualcomm Faculty Award 2022



Prof. Sorav Bansal

Computer Science and Engineering Dept.. IIT Delhi

Elected as a Fellow of the Institution of Civil Engineers (ICE), London, UK



Prof. Dipti Ranjan Sahoo

Civil Engineering Dept., IIT Delhi

Appointed as an Associate Editor for the Computational Methods in Structural Engineering Section in Frontiers in Built Environment



Prof. Vasant Matsagar

Civil Engineering Dept., IIT Delhi

Awards & Excellence

Elected as Chair of the Indian National Young Academy of Sciences (INYAS) for 02 years National Innovation Challenge Awards 2020 DST to support his proposal



Prof. Rajendra S. Dhaka

Physics Dept., IIT Delhi



Prof. Anil Verma

Chemical Engineering Dept., IIT Delhi

Inducted in Editorial Board of Nature portfolio journal 'Communications Earth & Environment'

Enlisted in 'Research.com - A leading academic research portal' in the category of top Mechanical and Aerospace Engineering Scientists in India



Prof. Yama Dixit

Centre for Atmospheric Sciences IIT Delhi



Prof. Pulak M. Pandey

Mechanical Engineering Dept., IIT Delhi

To serve as Review Editor of the journal 'Frontiers in Energy Research' Received Humboldt Research Fellowship for Experienced Researchers



Prof. Vipin Kumar

Energy Science and Engineering Dept., IIT Delhi



Prof. M. Ali Haider

Chemical Engineering Dept., IIT Delhi

Corporate Relations

- ITC Limited, one of India's leading multi-business conglomerate and sustainability exemplar, signed Memorandum of Understanding (MoU) with Indian Institute of Technology Delhi on March 22, 2022. The MoU was inked for a period of five years and ITC will contribute to IIT Delhi for research and development in the STEM areas aimed at promotion of Sustainable Development Goals, under the ambit of Corporate Social Responsibility (CSR) spends by ITC.
- Delhi International Airport Ltd (DIAL), a GMR Group Infrastructure Ltd.-led consortium, signed an agreement with the Indian Institute of Technology Delhi on February 21, 2022 for research collaboration through FITT. The projects are aimed at finding solutions to key business challenges faced at Indira Gandhi International Airport (IGI) Airport, Delhi.



Picture: IIT Delhi-DIAL MoU Signing Ceremony

- In January 2022, Voith Paper Fabrics India Limited contributed to the Institute as a part of their CSR initiatives. The funds are aimed at supporting PhD scholars.
- IIT Delhi conducted a pilot program to train the employees of Power Grid Corporation of India in the domain of Energy Storage Systems. Lasting over two weeks, the training was coordinated by the Department of Energy Science and Engineering.



Picture: Training of Power Grid Corporation of India Employees

- TBO Tek Limited inked MoU to support the STEM Mentorship Program at IIT Delhi. The fund was utilized to purchase required equipment.
- A training programme on "Cyber Security Network and System Security" was organised for Mahindra & Mahindra Limited by the Corporate Relations office.

Alumni Relations

Newly Instituted Scholarships (January-March 2022)

Scholarship Title	Donor Name	Area	
Bimla Dogra Scholarship	Vivek Dogra	To provide support to 2nd year student of Engineering Physics to undertake research internship at a reputed university abroad	
Global Vectra Helicorp Ltd (GVHL) Scholarship	Global Vectra Helicorp Ltd	BTech/Dual degree program in Electrical Engineering	
Mrs. Sarla and Mr Anand Prakash Gupta Scholarship	Sandeep Singhal	For 1st year student of M.Sc Physics	
Prasad & Syamala Akkineni Scholarship	Rakesh Akkineni	BTech/Dual degree program for female student	
Sh. ML Prabhakar & Mrs K Prabhakar Scholarship	Vishvesh Prabhakar	BTech/Dual degree program in Electrical Engineering	

Newly Instituted Awards (January-March 2022)

Award Title	Donor Name	Area
Dr Ram Prakash Bhatia Award	Sudeep Bhatia	Dept of Mathematics
Voith paper Fabrics CSR Grant for Phd Scholars		Assistance to research scholars to continue their PhD programme
M. Sc. Physics '94 Girl Student Award	M. Sc. Physics 94 Batch	M. Sc Physics Student (Girl)

❖ Newly Instituted Chairs (January-March 2022)

Chair Title	Donor Name	Area
Cadence Chair	Anirudh Devgan	In the area of electronic design automation, system design and analysis and/or Artificial Intelligence

❖ First Award Ceremony of Endowment Merit Fellowship Held on March 24, 2022



INTERNATIONAL PROGRAMMES

High Commissioner of Bangladesh to India, H.E. Mr. Muhammad Imran Visits IIT Delhi



On February 28, 2022, the High Commissioner of Bangladesh to India, H.E. Mr. Muhammad Imran and the Counsellor, Bangladesh High Commission, Mr. Shahed Bin Aziz visited IIT Delhi and met with Prof. Rangan Banerjee, Director, IIT Delhi. On this occasion, IIT Delhi's Prof Naveen Garg, Dean, International Programmes; Prof SK Khare, Dean, R&D; Prof Shantanu Roy, Dean, Academics and Prof. B.K. Behera, Textile and Fibre Engineering Department were also present. Prof. Garg welcomed the High Commissioner of Bangladesh and presented a brief outline of IIT Delhi.

While addressing the senior functionaries of IIT Delhi, H.E. Mr Muhammad Imran emphasized the importance of developing bilateral cooperation, particularly in the field of textile engineering.

Prof. Rangan Banerjee, Director, IIT Delhi, highlighted the ways in which IIT Delhi may strengthen its relationship with Bangladesh. He discussed the IIT Delhi's new initiatives and Doctoral programmes to increase the participation of international students. During the meeting, Bangladeshi students enrolled in various programmes at IIT Delhi were also present.

International Meetings (Physical & Virtual Mode)

Virtual meeting with members of Delft University of Technology	January 24, 2022
Dr. Didier Raboisson, Attaché for Scientific and Academic Cooperation, Embassy of France in India	February 09, 2022
Dr. Derrick Marcus Tepaske, Science Director, Office of Naval Global, Singapore	March 17, 2022
Prof. Tim White, Vice President (International Engagement) NTU, Singapore	March 28, 2022
Dr. Khalid Yusef Bargawi, Cultural Attaché, Royal Embassy of Saudi Arabia in India	March 30, 2022
A 5-member delegation from Embassy of Mexico in India	March 31, 2022

Memorandum of Understanding (MoUs)

MoU signed with University of Groningen, Netherlands	January 07, 2022
Delft University of Technology, Netherlands	January 24, 2022
Alliance of 4 Universities (A4U)	February 03, 2022
University of Waterloo (Academics) Canada	March 09, 2022

IIT Delhi on Social Media:

: twitter.com/iitdelhi

: facebook.com/IITDelhi/

in : linkedin.com/school/iitdelhi/

🔘 : instagram.com/iitdelhi/

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

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