

DEPARTMENT OF CIVIL ENGINEERING



DECEMBER 2025 ISSUE



NEWSLETTER

An Insight into the Department of Civil Engineering. Exploring Key Events, Research Highlights and Sustainable Initiative - December 2025 Issue.

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Srinivas Pasupuleti

Head of Department
Department of Civil Engineering

MESSAGE *from the* HOD's Desk

“

Dear all,

Welcome to the December edition of our departmental newsletter! This newsletter serves as a platform to showcase our successes and keep informed about the major events, publications, projects of our R&D activities.

These events and activities highlight the academic, research, and extracurricular environment at Department of Civil Engineering of IIT (ISM) Dhanbad.

It gives me great satisfaction and pleasure to witness the achievements of the Department of Civil Engineering with continuous efforts from dynamic faculty colleagues, talented research scholars duly supported by dedicated technical staff members.

Best Wishes !

Srinivas Pasupuleti

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DEPARTMENT OF CIVIL ENGINEERING
INDIAN INSTITUTE OF TECHNOLOGY (ISM) DHANBAD

PATENT



Mr. Kundan Kumar, Mr. Bhushan Sah, Dr. Sajal, Mr. Nilesh Choudhary, Dr. Pranesh Roy filed an Indian Patent with Application No.: 202531119989, Date: 01.12.2025 for their invention titled "A method to measure peridynamics length scale parameter of materials".

PUBLICATIONS

JOURNALS

Biswas, S., & Sengupta, P. (2025). Multi-hazard failure analysis of highway bridges under earthquake and blast loading. Engineering Failure Analysis, 110506.
<https://doi.org/10.1016/j.engfailanal.2025.110506> (IF: 5.7; Q1)

Jana, K., Sarkar, R., & Bhattacharya, S. (2025). Assessment of VHM capacity curves for monopile foundations of multi-megawatt offshore wind turbines for Indian coastlines. Bulletin of Earthquake Engineering, 1-37.
<https://doi.org/10.1007/s10518-025-02332-5> (IF: 4.1; Q1)

Sharma, K., Bhartiya, R., & Das, S. K. (2026). Sustainable mortars using overburden-derived M-sand and coal bottom ash: Mechanical properties, durability and life cycle assessment. Construction and Building Materials, 506, 144937.
<https://doi.org/10.1016/j.conbuildmat.2025.144937> (IF: 8.0; Q1)

Das, R., & Singh, A. K. (2026). Geo-mechanical performance of copper slag-infused hybrid geopolymer for stabilising sandy soils under static and cyclic loads. Journal of Rock Mechanics and Geotechnical Engineering.
<https://doi.org/10.1016/j.jrmge.2025.09.030> (IF: 10.2; Q1)

Singh, A. K., & Das, R. (2026). Three-Dimensional Numerical Modeling for Thin-Layered Low-Volume Bituminous Roads under Varying Tire Pressures and Material Compositions. International Journal of Geomechanics, 26(3), 04026003.
<https://doi.org/10.1061/IJGNAL.GMENG-10301> (IF: 3.3; Q2)

PUBLICATIONS

Shrivastava, S., Khatri, V. N., Banerjee, A., & Pasupuleti, S. (2026). Seepage control and stability in earth dams: an experimental and numerical study of optimising triangular toe filters. Environmental Earth Sciences, 85(2), 40.
<https://doi.org/10.1007/s12665-025-12758-4> (IF: 3.0; Q2)

CONFERENCE PROCEEDINGS

Choudhary, N., & Roy, P. (2025). Peridynamics plasticity theory for beams, 10th International Congress on Computational Mechanics & Simulation (ICCMS), IIT Bhubaneswar, December 17-19, India (Abstract ID: 061).

Ranjana, K.N., & Roy, P. (2025). Two-scale Riemannian geometry based peridynamics computational homogenization technique 10th International Congress on Computational Mechanics & Simulation (ICCMS), IIT Bhubaneswar, December 17-19, India (Abstract ID: 065).

Dey, B., & Roy, P. (2025). Peridynamics modeling of multi-shell metasurfaces, 10th International Congress on Computational Mechanics & Simulation (ICCMS), IIT Bhubaneswar, December 17-19, India (Abstract ID: 060).

