

International Workshop on 'Sustainable Tunneling for Better Life'

15th & 16th November 2024

“Digging deep for a greener tomorrow.”

SUSTAINABLE TUNNELING

Sustainability in tunnelling is vital for responsible infrastructure development, especially in India where the focus is on developing northern regions. Utilizing underground space can lessen surface environmental impacts and conserve land, but it also introduces challenges like water management, waste disposal, and energy use. Tunnel construction can disturb soil and groundwater, risking subsidence, water pollution, and landslides. In India, such issues have occurred, underscoring the need for sustainable tunnelling practices.

To ensure sustainable tunnelling and reduce carbon footprints, eco-friendly practices that minimize waste and emissions, along with efficient water and energy management, are essential. Measures to cut the carbon footprint of tunnelling projects include using innovative technologies and materials that lessen environmental impacts. For instance, employing low-emission construction equipment, sourcing materials locally to cut transportation emissions, and using renewable energy systems for tunnel ventilation and lighting.

Involving local communities and stakeholders in decision-making is crucial to share the benefits of tunnelling and minimize its impact. Sustainable tunnelling practices should also incorporate innovative technologies and materials to reduce environmental footprints. Examples include energy-efficient lighting and ventilation systems, reducing excavation waste, and using rainwater harvesting systems.

In conclusion, responsible use of underground space and tunnelling demands a commitment to sustainability, both environmentally and socially. With this in mind, we plan to organize a two-day workshop on “SUSTAINABLE TUNNELLING FOR BETTER LIFE” in collaboration with the International Tunnelling and Underground Space Association (ITA) and ITA-Committee on Education and Training (ITA-CET).



Prof. Arnold Dix,
*President, International
Tunnelling Association
(ITA)*

Prof. Dix seamlessly combines the legal expertise of a top-tier international lawyer with the technical acumen of a scientist and Professor of Engineering, creating a distinctive practice centred on risk management and safety for surface and subsurface engineering and infrastructure projects. His unique interdisciplinary background enables him to provide integrated, holistic solutions that address complex legal, scientific, and engineering challenges. His focus lies in leveraging both legal and technical expertise to drive advancements in subsurface and surface engineering and infrastructure performance. By innovating in these fields, Prof. Dix helps teams develop high-performance strategies to manage the complexities of underground and surface environments, while effectively navigating and embracing the inherent risks associated with them and the regulatory environments in which they are conducted.



Mr. R.K. Dhiman
*President
Tunneling Association of India
(TAI)*

R K Dhiman AVSM, VSM former Additional Director General of Border Roads Organisation has more than 36 years' experience of executing various infrastructure projects in hilly area. He had been instrumental in implementation of various innovative proposal in bridges and tunnels He has developed formula for scour around bridge pier in 'Bouldery Bed" based on data collection of existing bridges. Optimisation of cost of tunnel and time for construction with introduction of new technology is his thrust area, As a president of TAI he is very much concern about safety during tunnel construction.



Prof. K.S. Rao
*Emeritus Professor
IIT-Delhi*

Dr. K.S. Rao is a distinguished Emeritus Professor at IIT Delhi's Civil Engineering Department. With over four decades of research experience, he is renowned for his expertise in rock mechanics, geotechnical engineering, Tunnel design and seismic micro zonation. A dedicated teacher, researcher, and consultant, Dr. Rao has mentored numerous students and received prestigious awards for his contributions. His research spanning over 40 yrs has been on engineering behaviour of rock mass, stability of slopes, underground structures, foundations, site characterization and numerical modelling. He is the recipient of IGS-Prof Leonards best Ph.D. thesis award and 13 other IGS and ISRMTT best research awards. A prolific writer, Prof Rao published 350 technical papers in national and international journals and conferences.

SPEAKERS



Prof. Mike Mooney
Colorado School of Mines
Golden, Colorado,
United States

Professor Mike Mooney is a renowned expert in geotechnical engineering, tunneling, and underground construction. He serves as a Professor of Civil and Environmental Engineering at the Colorado School of Mines.

Prof. Mooney is highly respected for his contributions to the field of geotechnical engineering and tunneling, and is actively involved in research, teaching, and industry collaboration.

- Published numerous papers on tunneling, geotechnical engineering, and rock mechanics
- Collaborated with industry partners on various research projects
- Served as a consultant for tunneling and underground construction projects



Shri. Rahul Gupta,
Chief Engineer (Tunnel), Ministry of
Road Transport & Highways,
Gol, New Delhi.

