

ABOUT THE ITACET FOUNDATION: In an industry where technological progress is quickly advancing and where information and training are always required, the ITA-CET Foundation has been set in 2009 by the International Tunnelling and Underground Space Association ITA-AITES as a body for education and training actions. The Foundation is associated with the ITA-AITES Committee of Education and Training. One of the objectives of the ITA-CET Committee is to prepare the programmes and choose the lecturers for training sessions and short courses organized by the ITACET Foundation. The training sessions and short courses organized by the Foundation are available for ITA member nations and other interested organizations and companies. Courses' Portfolio and more information are available on [www.itacet.org](http://www.itacet.org)

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## President's Address



Eng. Abdullah bin Abdulrahman Al-Muqbel

The training session organized 25-27 of January 2016 in Riyadh on "Tunnelling & Landslides" and on "Rockfall" analyzed in depth the impact of natural disasters, e.g. rockfall, landslide, flood, earthquake, mobility and transportation network.

The programme on "**Tunnelling and Landslides**" included the role of tunnels in the prevention and the treatment of landslides. Case studies on motorways, railways and on flood in cities were presented. The importance of risk management plans was highlighted.

The "**Rockfall**" day was devoted to the analysis of these phenomena and to the presentation of the technologies to prevent them.

Today, the large majority of these disasters were not detected nor treated timely. As an example, it is not rare that rescue teams have been stopped on roads, due to landslides or floods.

We have to devote ourselves: politicians, planners and technicians, to work for resilient cities and reliable infrastructure networks.

Therefore, each planning and design step of new or refurbished infrastructures shall be focused on risk mitigation and disaster management. A risk management plan shall be implemented in all projects.

Then, the priority is to make everybody aware of the need and the possibility of such plan. The ITA-CET Training Sessions are a powerful and effective step in that direction.

Eng. Abdullah bin Abdulrahman Al-Muqbel  
President of the ITACET Foundation

## Training Courses at the WTC 2016 in San Francisco.



Exceptionally, this year, the WTC 2016 Organization and the ITACET Foundation are setting two courses who will be held simultaneously on Friday 22 and Saturday 23 April 2016.

### MONITORING AND CONTROL IN TUNNELLING

This training provides the purpose, methods and examples of monitoring the effects of tunnelling, including the monitoring of tunnel machine performance.

To control tunnelling to achieve acceptable excavation performance with stable underground structures and prevent damage to existing structures and utilities.

Due to the great variability in ground conditions, monitoring has an essential role in tunnelling regardless of method of excavation.

It is the only effective means to allow the tunnel design and construction procedures to be adjusted and validated as tunnelling takes place.

Topics include instrumentation (equipment and typical applications), interpretation of monitoring data, role of monitoring in risk management, contractual aspects and case histories. The course is of interest for owners, designers, construction engineers, supervisors and managers.

### UNDERGROUND SPACE USE

This course will serve as valuable introduction for engineers, architects, planners and public administrators to the use of underground space to increase liveability and sustainability in urban areas and in other key public resource regions.

## Coming Soon:

### WATERPROOFING. Waterproofing - Impermeabilización en túneles y espacios subterráneos Santiago, Chile 16-17 March 2016 - Auditorio empresa Conpax

CTES, Comité de túneles y espacios subterráneos de Chile will organize with the Foundation a training session on "Waterproofing".

This course aims to provide general information to engineers & decision makers on the waterproofing for tunnels and especially for long undersea tunnels.

The ITA-CET Foundation will delegate several renewed specialists of the field to teach at this event. CTES also invited several professionals from major companies' actives in waterproofing technics and products to provide insights to the audience with reviews and analysis of practical cases. A short presentation of the lecturers is available on the CTES website >>

This training session will present the participant with a great opportunity to obtain information from the highest quality on the subject. Also, a chance to interact directly with the lecturers through the several open discussions, which will be held during these two days.

Information, and registration on the web site of CTES: [www.ctes.cl](http://www.ctes.cl)

The seminar will identify key issues that need to be considered when using underground space and will show how these key issues are dealt with on a worldwide basis.

### ABOUT THE TRAINING COURSES

ITA-CET Training Courses are presented primarily by ITA-AITES members. The courses are open to all participants but require advance registration and payment.

Pre-registration for ITA-CET Training Courses ends 14 April 2016. Limited onsite registration for ITA-CET Training Courses will be available.

Training Course fees include course materials, lunches and morning/afternoon coffee breaks.

### PROFESSIONAL DEVELOPMENT HOURS (PDHS)

For each ITACET Training Course you attend, you can earn 14 Professional Development Hours.

