IIT Delhi team makes first hi-res landslide risk map for India
An IIT Delhi team has created India’s first national landslide susceptibility map in high resolution.
IIT Delhi receives grant from Rockefeller Foundation to establish Climate Sciences and Technology Chair


Over the course of the five-year grant, IIT Delhi will elect an academic with noteworthy contributions in the area of climate sciences and technology to expand the existing talent pool in this field from the Global South.

Along with the Chair, IIT-D, across the five years, will hold two climate-centric convenings bringing together experts from the Global South to discuss the latest advances in tackling climate change.

(Representative image. File)

The Indian Institute of Technology, Delhi (IIT D) received a grant from the Rockefeller Foundation to establish the Climate Sciences and Technology Chair.

With the aim of supporting the growing interest in climate technology interventions, this collaboration will provide resources to experts, researchers, and students to shape future climate policy action.

Over the course of the five-year grant, IIT Delhi will elect an academic with noteworthy contributions in the area of climate sciences and technology to expand the existing talent pool in this field from the Global South. Along with the Chair, IIT-D, across the five years, will hold two climate-centric convenings bringing together experts from the Global South to discuss the latest advances in tackling climate change.
“It is our immense pleasure to be associated with The Rockefeller Foundation to set up a Chair Professorship for Climate Sciences and Technology”, stated Prof. Naresh Bhatnagar, Dean (R&D), IIT Delhi. “Climate change will be one of the defining challenges of the 21st century, and IIT Delhi, through its substantial and growing presence in climate science, innovation and policy, is well-placed to help address this enormous challenge. We believe this partnership with The Rockefeller Foundation will play an important role in our efforts within and beyond IIT Delhi to enhance research-driven climate action.”

IIT Delhi Students Visit Uttarakhand Villages; Aiming to Develop Tech Solutions for Local Challenges


GRIP 2023-24: Students of IIT Delhi visited Uttarakhand villages as part of the Grassroots Innovation Programme (GRIP). In collaboration with SEWA International, they engaged in a hands-on exploration that went beyond the conventional academic realm. Get complete details here
Organized by IIT Delhi’s Academic Outreach office, led them to the rural areas of Tapovan and Urgam in the Chamoli district of Uttarakhand.

In collaboration with SEWA International, a prominent NGO in Uttarakhand, the students engaged in a hands-on exploration that went beyond the conventional academic realm. The scope of the program was broad, encompassing the study of social and economic dynamics, evaluation of healthcare services, education systems, and direct engagement with local self-help groups (SHGs).

Additionally, the students delved into cultural immersion, ensuring a holistic understanding of the communities they were working with. Meticulous documentation of their experiences added depth to their engagement.

“The GRIP initiative is designed to go beyond mere observation, as it encompasses a social immersion phase. During this phase, student groups spend significant time in communities, including smaller towns and villages. The goal is to deeply understand local needs and challenges, paving the way for the identification of grassroots societal problems. The next step involves devising innovative solutions to address these challenges,” said Prof. Subodh Sharma, Associate Dean, Academic Outreach, IIT Delhi.

IIT Delhi Students Visit Uttarakhand Villages

Insights from Urgam and Tapovan village immersion revealed several issues related to waste management, traditional arts, climate change, seasonal farming, etc. These insights emphasized the need for targeted interventions. The group, after identifying specific challenges, is now committed to developing technological solutions.

These include creating a web app/database for health and market information, designing a basket for carrying dry grass, developing a compactor, researching materials for housing and road construction, improving conditions for local handicraft workers, training SHGs, introducing paalki in higher-altitude villages in the Urgam Valley, developing lightweight building materials, and enhancing waste management practices.

Reduce number of trees to be hit by expansion, IIT told


Indian Institute of Technology, Delhi, has submitted a proposal to Delhi State Level Expert Appraisal Committee (SEAC) seeking environmental clearance for expansion of its campus. It has proposed an academic block, five blocks for faculty housing, two blocks for residential quarters and an electric substation.
For the project, the institute has proposed that out of 1,169 trees on the site, 1,136 trees will have to be cut down while 482 trees will need to be transplanted. Only 51 are proposed to be retained. However, SEAC has asked IIT to modify the proposal and reduce the number of trees that would be impacted.