Sengupta, S. and Malik, L. (2025). Evaluating Range Sufficiency and Charging Infrastructure for Electric Light Commercial Vehicles in Delhi, in CTRG 2025 (8th Conference of Transportation Research Group of India), IIT Guwahati. (Paper ID: 36)

Kashyap, S. N., & Barman, B. (2025). Reynolds shear stress analysis over the gravel bed channel with submerged rigid vegetation patches. 30th International Conference on Hydraulics, Water Resources, River and Coastal Engineering (Hydro 2025), NIT Rourkela, India.

Kashyap, S. N., & Barman, B. (2025). Experimental study on flow behavior through finite and continuous vegetation patches in a narrow open channel. AGU annual meeting 2025, New Orleans, USA.

PUBLICATIONS

CONFERENCE PROCEEDINGS

Sharma, A., & Barman, B. (2025). Geospatial Analysis of Rainfall Erosivity in Eastern Plateau and Hill Region (Jharkhand) of India: Using FI, MFI, and Empirical Models. 30th International Conference on Hydraulics, Water Resources, River and Coastal Engineering (Hydro 2025), NIT Rourkela, India.

Deepankar U., Kumar, VP., Chanda, K., & Dutta, R. (2025). Comparison of Evaporative Stress and Soil Moisture Stress for historical droughts across India using multiple reanalysis and land surface model products. 30th International Conference on Hydraulics, Water Resources, River and Coastal Engineering (Hydro 2025), NIT Rourkela, India.

Das P., Mandal N., & Chanda K. (2025). Developing optimal GCM Ensembles of High-Resolution Precipitation Dataset through Bayesian Networks: A comparative U-Net Based Analysis. 30th International Conference on Hydraulics, Water Resources, River and Coastal Engineering (Hydro 2025), NIT Rourkela, India.

Kumar P, & Chanda K. (2025), Causal discovery of the dependence process between large-scale teleconnection indices and monsoon rainfall in Sabri Basin in Lower Godavari, India. 30th International Conference on Hydraulics, Water Resources, River and Coastal Engineering (Hydro 2025), NIT Rourkela, India.

Kumar, V. P., Chanda, K., & Dutta, R. (2025). Development and progression of flash droughts across India using root zone soil moisture information from land surface model. 30th International Conference on Hydraulics, Water Resources, River and Coastal Engineering (Hydro 2025), NIT Rourkela, India.

Mandal, N.S., Das, P., Mandal, N., & Chanda, K. (2025). Spatio-Temporal Trends of Heatwave Occurrences across India and Comparison of the Discomfort Indices at Heat Wave Hotspots. 30th International Conference on Hydraulics, Water Resources, River and Coastal Engineering (Hydro 2025), NIT Rourkela, India.

PUBLICATIONS

CONFERENCE PROCEEDINGS

Mandal N., Roshni T., & Chanda K. (2025). Performance of kernel-based and network-based machine learning models in comparison with temperature-based empirical models for estimation of evapotranspiration. 30th International Conference on Hydraulics, Water Resources, River and Coastal Engineering (Hydro 2025), NIT Rourkela, India.

Ghosh, A., Chawla, S. & Khatri, V.N. (2025). Impact of Alkaline Treatment and Natural Rubber Latex Coating on the Mechanical Properties of Jute Geotextile Yarn. Indian Geotechnical Conference on Geotechnical Practices for Innovations and Sustainability (IGC 2025), NIT Jalandhar, India.

EDITED JOURNAL ISSUE

Special Issue-1: Keynote Articles of 8 International Conference on Recent Advances in Geotechnical Earthquake Engineering and Soil Dynamics (8ICRAGEE-2024). ISET Journal of Earthquake Technology, 62(1), March 2025. Guest Editors: Sarkar, R., Kumar, A., Maheshwari, B.K.



R&D AND CONSULTANCY PROJECT

Sl. No.	PI/Co-PI or CI/Co-CI	Project Title	Status	Project Value (Lakhs)	Funding Agency
1.	CI: Prof. Rajib Sarkar, CE Co-CI: Prof. Sukanta Chakraborty, CE Co-CI: Prof. Tanish Dey, CE	Proof Checking for Conveyor tapping of NMDC BP05 Project	Ongoing (Consultancy Project)	Rs. 10.62	M/S Kalpataru Projects International Ltd., Bachel
2.	CI: Prof. Tanish Dey, CE	To Provide Checking of Design Calculations for Kingzip Roofing	Ongoing (Consultancy Project)	Rs. 1.18	M/s Kingspan Jindal Pvt. Ltd., Haryana