Please check with your state/nation board(s) for their criteria to be certain this meets the required needs. UCA of SME will be sending confirmation of ITACET Training Course completion after the conclusion of the WTC 2016 conference.

For more information or questions regarding ITACET Training Courses and Professional Development Hours, please contact Tara Davis at [davis@smenet.org](mailto:davis@smenet.org).

Full program of each course are available, registration are open.

Registration and more information about the WTC Training courses and the WTC2016 are available on the website of the WTC : [www.wtc2016.US](http://www.wtc2016.US)



## Next events in preparation:

- TUNNEL DESIGN. Bhutan, Thimphu, 30-31 May 2016.
- IMMERSSED TUNNELS. Amsterdam, Nederland, 06-07 Septembre 2016.
- CONTRACTS and RISKS. Nepal, Kathmandu, October 2016.

## Event Report:

**TUNNELLING AND LANDSLIDES.** 10-11 January 2016. Riyadh, Saudi Arabia  
**ROCKFALL PROTECTION TECHNIQUES.** 12 January 2015 - Riyadh, Saudi Arabia

The ministry of transport organized with the ITA-CET Foundation, an event intended to raise awareness and further the education of every party involved in transport and infrastructure planning, construction and management. The topics studied included: landslides risk prevision and management in relation with tunnelling, rock falls and protection techniques in relation with transport infrastructures.

**LANDSLIDES AND TUNNELLING**  
Two-day seminar for continuing education, Mon. 25 Tue. 26 January 2016

**ROCK FALLS AND PROTECTION TECHNIQUES**  
One-Day specialized Training session, Wed. 27 January 2016

**MARK YOUR CALENDAR!  
TUNNELLING TRAINING COURSES**

Hosted by H.E. Eng. Abdullah A. Al-Mogbel, KSA Minister of Transport, Organized by the ITA-CET Foundation and the ITACET Foundation, Saudi Ministry of Transport, Riyadh.

**Key topics**  
Identifying and dealing with difficulties linked to unstable mountain slopes and hillsides - especially the risk of landslides.  
Latest developments and current state of the research on how Tunnels can play a role in preventing or mitigating the risk of landslides.  
Presentation and discussion of innovative protection devices that can be used to safeguard infrastructures against rockfall events.

**Speakers**  
An international panel of Engineers, Soil Mechanics, Researchers and Tunneling specialists from prestigious Universities and leading Companies from the field of landslides will come to share their knowledge and experience. Abdulrahman Al-Omer (KSA) from MCT, Prof. Andre Assis of the University of Brasilia (Brazil), Michel Defaytet (France) Managing Director of CDG (European Geotech Group), CEO of Geosolcia Inc., Prof. Daniele Peila (Italy) from the Polytechnic University of Torino and Harald Wagner (Austria) Geotechnical Engineering engineer.

**REGISTER NOW**

- An unique opportunity to get high level information on the latest development and research on the topic.
- Learn from the experience of field specialists during their review of selected practical cases.
- Get answers several open discussion with the lecturers will be held during the courses.
- Expand your professional network.

**Contact & registration information**  
LANDSLIDES AND TUNNELLING, Eur 1700,00  
ROCK FALLS AND PROTECTION TECHNIQUES, Eur 650,00

Registration fees include:  
• Printed and digital version of the courses proceedings  
• Certificate of participation signed by H.E. Eng. Abdullah A. Al-Mogbel, KSA Minister of Transport and Prof. Andre Assis  
• Lunch and refreshments

Registration: Online on [www.itacet.org](http://www.itacet.org) or contact Mr. Hussein Adhikari at The Administration Development Dept. - Ministry of Transport  
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The training lasted for three days, 25 to 27 January 2016. It was hosted within the Ministry of Transport by H.E Eng. Abdullah Al-Mogbel, Minister of Transport and President of the ITA-CET Foundation.

The first two days treated the topic of "Tunnelling" and "Landslides". The lectures aimed to explain and demonstrate the means of identifying and dealing with difficulties linked to unstable mountain slopes and hillsides (especially the risk of landslides). It outlined the main principles and provides theoretical and operational tools enabling participants to understand and deal with such issues.

The training started with a welcome and opening words from Eng. Hathlool Hussein Alhalthool, Deputy Minister for Roads. (pict. top)



This was followed by a technical introduction by Eng. Abdulrahman Alamri from the Ministry of Transports. The ITA-CET Foundation delegated

five lecturers, namely Messrs Andre Assis, Michel Defaytet, Piergiorgio Grasso, Daniele Peila and Harald Wagner.

The course was very appreciated by the 100 participants, who also enjoyed the free discussion organized with the lecturers at the end of each day. Participants especially highlighted the competence of the lecturers and the high quality of their intervention.

