



AUGUST 2025 ISSUE



DEPARTMENT OF CIVIL ENGINEERING



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NEWSLETTER

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

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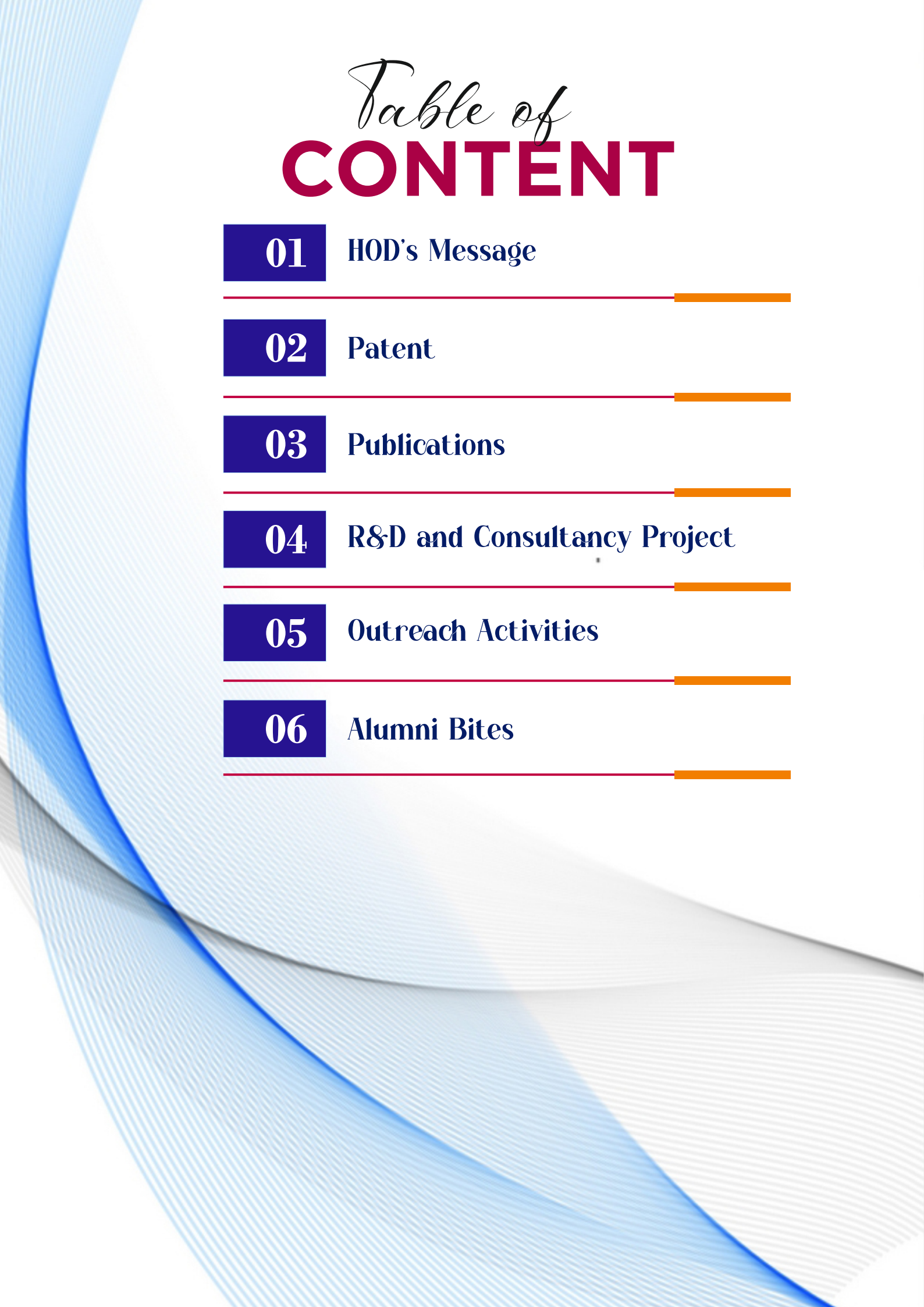


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MESSAGE *from the* HOD's Desk



Dear all,

Welcome to the August 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.