“According to the proposal, 97% of the trees will be cut or transplanted, and only 51 trees are proposed to be retained, which is just 3% of the total trees. This is an extraordinarily high percentage of trees being removed. The plan for the building and its ground coverage may be reviewed so as to reduce the trees being impacted,” SEAC said, according to its latest minutes of the meeting held on January 4. The minutes were shared recently.

The proposal states that certain buildings will be demolished and redeveloped. New buildings, including an academic block with two basements and six floors, five blocks of Type VI faculty housing with six floors, two blocks of Type C residential quarter block with six floors and an electric substation, will be added. The proposal states that due to the demolition, redevelopment and addition of new buildings, the net built-up area of campus will increase by 98,741 sqm. Hence, the total built-up area, including existing, modification and expansion, will be 8,69,304.286 sqm.

Vijay Garg, the chairman of SEAC, said the IIT has sought environmental clearance for the expansion. “However, we have asked them to conduct a survey of the site and submit a modified proposal to get an environment clearance. We have asked the project proponent to reduce the total number of impacted trees. We have also asked the institute that the trees should be transplanted within the campus,” Garg told TOI.

Apart from increasing the number of trees to be conserved, SEAC has directed the project proponent to address other issues, including maximising recycling of water and utilisation of rainwater, details of use of solar energy and alternative source of energy to reduce fossil fuel consumption, submit NOC of Airport Authority of India for the proposed height of the building and to work up the inventory of the demolition waste likely to be generated from the existing building with a specific reference to hazardous waste, along with its safe disposal plan.
In a grand celebration of innovation and entrepreneurship, the Indian Institute of Technology Delhi’s (IITD) Entrepreneurship Development Cell (eDC) is gearing up to host the highly anticipated annual event, BECon’24. Scheduled for the 3rd and 4th of February, BECon’24 promises to be a spectacular affair, drawing a diverse audience of over 30,000 individuals and garnering participation from 500+ institutes across India.

Solidifying its status as a premier platform for startups, BECon’24 provides an unprecedented opportunity for over 15,000 enthusiasts to engage with industry leaders, connect with like-minded entrepreneurs, and showcase groundbreaking products. The event has become a pivotal moment for startups to gain visibility, connect with industry leaders, and establish collaborations that transcend conventional boundaries.
This year, BECon’24 is set to host distinguished guests such as Shri Nitin Gadkari, India’s Minister of Road Transport and Highways, known for advocating innovative and sustainable practices, and Shri Raghuram Rajan, former RBI governor and an IITD alumnus. The lineup also includes industry titans like Vijay Shekhar Sharma (Paytm), Sanjeev Bikhchandani (InfoEdge), and founders of renowned startups, among many others. Notably, Varun Grover, the comedy maestro and Director of “All India Rank,” charmed attendees at a pre-summit event, offering insights on overcoming challenges during college life.

BECon’24 promises enriching discussion sessions with top entrepreneurs and business leaders, including Anurag Kashyap (Film Director), Manu Kumar Jain (Ex Global VP, Xiaomi), V Krishnan (Just Dial Ltd), Vikram Gupta (IvyCap Ventures), Pradeep Gupta (IAN, CyberMedia), Meetul Patel (Wadhwani Foundation), Satya Prakash Singh (SIDBI), Amit Kumar Agarwal (NoBroker) and Himanshu Gautam (Safalta.com). These sessions are designed to provide a knowledge and creative boost to all attendees.

Highlighting the commitment to diversity, BECon’24 features a dedicated session for Women Entrepreneurs, featuring panellists Ruchira Shukla (World Bank Group), Shaili Chopra (SheThePeople), Swati Vasudevan (MD, Khan Academy), Swati Bhargava (Co-Founder of CashKaro.com), and Tanya Singhal (Founder, Mynzo Carbon).

Adding an academic perspective, BECon’24 includes a panel discussion titled “The IIT Delhi Effect: Unraveling the Secret to Producing Most Entrepreneurs,” featuring some of the most successful founders and investors produced by IIT Delhi.

