

**Newsletter (Sept 2025) of the
Dept. of Fuel, Minerals & Metallurgical Engg.**



**Indian Institute of Technology
(Indian School of Mines)
Dhanbad**



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From the HoD's Desk

It gives me great pleasure to extend my greetings through the September 2025 edition of our departmental newsletter. This platform continues to highlight the academic excellence, research contributions, and vibrant activities that define our department's dynamic environment. The month of September has witnessed significant academic and research engagements, including active participation of our students and faculty members in industrial visits, conferences, workshops, and collaborative projects. Such initiatives not only enhance the technical competence of our community but also strengthen our department's visibility and impact at national and international levels. I take this opportunity to commend the efforts of our faculty, staff, and students for their continued dedication toward the department's growth. Let us maintain this momentum as we approach the closing months of the year and continue to uphold the values of innovation, teamwork, and integrity in all our endeavours. I encourage everyone to stay inspired, contribute meaningfully to our collective mission, and make the Department of Fuel, Mineral and Metallurgical Engineering a hub of excellence in education, research, and innovation.



Dr. Shatrughan Soren, Associate Professor & HOD

Dept. of Fuel, Minerals & Metallurgical Engg.
Indian Institute of Technology (ISM) Dhanbad
Mob: +91-9939707967, LL: +91-326-223-5948

Email: fmme@iitism.ac.in

Seminars & Conferences Attended

- ❖ **Prof. Pankaj Kumar Jain** attended a seminar on Centers of Excellence for the National Critical Mineral Mission and the Launch of the 6th tranche of Critical Mineral Blocks Auction on September 16, 2025, at T-Hub, Gachibowli, Hyderabad.



- **Prof. Raj Dishwar** attended and presented his research at **SteelSim 2025**, delivering a talk titled *“Plasma-Assisted Refining of Pig Iron: Role of Lime Charging Modes, Fluxed DRI Reduction Levels, and Method of Melting.”*
- His presentation explored advanced plasma-assisted refining strategies, emphasizing the influence of lime dynamics and DRI characteristics on process efficiency and steel quality enhancement.
- A key highlight of the conference was the engaging interaction with **Prof. Neshlihan** and her research group, whose insightful questions and perspectives inspired new directions for refining process optimization and potential collaborative research.
- Prof. Dishwar expressed his appreciation for **SteelSim 2025** as a valuable platform fostering dialogue among researchers and industry experts driving the future of **sustainable steelmaking**. He looks forward to building on these discussions and contributing to the continued advancement of metallurgical innovation.





Publications

- **Jain, P.K.**, 2025. The Graphite Processing Sector: A Global Perspective on Practices, Applications, Trade, and Trends Toward 2047. Mineral Processing and Extractive Metallurgy Review 1–24. Available online. <https://doi.org/10.1080/08827508.2025.2552149>
- Girendra Kumar, **Avanish Kumar**, Himadri Nandan Bar: Ratcheting fatigue in SA333 Gr-6 steel: Beneficial effect of dynamic strain aging and microstructure evolution. Journal of Materials Engineering and Performance (2025). <https://doi.org/10.1007/s11665-025-12191-5>

R & D Funding

- **Title of the Project:** Beneficiation of iron ore slimes using reverse floatation and a study on the synergistic effect of collectors.
 - **PI:** Prof. Shravan Kumar
 - **Funding agency** - Ministry of Steel,
 - **Project outlay** - 42 Lakh



Visitors/Visits for Collobarations

- Prof. Arup Kumar Mandal and Dr. Satadal Ghorai from the Dept of Metallurgical and Materials Engg, NIT Durgapur, visited the Steel Technology Laboratory to discuss ongoing research collaborations





From Left:

Prof. Satadal Ghorai, Assoc. Prof., NIT Durgapur
 Prof. Arup Kumar Mandal, Asst. Prof., NIT Durgapur

Prof. Raj Dishwar, Asst. Prof., IIT (ISM) Dhanbad
 Prof. Vishnu Teja, Asst. Prof., IIT (ISM) Dhanbad

- Prof. Raj Dishwar had an extensive discussion with his PAIR team during the one-day workshop successfully organized by IIT (ISM) Dhanbad under the ANRF-PAIR Category B Project on “Development of Innovative and Cutting-Edge Indigenous Technologies for Critical Minerals Exploration and Smart/Sustainable Mining.



- A visit to Rashmi Group, Kharagpur, was undertaken by Prof. Raj Dishwar and Prof. Vishnu Teja on 26–27 September to initiate discussions on potential collaborative projects and joint research opportunities.

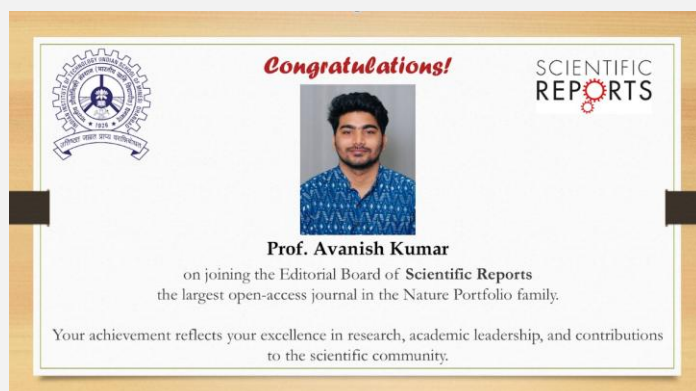


- Prof. Raj Dishwar visited Universitat Rovira i Virgili (URV), the public university of Tarragona, to explore avenues for joint research and academic collaboration.



Faculty Achievements

Prof. Avanish Kumar and Prof. Shubhi Gupta have joined the Editorial Board of *Scientific Reports* (Springer Nature).



Student Achievements

At the 6th International Conference on Advances in Steel, Power and Construction Technology (ICASPECT'25) held at OPJU, Raigarh, research scholar **Sandip Kumar Bauri**, under the guidance of **Prof. Avanish Kumar**, presented his work on **phase transformations during austempering in high-carbon steel** using dilatometry. His study offered key insights into transformation behavior and bainite stability. As part of the event, he also visited **Jindal Steel and Power Ltd.** with industry experts from **SLV Mexico** for industrial exposure.



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