



Department of Mining Engineering

From HoD's Desk
By Prof. D. P. Mishra



Dear Readers,

It brings me immense joy to bring to you the 2nd Edition of "The Mining Edge", the monthly newsletter of the Department of Mining Engineering, IIT (ISM) Dhanbad. This newsletter updates you of the recent developments and ongoing journey of our Department. In the last month, our department excelled in terms of receiving high value industry-sponsored projects and research

Department successfully organised the Annual Techno-mining Fest KHANAN'24 during 26-27 October, 2024. The event featured several compelling technical competitions and workshops, such as Mining Olympiad, General Quizzine, Placement Fever, Nirvana, etc. This year's KHANAN edition has witnessed a huge student participation from different prestigious institutions across the country. A large number of luminaries from the mining industry, namely Mr. Jitendra Malik, Director (Technical/Operations), Northern Coalfields Ltd., Mr. Niladri Roy, Director (Technical/Operations) Eastern Coalfields Ltd., Mr. Satish Jha, Director (Technical/Engineering Services), CMPDI, and Mr. Animesh Jain, Regional Executive Director and CEO, NTPC Ltd. graced the Inaugural Function. Prof. A. K. Mishra, Director, SCIR-CIMFR Dhanbad graced the Valedictory Function of the event as Chief Guest. KHANAN'24 set a platform for fostering technical excellence and innovation in the mining sector.

As we continue down the trails of a transformative era in the mining

industry, I take this opportunity to share some insights into the future of mining technology. India's mission for efficient transition from coal to renewable sources requires the availability of critical minerals. While India is mostly reliant on other countries for critical minerals, our country's effort for exploration of critical minerals has seen a huge growth in sectors of Lithium, REEs, Cobalt and Nickel. Nevertheless, we have to go a long way, and there are lots of challenges and opportunities in mining and processing of critical minerals. In this endeavour, R&D is

Editorial Board

Chief Editor

Prof. D. P. Mishra

Editor

Prof. Ankush Galav

Assistant Editor

Prof. Ajeet Yadav

Student Editors

B.Sai Prasad
Shreya Sinha

going to play a vital role in developing appropriate methods for exploration, mining and extraction of critical minerals. Attempts should also be made to extract critical minerals from the mining and mineral wastes, such as mine overburden, mill tailings, fly ash, etc.

Our department continues its journey fuelled by dedication and innovative mind-set. I encourage the budding minds to engage in collaborative efforts for innovations. I would also like to record my appreciation and recognize the hard work of our students, staff, faculty and alumni. Their skills and collective effort have certainly uplifted the department's reputation. Finally, I would like to thank and congratulate the editorial team for their sincere efforts in bringing this edition of the newsletter.

With kind regards,
D. P. Mishra

Projects

Prof. D. P. Mishra, Prof. V. G. K. Villuri, Prof. Bhaskara Behera is awarded "Scientific Assessment of Old and Dangerous Workings of BCCL Mines (Phase-1)" of worth Rs. 147.5 Lakhs from M/s Bharat Coking Coal Limited, Dhanbad.

Prof. B. S. Choudhary is awarded "Scientific study for designing deep hole controlled blasting as per regulation No. 196(3) of CMR 2017 at Nichitpur colliery, Sijua Area, BCCL, Dhanbad" of worth Rs. 5.17 Lakhs from M/s Bharat Coking Coal Limited.

Prof. B. S. Choudhary, Prof. V. M. S. R. Murthy, Prof. D. Gopi Krishna is awarded "Monitoring of Controlled Blasting Methodology for Rock Dredging in the inner Harbour Channel near ORI, ORII, ORIII and Fertiliser" of worth Rs. 63.72 Lakhs from M/s BITD Cem India Ltd., Visakhapatnam.

Prof. Siddhartha Agarwal, Prof. Ashok Kumar is awarded "Slope Stability Study in Survey Larung Lumshnong Limestone Block at Lumshnong, East Jaintia Hills District, Meghalaya" of worth Rs. 12.98 Lakhs from M/s Green Valley Industries Ltd., East Jaintia Hills.

Prof. Siddhartha Agarwal, Prof. Ashok Kumar is awarded "Slope Stability Study in Survey Larung Lumshnong Limestone Block at Lumshnong, East Jaintia Hills District, Meghalaya" of worth Rs. 12.98 Lakhs from M/s Green Valley Industries Ltd., East Jaintia Hills.

