



The WTC in Copenhagen is fast approaching and after two years with little or no chance for the tunnelling community to get together in person, we are sure that you are as eager as us to attend and catch up with colleagues from around the globe!

Sustainability will be the topic at the heart of this year's congress and with this in mind, the ITA-CET Committee and ITACET Foundation will kick off the event with a two-day face-to-face training session, looking at how sustainability can be better integrated into underground design. This session will include the participation of several prominent figures from ITA Working Groups and Committees. You can find more details in our article on page 2.

Our lunchtime lecture series has continued to go from strength to strength, with 17 instalments having taken place since the beginning of 2021. Interest remains high on a global scale and the feedback from our participants and from the ITA community as a whole is very positive, as we explain in our article on page 3.

As you no doubt know, one of the ITA-CET Committee's missions is to nurture a university network around the globe, by helping to develop and promote top-level courses and innovative research work. Research is fundamental in advancing knowledge in the tunnelling industry and the

ITA-CET Committee is providing its university members with the chance to showcase recently completed research work during a conference which will take place in Leoben, Austria, on 22nd November 2022 (see our article on page 4 for details).

The ITA-CET Committee and ITACET Foundation have also continued to work hand-in-hand with ITA Member Nations to develop tailor-made training events adapted to the specific requirements of individual countries. Key correspondents from Member Nations who have expressed interest in collaborating with ITA-CET are invited to attend the ITA-CET Committee meeting which will take place during the WTC on Monday 5th September 2022. A formal invitation will be sent shortly.

One of the Member Nations with whom the ITA-CET Committee has continued to strengthen its relationship is India. In our article on page 5, we take a look at our recent collaboration with the MIT World Peace University in Pune.

As you can see, the ITA-CET Committee and ITACET Foundation have remained highly active over the last few months and continue to promote collaboration with ITA Working Groups, Committees and Member Nation representative bodies. Special thanks to all the lecturers for their time and effort when preparing and participating in our training sessions.

If you would like to organize a training event with us, please don't hesitate to get in touch with the Committee secretariat (see opposite for contact details).

We sincerely hope to see you in Copenhagen and for those of you who are unable to attend, please remain in touch!

Robert Galler – Committee Chair

Michel Deffayet – Vice chair

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FOR MORE INFORMATION

<http://www.ita-aites.org/en/wg-committees/committees/ita-cet>

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WTC training session on sustainable tunnelling

This year's World Tunnel congress is highlighting solutions in line with climate and sustainability issues. As the President of ITA, Jinxiu (Jenny) Yan recently pointed out: "In terms of ITA strategy for the next level, sustainability is one of the key elements to be considered. On the one hand, the use of tunnels and underground space can provide sustainable solutions to society. For example, among the 17 UN SDGs, tunnelling and underground space can contribute to several. On the other hand, the construction of underground projects requires lots of materials and equipment and produces emissions. Therefore, we should pool our resources to make our construction greener and more sustainable."

With this in mind, the ITA-CET Committee and ITACET Foundation have teamed up with the WTC organizers to develop a two-day training session on "sustainability in underground design and its practical implementations" which will kick off the congress on the 2nd and 3rd September 2022.

Day one will provide a general introduction to sustainability in tunnelling, with both contractors and clients giving their perspective on how the carbon footprint of tunnelling projects can be reduced. The use of underground space as a means to promote sustainability will be explained, with a case study from Helsinki, Finland. This first day will round off with a workshop on underground space planning.

Day two will focus on two distinct topics - immersed tunnelling and mechanized tunnelling - with a look at how sustainability aspects can be introduced in each case.

" In terms of ITA strategy for the next level, sustainability is one of the key elements to be considered "

Jinxiu (Jenny) Yan – ITA President

This face-to-face course will be held at the Ramboll head office in Copenhagen, just one metro station away from the WTC venue. Aimed at young tunnelling professionals, but of equal interest to a wider audience, this event will be a great opportunity to benefit from the knowledge of some of the top names within the ITA community and to network with likeminded professionals eager to push sustainability in tunnelling to the next level. Don't miss out!

