

IIT Bombay Celebrates 62nd Foundation Day



(L- R) Prof. Suhas Joshi, Prof. Subhasis Chaudhuri, Mr. Rajesh Gopinath, and Prof. Milind Atrey on the dias during the celebrations

The Indian Institute of Technology Bombay celebrated its **62nd Foundation Day** on March 10, 2021 by honouring the contributions of its faculty members as well as alumni who have left their mark in their chosen fields of profession. The Institute also felicitated the philanthropy of a few alumni under the ‘**Donor Appreciation**’ program.

This year, due to the ongoing pandemic, only the awardees, their family members, Institute functionaries and few dignitaries were invited to attend the ceremony in person. The event was webcast live on social media channels for others.

The Foundation Day ceremony started with a welcome address by the Director of IIT Bombay **Prof. Subhasis Chaudhuri**. In his welcome address, Prof. Chaudhuri highlighted the key milestones achieved by the Institute in the past 62 years. Prof. Chaudhuri said, “*The seed sown in 1958 has now developed into a wonderful institution catering to the needs of the society through high-quality education and research, entrepreneurship and frugal innovations. On this Foundation day, the Institute rededicates itself towards achieving excellence in its spheres of activities*”.

The Chief Guest of the function **Mr. Rajesh Gopinathan**, Chief Executive Officer and Managing Director of Tata Consultancy Services (TCS), in his address said, “*Our company and the Indian Institute of Technology*

has been connected since few decades through its alumni network. I hope that we will hold on to the partnership and look into the future, where the alumni will form the touch point of our relation. At the Institute level, we are aligned for research and development, academic purposes. We look forward to working together in a larger technological ecosystem”.

Speaking about the developing industrial sector, he added, “For the future opportunities, we need to think about integrated capabilities and encourage students to explore and give them choices in various sectors/ fields. Besides quality and innovation being the minimum requirements in the industry, now-a-days



Chief Guest of the function Mr. Rajesh Gopinathan addressing the audience



Prof. R. Sunoj while receiving 'Prof. S. C. Bhattacharya Award for Excellence in Research in Pure Sciences'

extreme importance is given to speed and scale in market. We also need to think about retraining, reskilling and other challenges”.

The Institute honoured its select alumni for their achievements in diverse fields ranging from academics, research and entrepreneurship. The ‘**Prof. S.C. Bhattacharya Award for Excellence in Research in Pure Sciences**’ was conferred on **Prof. R. Sunoj**, Department of Chemistry. The ‘**Prof. H.H. Mathur Award for Excellence in Research in Applied Sciences**’ was conferred on **Prof. Pushpak Bhattacharya**, Department of Computer Science and Engineering.

The ‘**Prof. S. C. Sahasrabudhe Lifetime Achievement Award 2021**’ was conferred on Prof. Krithi Ramamritham, Professor in the Department of Computer Science and Engineering, who recently superannuated.

The Institute recognized select alumni of IIT Bombay, who have excelled in their field of work and made the Institute proud with the **Distinguished Alumnus Awards (DAA)**. The awardees this year include:

- | | |
|----------------------------|-------------------------|
| • Mr. Sunil Shenoy | • Mr. Subramanian Sarma |
| • Mr. Pandurang Nayak | • Mr. Harrick Vin |
| • Mr. Ramesh Mangaleswaran | • Mr. Sharad Sanghi |
| • Dr. Kavita Bala | • Dr. Vikram Despande |
| • Dr. Govindasamy Mugesh | • Dr. Devavrat Shah |

The **Young Alumni Achiever Awards (YAAA)** are for alumni who have made outstanding achievements in their chosen field of work and are below 40 years of age. These awards were instituted in the year 2011. The awardees for this year's Young Alumni Achiever Awards 2021 include:

- Dr. Zubin Jacob
- Mr. Akhil Gupta
- Mr. Gaurav Porwal
- Mr. Mohit Soni
- Dr. Yashodhan Kanoria

Besides the distribution of the Institute awards, the alumni who contributed to their alma mater were felicitated in the **'Donor Appreciation Ceremony'** during the event. **Mr. Sharad Saraf**, Chairman and Managing Director of Technocraft Group and **Mr. Sudarshan Saraf**, Co-Chairman and Managing Director of Technocraft Group were felicitated for their generous contribution of Rs 15 crores to build a **'Technocraft Centre for Applied Artificial Intelligence' (TCA2I)** with IIT Bombay. The donors believe that the future of technology is with the growth of Artificial Intelligence (AI) and it is necessary to expose students to AI through a dedicated AI Center. IIT Bombay expressed gratitude to alumni of Hostel-5, who responded to the fund-raising drive spearheaded by Alumni Association of IIT Bombay for Hostel-5 renovation. They contributed Rs 5 crores for the renovation of Hostel 5. The Institute thanked all the alumni in USA who contributed during the year through the **GO-IIT Bombay** annual campaign spearheaded by IIT Bombay Heritage Foundation in USA to give back to the Institute. This year, IIT Bombay alumni in USA have contributed \$3.6 m to the Institute.

This year, IIT Bombay has initiated an annual fund-raising drive, **'Cherish IIT Bombay'** for the donors all over India and the world. The Institute has been raising funds for various causes for the benefit of students and faculty members of the Institute.

The campaign that stands out this year is the IT hardware campaign. As IIT Bombay moved to online classes in response to the pandemic, many of our students couldn't access the online classes as they couldn't afford the investment in IT hardware at their respective homes. The Institute reached out to alumni for funding over 800 laptops and data connections. The Institute got a phenomenal response for this.

IIT Bombay thanks all the donors for showing affection and making generous contributions to various campaigns that are conducted by the Institute.



Prof. Pushpak Bhattacharya received 'Prof. H.H. Mathur Award for Excellence in Research in Applied Sciences' (virtually)



'Prof. S. C. Sahasrabudhe Lifetime Achievement Award 2021' was conferred on Prof. Krithi Ramamritham for his outstanding contribution to the Institute



Mr. Sudarshan Kumar Saraf, Co-Chairman and Managing Director of Technocraft Group, donated Rs 15 cr to Institute to set up AI center



Institute receives a fund of Rs 5 cr from IIT Bombay Alumni Association for the renovation of Hostel 5

IIT Bombay Awards Degrees To 178 Students During 59th Interim Convocation

The **Interim Session of 59th Convocation** of IIT Bombay was held on February 27, 2021 at the Institute's Convocation Hall in Hybrid mode (3-D Virtual Reality Enabled). Keeping in view the safety measures on priority during the pandemic, the physical participation to the function was limited to a few of the degree recipients, their parents, Institute functionaries and dignitaries only.

Mr. Adil Zainulbhai, Chairman, Quality Council of India and Former Chairperson, McKinsey, India was the Chief Guest for the interim convocation function this year.

At this convocation, IIT Bombay awarded degrees to 178 students. Total degrees awarded to the students were 198, which include - 123 Ph.D., 20 Dual degrees (M.Tech./M.Phil.+Ph.D), 16 Dual degrees (M.Sc+PhD), 6 M.Tech., 4 Dual Degrees (B.Tech.+M.Tech.), 1 M.Mgt, 4 M.Sc., 15 B.Tech., 3 B.Des. degree, 2 MS by Research, 1 PGDIIT and 3 E-MBA (Joint E-MBA degrees are in association with Washington University in St. Louis (WUSTL))

The degrees were presented to those graduating students who have completed all the requirements during the period from August 2020 to February 2021 and have requested for the degree to be awarded earlier than the 59th Convocation in August.

The Chairman of the Board of Governors, IIT Bombay **Dr. Pawan Goenka**, Managing Director of Mahindra and Mahindra Limited, in his address to students said, *"Post-pandemic period has brought out the best from all of*



Dr. Pawan Goenka, Chairman, Board of Governors, IIT Bombay motivated students to help in nation-building using developing technology and innovation

us. It has accelerated high rates of technological changes in our daily life. Most of the work today is conducted online and virtually. This year's graduating students will be entering their professional career with the new normal lifestyle and I hope that these students can be the change agent of the new normal".

He added, *"The Atmanirbhar Bharat has a lot of opportunities for the beginners and it aims at developing our country to become a technology manufacturing destination. Through Atmanirbhar Bharat, the government has put their trust in the Research & Development (R&D) sector,*

innovation and developing technology. The graduating students should help in nation building with the help of developing technology and innovation. The importance of R&D is increasing. I urge the students to step out with confidence. The industry needs to understand your caliber in R&D sector".

While addressing the graduating students, **Prof. Subhasis Chaudhuri**, Director, IIT Bombay, said, *"It was a matter of great satisfaction to the Institute that nearly 140 students could complete their Ph.D. during this difficult time. The resilience and adaptability shown by the students, staff and faculty members in upholding the spirit and excellence of IIT Bombay is truly remarkable".*

Mr. Adil Zainulbhai is currently the Chairman of the Quality Council of India (QCI) since 2014. He is



Prof. Subhasis Chaudhuri, Director, IIT Bombay

also the Chairman of Network 18 and TV18 and is currently on the Boards of Reliance Industries Ltd., Larsen & Toubro Ltd., and Cipla. Mr. Adil Zainulbhai graduated in Mechanical Engineering from the IIT Bombay in 1977. As Chairman of QCI, he is involved in many initiatives across the government agencies to improve quality of goods and services. He is also involved in Swachh Bharat initiative and worked with over 23 ministries. He is involved in projects in infra, health care, education, coal and others. Mr. Zainulbhai is very active in community and social causes. He is a Board member on the Board of Trustees at Saifee Burhani Upliftment Trust (re-developing Bhendi Bazaar in Mumbai) and Piramal Swasthya, Piramal Foundation and Anant National University.

The Chief Guest **Mr. Adil Zainulbhai** in his address said, *"I encourage you to plan for next 30- 40 years of your career"*. While emphasising on various obligations of the intellect that students are gifted with, he urged the students to do much more than what others can do. *"I hope you take up the obligation and do something for others like community, friends and the country and succeed. You make a mark not just in the fields of commerce, in the field of finance, in the fields of technology but also in fields of improving people's lives,"* he added.



The Chief Guest Mr. Adil Zainulbhai encouraged students to work for social cause



Graduating students received degree certificates from Prof. Subhasis Chaudhuri, Director, IIT Bombay

The event was streamed live on Institute's social media channels including YouTube channel.

Apart from the students and faculty members of the Institute, the ceremony was attended online by the families and friends of the students. It was also a delight for a large section of viewers who had missed experiencing the world's first ever virtual reality enabled convocation pioneered by IIT Bombay in August 2020.

IIT Bombay Felicitates Corona Warriors On 72nd Republic Day



IIT Bombay Director Prof. Subhasis Chaudhuri addressing the gathering

The Indian Institute of Technology Bombay (IIT Bombay) celebrated the **72nd Republic Day** at the Institute's campus on January 26, 2021. Following the COVID-19 rules and guidelines, this year's Republic Day was celebrated with a minimum number of attendees by maintaining social distance.

The celebration began with the unfurling of the national flag by the Institute's Director **Prof. Subhasis Chaudhuri** at the Institute's gymkhana ground. Prof. Subhasis Chaudhuri addressed the gathering. IIT Bombay security staff gave the salute to the national flag. The entire programme was broadcast live.

This year, the Institute appreciated the Corona Warriors from IIT Bombay community who worked during the lockdown and extended their helping hand to the needy during the pandemic. As a token of gratitude, over 900 IIT Bombay staff, faculty, students were felicitated and given certificates online in appreciation of the work performed during the pandemic.