**Highlights of BECon’24:**

**Moonshot: Asia’s Biggest Student-Run Startup Showcase:**

One of the standout features of BECon’24 is the Moonshot competition, touted as Asia’s biggest student-run startup showcase. Entrepreneurs are invited to pitch their ideas in front of India’s leading investors, including Ankit Agrawal (Founder, InsuranceDekho), Apurva Chamaira (Head VC, Google India), Ankit Mehrotra (Founder & CEO Dineout, Angel Investor), Tej Kapoor from IvyCap Ventures, and Priyank Garg from IAN Fund. Startups participating in Moonshot will not only have the chance to share their stories with millions through media coverage from Inc42 and other outlets but will also witness regional events in Bombay and Bangalore.
**Startup Clinic:**

BECon’24 introduces the Startup Clinic, an innovative platform designed to foster collaboration and growth within the entrepreneurial ecosystem. At its core, eDC believes that the synergy between startups, investors, and industry experts is the key to unlocking unparalleled success. The Startup Clinic serves as a nexus where groundbreaking ideas converge with seasoned expertise, creating a unique space for innovation, learning, and strategic partnerships.

**BECon Launchpad: A Gateway for Startups:**

At the heart of BECon’24 lies the BECon Launchpad, an annual business and startup expo. This expo offers a unique opportunity for startups to network with industry leaders, connect with other startups, meet key founders, and gain exposure through brand connect and social media outreach.

BECon’24 will also host events like BluePrint: Business Plan Competition, Workshops, Hackathons, AutoExpo, and more competitions for startup founders and enthusiasts. With a focus on sustainability and social entrepreneurship, BECon emphasizes these aspects through its startup expo.

BECon’24 is more than just an e-summit; it is a dynamic convergence of dreams, innovation, and collaboration. Ideated and organized entirely by students at IIT Delhi, this transformative celebration invites students and enthusiasts to witness bold ideas soaring, opportunities unfolding, and knowledge being shared. Join us at BECon’24 for an immersive experience where the spirit of revolution is amplified through shared experiences.

Website is live @ becon.edciitd.com register yourself for free.
NEW DELHI: In what could prove to be a boon for patients who have lost their ability to speak due to throat cancer, All India Institute of Medical Sciences, in collaboration with IIT Delhi, has developed a cost-effective prosthesis to restore their voice. According to doctors, many throat cancer patients are unable to speak after the removal of their larynx due to advanced stages of laryngeal disease. Larynx, or voice box, contains vocal cords and helps a person speak, breathe and swallow.

A study conducted on 20 patients over three years has yielded positive outcomes, said AIIMS doctors. Until now, patients have been implanted with commercially available voice prosthesis costing between Rs 20,000 and Rs 40,000. However, the AIIMS-IIT prosthesis is free of cost for AIIMS patients. Following successful trial completion and approvals, it may be made available for other patients and could cost a few hundred rupees. Dr Alok Thakar, head and professor of otolaryngology and head/neck surgery, said the aim of developing the device was to ensure patients who lost their voice due to cancer in the larynx can speak again without shelling out thousands of rupees on an artificial voice box.

“During the tracheoesophageal puncture (TEP) procedure, we create a small hole in the wall between the trachea and esophagus, the tube that moves food from mouth to the stomach. A small one-way valve, called tracheoesophageal prosthesis, is placed inside the hole to direct air into the throat,” he said, adding the valve is made of silicon.
He said the vocal cords are completely removed during total laryngectomy surgery and the sound source is lost. The TEP surgery with a prosthesis creates a path for air to move from lungs to the esophagus. This air causes the top of the esophagus to vibrate, producing a new tracheoesophageal voice, he explained. The device, weighing a few grams, enables throat cancer patients who had their larynx removed to speak.

Prof Rakesh Kumar from the ENT department said on an average, annually four-five out of 25 patients suffering from larynx cancer face voice box removal risk. Usually, cancer occurs in the 50-60 age group.

“It’s not difficult to learn how to use the prosthesis. After surgery, patients just need guidance and practice. The prosthesis valve lasts six-eight months on an average. The replacement procedure doesn’t require surgery. It is usually painless and can be done in OPD,” he said.