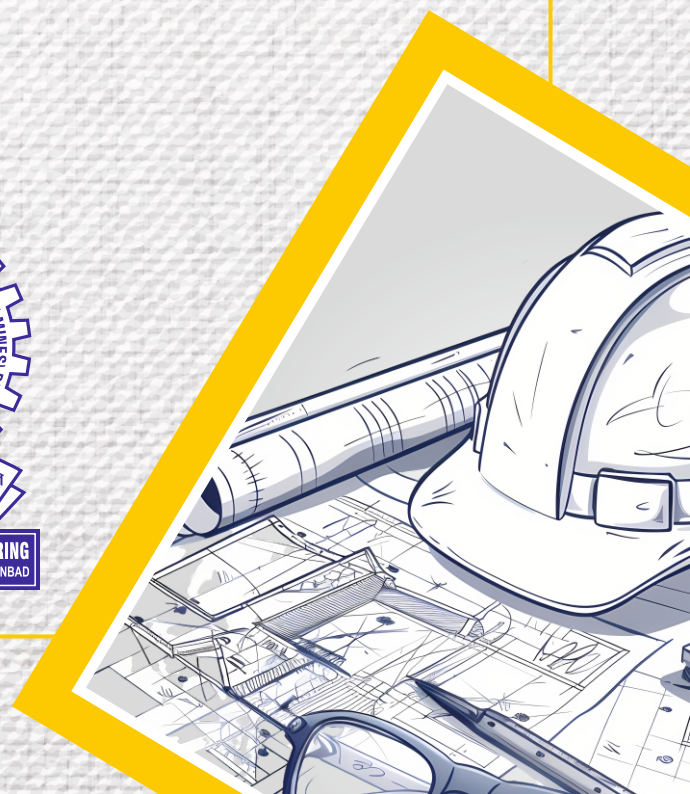
It gives me great satisfaction and pleasure to witness the achievements of the Department of Civil Engineering with continuous efforts from dynamic faculty colleagues, talented research scholars duly supported by dedicated technical staff members.

Best Wishes!

Srinivas Pasupuleti



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



PATENT



Kuldeep Sharma and Sarat Kumar Das Published Indian Patent No. 202531066822 on 08.08.2025 for their invention titled “**An unconfined compressive strength (UCS) soil compactor with integrated pressure gauge and sample extruder mechanism**”.



Rahul Bhartiya and Aamir Hassan Published Indian Patent No. 202531071018 on 01.08.2025 for their invention titled “**A method of constructing advanced rotated multi-cellular double skin tube columns (RMCDSTCS) for enhanced structural performance**”.



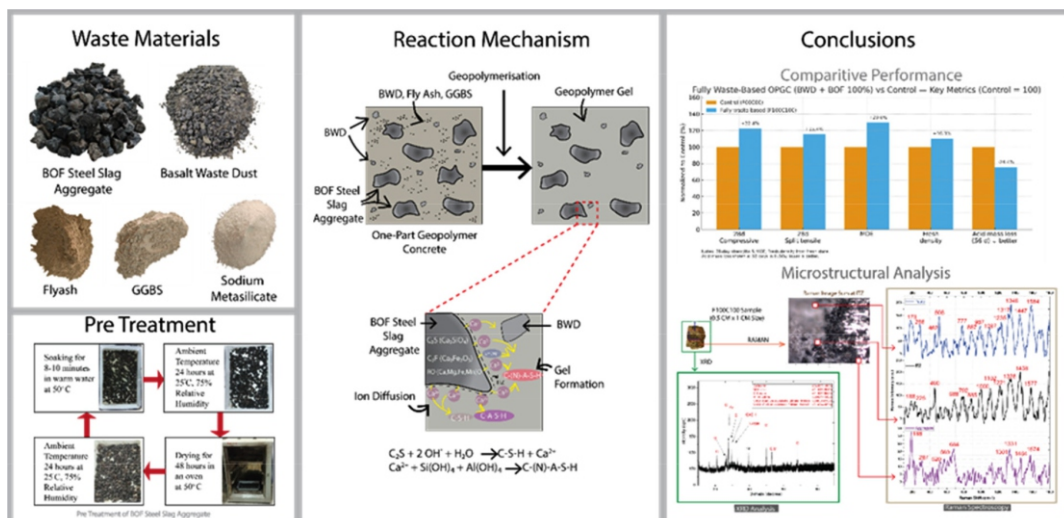
Kuldeep Sharma and Sarat Kumar Das Published Indian Patent No. 202531064480 on 18.07.2025 for their invention titled “**Mould assembly configured with semi-circular Knapp joint connections integrated with vibratory motor to cast Mortar**”.

