



3-Day National Workshop on Tunnelling Advances in Difficult Grounds: Numerical Modelling & Machine Learning Approach

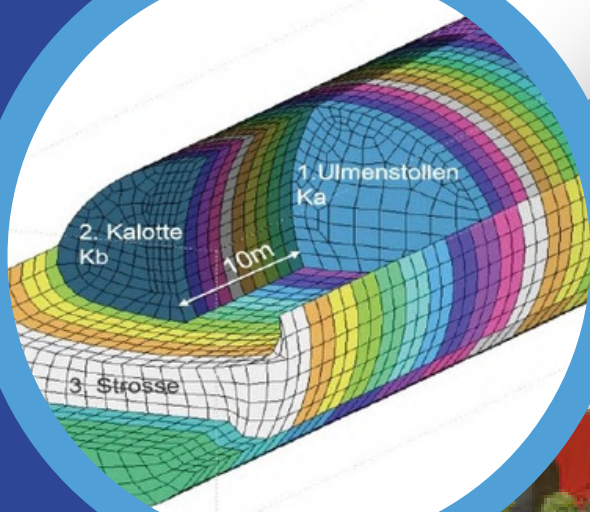
TUN-AID 2025



3rd to 5th November, 2025

Organised By

Department of Mining Engineering, IIT (ISM), Dhanbad
& IGS Dhanbad Chapter



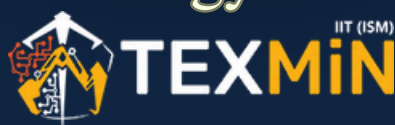
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3-Day National Workshop on Tunnelling Advancements in Difficult Grounds (TUN-AID 2025): Numerical Modelling and Machine Learning Approach

(3rd to 5th of November, 2025)

Organized by the Department of Mining Engineering, IIT (ISM), Dhanbad, & Indian Geotechnical Society (IGS), Dhanbad Chapter



EXPERT SPEAKERS



Dr. Manoj Verman

Tunnelling & Rock Engineering Expert, Rocscience Representative and President, ISRM Commission on Hard Rock Excavation



Prof. V M S R Murthy

Director- IEST Shibpur
Former Head of Mining Engineering Department- IIT (ISM) Dhanbad
Former Scientist- CMRI Nagpur



Dr. Bineshian Hoss

Chief Principal, Director (Technical) at Amberg Engineering
Sr. Vice President - TAI



Prof. Byungmin Kim

Associate Professor- Department of Urban and Environmental Engineering, Ulsan National Institute of Science and Technology (UNIST)



Dr. Mainak Ghosh Roy

Group Senior Manager (Geology), NHPC Ltd.
Member (Hydro), Central Electricity Authority



Mr. Sandeep Singh

DGM, Larsen & Toubro (L&T),
Project Director- Mumbai Coastal Road Project (Package-1 and 4)



Dr. Jitendra Khatti

Researcher and Consultant in Computation Mechanics (Machine, Advanced Machine, Hybrid & Deep Learning Approaches), Geotech Engineering.



Dr. Priyanka Bhartiya

Principal Engineer - COWI India,
Tunnelling and Geotechnical Engineering



Mr. Vishal Bansal

Tunnel Design Engineer- NHAI
Secretary (Technical)- TALym



Mr. Chiranjib Sarkar

Principal Engineer Geoconsult India, Former Vice Chairperson- TALym Governing Council Member — TAI
Jt. Secretary -IGS Kolkata chapter

Who Should Attend?

- B.Tech, M.Tech, Ph.D. student, or a faculty member from the fields of Mining Engineering, Geotechnical Engineering, or Civil Engineering.
- Working professional from mining, tunnelling consultancies, instrumentation, or infrastructure development companies.
- Official from a regulatory body such as the CPCB, SPCB, DGMS, or IBM.

Course Overview

This three-day workshop explores the critical role of tunnelling and underground space technology in modern civil and mining engineering. As demand for sustainable infrastructure grows, this field is essential for shaping the future of urbanization and industry.