Besides this, names of winners of an essay writing competition on "**Satark Bharat, Samridh Bharat (Vigilant India, Prosperous India): My Roadmap**" held during Vigilance Awareness Week 2020 were displayed on screen during the live event. Respecting the COVID-19 guidelines, the Institute decided not to conduct any performances and march past on the occasion this year.

Winners in Students category:

Prize	Name:	Department:
First Prize	Ankita A Baruah	Masters in Public Policy, Centre for Policy Studies
Second Prize	Prathmesh Mokul	Masters in Public Policy, Centre for Policy Studies
	Tresa Maria	M.Tech, Centre for Technology Alternatives for Rural Areas
	Raman Kumar Thukral	M.Tech, Electrical Engineering
Third Prize	Sanket Mishra	Ph.D, Industrial Engineering and Operations Research
	Jeevan G	B.Tech, Mechanical Engineering

Winner in Employees category:

Prize:	Name:	Department:
First Prize	Prof. Rajkumar S Pant	Professor, Aerospace Engineering
Second Prize	Dr. Harish Padinjarethil	Sr. Sports Officer, IITB
	Jeetendra K Jain	Sr. Library Information Assistant
Third Prize	Prasad V Sawant	Jr. Administrative Assistant



Institute felicitated Corona Warriors with certificate of appreciation



Republic Day celebrations at the gymkhana ground

IIT Bombay Secures 1st Position In India In QS Ranking By Subject 2021



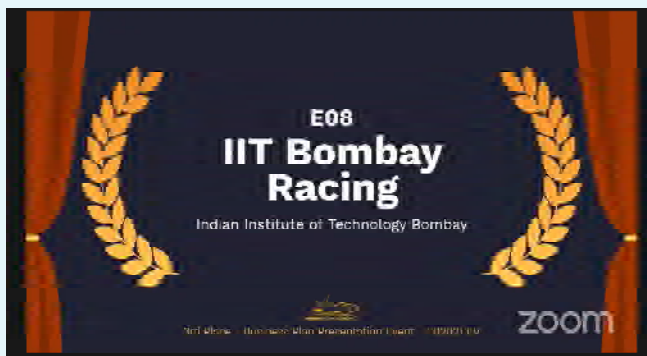
IIT Bombay has been ranked **1st in India** and **49th globally** in Engineering and Technology with an overall score of 79.9 out of 100 in the **Quacquarelli Symonds (QS) World University Rankings by Subject for 2021**. The Institute has been ranked in 4 out of 5 broad subject areas, which includes Engineering & Technology, Natural Sciences, Social Sciences and Management, and Arts and Humanities.

The Institute has been ranked (51-100) for Art and Design, 67th for Computer Science, 51-100 for Civil Engineering, 70 for Chemical Engineering, 61 for Electrical Engineering, 82 for Mechanical Engineering, and 41 for Minerals Engineering. The results were released on Thursday, March 4, 2021 by QS, a British company.

The QS World University Rankings by Subject identifies the world's strongest universities in 51 individual subject areas.

IIT Bombay's B-school Shailesh J. Mehta School of Management (SJMSOM) has secured 4th Rank among the top Business & Management Colleges in India by the QS World University Rankings 2021 and 140th position globally.

IIT Bombay Racing Team Wins Awards In Formula Bharat 2021



IIT Bombay Racing Team wins various awards in Formula Bharat 2021



IIT Bombay Racing Team secured following results at Formula Bharat 2021, India's own Formula Student competition:

- * Overall: 4th out of 23 participating teams in the Electric category across India
- * Business Presentation: 3rd (points 73/75), recipient of best presentation delivery award
- * Engineering Design: 5th (points 107.45/150)

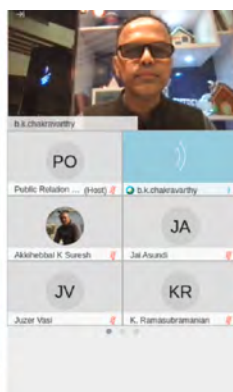
Due to the ongoing situation, the events namely the engineering design and business plan presentations, organised by Formula Bharat were held in virtual mode.

IIT Bombay Celebrates 'Azadi Ka Amrut Mahotsav'

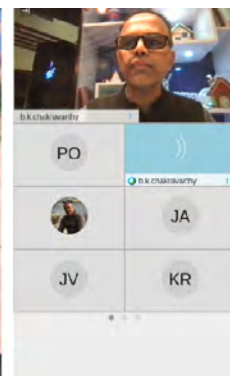
Indian Institute of Technology Bombay had organized various online talk sessions, panel discussions, and essay writing competition, to celebrate **'India's 75 years of Independence - Azadi Ka Amrut Mahotsav'**. Various events will be held throughout the year by the Institute. The idea of the Mahotsav is to showcase

accomplishments since 1947 to instil a sense of pride and to create a vision for India @2047.

The first talk on **'The Role of IIT Bombay in Immortalising the Dandi Salt March'** was held on March 12, 2021. Nine decades ago, on March 12, 1930, Mahatma Gandhi started Dandi March, a salt satyagraha protesting the British colonial rulers' monopoly on the production of salt.

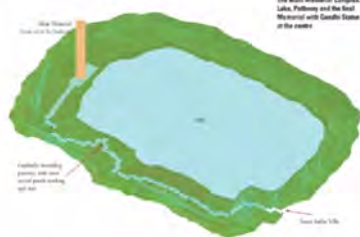


Prof. Juzer Vasi, Department of Electrical Engineering, and **Prof. B.K. Chakravarty**, IDC School of Design were the keynote speakers. Prof. Juzer Vasi spoke about the origin and history of the 1930 salt march and how IIT Bombay got involved with the Dandi Memorial Project. Later, Prof. BK Chakravarty from IDC School of Design highlighted the design and construction of the Dandi Memorial and also showed some insightful videos to the audience.



Early Designs of the Dandi Memorial

- Prof. Kirti Trivedi experimented with several early designs of the Memorial layout and monument



IIT Bombay Institute has been an integral part of the 'National Salt Satyagraha Memorial' in Dandi, Gujarat as it was designated as the 'design co-ordinating agency' of the Dandi Memorial Project in 2011. On behalf of the Institute, Prof. Juzer Vasi led the Dandi Memorial Project

to solarise the memorial based on Mahatma Gandhi's ethos of self-sufficiency. Prof. BK Chakravarty was the principle investigator of the project wherein he worked on

various domains of the Dandi Memorial Project by taking the project from concept to construction.

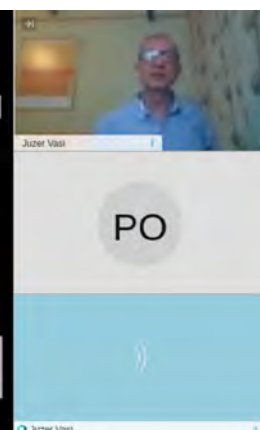
On March 17, 2021, a panel discussion on **'Scope for Technology Development & Entrepreneurship in Climate Studies'** was organized by Interdisciplinary Program in Climate Studies. It was moderated by **Prof. Chandra Venkataraman** and

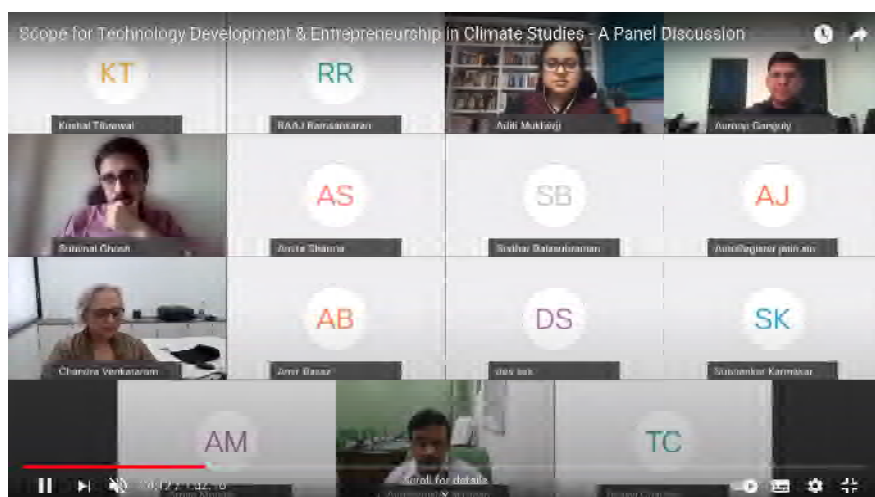
Discovering a Personal Connection ...



Gandhiji stayed at Saifee Villa at the invitation of his friend, Sirajuddin Vasi.

I found this out only during my visit, and later discovered he was a distant relative!





Prof. Sridhar Balasubramanian. A seminar was conducted by the Department of Energy Science and Engineering (DESE) on 'India Energy Security Scenarios'. **Mr. Sarvesh Chaudhari**, a research engineer working on the India Energy Security Scenarios (IESS) project, **Prof. Venkat Ramadesigan** and **Prof. Rangan Banerjee** from the Department of Energy Science and Engineering, were keynote speakers at the seminar. The DESE is working with NITI Aayog to update the

IESS tool, further automate and enhance its features. The seminar provided an overview of the current IESS tool, discuss limitations, gaps and provide an idea of the proposed changes in the tool.

The Water Innovation Center-Technology, Research, Education (WICTRE), IIT Bombay on March 22, 2021, organized a day-long symposium on 'World Water Day'. The symposium features a panel

Field Sites (India)

- Two wastewater treatment plants; surface and drinking waters
- Microbiological sampling only (2016); Microbiological & chemical sampling (2017)



Kris Mapili Processing Samples at IIT-Madras



Suraj Gupta (MS-VT) & Kris Cook (REU 2017) Field Sampling



of well-known national and international personalities discussing developing indigenous technologies for water and wastewater treatment, 'Sustainable Materials for Advanced Water Treatment (SMART)' in the 2020s.

