NEWSLETTER

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

Civil Lens

JUNE 2025 ISSUE

DEPARTMENT OF CIVIL ENGINEERING

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Published by

Department of Civil Engineering

Indian Institute of Technology (ISM) Dhanbad

Jharkhand - 826004

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MESSAGE *from the* HOD's Desk

Dear all,

Welcome to the June 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

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

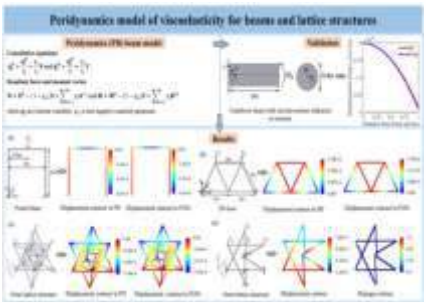
PATENT

Prof. P. Agarwal, Prof. S. Pasupuleti, Prof. A. Sinha Prof. A. Singh, Prof. A Banerjee Filed Indian Patent No. 202531058176 on 17.06.2025 for their invention titled **"A system of automatic operation of canal gate designed with secured casing and motor".**

PUBLICATIONS

JOURNALS

Sah, B., Sajal, Choudhary, N., Kumar, K., & Roy, P. (2025). "Peridynamics model of viscoelasticity for beams and lattice structures", International Journal of Mechanical Sciences, Elsevier, 301, 110545. https://doi.org/10.1016/j.ijmecsci.2025.110545 (IF: 9.4)



Kumar, K., Choudhary, N., Sajal, Sah, B., & Roy, P. (2025). "Peridynamics model of viscoelasticity for shells and metasurfaces", Computer Methods in Applied Mechanics and Engineering, Elsevier, 444, 118169. https://doi.org/10.1016/j.cma.2025.118169 (IF: 7.3)

Kumar S., Sarkar R., and Nainegali L. (2025). "Effects of Uncertainty of Critical Parameters on Performance of Piles with Different Batter Angles in Laterally Spreading Ground: Development of Prediction Models." European Journal of Environmental and Civil Engineering, Taylor & Francis. (IF: 2.2). DOI: https://doi.org/10.1080/19648189.2025.2523880

Banik N. and Sarkar R. (2025). "Experimental study on monotonic behaviour of MICP-treated sand using different ureolytic bacteria considering wetting-drying cycles." Indian Geotechnical Journal, Springer. (IF: 1.4) DOI: https://doi.org/10.1007/s40098-025-01281-9

PUBLICATIONS

JOURNALS

Gupta, A., Choudhary, P., & Parida, M. (2025). Exploring driver decision-making in lane-changing : A human factors approach using AI and naturalistic data. Transportation Research Part F: Psychology and Behaviour, 114 (March), 794–820. https://doi.org/10.1016/j.trf.2025.06.030 (IF: 4.4)

Shrivastava, S., Khatri, V. N., Banerjee, A., & Pasupuleti, S. (2025). Evaluating the impact of core position and material on seepage and stability of rockfill dam through experimental and numerical analysis. Acta Geophysica, 1-16. (I.F.: 2.1). https://doi.org/10.1007/s11600-025-01625-2

Tiwari, S., Das, S. (2025). Explainable Artificial Intelligence-Driven Ensemble Learning for Liquefaction Susceptibility Analysis. Transp. Infrastruct. Geotech. 12, 171 (I.F.: 2.3). https://doi.org/10.1007/s40515-025-00628-2

Chaurasia, V., Pulkit, U., & Adhikary, S.D. (2025). An analytical prediction of maximum deflection and concrete contribution in shear-critical RC beams subjected to low-velocity transverse impact. ASCE Journal of Structural Design and Construction Practice, Accepted (I.F.: 2.1)

CONFERENCE PROCEEDINGS

Ravi Kumar Mishra, Bandita Barman, and Tinesh Pathania (2025). "Hydro-Morphodynamic Characteristics of a Mining Pit Near a Channel Confluence" at 41st International Association for Hydro-Environment Engineering and Research (IAHR) World Congress, Singapore, during June 22-27, 2025.

Yatirajulu Gurugubelli, Laxman Rathod, Timbadiya P.V., and Bandita Barman (2025). "Computation of Bed Shear Stress Using Multiple Methods and Quadrant Analysis in an Asymmetric Sinuous Channel" at 41st International Association for Hydro-Environment Engineering and Research (IAHR) World Congress, Singapore, during June 22-27, 2025.

PUBLICATIONS

CONFERENCE PROCEEDINGS

Laxman Rathod, Yatirajulu Gurugubelli, Timbadiya P.V., and Bandita Barman (2025). "Turbulent flow Structure in Compound Channels: Comparing the Morphological Effects of Two Emergent Flexible Floodplain Vegetation Types" at 41st International Association for Hydro-Environment Engineering and Research (IAHR) World Congress, Singapore, during June 22-27, 2025.

