

TENTATIVE VIRTUAL PROGRAMME

12TH SEPTEMBER 2020



MALAYSIA TIME, MYT (UCT+8)	
0950-1010	Log-in Registration
1010-1015	Welcome Address by SYTA Organising Chairman
1015-1020	Address by IEM WTC2020 and TUSTD Chairman
1020-1025	Address by ITAym Chair
1025-1050	Presentation 1: Excavating in Weak Ground, where Risk of Landslide is High, <i>T. Suzuki</i>
1050-1115	Presentation 2: Features of Urban-Ring method adopted for construction of underground structures, <i>Y. Suenaga</i>
1115-1125	Break
1125-1150	Presentation 3: Challenges in Tunnelling – UGC02 Mumbai Metro Line -3, <i>A.K. Chaudhary</i>
1150-1215	Presentation 4: Tunnelling in Granites: Case study of a highway project in Afghanistan, <i>A. Chauhan</i>
1215-1240	Presentation 5: Construction of INA metro station over operational twin tunnels, <i>V.K. Sattawan</i>
1240-1350	Break
1350-1415	Presentation 6: A Comparison of Empirical and Numerical Approaches for Estimating Rock Support Pressure on Tunnel Lining, <i>F.K.L. To</i>
1415-1440	Presentation 7: On blow-out in tunnelling and a case study in Ho Chi Minh Metro Line 1, <i>M.N. Vu, N.T. Dung</i>
1440-1505	Presentation 8: Ground Vibration Study in Karstic Limestone Formation for Controlled Blasting Works in Klang Valley, <i>N. Ravichandran</i>
1505-1515	Break
1515-1540	Presentation 9: Design of steel fiber reinforced concrete segment with curved radial joints, <i>S.S. Nirmal</i>
1540-1605	Presentation 10: Tunnelling in an urban environment and managing 3rd party interfaces in London, <i>D. Bandopadhyaya</i>
1605-1650	Future Plans for 2nd SYTA by ITAym Steering Board
1650-1700	Closing Remarks
1700	End of 1 st SYTA, log-out.

1ST SYMPOSIUM FOR YOUNG TUNNELLERS OF ASIA



A pre-WTC2020 Event

Jointly organised by: **Tunnelling and Underground Space Technical Division (TUSTD), IEM, and WTC2020 Organising Committee**
 Managed by: **IEM Academy Sdn. Bhd.**



Date: **12 September 2020 (Saturday)**

Time: **0950 – 1700 MYT (UCT+8)**

A Virtual Event using Zoom Video Webinars!



INTRODUCTION

In conjunction with the ITA-AITES World Tunnel Congress (WTC) 2020 and 46th General Assembly in Kuala Lumpur, Malaysia, which will be moved to a full digital platform scheduled from 11th to 17th September 2020, Tunnelling and Underground Space Technical Division of IEM (TUSTD Young Member Sub-committee) and WTC2020 Organising Committee is jointly organising the **1st Symposium for Young Tunnellers of Asia (SYTA)** on 12 September 2020. *SYTA is also going virtual using Zoom Webinar!*

The main goal of this Symposium is to have a technical networking platform for young professionals and students involved in the tunnelling & underground space industry. The theme of the 1st SYTA is Tunnelling: Design, Operations and Surveillance which acknowledges the valuable contributions of young, enterprising and energetic Tunnellers working in increasingly challenging projects.

This one-day Symposium is hosted by turns amongst ITAym participating member nations in Asia. In this 1st SYTA, 11 presentations will be delivered from Hong Kong, India, Japan, Malaysia and Vietnam.

The Symposium written and spoken language shall be in English.

ABOUT ITA YOUNG MEMBERS (ITAym)

Who are the ITA young members?

The ITA young members (ITAym) include all young professionals in tunnelling from all over the world under 35 years.

ITAym objectives and key activities are set out to create an international professional networking platform and support other Member Nations in establishing their own national Young Member organisations. Officially founded at the ITA General Assembly 2014 in Iguazu, Brazil, the ITAym-group consists now of **more than 30 Member Nations** and has still a lot of potential to develop and motivate young professionals to get involved in the world of tunnelling.

The ITAym mission is to:

1. Provide international information hubs for young professionals in the tunnelling & underground space industry to enable the exchange of experience and to build on the professional network.
2. Outline the need to bridge the gap between generations and embrace the opportunity to network across generations in the industry.
3. Improve awareness of the tunnelling & underground space industry to new generations.
4. To provide young professionals and students with a voice in the ITA.
5. To look after the next generation of tunnelling professionals and to pass on the aims and ideals of the ITA.

Additional information and links to the annual magazine of the ITAym:
<https://about.ita-aites.org/wg-committees/young-members>

REGISTER NOW!

