

IIT Bombay Celebrates 65th Foundation Day

The Indian Institute of Technology Bombay celebrated its **65th Foundation Day** on March 7, 2024 by honouring the contributions of its faculty members as well as alumni who have left their mark in their chosen fields of profession.

The foundation day ceremony commenced with a welcome address by the Director of IIT Bombay **Prof. Subhasis Chaudhuri**. In his welcome address, Prof. Chaudhuri highlighting the key milestones achieved by the Institute in the past 65 years said, *"The seed sown in 1958 has now grown into being one of the finest temples of learning in the world. Our efforts shall continue in making this Institute more participatory and impactful in coming years"*.



Director of IIT Bombay Prof. Subhasis Chaudhuri addressing the audience during the 65th Foundation Day



The Chief Guest of the function **Prof. Ajay Kumar Sood**, Principal Scientific Adviser, Government of India, urged the guests to aim towards moving from a service economy to a product economy and said, *"In order to achieve these goals, we all need to work together: academics, industry, start ups, MSMEs, Central and state governments, in the coming years"*.

Chief Guest of the function Prof. Ajay Kumar Sood, Principal Scientific Adviser, Government of India addressing the audience

The IIT Bombay Prof. S.C. Sahasrabudhe Lifetime Achievement Award recognizes outstanding individuals whose pioneering spirit and demonstrated inventiveness throughout their careers have improved society and inspired others. IIT Bombay conferred the **Prof. S.C. Sahasrabudhe Lifetime Achievement Award (2023-2024)** on **Prof. P. M. Mujumdar**, former Head of the Department of Aerospace Engineering (2008–11) and former Deputy Director (Finance and External Affairs) of IIT Bombay from 2015-2021, in recognition of his outstanding contributions as teacher, researcher and administrator, during the Foundation Day celebration.



(Retd.) Prof. P. M. Mujumdar, Department of Aerospace Engineering (L) receiving Prof. S.C. Sahasrabudhe Lifetime Achievement Award 2023-24



The Institute also honoured its faculty for their research achievements. The '**Prof. S.C. Bhattacharya Award for Excellence in Research in Pure Sciences (2023)**' was conferred on **Prof. Ruchi Anand**, Department of Chemistry, for her outstanding contributions in the area of *Structural Biology, Biochemistry and Biophysics*.

Prof. Ruchi Anand, Department of Chemistry, receiving 'Prof. S.C. Bhattacharya Award for Excellence in Research in Pure Sciences' 2023

The '**Prof. H. H. Mathur Award for Excellence in Research in Applied Sciences (2023)**' was conferred on **Prof. Rohit Srivastava**, Department of Biosciences and Bioengineering, for his outstanding contributions in the area of *Affordable point-of-care diagnostics, medical devices, Cancer nanomedicine, orthopaedic nanomaterials*.



Prof. Rohit Srivastava, Department of Biosciences and Bioengineering, receiving 'Prof. H.H. Mathur Award for Excellence in Research in Applied Sciences' 2023

The Institute recognised 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 for this year (2024) include:

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|---|-----------------------------------|
| * Prof. Anil Virkar | * Mr. Narendra Goliya |
| * Mr. Salil Donde | * Dr. Pratap Nair |
| * Mr. Nallicheri Vydianathan Tyagarajan | * Dr. Shridhar Bhalchandra Shukla |
| * Mr. Sanjay Jain | * Mr. Rajesh Jain |
| * Mr. Karthik Ganapathy | * Dr. Mukesh V. Khare |
| * Prof. Ashwin Arunkumar Seshia | * Mr. Kashyap Deorah |
| * Mr. Nakul Aggarwal | * Mr. Ritesh Arora |

Instituted in the year 2011, the Young Alumni Achiever Awards (YAAA) honours the alumni who have made outstanding achievements in their chosen field of work and are below 40 years of age. The awardees for the **Young Alumni Achiever Awards 2023** were:

- | | |
|-------------------------|---------------------------|
| * Dr. Alekh Agarwal | * Dr. Abhinav Kandala |
| * Prof. Karthik Shekhar | * Mr. Somay Vinayak Munde |

The function was attended by awardees, their families, Institute functionaries and invited dignitaries and was broadcast live on IIT Bombay's YouTube channel: [IITBombayOfficialChannel](https://www.youtube.com/channel/UCBOMBAYOFFICIALCHANNEL).



Presentation By Rakesh Mathur Research Awardees

The **Office of Dean (Research and Development)** organised a presentation by the recipients of the Rakesh Mathur Awards for Excellence in Research - 2023 of their work for the IIT Bombay academic community on March 16, 2023. The presentations were focused on the significance of the work leading to these research awards. **Prof. Sachin Patwardhan**, Dean (Research and Development) gave introductory remarks about the programme.

Details of presentations by the awardees are as follows:

Speaker:	Prof. Rohit Srivastava , Department of Biosciences and Bioengineering
Award:	Recipient of Prof. H.H. Mathur Award for Excellence in Applied Sciences 2023
Presentation Title:	Affordable Healthcare Technologies for India
Speaker:	Prof. Ruchi Anand , Department of Chemistry
Award:	Recipient of Prof. S.C. Bhattacharya Award for Excellence in Pure Sciences 2023
Presentation Title:	Strategies to Combat Antibiotic Resistance

Hon'ble Prime Minister Of India Shri Narendra Modi Inaugurates (Virtually) IIT Bombay Research Park Building And Lays Foundation Stone Of Other Institute Projects



(From L-R) Chairperson of the Board of Governors of IIT Bombay Dr. Sharad Saraf; Guest of Honour, Member of Parliament (Mumbai North-East) Shri Manoj Kotak and Director of IIT Bombay Prof. Subhasis Chaudhuri during inauguration of IIT Bombay Research Park Building and other projects

Hon'ble Prime Minister of India **Shri Narendra Modi** inaugurated (virtually) the **IIT Bombay Research Park Building** and also laid the foundation stone of Academic and Residential buildings at the Indian Institute of Technology Bombay on February 20, 2024.

IIT Bombay Research Park was constructed at a cost of Rs. 225 crores, utilizing Rs. 100 crores from the grant by the Ministry of Education, Rs. 67 crores from HEFA loan and Rs. 58 crores from IIT Bombay internal revenue generation. The Research Park is a G+14 floor building with 5 lakh square feet of built-up space.

The Hon'ble Prime Minister also laid the foundation stone of **Efficiency Apartments; Hostel 04; Academic Sciences Blocks for Chemistry and Chemical Engineering; Bio-School and Central Animal Facility; and Academic Block 1 & 2**. The total cost estimate is over Rs. 1120 crores for the foundation stone laying projects.

Addressing the audience, Hon'ble PM **Shri Narendra Modi** said, *"The government of today invests maximum expenditure for the modern education of the present and future generations"*.

The function at IIT Bombay was attended by the Guest of Honour, Member of Parliament (Mumbai

North-East) **Shri Manoj Kotak**; Chairperson of the Board of Governors of IIT Bombay **Dr. Sharad Saraf**; Director of IIT Bombay **Prof. Subhasis Chaudhuri**; Professor-In-Charge of the IIT Bombay Research Park Foundation **Prof. Swaroop Ganguly** and other Institute functionaries.

Director of IIT Bombay **Prof. Subhasis Chaudhuri** in his address said, *"IIT Bombay is extending the IITB Research Partnership program by investing in a dedicated facility, the IITB Research Park, where our industry partners can co-locate their researchers and staff in the IIT Bombay campus. The Research Park will be a hub for innovation and collaboration between academia and industry. It will be organised into clusters, in core and emerging areas such as Bio Engineering and Healthcare. Sustainability and Clean Energy, Semiconductors and Quantum Tech, Materials and Smart Manufacturing, eMobility, AI Robotics and automation, geospatial tech, etc. Each of these clusters will comprise, in addition to anchor corporate partners, startups from the IITB ecosystem in related areas and IITB translational research labs and facilities. This close proximity between researchers, corporates, MSMEs and entrepreneurs will result in spontaneous and vibrant collaboration between all these participants of the innovation ecosystem"*.



(From L-R) Chairperson of the Board of Governors of IIT Bombay Dr. Sharad Saraf; Guest of Honour, Member of Parliament (Mumbai North-East) Shri Manoj Kotak and Director of IIT Bombay Prof. Subhasis Chaudhuri during ribbon-cutting ceremony of IIT Bombay Research Park Building

“Early adopters included promising startups like Neodocs; as well as multinational corporates like UbiSoft, Murata and Applied Materials,” he added.

About IIT Bombay Research Park: The goal of IIT Bombay Research Park is to promote effective two-way interaction between IIT Bombay researchers and real-world problem solvers. Some of the key sectors envisaged as potential areas for collaboration are information and communication technology,

semiconductors, energy, chemical engineering and mechanical engineering. The vision of the Research Park is to enable Research and Development and collaboration with large companies, small and medium enterprises, and technology startups.