R&D AND CONSULTANCY PROJECT

Sl. No.	PI/Co-PI or CI/Co-CI	Project Title	Status	Project Value (Lakhs)	Funding Agency
3.	CI: Prof. Sanket Nayak, CE Co-CI: Prof. Tanish Dey, CE Co-CI: Prof. S. S. Mohapatra, CE	Third Party Quality Control and Quality Assurance Services for Civil Works of around 30 Numbers of Buildings and other Development Works at Belgaria Township, Dhanbad by JRDA	Ongoing (Consultancy Project)	Rs. 5.90	M/s JRDA, Dhanbad
4.	CI: Prof. Tanish Dey, CE	Mix Design of M35 and M40 Grade of Concrete for Mahagama Rail Project"	Ongoing (Consultancy Project)	Rs. 0.70	M/s Triveni Engicons Pvt. Ltd, Jamshedpur, Jharkhand

WOMEN FACULTY ACHIEVEMENTS

The Indian Geotechnical Journal is bringing out a special issue titled "Women in Geotechnical Engineering", scheduled for publication in December issue, highlighting the outstanding contributions of women professionals across diverse domains of geotechnical engineering worldwide. Prof. Sowmiya Chawla, Associate Professor, Department of Civil Engineering, has been featured among the top women geotechnical professionals from across the globe, alongside several internationally acclaimed experts. The articles in this special issue collectively showcase technical excellence, research leadership, and lifetime achievements, reflecting the growing global impact of women in geotechnical engineering.

For more details and the complete list of authors, you may refer to the following link:

<https://link.springer.com/article/10.1007/s40098-025-01423-z>

"My journey, beginning as a simple girl from southern India with a vision to make a difference, has been dedicated to advancing geotechnical engineering, geosynthetics, and ground improvement for sustainable transportation, especially railway geotechnics. I strive to bridge research and innovation with real-world applications that create meaningful impact. Looking ahead, I envision women as key contributors to innovation in railways and infrastructure, ensuring that their perspectives shape high-level decision-making and transformative policies. I believe that women's active participation in high-level engineering and technological advancements will be crucial in shaping smarter, more sustainable, and future-ready infrastructure systems."



OUTREACH ACTIVITIES

CENTENARY EVENT: HACK4SUSTAIN 2025



INNOVATE, BUILD, SUSTAIN

The Department of Civil Engineering, IIT (ISM) Dhanbad, successfully organized HACK4SUSTAIN 2025 on 5th December 2025, marking its first-ever hackathon. The event, themed “Innovate, Build, Sustain: Propose breakthrough ideas that reimagine infrastructure to save energy, conserve resources, and build sustainably,” aimed to provide a platform for students to develop innovative, sustainable, and resilient civil engineering solutions.

A total of 104 students across 32 teams from IIT (ISM) Dhanbad, BIT Sindri, BIT Mesra, and NIT Jamshedpur participated, with 20 teams advancing to the final round. The hackathon was conducted in three phases, including idea pitching, prototype/model demonstration, and final presentations with expert jury interaction. Participants addressed challenges in low-carbon materials, eco-friendly design, disaster-resilient systems, climate-adaptive infrastructure, and smart digital approaches.

After thorough evaluation, three teams were declared winners for their exceptional innovation, feasibility, and sustainability impact, while six teams received consolation prizes. All participants were awarded certificates. Additional interactive activities such as Civil Quiz, Brain-Bowl, Surveying with a Twist, and Material Mystery Box enhanced engagement and peer learning.

The event was successfully coordinated by the faculty and student organizing committees. HACK4SUSTAIN 2025 set a strong precedent for innovation-focused initiatives, and the Department looks forward to an even larger and more impactful HACK4SUSTAIN 2026.



OUTREACH ACTIVITIES

CENTENARY EVENT: HACK4SUSTAIN 2025



OUTREACH ACTIVITIES

CENTENARY EVENT: HACK4SUSTAIN 2025



FIRST PRIZE WINNER

Team Name: Eco Core

Team Members : Kumari Muskan , Madhu Kumari, Tannu Kumari Mishra.