Publications

Dasgupta T., Mishra D.P., Pandey P. "Investigation of thermal stability, heat transfer dynamics, low-temperature oxidation kinetics and gas evolution profiles of coal: An innovative approach." Fuel 381 (2025) 133354. 10.1016/j.fuel.2024.133354

Chandrasah S., Choudhary B.S., Venkataramayya, M.S., Fissha Y., Taiwo B.O., 2024 "An investigation of the cumulative impact of decking length and firing pattern on blasting results" Journal of Mining and Environment. 10.22044/jme.2024.14555.2743

Workshops, Lectures and Seminars

Prof. Dheeraj Kumar, Prof. V.G.K. Villuri, Prof. Md. Soyeb Alam has conducted a Four Weeks Course on "Mine Surveying Techniques" for the M/s Mahanadi Coalfields Limited and M/s Bharat Coking Coal Limited.

Prof. R. M. Bhattacharjee, Prof. P. S. Paul has conducted Training on Safety Management System Audit for Second Batch of Executives from South Eastern Coalfields Limited (SECL).

Integrity Pledge



The Department of Mining Engineering observed the Vigilance Awareness Week with the theme **Culture of Integrity for Nation's Prosperity** on 28 October 2024. The faculty, staff, and students of the Department assembled in the Conference Room and took the integrity pledge.

Spotlight



Prof. Ankush Galav has joined our Department as an Assistant Professor on 22 August 2024. He has done his B.Tech, M.Tech and Ph.D from the Department of Mining Engineering, IIT (BHU) Varanasi. Prof. Galav brings a wealth of experience, having worked as a Postdoctoral Fellow, Research Associate, Senior Research Fellow, and Senior Project Fellow on various R&D projects sponsored by Coal India Limited. His research focuses on the fields of instrumentation, laboratory testing, and application of numerical modeling in mining.

Prof. Galav's impressive accolades include best paper publication award by the Institution of Engineers (India), Rocha Medal 2025 nomination by ISRM (India), Special Mention for organisational activities by IIT (BHU) and several honors for his research excellence at IIT (BHU) Varanasi. The Department of Mining Engineering extends a hearty welcome to Prof. Galav and looking forward to the his valuable contributions for enriching the academic and research activities of the Department.



SME
IIT (ISM)

sponsored by



KHANAN'24

KHANAN'24, the Annual Techno-Mining Fest of IIT (ISM) Dhanbad was organized by the Department of Mining Engineering in association with SME IIT ISM Student Chapter during 26-27 October 2024. This event brought together students from mining and allied disciplines across the country, providing a platform to showcase their skills and gain valuable insights.

The fest included interactive discussions, expert talks, research presentations, and case analyses. It offered participants exposure to real-world industry challenges while enhancing their problem-solving and decision-making abilities. KHANAN'24 successfully contributed to the personal and professional growth of its participants.

The inauguration ceremony marked the start of KHANAN'24, featuring the luminaries from different mining companies namely, **Mr. Animesh Jain**, Regional Executive Director and CEO NTPC; **Mr. Satish Jha**, Director (Technical/Engineering Services), CMPDI with additional charge Director (Technical/Project Planning) CCL and CMD-Select of Eastern Coalfields Limited, **Mr. Niladri Roy**, Director (Technical/Project and planning) Eastern Coalfields Limited and **Mr. Jitendra Malik**, Director (Technical/Operations) Northern Coalfields Limited as the guests of honour along with **Prof. Dheeraj Kumar**, Deputy Director, IIT (ISM) Dhanbad and **Prof. D.P. Mishra**, HOD, Department of Mining Engineering and faculty advisor SME IIT ISM Student Chapter, joined them on stage. **Prof. Sukumar Mishra**, Director IIT (ISM) Dhanbad joined the ceremony through online mode and grace the occasion.





Galaxy S24 Ultra



The opening ceremony featured inspiring speeches from honorary guests and discussions on the industry's future, setting ambitious goals for next year's KHANAN to achieve international success. The ceremony concluded with a live performance of sweet music and dance. A whirlwind day of intellectual and creative challenges unfolded on the first day, from the serene focus demanded by Nirvana's intricate problems to the intense fervor of Placement Fever. The intellectual battlegrounds of Mining Olympiad and Quizzine tested minds, while Kalakriti ignited imaginations with a vibrant display of artistic talent. War-o-Words saw sharp minds clash in a heated battle of wits.