REGISTRATION FEES:

(For inquiry please e-mail sytayoung@gmail.com)

Category	Fee
Student / Young Member (age 35 and below)	Complimentary
IEM Members (age above 35)	MYR 15.00
Non-IEM Members (age above 35)	MYR 50.00

Closing for Registration: 5th September 2020

Please register via the link below:

<https://docs.google.com/forms/d/e/1FAIpQLScIMhpt4dhRC2Z3KRYN44DORzmmh15rNDB3yIyJUVU49Yid7IA/viewform?vc=0&c=0&w=1>

Terms & Conditions

- ✓ The COMPLIMENTRAY REGISTRATION is subject to availability on first come first serve basis.
- ✓ FULL PAYMENT must be settled before commencement of the event. Fee paid is not refundable.
- ✓ The Organizing Committee reserves the right to cancel, alter, or change the program due to unforeseen circumstances. Every effort will be made to inform the registered participants of any changes. In view of the limited places available, intending participants are advised to send their registrations as early as possible so as to avoid disappointment.

Synopsis & Speakers' Biodata

1. Excavating in Weak Ground, where Risk of Landslide is High

Takuya Suzuki, Japan

Synopsis:

Higashikyusyu Expressway consists of a tunnel through a mountain. Soil at the area is weak with remnants of active landslides found. The tunnel was designed to pass under the landslides surface, which necessitated many countermeasures to be adopted. For instance, the support structures were redesigned as rigid elements incorporating invert struts.

Biodata of Speaker:



Mr. Takuya Suzuki obtained his Bachelor's Degree in civil engineering at Waseda University, Tokyo, Japan in March 2010. His research project for his degree was on 'Local Buckling at Main Girder of Steel Segment'. Upon graduation, he joined Obayashi Corporation in April 2010 where he was involved in 4 tunnelling projects as a site engineer. He is currently working at Tunnelling Technology Department, in Civil Engineering Technology Division of Obayashi Corporation. His primary responsibility is to provide technical support to mountain tunnelling job sites throughout Japan. His other responsibilities include research and development on tunnelling technology. He gained his professional engineer status in civil discipline in March 2018.

2. Features of Urban-Ring method adopted for construction of underground structures

Yuma Suenaga, Japan

Synopsis:

Urban-Ring method has been adopted in urban areas for the construction of underground structures. With this method, the construction can be done within narrow space, minimising the influence on both peripheral ground and existing nearby structures as well as shortening the construction period.

Biodata of Speaker:



Mr. Yuma Suenaga majored in civil engineering at Tokuyama College of Technology, Yamaguchi, Japan. He did a research project on 'Optimum Location of Vibration Control Devices in a Steel Frame' and earned his Bachelor's Degree in year 2013. Upon graduation, he joined Taisei Corporation where he spent 3 years working at a bridge pier construction site. Thereafter, he was assigned to the company's infrastructure design section, and was mainly involved in the design of shield tunnel for 3 years. He is currently studying ground freezing techniques for the purpose of ground improvement and water stoppages.

3. Challenges in Tunnelling – UGC02 Mumbai Metro Line -3

Abhijeet Kumar Chaudhary, India

Synopsis:

Challenges in the UGC02 Mumbai Metro Line 3 project to be presented and discussed are as follows:

- a. High water ingress during tunnelling using TBM, cross passages & NATM works
- b. Urban Tunnelling:
 - i. Structures are very old (75-120 years), severe & very severe, heritage, high rise buildings.
 - ii. Extensive utility identifications & diversions
 - iii. Below existing Railways & bridges.
- c. Extensive Instrumentation & Monitoring with real-time data. Approximate monitoring of 3000+ buildings & safeguarding them.
- d.

Biodata of Speaker:



Mr. Abhijeet Kumar Chaudhary is working as an Assistant General Manager in Mumbai Metro Rail Corporation, looking after UGC-2 in Mumbai Metro Line 3. It is a world class mass public transportation system of 33.5 km long, i.e. a completely underground Metro Rail Network consisting of 27 stations (26 underground & 1 at-grade station as depot) costing around 23000+ Crores and estimated to carry over 14 lakhs passengers daily starting from the time of its operation in year 2021. He started his career as trainee civil engineer in year 2010 at Afcons Infrastructure Ltd for Kolkata Metro UG-1 and subsequently promoted to Engineer Execution for a period of 3 years. He had also worked as Technical Engineer and Senior Engineer (Tunnels) at L&T STEC JV for Delhi Metro Rail Corporation Project, CC27. Several TBMs that he had worked with are Herrenknecht, Hitachi, STEC (Hard Rock EPB TBMs for DMRC) & Terratec (Dual Mode Hard rock TBM for Mumbai Metro) for urban Tunnelling completing an overall tunnelling length of 11 km as at to-date.