The program offers a powerful mix of theory and application, featuring two days of intensive, hands-on training in advanced numerical modelling using Rocscience software. You'll also learn from international experts and industry leaders through guest lectures and technology showcases. A special session will be dedicated to the integration of Machine Learning in geotechnical engineering, revealing innovative solutions for complex tunnelling projects.

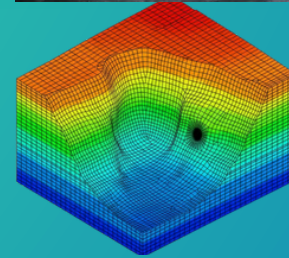
Designed for students, researchers, and professionals, this workshop is an ideal opportunity to gain practical expertise, network with global leaders, and explore the future of this dynamic field.

**Numerical
Modeling
using
FEM/DEM**

**AI-ML
approches for
Geotechnical
Problems**

**I-System of
Ground
Classification**

**Insightful
Case
Studies**



About the Department

QS World University Rankings: Ranked #1 in India & Ranked #20 Globally (For Mineral & Mining Engineering)

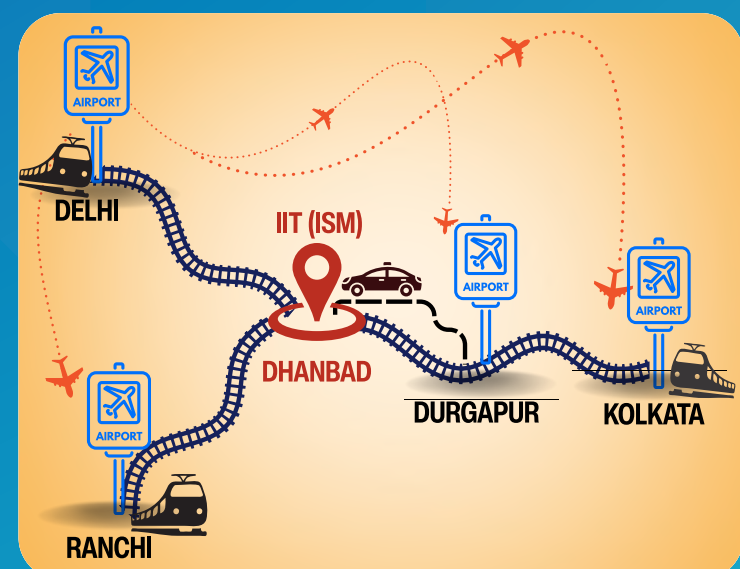


Founded in 1926, the Department of Mining Engineering at IIT (ISM) Dhanbad has been a pioneer in shaping the future of mining and mineral education for nearly a century. As the largest and most renowned department of its kind in India, it has set benchmarks in teaching, research, and innovation across coal, metalliferous mining, and construction sectors.

Celebrating its legacy of excellence, the department proudly holds a prestigious position in the QS World University Rankings 2025: Ranked #20 globally and #1 in India in Engineering – Mineral & Mining, and placed among the Top 100 in Southern Asia.

How to Reach Dhanbad?

- Delhi to Kolkata: by Flight (2hr 15min)
- Kolkata to Dhanbad: by Train (4hr); by Road (5hr 40min)
- Durgapur to Dhanbad: by Train (1hr 40min); by Road (2hr 10min)
- Delhi to Ranchi: by Flight (2hr)
- Ranchi to Dhanbad: by Train (4hr 50min); by Road (5hr)



IGS Dhanbad Chapter

Founded as the “Indian National Society of Soil Mechanics and Foundation Engineering” in 1948, the IGS has expanded its influence to become one of the most renowned and respected organizations in the field of Geotechnical Engineering in India. The IGS has a vast network of Local Chapters and Student Chapters across the country, with Prof. Sarath Kumar Das, of Civil Engineering Department, IIT (ISM) Dhanbad as the Hon. Chairman of the IGS Dhanbad Chapter.