Doctors said TEP’s main advantage is it generates the most intelligible, fluent and natural voice compared to other alaryngeal speech methods.
IIT Delhi launches Executive Programme for Tech Product Management to create future leaders


It is tailored for mid-career professionals to transition into roles that require a strong understanding of both technology and business

To equip participants with the expertise for conceiving, developing, launching, and proficiently managing tech products in the ever-evolving digital era, the Indian Institute of Technology Delhi (IIT Delhi) has launched the Executive Programme for Tech Product Management aimed at addressing the growing need for adept leaders.

According to the Bureau of Labor Statistics, the demand for product managers is expected to grow by 10% in 2024 owing to the rise of data-driven business decisions and the digital transformation in every industry. According to a LinkedIn survey, the number of Product Manager jobs is increasing around 30% every year. Technical product managers who find success in their roles may move up over time and can aspire to pursue roles such as director of product management, VP of product and chief product officer. According to reports, researchers are optimistic about the growing IT budgets for 2024 that will lead to increased hiring of tech talent.

The Executive Programme for Tech Product Management will be conducted via the Interactive Learning (IL) platform and delivered in Direct-to-Device (D2D) mode. It is tailored for mid-career professionals to augment their managerial skills or transition into roles that require a strong understanding of both technology and business. The five-month online programme includes modules on product ideation, strategy, product roadmap, product design and discovery, product development, product marketing, etc, that will equip learners with the knowledge and skills needed to navigate the complexities of tech product management successfully. Upon completion of the Executive Programme for Tech Product Management, learners can explore a career as technical product managers, product marketers, business analysts, product analytics managers, product owners, etc.

Dr Biswajita Parida, assistant professor, IIT Delhi, says,"In the rapidly evolving technological landscape, organisations require leaders capable of not just keeping pace with changes but also propelling innovation forward. Participants will gain insights into non-core functions essential for supporting the operational aspects of tech products, developing strategic approaches to bolster functions surrounding core offerings."
IIT Delhi Students Make App to Track Blood Donation, Find Scribe Requests for Students


The Indian Institute of Technology, IIT Delhi’s National Service Scheme has developed a mobile application titled NSS IIT Delhi to revolutionise youth engagement and social impact. Through the app, students who want to be NSS volunteers can find relevant projects and participate in them.

“No longer confined by emails/posters, the NSS App is a game-changer. With the help of the App, IIT Delhi students who like to be NSS volunteers can now register, find projects near them, track their volunteer hours, and connect with fellow volunteers – all on a user-friendly platform,” the IIT said in a press release.

The app has made it easier to track Blood Donation requests and scribe requests, so the students can directly see the requests posted and can also look at the location and route through the map integrated into the app itself.

The app has been developed by a team of young NSS volunteers, with help from tech-savvy mentors. “We wanted something simple, accessible, and engaging,” says Abhishek, a student programmer who led the app’s development. “Something that would resonate with our generation and make volunteering an effortless act of kindness,” he added.
“The App’s launch sent ripples across the NSS network at the Institute. Within days, thousands of registrations flooded in, with a 4.9-star rating in Google Play and 5-star in the App store, painting a vibrant digital map of volunteers eager to contribute. The development has been made possible with constant inputs from the Office of the Dean of Students and the Computer Service Centre (CSC), IIT Delhi,” the institute said.

“The App has made volunteering so much more accessible,” shares Sudhanshu, a young student who was amazed at the ease of operation of the App. “I can explore projects happening around me, and it’s so easy to join in and make a difference. I can now see my hours completed in real time... Amazing”.

The app also has a map of the campus with live tracking and the numbers of all the important contacts, like the Institute’s Security Control Room, Hospital, Ambulance, and many more. It has also provided fun hangouts like Rajdhani, night messes, and other outlets at IIT Delhi.

**IIT-Delhi group to organise pride fest this weekend**


Indradhanu, the LGBTQI+ support group at IIT-Delhi, will organise the second edition of the institute’s first pride fest, Vibhinn, on January 13-14.