An experienced Highway Engineering professional with over Eighteen (27) years' experience in the Highway Infrastructure Development domain. Experienced in Strategic Planning & Engineering Design, Implementation of Projects including Externally Aided Projects and Public – Private Partnership (PPP) Projects, Co-Ordination, Analysis, Environmental Management Programs. As Regional Officer of NHAI in J&K, responsible for execution of country's 2 longest road tunnels viz. Chenani-Nashiri and Banihal-Quazikund Tunnels on PPP (DBFOT – Annuity) mode. He has been felicitated by Hon'ble Minister (RT&H) for successful implementation and completion of Chenani-Nashiri Tunnel. He was Technical Secretary to Director General (Road Development) & Special Secretary to Government of India for a period of 2 years, advising him in all Roads and Highway development issues in the country.



Mr. Chris Cooper,
Project Leader,
L&T

Proven Project leader / Director for Major Key infrastructure Construction Projects. Chris is a Chartered Engineer with an experienced track record for delivery of Major International key civil engineering infrastructure, Metro tunnels, Large Caverns, Dams, Railway, and Mining Projects. Chris has a broad experience in Operational and Commercial Management roles thru to key Manager and Executive level creating updating and executing large project strategies and Delivery. He excels in the delivery of challenges in both Business and Operational Management roles. Strong business acumen and team leadership skills. Strong business experience in Asia and China with an ability to communicate at a local level as a proficient

SPEAKERS



Prof. Robert Galler
Montan University Leoben,
Austria

Dr. Robert Galler is a Professor at the Montan University Leoben in Austria and head of the large-scale underground research-, development-, training- and education centre ZaB – Zentrum am Berg. He worked as a consulting engineer in several international large-scale projects and became project leader for the tender design of several tunnel projects along the northern access route to the Brenner Base Tunnel. He also was the project manager of an international JV for the Brenner Base Tunnel with a length of about 57km including all fields of tunnel design from tunnel safety, aerodynamics, electrical design to civil and environmental design. Robert Galler is the chairman of the ITACET Steering Committee and representative of ITA Austria, as well as a member of the board of the Austrian Society for Geomechanics.



Dr. Sanjay Rana
Professional Geophysicist
Managing Director,
Parsons Overseas Ltd.

Dr. Sanjay Rana is a geophysicist by profession, an environmentalist at heart and a trainer by passion. After working for initial 5 years with the state and central government (department of atomic energy), he started the first-ever engineering geophysics company in the private sector in India. Since 1995 he has been working tirelessly towards the growth of the geophysical industry in the country, exploring new & unique application areas in various fields like Hydropower, dam safety, oil & gas, mining, infrastructure, roads & highways etc. He has been instrumental in bringing various technologies in India including Ground Penetrating Radar, High-Resolution Tomography, Dam Geophysics, Subsurface Utility Engineering (SUE) and Passive Seismic Tomography etc.



Dr. Gopal Dhawan
Founder & Chairman,
DDAG Pvt Ltd.

44 years of professional experience in Engineering Geology & Mineral Exploration for Infrastructure Projects. Working on skill development of young Geologists.

Formerly CMD, MECL & Executive Director (Geo Tech) NHPC.

Founder & Chairman, Dr Dhawan Academy of Geologists (DDAG Private Ltd)

NTPC- Member Panel of Experts

Arun III Hydro Power Project, NEPAL (SAPDC/ SJVN) - Doing Engineering Geological Studies for construction of stable dam abutment slopes

SPEAKERS



Dr. R.K. Goel

*Chief Scientist (Tunnel &
Underground Space Design),
CSIR-CIMFR*

Eminent Professional Engineering Geology and Rock Mechanics with an extensive portfolio of successful experience in all aspects of Tunnel Designing, Underground Space in Rocks, Characterization and Rock Mass Classification for Suitability and Sustainability of Rock Slopes in Hilly Terrain, plus comprehensive geotechnical investigation experience and relevant team leadership. This experience has been gained while working and collaborating with leading blue-chip companies, national and international Universities. Superannuated from CSIR-CIMFR (an Autonomous Institute of CSIR, Govt. of India) on June 30, 2020, after about 37 years of working and teaching experience in different capacities. After superannuation, working for various companies as Independent Tunnel Design Consultant/Advisor.



