# PROCEEDINGS OF THE 10TH INTERNATIONAL CONFERENCE ON CIVIL, STRUCTURAL AND TRANSPORTATION ENGINEERING (ICCSTE 2025)

**July 17, 2025 - July 19, 2025 | Imperial College London Conference Center, London, United Kingdom**


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# WELCOME MESSAGE FROM THE CONFERENCE CHAIR

**On behalf of the International Academy of Science, Engineering and Technology (International ASET Inc.), the organizing committee would like to welcome you to the 10th International Conference on Civil, Structural and Transportation Engineering (ICCSTE 2025).**

**ICCSTE 2025** is aimed to become one of the leading international annual conferences in the fields related to civil, structural, and transportation engineering. This conference will provide excellent opportunities to the scientists, researchers, industrial engineers, and university students to present their research achievements and to develop new collaborations and partnerships with experts in the field.

**ICCSTE** is a series of international conferences held annually. The **10th International Conference on Civil, Structural and Transportation Engineering (ICCSTE 2025)** is going to be held in a hybrid format, i.e. in person as well as online.

In the **tenth meeting** of this conference, one plenary speaker and Two keynote speakers will share their expertise with the aim of exposing participants to a wide spectrum of applications, and to foster crosspollination of ideas and develop new research interests. In addition, approximately 121 papers will be presented from professors, students, and researchers across the world.

We thank you for your participation and contribution to the 10th International Conference of Civil, Structural and Transportation Engineering (ICCSTE 2025). We wish you a very successful and enjoyable experience.

**Dr. Khaled Sennah**
Toronto Metropolitan University, Canada
*Conference Chair and Proceedings Editor*
*ICCSTE 2025*

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# ABOUT ICCSTE 2025

**The 10th International Conference on Civil, Structural and Transportation Engineering (ICCSTE 2025) aims to become the leading annual conference in fields related to civil, structural and transportation engineering.** The goal of ICCSTE 2025 is to gather scholars from all over the world to present advances in the fields of civil, structural and transportation engineering and to foster an environment conducive to exchanging ideas and information. This conference will also provide an ideal environment to develop new collaborations and meet experts on the fundamentals, applications, and products of the mentioned fields.

ICCSTE is a series of international conferences held annually. These conferences focus on all aspects of civil, structural and transportation engineering. After successfully holding ICCSTE'15 to ICCSTE'24 in Canada, ICCSTE 2025 is hosted in **London, United Kingdom** as well this year. ICCSTE 2025 is going to be held in a hybrid format, i.e. in person as well as online.

**ICCSTE** is an acronym for **I**nternational **C**onference on **C**ivil, **S**tructural and **T**ransportation **E**ngineering.

- All papers were peer-reviewed
- The conference proceedings are published under an ISSN and ISBN number
- Each paper is assigned a unique DOI number by Crossref
- The conference proceedings are indexed by Scopus and Google Scholar
- The proceedings are permanently archived in Portico (one of the largest community-supported digital archives in the world)

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# SCIENTIFIC COMMITTEE

**We would like to thank the following for accepting to act as a member of the Scientific Committee for the ICCSTE 2025 Congress:**