The med ‘Information and Injustice’, Vibhinn will feature a town hall meeting with LGBTQI+ leaders who have struggled against all social odds to register political victories. One of the speakers will be Shabnam Mausi, the only transgender person in the country to get elected to a legislative assembly as an independent candidate. The discussion will focus on ‘Trans Politics — Navigating Political Representation and Futures’. Other speakers are Bobi Kinnar, MCD member from Sultanpuri ward, and Disha Pinki Shaikh, a transgender political leader from Maharashtra.

“Our world view on the diversity of people and cultures is often shaped by our everyday social interaction. Information and self-knowledge become our yardstick to make sense of our belongingness in the social world. However, as social beings, we often remain at odds with information that we believe is uncommon, and at times, unsettling,” said Vaivab Das, a PhD scholar and Students Affairs Council representative at Indradhanu. The IIT group has always worked towards forging dialogues, “where we turn our attention not merely to ‘human difference’ but also to informational systems that hinder our ability to understand one another without prejudice”, Das added. “It is not only a celebration of diversity, but also a platform for critical discussions and insights into the LGBTQI+ experience.”
The fest will feature an All India Queer Collective Conference on Saturday, bringing together LGBTQI+ collectives from across the country to facilitate participatory learning, collaboration and idea exchange on topics like gender, sexuality, caste, class, disability and ethnicity. A workshop, Queer Activism and the Right to Information Act, is also on the cards. It will be followed by a queer talent show, which will provide a platform for artistic expression, celebrating diversity and resilience within the community.

The fest will conclude with a pride march on Sunday, promoting acceptance, visibility and solidarity. The march will bring together members of the LGBTQI+ community, allies and participants, echoing the founding vision and values of the institute in pride hues.

**BEL, IIT Delhi ink MoU for various emerging technologies**  

Bharat Electronics Limited (BEL) and IIT Delhi have signed an MoU to transform breakthroughs in deep tech research into products for Indian Navy
Navratna Defence PSU Bharat Electronics Limited (BEL) has joined hands with the Foundation for Innovation and Technology Transfer (FITT) at IIT Delhi to translate breakthroughs in Naval Deep Tech research being carried out at CARE - IIT Delhi, into products for Indian Navy.

BEL and IIT Delhi on Wednesday signed an MoU for R&D collaborations in various emerging technologies, as envisaged by the Indian Navy’s office of Naval Projects at IIT Delhi, to facilitate conversion of inventions in ongoing Deep Tech research into Naval products. The MoU was signed by BEL's Director (R&D) Manoj Jain and FITT's Managing Director Prof Preeti Ranjan Panda in the presence of dignitaries from the Indian Navy and IIT Delhi.

The Naval research being carried out at CARE - IIT Delhi required some handholding from the industry, as industry partners need to be part of the research and product development from the initial stages itself to ensure smooth transition during prototype trials and production.

The entry of BEL marks the beginning of a new chapter of synergy between the industry and user-academia alliance at IIT Delhi, giving a boost to the Govt’s Atmanirbhar Bharat drive. BEL and IIT Delhi will now jointly work on core technology development with use cases in areas of interest pertinent to the Indian Navy.

BEL has expressed interest to participate in collaborations in the field of Naval Electronic Systems, including RF, Sonar systems, IMARS, Communication Systems, etc.

**India and UAE Forge Robust Educational Alliances: CBSE Regional Office in Dubai and IIT Delhi Campus in Abu Dhabi on the Horizon**

India and the United Arab Emirates (UAE) solidify their educational partnership with plans to establish a Central Board of Secondary Education (CBSE) regional office in Dubai and an Indian Institute of Technology (IIT) Delhi campus in Abu Dhabi.

Distinguished members of the Indian Parliament, including Dhairyasheel Sambhajirao Mane, Sudheer Gupta, Sanjay Sadashivrao Mandlik, Shrirang Appa Barne, and Prataprao Jadhav, brought these ambitious initiatives to the forefront during a parliamentary session on December 4, 2023. The subsequent responses from the Minister of State in the Ministry of Education, Dr. Subhas Sarkar, revealed the comprehensive nature of these educational endeavors.

