



IIT
ISM INDIAN INSTITUTE
OF TECHNOLOGY
INDIAN SCHOOL OF MINES
DHANBAD

Department of Mining Engineering



THE MINING EDGE

MONTHLY NEWSLETTER

VOLUME 10

June 2025



Content

• From HOD's Desk	...01
• Spotlight	...02
• Five-Days Training Program on Accident Investigation and Auditing of Safety and Health Management System in mines	...04
• Six-Weeks Executive Development Program on "Advances in Mine Surveying Technology"	...06
• On-site demonstration cum one-day training program of Isograph Software	...07
• Research Publications & Projects	...08
• Longwall Training Gallery Visit	...09
• International Conference "Digital Intelligence for Green Mining and Industrial Networks"(DIGMIN-2025)	...10
• Faculty Profile of the Department	...11
• Mining Days Calendar	...13

Editorial Board

Chief Editor

Prof. D. P. Mishra

Editor

Prof. Ankush Galav

Assistant Editor

Prof. Ajeet Yadav

Tech. Staff & Student Editors

Mr. Sudhanshu Pandey

Mr. Kunal Rungta



From HoD's Desk



Dear Readers,

I am pleased to present the June 2025 edition of The Mining Edge, the monthly newsletter of the Department of Mining Engineering, IIT(ISM) Dhanbad. This issue showcases our department's continued dedication to academic excellence, industry collaboration, and pioneering research.

June has been a particularly eventful and fulfilling month.

We successfully conducted a Five-Day Training Program on Accident Investigation and Auditing of Safety and Health Management Systems in Mines for officers from the Directorate General of Mines Safety (DGMS), reaffirming our commitment to mine safety and regulatory excellence.

Additionally, the Six-Week Executive Development Program on Advances in Mine Surveying Technology was organized to empower industry professionals with the latest tools, technologies, and practices in mine surveying and automation—further strengthening our industry engagement.

We also hosted a focused on-site demonstration and training session on Isograph Reliability Engineering software for faculty and students of the department. This initiative aimed to enhance analytical capabilities in system reliability and maintenance planning.

I am delighted to announce the appointment of Prof. B.S. Choudhary as the new Head of the Department. I extend my sincere congratulations to Prof. Choudhary and wish him a successful and impactful tenure. On a personal note, I am humbled to take on the role of Associate Dean (Academic – UG) at IIT(ISM) Dhanbad, and I look forward to contributing further to our institute's academic growth.

Looking ahead, we are excited to host the International Conference on Digital Intelligence for Green Mining and Industrial Networks (DIGMIN-2025) in September 2025, as part of our Centenary Celebrations. We warmly invite you to be a part of this landmark event.

I extend my heartfelt gratitude to our faculty, staff, students, alumni, and industry partners for their continued support and contributions to the department's growth and success.

Warm Regards
Prof. D. P. Mishra



Spotlight

Prof. B.S. Choudhary Appointed as Head of the Department, Department of Mining Engineering, IIT(ISM) Dhanbad



The Department of Mining Engineering, IIT (ISM) Dhanbad is pleased to announce the appointment of **Prof. Bhanwar Singh Choudhary** as the Head of the Department, Department of Mining Engineering, IIT(ISM) Dhanbad.

Prof. Choudhary brings with him over two decades of rich academic, research, and industry experience in the field of Mining Engineering, with specialized expertise in drilling and blasting, mine planning, tunneling, and underground metal mining. He has led numerous R&D and consultancy projects and has guided more than 50 postgraduate and doctoral scholars.

As a seasoned educator and consultant, Prof. Choudhary's vision is expected to steer the department toward greater innovation, industry collaboration, and academic excellence.

We congratulate Prof. Choudhary on this significant milestone and wish him continued success in his new leadership role.



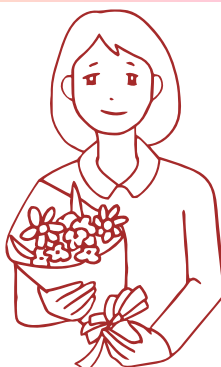
Prof. D.P. Mishra Appointed as Associate Dean (Academic - UG), IIT(ISM) Dhanbad



The Department of Mining Engineering is proud to share that **Prof. Devi Prasad Mishra** has been appointed as the Associate Dean (Academic - UG) at IIT(ISM) Dhanbad, following the successful completion of his distinguished tenure as the Head of the Department of Mining Engineering.

A leading academician and researcher in the field of Mine Ventilation, Mine Environment, Methane Drainage, CBM, Mine Fire and Explosion and Application of Fly Ash in Mine Stowing, Prof. Mishra has made impactful contributions through pioneering research, innovative teaching, and active engagement with industry. Under his leadership, the department saw advancements in academic curricula, research infrastructure, and academia-industry collaboration.