## Scientific Committee Chair

### Dr. Khaled Sennah

**Toronto Metropolitan University, Canada**
Conference Chair

## Scientific Committee Members

- **Dr. Mizan Ahmed,** Curtin University, Australia
- **Dr. Firas Al-Mahmoud,** University of Lorraine, France
- **Dr. Aref Abadel,** King Saud University, KSA
- **Dr. Francis Au,** University of Hong Kong, Hong Kong
- **Dr. Michele (Mike) Barbato,** University of California, USA
- **Dr. Bruno Briseghella,** Fuzhou University, China
- **Dr. Nawawi Chouw,** Auckland University, New Zealand
- **Dr. Johann Facciorusso,** Università degli Studi di Firenze, Italy
- **Dr. Massimo Fragiacomo,** University of L'Aquila, Italy
- **Dr. Rajeshwar Goodary,** Université des Mascareignes, Mauritius
- **Dr. Marte Gutierrez,** Colorado School of Mines, USA
- **Dr. Ahmed Hamoda,**Kafrelsheikh University, UAE
- **Dr. Yasser Hassan,** Carleton University, Canada
- **Dr. Mostafa Fahmi Hassanien,**Tanta University, Egypt
- **Dr. Jianwei Huang,**Southern Illinois University, USA
- **Dr. Venkatesh Kodur,** Michigan State University, USA
- **Dr. Tribikram Kundu,** University of Arizona, USA
- **Dr. Ashraf Othman,** Military Technical College, Egypt
- **Dr. Hosein Naderpour,** Semnan University, Poland
- **Dr. Elżbieta Macioszek,** Silesian University of Technology, Poland
- **Dr. M. Shamim Miah,** Graz University of Technology (TU Graz), Austria
- **Dr. Saber Moradi,** Toronto Metropolitan University, Canada
- **Dr. Iraj H.P. Mamaghani,** University of North Dakota, USA
- **Dr. Ayman M. Okeil,** Louisiana State University, USA
- **Dr. Luigi Di Sarno,** University of Liverpool, UK
- **Dr. Grzegorz Sierpiński,** Silesian University of Technology, Poland
- **Dr. Maged A. Youssef,** University of Western Ontario, Canada



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# KEYNOTE SPEAKERS

**The keynote information for the 10th International Conference on Civil, Structural and Transportation Engineering (ICCSTE 2025) is as follows:**

## Plenary Speaker

**Dr. Shamim A. Sheikh**
**University of Toronto, Canada**

## Keynote Speakers

**Dr. Husham Almansour**
**University of Ottawa & National Research Council Canada (NRC), Canada**

**Dr. Ashraf Ashour**
**University of Bradford, UK**

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# ICCSTE 2025 PLENARY SPEAKER

**Titles:** FRP for Sustainable, Resilient, and Seismically Resistant Concrete Structures

**Dr. Shamim A. Sheikh, University of Toronto, Canada**

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Dr. Sheikh is a Professor in the Department of Civil and Mineral Engineering at the University of Toronto and a Fellow of The Canadian Academy of Engineering. He was the Graduate Chair of the department from 1998 to 2004 and Academic Chair from 2009 to 2012. Before joining Toronto in 1989, he was a faculty member for over nine years at the University of Houston. He also holds adjunct High-Level Talent Research Professorship at Zhengzhou University, China.

He has served as Chair and member of several ACI-ASCE (American Concrete Institute-American Society of Civil Engineers) and CSCE (Canadian Society for Civil Engineering) technical Committees on Reinforced Concrete Structures. He is also active in several code committees and currently chairs the CSA (Canadian Standards Association) committee on Structures with FRP of the Canadian Highway Bridge Design Code.

Dr. Sheikh's major areas of research include behaviour of structures, seismic resistance of concrete structures and their upgrade, FRP-reinforced concrete structures for durable, resilient, and corrosion-free infrastructure to withstand extreme loads, environment, and climate change. He has authored over 250 papers published in international journals and conference proceedings and has a U.S. patent to his credit for an Expansive Cement.

His published research has formed the basis of many design provisions in North American, European, and Asian design codes among others. His work has been extensively cited by researchers and used by engineers. His research on upgrading structures with FRP has provided unique solutions for sustainability and resulted in several applications around the world. This innovative and economical solution for the deteriorating infrastructure has been featured in various TV programs such as CBC National, Discovery Channel, and print media. He has consulted on complex structural safety issues on a variety of structures around the world.

# ICCSTE 2025 KEYNOTE SPEAKER

**Titles:** Climate Change Adaptation for Resilient Highway Bridges against Extreme Climate Events

**Dr. Husham Almansour, University of Ottawa & National Research Council Canada (NRC), Canada**

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Husham Almansour, Ph.D., P.Eng. is a Senior Research Officer in the Sustainable Resilient Infrastructures and Communities Research Unit, the Construction Research Centre (CRC), National Research Council Canada (NRCC), and an Adjunct Professor in the area of Structural Engineering, Department of Civil Engineering, the University of Ottawa, and Department of Civil & Mineral Engineering, University of Toronto. Dr. Almansour's expertise is in the area of structural mechanics with a focus on the performance, protection, and rehabilitation of aging structures and infrastructure against extreme loads and the area of innovative structural systems using advanced materials. He is leading the NRC research teams in the area of climate resilience of infrastructure and the area of innovative high-performance structural systems using advanced materials. Dr. Almansour co-supervised more than twenty Ph.D. and M.A.Sc research theses. Dr. Almansour is a member of NRC-NBC, CSA committees S6 (Canadian Bridge Design Code), S 850 (Design and assessment of buildings subjected to blast loads), S806 (Design and Construction of Building Components with Fiber-Reinforced Polymers), ASCE-11, Guideline for Structural Condition Assessment of Existing Buildings, ASCE Blast and impact loads on structures; ASCE Resilience and bridge design, TAC Structure Standing Committee, and CSCE Committee on Education and Research.

