

WATER DISTRIBUTION SYSTEMS RESEARCH IN CHINA - DEVELOPMENTS IN TJU AND SYSU

Speaker

Prof. Khu Soon-Thiam

Sun Yat-sen University, China

Abstract

Prof Khu's talk will be divided into 3 parts each focusing on a different aspect of WDS in China: dual-modal supply system, integrated control operations, and validation of network modelling results.

Firstly he will introduce the concept of dual-modal in terms of providing water of different quality to households for different purposes. This concept is very much modelled after the HK usage of seawater for toilet flushing, but extend it to recycled water. This work is currently being piloted in a very small scale township.

The second work is based on the need for more intelligent operation control of valves and pumps in the WDN which has resulted in the double advantage of water quality preservation and energy reduction. This is based on another project in Fujian province.

The third section is based on the development of a full-scale experimental WDN test-rig, which is the largest in the world. This test rig has the ability to provide real controllable data to validate WDN models. The talk will also introduce other possibilities such as to simulate the impact of contaminants in WDN.

Biography

Professor Khu Soon-Thiam is currently a professor of Urban water systems at the School of Civil Engineering, Sun Yat-sen University, China. After obtaining his Bachelor of Civil Engineering and PhD in Engineering at the National University of Singapore, he moved to Europe to start his professional career.

Over the past 30 years or so, he had the honour to work at several prestigious research institutes and university, such as Danish Hydraulic Institute (DHI), TU Delft, University of Exeter, Surrey University and Monash University. Since August 2019, Professor Khu started to work in China full-time, firstly as Dean of the School of Environmental Science and Engineering, Tianjin University, and most recently at SYSU. Professor Khu has participated and lead over 40 projects in the field of water engineering, including NERC and EPSRC projects, EU projects, China-UK bilateral projects, and projects funded by the National Natural Science Foundation of China.

His research interests spans across a wide range of topics in Civil Engineering, in particularly with relations to engineering application of hydroinformatics, such as optimisation of water networks, modelling of urban drainage, urban flooding, environmental sensor placements, urban ecological restoration solutions etc. In China, his more notable work is on design and running a full-scale experimental test-rig on drinking water distribution, which is the largest in the world. This test rig has the ability to simulate the impact of contaminants in real drinking water networks and evaluate suitable respond measurements to these incidents and accidents.

He has published more than 200 journal and conference papers, covering both English and Chinese journals, many of which are still being cited by peers more than 10 years since publication. His work also resulted in around 20 patents, and several of which are in the process of being commercialised. He believes that complete engineering training should involve not just innovative ideas but to see these ideas carried out to fruition and to be involved in actual practical engineering projects.



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**Room 2128C (Lift 25/26),
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