

EINLADUNG

zum Gastvortrag

von

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am

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Technische Universität Wien, Karlsplatz 13, 1040 Wien
Seminarraum 202 (Stiege 2, 2. Stock + Halbstock)

Structural Use of Fiber-Reinforced Polymer Composites in Construction

Abstract: Fibre-reinforced polymer (FRP) composites are formed by embedding continuous fibres (e.g. carbon, glass and aramid fibres) in a polymeric resin matrix. The advantages of FRP composites include their excellent corrosion resistance, high strength-to-weight ratio and tailorability of material properties. Over the past two decades, FRP composites have gained increasingly wide acceptance as a new class of construction materials, initially in the strengthening of existing structures and more recently in the construction of high-performance new structures.

This presentation will provide a review of the major achievements in the structural use of FRP composites in construction over the past two decades, covering both research and practical implementations. A strong emphasis will be placed on the optimal use of FRP composites to enhance the performance of structures, which often means that FRP composites need to be used in combination with traditional materials such as steel and concrete. In the area of strengthening, externally bonded FRP reinforcement is now a mainstream technology. In the area of new construction, many innovative structural forms enabled by FRP composites are being explored. The presentation will also examine future opportunities and challenges in the area.



Biography of Speaker: Dr. Jin-Guang Teng received his PhD degree in 1990 from the University of Sydney with a thesis entitled "Buckling and collapse of shells and rings for steel silos". Since then, he has conducted research on a wide range of topics, with a strong emphasis on the exploitation of advanced computational methods in understanding and modelling structural behaviour. His current research is focussed on the structural use of fibre-reinforced polymer (FRP) composites in construction. He has authored/co-authored over 190 SCI journal papers, leading to over 6,700 citations according to the Web of Science Core Collection. His work has impacted significantly on relevant design guidelines/codes in China, Australia, Europe, the United Kingdom and the United States.

Dr. Teng's research contributions have been recognised by many awards/prizes, including the State Natural Science Award of China, Distinguished Young Scholar Award from the Natural Science Foundation of China, the IIFC Medal from the International Institute for FRP in Construction (IIFC), and the State-of-the-Art of Civil Engineering Award from the American Society of Civil Engineers. He serves as one of the two Editors-in-Chief of the international journal "Advances in Structural Engineering" and a member of the editorial boards of 7 other SCI journals. He was elected a Fellow of the Hong Kong Academy of Engineering Sciences in 2013 and a Corresponding Fellow of the Royal Society of Edinburgh in 2015.