The entire event was broadcast live on the YouTube link: <https://www.youtube.com/watch?v=YfIWJMbKjPM>



325 Students Receive Degrees During 62nd Interim Convocation Ceremony At IIT Bombay



From (L - R) Chairperson of the Board of Governors, IIT Bombay Dr. Sharad Saraf, Chief Guest Prof. Satish K. Tripathi and Director Prof. Subhasis Chaudhuri on the dais during the 62nd interim convocation of the Institute



Chairperson of BoG, IIT Bombay Dr. Sharad Saraf addressing the audience



Chief Guest Prof. Satish K. Tripathi addressing the audience

The Institute of Technology Bombay awarded degrees to 325 students at the **interim session of its 62nd Convocation** held at the Institute's Convocation Hall on February 24, 2024.

At the interim session of 62nd convocation, **325** students were awarded **352** degrees, which included **209** PhD students (including dual degrees (MTech/ [MSc +PhD])). In addition, **143** degrees including **44** Executive MBA degrees were awarded to students of various other programmes.

The degrees were conferred upon those students who have completed all the requirements during the period from August 2023 to January 2024 and have requested for the degree to be awarded earlier than the 62nd Convocation.

Prof. Satish K. Tripathi, University at Buffalo, State University of New York, was the Chief Guest of the function. The function was presided by the Chairman of the Board of Governors, IIT Bombay **Dr. Sharad Kumar Saraf**. The Director **Prof. Subhasis Chaudhuri** gave away the degrees.

Addressing the graduates, **Prof. Tripathi** said, "This era is being driven by AI, blockchain, virtual reality, robotics, quantum computing, the Internet of Things and nanotechnology, among other innovations. It is characterised by the speed scope interconnectedness and global impact, from virtual assistant to small devices, to facial recognition and chat GPT. These technologies are fundamentally altering the way we work, do business and live. At the same time, the explosion of new information and technologies is expanding exponentially. The pace at



Director of IIT Bombay Prof. Subhasis Chaudhuri addressing the students



Student while receiving her degree

which these innovations are entering the market and the scope of their applications create extraordinary opportunities but also raise troubling concerns. On one hand, these powerful tools can engender tremendous goods by tackling pressing problems and enhancing quality of life for people around the world. However, in the wrong hands, they can give rise to wide-scale manipulation, deception and worse. Understand how to apply these resources to their best use to harness them for the social good that I would argue is the defining challenge of our time. And as I look out at you - our future leaders, I have every confidence you will leverage the knowledge that you have acquired at IIT Bombay to meet this challenge head-on. Society needs innovators like you - educated global citizens who can bring their disciplinary expertise to bear on complex issues”.

The Chairman of the Board of Governors, IIT Bombay **Dr. Sharad Kumar Saraf**, in his address encouraged the graduates to give back to their alma mater and society at large.

Congratulating the graduating students and their families, Director of IIT Bombay **Prof. Subhasis Chaudhuri** said, “It is your collective responsibility to contribute to the growth of the society. Stand up to the challenges of the society. You have been endowed with the critical thinking process, your engineering/ scientific skills to solve the problems of common people so that their life is lot better”.

Apart from the students and faculty members of the Institute, the ceremony was attended by the families and friends of the students.

The event was broadcast live on: <https://www.youtube.com/IITBombayOfficialChannel>



Graduating students taking pledge during interim convocation

Conference On Semiconductor Technologies



Commemorating the historic event of inauguration of the three semiconductor manufacturing facilities by Hon'ble Prime Minister **Shri Narendra Modi** on March 13, 2024, IIT Bombay conducted a conference titled **'Semiconductor Fabs are Coming'** on semiconductor technologies on the same day.

Deputy Director **Prof. KVK Rao** welcomed the audience and delivered the opening remarks. **Prof. Udayan Ganguly**, Professor-in-Charge, Centre of Excellence in Semiconductor Technologies (SemiX) outlined IIT Bombay's research, innovation and entrepreneurship efforts in semiconductors.

During this conference, several experts delivered expert talks. **Prof. Sunit Rikhi**, Visiting Professor of Practice, IIT Bombay, *ex-GM of Intel Foundry Services* delivered a talk on **"Is India Ready for the Fab it's been waiting for?"** Chief Guest **Dr. Gopi Chandran**, *Director (R&D) of Applied Materials India* delivered the keynote address on **"Semiconductor R&D: IITB-AMAT Partnership and the future"**. **Prof. Juzer Vasi**, Professor Emeritus also spoke on the road ahead in the field of semiconductors. A panel discussion on IITB's readiness towards our semiconductor journey was also held.

The panelists included **Prof. Saurabh Lodha** and **Prof. Kasturi Saha** (Department of Electrical Engineering), **Prof. Pradeep Dixit** (Department of Mechanical Engineering), **Prof. Srinivasan Ramakrishna** (Department of Chemistry), **Prof. Abhijeet Sangle** (Department of Metallurgical Engineering and Materials Science) and **Prof. Ravindra Gudi**, Dean (Alumni and Corporate Relations)

IIT Bombay Conducts Lectures On Nobel Prizes 2023



(From L-R) Prof. Vaijayanthi Sarma, Department of Humanities and Social Sciences; Prof. Upendra Bhandarkar, Associate Dean (Research and Development); Prof. Sachin Patwardhan, Dean (Research and Development); Prof. Rama Pal, Department of Economics and Prof. Ananda Amritmahal (Principal, Sophia College for Women, Mumbai) during Nobel Lectures 2023

The **Industrial Research and Consultancy Centre (IRCC)** organized the second session of lectures on Nobel Prizes 2023 on January 10, 2024. These lectures focus on the significance of the work leading to the award of this coveted prize and are presented at a level accessible to a literate audience. The first session of **Nobel Prizes 2023** lectures covering the categories Physics, Chemistry and Physiology/Medicine on was held on November 29, 2023.

Prof. Sachin Patwardhan, Dean (Research and Development), gave introductory remarks about the programme.

Category	Laureate(s) [Prof.] and Awarded work	Speaker [Prof.]
Economics	Claudia Goldin <i>"for having advanced our understanding of women's labour market outcomes"</i>	Prof. Rama Pal , Department of Economics
Literature	Jon Fosse <i>"for his innovative plays and prose which give voice to the unsayable"</i>	Dr. Ananda Amritmahal Principal, Sophia College for Women, Mumbai

The lectures were well-attended by faculty members, students and the staff. Prof. Patwardhan gave a vote of thanks to all the speakers and participants of the programme.

IIT Bombay Celebrates 75th Republic Day



Republic Day celebrations at the Institute's Gymkhana ground

The Indian Institute of Technology Bombay (IIT Bombay) celebrated the **75th Republic Day** on January 26, 2024. The celebration began with the unfurling of the National Flag by the Director **Prof. Subhasis Chaudhuri** at the Institute's Gymkhana grounds. IIT Bombay security staff and NCC saluted the National Flag. Prof. Chaudhuri addressed the gathering and conveyed his best wishes to the IIT Bombay community on this momentous occasion.

During the event, the Director awarded certificates to winners of an essay writing competition on **"Say no to corruption; commit to nation"** held during Vigilance Awareness Week 2023. Security Officers, guards and staff from IIT Bombay and NCC cadets were felicitated during the event. Certificates were also presented to students for securing prizes in the **"Words of Change"** creative writing competition organized by the **Gender Cell under the Elimination of Violence Against Women Pakhwada 2023**.

The celebrations were marked by wonderful performances filled with the spirit and fervour of the Republic Day celebrations by students of Aman Day Care Centre, Campus School, Kendriya Vidyalaya, IIT Bombay and NSS.

Winners of Vigilance Essay Competition 2023

EMPLOYEES

First Prize	Mr. Jitendra Kumar Jain	Central Library
Second Prize	Ms. Afreen Qamar Quraishi	IIT Campus School & Jr. College
Third Prize	Dr. Varsha Mahesh Kosta	IIT Campus School & Jr. College

STUDENTS

First Prize	Mr. Satyanarayana Reddy Karri, Fourth year, Dual Degree (B.Tech. + M.Tech.)	Department of Metallurgical Engineering and Materials Science
Second Prize	Ms. Malvika Jayakumar, Third Year, Ph.D.	Department of Humanities and Social Sciences
Third Prize	Mr. Mayank Rammohan Bradiya, Fifth year, Ph.D.	Department of Energy Science and Engineering

Mega Tulsi Plantation Drive



On the occasion of Republic Day, **NSS IIT Bombay**, in collaboration with **Team SHUNYA**, hosted a mega **Tulsi Plantation Drive** on January 26, 2024, with the aim of moving towards a more environmentally conscious and sustainable future. A total of 2000 tulsi saplings were planted within the premises of IIT Bombay.

Institute functionaries, including **Prof. S. Sudarshan**, Deputy Director (Academic and Infrastructural Affairs); **Prof. K.V. Krishna Rao**, Deputy Director (Finance and External Affairs); **Prof. Nand Kishore**, Dean (Administrative Affairs); **Prof. Anurag Garg**, Associate Dean-III (Infrastructure Planning and Support); **Prof. S.V. Kulkarni**, Department of Electrical Engineering and **Mr. Ganesh Borkhade**, Registrar, among many others participated in the drive.

Institute Hosts All IIT Registrar's Conclave 2024



The Indian Institute Of Technology Bombay organized a two-day **IIT Registrar's Conclave-2024** during March 15-16, 2024. The theme of the conference was '**Building World-Class University Administration**' and was attended by Registrars of 18 IITs.