4. Tunnelling in Granites: Case study of a highway project in Afghanistan

Ankur Chauhan; India

Synopsis:

The proposed highway corridor project is a 6.5 km long twin tube tunnel located in the Hindu-Kush Mountains, Afghanistan; located predominantly within granite and stretches of gneiss and schist. The tunnel will be constructed by conventional tunnelling method and a two-pass lining consisting of a primary shotcrete lining with rock bolts, and a secondary cast in-situ lining.

Biodata of Speaker:



Mr. Ankur Chauhan has 5 years of extensive working experience in design and construction of various kinds of underground infrastructure projects. He is a specialist Tunnelling Engineer graduated from Indian School of Mines, Dhanbad (India) and has good knowledge in various tunnelling approaches such as bored TBM Tunnels; New Austrian Tunnelling Method (NATM); and Norwegian Method of Tunnelling (NMT). He has also received training from the pioneers of the NATM as well as the world's foremost authorities on the application of the NATM or otherwise known as conventional tunnelling method. His other working experience includes being involved in TBM operations for metro tunnels. He is an active member of the International Tunnelling Association (ITA) and is involved in the technical working groups working on innovations and technical solutions to various tunnelling problems. He has also worked on many prestigious projects funded by International funding agencies such as the ADB, JICA and World Bank and is well versed with Indian and International codes and standards related to Tunnel design. He is the Secretary/professional development at Tunnelling Association of India Young Members.

5. Construction of INA metro station over operational twin tunnels

Virender Kumar Sattawan, Saurabh Sharma, India

Synopsis:

Due to the relatively small vertical space left (1.05m) between bottom slab of new INA station of Line-7 (Pink Line) and top of operational bored tunnels of Line-2 (Yellow Line), special attention had to be given to both design and construction sequence. Construction sequence must be strictly followed to ensure that both ovalisation and upliftment of revenue metro tunnels are kept within acceptable limits. To monitor both behaviour and movement of the existing metro tunnels during construction, a 24-hour real-time instrumentation monitoring system was implemented inside the operational twin tunnels in accordance with the approved scheme.

Biodata of Speaker:



Mr. Virender Kumar Sattawan joined Delhi Metro Rail Corporation (DMRC) in year 2009. In his career of over 11 years with DMRC, he was involved in the Delhi MRTS project and oversaw the successful completion of complex underground works such as Jorbagh Metro station of Line-2 (Yellow Line); Underground Ramp from Bhikaji Cama Place to Moti Bagh; and INA interchange metro station of Line-7 (Pink Line). Presently, he is taking charge of land acquisition and survey works for the upcoming alignment from R.K. Ashram Marg to Majlis Park Metro station of Line-8 Extension (Magenta Line) of Delhi MRTS Project (Phase-IV).

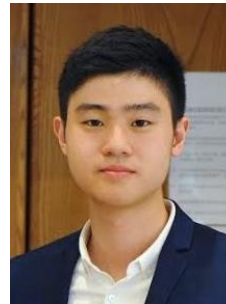
6. A Comparison of Empirical and Numerical Approaches for Estimating Rock Support Pressure on Tunnel Lining

To Franklin Kwok Leung, Hong Kong

Synopsis:

By establishing a series of comparison models, this study investigates the difference in estimated rock support pressure on tunnel lining using empirical approaches and finite element modelling. The influence of missing parameters in empirical equations and rock mass behaviour around excavation profile are also studied.

Biodata of Speaker:



Mr. Franklin To is a Chartered Engineer with 6 years of working experience in civil and geotechnical engineering. He received his Bachelor's Degree in civil engineering from Hong Kong Polytechnic University in year 2014. Following his graduation, he joined AECOM as a graduate engineer to undertake design of civil and geotechnical works. He completed his part-time Master's Degree in geotechnical engineering from University of Hong Kong in year 2018. Franklin is now a Project Engineer with the Tunnel & Cavern team at AECOM in Hong Kong. His areas of specialisation are predominantly design, construction, site supervision and project management of tunnels, rock caverns, explosive blastings, slope stabilisation, deep foundations, deep excavations and ground investigation works.

7. On blow-out in tunnelling and a case study in Ho Chi Minh Metro Line 1

Minh Ngan Vu, Nguyen Tien Dung, Vietnam

Synopsis:

When the support pressure at the tunnelling face and/or the tail is too high, blow-out occurs. In tunnelling design, blow-out is determined as an upper bound in order to calculate the maximum support pressure at the tunnelling face and at the tail of the shield. Although there was good control procedures during tunnelling especially in soft soil and at shallow depths, blow-out still occurred in some tunnel projects. This report presents a back analysis for a state-of-the-art blow-out case study of Hochiminhcity Metro Line 1 Ben Thanh – Suoi Tien, Vietnam. Based on recent models for estimating the blow-out pressure, the maximum pressure is re-calculated and compared with the blow-out pressure at the site.

