



Advanced Composites in Civil Infrastructure

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ABSTRACT

Advanced composites such as fiber reinforced polymers (FRP's) possess many advantages over conventional materials used in the construction industry (e.g. concrete, steel, timber), such as a high strength to weight ratio, shape flexibility, ease of application and corrosion resistance. However, irrespectively of many advantages of FRPs, penetration of FRPs in to construction materials market remain as low as 4%. Current FRP usage within the civil construction industry is largely focused on strengthening applications, while the advantages of using FRP's in new structural systems remain largely unexploited. The use of FRP's civil infrastructure presents a unique set of technological challenges, where innovative solutions resulting in efficient, economical, and sustainable infrastructure are required. Due to the lower market share of the construction industry when it comes to advanced composite usage, little effort has been devoted in developing FRP technologies and products that address the requirements of the civil construction industry. However, due to the steady growth rate of the use of FRP's within the recent years, the construction industry is now seen as a major industry driving the growth of FRP usage. This presents an opportunity to develop FRP solutions that can meet the needs of civil construction industry and unlock considerable potential within the new construction market.

This talk will present some of the technologies developed at the University of Queensland aiming to address future demands of FRPs in civil infrastructure applications. Topics covered will include, behavior of bonded interfaces, hybrid structures and optimal design of composite structures.

Date: 24 June 2019 (Monday)
Time: 2:30 p.m. – 3:30 p.m.
Venue: Room Z409, 4th floor, Block Z,
The Hong Kong Polytechnic
University, Hung Hom, Kowloon

SPEAKER'S BIOGRAPHY

Dilum Fernando obtained a Bachelor of Civil Engineering from Monash University in 2005 and PhD from The Hong Kong Polytechnic University in 2010. He has also worked as a structural design engineer at Connell Wagner (pty) Ltd. From 2004 to 2006, and as a Post-Doctoral Fellow at the Swiss Federal Institute of Technology in Zürich (ETHZ), Switzerland. Dilum Fernando joined The University of Queensland (UQ) in August 2013 as a lecturer in School of Civil Engineering. He is currently an Associate professor at UQ, and also the Deputy Director of the Australian Research Council funded Future Timber Hub. Dilum Fernando is also the lead inventor of the Double Skin Tubular Arch bridge, which won the inaugural BERD'FEUP Prize for World Innovation in Bridge Engineering.

*** All Interested Are Welcome ***

For further information, please contact *Prof J.G. Dai* at Tel. 27666026

Free Admission. Please reserve your seat with *Dr Y.S. Wang* by email: yswanq@polyu.edu.hk
Certificates of attendance will be provided to participants if they attend the whole lecture.