On the first day, the Director of IIT Bombay **Prof. Subhasis Chaudhuri** addressed the Registrars, followed by a talk by **Prof. Partha P. Chakrabarti**, former Director, IIT Kharagpur on '*IIT System: Challenges and Strategies for Improvement*'. **Prof. Devang Khakhar**, former Director of IIT Bombay spoke on '*Enhancing Governance Systems*'. **Prof. K.V.K Rao**, Deputy Director (Finance and External Affairs) spoke on '*Funding Finance and Tax issues in the IIT System*'.

The session concluded with a panel discussion on the common issues faced by all IITs followed by an

interaction session on '*Issues related to Outsourcing and Labour Contracts*,' by **Shri Tej Bahadur**, Deputy Chief Labour Commissioner and his team.

On the second day, Padma Shri **Prof. Deepak Phatak** discussed strategies for improving efficiency in IIT administration. Hon'ble Governor of Maharashtra **Shri. Ramesh Bais** addressed the Registrars at Raj Bhavan, Mumbai, on March 16, 2024. The Governor advised the Registrars to make the administration ultra-modern and student-friendly. He expressed the need to create a safer atmosphere for students from rural, reserved backgrounds.

The conclave was organized by the Dean (Administrative Affairs) of IIT Bombay, **Prof. Nand Kishore** and the Registrar of IIT Bombay, **Mr. Ganesh Bhorkade**.

DSSE Celebrates A Decade Of Innovation And Entrepreneurship

The **Desai Sethi School of Entrepreneurship (DSSE)** celebrated its **10th anniversary** on January 31, 2024. The School was initially established in 2014 as a Centre through a donation from alumnus **Mr. Bharat Desai** with a vision to foster innovation and entrepreneurship on the campus and beyond through research, education, innovation and catalysing the practice of entrepreneurship. Today, the School has scaled its offerings from just one course for 189 students in 2014 to a bouquet of eleven courses for more than 1000 students annually.



Dr. Abhay Karandikar, Secretary, Department of Science and Technology, Government of India addressing the audience

The event commenced with a live-stream talk by **Dr. Abhay Karandikar**, Secretary to the Department of Science and Technology (DST), Government of India on the *role of Innovation and Entrepreneurship in nation-building*. This was followed by a speech from **Prof. Subhasis Chaudhuri**, Director of IIT Bombay, on IIT Bombay's vision and strategy and the role of entrepreneurship. **Mr. Rajesh Gopinathan**, former Chief Executive Officer of Tata Consultancy Services (TCS), who leads the Institute's efforts in Translational Research, was also welcomed.

Dr. Chintan Vaishnav, Mission Director, Atal Innovation Mission India, delivered the keynote speech on the evolving role of entrepreneurship education and academic incubators.

The audience engaged in a lively first-panel discussion moderated by **Prof. Devdip Purkayastha** of DSSE on '*Entrepreneurship Education – Building Future Leaders*'. The speakers included **Mr. Rajesh Gopinathan**, former CEO of Tata Consultancy Services; **Mr. Shrijeet Mishra**, Chief Innovation Officer of Aditya Birla Group; and **Ms. Anuradha Razdan**, Executive Director (ED), Human Resources (HR) and Chief Human Resources Officer (CHRO), Unilever South Asia.

Mr. Bharat Desai, Co-Founder of Syntel Inc. and DS Foundation, joined online to thank the DSSE team and felicitate the Institute functionaries for their tremendous support in the last ten years that helped the School reach where it is today.

The second-panel discussion, moderated by **Prof. Sankalp Pratap**, was on '*Entrepreneurship Ecosystem – Enabling Job Creators*'. The key speakers were **Mr. Ankit Mehta**, Co-Founder of Idea Forge; **Ms. Namita Dalmia**, Co-Founder of Enzia Ventures; and **Mr. Shibabrata Das**, Co-Founder of Atomberg.



On the occasion, **Prof. Ravindra Gudi**, Dean (Alumni and Corporate Relations), announced an endowment instituted by **Prof. Jagdish Sheth**, Emory University and his wife honouring the extraordinary leadership of **Prof. Anand Kusre** in setting Desai Sethi School of Entrepreneurship. The endowment will support two annual scholarships – one for the best student of the entrepreneurship school and another for a team or individual with the best idea for exploiting a techno-commercial opportunity.



Furthermore, **Prof. Krishna Kaliappan**, Dean (Strategy), felicitated IIT Bombay student participants who won awards, including a national first prize at the Smart India Hackathon, sponsored by the Govt's Ministry of Education's Innovation Cell, challenging Indian students to design solutions for real-time problem statements relevant for the country's progress.

The event ended with vote of thanks by **Prof. Anu Narasimhan**, Head, DSSE.

Institute Students Participate In Mera Pehla Vote Desh Ke Liye Campaign



Students of IIT Bombay took pledge to exercise their right of casting vote in the ensuing elections as part of Mera Pehla Vote Desh Ke Naam Campaign

Mera Pehla Vote Desh Ke Liye is a voting awareness campaign envisioned by **Hon'ble Prime Minister Shri Narendra Modi** to encourage Amrit Peedhi to step into the democratic arena for the first time, fueled by hope, responsibility, and love for the country. From being a spectator to becoming a participant in shaping the nation's future, the Mera Pehla Vote Desh Ke Liye campaign is calling on the youth of the country to come forward and cast their vote in the largest electoral process, the 18th Lok Sabha Election. As a part of the campaign, students of IIT Bombay pledged to vote in the upcoming elections.

'Distinguished Patent Holder' Honour For IIT Bombay

Commemorating the 75th Republic Day, Government of India invited various distinguished patent holders and inventors to acknowledge their ingenuity and substantial contributions in the field of science & technology, and raise the stature of India globally.

IIT Bombay is honoured to be recognised as a distinguished patent holder, for its contribution in generation and deployment of various Intellectual Properties, and playing an important role in the economic growth of the country.



Prof. Jayesh Bellare, Department of Chemical Engineering, IIT Bombay (fourth from right) along with Hon'ble Minister Shri Piyush Goyal (center) and others

On behalf of IIT Bombay, **Prof. Jayesh Bellare** from the Department of Chemical Engineering attended the Republic Day Parade at Kartavya Path, New Delhi on January 26, 2024. The event was followed by an interactive session with **Shri Piyush Goyal**, Hon'ble Minister of Commerce and Industry, Consumer Affairs, Food and Public Distribution and Textiles, and **Dr. Unnat Pandit**, Controller General of Patents, Designs and Trade Marks.

Institute is grateful to the Government of India for bestowing this recognition, and shall continue to make concerted efforts to achieve the objective of 'Atmanirbhar Bharat', through development and translation of indigenous technologies.

International Women's Day: Celebrating Empowerment And Achievement At IIT Bombay

On **International Women's Day**, **Gender Cell, IIT Bombay** welcomed noted actor **Ms. Ratna Pathak Shah** to share her experiences in conversation with **Institute Profs. Mazhar Kamran** (IDC School of Design) and **Mukta Tripathi** (Department of Chemical Engineering) on March 8, 2024.

The legendary actress, renowned for her iconic portrayal of Maya Sarabhai, a character who challenged societal norms, has consistently championed strong and multifaceted portrayals of women on screen. Her latest film "Dhak Dhak" further exemplifies this commitment.



Ms. Shah's responses focused on the societal impact of parenting, the evolution of gender roles and the changing landscape of women's roles in film and theatre. The interactive session that followed had many interesting questions from the engaged audience. During the curated Q&A session, Ms. Shah's often amusing and always well-articulated replies, truly celebrated female strength and a call to invest in women to build a more equitable future.

The programme was followed by a felicitation of women employees (superannuating between January 2024 and February 2025) for their dedication and service to the Institute and members of the IIT sports contingent who carried the Championship Trophy (Gold) at the recently held Inter-IIT Staff Sports Meet. Tokens of appreciation were given in recognition for such achievement.

The day served as a potent reminder that women are not just breaking barriers but are redefining them too. It was a day that left a lasting impression on the IIT Bombay community, inspiring all to embrace their strengths and to work towards a brighter tomorrow.

IIT Bombay Participates In InvenTiv 2024



Hon'ble Minister of Education
Dr. Dharmendra Pradhan interacting with
IIT Bombay student

The second edition of **InvenTiv 2024** was held in IIT Hyderabad during January 19-20, 2024. This event saw participation from all IITs along with representations from NIT, IISER, IIITs etc. Despite a large volume of entries, all 5 technologies submitted by IIT Bombay were accepted for display at the Fair. The participating technologies were:

*** Surya Shakti - Clean heating solutions for air and water (Prof. C. Subramaniam, Department of Chemistry and Prof. Sandip Saha, Department of Mechanical Engineering) - Theme: Defense and Aerospace**

*** Development of an indigenous Anti Hail Gun for preventing crop destruction (Prof. Sudarshan Kumar, Department of Aerospace Engineering) - Theme: Agriculture**



Director of IIT Bombay Prof. Subhasis Chaudhuri, IIT Bombay student and Prof. C. Subramaniam, Department of Chemistry during InvenTiv 2024

*** Handheld pulsed eddy current probe for non-invasive profiling of steel rebars embedded in RCC structures (iPEC) (Prof. Siddharth Tallur, Department of Electrical Engineering) - Theme: Industry 4.0**

*** Metal Hydride based Hydrogen Storage Systems and Solutions (Prof. Pratibha Sharma, Department of Energy Science and Engineering) - Theme: Sustainable Technologies (clean energy, climate change, e-mobility, etc.)**

*** Chimeric Antigen receptor T- cell (CAR-T) therapy for cancer cure (Prof. Rahul Purwar, Department of Biosciences and Bioengineering) - Theme: Affordable Healthcare**

IIT Bombay Celebrates Matribhasha Diwas



The Indian Institute of Technology Bombay celebrated **Matribhasha Diwas (International Mother Language Day)** on February 21, 2024 by organising a cultural programme at P.C. Saxena Auditorium. Over 25 participants, including students of IIT Campus School and members of various cultural associations of the Institute, performed different art forms during the cultural programme highlighting the rich heritage of their respective mother languages.