Team From: BIT Sindri

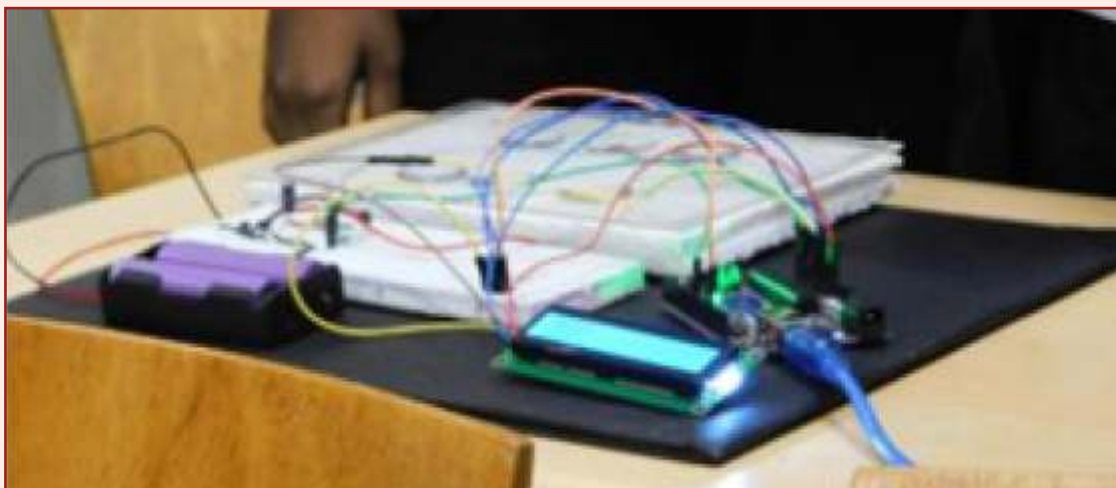
Project Title: SMART VIBRA-SENSE: Self-Powered Pavement Health Monitoring through Footstep Energy Harvesting

Problem: Hidden micro-cracks develop in pavements due to repetitive pedestrian loading, while conventional inspection methods are manual, slow, and reactive. Additionally, kinetic energy from footsteps remains unused.

Proposed Solution: A self-powered pavement health monitoring system that harvests footstep energy to operate vibration-based sensors for early crack detection.

Key Outcome: Enables real-time pavement condition monitoring without external power, reduces maintenance costs, and improves public safety.

Application: High-footfall areas such as footpaths, campuses, metro stations, and public plazas.



OUTREACH ACTIVITIES

FIRST RUNNER UP

Team Name: Pupils

Team Members: Abhiraj Singh, Aditya Singh, Anab Farooq

Team From: IIT(ISM) Dhanbad

Project Title: Hybrid Smart Sewer & AI Stormwater Management Network

Problem: Urban sewer and stormwater systems fail during heavy rainfall due to lack of real-time monitoring, prediction, and proactive control.

Proposed Solution: Integration of smart sensors, IoT, and AI-based analytics for real-time monitoring and predictive overflow management.

Key Outcome: Early warning of flooding events, optimized flow control, and reduced sewage overflow and environmental pollution.

Application: Smart urban drainage and flood-resilient city infrastructure.

SECOND RUNNER-UP

Team Name: GeoOptima

Team Members: Narayan Mishra, Rajdeep

Team From: IIT(ISM) Dhanbad

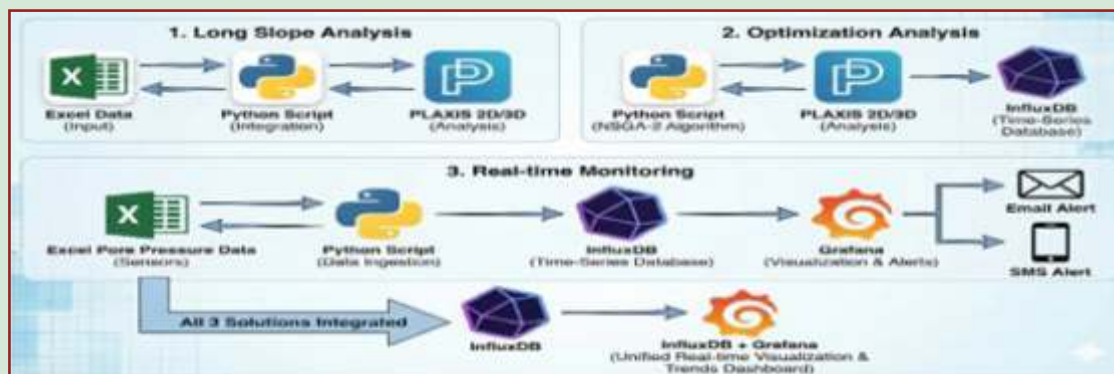
Project Title: Sustainable Slope Design Optimization Using NSGA-II with Real-Time Stability and Cost Analysis

Problem: Large-scale slope stability assessment is time-consuming, costly, and lacks real-time risk monitoring under dynamic conditions.