PUBLICATIONS

JOURNALS



Jain, D. and Adhikary, S.D. (2025). “Development of Fully Waste-Based One-Part Geopolymer Concrete Utilizing Basalt Waste Dust and Steel Slag Aggregate” Construction and Building Materials Journal, Elsevier, 143204, <https://doi.org/10.1016/j.conbuildmat.2025.143204>, (Q1, IF-8.0)



PUBLICATIONS

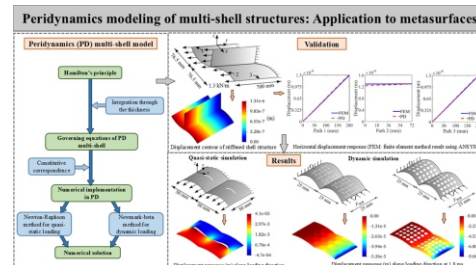
JOURNALS

I. Jha, S.C. Dutta, V. Kumar (2025). Structural behaviour and performance assessment of proposed concrete-filled quadruple steel tubular (CFQST) cross-sections under compressive loading: Experimental and numerical study., Journal of Building Engineering (Q1, IF-7.4). <https://doi.org/10.1016/j.jobbe.2025.113828>.

Mishra, P. N., H. Verma, S. Tiwari, Sebastian, Q. Olaya, Thierry Bore, Z. Zhao, and S. K. Das. (2025). "Hydromechanical and Electromagnetic Properties of Xanthan Gum-Treated Kaolin." J. Geotech. Geoenvironmental Eng., 151 (11): 06025005. American Society of Civil Engineers (Q1, 4.4). <https://doi.org/10.1061/JGGEFK.GTENG-13134>.

Abhishek, R., Chawla, S. and Vinod, J S. (2025). "Enhancement of Existing Railway Tracks for Heavier Axle Loads: Innovative Retrofitting Techniques", Indian Geotechnical Journal (Q3, IF-1.6), <https://doi.org/10.1007/s40098-025-01355-8>.

Dey, B., Sajal, & Roy, P. (2025). "Peridynamics modeling of multi-shell structures: Application to metasurfaces", Thin-Walled Structures, Elsevier, 113890. <https://doi.org/10.1016/j.tws.2025.113890> (Q1, IF-6.6)



CONFERENCE PROCEEDINGS

Jain, D. and Adhikary, S.D. (2025). "Eco-Friendly One-Part Geopolymer Composites: Influence of PVA and Glass Fibers on Mechanical and Durability Properties" 3rd International Conference on Construction Materials and Structures (ICCMS 2025), IIT Tirupati, India.

BOOK

Dynamic Soil Properties and Liquefaction: Select Proceedings of 8th ICORAGEE 2024, **Kumar, A., Maheshwari, B.K., Sarkar, R.** (Eds.), Springer Nature, 2025, ISBN: 978-981-96-1608-4. DOI: <https://doi.org/10.1007/978-981-96-1606-0>.

PUBLICATIONS

BOOK

Seismic Design and Performance of Structures, Soil-Structure Interaction: Select Proceedings of 8th ICRAGEE 2024, **Maheshwari, B.K., Sarkar, R., Kumar, A.** (Eds.), Springer Nature, 2025, ISBN: 978-981-96-2098-2. DOI: <https://doi.org/10.1007/978-981-96-2096-8>.

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. Sekhar Chandra Dutta, CE	NDT tests of Minor Bridge in connection with "PMC work for newline/ modification existing lines for making provision of rapid loading system at KDH railway siding of CCL, Dist. Ranchi, Jharkhand, - Reg. submission of remuneration	On-going	Rs. 1.77	M/S RITES LIMITED, Kolkata
2.	CI: Prof. Sarat Kumar Das, CE	The Annual Safety Certification of Ash Dykes of Bokaro Thermal Power Station (BTPS), Damodar Valley Corporation (DVC)	On-going	Rs. 5.9	M/S DVC, Bokaro Thermal Power Station, Bokaro
3.	CI: Prof. Tanish Dey, CE Co-CI: Prof. Rajib Sarkar, CE	Proof Checking of Structural Design and Drawings for Pier Mark MP1 & MP2 (62 M Bow-String Superstructure Supporting Pier) for Shalimar Rob	On-going	Rs. 2.77	M/S Ircon International Limited, Kolkata
4.	CI: Prof. Sarat K. Das, CE	The Annual Compliance Audit (2024-25) for Ash Disposal at RTPS, DVC as per Direction of MoEF & CC	On-going	Rs. 2.12	M/S Raghunathpur Thermal Power Station, Damodar Valley Corporation (RTPS, DVC), Purulia

OUTREACH ACTIVITIES

Rajib Sarkar: Delivered expert lecture on *“Seismic Performance of Foundations of Offshore Wind Turbines in Indian Context”* in Seismo Hack 1.0 at SRM Institute of Science and Technology, KTR Campus, Chennai, Tamil Nadu, 7th-8th August 2025.