A video recording of the event is available at: <https://www.cdeep.iitb.ac.in/events.php>

IIT Bombay's Abhyuday Hosts Its Annual Social Festival



Abhyuday, the social body of IIT Bombay, held the 11th edition of its annual social festival, “**Advitya**”, during January 20-21, 2024, based on the theme “**A Serenade of Aspirations**”.

Advitya 2024 saw a series of impactful campaigns designed to make a tangible difference in the lives of those in need. From the Powai Lake Cleanup drive to the distribution of education kits for underprivileged children, and free cervical vaccinations for girls from marginalised backgrounds, these campaigns exemplified Abhyuday's dedication to promoting social welfare across all sectors. The event also offered enriching workshop from self-defense and leadership to emotional intelligence building, equipping attendees with valuable skills to navigate various challenges in one's personal and professional lives.

One of the highlights of this festival was the networking arena, which facilitated meaningful connections between corporate social responsibility (CSR) heads and non-governmental organisations (NGOs). Through panel discussions and interactive sessions, participants engaged in insightful conversations on relevant social issues, fostering the exchange of ideas and the cultivation of new partnerships.

Notable speakers such as **IPS Amit Lodha**, entrepreneur **Prafull MBA Chaiwala**, and actor **Gagan Dev Riar** inspired attendees with their stories of resilience and determination in adversity. Additionally, sessions on the circular economy by **Dr. Pankaj Das** and **Mr. Suresh Prabhu**, climate change conclave, sustainability and discussions on gender masculinity by **Mr. Nikhil Taneja** sparked dialogue and action on critical issues facing society today. Discussions on women's health was led by **Ms. Suchita Mukherjee** and **Dr. Taru Jindal**.

The event also featured engaging competitions such as Action Plan for social entrepreneurship, mock parliament, socio-trivia, debates, and hackathons, encouraging participants to channel their creativity and innovation towards meaningful social impact.

The crowning jewel of Advitya 2024 was undoubtedly the “*Satyameva Jayate*” session—a revamped version of the original show by **Aamir Khan** bringing together survivors, experts, and celebrity guests, raising awareness and inspiring change in the hearts and minds of the audience.

In conclusion, Advitya 2024 was a testament to the transformative power of collective action and empathy in sparking social consciousness and inspiring attendees to become catalysts for positive change in their communities and beyond.

SCAN Annual Symposium 2024



Mr. Sharad Sanghi and Prof. Samir Maji, IIT Bombay



Dr. Sangeeta Ravat, KEM Hospital, Mumbai



Prof. Anindya Ghosh Roy, NBRC, Gurgaon



Prof. Ranjith Padinhateeri, IIT Bombay



Prof. Neelanjana Sengupta, IISER Kolkata



Dr. Indrani Datta, NIMHANS, Bangalore

The **SCAN Annual Symposium 2024**, organized by the **SCAN IITB - Sunita Sanghi Centre of Ageing and Neurodegenerative Diseases** witnessed a significant gathering of experts, researchers and professionals dedicated to advancing the understanding and treatment of neurodegenerative diseases. Held during January 9-10, 2024 at the VMCC on campus, this symposium aimed to delve into the latest research, findings, and innovations related to neurodegeneration, addressing the pressing global issue that affects millions of individuals.

The chosen theme, ***“Recent Trends in Neurodegeneration,”*** aptly reflected the symposium’s commitment to exploring the ever-evolving landscape of neurodegenerative diseases. Participants had the opportunity to engage with eminent speakers and scientists who shared their insights and expertise, unraveling the various cellular and molecular mechanisms underlying these complex disorders. The two-day event provided a platform for attendees to gain a deeper understanding of the challenges posed by neurodegenerative disorders and to discuss groundbreaking discoveries that have the potential to reshape the approach to diagnosis, treatment and care.

The symposium concluded with a dynamic poster session, fostering engaging discussions and knowledge exchange. This interactive component allowed researchers to showcase their work, share novel findings, and receive valuable feedback from their peers.

IIT Bombay Hosts Hydrogen Workshop 2024

IITB Hydrogen Workshop, the 2024 edition of IRCC's Annual Conferences on Emerging Concepts [ICONS], was an unparalleled success, dedicated to illuminating the cutting-edge advancements in India's Hydrogen economy.

Held on February 16-17, 2024 at the Institute, this two-day extravaganza showcased an array of talks by the most eminent figures in hydrogen generation, storage, transportation and application, drawing from both

industry titans and academic luminaries. **Mr. Lalit Bohra**, Joint Secretary of Ministry of New & Renewable Energy (MNRE), graced the occasion as the chief guest, delivering an awe-inspiring vision for the widespread adoption of hydrogen technologies among the masses in India.

Under the leadership of the Conveners **Prof. Pratibha Sharma** (Department of Energy Science and Engineering, IIT Bombay) and **Prof. Arnab Datta** (Department of Chemistry, IIT Bombay), the workshop included insightful addresses by **Dr. V. K. Saraswat** from NITI Aayog (National Institution for Transforming India); **Dr. Ashish Lele** from National Chemical Laboratory (NCL) Pune; **Dr. Kanakasabapati Subramanian** from Ashok Leyland; **Dr. Sumon Roy Choudhary** from Naval Materials Research Laboratory (NMRL); **Dr. Sunita Satyapal** from US Department of Energy (DoE); **Dr. Anita Gupta** from Department of Science & Technology (DST) along with many other speakers who shared their invaluable experiences in the realm of Hydrogen production, storage and utilization. The workshop also included captivating lectures by experts from Indian Oil Corporation Limited (IOCL), Tata Consulting Engineers (TCE), Adani, Cummins, Bharat Petroleum Corporation Limited, TATA Steel, Reliance, John Cockerill and others.

The exhibition segment showcased groundbreaking innovations ranging from type-4 hydrogen cylinders to hydrogen-based two wheelers, further illustrating IIT Bombay's prowess in pioneering hydrogen-centric solutions.



National Cryogenic Electron Microscope Facility Inauguration

Prof. Abhay Karandikar, Secretary of Department of Science of Technology (DST) and CEO of Anusandhan National Research Foundation, Government of India **inaugurated the National Cryogenic Electron Microscope facility of IIT Bombay** on March 7, 2024. He was accompanied by **Prof. Subhasis Chaudhuri**, Director of IIT Bombay, **Prof. Subramaniam** from the University of British Columbia, Canada and **Prof. Shekhar Mande**, Distinguished Professor, Savitribai Phule Pune University, Former DG-CSIR. The inauguration was also graced by **Prof. KVK Rao**, Deputy Director (FEA), heads of various departments of IIT Bombay, and national and international scientists working in Structural Biology and allied fields.



The facility houses the Vitrobot Mark IV, Leica's Cryo-Ultramicrotome and high-pressure freezer, a screening 120 kV Cryo-EM (Talos L120V), and the 300 kV Krios G4 equipped with a Biocontinuum Energy filter and the Gatan K3 detector. IIT Bombay's facility is one of the four national facilities supported by SERB and is the first to be inaugurated.

The facility will cater to the scientific needs of the nation by providing access to cutting-edge technology, thereby allowing us to make a positive impact on the scientific landscape of the world.

Students Attend 'Pariksha Pe Charcha' 2024

Students of **KV IIT Bombay** attended the **7th edition of "Pariksha Pe Charcha"** on January 29, 2024. Their day began on a high note, as they explored the keys to exam triumph and life's adventures through various insights shared by **Hon'ble Prime Minister of India Shri Narendra Modi**.



KV IIT Bombay as a zonal coordinator hosted a drawing competition on January 23, 2024 at its campus for school children as part of 'Pariksha Pe Charcha' 2024

IIT Bombay Collaborates With Tower Research Capital

In a strategic **CSR partnership**, **IIT Bombay** has joined forces with **Tower Research Capital** to establish the '**Tower Research Capital Machine Learning for Social Good Lab**' at the Institute. This facility aims to harness AI/ML methods for providing extensive hands-on education in Computer Science and Engineering (CSE).

This collaboration targets the pressing issue of employability within the CSE domain, exacerbated by a deficiency in practical skills and disparities in gender and economic backgrounds. Leveraging IITB's proprietary ed-tech platforms, this initiative aims to deliver highly practical online degree programs, standalone courses, and certification series tailored specifically for CSE students.