Proposed Solution: An automated slope analytics platform using NSGA-II optimization for rapid stability evaluation, cost optimization, and real-time monitoring.

Key Outcome: Assessment of 1,000+ slopes within hours, optimized material selection, and proactive failure warnings.

Application: Highways, embankments, mining areas, and large linear infrastructure projects.



OUTREACH ACTIVITIES

CONSOLATION PRIZE WINNERS

Team Name: GeoMind01

Team Members: Abhishek Dubey, Aman Kumar

Team From: BIT Sindri

Project Title: Smart Landslide Prediction and Early Warning System

Problem: Landslides cause severe damage due to lack of real-time prediction and sustainable monitoring systems.

Solution: Sensor-based monitoring of rainfall, soil moisture, slope movement, powered by solar energy with color-coded alerts.

Outcome/Application: Sustainable early warning system for landslide-prone regions supporting disaster risk reduction.



Team Name: TEAM BITS

Team Members: Rishav Raj, Suraj Kumar, Rajiv Kumar, Alok Kumar Saw

Team From: BIT Sindri

Project Title: Crack Detection with AI/ML

Problem: Manual crack detection is slow, subjective, and unsuitable for frequent inspections.

Solution: CNN-based deep learning model integrated into an Android mobile application for real-time crack detection.

Outcome/Application: Fast, accurate, low-cost structural inspection using smartphones.

Team Name: Shield Deck

Team Members: Hansika, Pritesh Singh, Nihal Bhadani, Hans raj

Team From: BIT Sindri

Project Title: AI-Based Road Damage Detection and Severity Classification System

Problem: Road damage detection relies on manual surveys with delayed maintenance decisions.

Solution: AI and computer vision-based system for automated pothole detection and severity classification.

Outcome/Application: Data-driven road maintenance planning with repair recommendations for smart cities.

Team Name: HiggsBoson

Team Members: Kamlesh Kumar Sharr, Priyanshu Kumar, Aman Aray, Varun Kumar Barnwa

Team From: BIT Sindri

Project Title: JhariaWatch – Coal Mine Subsidence Risk Prediction & Early Warning System

Problem: Coal mine subsidence in Jharia poses serious risks to lives and infrastructure without early warning systems.

OUTREACH ACTIVITIES



1,00,000+

People at Risk

27-29 mm/yr

Alkusa Subsidence

450 sq km

Affected Area

100+ yrs

Fires Burning

Solution: Satellite InSAR data integrated with AI/ML, mobile alerts, and administrative dashboards.

Outcome/Application: Community-focused early warning system for mining regions with high subsidence risk.