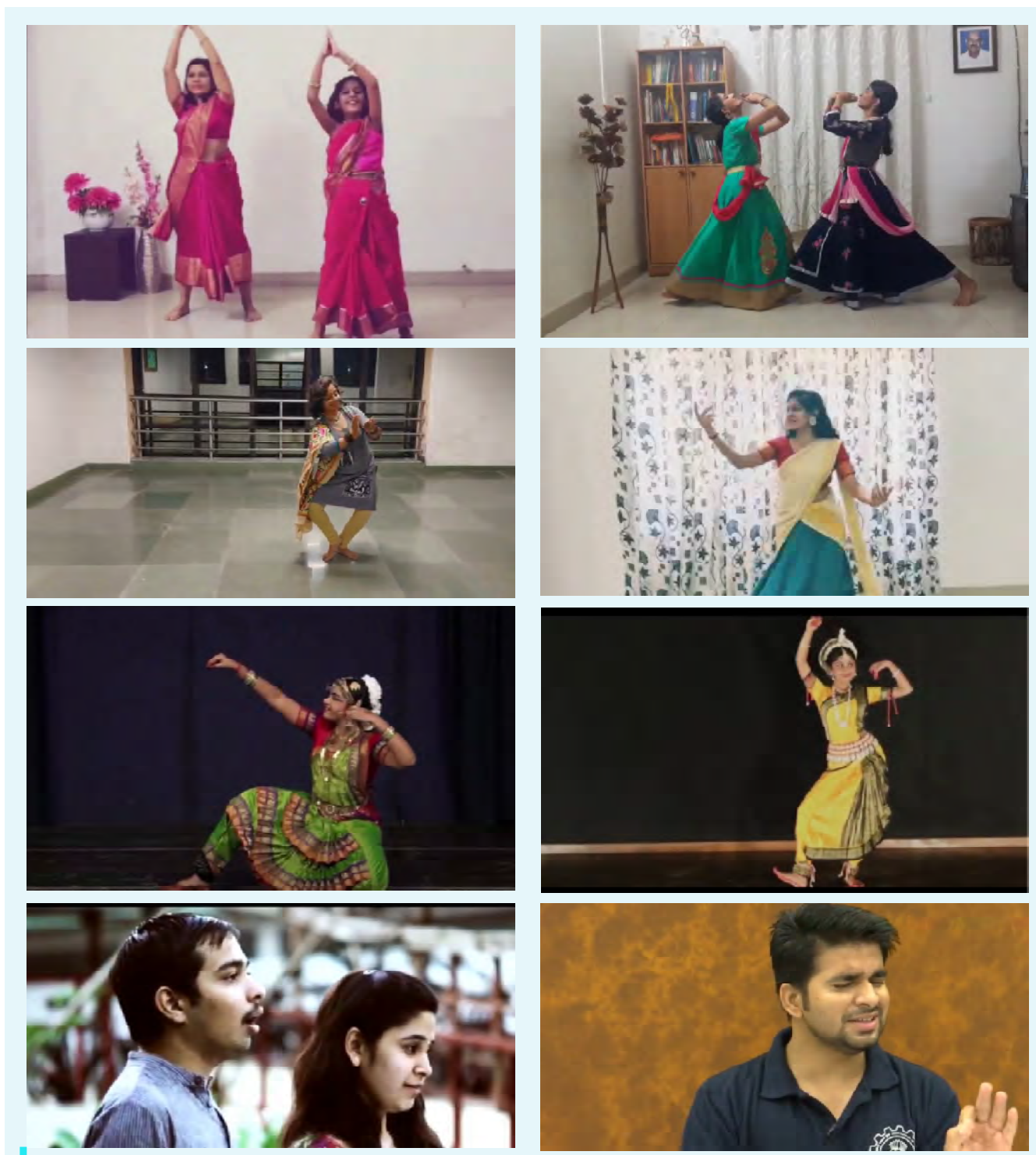
The Interdisciplinary Program in Climate Studies, IIT Bombay also held an online panel discussion on 'Climate Resilient Engineering Design', on March 24, 2021.

The discussion was moderated by **Prof. N.C. Narayan**, Centre for Technology Alternatives for Rural Areas (CTARA) and **Prof. Arpita Mondal**, Department of Civil Engineering & IDP.

An essay writing competition on 'India's Freedom Struggle' was also held.



Institute Observes Matribhasha Diwas To Celebrate Linguistic Diversity

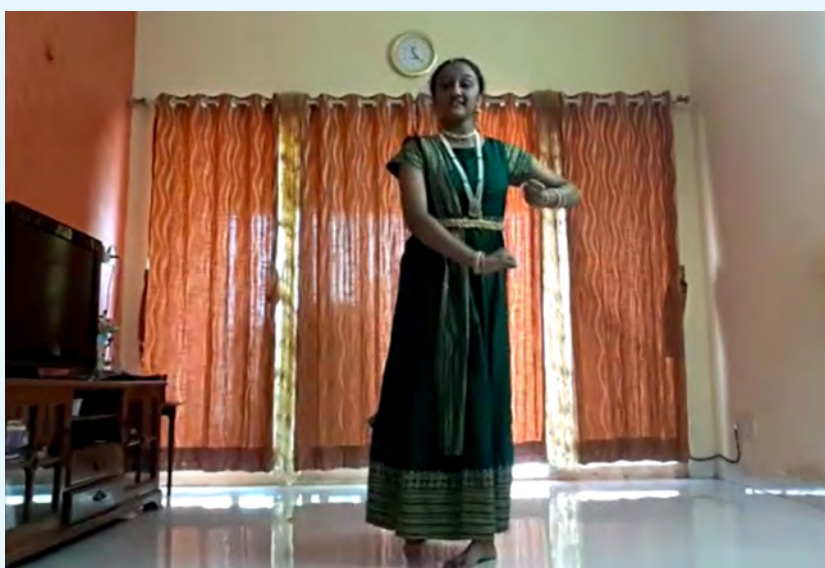
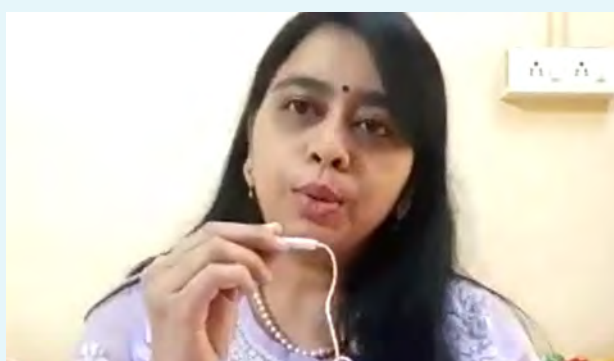


Glimpse of various participants performing to promote regional languages (virtually)

With an aim to promote the use of mother tongue (regional language), different linguistic associations from IIT Bombay came together to celebrate **Matribhasha Diwas (Mother Language Day)** virtually on February 21, 2021. Due to COVID-19 guidelines, the event was organized online. Every year, the Institute's Hindi Cell organises various cultural programmes to celebrate the Matribhasha Diwas as per the directives of the Ministry of Education (MoE) to show the linguistic diversity of India.

The celebrations include promoting various languages to create awareness of linguistic and cultural traditions amongst Institute community members. The Institute's faculty, staff and students participated in the event by showcasing their talent and performing various art forms that were focused on the linguistic diversity of our country, culture, historical, literary, social progress. The programme was attended online by the faculty, staff and students.

IIT Bombay Observes Marathi Bhasha Samvardhan Pandharwada



Glimpses of various participants performing to promote Marathi language

The Indian Institute of Technology Bombay celebrated **Marathi Bhasha Samvardhan Pandharwada** (Marathi Language Conservation Fortnight) from January 14 to 28, 2021 by organizing various competitions and a cultural programme in online mode. The objective of the celebration was to preserve and practice the Marathi language.

The members of the IIT Bombay community of various age groups performed different art forms during the cultural programme to highlight Marathi culture.

The Marathi Pandharwada Committee organized various competitions such as Katha-Kathan (storytelling), Hast-Lekhan (handwriting) and Nibandh-Lekhan (essay writing). The competitions received overwhelming participation from the employees, faculty and students.

Winners of the Storytelling Competition :

Prize	Name	Department
First Prize	Swapnali Bhandare	Technical Superintendent, Department of Aerospace Engineering
Second Prize	Lata Gangaram Popale	Primary Teacher, IIT Campus School
Third Prize	Pritee Jogale	Jr. Administrative Assistant, Account Section
Consolation Prize	Ketan S	Student, Department of Mathematics
	Anagha Kankekar-Bilay	Junior Lab Assistant, Department of Biosciences and Bioengineering

Winners of the Handwriting Competition:

Prize	Name	Department
First Prize	Prajakta Sarafdar	Jr. Mechanic, Department of Civil Engineering
Second Prize	Pathmesh R. Keelath	Jr. Administrative Assistant, Material Management Division
Third Prize	Vasundhara M. Sontakke	Student, Department of Environmental Science and Engineering
Consolation Prize	Suraj Sarfare	Jr. Mechanic, Department of Electrical Engineering
	Umesh Pirankar	Jr. Mechanic, Electrical Maintenance Division

Winners of the Essay Writing Competition:

Prize	Name	Department
First Prize	Rahul Shingote	Jr. Administrative Assistant, Estate Office
Second Prize	Varsha Sinnarkar	Jr. Administrative Assistant, Material Management Division
Third Prize	Manasi Bandichode	B.Tech Student, Department of Civil Engineering
	Rohidas Gaikwad	Junior Mechanic, Department of Electrical Engineering
Consolation Prize	Rutuja Dhore	M.Tech Student, Department of Civil Engineering
	Ravji Suresh Paradkar	Junior Mechanic, Telephone Office
	Ashish M Nagwekar	Technical Officer, Computer Center Office
	Sanjeevani Birare	Jr. Administrative Assistant, HR-1 (HRM)

IIT Bombay's Gender Cell Celebrates International Women's Day



Gender Cell celebrates International Women's Day using online mode

The IIT Bombay's Gender Cell celebrated **International Women's Day** on March 25, 2021. This year due to pandemic, the event was organized online and broadcasted on the YouTube channel of the Institute.

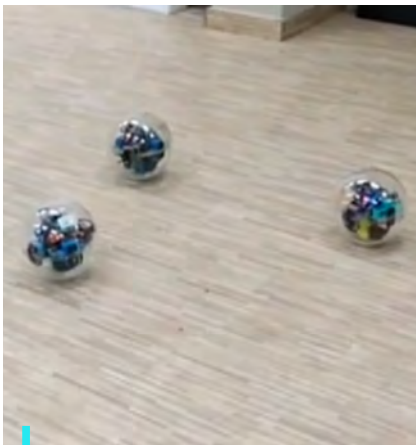
Prof. Subhasis Chaudhuri, Director, IIT Bombay graced the occasion as Chief Guest for the event. The program included the inauguration of the new website of Gender Cell, an online modules announcement on gender sensitization and a short cultural program by the children of IIT Bombay's faculty and staff members.



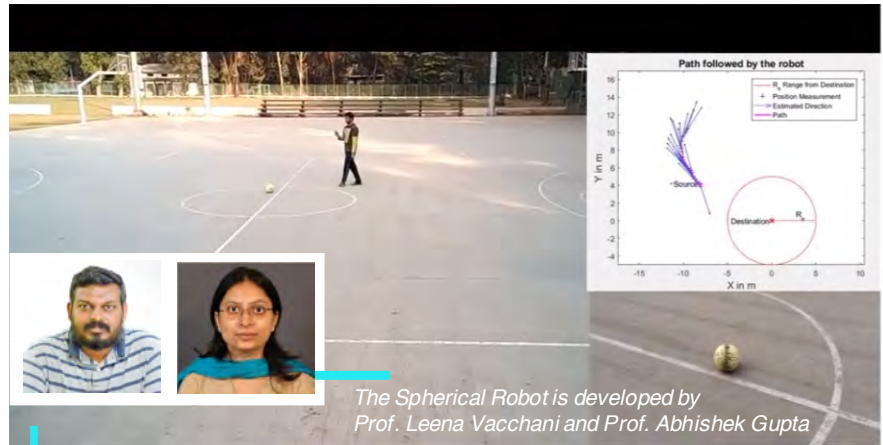
Children perform various art forms to celebrate International Women's Day



Team Develops Tele-operated Spherical Robot



Formation of the multiple spherical robots



Outdoor testing of the bots to check the autonomous navigations from one point to another with GPS feedback

The Spherical Robot is developed by Prof. Leena Vacchani and Prof. Abhishek Gupta

A team lead by **Prof. Leena Vacchani**, System and Control Engineering Department and **Prof. Abhishek Gupta**, Mechanical Engineering, has developed a cutting-edge customizable and scalable-in-size **Spherical Robot** which can be deployed at hazardous, difficult and enemy intruded areas and controlled from a safe region. The indigenous mobile rolling spherical robot provides visual feedback for reconnaissance and search.