Campus Tour of the Dignitaries



Events Organised in KHANAN'24

Mining Olympiad



The Mining Olympiad, a dynamic quiz competition, covered subjects like science, business, and history. It featured two rounds: a pen-and-paper quiz and an exciting rapid-fire challenge, offering participants an engaging intellectual experience.

Khanan Mafia



Khanan Mafia was an exhilarating journey, filled with geo-puzzles that challenged participants and uncovered hidden talents. It pushed them to solve intricate puzzles, igniting their inner explorers as they raced to claim the ultimate treasure. Their determination was tested, and at the end, they rose among the champions.

War-O-Words

War-O-Words is an intellectually stimulating debate contest that tested participants' persuasive abilities and critical thinking. This platform provided an opportunity to refine debating skills and engage in thought-provoking discourse with the best in the field.

Gamicon

Gamicon included two nights of engaging online games, providing the perfect opportunity for relaxation and social connection. Participants were able to hone essential skills such as teamwork and focus, while enjoying the experience and contributing to a friendly atmosphere.

Nirvana



Nirvana offered a platform to tackle key challenges in the mining industry, with both predefined and participant-created problem statements. The competition included two rounds: online submissions and presentations. Winners were chosen based on the innovation and impact of their solutions.

Dezyn-O-Mania

Dezyn-O-Mania, a collaboration between Coal India and IIT (ISM) Incubation Center, challenged students to design innovative solutions for the mining industry. Participants developed prototypes aimed at improving safety, efficiency, and machinery effectiveness, while gaining hands-on experience, networking with industry experts, and showcasing their creativity for potential career opportunities.

Placement Fever

Placement Fever offered a realistic simulated campus placement experience involving three rounds: Aptitude Test, Group Discussion, and Interview. Participants enhanced their cognitive, collaboration, and communication skills while gaining valuable insights to improve their readiness for the placement process.

General Quizzine

General Quizzine challenged the mining enthusiasts with geo-puzzles and complex problem-solving in a two-stage competition. Teamwork and sharp intellect were key to uncovering brilliance in the two consecutive rounds.

Kalakriti



Children from the NGOs, FFI, and Kartavya took part in the drawing competition. Their artwork raised awareness and made a positive societal impact, sparking meaningful conversations for a better future. This memorable event highlights the transformative power of creativity and reminds us that change often starts with simple yet impactful expressions.



Prize Distribution Ceremony of KHANAN'24

The day concluded with the vibrant energy of Gamicon, where gamers from across the nation gathered to demonstrate their skills. The second day of KHANAN'24 elevated the competitive spirit with a series of exciting events, including Dezyn-O-Mania and the highly anticipated Khanan Mafia, both of which captivated participants with their innovative challenges. Concurrently, a range of insightful workshops provided an in-depth exploration of the complexities of mining and its related fields, enriching attendees with valuable knowledge and expertise. The day culminated in a graceful closing ceremony, where our esteemed guests, including **Prof. A. K. Mishra**, Director, CSIR-CIMFR Dhanbad, **Prof. Dheeraj Kumar**, **Prof. D. P. Mishra**, and **Prof. Anindya Sinha**, honored the winners with well-deserved trophies and certificates. As the curtains fell on KHANAN'24, the campus reverberated with the electrifying beats of the EDM night, offering a memorable farewell to all. Next year's KHANAN promises to be even more impactful, with a focus on the future of mining, sustainable practices, and technological integration. The event aims to provide a platform for students, professionals, and experts to collaborate and drive meaningful change.