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Registration fee

1	Students	₹ 1,500/-
2	Academicians	₹ 8,260/-
3	Professionals from Government Organization and Industries	₹ 11,800/-

Terms & Conditions

- Seats for the workshop are limited and will be allocated on a first-come, first-served basis. Registration is confirmed only upon successful payment of the registration fee.
- The registration fee is non-refundable.
- Please note that the registration fee does not include travel, accommodation, or any other personal expenses.
- Limited, paid accommodation may be available at the institute's hostels or guest houses.
- This accommodation will be provided on a first-come, first-served basis, subject to room availability. Participants should indicate their requirement in the registration form.
- The organizing committee reserves the right to make changes to the workshop program, schedule, speakers, or venue due to unforeseen circumstances without prior notice.

About TEXMIN

Mining Foundation (TEXMIN) is a section-8 company set up by the TEXMIN Foundation: Technology Innovation in Exploration & Department of Science and Technology, Govt of India at IIT (ISM) Dhanbad under the aegis of the National Mission on Interdisciplinary Cyber-Physical Systems (NM-ICPS). The Director, IIT (ISM) Dhanbad, is the Chairman of the Board. TEXMIN aims to develop commercially feasible mineral exploration and mining solutions using cyber-physical systems such as IOT, AI/ML, blockchain, drones, robotics, and satellite imagery. Now recognized as a Translation Technology Research Park (TTRP)—one of only four in India focused on Mining (from Exploration to Mineral Beneficiation)—TEXMIN serves as a national platform for innovation, entrepreneurship, technology development, and executive capability building across the mineral exploration, beneficiation, and mining value chain.

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COMMITTEE MEMBERS



Chairman

**PROF. B. S.
CHOUDHARY**

**HEAD OF DEPARTMENT,
DEPARTMENT OF MINING
ENGINEERING, IIT (ISM) DHANBAD**

Dr. Bhanwar Singh Choudhary, specializes in mine planning, underground metal mining, drilling and blasting, and tunneling. With 17+ years of academic and industry experience, published 90 journal papers, and led R&D and consultancy projects. He is a leading authority in blasting technology and mining engineering education. He served as the Secretary of the Research Task Force at IIT (ISM) Dhanbad from 2013 to 2017. He has been conducting numerous professional development programs with the support of NHPC, BRO, and several other Departments under the GOI.



Convenor

**DR. SWAPNIL
MISHRA**

**ASSISTANT PROFESSOR,
DEPARTMENT OF MINING
ENGINEERING, IIT (ISM) DHANBAD**

Dr. Swapnil Mishra, specializes in tunneling, underground space development, high-strain rate loading, blast and seismic loads, and finite element analysis. With a Ph.D. from IIT Delhi and international collaboration with UNIST, South Korea, she has designed advanced impact testing facilities. Recognized among the top 75 Women Leaders in Geotechnical Engineering by IGS, she received the Women Achiever Award 2023 for her significant contributions to underground structure design and impact load studies.



Co-Convenor

**DR. D. GOPI
KRISHNA**

**ASSISTANT PROFESSOR
DEPARTMENT OF MINING
ENGINEERING, IIT (ISM) DHANBAD**

Dr. Dondapati Gopi Krishna is an Assistant Professor in the Department of Mining Engineering at the IIT (ISM), Dhanbad, a position he has held since August 2023. His expertise lies in rock excavation, mechanical cutting, rock-tool interaction, rock mechanics, and numerical modeling. He earned a prestigious joint doctoral degree from IIT Kharagpur and the University of Wollongong, Australia. He is a chartered Professional Engineer (PEng) certified by Engineers Australia, highlighting his standing in the global engineering community.

Student Coordinators

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Jyoti Jagajjita Raj
M.Tech in
Tunnelling &
Underground Space
Technology



**Susmit Mantayya
Swami**
M.Tech in
Tunnelling &
Underground
Space Technology



Ashwani Kumar
M.Tech in
Tunnelling &
Underground Space
Technology