A joint initiative of the Ministry of Electronics and Information Technology, GoI and the Indian Institute of Technology Bombay, the tele-operated robot can be used for autonomous applications such as indoor mapping, detection of sound and fire sources, to name a few. The team has showcased their robot to various internal security agencies under the National Center of Excellence in Technology for Internal Security. The current prototypes have the facility to view 360 panoramas in real time.

IIT Bombay's Robotic Team Wins 'Young Researcher Prize'



Virtual presentation of the Young Researcher Prize by IEEE OES (Oceanic Engineering Society)

IIT Bombay's robotic team **AUV-IITB** has won the prestigious '**Young Researcher Prize**' awarded by the IEEE OES (Oceanic Engineering Society) at Underwater Technology 2021 competition organized by the University of Tokyo. The team was among the 14 finalists from across the globe.

The official submission for the competition was a video that highlighted their journey so far, including the development of six underwater vehicles - each being more proficient and advanced than its predecessor - and various research projects in the underwater domain which are undertaken throughout the years.

IIT Bombay Signs MoU With CSIR-NCL To Build Virtual Labs



File photo of CSIR-NCL



Online meet to start Jignasa 2.0, a national initiative towards building Virtual Labs for school students

The Indian Institute of Technology Bombay will be part of **Jignasa 2.0**, a national initiative towards building a virtual laboratory for all school students. IIT Bombay signed an MoU on January 29, 2021 with CSIR-NCL in presence of **Dr. Shekhar Mande** (DG, CSIR) and **Dr. S. Chandrashekhara** (Director, IITC & NCL).

The Jignasa 2.0 initiative is being spearheaded by the Council of Scientific and Industrial Research (CSIR) through National Chemical Laboratory (NCL). The CSIR-NCL will be partnering with IIT Bombay to get the lab(s) developed for the school going students. The content of the virtual labs will be available in all major Indian languages.

On behalf of IIT Bombay, **Prof. Santosh Noronha**, Department of Chemical Engineering is heading the initiative. Through the initiative, the Institute aims to create more awareness and curiosity in science education in school-going students. The virtual labs initiative is very timely and relevant due to the COVID-19 pandemic.

IIT Bombay-Monash Research Academy Signs MoU With Michelin India



CEO of IIT Bombay-Monash Research Academy M.S. Unnikrishnan and Dr. Arun Jaura, Managing Director Michelin India Technology Centre India sign the MoU

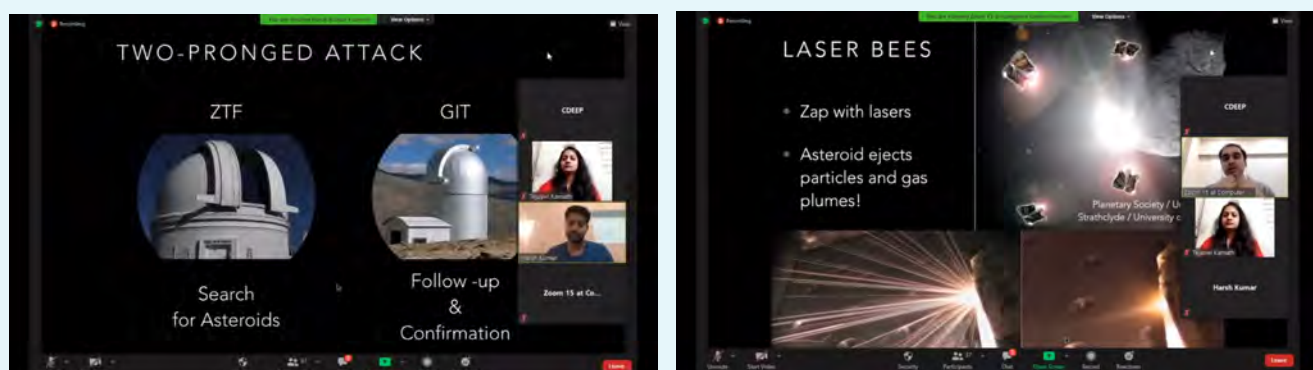
The **IIT Bombay-Monash Research Academy** and Pune-based **Michelin India Technology Centre** (a French multinational tyre manufacturing company) inked a Memorandum of Understanding (MoU) for next-generation sustainable mobility research on February 15, 2021. As per Michelin India Technology Centre, the tie-up with IIT Bombay-Monash Academy will enhance mutual development and stimulate stronger collaboration for sustainable mobility.

The partnership between the IIT Bombay-Monash Research Academy and Michelin India Technology Centre will be of five-year tenure in which various

projects will be anticipated for development in the mobility space in India. “*IIT Bombay-Monash Research Academy in partnership with Michelin is aiming to conduct application-oriented translational research,*” said CEO of IIT Bombay-Monash Research Academy **Mr. M.S. Unnikrishnan**.

Professors from IIT Bombay and Monash University, Australia will team up with Michelin in this outcome-oriented program targeted to create mobility-oriented technologies of tomorrow. The IIT Bombay-Monash Research Academy was established as a joint-venture (JV) research academy that aims at enhancing research collaborations between India and Australia.

IIT Bombay Organizes Lecture On National Science Day



Glimpse of an online lecture on 'Hunting For Killer Asteroids' held to celebrate National Science Day

The Indian Institute of Technology Bombay celebrated **National Science Day** by organizing a lecture on '**Hunting For Killer Asteroids**' for the IIT Bombay community members. During the lecture, **Prof. Varun Bhalerao**, Department of Physics and his team spoke about their project and searching for asteroids using the GROWTH-India telescope.

Every year, India celebrates the National Science Day on February 28 to commemorate the discovery of the '**Raman Effect**' by **Sir Chandrasekhara Venkata Raman**, an Indian physicist. He was awarded the Nobel Prize in Physics in 1930 for the discovery of the '**Raman Effect**'.

The team members, especially **Kunal Deshmukh**, a final year undergraduate in the Department of Metallurgical and Material Science, **Harsh Kumar**, a third year Ph.D student in the Department of Physics and **Kritti Sharma**, a third year undergraduate student in the Department of Mechanical Engineering, received a special mention and silver medals under the '**New Discovery Award 2020**' from the Astronomical Society of India. Under a collaboration with the Zwicky Transient Facility in California, these students discovered 2020 QG: the closest asteroid then known that had passed by Earth without hitting it.

They have discovered a total of 43 asteroids in the last one and half years. These students work with the GROWTH-India telescope and the international GROWTH collaboration to search for and confirm Near-Earth Asteroids. The GROWTH-India telescope which is jointly operated by IIT Bombay and the Indian Institute of Astrophysics, Bangalore.

Along with Prof. Bhalerao, these students participated in the lecture presentation and discussion with the audience.

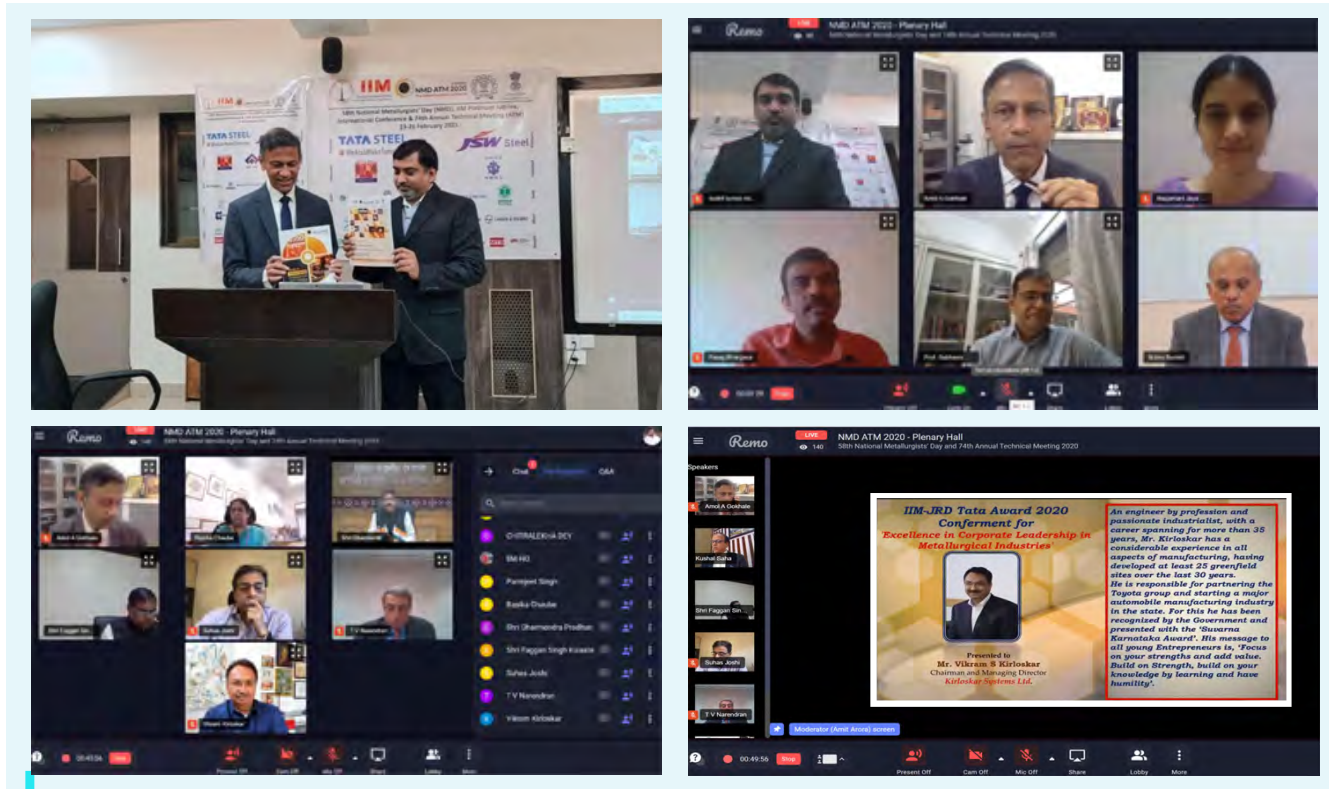


Recipients of the New Discovery Award 2020

The students work with the GROWTH-India telescope to search for Near-Earth Asteroids.



Institute Organizes National Metallurgists Day



Glimpses of (online) international conference of 58th 'National Metallurgists Day' and 74th Annual Technical Meeting (ATM) of Indian Institute of Metals (IIM)

The Indian Institute of Technology Bombay along with the Indian Institute of Metals (IIM) had organized the **58th 'National Metallurgists Day' and 74th Annual Technical Meeting (ATM)** of IIM, **International Conference**, from February 23-26, 2021.

The National Metallurgists Day is celebrated to recognize the stellar role played by metallurgists in nation-building. The ATM brings together researchers from across the world in order to present their most recent work in this field. While the event is annually held in different places in the country, last year's annual event was postponed from November 2020 to February 2021 due to the ongoing pandemic.

The online conference was held for the first time keeping in mind the pandemic guidelines. **Dr. V.K. Saraswat**, Member, NITI Aayog and Director of IIT Bombay **Prof. Subhasis Chaudhuri** were the Guests of Honour. **Prof. Subra Suresh**, President, NTU Singapore was the keynote speaker for the inaugural session on February 23, 2021.