BOOK

Foundation Dynamics: Select Proceedings of 8th ICRAGEE 2024, **Sarkar, Rajib, Kumar, Abhishek, Maheshwari, B.K. (Eds.),** Springer Nature, 2025, ISBN: 978-981-96-1417-2. DOI: https://doi.org/10.1007/978-981-96-1417-2.

Analyses for Retaining walls, Slope Stability and Landslides: Select Proceedings of 8th ICRAGEE 2024, **Sarkar, Rajib, Maheshwari, B.K., Kumar, Abhishek (Eds.),** Springer Nature, 2025, ISBN: 978-981-96-1683-1. DOI: https://doi.org/10.1007/978-981-96-1683-1.

BOOK CHAPTER

Kumar A., Anand, A., Sarkar R., and Singh R.V. (2025). "Seismic slope displacement analysis of variably saturated tailing pond dyke slop." R. Sarkar et al. (eds.), Analyses for Retaining walls, Slope Stability and Landslides, Lecture Notes in Civil Engineering 568, Select Proceedings of 8th ICRAGEE 2024. https://doi.org/10.1007/978-981-96-1683-1_1

R&D AND CONSULTANCY PROJECT

Sl. No.	PI/Co-PI or CI/Co-CI	Project Title	Status	Project Value (Lakhs)	Funding Agency
1.	PI: Prof. Mohit Agrawal, Dept. of AGP Co-PI : Prof. Sowmiya Chawla, Dept. of CE	Raising awareness among school students and teachers about earthquake hazards and risk mitigation strategies	On-going R&D Project	Rs. 10.22	Department of Science & Technology, National Council for Science and Technology Communication

R&D AND CONSULTANCY PROJECT

Sl. No.	PI/Co-PI or CI/Co-CI	Project Title	Status	Project Value (Lakhs)	Funding Agency
2.	CI: Prof. Tanish Dey, CE	Mix Design of M10 and M25 Grade of Concrete	On-going Consultancy Project	Rs. 0.82	Mr. Binod Kumar Singh, Dhanbad
3.	CI: Prof. Tanish Dey, CE Co-CI: Prof. Rajib Sarkar, CE	Vetting of Structural Drawings & Designs for Different Military Engineering Projects	On-going Consultancy Project	Rs. 1.18	M/s Engineers and Consultancy, Koderma
4.	CI: Prof. Tanish Dey, CE Co-CI: Prof. Rajib Sarkar, CE	Vetting of Drawings & Designs of RCC Box, Pile and Pile Cap	On-going Consultancy Project	Rs. 1.41	M/s Jhajharia Nirman Limited, Kolkata
5.	CI: Prof. Sukanta Chakraborty, CE Co-CI: Prof. Sarat K. Das, CE	Vetting of the design for staging/scaffolding of conveyor gallery type DCG 27 and GG131 at NTECL, Vallur, TN	On-going Consultancy Project	Rs. 5.31	M/s Powergen Technical Services Pvt. Ltd., Kolkata

INDIVIDUAL FACULTY ACHIEVEMENTS

Prof. Akshay Gupta has been appointed as a Co-Chair, Special Interest Group H-5: Urban Transport in Developing Countries of World Conference on Transport Research Society (WCTRS). This international Society (WCTRS) provides a forum for the interchange of ideas among transport researchers, managers, policy makers, and educators from all over the world, from a multi-modal, multi-disciplinary, and multi-sectoral perspective.

OUTREACH ACTIVITIES

LECTURE

Rajib Sarkar: Delivered online lecture on "Earthquake-Resistant Design Considerations for Pile-Supported Structures with focus on Tall Building Foundations" for Captain Steel, 30th June 2025.

GIAN COURSE

GIAN Course on "Geo-Environmental Consideration for the Design of Tailings Storage Facilities" at Department of Civil Engineering, IIT (ISM) Dhanbad

The Department of Civil Engineering, IIT (ISM) Dhanbad, successfully hosted a five-day GIAN course from June 23–27, 2025, under the Ministry of Education's Global Initiative of Academic Networks (GIAN) scheme. The course focused on the pressing challenges and best practices surrounding the safe design, operation, and closure of Tailings Storage Facilities (TSFs), a critical concern in modern mining operations.

This course was organised by Prof. Sarat Kumar Das of IIT (ISM) and Dr. Bibhuti Bhusan Panda, a Senior Geotechnical Engineer at AECOM, USA, joined as a foreign expert. The course featured in-depth lectures, tutorials, and hands-on training. Participants explored a wide range of topics including tailings disposal methods, hydro-geotechnical parameters, seismic and filter design, instrumentation like InSAR, and global standards such as GISTM.