Visit their project: <https://jhariyawatch.onrender.com>

Team Name: WarningWave

Team Members: Shasi Kumar, Anish Kumar, Roushan Raj, Ayush Rathor

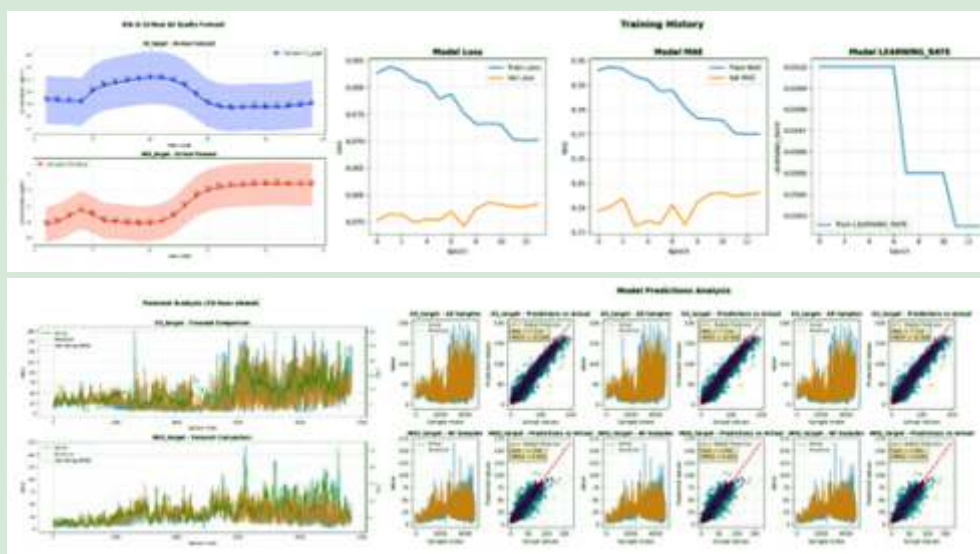
Team From: BIT Sindri

Project Title: Short-Term Forecasting of O_3 and NO_2 Using Satellite and Reanalysis Data

Problem: Limited spatial coverage and predictive capability of conventional air-quality monitoring stations.

Solution: Data-driven forecasting framework combining satellite observations with meteorological reanalysis data

Outcome/Application: Improved short-term air-quality forecasting to support pollution control and public health decisions.



OUTREACH ACTIVITIES

CONCLUSION

The winning and consolation prize projects of HACK4SUSTAIN 2025 collectively demonstrated strong innovation, sustainability focus, and practical applicability. The solutions addressed critical challenges in infrastructure resilience, disaster risk reduction, environmental monitoring, and smart urban systems, reinforcing the success of the first-ever Hack4Sustain event and setting a strong foundation for Hack4Sustain 2026.

CENTENARY EVENT: BUILD 2025

The Department of Civil Engineering organized an event entitled “Build 2025” on 08.12.2025 which was a competition on “Building urban innovative load-resistant design of civil infrastructure” as a part of the centenary celebration of IIT (ISM) Dhanbad. It was sponsored by PVUN, KTMLP, MEGAPLAST, Aimil Ltd., and Krubber. The event was coordinated by organizing committee members, Prof. Piyali Sengupta, Prof. Pranesh Roy, Prof. Rahul Bhartiya, Prof. Leeza Malik, Prof. Avinash Kumar Singh, and Prof. Lijith KP. There were two sub-events, namely, Build-Mania and Exhibit-Craze. Build-Mania was a model building event. It is about building a balanced cantilever bridge using cardboard, glue, tape, and ice-cream sticks. The model building time on site was 1.5 hours. Evaluation was based on model demonstration and strength to weight ratio. Exhibit-Craze was an exhibition event. Here, participants carried their built models from home. The models included hydraulic dam, twin horse-shoe tunnel, battery operated smart transportation system and many more. Models were ready for exhibition and were demonstrated by the participants. Model dimension was limited to 0.5m x 0.5m x 0.5m. In both the events, team size was up to 3-5 students. Dr. Amiya, BCCL, Dr. Aditya Rana, CIMFR, Dr. Shorub Rukiyar, CIMFR were the judges of the events. The prize money of Rs. 15000, 10000, and 6000 was awarded to the winner, first, and second runner-up.



OUTREACH ACTIVITIES

CENTENARY EVENT: POSTER PRESENTATION COMPETITION

The Department of Civil Engineering organized a poster presentation competition as part of the centenary celebrations of IIT (ISM) Dhanbad on 06.12.2025. It was sponsored by PVUN, KTMLP, MEGAPLAST, Aimil Ltd., and Krubber. The event was coordinated by organizing committee members, Prof. Smruti Sourav Mohapatra and Prof. Punyabeet Sarangi. The event invited ongoing and unpublished research papers in the areas of geotechnical, structural, transportation, and water resources engineering in the form of an abstract of 300 to 400 words from PG and PhD students of our institute, as well as from outside participants. We received 32 abstracts, out of which we shortlisted 17 abstracts based on their technicality and originality. Shri Manoj Kumar Pandey, NHA1 Hazaribagh; Shri Ashish Kumar, ECR Dhanbad Division; Shri Onkar Ashis, ECR Dhanbad Division; and Prof. Alok Sinha, HOD Department of Environmental Engineering were the judges of the events. During the evaluation of posters, each participant was given 10 minutes to explain their work to the judges, followed by 5 minutes of interaction session. The prize money of 15000, 10000, and 5000 was awarded to the winner, first, and second runner-up, followed by 5 consolation prizes of 1000 each. Mr. Shubham Kumar of IIT (ISM) (Geotechnical) was the winner, Mr. Shivam Shekhar of BIT Mesra (Structural) was the first runners-up and Mr. Nitish Kumar of IIT (ISM) (Water Resource) was the second runner-up.