It was followed by a panel discussion moderated by **Kunal Bose**, a senior journalist focusing on 'Enhancing Global Competitiveness of Indian Metals Industries'. The participants included **Mr. Sumit Deb**, CMD, National Minerals Development Corporation; **Mr. Abhijit Pati**, CEO, Bharat Aluminium Co.; **Mr. Arun Misra**, CEO, Hindustan Zinc Ltd; **Mr. P. K. Rath**, CMD, Vizag Steel; **Mr. Sridhar Patra**, CMD, National Aluminium Company and **Mr. Anirban Dasgupta**, Director, Bhilai Steel Plant. Collectively, they represented a very high level of leaders of the Indian Metals Industry.

Hon'ble Minister of Steel **Mr. Dharmendra Pradhan** and Minister of State for Steel **Mr. Faggan Singh Kulaste** presented awards during the National Metallurgists Day. This year, '**Dr. J. R. D. Tata Award**', a highest-ranking award, was presented to **Mr. Vikram Kirloskar**, the Chairman of Kirloskar Systems and Vice-Chairperson of Toyota Kirloskar. Other industry awards and individual awards were distributed during the event. The Indian Institute of Metals celebrated its Platinum Anniversary on February 24, 2021.

Another panel discussion on '**Entrepreneurship in Materials**' was held on February 26, 2021, to encourage young minds for start-ups in materials and make them aware of the related issues. Two of the talk sessions 'Digital Transformation in Tata Steel' by MD Tata Steel and 'Impact of Electric Vehicle (EV) revolution on global materials prospects' by McKinsey (UK) highlighted changes in the way materials space is evolving in relation to new technology.

The international conference on the theme '**IIM at Seventy-Five: Inspiration and Aspirations**', featured 13 speakers from seven countries - Japan, Singapore, India, Portugal, Germany, UK, and USA. Around 300 papers were presented during the conference. During a 'micro-structures contest', participants displayed materials and micro-structures that are scientifically significant and aesthetically artistic in nature. Around 100 entries were received this year. The event was organized by IIT Bombay after a gap of more than two decades.

IIT Bombay And WUSTL Launches 6th Executive MBA Batch

On January 13, 2021, the senior leadership of IIT Bombay and Washington University in St. Louis flagged-off their 6th executive MBA batch. The launch function was inaugurated by **Mr. Gopal Shukla**, the CEO of the IIT Bombay and Washington University in St. Louis joint venture. **Prof. Subhasis Chaudhuri**, Director IIT Bombay welcomed the cohort 6. **Mr. Mayank Pareek**, a seasoned industry leader and the President of TATA Motors was the special guest of honour. The other senior dignitaries present were **Prof. Prasanna Majumdar**, Deputy Director (Finance and External Affairs), IIT Bombay, **Prof. S. Narayan Rao**, Head, Shailesh J. Mehta School Of Management and **Prof. Daniel Elfenbein**, Professor of Strategy, Olin Business School.



Students at the launch of the sixth E-MBA batch of IIT Bombay and Washington University in St.Louis (WUSTL)



Students and dignitaries look on during the launch session of the sixth E-MBA batch of IIT Bombay and Washington University in St.Louis (WUSTL)

the 6th batch too sees a splendid representation from diverse levels, industries and domains. These include IT, academics, pharmaceutical, finance, consulting and others.

The strength of the program is in its belief that the continuous evolution and transformation of executive education is the most important catalyst enabling strategic transitions in the 21st century. Keeping in line with this thought, the curriculum focuses on making leadership succeed and allowing change-management thrive. After 5 batches, it still remains India's only E-MBA program to confer an executive MBA degree from both an Indian and an American university.

The 18-month E-MBA joint degree program from IIT Bombay and Washington University in St. Louis, over its past 5 batches, has successfully created a sustained leadership pipeline for the corporate world. While doing that, it has enabled middle level managers to grow and evolve into their natural next roles and assisted senior executives to consolidate. With a strength of 33,

Opening Of Executive Education Complex At SJMSOM



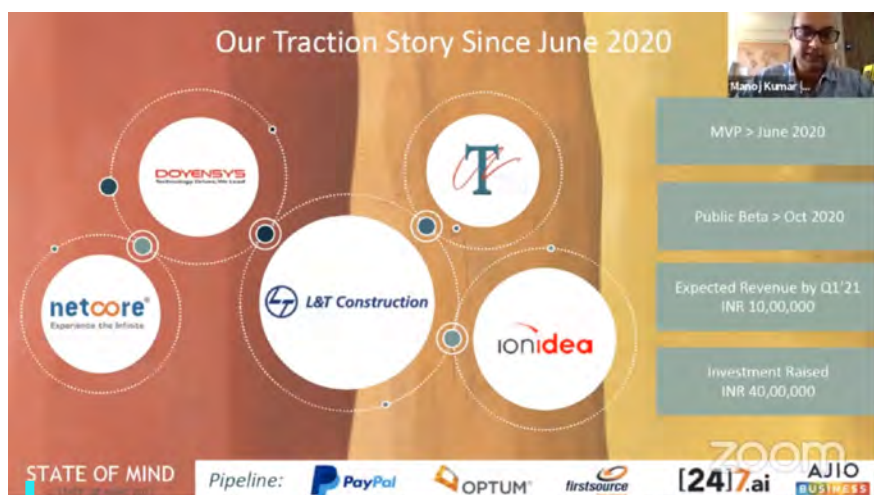
Opening of Executive Education Complex by Director of IIT Bombay Prof. Subhasis Chaudhuri and Prof. S. Narayan Rao, Head of SJMSOM



Institute functionaries interacting with Dr. Shailesh J. Mehta online

Director of IIT Bombay **Prof. Subhasis Chaudhuri** attended the opening ceremony of Executive Education Complex on Tuesday, March 2, 2021 on fourth floor of Shailesh J. Mehta School of Management building in the IIT Bombay campus. Prof. Chaudhuri interacted with (online) and thanked our Distinguished Alumni **Dr. Shailesh J. Mehta** for his continued support.

E-Summit 2021 Goes Online To Connect Entrepreneurs



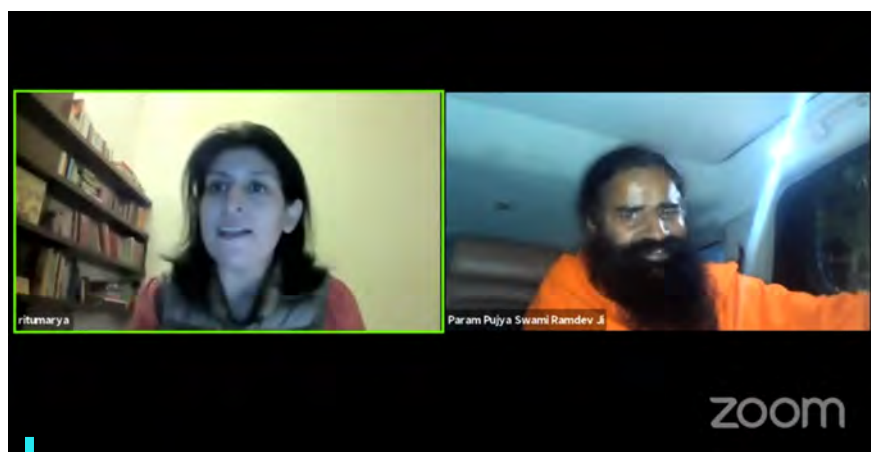
Startups pitching their ideas in 'The Ten Minute Million' to gain on-the-spot funding from investors

The 16th edition of **Entrepreneurship Summit (E-Summit)**, IIT Bombay's E-Cell flagship event was hosted online for the first time due to pandemic. This year, the E-Summit 2021 was organized on February 6 and 7, 2021 with the theme '**A Blizzard of Ingenuity**'. The theme aimed to provide breakthroughs to all aspiring entrepreneurs and students. The E-Summit has been a host to some of the biggest stalwarts of the industry over the years. This year too, the E-Summit continued to inspire countless ideas from the students, expedite innovative

startups and multiply social networking through a cluster of events designed for the participants. Various events, panel discussions, speaker sessions, competitions and workshops were organized during the two-day event.

It has become the first event of its kind to receive patronage from the Make in India, UNESCO, Digital India and Startup India. The two-day event provided a platform to discuss the technologies of tomorrow and exhibit various technologies.

The event hosted various entrepreneurs, corporates and popular celebrities such as **Mr. Jordan Belfort**, author of *The Wolf of Wall Street*; **Swami Ramdev**, Founder of *Patanjali* and a yoga guru; **Mr. Ritesh Agarwal**, Founder and CEO of *OYO Hotels and Rooms*; **Mr. Deepak Parekh**, Chairman of *HDFC Bank*; **Mr. Manish Sisodia**, Deputy Chief Minister of New Delhi; **Ms. Vani Kola**, Managing Director of *Kalaari Capital*; **Ms. B.K. Shivani**, spiritual teacher at *Brahma Kumaris*; **Mr. Ram Shriram**, Founding Board Member of *Google*; **Mr. Kanwal Rekhi**, Co-founder of *TiE*; **Mr. Kunal Bahl**, Co-founder and CEO of *Snapdeal* and **Mr. Scott Marcar**, CIO Corporate and Investment Banking, *Deutsche Bank* to name a few.



Students in conversation with Swami Ramdev Baba, founder of Patanjali

This event was the largest entrepreneur summit organized by a student organization.



Highlight session on startups with CEO and Founder of OYO Rooms and Hotels, Ritesh Agarwal

IIT Bombay Organises Lecture On Leadership



Mrs. Majeet Hirani was the guest speaker for the lecture

The Indian Institute of Technology Bombay had organized the **Radhika Rajan Women Leadership Lecture** on February 18, 2021. In the third lecture series, **Mrs. Majeet Hirani**, a pilot by profession, was the guest speaker for the lecture, in which she spoke about her book, '*How to be Human*'. The book is inspired by her dog and teaches life lessons from a dog's perspective. The lecture was organized in an online mode.

The book '*How to Be Human*' teaches to look at life from a less cynical standpoint. During her talk, Mrs. Hirani spoke about the making of this book and excerpts from it on topics like attachment, parenting and karma, among other things. She also highlighted how having a dog in the house can alter a person's perspective and change the way they experience their life.

Mrs. Manjeet Hirani is a senior commander and trainer with Air India, a lady with determination to achieve what she wanted

despite all obstacles, Hirani had the courage to carve her own way at a time when very few women had the courage to do so. She is also an influencer and speaker across various platforms.

Observing Policies Through Cinema Lens

IIT Bombay's Centre for Policy Studies had organized a four-day event on cinema and conversations around policy named '**Atelier - Talking Policy Through Cinema**', from March 3-6, 2021. Besides showing short films, movies and documentaries, the team also held an online discussion with filmmakers, academicians and experts from the field on the social issues highlighted by each film.



A shot from the film Eeb Allay Ooo

In the online event organized this year, the participants were encouraged to have a discussion among themselves after watching the film. After hearing their thoughts, the main speakers of the interactive session - the filmmakers and guest speakers participated in a free-wheeling conversation throughout the events. More than 100 viewers attended the event and an average of 50 participants participated at the discussions.

The films shown this year included **Eeb Allay Ooo**, directed by **Mr. Prateek Vats**, which highlights the struggling journey of a young migrant who is hired to shoo away monkeys from government offices and how his misadventures become a lens to view the realities of contemporary India.