The planned CBSE regional office in Dubai is poised to strengthen coordination with approximately 200 CBSE-affiliated schools in the UAE. A committee, appointed for this purpose, is actively engaged in outlining the specifics for the establishment of this international regional office, as approved in the CBSE Governing Body meeting on June 14, 2023.

Simultaneously, an agreement signed on July 15, 2023, involves the Ministry of Education (MoE), Government of India, Indian Institute of Technology (IIT) Delhi, and Abu Dhabi Department of Education and Knowledge. This agreement sets the stage for the establishment of an IIT Delhi campus in Abu Dhabi, showcasing the commitment of both nations to elevate higher education collaboration to new heights.

**IIT Delhi researchers propose solutions for fair compensation to food delivery agents in India**


Fairwork Project is a global initiative that seeks to improve the working conditions of digital platform workers, including food delivery riders. The project assesses and ranks platform companies based on their adherence to fair labor practices to promote better standards in the gig economy. Fairwork India’s 2023 report has shed light on a critical issue in the food delivery industry in India, where none of the major food delivery platforms were found to provide hourly local minimum wages to their delivery workers after accounting for fuel and other expenses.

The gig economy model has been a driving force in the food delivery industry, making it difficult for the delivery workers to secure their rightful earnings. Additionally, food delivery platforms have faced challenges in increasing order delivery fees beyond a certain point, creating a complex dilemma for all stakeholders involved.
However, IIT Delhi’s research team comprising Prof. Abhijnan Chakraborty, Prof. Sayan Ranu, Prof. Amitabha Bagchi and PhD scholar Ms. Anjali have developed a unique approach, which they name ‘Work4Food’, that not only guarantees government-mandated minimum wage compensations for delivery workers but also seeks to minimize platform costs while ensuring customer satisfaction. Their proposal was also presented at the prestigious International Joint Conference on Artificial Intelligence.

The key features of the proposed formulation includes income guarantee. The scheme ensures that all delivery agents receive income guarantees based on government-mandated minimum wage rates, allowing them to earn a fair and consistent income. Second, it includes platform control. The formulation provides platforms with the necessary flexibility to determine the number of delivery workers onboarded, ensuring that income guarantees are met while addressing operational constraints. Third, personalized guarantees which takes into account worker-specific factors and performance metrics, beside demand-supply dynamics in particular localities, to provide personalized guarantees tailored to each delivery worker.

“In our work, we developed an order assignment algorithm (which determines which delivery person gets which order) to ensure that each delivery person earns more than the minimum wage. To achieve this without increasing the cost for the platform or the consumer, we recommend utilizing the delivery workers more efficiently and reducing the habit of over-provisioning. In other words, since the platforms gather a lot of data, by looking at historical patterns, they can predict the supply-demand dynamics in a particular location at a particular time and accordingly onboard delivery workers if there is a need”, said Prof. Abhijnan Chakraborty, Computer Science and Engineering Department, IIT Delhi.

Work4Food’s minimum income guarantee, coupled with the flexibility it offers to platforms in onboarding delivery agents based on demand-supply dynamics, minimizes unnecessary travel – a common practice among the delivery agents to strategically position themselves for the next order.

“This can have a long-term effect on reducing air pollution caused by vehicular emissions, at least until the entire delivery fleet transitions to battery-operated vehicles”, Prof. Abhijnan Chakraborty added.

While online food delivery companies often cite the gig nature of the work and operational constraints as barriers to implementing local minimum wage guarantees, the novel solution introduced by the IIT Delhi researchers promises to address the issues.

“We believe that our proposed solution has the potential to revolutionize the way food delivery platforms operate in India, creating a win-win situation for all parties involved -- delivery workers, platforms, and customers -- representing a significant step toward achieving fairness and equity within the food delivery industry”, said Prof. Amitabha Bagchi, Computer Science and Engineering Department, IIT Delhi.
IIT Delhi, Teerthanker Mahaveer University collaborate for materials, devices development


NCMD 2023: Experts discussed the intricacies of semiconductor devices, their applications, and the significance of materials in all tools.

Candidates can get access to all the details about JEE Advanced including eligibility, syllabus, exam pattern, sample papers, cutoff, counselling, seat allotment etc.