As Associate Dean (Academic - UG), Prof. Mishra is expected to bring his dynamic vision and commitment to academic excellence to a broader institutional level. We extend our heartfelt congratulations and wish him continued success in this pivotal role.



Five-Days Training Program on Accident Investigation and Auditing of Safety and Health Management System in mines



The Department of Mining Engineering organised a Five-Days Training Program on “Accident Investigation and Auditing of Safety and Health Management System in mines” for DGMS Officers from 23-27 June 2025. The program was coordinated by Prof. R.M. Bhattacharjee, a leading expert in mine safety and operations. In the inaugural function of the program, Prof. R.M. Bhattacharjee, Course Coordinator, welcomed the participants and dignitaries. Prof. Bhattacharjee also elaborated on the course curriculum, which covers theoretical insights, case studies, and interactive workshops to empower DGMS officers with skills in accident investigation, data-driven decision-making, and compliance auditing.

Prof. S.R. Samadder, Associate Dean (R&D), IIT(ISM) Dhanbad welcomed the participants to the institute and training program, and wished them a pleasant stay at IIT(ISM) Dhanbad. Prof. D.P. Mishra, HOD, Department of Mining Engineering, IIT (ISM) Dhanbad, introduced the Department of Mining Engineering. Prof. Sukumar Mishra, Director, IIT(ISM) Dhanbad, presided over the function. He stresses on the role of IIT(ISM) Dhanbad in training Mining professionals and the critical role of AI in mine safety. The function was graced by the presence of Shri Ujjwal Tah, Director General (DG) of the Directorate General of Mines Safety (DGMS), as the Chief Guest. The Chief Guest emphasized on the importance of such specialized training programs in fostering a culture of safety and operational excellence in the mining industry.

The participants, comprising senior officials of DGMS from across the nation, engaged enthusiastically throughout the course, contributing to the collaborative learning environment. This initiative reflects the ongoing commitment of Department of Mining Engineering and DGMS towards ensuring efficient accident investigation and safer mining practices.

Valedictory Program of Six-Weeks Executive Development Program on “Advances in Mine Surveying Technology”

The Department of Mining Engineering successfully concluded the six-weeks Executive Development Program (EDP) on “Advances in Mine Surveying Technology” with a valedictory function held on 6 June 2025. The program aimed to enhance the skills and knowledge of industry professionals, researchers, and academicians by providing in-depth insights into modern mine surveying techniques and technologies. During the valedictory function, the participants shared their enriching experiences, and certificates were distributed to mark the successful completion of the training program. The Department reaffirmed its commitment to bridging the gap between academia and industry through such impactful initiatives.



Program Overview

- The EDP covered advanced topics in mine surveying, including the integration of digital technologies, automation, and advanced geospatial tools.
- Participants were exposed to hands-on training sessions, interactive workshops, and expert lectures from leading faculty and industry specialists.
- The curriculum emphasized both theoretical foundations and real-life applications, ensuring that attendees gain a holistic understanding of the latest advancements in mine surveying technology.



Objectives and Impact

- The program aimed to bridge the gap between traditional surveying practices and emerging technological innovations, preparing participants for the evolving demands of the mining industry.
- By fostering interdisciplinary learning and industry-academia collaboration, the EDP supports the development of safer, more efficient, and sustainable mining operations.

Engagement and Participation

- The program had attracted professionals from across the mining sector, reflecting the growing recognition of the importance of advanced surveying techniques in modern mining.
- Regular feedback and interactive sessions ensured that the content remains relevant and impactful, tailored to the specific needs of participants.



The Department of Mining Engineering continues to uphold its legacy as a leader in mining education and research, and this EDP is a testament to its dedication to continuous professional development and technological innovation in the field.



On-site Demonstration cum One-Day Training Program of Isograph Software



The Department of Mining Engineering organised an on-site demonstration of the Isograph software (Reliability Engineering) on 23 June 2025 in the Conference Room of the Department. The demonstration cum training program started with the welcome address by Prof. D.P. Mishra, HOD, Department of Mining Engineering. He welcomed Dr. Deepak Kumar, Reliability Engineer, Simcad Technologies, and praised the effort of Prof. Ankush Galav, Assistant Professor, Department of Mining Engineering in organizing this training program.

Dr. Kumar conducted the demonstration cum training program of the Isograph software for faculty members and students of the Department. He provided an overview of the software's capabilities and its applications in reliability engineering with special focus on mining machineries. He demonstrated the different features of the Isograph Software and discussed the fundamentals of the Reliability, Maintainability, and Availability of the mining machineries. The training program was concluded with the vote of thanks and felicitation to Dr. Kumar by Prof. Mishra.