Turup, directed by **Ektara Collective**, focuses on the chess-like moves of a domestic worker with a secret hobby, a young woman in love, and a former journalist struggling with married life when caste, class, religion and gender come into play. **A Nation of Farmers and Migrants**, a short film from the **People's Archive of Rural India (PARI)**, focuses on sharing stories of the everyday lives of everyday people.

On the closing day, **Kosa**, directed by **Mr. Mohit Priyadarshi** was showcased to the audience. The film is a scathing attack on the oppressive and abusive powers displayed by police and local government towards the tribal communities living in the Indian forests.

IIT Bombay Launches Online Mobile Jaggery Plant

Dr Anil Kakodkar, Chairman, Rajiv Gandhi Science & Technology Commission, Government of Maharashtra (virtually) launched the mobile jaggery plant developed by the Indian Institute of Technology Bombay on February 22, 2021 in the presence of Director of IIT Bombay **Prof. Subhasis Chaudhuri**, Dean (Alumni and Corporate Relations) **Prof. Suhas Joshi** and Dean (Research and Development) **Prof. Milind Atrey**. A large number of faculty, staff and students attended the event online.



IIT Bombay develops 'Mobile Jaggery Plant'

With people becoming increasingly health conscious, the demand for chemical-free and natural foods is significantly rising. Jaggery, a traditional sweetener, is a healthy replacement to white refined sugar. The Indian Institute of Technology Bombay has developed a mobile jaggery plant that produces consistent quality of jaggery in a hygienic, energy-efficient, economical method with minimal human intervention during the process. The jaggery manufacturing unit can easily be mounted on tractor trolleys and carried to sugarcane fields, thus saving time and effort. This project is sponsored partly by Rajiv Gandhi Science and Technology, Mumbai and partly by Tata Centre for Technology and Design, IIT Bombay.

State Minister Nawab Malik Gets An Insight Of SINE's Entrepreneurial Ecosystem



Institute's functionaries interact with Mr. Nawab Malik

Hon'ble Minister of State for Skill Development, Employment and Entrepreneurship **Mr. Nawab Malik** and the members of Maharashtra State Innovation Society (MSInS) visited the IIT Bombay's Society for Innovation and Entrepreneurship (SINE) business incubation facility on February 19, 2021. The objective of the visit was to understand SINE's role in the entrepreneurial ecosystem. During their visit, they interacted with the SINE incubated startups, visited their office space and SINE labs. Few of the SINE startups presented their innovations to the Entrepreneurship Minister and to the members from MSInS.



Mr. Nawab Malik visits SINE business incubation facility along with members from Maharashtra State Innovation Society

IIT Bombay Professor Develops Cannon To Help Farmers From Impending Hailstorms

Prof. Sudarshan Kumar from the Department of Aerospace Engineering, IIT Bombay has developed an '**anti-hail cannon**' device to help farmers from impending hailstorms. The 22-foot tall anti-hail cannon indigenously designed by IIT Bombay works with LPG fuel and is made up of stainless steel, which consists of a detonation tube, convergent-divergent duct, and a divergent nozzle.

The design and development was undertaken at Combustion Research Laboratory, Department of Aerospace Engineering, IIT Bombay. The cost of this device is expected to be around 8 to 10 lakh rupees on site. Using LPG as fuel significantly reduces the operating cost for the farmers in the field.

The anti-hail cannon is currently being evaluated for its effectiveness in collaboration with the Department of Environmental Science, Dr. YS Parmar University of Horticulture & Forestry, Nauni, Solan, Himachal Pradesh. To assess its effectiveness it has been installed at KVK Kandaghat, Solan of the University. Experiments are being conducted for performance evaluation and better optimization of the device. From initial experiments performed, the detonation wave generated travels at a speed of 1100m/s or 3960 kmph, which is close to the C-J (Chapman-Jouguet) velocity of 1200m/s for LPG-Air mixture.

In India, every year, hailstorms cause damage to apple crops in Himachal Pradesh which results in significant losses of around 200–500 crores to farmers and horticulturists. Additionally, the operating and installation costs of imported anti-hail cannons by the government of Himachal Pradesh, that works on acetylene fuel, are significantly higher and unaffordable to the farmers in the field.

Acetylene fuel is also difficult to handle and store as this gas is highly inflammable. To reduce these damages, anti-hail nets are widely used by farmers sowing these crops. Although, the anti-hail nets do help to protect the fruits and crops from damage due to hailstorms, however, the installation of anti-hail nets is very difficult and requires a lot of work, and may alter the microclimate around plants which may create favorable conditions for disease infestation and also blocks light required for stimulating various physiological processes in plants.

Therefore, an alternative effective solution to tackle this situation is to use anti-hail guns/ anti-hail cannons. An anti-hail cannon device that works on the principle of '*Deflagration to Detonation Transition*' (DDT), generates a detonation wave using a combustible fuel-air mixture. This detonation wave travels with supersonic speed into the atmosphere and helps raise the temperature of the clouds responsible for the formation of hailstones, thus, suppressing the hail formation.

This device is expected to help farmers save their crops, particularly apple fruit plants from hail storms during the months of March-May, every year.



Anti-hail cannon, indigenously built by IIT Bombay, works with LPG fuel and is cost-effective

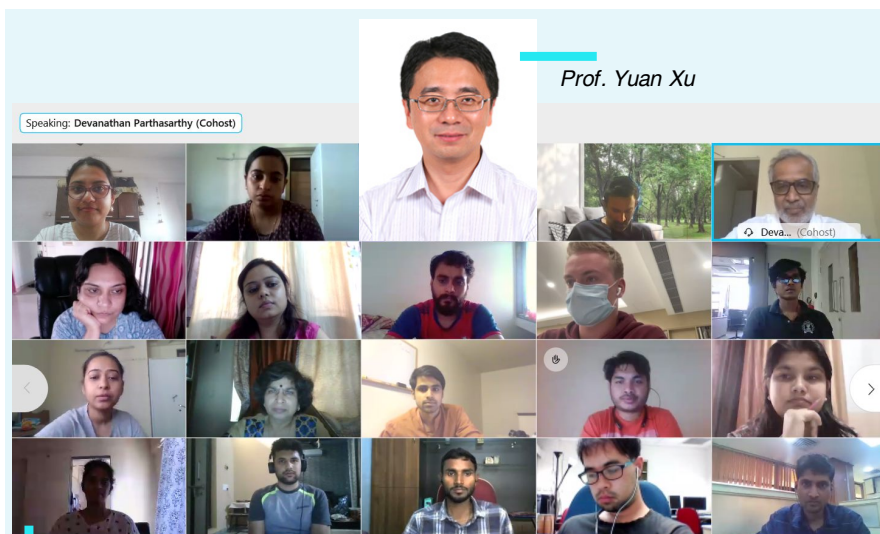
Webinar Series On Climate Policy And Governance

The Indian Institute of Technology Bombay's Interdisciplinary Programme in Climate Studies and Hong Kong Institute of Asia-Pacific Studies, Chinese University of Hong Kong (CUHK) has jointly initiated a webinar series themed on '**China-India Forum: Climate Policy & Governance**' which aims to understand the climate policies in China and India.

The first lecture titled '*Environmental Policy and Air Pollution in China: Governance and Strategy*' in this webinar series was delivered by Prof. Yuan Xu, Associate Professor,

Department of Geography and Resource Management, CUHK on March 10, 2021. The invited speaker professor's research focuses on energy and environment policy and strategy in China and increasingly in India. During the lecture, the speaker highlighted the climate mitigation policies in China to reduce GHG emissions, the role of its government using goal-centered governance and devolution as strategies to clean up air pollution, and the challenges faced in implementing these policies.

The lecture was attended by around 100 participants from academia and the industry sector.

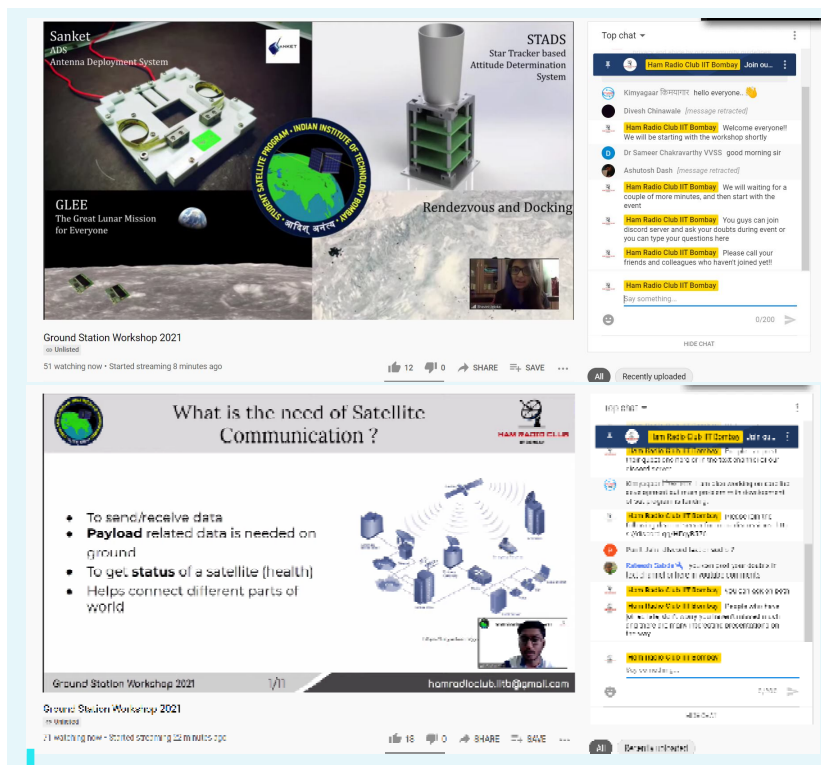


Online interaction with Prof. Yuan Xu

Ham Radio Club Organizes Workshop For Students To Explore Ground Station And Ham Radio

The Ham Radio Club of IIT Bombay organized its annual flagship event '**Ground Station Workshop**' on January 24, 2021 in virtual mode. The club conducted a day-long free-of-cost technical workshop aimed at well-equipping engineering colleges across India to set-up a ground station on their campuses. The workshop was attended by enthusiastic students who desire to start exploring the basics of the ground station and ham radio.

The team members from the **Student Satellite Program, IIT Bombay** presented various aspects of a ground station - designing and fabricating different antennas, transmitters, satellite reception with some live demonstrations, to the participants. The presentation also included important non-technical aspects such as team management and cost analysis.



Screengrabs from the online Youtube Live workshop

Mr. Sanjay Nekkanti, CEO of Dhruva Space, was the guest speaker for the event. Mr. Nekkanti shared his experiences and provided some useful insights about the ground station and the future of space entrepreneurship. The workshop was hosted online on Youtube Live. The event aimed at motivating each and every participant to build their own ground station.

IIT Bombay Cultural Fest 'Izhaar' Goes Online



Interaction with actor Akhilendra Mishra during 'Rubaroo' event

The Indian Languages Club of IIT Bombay - Vaani had organized its annual flagship festival '**Izhaar**' from March 6-7, 2021, in an online mode.

Izhaar's foremost event '**Rubaroo**' held on March 6, 2021, had legendary actor **Akhilendra Mishra** as its guest speaker. He has acted in various blockbuster movies like Lagaan, Gangaajal, The Legend of Bhagat Singh, Veer-Zaara, Sarfarosh, Kaabil, Ready, Delhi-6 and many more. During his interaction, he spoke about his book '**Akhilamritam**', a collection of his poems.