# ICCSTE 2025 KEYNOTE SPEAKER

**Titles:** Geopolymer Concrete from Construction and Demolition Waste: A Sustainable Solution for Carbon Emission Reduction

**Dr. Ashraf Ashour, University of Bradford, UK**

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Ashraf Ashour is a Professor of Structural Engineering at the University of Bradford, received his PhD from Cambridge University, was the Head of Civil Engineering Department and the Director of Research, and is currently the Leader of the sustainable environments research group at the University of Bradford. He is a Fellow of the Institution of Structural Engineers (FIStructE) and a Senior Fellow of the Higher Education Academy (SFHEA). He has extensive research experience in the development of new sustainable construction materials and their use in sustainable infrastructure as well as techniques to extend the life of concrete structures. He has published more than 300 journal and conference papers and is consistently ranked amongst the top 2% scientists in Civil Engineering in accordance with the Global Database produced by Stanford University and was recently awarded Newton Prize-2020 for his work in developing sustainable concrete materials and structures. He was the Editor-in-Chief of the Structures and Buildings Journal (ICE) and is currently an Associated Editor for Structures, Composite Structures and many other journals.

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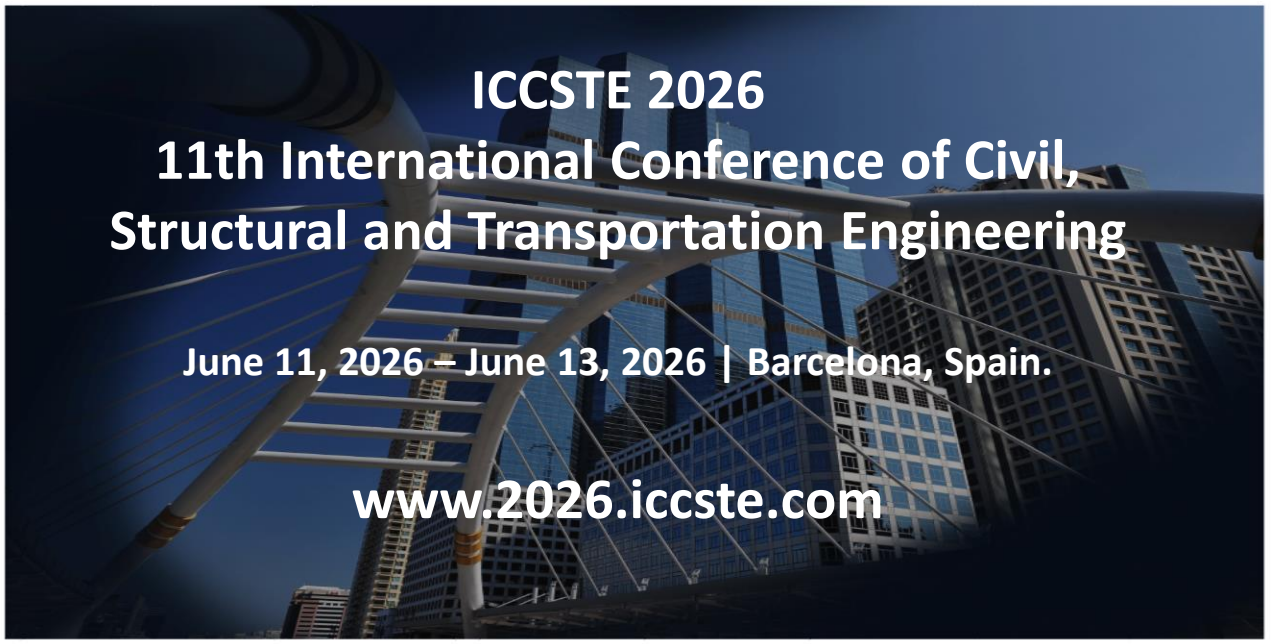


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