Prof. Kameswari Chebrolu, Principal Investigator, Tower Research Capital Machine Learning for Social Good Lab, expresses, *"Leveraging IITB's proprietary ed-tech platforms and AI/ML models curated from extensive data collection, this initiative aims to deliver highly scalable, practical online degree programs, standalone courses, and certification series tailored specifically for CSE students. We are grateful to Tower research for their generous grant, which empowers us to conduct educational outreach programs that will positively impact the lives of many aspiring students in the country and also will help us develop cutting-edge AI/ML models in the ed-tech sector"*.



Design Thinking Studio Inaugurated At IIT Bombay

The **Design Thinking Studio** at IDC School of Design, IIT Bombay, housed in the Rahul Bajaj Technology Innovation Centre (RBTIC) Building, was inaugurated on February 1, 2024 by the Director **Prof. Subhasis Chaudhuri** in the presence of Deputy Director (Academic and Infrastructural Affairs) **Prof. S Sudarshan**; Dean (Academic Programmes) **Prof. Avinash Mahajan**; Associate Dean (Academic Programmes) **Prof. Suvarn Kulkarni** and Head of IDC School of Design **Prof. Anirudha Joshi**.

The Studio been established to provide an immersive design education experience, accommodating up to 180 students simultaneously.

This innovative studio stands out as a unique learning space, combining a large collaborative classroom with a well-equipped making zone featuring 3D printers, laser cutting machines, hand tools, workbenches and more. This collaborative



learning environment has enabled IDC to offer the DE 250 - Design Thinking for Innovation, a HASMED course, to approximately 1350 second-year BTech students. The course is currently being conducted in eight batches, scheduled every Monday, Tuesday, Thursday, and Friday from 2 pm to 5 pm and 5:30 pm to 8:30 pm. Students engaging in this course will explore a user-centric approach to designing and innovating products.

During the inauguration, **Prof. Anirudha Joshi**, Head of IDC, presented the IDC's plan for HASMED courses and expressed gratitude to the institute functionaries for their support in bringing this studio to fruition.

Prof. Nishant Sharma, the main instructor for the course, highlighted the state-of-the-art facilities and elaborated on the pedagogy of collaborative hands-on teaching, emphasising its effectiveness in teaching a large number of students.



IIT Bombay Partners With Oracle To Empower Women In STEM



IIT Bombay's partnership with Oracle has provided a strong fillip to its endeavour of making world-class education accessible to India's underserved deserving youth. This partnership is particularly focused on advancing STEM education for girls and strengthening women's leadership in Science and Technology. First-ever initiative by any corporate, this generous contribution from Oracle has helped IIT Bombay in supporting scholarships for undergraduate girl students and build the next cadre of women leaders in STEM.

Institute is proud to share that Oracle's support towards the Merit & Means Scholarship has empowered 153 underserved female students in FY24

at IIT Bombay, enabling them to pursue their undergraduate degrees without any financial hindrance.

Speaking about this milestone, **Prof. Subhasis Chaudhuri**, Director, IIT Bombay said, "Oracle's dedication to empowering women in STEM resonates with the Institute's mission. This contribution from Oracle not only exemplifies their dedication to supporting education but also underscores the importance of industry-academic partnerships in driving societal impact. On behalf of IIT Bombay, I extend our deepest gratitude to Oracle for their visionary leadership and unwavering support".

Secretary of Ministry of Steel Visits IIT Bombay



Shri Nagendra Nath Sinha, IAS, Secretary of Ministry of Steel, Government of India visited IIT Bombay on February 29, 2024 to discuss various collaborations to further increase the research and industry use of steel in India.

Prof. Subhasis Chaudhuri, Director of IIT Bombay, along with Head, Department of Civil Engineering **Prof. Deepankar Choudhury** and Professor of Practice in Department of Metallurgical Engineering and Materials Science **Prof. Sanjay Chandra** interacted with Ministry of Steel during their visit.

Inauguration of C1973 EV Power Train Laboratory

IIT Bombay is dedicated to bolstering India's quest for self-reliance in Electric Vehicle (EV) manufacturing. On February 8, 2024, the Institute advanced its commitment with the **inauguration of the C1973 EV Power Train Laboratory** during the batch's Golden Jubilee reunion. This initiative, powered through the generous contribution of the Class of 1973, envisions transforming research and innovations in the EV space at IIT Bombay.



The vibrant occasion attracted several attendees from industry and academia. **Prof. Sandeep Anand**, Principal Investigator, EV Power Train Lab delivered a compelling presentation on the EV Lab's immense potential to shape India's electric vehicle landscape. The event also honoured IIT Bombay's faculty for their significant contributions to research and academia with the **Faculty Awards for Research Excellence (FARE)**, a pioneering initiative established at the Institute, by the Class of 1973. A total of 16 faculty members were conferred with this award. FARE aims to cultivate a vibrant research culture and is an initiative focused on recognising and incentivising the research of younger faculty at IIT Bombay.

Sr. No.	Professor Awardee	Department
1	Prof. M.J.N.V Prasad	Department of Metallurgical Engineering and Materials Science
2	Prof. Shyamprasad Karagadde	Department of Mechanical Engineering
3	Prof. Sandeep Anand	Department of Electrical Engineering
4	Prof. S. Akshay	Department of Computer Science and Engineering
5	Prof. Abhijit Majumder	Department of Chemical Engineering
6	Prof. Amritanshu Shrivastav	Environmental Science and Engineering Department
7	Prof. Zakir Rather	Department of Energy Science and Engineering
8	Prof. Biplab Banerjee	Centre of Studies in Resources Engineering
9	Prof. Indu J	Department of Civil Engineering
10	Prof. Manjesh Hanawal	Industrial Engineering and Operations Research
11	Prof. Sai Vinjanampathy	Department of Physics
12	Prof. Chandra M.R. Volla	Department of Chemistry
13	Prof. Prakriti Tayalia	Department of Biosciences and Bioengineering
14	Prof. Bata Krishna Das	Department of Mathematics
15	Prof. Radeef Chundakkadan	Department of Economics
16	Prof. Ahonaa Roy	Department of Humanities and Social Sciences

The Institute extends heartfelt congratulations to the Class of 1973 for achieving this remarkable milestone and expresses sincere gratitude to the batch for their generous contribution to their alma mater!



Celebration of National Science Day

IIT Bombay celebrated **National Science Day** to commemorate the discovery of the 'Raman Effect' by Sir C.V. Raman, an Indian physicist for which he was awarded the Nobel Prize in Physics in 1930.

As part of this celebration, IIT Bombay organized lectures on February 28 by **Prof. Samir Maji**, Department of Biosciences and Bioengineering, who delivered an informative discourse on "*Mechanism and development of blood tests for Parkinson's disease*" and **Prof. Varun Bhalerao**, Department of Physics, presented an enlightening lecture on "*Ultimate Alchemy: How does the Universe create gold?*".



The talks highlighted the work being done by the professors and featured their innovative discoveries. An effective Q&A session that followed the presentations gave the attendees valuable insights, making the event successful.

AAU Delegation Visit IIT Bombay



A senior delegation from the **Association of American Universities (AAU)** visited IIT Bombay and interacted with Institute functionaries on February 23, 2024. **Prof. Barbara Snyder**, President AAU and **Prof. Subhasis Chaudhuri**, Director IIT Bombay discussed innovation and collaborative research between AAU member universities and IIT Bombay. Engagements in these areas will strengthen cooperation between IIT Bombay and United States universities.

Bangladeshi Youth Delegation Visit IIT Bombay



A 100-member Bangladeshi youth delegation visited IIT Bombay on March 2, 2024. The primary objective of this programme was to foster the exchange of ideas, values and culture among the youth of India and Bangladesh, promoting international understanding.

IIT Bombay-India-US Consulate Meeting



US Consul General **Mike Hankey** visited IIT Bombay to learn about their initiatives on cybersecurity and climate action on March 13, 2024. He was impressed by the Trust Lab that works towards the development of a secure and trustworthy digital environment, as well as the Green Energy and Sustainability Hub that aims to accelerate the transition to sustainable sources of energy. He also discussed avenues for US-India academic collaboration to promote innovation in emerging technologies.

Institute Cow Shelter Inaugurated After A Facelift

The newly refurbished **Dharsh Gaushala** in the campus of Indian Institute of Technology Bombay was inaugurated on January 22, 2024 by **Ms. Ashwini Bhide**, Additional Municipal Commissioner (Brihanmumbai Municipal Corporation) and Managing Director [Mumbai Metro Rail Corporation (MMRC)] and **Prof. Subhasis Chaudhuri**, Director, IIT Bombay in the presence of **Prof. S. Sudarshan**, Deputy Director (Academic and Infrastructural Affairs); **Prof. K.V. Krishna Rao**, Deputy Director (Finance and External Affairs); **Dr. Gopal Rai**, IIT Bombay alumni along with his family members;



Prof. Vedagiri Perumal, Associate Dean – 1 (Infrastructure Planning and Support); **Prof. Anurag Garg**, Associate Dean – 3 (Infrastructure Planning and Support); **Mr. Ganesh Bhorkade**, Registrar; **Mr. Sudhir S. Bhawe**, Convener, and other members of the Cattle Management Committee. The ceremony was attended by Deans, faculty, officers, students, staff and campus community.

