



International Summer School on Composites in Infrastructure

18-22 July 2016

UOW *(Second announcement)*



INTRODUCTION

The inaugural International Summer School on Composites in Infrastructure (ISSCI) will be held in Wollongong, Australia on 18-22 July 2016. The ISSCI will be hosted by the University of Wollongong, with its co-organisers being The Hong Kong Polytechnic University, Queen's University Belfast, Tsinghua University, University of Queensland and Southern Cross University.

The ISSCI, to be taught by a strong team of experts including some of the leading scholars in the world in this area, will focus on the structural use of fibre-reinforced polymer (FRP) composites in infrastructure. The ISSCI aims to prepare researchers and postgraduate students for high-quality research in the area, and to prepare engineers for practical applications. It will provide a comprehensive and thorough treatment of the behaviour, modelling and design of structures incorporating FRP composites (including both FRP-strengthened structures and FRP-based new structures), with a strong emphasis on their fundamental mechanics. The ISSCI will include a one-day symposium which provides an international forum for all attendees to share their recent advances in both research and practice, and to benefit from discussions with the summer school lecturers.



UNIVERSITY
OF WOLLONGONG
AUSTRALIA



CONFIRMED LECTURERS

(In alphabetical order)

- Professor Jian-Fei Chen
- A/Professor Jian-Guo Dai
- Professor Peng Feng
- Dr. Dilum Fernando
- A/Professor Muhammad Hadi
- Professor Scott Smith
- Professor Jin-Guang Teng
- Dr. Tao Yu
- Dr. Shi-Shun Zhang

TOPICS

Day 1: Overview and Fundamentals

- FRP composites in construction: an overview
- Numerical and experimental research techniques
- Classical lamination theory and failure criteria
- Mechanics of bonded interfaces
- Mechanics of confined concrete

Day 2: FRP-strengthened Structures

- Flexural strengthening of RC beams/slabs
- Shear strengthening of RC beams
- Strengthening and seismic retrofit of RC columns
- RC beams strengthened with near-surfaced mounted FRP reinforcement
- Strengthening of steel structures

Day 3: FRP for New Construction + Durability & Fire Resistance

- Hybrid FRP-concrete-steel structures
- FRP bar-reinforced concrete structures
- All FRP structures
- Durability and Fire resistance

Day 4: Design issues

- Introduction and basis of design
- Design for flexural strengthening of RC beams
- Design for shear strengthening of RC beams
- Design for strengthening of RC columns
- Design of FRP-based new structures
- Design for flexural strengthening of steel beams
- Design software

Day 5: International symposium

Recent advances in this area will be presented and discussed. These will include a small number of invited presentations by experts in the area as well as presentations by other participants of the summer school. More details will be announced later.

TO REGISTER

Register now for the International Summer School on Composites in Infrastructure at <http://bit.ly/issci16>, or <https://www.eventbrite.com.au/e/international-summer-school-on-composites-in-infrastructure-issci-tickets-23135860983>

ORGANISING COMMITTEE

(In alphabetical order)

Co-Chairs: Prof. Jin-Guang Teng and Dr. Tao Yu

Members: Prof. Jian-Fei Chen, Prof. Peng Feng, Dr. Dilum Fernando, A/Prof. Muhammad Hadi, A/Prof. Alex Remennikov, Prof. Scott Smith, Dr. Shi-Shun Zhang

TEACHING MATERIALS

A USB disk containing a soft copy of all lecture notes will be provided.

ABOUT WOLLONGONG

Wollongong is almost as conveniently located as Sydney: it is just 80 km south of Sydney – about one hour from the Sydney International Airport and 90 minutes by road or train from the centre of Sydney.

Wollongong is a vibrant, multicultural city, situated on one of Australia's most picturesque coastlines. It combines a relaxed, coastal atmosphere with cosmopolitan dining, shopping and culture.

FURTHER INFORMATION:

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ORGANISED BY:



UNIVERSITY
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AUSTRALIA

CO-ORGANISED BY:



THE HONG KONG
POLYTECHNIC UNIVERSITY
香港理工大學



清华大学
Tsinghua University



THE UNIVERSITY
OF QUEENSLAND
AUSTRALIA



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CONFIRMED LECTURERS

(In alphabetical order)



PROF. JIAN-FEI CHEN

Prof. Jian-Fei Chen is Professor of Civil and Structural Engineering and theme leader of the Structures Theme at Queen's University Belfast. His main research interests lie in two distinct areas in structural mechanics and structural engineering: a) applications of FRP composites in construction and b) materials handling and behaviour of particulate solids flow, with recent research extended to renewable energy and low carbon construction materials. He has authored or co-authored over 300 publications, including the book "FRP-Strengthened RC Structures" published by Wiley in 2002, which has also been translated into Chinese, Korean and Persian. He has received a number of awards such as the Frederick Palmer Prize (2015) and Howard Medal (2004) awarded by the Institution of Civil Engineers, and the J.M. Ko Medal (2013) given by the international journal *Advances in Structural Engineering*. Prof. Chen is a founding Council member of the International Institute of FRP for Construction (IIFC) and currently the President of the IIFC.