To see the detailed programme and register for this event, please visit the WTC 2022 web site: <https://wtc2022.dk/>

The advertisement features a background photograph of several professionals in a conference setting, looking towards the right. Overlaid on the image is a white rectangular box containing event details. At the top left of the box is the ITACET Foundation logo, which includes a stylized 'O' icon and the text 'ITACET Foundation'. To the right of the logo is the WTC 2022 logo, featuring a silhouette of a person sitting on a mound, with the text 'WTC2022' and '2-8 SEPTEMBER 2022 Copenhagen'. Below these logos, the main text reads 'ITACET Training Courses Register Now!' in large, bold, green font. At the bottom left of the box, the dates 'September 2-3, 2022' and the location 'Copenhagen, Denmark' are listed. At the very bottom of the box, the logos for ITA (International Tunnelling Association), AITES, and DFTU are displayed.

Continued success for the lunchtime lecture series

With over 2,600 registered participants since it kicked off in February 2021, the ITACET lunchtime lecture series continues to attract a worldwide audience on a monthly basis. What are the reasons for this continued success? We asked some of the ITA Working Groups and Committees for their view.....

The ITACET lunchtime lecture series, initiated by the ITACET Foundation and co-organized with the ITA-CET Committee, has now been running for well over a year, becoming a regular event in many diaries. Originally developed as a short-term response to the COVID pandemic and the subsequent impossibility of organizing traditional face-to-face ITA training events, the series continues to gather an average of 150 participants each month, almost a year and a half after its launch.

In line with the ITA's mission to promote knowledge sharing to as wide an audience as possible, participants who attend the lectures live can do so free of charge. Participants who cannot attend live, can stream the recording after the event for a small fee, adapted to their country category. This free registration policy, coupled with a practical online format, consisting of short "bite-size" lectures on a regular monthly basis, are undoubtedly two of the main reasons for the success of the series.

Indeed, over the last couple of years there has been a digital revolution when it comes to training, with online formats gaining in popularity. As Nick Chittenden, chair of the ITAtch Committee points out: "Although the pandemic brought many negative impacts to the tunnelling world it also brought the benefit of accelerating the acceptance of virtual meeting options. These virtual meetings provide the opportunity to adopt a "little and often" approach to developing training in the industry. This allows far more engineers around the world access to the expertise of the ITA and knowledge transfer as a goal of the ITA".



Kate Havard (ITACET Foundation) hosting the session in January 2022

“ Efficient access to selected topics relevant to modern tunnelling.....the benefits to the tunnelling community are enormous.... ”

Brian Fulcher -Animateur ITA Working Group 14 on Mechanized Tunnelling

In addition to ensuring access to free live training opportunities during the pandemic, another main objective of the series was to strengthen collaboration with the other ITA Committees and ITA Working Groups, who are invited to propose topics and lecturers in turn.

To date, lectures have been organized in collaboration with ITAtch, ITA- COSUF and ITACUS on various topics such as "robotics and data processing in tunnelling", "lessons learnt from fires in tunnels" or "the planning, modelling and use of the subsurface". The ITA Young Members Group has also been actively involved, co-chairing a session on automation in tunnel construction".

The majority of the ITA Working Groups have also either already participated or are due to do so, with topics such as "contractual practices and the FIDIC Emerald book", "tunnel refurbishment", or "the challenges of long tunnels at great depth", thereby showing that there is a strong interest within the ITA to facilitate training opportunities for the industry as a whole.

The lunchtime lecture series provides the opportunity for the Committees and WGs to promote their activities and technical reports, thereby making them known to a wider audience outside the traditional ITA community. As Brian Fulcher, animateur of ITA Working Group 14 on Mechanized Tunnelling told us: "The ITACET lunchtime lecture series is a very good and functional program that provides considerable and efficient access to selected topics relevant to modern tunnelling on a global scale.....The benefits to the tunnelling community are enormous and focused, and with monthly lectures, each lasting approximately 90 minutes, they are not overwhelming and allow for active audience engagement. Tunnelling industry subject matter experts are brought in and presentations often linked to numerous published papers. The benefits to the Working Groups should also be considered very positive...developing additional outreach opportunities and communications".

The stakeholders that can benefit from the lunchtime lecture series are varied: tunnel owners, designers, operators, contractors, suppliers....