This shelter was constructed with the generous contribution from Dr. Gopal Rai, alumni through his company M/s. Dharendra Group of Companies (DGC). Since December 2018, the shelter was managed in a temporary shed in the hostel area.

This shelter houses the cows and calves. **Nandishala**, a separate arrangement for the bulls, is located in the hostel area. This initiative has been successful in avoiding human-animal conflict and in restricting in the free movement of the cattle in the academic, residential and hostel areas. This has also taken care of the cattle safety and all their requirements. The day-to-day activities of the shelter are managed by an NGO **Shree Sarveshwar Seva Sahkar Sanstha**. The Cattle Management Committee and the Cattle Welfare Group monitors the activities here with the help of volunteers.

The Chief Guest and other attendees appreciated this unique initiative in the campus.



IIT Bombay Signs MoU with MILIT Pune



IIT Bombay signs MoU with **Military Institute of Technology (MILIT), Pune** during 12th Raising Day of MILIT.

The MoU paves the way for joint training programs and collaborative projects. This MoU will help the **Technocraft Center for Applied Artificial Intelligence (TCA2I)** fulfill its commitment of taking AI benefits to the defense sector.

Trace Fossil Named After Retired Institute Professor



A team of researchers led by **Ms. Mohuli Das** and her PhD mentor **Prof. Sudipta Dasgupta**, Department of Earth Sciences, IIT Bombay, has discovered a ca. 50-million-year-old new species of trace-fossil in Kachchh: **"Nummipera saraswatii"**. This fossilized relic reveals a unique behaviour of a group of burrowing creatures at the bottom of a prehistoric sea. For both protection and sustenance, the burrowers meticulously selected certain specific "shells" of foraminifera, a unicellular organism, and intricately designed walls of their passageways through sediments.

Recently accepted for publication by the International Ichneological Association in their journal *Ichnos*, this discovery pays deep respect to **(Retd.) Prof. Pratul K. Saraswati**, a former Professor at IIT Bombay and a renowned micropalaeontologist with a career spanning four decades.

<https://doi.org/10.1080/10420940.2024.2304292>

E-Cell Organizes 19th Edition of E-Summit

E-Cell hosted the 19th edition of **E-Summit**, IIT Bombay's annual entrepreneurship summit, during February 3-4, 2024. The event drew participants from across the country, including entrepreneurs, corporates, venture capitalists, investors, media personalities, students, academicians and aspiring entrepreneurs, making it a national event. The two-day event saw a massive footfall of 40000+ individuals, who came together to empower the entrepreneurship ecosystem of India.



A series of speaker sessions with esteemed personalities included **Arjun Malhotra**, Co-founder HCL Technologies; **Rajesh Gopinathan**, Former CEO, TCS Head of Entrepreneurship, IIT Bombay; **Mr. Azhar Iqbal**, Founder, Inshorts; **Dr. Tanu Jain**, Former Bureaucrat; **Mr. Bhavish Aggarwal**, Co-Founder, Ola; **Mr. Amit Bhadana**, Director/ Writer/ Content Creator; **Mr. Ashish Chanchlani**, Content Creator; **Abhi and Niyu**, Content Creators; **Mr. Ashutosh Gupta**, Head, LinkedIn India; **Mr. Ankit Bose**, NASSCOM head of AI; **Mr. Sanjeev Kapoor** and **Ms. Shipra Khanna**, Celebrity Chefs; **Mr. Rajat Sharma**,



Chairman, India TV, among others. Their talks motivated and provided valuable insights to young, new and budding entrepreneurs. E-Summit featured a variety of events, including workshops, networking, on-spot funding events, competitions, and a startup expo such as TTMM (The Ten Minute Million), Networking Arena (NA), Seedstars, I-Hack, Incubators Summit, Startup Expo, RND Conclave, Internship and Job Fair, and numerous others.



Book Discussion On The Novel 'Manas Ka Hans'

On January 25, 2024, the **Hindi Cell and Electronic Theses and Dissertation Cell of Central Library** jointly organized a literary (book) discussion (Pustak Charcha) on the novel ***Manas Ka Hans***, authored by **Amritlal Nagar**. The event commenced with the lighting of a traditional lamp and the recitation of Saraswati Vandana. **Dr. Ranjit Kumar Das**, Assistant Librarian (Selection Grade), hosted the programme. **Dr. Vinod Kumar Prasad**, Senior Assistant Registrar, introduced the novel to the audience, while **Mr. Raju Kumar Shaw**, Administrative Superintendent (Hindi Translator), introduced the author.



Esteemed dignitaries graced the occasion, including **Prof. Nand Kishore**, Dean (Administrative Affairs), who delivered the presidential address. **Prof. S.V Kulkarni**, former Dean (Administrative Affairs), briefed the audience on Goswami Tulsidas and extended best wishes to the organizers. He also inspired the participants to maintain a culture of learning.

Other notable participants included **Chief Guest Prof. Sachin Gapat**, Department of Hindi, University of Mumbai; IIT Bombay functionaries **Prof. Ashutosh Kumar**, Department of Biosciences and Bioengineering; **Mr. Ajay Prasad**, Deputy Registrar (Accounts Section); **Ms. Vaishali Bahulkar**, Hindi Officer and **Mr. Anmol Jain**, PhD Student and General Secretary (Academic Affairs).

The event was a resounding success with the audience finding it engaging and enriching. The programme concluded with Ms. Vaishali Bahulkar proposing the vote of thanks.



Hindi-Cell Organises Hindi Workshop

The **Hindi Cell** organized a **Hindi workshop** for the Institute staff on February 15, 2024. **Mrs. Gargi Gadgil**, Assistant Director and Head of Office, Hindi Teaching Scheme, Department of Official Language, Ministry of Home Affairs, Navi Mumbai was the speaker of this workshop. During the course of the workshop, she gave a brief overview of the various official terminology and phrases in Hindi to the participants. The objective of the workshop was to encourage the staff members to use Hindi in official work.

Research in focus

New study uses mathematical analysis of walking patterns for early detection of Parkinson's disorder.

Parkinson's disease (PD) is a neurodegenerative disorder affecting neurons in the brain. Named after James Parkinson, who first described the condition in 1817, PD is characterised by the progressive degeneration of dopamine-producing neurons in the brain called dopaminergic neurons. Dopamine is a hormone and a neurotransmitter – a chemical that allows neurons to talk to each other. Dopamine plays a crucial role in coordinating controlled movements of the muscles, as well as regulating other functions like mood, memory, sleep, and learning. A decrease in dopaminergic neurons, and consequently in dopamine, can affect an individual's movement as well as other functions.

An insidious disorder, early symptoms of PD are particularly hard to spot. Many individuals remain undiagnosed until symptoms become conspicuous and severe, making treatment far more challenging at this advanced stage of PD. The hallmark symptoms of Parkinson's disease include tremors, rigidity of muscles, slowness of movement, and postural instability. As the disease progresses, individuals may also experience difficulties with balance, coordination, and a range of non-motor symptoms such as sleep disturbances, mood changes, and cognitive impairment.

The latent signs of PD start intermittently, and progressively become more consistent as the disease develops over time. By the time symptoms manifest, around 50% to 80% of dopaminergic neurons have already degenerated. This makes the initial diagnosis notoriously difficult but remarkably crucial in mitigating the negative impacts later on.

Now, in an advancement in early PD detection, researchers from the Indian Institute of Technology, Bombay (IIT Bombay) and Monash University, Australia have proposed an innovative method that allows the earliest and simplest way to detect PD, even before the patients show any obvious symptoms. The study proposes analysing slight differences or inconsistencies in the walking patterns of individuals and using well-established mathematical tools to detect PD.

Walking Towards A Solution For Early Parkinson's Detection



PD primarily manifests as a loss of control over body movements or motor functions such as walking, talking, and gripping objects. Based on this knowledge, the researchers hypothesise that there could be subtle and intermittent differences over time in the way individuals affected by PD walked. They analysed the walking pattern, known as 'gait' data, from patients using an algorithm called Dynamic Time Warping (DTW). DTW is an algorithm that allows comparison between two temporal sequences (events happening over time), like a person walking, writing or speaking. *"DTW in general is an algorithm to find similarity between two temporal sequences which may vary in speed. For eg. the same person walking at different speeds,"* explains **Ms. Parvathy Nair**, a doctoral student at the IIT Bombay-Monash Research Academy and the lead author of the study. She was guided by **Prof. Maryam Shojaei Baghini**, a professor at IIT Bombay, and co-advised by **Prof. Hoam Chung** from Monash University.

While comparing gait data using DTW, any minor, intermittent differences between any pairs of cycles of the same event, show up as a high difference compared to other pairs. *"A disturbed gait is the most common, debilitating symptom of PD. Hence, we developed a generic algorithm (DTW) to detect the intermittent gait disturbances that may appear due to any early-stage symptom,"* adds **Ms. Nair**.

Next, using a mathematical technique called K-means clustering, the data is organised into clusters, which allows for the extraction of identifiable features for each individual being tested based on the DTW data. Ms. Nair explains, *"These final features are fed to a simple logistic regression (a statistical model) to easily and successfully detect early PD symptoms, which was reported as challenging using conventional statistical features".* She adds, *"In our algorithm, the feature extraction using DTW and K-means is performed*

separately for each subject to avoid any effects or outliers due to variations in the style and speed of walking in different people".