A/PROF. JIAN-GUO DAI

Dr. Dai is an Associate Professor of Department of Civil and Environmental Engineering at The Hong Kong Polytechnic University. His research fields include "FRP composites in construction", "Durability and life cycle management of concrete structures in marine environments" and "Structural use of fiber-reinforced cementitious composites". He has published over 160 international journal/conference papers in the above fields and his research work has been recognized by a number of academic awards including "Best Basic Research Paper Award" from Journal of Composites for Construction, ASCE and "Distinguished Young Scholar Award" from FRP Application Associate of China Civil Engineering Society. Dr. Dai is active in the technical committees of many international organizations such as Asian Concrete Federation (ACF), International Institute for FRP in Construction (IIFC), ISO/TC71 on "Concrete, Reinforced Concrete and Pre-stressed Concrete" and Japan Concrete Institute (JCI). He has also served some international journals as an Associate Editor or a Guest Editor.



PROF. PENG FENG

Prof. Peng Feng holds the positions of full Professor of civil engineering and deputy head of the Department of Civil Engineering at Tsinghua University. His research fields are related to the high-performance structures with emerging materials and advanced construction techniques for civil engineering, including all-FRP structures and FRP hybrid structures, FRP strengthening of existing structures, integration of structures and functions for sustainable construction, and 3D printing for construction. Prof. Feng is the chair of three Chinese National Standard Committees on FRP. His work has impacted significantly on the relevant industry in China. He was awarded the Excellent Young Scientists by the National Natural Science Foundation of China (NSFC) and the Distinguished Young Scholar Award by the Specialty Committee on Infrastructure Applications of FRP Composites of the China Civil Engineering Society (CCES).



DR. DILUM FERNANDO

Dr. Dilum Fernando is a Lecturer in the School of Civil Engineering and also a Director of The Centre for Future Timber Structures at The University of Queensland. His research interests include behavior of bonded interfaces, FRP strengthening of existing structures, FRP hybrid structures, timber structures and performance based and life-cycle design of structures. Dr. Fernando is an emerging researcher in the field of advanced composites in civil infrastructure and is a recipient of Australian Research Councils' (ARCs') Discovery Early Career Research Award (DECRA) among many other research awards.



A/PROF. MUHAMMAD HADI

A/Prof. Muhammad Hadi is an Associate Professor of Structural Engineering at the University of Wollongong, Australia. He obtained his PhD from The University of Leeds, UK. A/Prof. Hadi is a Fellow of the Australian Institution of Engineers, and a Fellow of the American Society of Civil Engineers. He published more than 200 research papers in the areas of concrete structures, concrete-steel and FRP composite structures. He supervised 11 PhDs and 7 ME (Hons) to date; and is currently advising 20 PhD candidates.



PROF. SCOTT SMITH

Prof. Scott Smith is Dean of Engineering and Foundation Professor of Engineering at Southern Cross University, Australia. He was awarded BE (Civil, 1994) and PhD (Structural Engineering, 1999) degrees from the University of New South Wales, Australia, and he was formerly an Associate Professor at the University of Hong Kong. Prof. Smith is Senior Vice President of the International Institute for FRP in Construction (IIFC), and he is Fellow of the IIFC, Engineers Australia, American Society of Civil Engineers, and The Hong Kong Institution of Engineers. He is a co-author of the well regarded 2002 Wiley book “FRP-Strengthened RC Structures”, has over 4400 Google Scholar Citations to his credit, and in 2010 was bestowed the IIFC Distinguished Young Researcher Award. Prof. Smith is an Editor of Construction and Building Materials (JCBM) and he is a member of the International Editorial Board of the ASCE Journal of Composites for Construction.



PROF. JIN-GUANG TENG

Prof. Jin-Guang Teng holds the positions of Ko Jan Ming Professor in Sustainable Structures and Materials, Chair Professor of Structural Engineering, and Director of Research Institute for Sustainable Urban Development at The Hong Kong Polytechnic University. He has conducted research over the past three decades on a wide range of topics within the broad field of structural engineering, including the structural use of fibre-reinforced polymer (FRP) composites in construction and steel & thin-walled structures. He has authored/co-authored some 190 SCI journal papers, leading to over 6,400 citations according to the Web of Science Core Collection. His work has impacted significantly on relevant design guidelines/codes in Australia, China, Europe and the United States. 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. He served as the founding president of the International Institute for FRP in Construction (IIFC) (the premier international learned society in the field) during 2003-2006 and received the inaugural IIFC Medal in 2008.



DR. TAO YU

Dr. Tao Yu is a Senior Lecturer in civil engineering at the University of Wollongong (UOW) in Australia, and an Associate Editor of the international journal *Advances in Structural Engineering*. His research interests include hybrid FRP structures, rehabilitation of existing structures and nonlinear finite element modeling of structural behavior. Dr. Yu has published over 80 research papers in the area of structural engineering, and many of his journal publications are among the “Most Cited Articles”, “Top 25 Hottest Articles”, or “Top Downloads” of the respective journals. Dr. Yu has successfully secured a number of research projects, including the “Discovery Early Career Researcher Award” from the Australian Research Council. He is one of the main contributors for the Chinese national standard “Technical Code for Infrastructure Application of FRP Composites (GB50608-2010)”.



DR. SHI-SHUN ZHANG

Dr. Shi-Shun Zhang is a Lecturer in the School of Civil, Mining and Environmental Engineering of the University of Wollongong. His research interests include FRP-strengthened concrete structures, nonlinear finite element analysis of structures, application of fibre-optic sensing systems in civil structures, seismic retrofit of RC frames and novel hybrid structural members. He has a number of scholarly peer-reviewed publications in reputed international journals and is one of the authors of the Hong Kong design guideline “Guide for the Strengthening of Reinforced Concrete Structures using FRP Composites” (to be issued). As the Principal Investigator, he secured a research grant from the National Natural Science Foundation of China.

