

# INSTITUTE FOR WATER INNOVATION SEMINAR

**FAISAL HAI**

**University of Wollongong**

## ***Affluence from effluents: safe disposal, reuse, and energy harnessing from sewage and biosolids***

Thursday, October 26, 2017

2:00 pm - 3:00 pm

200 College Street

Wallberg Building

Room 215

[FAISAL I. HAI](#) is an Associate Professor at the School of Civil, Mining and Environmental Engineering (CME) of the University of Wollongong (UOW), Australia. He is one of the key teaching and research academics of the Strategic Water Infrastructure Laboratory at CME. A recipient of Japan Society for Promotion of Science fellowship (2007-2009) and UOW Vice Chancellor's fellowship (2010), Dr. Hai was awarded the outstanding lecturer award by the Japanese Society on Water Environment in 2010, and UOW Vice Chancellor's Outstanding Contribution to Teaching and Learning Award in 2015. Building on his vast experience of working with Professor Kazuo Yamamoto, the inventor of the membrane bioreactor (MBR) technology, at the University of Tokyo, he continues to carry out exciting research on the application of hybrid membrane processes for the removal of biologically persistent compounds (especially micropollutants) from water and wastewater. Dr. Hai is the lead editor of a recent book, [Membrane Biological Reactors](#), published by the International Water Association. Dr. Hai also serves as an Associate Editor of the renowned journal, Water Science & Technology (IWA Publishing, UK) and Journal of Water and Environment Technology (Japan Society on Water Environment).

Affluence from effluents: safe disposal, reuse and energy harnessing from sewage and biosolids

Keywords: bioremediation, biofuel, contaminants of emerging concern, hybrid physico-chemical processes, membrane technology

This presentation will provide snapshots of current research focus of the Environmental Biotechnology Laboratory led by Dr. Hai at the University of Wollongong, Australia. Our work underpins the protection of land and water resources from contamination and focuses on the aspects of wastewater treatment and reuse, management of biosolids originating from wastewater treatment plants, and providing environmental solutions for resource and energy development projects.

This presentation will particularly focus on:

Next generation membrane bioreactors (MBRs): high retention MBRs (nanofiltration/ reverse osmosis/ forward osmosis membranes integrated with biological reactors) and enzymatic membrane bioreactors for removal of contaminants of emerging concern e.g., endocrine disruptors. Resource recovery from waste: membrane assisted phosphorus and methane recovery from wastewater/sludge, and enzymatic bioethanol production from solid waste.