Teerthanker Mahaveer University has announced a collaboration with the physics department of Indian Institute of Technology Delhi (IIT Delhi) for research in semiconductor technology. The announcement was made during the fourth National Conference on Materials and Devices (NCMD 2023).

TMU executive director Akshat Jain said that the semiconductor devices play an important role in modern tool construction and expressed optimism about initiating the manufacturing of these devices.

During the two-day national conference, experts discussed the intricacies of semiconductor devices, their applications, and the significance of materials in all tools. They also discussed the innovative approaches required for materials and devices research.

The national conference witnessed the presentation of 22 research papers on the first day.

Meena Mishra, director of the solid state physics laboratory at DRDO, talked about the utility of DRDO in the defence sector, where ongoing research has led to the discovery of cutting-edge technologies. She elaborated on the “advancements in radar capabilities achieved through gallium nitride technology and discussed practical applications, such as laser diode technology and infrared imaging through thermal imaging”.

Academics, experts highlighted the need for inventing materials and devices that can meet the challenges of the 21st century.

Pankaj Srivastava, professor from the physics department of IIT Delhi and conference general chair, RK Dwivedi emphasized the need for collaboration to accelerate research on semiconductor.

Speaking on the significance in technological advancement and material research, TMU registrar Aditya Sharma talked about the role of educational institutions in fostering innovation.
Shyam Sundar Tiwari, director of the Advanced Sensor Research Organization and Diptonil Banerjee also shared their insights during the conference.

**Not enough commuters? Metros have less than 50% projected ridership, says IIT-D report**

02 January, 2024 07:30 am IST  [https://theprint.in/india/not-enough-commuters-metros-have-less-than-50-projected-ridership-says-iit-d-report/1907526/](https://theprint.in/india/not-enough-commuters-metros-have-less-than-50-projected-ridership-says-iit-d-report/1907526/)

Report by IIT-Delhi & Infravision Foundation also found that Delhi metro ridership was equal to 47% of projected ridership as against 25-30% for other operational metro rail networks.

Ridership on all metro rail networks in India is less than 50 percent of their projected ridership, according to a report by IIT-Delhi and Delhi-based think tank The Infravision Foundation.

According to the report, presented on 4 December at a conference by the Confederation of Indian Industry and The Infravision Foundation, ridership of most metro rail systems in India is 25-30 percent of projected ridership — ridership forecast as mentioned in the Detailed Project Report (DPR) which outlines the intended
objectives of a project. The only exception was the Delhi metro, which it said has a ridership equal to 47.45 percent of its projected ridership.

“Metro systems operating in India have 25-35 percent projected ridership. Since all benefits and revenue generation is dependent on the actual ridership, none of the systems have achieved the estimated benefits at the time of approval of the project,” said the report, titled ‘A framework for selecting an appropriate urban transport system in Indian cities’.

Though the country’s first metro rail project was developed by the Indian Railways and commissioned in Kolkata in 1984, large-scale expansion of the network picked up pace only after the inauguration of the first corridor of the Delhi metro in 2002. According to the report, India has 905 km of operational metro network in nearly 20 cities, including Delhi-NCR. This includes the more than 600 km approved in the past nine years for Kanpur, Surat, Ahmedabad, Bhopal, Indore, Agra, Patna, Kochi, Pune, Nagpur, Lucknow etc.

However, as the report pointed out, most of these operational metro projects have fallen short of achieving the projected ridership.

“Even the Delhi Metro Rail Corporation (DMRC), which has the largest network in India, has less than 50 percent of the projected ridership,” Geetam Tiwari, a professor at IIT-Delhi who co-authored the report alongside assistant professor Deepty Jain, told ThePrint.

The parliamentary panel on housing and urban affairs too raised the issue of low ridership of metro rail networks in its report tabled in July 2022. Average daily ridership of the Delhi metro, the panel noted then, was 50.65 lakh commuters in 2020-21 — more than the 38.34 lakh-mark which was required for the DMRC to break even.