Mr. Senthilnath G T

*Associate Principal Tunnels &
Geotech, EIC Brisbane,
Queensland, Australia*

Senthil is a civil engineer with leadership and consulting experience in diversified infrastructure and mining projects. He has worked on various tunnelling projects (soft ground, hard rock, deep caverns) with project experience in Australia, Singapore, UAE, India, Malaysia, and Indonesia. He is a Fellow of Engineer Australia and a recognised engineering executive with more than 15 years of experience in the industry. As a lead design engineer, he has successfully led and delivered major multi-disciplinary underground projects, from concept design to detailed design to construction. Some of his recent large-scale projects in Australia include Suburban Rail Loop, Brisbane Metro, SNOWY 2.0, North East Link Melbourne, Sydney Metro-Western Sydney Airport-Station Box and Tunnelling, Cross River Rail Brisbane & Inland Rail (G2K).



Dr. Rajat Gangrade

*Technical Advisor - Geotech &
Tunneling, HNTB*

Dr. Rajat Gangrade is a geotechnical and tunneling engineer at HNTB in San Jose, California. He works on design aspects of soft ground tunnel projects. He has eight years of professional experience in geotechnical and tunneling projects.

He has Ph.D. in Underground Construction and Tunneling from the Colorado School of Mines where he worked with Prof. Mike Mooney. His doctorate focused on risk assessment in tunnel projects considering soil variability and uncertainty. During his Ph.D., he also worked as a consulting geotechnical and tunnel engineer on multiple tunnel projects in North America and South-east Asia. His works involved ground characterization, investigating the ground-TBM interaction, and instrumentation and monitoring data.

SPEAKERS



Mr. Sandeep Singh Nirmal,
*Senior Tunnel Engineer Jacobs,
London*

Sandeep is a tunnel engineer with experience in the design of tunnels & underground structures and design management. He holds Masters in Tunnelling and Underground Space from University of Warwick and bachelor's degree in civil engineering from IIT Delhi. He was Young Tunneller of the Year 2019 (India) and finalist for Young Tunneller of the Year 2020 (global) among 5 finalists across the world. He founded Tunnelling Association of India Young Members in 2018 and Symposium of Young Tunnellers of Asia in 2019. He has presented his work at World Tunnel Congress, Tunnel Asia Conference, Tunnel Talk magazine, TALym, BTSym and at various other platforms.



Dr. Anshul Sindhwani
*Manager Geologist Tunnelling,
L&T Construction*

Anshul is an Engineering Geologist with a demonstrated history of working in the engineering design and construction team of TBM/NATM tunnels, Cross Passages, Shafts, Crossover, Cut & Cover ramp and Underground Stations having 9.5 years of experience. Holds a Ph. D degree from IIT (ISM) Dhanbad on Tunnelling focussed on TBM performance prediction in varied ground conditions and had published his work in Q2/SCI/Scopus Journals and Conferences. Also served as Secretary for TALym group shows his personal commitment towards tunnelling industry beyond his professional work responsibilities.



Mr. Akx Malik
*Engineering Manager,
Underground Structures,
L&T*

Rock Mechanics, Tunnel Designs and Research Engineer for Underground Projects. Established Design of Support systems for complex Large Caverns & Underground Tunnels. NATM as well as NMT methods. Completed end-to-end engineering designs (borehole investigations, Parameters Characterization, tunnel support, Portals & Intersections, Shotcrete Permanent Linings, Permanent Bolts, Instrumentation, Grouting, slope stability, ensuring quality control (extensive lab and in-situ testing), strict timelines and documentation. Achieved optimization in designs (Wire mesh, Lattice Girders, RRS, Rock bolts, Shotcrete/Concrete works) using Research and technological developments. Gained strong client trust and appreciation by resolving various challenges and issues.

MIT-World Peace University Tunnelling Awards

Call for Nominations

We are excited to announce the launch of the 1st edition of the MIT-WPU Tunnelling Awards. A national-level competition recognizing outstanding projects in tunnelling and promoting quality, safety, sustainability and innovation in Tunneling.

Objective:

The MIT-WPU Tunnelling Awards aim to identify and reward exceptional achievements in tunnelling, promoting excellence in the industry.

Nomination:

Please submit your nomination for **'MIT-WPU Outstanding Tunnel Project Award-2024'**

Eligibility:

Projects with major civil engineering work completed within the last two years are eligible.

Award Ceremony:

The 1st edition of the MIT-WPU Tunnelling Awards will take place at the august hands of Shri Nitin ji Gadkari, Hon. Minister of Road Transport and Highways, GoI. on November 16, 2024, at MIT World Peace University, Pune, during the International Workshop "Sustainable Tunneling for Better Life".

For nomination and selection process details please send email to secretariattunnelworkshop@gmail.com

Mobile No. 9890436536

Submission Deadline: October 30, 2024

Paper Competition

Paper competition on following topics is organized. You may present case studies of successful implementation or suggest innovative methodologies. These topics aim to inspire innovative solutions, encourage sustainability, and promote cutting-edge technologies in tunnel construction.