Research Publications & Projects



Research Publications



- **Manohar M., Choudhary B.S., Skrzypkowski K., Zagórski K., Zagórska, A (2025) A Performance Evaluation of Fly Ash–Plastic Aggregate in Hydraulic Backfilling: A Comparative Study. Materials, 18, 2751. <https://doi.org/10.3390/ma18122751>**
- **Verma R., Choudhary B.S (2025) An Empirical Approach for Investigating the Blast-Wave Propagation in Opencast Mine Bench Blasts Using Seismic Experiment. J. Inst. Eng. India Ser. D. <https://doi.org/10.1007/s40033-025-00907-9>**
- **Singh G.S.P., Galav A., Shukla V. (2025) A Computer Program for Selection of Rational Width of Protective Water Barrier Pillars in Underground Coal Mines. J. Inst. Eng. India Ser. D. <https://doi.org/10.1007/s40033-025-00901-1>**



Projects



- **Prof. Dheeraj Kumar** has been awarded a R&D project titled “Development indigenous synthetic aperture radar data analytics engine powered by Big Data and Deep Learning” by DST.
- **Prof D.P. Mishra and Prof Ankush Galav** have been awarded “Two Weeks Mining Domain Residential Training Program for the GETs of NLC India Ltd.” by M/s Neyveli Lignite Corporation India Limited.



Longwall Training Gallery Visit



The Department of Mining Engineering organised a visit of the Longwall Training Gallery for Dr. Anupam Bhatnagar, Professor & Head (Mining Engineering), College of Technology and Engineering, MPUAT, Udaipur Rajasthan India and his team during his visit to the Department.





INTERNATIONAL CONFERENCE "Digital Intelligence for Green Mining and Industrial Networks" (DIGMIN-2025)

The Department of Mining Engineering, Indian Institute of Technology (Indian School of Mines), Dhanbad is proud to host the prestigious International Conference on Digital Intelligence for Green Mining and Industrial Networks (DIGMIN-2025) during 12-13 September 2025, organized as part of the centenary celebrations of IIT (ISM) Dhanbad. This two-day event will serve as a flagship forum for deliberations and collaboration in sustainable and intelligent mining technologies.

DIGMIN-2025 will bring together the distinguished academicians, researchers, industry professionals, policymakers, and sustainability leaders to explore the convergence of digitalization, automation, artificial intelligence, and green mining practices. The conference will showcase the cutting-edge developments in AI/ML for risk prediction, IoT-enabled mine automation, autonomous systems, and cyber-physical solutions for resource efficiency and environmental stewardship.

Key themes of the Conference include:

- Smart Mining Infrastructure and Digital Foundations
- Robotics & Automation in Harsh Mining Environments
- Real-time Analytics and Edge AI for Mining Operations
- AI-Driven Intelligence for Critical Mineral Estimation
- Energy Optimization and Resilient Mining Systems

DIGMIN-2025 promises an enriching experience with high-impact keynote addresses, technical paper sessions, industry exhibits, and policy roundtables, aiming to create actionable roadmaps for a digitally empowered and environmentally responsible mining future.

INTERNATIONAL CONFERENCE ON

"Digital Intelligence for Green Mining and Industrial Networks (DIGMIN-2025)"

September 12-13, 2025

GJLT Auditorium, IIT (ISM) Dhanbad



Faculty Profile of the Department



Prof. V M S R Murthy
Professor (HAG)
On Deputation As Director
IIST Shibpur

Research Interest:
Rock Excavation Engineering



Prof. Arvind Kumar Mishra
Professor (HAG)
On Deputation As Director
CIMFR

Research Interest:
Explosive Engineering, Rock
Blasting Technology, Rock
Excavation Engineering,
Opencast Mining



Prof. Dheeraj Kumar
Professor (HAG)

Research Interest:
Digital Mining Technologies,
Mine Surveying & Geospatial
Technologies



Prof. R M Bhattacharjee
Professor

Research Interest:
Underground Coal Mining
Technology, Risk Assessment
And Safety Management,
Emergency Response &
Disaster Management,
Accident Investigation, Mine
Fire And Explosion



Prof. Devi Prasad Mishra
Professor

Research Interest:
Mine Ventilation and
Environmental Engineering, Mine
Fire And Explosion, Application
of CFD In Mine Ventilation and
Environmental Engineering,
Methane Drainage/CBM/UCG,
Stowing/backfilling With Fly
Ash/pond Ash, Characterization
of Fly Ash/pond Ash



**Prof. Bhanwar Singh
Choudhary**
Professor

Research Interest:
Drilling & Blasting Technology,
Underground Metal Mines,
Computer Aided Mine Planning,
Tunnel Engineering



Prof. Partha Sarathi Paul
Professor

Research Interest:
Core Mining Discipline: Mine
Safety Engineering; Occupational
Health, Safety And Ergonomics;
Applied Multivariate Modeling
And ML Techniques; Rock
Mechanics; Mine Ventilation.
Interdisciplinary: Automation For
Workplace Safety; Socio-
economic Impact Of Mining