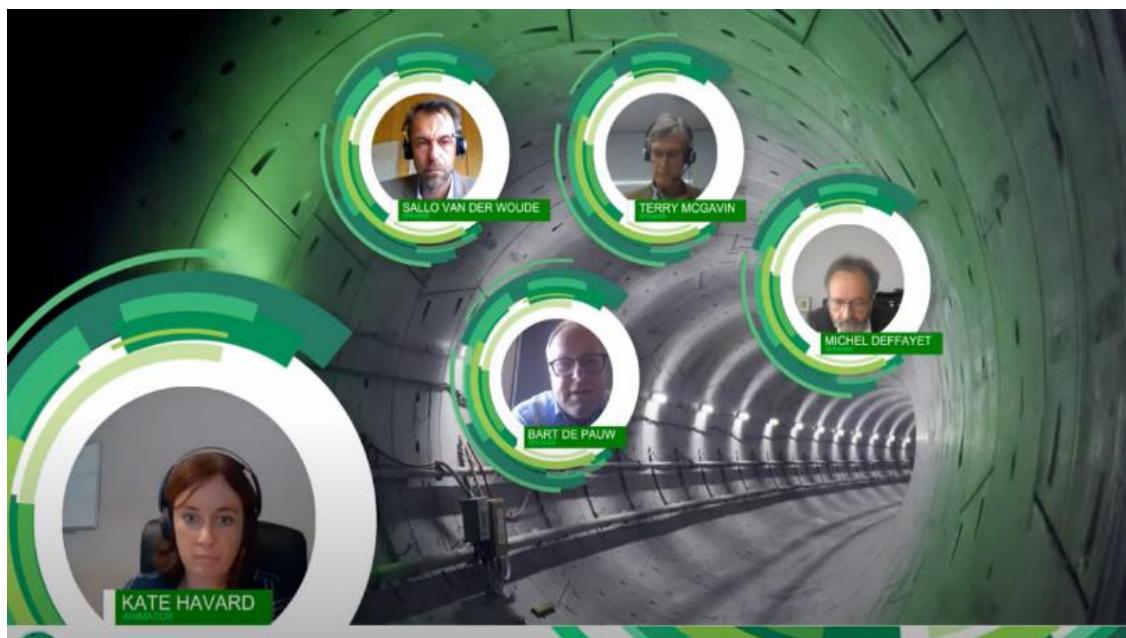
With regards the latter category, Nick Chittenden, ITA chair, points out: "The opportunity for the suppliers in the industry to also share their knowledge through a few specific sessions is fantastic and certainly brings value to the active involvement of our supporters and prime sponsors in ITAtech".

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Nick Chittenden – ITAtech chair

Topics that will be covered in the remaining 2022 sessions include:

- Building sustainable precast segment linings with fibre-reinforced concrete (12th July)
- Seismic effects and guidelines (13th September)
- New energy carriers in tunnels (11th October)
- Tunnel shafts (8th November)
- Underground and the environment – topic to be confirmed (13th December)



Lunchtime lectures on tunnel refurbishment organized in collaboration with ITA WG6 (2021)

In addition to this lunchtime lecture series, the ITA-CET Committee and ITACET Foundation are continuing to provide tailor-made training sessions for ITA Member Nations at their request. A good example of a recent session of this type can be found on page 6 of this newsletter, where we provide feedback on an online event organized for India.

In terms of future events for ITA Member Nations, on the 26th, 28th and 30th September 2022, an online training session on “Conventional and mechanized tunnelling in soil and rock” is being co-organized with AMITOS, the Mexican association of tunnelling and underground space engineers.

Both the lunchtime lecture series and these tailor-made events are complementary in nature. As Nick Chittenden sums up “While it is hoped that the “face-to-face” lectures and intensive sessions in developing countries continue, the lunchtime lecture series is one of the best adverts for both the ITA and ITACET in whatever they are doing”.

To register for one of our lunchtime lectures or to request a tailor-made training session, please don't hesitate to contact us!



ITA-CET university members invited to showcase their research work

One of the missions of the ITA-CET Committee is to develop and support a university network comprising representatives from universities that provide Master and PhD level courses in tunnelling and underground space. This network currently comprises representatives from 28 universities around the globe.

In order to enable network members to exchange on their respective university degree courses and research activities, the ITA-CET Committee has decided to organize its second professors meeting and PhD students conference, following a successful first edition in 2019.