1. **Enhancing tunnel design efficiency:** propose innovative improvements to existing tunnel design practices, focusing on sustainability, safety, and cost-effectiveness.
2. **Optimizing tunnel construction methods:** suggest enhancements to existing tunnel construction techniques, emphasizing reduced environmental impact, improved safety, and increased productivity.
3. **Himalayan tunnel construction challenges:** develop novel methodologies for tunnel construction in the himalayan region, addressing unique geotechnical, logistical, and environmental concerns.
4. **Sustainable tunnel construction strategies:** design and propose methodologies to minimize carbon footprint, reduce waste, and promote environmentally responsible tunnel construction practices.
5. **Leveraging technology for tunnel excellence:** explore the implementation of cutting-edge technologies such as building information modelling (bim), laser scanning, and other digital solutions to enhance tunnel construction efficiency, accuracy, and sustainability.

For participating in Paper Competition registration for the Workshop is mandatory.

For more information mail to secretariat-tunnelworkshop@mitwpu.edu.in or contact

Omkar Sarangkar	8097126133	Sushmit Shinde	8433983338
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Registration

Category	Registration fee
Working professionals and faculty members	Rs. 2000
TAIym members	Rs. 1000
Students	Rs. 500
Foreign delegates	USD 50
Virtual Participation (Students/ Professionals)	Rs 500

Registration fee includes Lunch, High Tea, Refreshments for two days and workshop kit. All participants will be issued 'Certificate of Participation' signed by **Prof. Arnold Dix, President, ITA**. **Hostel facility on twin sharing basis will be provided to outstation participants at reasonable charges subject to availability.** To register for this workshop, visit the following link and fill in the form. <https://forms.gle/cjzx52rrBaFNhxT99> or mail your details to registration-tunnelworkshop@mitwpu.edu.in

For more information, please contact Registration Committee Members (Last Page)

Who should attend the International Workshop?

Tunnel engineering professionals, Civil engineers, Civil engineering UG and PG students, faculty members of civil engineering should attend.

Why to attend?

It is great opportunity for young as well as experienced civil and tunnel engineers to interact and learn from stalwarts in tunneling industry. To know more about latest techniques, materials, equipment and software used in tunneling.

Sponsorship

This International Workshop will provide an excellent opportunity to national and international organizations; central / state government organizations, public sector undertakings, industrial organizations, equipment manufacturers, entrepreneurs, financial and funding institutions, consulting and construction organizations to publicize themselves by being Platinum / Golden / Silver sponsors or Supporter of the Conference. The sponsorship fees payable and benefits are mentioned below. Interested organizations may communicate their willingness to the Workshop Secretariat.

Entitlement	Platinum	Gold	Silver	Kit Sponsor	Dinner Sponsor
	Rs.4,00,000	Rs. 3,00,000	Rs.2,00,000	Rs. 2,00,000	Rs.2,00,000
Logo on the Backdrop	Yes	Yes	Yes	Yes	Yes
Complimentary Delegates	5	3	2	3	2
Audio Visual Presentation	30 Minutes	20 Minutes	15 Minutes	20 Minutes	20 Minutes
Distribution of Catalogues to participants	Yes	Yes	Yes	Yes	Yes
Advertise in Brochure	Two pages	One page	Half page	—	—
Display of Name and Logo during Dinner hours	—	—	—	—	Yes
Name & Logo in the inner flap of the Kit	—	—	—	Yes	—

Inauguration of MIT School of Subsurface (Tunnel) Engineering at the august hands of Hon. Shri. Nitin Gadkari, Union Minister for Road Transport & Highways, Gol.



ABOUT MIT WORLD PEACE UNIVERSITY

With a rich legacy of 40 years in fostering world-class academic excellence and over 100,000 alumni across the globe, MIT-WPU is one of the premier institutions of higher learning in India offering Undergraduate, Postgraduate, Diploma, and Ph.D. programmes.

Uniquely positioned as one of the first universities across the world that offers the highest standard of professional education ingrained with the postulates of peace studies, MIT-WPU enables an inclusive culture of dignity, fairness, and respect amongst its students, grooming them into future-ready, responsible citizens of the world.



Here, all learners have access to high impact experiential learning that combine academic offerings with yoga and meditation courses, multiple sporting opportunities, academic and cultural clubs, and year-round on-campus events aimed at strengthening the foundational development of all its students.

For any queries regarding Registration and Hostel Accommodation please contact any member of the Registration Committee.

REGISTRATION COMMITTEE

Aayush Bhadane	9370898439	Yashasvi Patil	9284797063
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