The festival also conducted a lyrics writing workshop on March 6, 2021 by well-known Bollywood lyricist **Vishwadeep Zeest** who introduced the participants to the intricacies of poetry and lyrics with a live example on a given rhythm and music.

On concluding day, well-known poets **Shakeel Azmi**, **Dr. Sarita Sharma**, **Ashu Mishra**, **Abbas Qamar** and **Tahzeeb Hafi** came together to grace the 'Kavi Sammelan' event, held on March 7, 2021. Izhaar has previously witnessed performances by some great personalities.

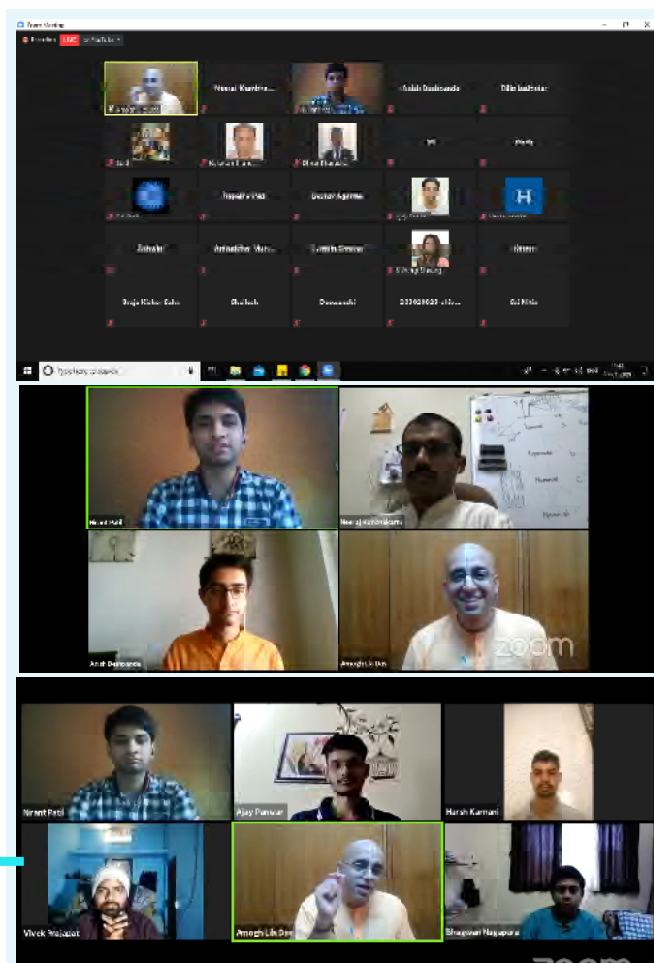
Vaani, the Indian Languages Club of IIT Bombay promotes and celebrates the works of students of IIT Bombay pursuing an interest in Indian languages and associated literature.

Yogastha Organizes Online Talk

The IIT Bombay's Yogastha organized a talk on '**The new year evolution**' on January 17, 2021 for the IIT community members. The talk by **Mr. Amogh Lilas Das** was organized to encourage people to work towards their fitness and well-being.

The speaker began the talk by discussing the need for evolution in life. Over 60 participants attended the online session. The participants participated in the Q&A session too. Few of the participants gave feedback after the session.

The Yogastha Club of IIT Bombay also conducted a workshop session on '**Improve Focus With Yoga**' on March 13, 2021. The session highlighted techniques that will help people to increase their focus with yoga without leaving their seat or desk. During the session, yogini **Ms. Riya Bhansali** taught simple techniques to improve concentration and focus. IIT Bombay students, staff members and residents joined the session to learn the techniques. The workshop was free and open for all age groups.



Participants attending an online talk held by Yogastha

Research in focus

New study reveals how effectively the novel coronavirus spreads through coughs

Researchers study the spread of a cough cloud containing SARS-CoV-2

Infected airborne respiratory droplets play a significant role in the spread of the coronavirus, formally known as SARS-CoV-2. The widespread use of respiratory masks has curbed the spread of the virus and brought down the number of people affected by the disease. But, as the pandemic rages on, general fatigue in following the behavioral restrictions has set among the public. Festive gatherings continue to be celebrated, and governments across the world have had a difficult time convincing people to adhere to the safety guidelines. In such a scenario, it is crucial to understand how the virus-carrying fluid particles carried by a person's cough or sneeze spreads through the ambient air.

Researchers had earlier found that the speed of a cloud of cough containing the airborne virus decreases as it travels away from the mouth. In a recent study, researchers from the Indian Institute of Technology Bombay (IIT Bombay) have used this finding to mathematically formulate the cloud's spread through moist air in an enclosed area. The study was published in the journal *Physics of Fluids*.

The researchers found that the virus' spread is independent of who coughs and how vigorously. The volume of air eventually covered by the cough cloud does not depend on the initial speed with which it is ejected. The mathematical calculation revealed that the volume depends on the distance the cough travels from the mouth and its sidelong spread. *"These dependencies arise because the cloud traps air from the surroundings as it evolves,"* says **Prof. Rajneesh Bhardwaj**, one of the authors of the study.

By analysing the equations of flow for the cough, the researchers found that a large volume of ambient air slowly gets trapped inside the cloud as it spreads out. With time, the droplet concentration inside the cloud thus reduces significantly from its initial concentration. Since the virus requires liquid droplets to survive, the possibility of its spread declines. They also found that the front of the cough cloud covers the first two metres of its total distance from the source within two seconds of being emitted. Hence, the cloud has the maximum probability of spreading the viral liquid immediately after release.

The calculations also enabled the researchers to quantify the effect of masks precisely. Masks reduce the net distance covered by the cloud by blocking it before its spread, earlier experiments have revealed. The researchers now compared the effect of surgical masks and clinical N95 masks on the volume of the cloud. While the cloud remains effective till about 8 seconds before dissipating irrespective of whether the person is



masked or not, surgical masks reduce the volume by seven times compared to having no mask. N95 masks perform much better, decreasing it by as much as 23 fold. This quantitative estimate sheds a clear light on why masks have been so effective in curbing the spread. *"In case a person is not using a mask while coughing, it is possible to reduce the spread by simply blocking the mouth with a palm or an elbow,"* says **Prof. Amit Agrawal**, the other author of the study.

The researchers also calculated the effect of temperature and humidity of ambient air on the cloud's spread. They found that the cloud's temperature and humidity, which depends on the temperature, decrease over the distance of its spread. However, its humidity stays higher than the humidity of the ambient air till the end, as the cloud entraps water vapour from its surroundings.

"Only during the course of the pandemic have people realised the importance of studying coughing and sneezing in the context of disease transmission," says **Prof. Agrawal**. While the data related to coughing has been generated only recently, another team is already conducting experiments on sneezing, and the researchers will use these results to consider the effects of sneezing. *"Such a study will help us determine the maximum number of people that can be safely accommodated in a hospital ward,"* adds **Prof. Bhardwaj**.

Moreover, the airflow in the surroundings may change how a cough or sneeze evolves, for example, if there is a strong wind in the room. Although conducting detailed experiments in such flow conditions is not easy, work is in full swing. Once the results start coming in, the researchers will modify their findings considering additional practical situations. *"This will enable us to study the minimum rate at which air in a room, elevator, cinema hall, car, aircraft cabin, or restaurant needs to be circulated to maintain freshness and reduce the chances of infection,"* signs off **Prof. Agrawal**.

Article written by: Debdutta Paul

Photo Credit: Photo by Divyanshi Verma via Unsplash

Link: <https://aip.scitation.org/doi/10.1063/5.0029186>

Students News

IIT Bombay Students Win The 11th Rajagiri National Business Quiz



Preetham Upadhya and **Sidharth Sethu**, MBA students of Shailesh J. Mehta School of Management, IIT Bombay have won Rs 1,00,000 cash prize as the grand finale winner 'student category' in the 11th Rajagiri National Business quiz.

The quiz hosted jointly by the Rajagiri College of Social Sciences and Rajagiri Business School every year, is a student-run initiative with participation from across the country. Amidst the Covid-19 pandemic, the quiz was held virtually this year.

Of the 2,740 teams registered for the online preliminaries in January, 10 semi-finalists were selected in the corporate and student categories.

IIT Bombay Students Win AWSAR Award



(Left to Right) Abhishek Kumar, Debanjan Mitra, Ritutama Ghosh and Dr. Veenita Shah

IIT Bombay students **Abhishek Kumar**, **Debanjan Chandra**, **Ritutama Ghosh** and **Veenita Shah** were selected for the **AWSAR Award** by the Department of Science and Technology (DST) on National Science Day celebrated on February 28, 2021. They received a prize of ₹ 10,000 each for best popular science stories under Ph.D category and Postdoctoral Fellow (PDF) category along with a certificate of appreciation.

AWSAR (Augmenting Writing Skills for Articulating Research) is an initiative of the Department of Science and Technology (DST), Government of India. It attempts to disseminate Indian research in science, technology and innovation being pursued by Ph.D scholars and post-doctoral fellows in popular science writing format.

Ph.D Student Works On Solar Micro-Grid Project To Help J&K Villagers



Inauguration ceremony of solar micro-grid held at Ghaggar Hill

Mr. Ganesh Hegde, senior Ph.D student at CTARA, IIT Bombay had spent One month with Aseem Foundation in villages of Jammu and Kashmir as part of the summer fieldwork. With the help from the Indian Army and GS Lab Pune, they have successfully commissioned the first solar micro-grid in a remote village Ghaggar Hill, located 6000 ft above sea level. The grid has now been recently handed over to the residents of the village that has suffered severely from cross-fire at LoC over the years. The current project compliments the existing energy sources and provides a reliable electricity supply. Electrifying this cluster of households as a pilot project was incredibly fulfilling for Aseem Foundation, GS Lab, CTARA and the Indian Army.

Students Win Medals in NSUCRYPTO'2020



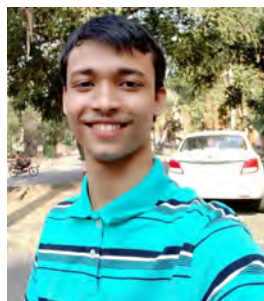
Three students from IIT Bombay's Cybersecurity Club bagged a gold medal as a team at the university division in NSUCRYPTO'2020, the 7th International Olympiad in Cryptography. The competition was held in the month of October and results were declared in December 2020.

Himanshu Sheoran, Sahil Jain and Tirthankar Adhikari are part of the Cybersecurity Club of IIT Bombay (CSec IIT Bombay) running under the Department of Computer Science Engineering. The team devised the best solution for the problem of AES-GCM.

Sahil Jain and Tirthankar Adhikari also won silver and bronze medals in the individual categories.

NSUCRYPTO is the unique cryptographic Olympiad to involve young researchers in solving interesting and tough scientific problems of modern cryptography by professionals, school and university students from all over the world. From the very beginning, the concept of the Olympiad was to challenge the cryptography enthusiasts with unsolved research problems at the intersection of mathematics and cryptography.

Student Receive Best Creative Idea Award



Arpon Basu, a first-year undergraduate student from the Department of Computer Science and Engineering, IIT Bombay has won the '*Best Creative Idea Award*' for his science fiction story "**Life in COVID-19**" in Covid Gyan program organized by **Homi Bhabha Centre for Science Education (HBCSE)**, a national center of the Tata Institute of Fundamental Research (TIFR), Mumbai.

Bandhu Organizes Yoga Session For Mental Well-Being

With an aim to address the mental well-being of the students, the team of **Bandhu**, IIT Bombay's self-help website, had organized a yoga session for students. The session was organized on January 10, 2020. The one-hour workshop was conducted to address stress, anxiety and psychosomatic disorders with the help of meditation and yoga.