The researchers tested their model on a total of 166 participants, where 83 were in the early stages of PD, 10 participants were in the middle stages, and 73 were healthy individuals considered as the control group. They used gait data of the patients from three different studies which has been compiled in a database named Physionet database. They found that their model predicted PD in the test subjects at an impressive 98% prediction accuracy, where 89% of the patients were in the early stages of PD. Moreover, since the technique used is generic, the researchers believe that the method could also be used to detect other neurodegenerative disorders, where motor functions are affected.

"There are still many early motor symptoms of PD, which are not visually observable but correlate with many fine details of the human body movements. Choice of the right function and the rightly positioned sensors are the key and are a part of the ongoing research. Outputs of such wearable sensors, to be collected on a timely basis along with the repeatability pattern analysis, will open more avenues towards early detection of PD. We are continuing the research in this direction," remarks **Prof. Maryam Shojaei Baghini**.

The key to combating Parkinson's lies in early detection. Though the disease is incurable, early diagnosis can assist medical practitioners in initiating the right treatment procedures, thus reducing the severity of symptoms in later stages. In addition, early treatment could potentially help in preventing the manifestation of classical motor symptoms, enhancing the patient's quality of life and substantially lowering treatment costs.

Article written by: Dennis C. Joy

Image/ Graphic Credit: Freepik, Nair et al. 2023, Scientificlly

Link to published work: <https://journals.sagepub.com/doi/10.1177/09544119231197090>

Conferences/ Workshops

The **Department of Economics, IIT Bombay** hosted an international conference on “*Meeting of Young Minds In Frontiers of Economics*” during February 20-22, 2024. HoD **Prof. K. Narayanan** was the convener.

Industrial Engineering and Operations Research, IIT Bombay organised a one-day workshop on “*Cybersecurity for Critical Infrastructure Theme: 5G Networks*” on February 1, 2024. During the workshop, **Vajra**, an indigenous tool for endpoint management, detection and response was launched. **Prof. Manjesh K. Hanawal, PiC, Technocraft Centre for Applied Artificial Intelligence (TCAAI)** was the convener for the workshop. For more details about the project: www.getvajra.com.

Industrial Engineering and Operations Research (IEOR), IIT Bombay conducted a two-day workshop during February 5-6, 2024 on “*System Dynamics Theory and Practice*”. **Prof. Jayendran Venkateswaran, IEO, IIT Bombay** and **Prof. Om Damani, Department of Computer Science and Engineering** were the organisers from IIT Bombay.

The **Centre for Technology Alternatives for Rural Areas (C-TARA)** and the **Department of Humanities and Social Science (HSS) at IIT Bombay** organised a two-day workshop on ‘*Compensatory Afforestation: Critical Challenges in the era of Climate Change*’ during February 9-10, 2024. The workshop was in collaboration with the Institute of Development Policy, University of

Antwerp, and the Korbel School of International Studies, University of Denver. This event was a part of the initiative for Seed funding for Collaboration and Partnership Projects (SCPP) supported by the Institute of Eminence (IOE) funds at IIT Bombay. **Prof. Pankaj Sekhsaria, C-TARA** and **Prof. Sarmishta Pattanaik, HSS** were the organisers.

SAIF/ CRNTS, IIT Bombay organised three workshops convened by HoD **Prof. Suparna Mukherji** as follows:

a) *Electron Spin Resonance (ESR) Spectroscopy* workshop, funded by IOE (Outreach and Visibility) grant, was held on February 22, 2024

b) Thermal Analysis Techniques titled “*Thermogravimetric/ Differential Thermal Analysis (TGDTA) and Differential Scanning Calorimetry (DSC)*” on March 13, 2024

c) *Dynamic Mechanical Analysis (DMA)* workshop on March 20, 2024.

Society For Innovation and Entrepreneurship (SINE), IIT Bombay organised a workshop on ‘*Overview of Medical Device and IVD Regulation in India*’ on March 4, 2024. **Ms. Meena Dalal, Founder and CEO at TrialGuna, Comprehensive Clinical Research Solution, an entrepreneur and a mentor** was the speaker of the workshop. **Prof. Santosh Gharpure, Department of Chemistry and PiC of SINE** was the convener.

The Fire and Safety Section, Office of Dean (IPS) at IIT Bombay organised a workshop on the theme “*Safety Harmony: Fostering a Safety Culture*

Within IIT Bombay” on March 4, 2024.

The **Centre of Semiconductor Technologies (Semix), IIT Bombay** organized a workshop on “*High-Performance Wide Band-gap Semiconductor Devices*” on March 7, 2024. The workshop included a talk titled “*Wide/ Ultrawide Bandgap Next Generation RF and Power Devices*” by **Professor Martin Kuball, Royal Academy of Engineering Chair in Emerging Technologies at the University of Bristol**. **Prof. Dipankar Saha, Department of Electrical Engineering, IIT Bombay** was the organiser for the workshop.

The **Wadhwani Research Centre for Bioengineering (WRCB), IIT Bombay** organised a one-day workshop titled “*Intellectual property driven research and development*” on March 16, 2024. The workshop was conducted by **Dr. Raj Hirwani, a leading expert in the field of technology management and entrepreneurship, along with Dr. Mohan Kulkarni, Emeritus Scientist at CSIR URDIP and Dr. Sangeeta Telang, Senior IP Analyst, Novonosis**. **Prof. Debjani Paul, Department of Biosciences and Bioengineering** was the professor in-charge of this workshop.

Society For Innovation and Entrepreneurship (SINE), IIT Bombay organised a workshop titled “*IPR: IP Protection, Monetization, and Transaction*” on March 27, 2024. **Mr. Rahul Kapoor, Managing Partner of the Silicon Valley Office at Morgan, Lewis & Bockius LLP, was the speaker**. **Prof. Santosh Gharpure, Department of Chemistry and PiC of SINE** was the convener.

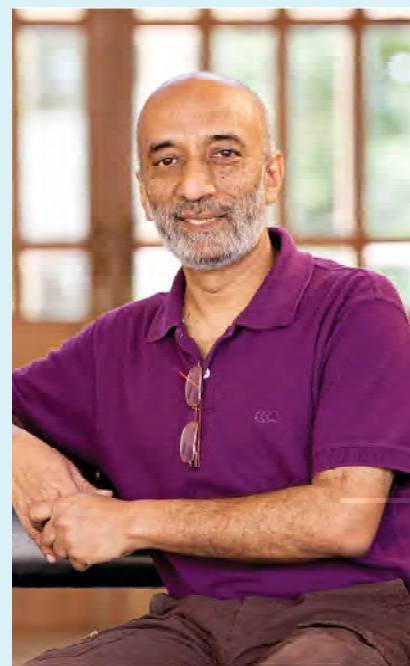
Institute Colloquium / Lectures



Prof. Ashok J Gadgil, Distinguished Chair Professor of Safe Water and Sanitation in CEE, Professor of Civil and Environmental Engineering, UC Berkeley and Faculty Senior Scientist, Lawrence Berkeley National Laboratory (LBNL), delivered the Institute colloquium titled *"Development Engineering - my journey my learnings"* on January 30, 2024



Dr. Sirish Shah, PhD, FCAE, FCIC, FIEEE, Emeritus Professor, Department of Chemical and Materials Engineering, University of Alberta, delivered the Institute talk titled *"Reimagining Systems Science in the era of AI and ML"* on February 7, 2024



Prof. Sriram Ramaswamy, Honorary Professor, J C Bose National Fellow, Department of Physics, Indian Institute of Science Bangalore, delivered the Institute colloquium titled *"Active Matter Today and Tomorrow"* on February 21, 2024

Student News



The PhD thesis of IIT Bombay student **Dr. Vijay Kanchetla** has received the **Top GroundBreaking Research Award** in the **Nationwide KPIT Shodh competition** during March 2024.

Dr. Kanchetla is the first PhD student from the aiCAS lab of **Prof. Rajesh Zele**. Together,

they worked on the development of *India's first navigational RF receiver chip - Dhruva in 65nm CMOS technology*. This chip is used for India's NAVIC (Navigation with Indian Constellation) and all other worldwide navigation standards.

The KPIT Shodh Award is a platform for PhD researcher/ advisor to submit their thesis work and win awards for outstanding translational research in the field of advanced technologies. The award was given away by Padmavibhushan **Dr. R. Mashelkar**, Director General (Aeronautical Systems) in DRDO **Dr. Tessa Thomas** and KPIT CEO **Ravi Pandit**.



IIT Bombay Racing Team recently excelled at **Formula Bharat 2024**, emerging as the **overall champions in the Electric Vehicle Category**. The team outshone 41 other teams from across India and garnered several accolades at the event.

In the Electric category, the team secured the first place overall and also emerged victorious in Static events, bagging the first place. In the Cost Event, the team came in second place, while in Vehicle Dynamics (VED), they secured the third place. Additionally, the team also received a special award for the best control system. The team was led by their Faculty Advisor **Prof. Sandeep Anand** (Department of Electrical Engineering).