The third day of the event was a special training day on the topic of "Rockfall and Protection Techniques". The core of this course as well the several reviews of cases history at the program complemented the lectures given during the prior two-day training session on "Tunnelling and Landslides".

The program of the course was entrusted to a renowned specialist in the field of Rockfall Protection Technique, Prof. Daniele Peila from the Polytechnic University of Torino.

The program saw in alternately, theoretical lectures by Prof. Peila and Jean-Louis Durville and intervention of delegates from contractors companies specialized in the field, namely the companies Geobruigg, Maccaferri and SWS, who spoke of practical cases they encountered during their activities.

The audience was very active and submitted numerous questions to the lecturers. The toggle between theoretical courses and practical explanation of case histories was also very much appreciated by all participants.



Following the interest of the audience and numerous attendance to both events, the Foundation and the Ministry of transport are already planning the organization of further training session in Riyadh.

## Three New Programs in our Portfolio

The ITA-CET Committee finalized three more programs who will be integrated to the Foundation's Portfolio:

### Sustainable Tunnelling

To provide an introduction to the environmental impacts of tunnel construction and the way to adopt a more eco-friendly and sustainable approach in the resource consumption. It will also outline the specific issues of management of excavated material and give more details about methodologies and tools that can be used to assess environmental impacts, especially LCA (Life Cycle Assessment).

### Calculation Methods for Tunnel Design

To present the design methods commonly used to assess tunnel stability. Each method is illustrated by an example. Advantages and difficulties when applied to a tunnel project will be highlighted.

### Numerical Simulation for Tunnel Design

Provide an introduction to Numerical Simulation in Tunnelling. The seminar will provide a general overview of the different calculation methods putting forward the use, advantages and difficulties of numerical simulation. To be followed with more in-depth sessions on the numerical models and the associated parameters. Finally, example of application will be given.

With these three addition, our portfolio now offer 20 programmes. Details are available on our website [www.itacet.org](http://www.itacet.org)

## ITACET Committee Special Lecture



On February 8th, Prof. Robert Galler of Montan University Leoben, Austria, gave a special lecture on "Resource Efficient Tunnelling".

The Lecture has been held at Lyon's ENTPE to the class of the

MAS "Tunnels et espace souterrain".

Furthermore, the lecture has been video broadcasted to the Master's students of the MAS "Tunnelling and Tunnel Boring Machine" of the Politecnico de Torino and to the engineers of the CETU, Centre d'Etudes des Tunnels in Lyon.

## Collaboration with ITA Endorsed Master Course program.



Announcing a new service to students of ITA-AITE endorsed Master Course in Tunnelling "Master in Tunnelling and Tunnel Boring Machine" of the Polytechnico of Torino (I).

From 2016, the Foundation will collaborate with the MAS by delegating several lecturers. During a special teaching week 04-08 April 2016. They will intervene to share their knowledge and experience with Master's students.

## News of our sponsored MAS students

**Sandeep Singh Nirmal** is a Student, MSc Tunnelling and Underground Space at University of Warwick, UK. Recipient of the ITA-CET Foundation Grant 2015-2016. He wrote to us about his current experience at Warwick:

"The MSc course in Tunnelling and Underground Space floated by University of Warwick is one of its kind course in world. It certainly lives up to its reputation. The course director Dr. Benoit Jones is a very competent and nice professor and is running the course successfully.

The course not only teaches the theoretical aspects but teaches the practical implementation of the the same also. We have many lectures from the Guest Lecturers working at very prestigious positions in Tunneling industry.

This gives me more practical knowledge and opportunity to socialize with them. Many site visits are also part of coursework. I have been to one of the deepest and complicates sites i.e. Liverpool Street Station of Crossrail Project in London on very first week of my course.

I would say that its the best learning experience I have had yet and would like to thank ITA-CET for helping me to pursue this opportunity."

**Rodrigo Winderholler** is a Student, MSc Tunnelling and Tunnel Boring Machine at Politecnico di Torino, Italy and recipient of the ITA-CET Foundation Grant 2015-2016.

Rodrigo has set a blog to relate his experience at the Politecnico of Torino.

"I send you the link of the blog that I am preparing , a little raw but still obviously is a process in which I will work continuously in this period of the master and definitely be able to get the best results every time . My idea is that every week to do a post on the topics covered and further try to bring this to a more professional social network like LinkedIn."

The scope of this blog is to give some information about the 2nd level Specialiazing Master in "Tunnelling and Tunnel Boring Machines" at Politecnico di Torino, Italy.

On it you will find some interesting abstracts of courses given during the program, video and usefull information about Tunnel engineering.T

## IMPRESSUM

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