Initially planned in December 2021, but postponed due to the pandemic, this second edition will now be hosted on 21st and 22nd November 2022 by Montanuniversität, Leoben, Austria, with online participation possible for those who cannot attend in person.

On 21st November, all ITA-CET university network members are warmly invited to attend a short meeting from 3:30 pm-5:00pm CET and to seize the opportunity of this meeting to exchange with their peers on course formats and content, exchange opportunities or possible collaborations on research work. Professors from the ITA-CET university network interested in attending this meeting should contact the [ITA-CET Committee secretariat](#), specifying if they will attend in person or online.

On 22nd November, selected PhD students and/or their university professors will be given the opportunity to present recently completed research work and in doing so will have the chance to network with students and professors from other countries. Universities interested in presenting their research work are invited to contact the [ITA-CET Committee secretariat](#), by the end of July, providing the envisaged title of their presentation and a short half-page summary of the topic in question.

For those able to travel to Austria, and wishing to prolong their stay, please note that Montanuniversität Leoben is hosting the TBM DIGS conference on the 23rd-25th November 2022. Registration for this separate ITA-endorsed event is required: <https://www.tbmdigs.com/en/>.

Non ITA-CET university network members who decide to attend this TBM DIGS conference (either in person or online) can attend the ITA-CET PhD students conference free of charge, but should register via the TBM DIGS web site.

Please note that whilst the ITA-CET professors meeting and PhD students conference are free of charge, registration charges will apply for the TBM DIGS conference and details can be found on the website at <https://www.tbmdigs.com/en/>.

We sincerely hope to see many of you at these events!



Helping to train India's tunnellers

In addition to the online lunchtime lecture series, the ITA-CET Committee and ITACET Foundation continue to provide tailor-made training events at the request of ITA Member Nations. An example of such an event is the four-day online industry-sponsored workshop which was organized at the request of India in February 2022. Professor Sandeep Potnis, of MIT World Peace University, Pune, gives us his feedback on this event which gathered over 500 participants.....

"India is one of the fastest growing markets for tunnel and underground construction due to various infrastructure projects underway throughout the country. Hence there is a need to update all stakeholders of the tunnelling industry in India about the latest developments in tunnel construction. A four-day international virtual workshop was organized in February 2022 by MIT-World Peace University, Pune, India in association with the ITA Committee on Education and Training and the ITACET Foundation. The theme of this virtual workshop was 'Advances in the Design and Construction of Tunnels'.

The objective of this training session was to give a global overview of the design and construction process with updated information of the new developments. The speakers of the workshop were renowned tunnelling professionals selected and appointed by the ITA-CET Committee.

There was tremendous response for the workshop. It was attended by 502 participants out of which 153 were tunnelling professionals, 137 army officers and 212 students. The workshop was inaugurated by Prof. Robert Galler, ITA-CET Chairman, along with Mr. Michel Deffayet, the ITA-CET Vice Chairman, and Mr. S.K. Dharmadhikari, Chair of the Road, Highways and Tunnels Advisory Committee, Ministry of Road Transport and Highways, Govt. of India.

In his inaugural speech, Dr. Galler expressed satisfaction over the active participation of MIT World Peace University in various ITA-CET activities. The workshop was sponsored by Epiroc, Herrenknecht, Sandvik and Bekaert.

Mr. Michel Deffayet stated that he greatly appreciated the efforts taken by the tunnel engineering students of MIT WPU under the leadership of Dr. Sandeep Potnis, Head of

the Tunnel Engineering Program. He also pointed out that it was one of the best training programmes organized by ITA-CET.

He thanked the speakers for the lectures that they agreed to deliver at short notice. He added that such collaborations are beneficial for all stakeholders of the tunnelling industry. On behalf of the sponsors, Mr. Anand Dwarkanath shared his views, noting that all the speakers were "amazing" and the question and answer sessions very fruitful.

Many participants shared their positive feedback after attending the workshop and thanked ITA-CET and MIT-WPU for organizing such a wonderful event.

Dr. Sandeep Potnis thanks the ITA CET committee and MIT WPU management for their strong support and guidance for organizing this outstanding event".

**INTERNATIONAL VIRTUAL WORKSHOP ON
ADVANCES IN DESIGN AND
CONSTRUCTION OF TUNNELS**