With strong participation from industry professional, students, faculty, and regulatory bodies, the course fostered meaningful dialogue between academia and practice. Attendees gained insights into advanced monitoring technologies, sustainable design, and regulatory frameworks that ensure long-term safety and environmental compliance of TSFs. This course not only enriched technical knowledge but also strengthened international collaboration in the field of geo-environmental engineering.

STUDENT ACHIEVEMENT

Satyam Tiwari, Ph.D. research scholar, received prestigious financial assistance under the **International Travel Scheme (ITS) of the Anusandhan National Research Foundation (ANRF)** to participate in the EGRWSE 2025 (6th International Conference on Environmental Geotechnology, Recycled Waste Materials and Sustainable Engineering) held in Spain in June 2025. This support enabled him to engage with leading researchers, present his ongoing work on smart geotechnical infrastructure, and explore collaborative opportunities in the field of digital twin-based slope stability assessment.

Ravi Kumar Mishra, a Ph.D. scholar in the Department of Civil Engineering, presented his research at the prestigious **41st International Association for Hydro-Environment Engineering and Research (IAHR) World Congress,** held in Singapore from June 22 to 27, 2025. His participation in this globally recognized event highlights the quality and impact of the ongoing work in the field of water and environmental engineering.

ALUMNI BITES

Devendra Kumar
Sub Divisional Officer
Irrigation & Water Resource Department, Uttar Pradesh
B.Tech.-Civil Engg. (ISM Dhanbad) (2014-18)

"The future belongs to the competent. Get good, get better, be the best!"

My journey began at ISM Dhanbad, where I opted my B-Tech in Civil Engineering disciplines. My Experience in ISM Dhanbad was intellectually stimulating and personally transformative. The Academic environment of ISM deepend my technical knowledge in Civil Engineering field while extracurricular activities helped me to develop leadership, teamwork and well rounded perspective.

I had a great time with ISM and enjoyed the culture of senior - junior relationship of ISM and I will cherish all the ISM memories for lifetime. I completed my B-Tech project (Design of U- shape intersection) under the guidance of Dr. Smruti Saurava Mohapatra, his advice and insights have been instrumental in my career growth. I would appreciate the dedication and efforts of Placement cell of our department headed by Dr. Satadru Das Adhikary (At that time), who put all the possible efforts to invite various companies including Public Sector Undertakings (PSUs) for the placement of the students. During final year, I got placed in HPCL (Maharatna PSU) through campus recruitment. After that I cleared State Engineering Service examination in 2021 and joined Irrigation and Water Resources Dept under Ministry of Jal Shakti, Uttar Pradesh as Sub Divisional Officer (SDO). This service will provide me an opportunity to use my core technical knowledge which were first nurtured during my college days.

So I am deeply grateful for the ISM that helped me to shape my career.

ALUMNI BITES

Dr. Tathagatha Khan
Assistant Professor
National Institute of Technology Mizoram
B.Tech (Visvesvaraya Technological University, Belgaum, Karnataka, India) M.Tech (NIT Silchar)
PhD (IIT(ISM) Dhanbad)

I began my Ph.D. journey at the Department of Civil Engineering, IIT (ISM) Dhanbad in 2017, after completing my M.Tech and gaining teaching experience. My research focused on the Operational Assessment of U-turns at Mid-Block Median Openings, a subject that lies at the intersection of traffic safety, driver behavior, and transportation system efficiency. Under the able guidance of Dr. S.S. Mohapatra, I was fortunate to delve into both theoretical and applied dimensions of transportation engineering.

My experience in the department was both transformative and fulfilling. Being part of a growing department meant we had to face some initial challenges, but these were more than outweighed by the immense support, mentorship, and collaborative spirit provided by the faculty and fellow scholars. The department fostered a research-driven culture with well-equipped laboratories, high-performance computing resources, and, most importantly, a 24x7 work environment that allowed me to develop a disciplined yet flexible work ethic.

IIT (ISM) Dhanbad, with its vibrant academic ecosystem and interdisciplinary research culture, provided the perfect platform for holistic development. Beyond academics, the campus life, interactions with peers, and access to ational and international experts shaped my perspective as a researcher and educator. Today, as an Assistant Professor at NIT Mizoram, I continue to build on the strong foundation laid uring my time at IIT (ISM) Dhanbad. I carry with me not only the technical expertise but also the values of integrity, leadership, and lifelong learning that the department instilled in me. I will always remain grateful to the Department of Civil Engineering and IIT (ISM) Dhanbad for shaping the academician I am today.