Biodata of Speaker:



Dr. Minh Ngan Vu obtained PhD in Delft University of Technology, the Netherlands in 2016 and then worked there as a postdoc for 2 years with the topic of shallow tunnelling in soft soils. He is now working as a lecturer in Department of Infrastructure Engineering, Hanoi University of Mining and Geology, Vietnam. He also works as a consultant for some projects in Vietnam in underground construction such as tunnelling and pipejacking.

8. Ground Vibration Study in Karstic Limestone Formation for Controlled Blasting Works in Klang Valley **Nalinii Ravichandran, Malaysia**

Synopsis:

Ground vibration study in Karstic Limestone Formation is vital in controlled blasting works especially in highly populated locality such as Klang Valley. The relationship between PPV and Scaled Distance used to establish K and β constants together with blasting parameters study which is important for optimization and safety concerns will be presented.

Biodata of Speaker:



Ms. Nalinii Ravichandran graduated with a Bachelor's Degree in civil engineering from Universiti Teknologi Petronas (UTP) in year 2016 and had since started her career as site engineer in one of the renowned Tunnelling Construction Company - MMC Gamuda KVMRT(T) Sdn Bhd. She has extensive working experience in controlled NATM tunnelling method. Besides, she has experience handling critical problems involving technical matters especially on geotechnical problems like cavities, sudden water ingress and ground settlement for underground works which are very common in karstic limestone formation. She had previously served as committee member for Tunnelling and Underground Space Division, IEM for 2018/2019 session. As an icing on the cake, she has also recently completed her Master's Degree in geotechnical engineering in January 2020 from Universiti Teknologi Malaysia (UTM).

9. Design of steel fiber reinforced concrete segment with curved radial joints **Sandeep Singh Nirmal, India**

Synopsis:

Curved radial joints of TBM segments experience high bursting stresses due to hoop forces. The design of SFRC segments in this scenario results in requirement of extra reinforcement to resist this bursting stress. This presentation attempts to summarise the design concepts from TBM tunnels of Mumbai Metro Line 3 project.

Biodata of Speaker:



Mr. Sandeep Singh is an enthusiastic tunnel engineer who is always looking for new challenges. He holds a Master's Degree in Tunnelling and Underground Space from University of Warwick, UK and was a recipient of ITACET scholarship from ITA in year 2015. He graduated from Indian Institute of Technology Delhi in civil engineering in year 2011. He has 6 ½ years of working experience in both the UK and India with active engagements with various professional development organisations such as British Tunnelling Society, Institution of Civil Engineers, UK and Tunnelling Association of India. He co-founded the Tunnelling Association of India Young Members (TAIym) in year 2018 and is current Chair of TAIym. He is also co-founder of Symposium of Young Tunnellers of Asia (SYTA) which is to be held for the first time in conjunction with WTC 2020.

10. Tunnelling in an urban environment and managing 3rd party interfaces in London

Divik Bandopadhyaya, India, UK

Synopsis:

Tunnelling within an urban environment comes with its own constraints. In London, the underground space is as congested as the land above; inevitably leading to interface with existing assets of national significance during tunnelling. Divik's presentation will provide an overview of typical challenges related to the 3rd party interfaces, and will provide an insight into the ways of managing them whilst ensuring effective project delivery

Biodata of Speaker:



Mr. Divik Bandopadhyaya is a Tunnelling Engineer with London Bridge Associates Ltd. After gaining internship experience in tunnelling and bridges at Herrenknecht, Atkins, Arup and AECOM, he completed his MSc in Tunnelling from University of Warwick in 2016. Soon after, he joined London Bridge Associates as a Tunnelling Engineer. In 2017 Divik was seconded into Tideway East (CVB) as the project wide Asset Protection Engineer, where he managed 3rd Party Interface. In 2019, Divik joined the secondary lining team at Hinkley Point C Marine Works. He has now returned back to Tideway East to aid in managing the interface for the two TBMs scheduled to be launched later this year. Other projects Divik has worked on include Dublin MetroLink, Counters Creek FAS, and St. Pancras International Capacity Upgrade. Divik currently serves as British Tunnelling Society Young Members' Sub-Chair (Professional Development), and in past, has also served as the Vice-Chair (Knowledge) for Institution of Civil Engineers London Graduates & Students Committee. Divik was the recipient of Terry Crabb Memorial Award for his MSc group project, as well as a finalist of ICE London Graduate of the Year 2018.