The human body receives and generates a huge amount of energy (Prana Shakti), which can help to recover from psychosomatic disorders,

improve the capacity of the brain to absorb and help to live a stress-free life. To address such lifestyle issues, they had organized a session by yoga guru **Mr. Deepak Parmar** to guide students in meditation and yoga in order to deal with stress and anxiety.

The participants found the workshop very informative. In the feedback given by the participants, they also stated that most of the participants liked the exercises and breathing techniques shown in the session.

Besides organizing yoga sessions, team Bandhu has been conducting various other workshops and talk series for the students on various occasions. On Valentine's Day, the team had organized a workshop on '**self-love and good habits**' by consultant counsellor **Ms. Nivedita Pawar** and a workshop on '**Coping with Failure**' on March 6, 2021.



IIT Bombay's Bandhu team organizes yoga session for students

Awards and Distinctions

Prof. Subhananda Chakrabarti, Department of Electrical Engineering, has been admitted as a Fellow of the prestigious SPIE (The International Society for Optics and Photonics), USA

Prof. Neela Nataraj, Department of Mathematics, has been elected as a Fellow of the Indian Academy of Sciences (FASc), Bangalore

Prof. Neela Nataraj, Department of Mathematics, has been invited to become an Associate Editor of ESAIM: Mathematical Modeling and Numerical Analysis (ESAIM: M2AN)

Prof. Harsha Hutridurga, Department of Mathematics, has been invited to join the Editorial Board of the Royal Society Journal *"Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences"*

Prof. Rinti Banerjee and Prof. Samir Maji, Department of Biosciences & Bioengineering, have been elected as Fellows of the National Academy of Sciences, India (FNASc)

Prof. Amit Agrawal, Department of Mechanical Engineering, has been elected as a Fellow of the Indian Academy of Sciences (FASc), Bangalore

Prof. E. Chandrasekhar, Department of Earth Sciences, has been invited to join the Editorial Board of Arabian Journal of Geosciences as an Associate Editor

Prof. Debasis Chakraborty, Department of Aerospace Engineering, has been elected as a Fellow of West Bengal Academy of Science and Technology (WAST)

Prof. Kiran Kondabagil, Department of Biosciences and Bioengineering (BSBE), has been invited to join the Mary Ann

Liebert Journal *"PHAGE: Therapy, Applications and Research"* as an Associate Editor

Prof. Nand Kishore, Department of Chemistry, has been appointed as the Editor of the Journal of Chemical Thermodynamics (an Elsevier Journal)

Prof. Santosh J. Gharpure, Department of Chemistry, has been selected as a member of India-UK Innovation and Sustainability Chemistry Consortium (ISCC) formed by scientists from India and UK and approved by the British High Commission

Prof. Santosh Gharpure, Department of Chemistry, has been invited to become a Fellow of the Royal Society of Chemistry through their *"Leaders in the Field Scheme"*. Prof. Gharpure has been invited in recognition of his contributions as an accomplished Synthetic Organic Chemist in developing solutions for industry for societal impact

Prof. Shobhna Kapoor, Department of Chemistry, has been selected to receive the Science and Engineering Research Board (SERB) Women Excellence Award-2021. This award is given to support the basic research in the frontier areas of science and engineering

Prof. Suvarn S. Kulkarni, Department of Chemistry, has been appointed as Guest Editor of a special collection on Carbohydrate Chemistry, to be published jointly by European Journal of Organic Chemistry and ChemCatChem

Prof. Tarun Kant, Department of Civil Engineering, has been selected to receive the VASVIK award for 2020 in the area of Mechanical & Structural Science and Technology

Prof. V. Jothiprakash, Department of Civil Engineering, has been appointed as an

Associate Editor of 'Journal of Applied Water Engineering and Research, IAHR Journal'

Prof. Vivek Kant, IDC School of Design, has been appointed as an Associate Editor of the Journal *'Ergonomics in Design'*

Prof. Hetu Sheth, Department of Earth Sciences, has been invited to become a member of the Editorial Board of *"Geosciences"* (published by MDPI, Switzerland) & Editorial Advisory Board member of *"Journal of Petrology"* (published by Oxford University Press, UK)

Prof. N. N. Viswanathan, Department of Metallurgical Engineering and Materials Science (MEMS), has been selected to receive the Indian Institute of Metals Educator Award for the year 2020

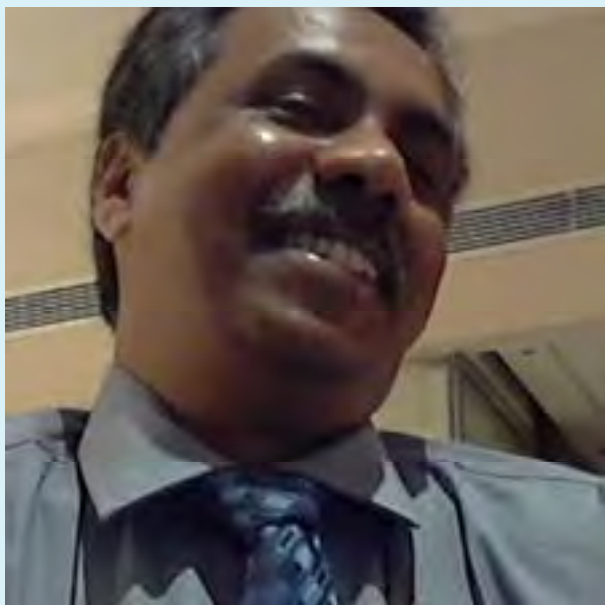
Prof. Dipti Gupta, Department of Metallurgical Engineering and Material Science (MEMS), **Prof. Neela Nataraj**, Department of Mathematics and **Prof. Archana Pai**, Department of Physics, have been selected to receive the SERB-POWER (Promoting Opportunities for Women in Exploratory Research) Fellowship

Prof. Raghavan B. Sunoj, Department of Chemistry, has been invited to join the Editorial Board of Chemical Society Reviews for a period of three years

Prof. Pushpak Bhattacharyya, Department of Computer Science and Engineering, has been recently inducted as one of the Editorial Board members of 'Journal of Natural Language Engineering, JNLE', published by Cambridge University Press

Prof. Shobha Shukla, Department of Metallurgical Engineering and Material Science (MEMS), has been invited to become a member of the Editorial Board of Journal of Physics-Photonics, published by IOP publishing

Institute Colloquium / Lectures



Dr. Sanjay Chandra, the former Chief of Research & Development at Tata Steel, delivered an Institute lecture titled "*Indian Innovations at Indian Steel Plants*" on February 3, 2021.



Prof. Chris Pistorius, POSCO Professor and Co-Director of Center for Iron and Steelmaking Research at the Department of Materials Science and Engineering at Carnegie Mellon University, delivered an Institute lecture titled "*Hydrogen in steelmaking*" on March 3, 2021.



Prof. Bruce Hajek, a Center for Advanced Study Professor of Electrical and Computer Engineering, Hoeft Chair of Engineering, and Research Professor in the Coordinated Science Laboratory at the University of Illinois at Urbana-Champaign, delivered N.R. Kamath Distinguished lecture titled "*Life and Random Algorithms*" on March 24, 2021.

Appointments

Prof. Rajesh N. Patkar has been appointed as Assistant Professor (Grade I) in the Department of Biosciences and Bioengineering w.e.f. January 5, 2021



Prof. Srineesh V. K. has been appointed as Assistant Professor (Grade II) in the Department of Civil Engineering w.e.f. January 18, 2021



Prof. Mrinal Kaul has been appointed as Assistant Professor (Grade I) in the Department of Humanities and Social Sciences w.e.f. January 18, 2021



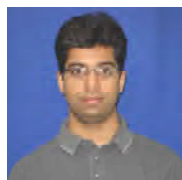
Prof. Raile Rocky Ziipao has been appointed as Assistant Professor (Grade I) in the Dept. of Humanities and Social Sciences w.e.f. January 18, 2021



Prof. Himadri Shekhar Dhar has been appointed as Assistant Professor (Grade I) in the Department of Physics w.e.f. February 15, 2021



Prof. Darshan Shah has been appointed as Assistant Professor (Grade I) in the Department of Mechanical Engineering w.e.f. March 1, 2021



Prof. Deepak Singh has been appointed as Assistant Professor (Grade I) in the Centre of Studies in Resource Engineering w.e.f. March 15, 2021



Retirements on January 31, 2021

Mr. M. Mohankumaran, Administrative Superintendent at IDC - School of Design, retired after 36 years of service



Retirements on February 28, 2021

Prof. Harkesh B. Singh, Department of Chemistry, retired after 37 years of service



Prof. Pratul K. Saraswati, Department of Earth Sciences, retired after 33 years of service



Mr. Shantaram D. Detke, Senior Multi-Skilled Assistant, Department of Chemical Engineering, retired after 40 years of service



Mr. Popat D. Jadhav, Senior Multi-Skilled Assistant, Centre of Studies in Resources Engineering (CSRE), retired after 37 years of service



Mr. Vasudev A. Haldankar, Senior Multi-Skilled Assistant, Dy. Director (Academic & Infrastructural Affairs), retired after 31 years of service



Retirements on March 31, 2021

Prof. Narendra G. Shah, Centre for Technology Alternatives for Rural Areas (CTARA), retired after 30 years of service



Prof. Nina Sabnis, IDC School of Design, retired after 13 years of service



Mr. Somnath Mahapatra, Sr. Cook, Centralized Hostel Management System (CHMS), retired after 40 years of service



Notification

Prof. Amit Agrawal has been appointed as Dean (IR) in the International Relations office w.e.f. January 01, 2021

Prof. Siddhartha Ghosh has been appointed as the Professor-in-Charge, Continuing Education Programme & Quality Improvement Programme (CEP/QIP) w.e.f. January 01, 2021

Prof. Kishore Chatterjee has been appointed as Head in the Department of Electrical Engineering w.e.f. January 11, 2021

Prof. S. Umasankar has been appointed as Head, Department of Physics w.e.f. January 28, 2021

Prof. Ramesh Singh has been appointed as Associate Dean-2 (IPS) and Chairman AAC-I & II w.e.f. March 19, 2021

Prof. Shobhna Kapoor has been appointed as Associate Warden Hostel no. 10 w.e.f. March 11, 2021

Prof. Deepankar Choudhury has been appointed as Head, Department of Civil Engineering department w.e.f. March 30, 2021

CEP courses scheduled during May 2021

Duration	Days	Course Title	Course Coordinator	Department
In House Programmes :				
3-5-2021	5 days	Refresher cum Orientation Programme For Rural Housing Engineers	Prof. Prakash Nanthagopalan	Civil Engineering
GIAN Courses :				
24-5-2021	5 days	Cognitive Human Factors and Advanced Sociotechnical Systems Safety	Prof. Vivek Kant	IDC School of Design

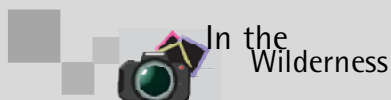


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by Mr. Sanjay Mohite

Campus Diary is edited and published by
Public Relations Officer,
IIT Bombay, Powai, Mumbai - 400 076.

Printed at IITB Printing Press

For Private Circulation Only.

Material for publication in Campus Diary
should reach PPR section by the 25th of
every month

(email : campusdiary@iitb.ac.in)

BOOK POST