Cult Night

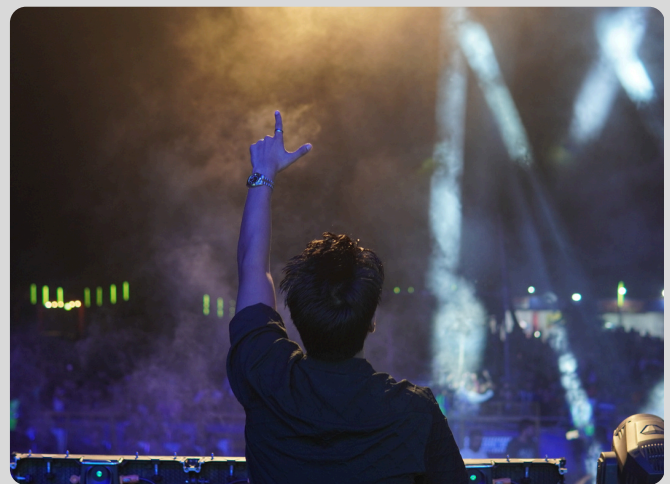


Cult Night, the pre-event at KHANAN'24, was the highly anticipated highlight of the evening. The event was a vibrant celebration of dance, comedy, and poetry, where exceptional talent took center stage and the energy in the air was electric.

A large crowd gathered to witness the incredible performances, creating an atmosphere brimming with creativity, passion, and excitement. From the captivating acts to the enthusiastic cheers of the audience, every moment added to the magic of the night.

The event proved to be a grand success, leaving everyone with unforgettable memories and a deep appreciation for the celebration of culture and the arts. It was truly the perfect way to kick off KHANAN'24.

EDM Night



A spectacular EDM night was hosted by Tribevibe on 27 October 2024. The event featured an electrifying performance by the renowned DJ Naaz, whose seamless mixes and dynamic beats kept the crowd energized and dancing all night.

The fusion of dazzling lights and high-energy music created an unforgettable atmosphere, making it one of the most memorable moments of the festival. With attendees from across the country coming together to celebrate, the night was filled with vibrant energy. This EDM party perfectly captured the spirit of KHANAN'24, leaving everyone with lasting memories.

International Conference on “Mine Ventilation and Environment for Green Mining (MVEGM-2024)”



Department of Mining Engineering is organising an International Conference on “Mine Ventilation and Environment for Green Mining (MVEGM-2024)” at Swosti Premium Beach Resorts, Puri, Odisha during 20-22 December 2024. Authors and delegates are requested to register for the Conference as soon as possible and provide their registration details in the link provided on the Conference website. The mining and allied companies are invited to enthusiastically support the event through sponsorship, nominating delegates and advertising in souvenir. Companies are also welcome to showcase their products related to mine ventilation and environmental monitoring & control in the exhibition planned during the Conference.

For registration and more details about the conference, please visit the conference website <https://people.iitism.ac.in/%7Emvegm/>.

Looking forward to your overwhelming support to make this conference a grand success. The tentative program schedule of the conference is appended below.

Friday, 20 December, 2024 (Day 1)	
Event	Time
Registration	08.30 am – 10.00 am
Inaugural Session	10.00 am – 11.00 am
Inaugural High Tea	11.00 am – 11.30 am
Keynote Session	11.30 am – 01.30 pm
Conference Lunch	01.30 pm – 02.30 pm
Technical Session I (Room 1 & Room 2)	02.30 pm – 04.00 pm
Tea Break	04.00 pm – 04.15 pm
Technical Session II (Room 1 & Room 2)	04.15 pm – 05.30 pm
Conference Dinner & Cultural Program @Attached Lawn, Swosti Premium Beach Resort	07.00 pm onwards

Saturday, 21 December, 2024 (Day 2)	
Event	Time
Registration	08.30 am – 10.00 am
Technical Session III (Room 1 & Room 2)	09.00 am – 11.00 am
Tea Break	11.00 am – 11.15 am
Technical Session IV (Room 1 & Room 2)	11.15 am – 01.30 pm
Conference Lunch	01.30 pm – 02.30 pm
Technical Session V (Room 1 & Room 2)	02.30 pm – 04.00 pm
Valedictory Session	04.00 pm – 05.00 pm
High Tea	05.00 pm – 05.30 pm
Destination Dinner & Cultural Program @Eco-retreat Konark	07.00 pm onwards

Sunday, 22 December, 2024 (Day 3): Technical Tour and Sightseeing

International Seminar by ISM Alumni Association

ISM Alumni Association Kolkata Chapter is organizing an International Seminar & Exhibition on ‘Current Trends of Sustainable Underground Mining,’ during 29-30 November 2024 at Biswa Bangla Convention Centre, New Town, Kolkata, India.