Pointing out the difference between minimum ridership and projected ridership, Tiwari said, “The ridership projected in the detailed project report is used for estimating all benefits and for calculating economic rate of return. The break even ridership is the minimum ridership required to meet the operational cost. To get the full benefit and justify the project cost, projected ridership is important.”

DMRC officials said that the Delhi Metro has met the ridership target needed for a mass transit system in Delhi. “DMRC is catering to around 67 lakh passenger journeys per day on weekdays — it has already exceeded the projected figures in DPR. There have been some setbacks due to COVID-19, but passengers’ journeys are picking up now,” a DMRC spokesperson said.

Besides metro rail projects, the report by IIT-Delhi and The Infravision Foundation also highlighted the need for a robust, reliable public bus transport system in all cities, including large cities with expansive metro
connectivity, stating that for most city dwellers, their daily commute is “less than 10 km in length regardless of densities and incomes”.

Even in large cities including Delhi and Mumbai, the daily commute for nearly 35 percent of residents is less than 5 km, it added. The report assessed work-related travel patterns in urban areas based on population, area and income to assess the demand.

“Trips shorter than 5 km are suitable for walking, bicycling and IPTs (integrated public transport). Regardless of city size, all roads should become walking, bicycling-friendly and an integrated para-transit system should be made available. While large cities like Delhi, Mumbai etc. can have 300-400 km of metro network, it is crucial to provide a robust, reliable network of buses,” said Tiwari.

Jagan Shah, chief executive officer of The Infravision Foundation, said the report is a ready reckoner for policy makers. “They will understand why integrated public transport systems must account for the network of locations for boarding and alighting from each mode of transport, the different technologies required for travel and the different investments and operational costs associated with each mode,” he told ThePrint.

Affordability & integrated public transport

The 75-page report also touched on why the choice of public transport is determined by the “affordability of the end user”.

“A household with a monthly income of Rs 36,000 can afford only Rs 80 per person per day in a household...This cost will include fare for last mile connectivity and provided that no other member in the household incurs travel expenditures. Similarly, a household earning Rs 12,000 a month can afford only Rs 26 per person per day to meet travel needs at 10 percent benchmark of the affordable transport system,” said the report.

It added that very few urban districts in India have more than 10 percent of the population with a monthly income greater than Rs 36,000. At Rs 40 per trip, “Only 10-18 percent of the population in certain urban districts can use a public transport system”, it said.

Emphasising that cost is one of the most important factors influencing one’s choice of public transport, Tiwari said, “This is why there is a need to ensure that public transport is affordable, especially in big cities where the travel distance is more.”

Further, the report found that even in cities “with a population greater than 80 lakhs and densities greater than 100 person per hectare, the average of the percentage of trips greater than 10 km are 17 percent only”.

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In most Tier-2 and Tier-3 cities, the report said, the average commute is short and the lack of an efficient public transport system is why many are dependent on personal vehicles. For instance, in many Tier-2 cities including Bhopal, Meerut, Agra, Patna and Kanpur, the report found that nearly 45 percent of work-related commute is shorter than 5 km.

“Formal bus system with a full network running on all arterial roads is required to serve the peak demand. Bus routes on all arterial roads at a frequency of 10 per hour may be able to attract sufficient commuters. Open BRT (bus rapid transit) system can provide a high quality PT (public transport) service on major corridors,” the report recommended.

It also highlighted that lately, efforts to upgrade the existing public transport grid have “generally been linked to bus technology and promotion of electric buses”.

“Very little effort has gone into performance improvement of buses. The public transport ridership continues to reduce in most cities and use of motorised two wheelers and cars continue to increase,” it added.

In August 2023, the central government launched the PM-eBus Sewa Scheme under which around 10,000 electric buses will be provided in Tier-2 and Tier 3 cities on Public Private Partnership (PPP) basis. While domain experts agree that electric buses are a step in the right direction, they add that key to discouraging the use of personal vehicles is to ensure an efficient public bus system and integration of all modes of public transport.

“Today, metro projects have become more of a fashion statement. There is a need to carefully assess the demand for metro in cities, especially Tier-2 cities, before proposing these projects,” Aswathy Dilip, managing director, Institute for Transportation and Development Policy – India, told ThePrint.