**Prof. Subhas Chandra
Bhowmik**
Adjunct Professor

Research Interest:
Underground Metal Mine,
Green Field Project from
Planning to Operation, Shaft
Sinking



Prof. Anindya Sinha
Professor of Practice

Research Interest:
Mine Planning & Design,
Mine Environment
Planning & Management,
Mine Mechanization &
Digitization



Prof. Rabindra Kumar Sinha
Associate Professor

Research Interest:
Design of Structures in Rock,
In situ Rock Mechanics
Investigations, Numerical
Modelling



**Prof. Vasanta Govind
Kumar Villuri**
Associate Professor

Research Interest:
Photogrammetry,
Cartography, Remote Sensing,
GIS And GPS



Prof. Radhakanta Koner
Associate Professor

Research Interest:
Mine Automation, Data Analytics,
Georesources Utilization Using
Remote Sensing Technology,
Slope Stability Analysis,
Landslide Analysis, Wireless
Sensing Technology, Real-time
Monitoring System In Mining



DEPARTMENT OF MINING ENGINEERING

Faculty Profile of the Department



Prof. Patitapaban Sahu

Associate Professor

Research Interest:

Mine Ventilation, Sub-surface Environmental Engineering, Mine Radiation, CBM And Data Analytics In Mining



Prof. Gnananandh Budi

Assistant Professor

Research Interest:

Rock Mechanics And Ground Control



Prof. Kashinath Pal

Assistant Professor

Research Interest:

Rock Mechanics, Groundwater, Slope Stability



Prof. Mohammad Soyeb Alam

Assistant Professor

Research Interest:

Geospatial Technology In Mining, Underground Metal Mining, Mine Subsidence Studies, Mine Slope Stability Analysis, Mine Surveying



Prof. Siddhartha Agarwal

Assistant Professor

Research Interest:

Digitalization of Mining Operations, Industry 4.0 Applications In Mining, Machine Learning And Artificial Intelligence Applications In Energy Consumption In Mines, Earth Sciences: Geostatistics, Open Pit Mine Planning & Scheduling, Real Time Monitoring Of Air Pollution In Open Cast Mines, Geo-technical And Environmental Closure And Repurposing Planning



Prof. Swapnil Mishra

Assistant Professor

Research Interest:

Blast Resistant Design of Underground Structures, In-situ Stresses Surrounding Underground Structures, Impact Testing on Weak and Weathered Rock Conditions, Ground Subsidence, Rock Dynamics and Material Testing, Physical Modelling



Prof. Ashok Kumar

Assistant Professor

Research Interest:

Underground Mining Methods, Strata/Rock Mechanics, Numerical Modeling, Underground Instrumentation And Monitoring Of Strata, Support Design, Rockmass Characterisation, Excavation Methods For Tunnels & Caverns, Drilling & Blasting, Operations Research, Mine Environment, Surface Mining



Prof. Dondapati Gopi Krishna

Assistant Professor

Research Interest:

Rock Mechanics, Numerical Modeling in Geotechnical Engineering, Coal Mining, Mine Instrumentation and Monitoring



Prof. Bhaskara Behera

Assistant Professor

Research Interest:

Rock Mechanics And Ground Control, Mining Methods, Numerical Methods In Geomechanics, Mine Planning And Design



Prof. Ajeet Yadav

Assistant Professor

Research Interest: Rock Mechanics And Ground Control, Mining Methods, Mine Ventilation, Numerical Modelling



Prof. Ankush Galav

Assistant Professor

Research Interest:

Rock Mechanics and Ground Control, Mining Methods, Rock Excavation Engineering, Numerical Modelling, Mine Planning and Design, Mine Instrumentation and Monitoring



2025 CALENDAR

JANUARY

M	T	W	T	F	S	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

FEBRUARY

M	T	W	T	F	S	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28		

MARCH

M	T	W	T	F	S	S
31					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

APRIL

M	T	W	T	F	S	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

MAY

M	T	W	T	F	S	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

JUNE

M	T	W	T	F	S	S
30						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29

JULY

M	T	W	T	F	S	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

AUGUST

M	T	W	T	F	S	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

SEPTEMBER

M	T	W	T	F	S	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

OCTOBER

M	T	W	T	F	S	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

NOVEMBER

M	T	W	T	F	S	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

DECEMBER

M	T	W	T	F	S	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

2025 Calendar of Important Mining Days

4th April : International Day for Mine Awareness and Assistance in Mine Action

22nd April : World Earth Day

1st May : International Labour Day

4th May : Coal Miners Day

23rd June : International Women in Engineering Day

30th October : Mine Rescue Day

1st November : Coal India Foundation Day

1st November : Indian Mining Day

5th December : World Soil Day

11th December : International Mountain Day

14th December : National Energy Conservation Day