OUTREACH ACTIVITIES



CONFERENCE PRESENTATION

Dr. Punyabeet Sarangi (Assistant Professor) attended the 8th Conference of Transportation Research Group 2025 held in IIT Guwahati from 17-20 December 2025, organized by the Transportation Research Group of India (TRG) and presented his paper co-authored with Dr. Chetan Doddamani, PhD, “Exploring Gendered Interactions in In-home and Out-of-home Activity Participation: A Bayesian Analysis of NTUS Data 2019 (Paper ID 235)”. The study dives deep into the unique socio-cultural and geographical context of North-East India to understand how spouses trade off their time between multiple out-of-home activities and how it impacts their travel behavior.



Keynote Lecture:

Dr. Bandita Barman delivered a keynote lecture at HYDRO 2025 titled “Three-dimensional hydro-morphodynamic modelling of alluvial channels using TELEMAC and GAIA.” The lecture focused on advanced three-dimensional numerical modelling of flow-sediment interactions in alluvial channels, highlighting methodological aspects, model capabilities, and practical applications in river engineering and morphodynamic studies.

In addition, she served as a Session Chair for the theme “Coastal, Harbor, and Ocean Engineering,” facilitating technical sessions and fostering scholarly discussions among researchers and practitioners.

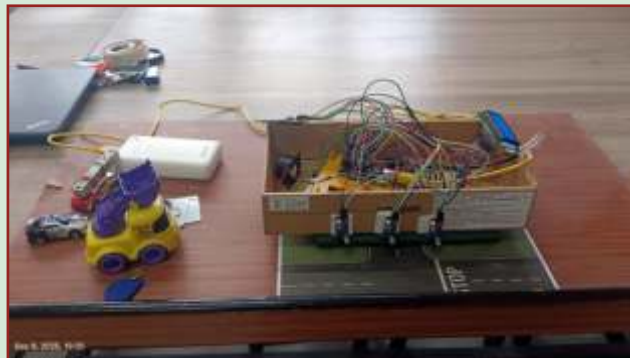
Dr. Barman also delivered an invited lecture at the Young Professionals Network (YPN) event during HYDRO 2025 on the theme “Inspiring and Connecting Future Water Professionals”, where she emphasized mentorship, interdisciplinary learning, emerging opportunities in the water sector, and the role of young professionals in addressing contemporary water-related challenges.

OUTREACH ACTIVITIES



STUDENTS ACHIEVEMENT

At Build 2025, organized as part of the centenary celebrations of IIT (ISM) Dhanbad, the team TransLogix, supervised by Prof. Leeza Malik (Department of Civil Engineering), secured First Prize. The team—Subrajeet Sengupta, Sourav Mandal, Ashutosh Kumar Tiwary, Ipshita Sanyal, and S D Suman—developed a model of an Intelligent Transport System for automatic detection of speeding and signal violations. The system integrates sensors, RFID, and adaptive signal control using Arduino board to enable real-time monitoring and automated fine generation without manual intervention. This innovative solution enhances road safety, traffic compliance, and data-driven traffic management



Arduino Model for automatic detection of speeding and signal violations



STUDENTS ACHIEVEMENT

WINNER TEAM

The Poster Presentation Event was organized as part of the Centenary Celebrations of IIT (ISM) Dhanbad. A team supervised by Prof. Sowmiya Chawla secured First Prize and a Consolation Prize. Shubham Kumar presented a poster titled “Performance Study of Stone Columns and Rigid Inclusions for Settlement Reduction in Loose Sandy Soil: A Numerical and Analytical Investigation”, comparing the performance of stone columns and rigid inclusions under uniform loading. Finite Element Modelling was employed to evaluate the settlement improvement factor (η) and load transfer mechanisms. The results showed that rigid inclusions achieve settlement improvement comparable to stone columns at much lower area replacement ratios, while Priebe’s analytical method significantly overestimated settlement improvement. MD Aman Nimezi and Ravishankar Sahu presented a poster titled “Innovative Pile Foundation: From Nature to Engineering”, focusing on snake-skin-inspired bio-inspired piles. Their numerical and experimental studies demonstrated superior uplift resistance and reduced displacement under pull-out and seismic loading compared to conventional monopiles, highlighting their potential for offshore and coastal structures in earthquake-prone regions



BUILD (2025) was organized as part of the Centenary Celebrations of IIT (ISM) Dhanbad. In the Build Mania event, the team “Bridging the Gap” secured the runner-up position. The team members, Shubham Kumar and Vikas Kumar, constructed a bridge using 50 ice-cream sticks, glue, and paper. The bridge successfully carried a load of 10.3 kg while weighing approximately 230 g, demonstrating an excellent load-to-weight ratio.