Awards and Distinctions

Prof. Sarika Mehra, Department of Chemical Engineering, has been invited to join the Editorial Advisory Board of the American Chemical Society (ACS) journal *ACS Infectious Diseases*.

Prof. Amit Agrawal, Department of Mechanical Engineering, has been selected as an **J.C. Bose Fellow**

Prof. U. K. Anandavardhanan, Department of Mathematics, has been elected as a **Fellow of the Indian Academy of Sciences**

Prof. Deepankar Choudhury, Department of Civil Engineering, has been elected as a **Fellow of the Indian Academy of Sciences**

Prof. Jugal K Verma, Department of Mathematics, has been selected as an Editorial Board Member of the Journal of the *Indian Mathematical Society*

Prof. Shyamprasad Karagadde, Department of Mechanical Engineering, has joined the Board of Review of *Metallurgical and Materials Transactions* as a Key Reader

Cell and gene therapy, NexCAR19, developed by **Prof. Rahul Purwar and his group**, Department of Biosciences and Bioengineering, has received approval from CDSCO (Central Drugs Standard Control Organization), Govt. of India, for the treatment of r/r B-cell lymphomas and leukemia.

Prof. Vikram Vishal, Department of Earth Sciences, has been

selected to receive the **Franklin Lecturer Award 2024**

Prof. Ruchi Anand, Department of Chemistry, has been selected as recipient of **Sun Pharma Science Foundation Research Fellowship, 2023**

Prof. Santosh Gharpure, Department of Chemistry, has been invited to join the Editorial board of the most reputed organic chemistry journals, *Tetrahedron* and *Tetrahedron Letters*.

Prof. Parthe Pandit, Centre for Machine Intelligence and Data Science (C-MINDS), research paper titled "*Mechanism of feature learning in neural networks and backpropagation-free machine learning models*," is to be published in *Science*, as a co-author.

Appointments

Dr. Akshaya Nikumbh, has been appointed as Assistant Professor Grade II in the IDP Climate Studies w.e.f. January 1, 2024



Dr. Sayantika Bhowal, has been appointed as Assistant Professor Grade I in the Department of Physics w.e.f. January 5, 2024



Dr. Sudeep R Bapat, has been appointed as Assistant Professor Grade I in the Shailesh J. Mehta School of Management w.e.f. January 8, 2024



Dr. Deepak Kumar Agrawal, has been appointed as Assistant Professor Grade I in the Department of Biosciences and Bioengineering w.e.f. January 9, 2024



Dr. Rahul Singh, has been appointed as Assistant Professor Grade I in the Department of Electrical Engineering w.e.f. January 15, 2024



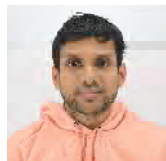
Dr. Sangram Nirmale, has been appointed as Assistant Professor Grade II in the Department of Civil Engineering w.e.f. February 1, 2024



Dr. Jayasree Biswas, has been appointed as Assistant Professor Grade II in the Department of Metallurgical Engineering and Materials Science w.e.f. February 1, 2024



Dr. Suraj Shetiya, has been appointed as Assistant Professor Grade II in the Department of Computer Science and Engineering w.e.f. February 1, 2024



Dr. Archak Mittal, has been appointed as Assistant Professor Grade I in the Department of Civil Engineering w.e.f. February 5, 2024



Dr. Chethan Kamath, has been appointed as Assistant Professor Grade II in the Department of Computer Science and Engineering w.e.f. February 5, 2024



Dr. Sayantan Dutta, has been appointed as Assistant Professor Grade II in the Department of Chemical Engineering w.e.f. February 9, 2024



Prof. Najeeb Shariff Mohammad, has been appointed as Assistant Professor Grade I in the Department of Civil Engineering w.e.f. July 24, 2023



Retirements on January 31, 2024



Prof. Shivganesh Bhargava, Shailesh J. Mehta School of Management, retired after 32 years of service



Mr. Sarwar S. Shaikh, Sr. Multiskilled Assistant, Office of Dean (Research and Development), retired after 37 years of service



Ms. Mary Thomas, Admin. Superintendent (P), Department of Earth Sciences, retired after 36 years of service



Mr. Gangaram Kharat, Sr. Multiskilled Assistant, Hostel Tansa, retired after 40 years of service

Retirements on February 29, 2024



Mr. Shankar V. Tawde, Sr. Security Guard, Security Section, retired after 31 years of service



Ms. Kavita B. Cheble, Administrative Associate, Materials Management Division, retired (voluntarily w.e.f. 07.02.24) after 21 years of service

Retirements on March 31, 2024



Prof. Dipendra Prasad, Department of Mathematics, retired after 5 years of service



Prof. Abhiram G. Ranade, Department of Computer Science and Engineering, retired after 27 years of service



Prof. Subodh Wagle, Centre for Technology Alternatives for Rural Areas, retired after 17 years of service



Mr. Bhimrao M. Kamble, Assistant Executive Engineer, Electrical Maintenance Division, retired after 31 years of service



Mr. Hanumant R. Sonar, Sr. Multiskilled Assistant, Central Library, retired after 38 years of service

CEP courses scheduled during April and May 2024

No.	Course Title	Course Coordinator/ Department	Duration
Open Programmes: (April 2023)			
1	Sustainable Finance (For Alumni of IIT Bombay only)	Prof. Trupti Mishra, Shailesh J. Mehta School of Management	April 6, 2024 (1 days)
2	Renewable Energy And Sustainability	Prof. Anish Modi, Department of Energy Sciecnce and Engineering	April 22, 2024 (5 days)
In House Programmes:			
3	P3 Executive Program For Schneider Electric Channel Partnerpeople	Prof. Dinesh Sharma, Shailesh J. Mehta School of Management	April 2, 2024 (1 days)
4	Effective Integration Of PedagogyAnd Technology	Prof. Sahana Murthy, IDP in Education Technology	April 6, 2024 (2 days)
Open Programmes: (May 2024)			
5	Monsoon Course On HCI	Prof. Anirudha Joshi, IDC School of Design	May 28, 2024 (12 days)

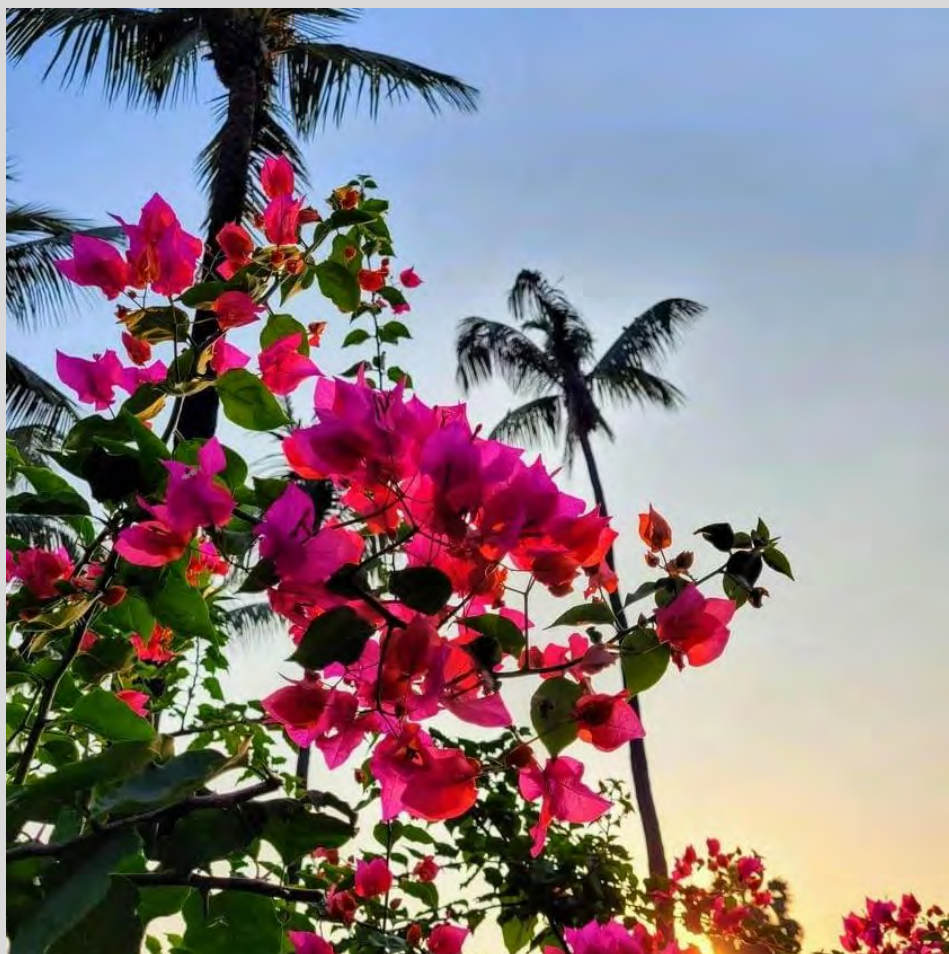
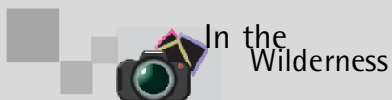


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Campus Diary is edited and published by
 Public Relations Officer,
 IIT Bombay, Powai, Mumbai - 400 076.

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)

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