Expert Talk: Next-Gen Railway Geotechnics

A GTS NX Webinar on “Next-Gen Railway Geotechnics: Application of Numerical Modelling in Sustainable and Resilient Railway Track Design” was held on 27th August 2025, featuring Prof. Sowmiya Chawla, Associate Professor, IIT (ISM) Dhanbad, as the speaker.

Prof. Chawla discussed the use of finite element method (FEM) modelling integrated with experimental validation to design sustainable and resilient railway track systems. She demonstrated applications using MIDAS GTS-NX for simulating track-ground interactions, highlighting areas such as geosynthetic-reinforced embankments, reinforcement mechanisms, mud-pumping mitigation, cyclic loading durability, and micropile-based rehabilitation strategies. The webinar drew over 100 participants from industry and academia and concluded with an engaging Q&A session making it a valuable knowledge-sharing platform in advancing railway geotechnics.



ALUMNI BITES



Gaurav Singh

Sub Divisional Officer
Scientist-B
DRDO India

My journey at ISM Dhanbad began in 2019 when I opted for B.Tech in the Civil Engineering discipline. The curriculum was well designed to develop interest in truly interesting subjects of civil engineering while also giving freedom to pursue different domains. The competitive environment of the campus was enough to build my focus on the work. Clubs and cultural activities always helped me lighten the mood. While our campus experience was almost ruined during lockdown, engaging in online classes and robust examination methods ensured that we caught up in academic knowledge. This helped me secure a silver medal for the branch.

During my final year, I got placed in Thyssenkrupp Industries Pvt. Ltd.

ALUMNI BITES

After that, I got selected in Indian Oil Corporation Limited (Maharatna PSU) via the GATE exam (AIR 12) and got the opportunity to serve in mega projects straightaway. I worked there for 1.5 years. I am now working in DRDO as Scientist-B and exploring new technologies. Diverse knowledge in various domains, thanks to the elective courses offered to us during semesters, has helped me in industrial experience after graduation and ensured that I become a better contributor in mega projects.

My Experience in ISM Dhanbad was the beginning of an all-around experience in academics and non-academic domains. I feel grateful for being given the opportunity, freedom, and encouragement to do anything I enjoy. Only the mess food could have been better.



Dr. Amit yadav
Assistant Professor
Deptt. of Civil Engineering,
NIT Mizoram

Looking back, my time at IIT (ISM) Dhanbad stands out as one of those chapters in life that leaves a lasting impression. Nearly a decade spent here in the Civil Engineering department: first as an M.Tech student, then pursuing my PhD, and this place has truly become like a second home.

I still remember joining in 2015 as part of the very first M.Tech batch in Structural Engineering. There was something exciting about being pioneers. We got to watch the program evolve right before our eyes, and there's a certain pride in being part of that foundation.

Those M.Tech years really set me up well. The grounding I got in structural analysis and design became the perfect launchpad for my doctoral research later on. During my PhD, I found myself getting completely absorbed in structural mechanics and computational

methods. Dhanbad has this wonderful cultural mix—Bihari and Bengali influences everywhere, especially in the food scene. I lost count of how many times I enjoyed sattu paratha or litti chokha from local joints, or treated myself to proper Bengali sweets like rasgulla and mishti doi. That cultural richness added so much depth to the whole experience.

If I had to give some advice to the juniors and new PhD scholars coming in, I'd say this: the journey is challenging. There were definitely moments when I questioned everything. But each roadblock taught me something valuable. Stay curious, keep at it consistently, and be patient with yourself. The department has fantastic resources and people who genuinely want to see you succeed, so don't hesitate to lean on that support system.

I know it sounds a bit sentimental, but I really am grateful for everything IIT (ISM) Dhanbad and the Civil Engineering department gave me. It shaped not just my career, but who I am as a person. That's something I'll carry with me wherever life takes me next.