- **Dr. Sajal (20DR0122)**, a former Ph.D. student of the Department of Civil Engineering under the supervision of Prof. Pranesh Roy, received the Inder Mohan Thapar Research (IMTR) Award for the calendar year 2024 for best publication in 2023 from the Civil Engineering Department, IIT (ISM) Dhanbad.

DETAILS OF NEW FACULTY JOINED



Dr. Chandrashekhar Lakavath is an Assistant Professor in the Department of Civil Engineering at IIT (ISM) Dhanbad. His research centers on sustainable concrete metamaterials, with a strong focus on Ultra-High Performance Concrete (UHPC) and strain-hardening cementitious composites for accelerated and sustainable construction.

His work addresses full-scale structural behavior, including the flexural and shear response of UHPC box girders, biaxial bending of UHPC columns, optimization-based sustainable concrete design, and the performance of railway sleepers. He also works on smart infrastructure and structural health monitoring, encompassing crack-based damage classification, real-time monitoring of critical structural components, and Acoustic Emission (AE) - based damage assessment. In addition, his research explores the fire performance of UHPC structures and post-fire damage evaluation, with applications in tunnels, underground infrastructure, and modular nuclear reactors. Students interested in research, higher studies, or career guidance are encouraged to connect with him.

Office: Department of Civil Engineering, 3rd Floor, New Academic Complex, Room 325

Email: chandrashekhar@iitism.ac.in

ALUMNI BITES



Mr. Koko Karbia
 Assistant Professor
 Manipur Technical University
 Batch: 2018-2020

I completed my M.Tech programme (2018–2020) with specialization in Geotechnical Engineering from the Department of Civil Engineering, IIT (ISM) Dhanbad. Two years at IIT (ISM) Dhanbad has been a memorable period of my life. My academic journey in this prestigious institute was highly valuable, which helped in contributing significantly to my professional growth as an academician and civil engineer. I sincerely thank my supervisor, Dr Lohit Nainegali, HOD Prof. Sarat Kumar Das and all the faculty members who have played an instrumental role in shaping my career. The faculty members in this institute were friendly, informed, and always keen to help students with their studies and reshaped by the department's regular technical seminars, expert lectures, and workshops. The availability of experimental labs and computing facilities enhanced the capacity

for numerical analysis and experimentation. The academic environment at IIT (ISM) Dhanbad encouraged discipline, professionalism, and ethical research practices. Interaction with peers from diverse academic and cultural backgrounds build up collaborative learning and professional networking. The knowledge, academic training and research exposure received during my M.Tech programme continues to guide my teaching and research activities in my current role as Assistant Professor. I am very grateful to the Department of Civil Engineering, IIT (ISM) Dhanbad, for providing a strong academic foundation and an inspiring learning environment.

ALUMNI BITES



Dr. Shilpa S Vadavadagi
Assistant Tailings Engineer –
Mine Waste at WSP.
Batch: 2017-2023

My Ph.D. journey at IIT (ISM) Dhanbad has been an immensely fulfilling and life time experience, both academically and personally.

The institute offered a vibrant research ecosystem that consistently encouraged critical thinking, innovation, and intellectual independence. Access to advanced laboratory facilities, academic resources, and interdisciplinary exposure enabled me to pursue my research with depth and rigor. The stimulating academic atmosphere pushed me to refine my problem-solving abilities and develop a strong research mindset.

One of the most valuable aspects of my time at IIT (ISM) Dhanbad was the guidance and mentorship provided by guide Prof. Sowmiya Chawla. Her Patience, innovative thinking and strong support and a great attitude to make impossible things possible has moulded me into a new person. Her expertise and constructive feedback played a crucial role in shaping my research direction and strengthening my academic foundation. Faculty members of the department are extremely helpful and knowledgeable. Prof. S. K. Das my DSC chairman, Prof. Lohitkumar Nainegali, Prof. Viswas Khatri, and Prof. Pasupuleti as my DSC members have played an important role in giving feedback during the Ph.D seminars and improving my work.