

***TITLE:***

Innovations in potable reuse: Two online water quality monitoring technologies

***ABSTRACT:***

Management of chemical and microbiological risks is essential to ensure the safety of recycled water for potable reuse. However, the credibility of reverse osmosis (RO) membrane for the removal of trace organic chemicals (TOCs), particularly *N*-nitrosodimethylamine (NDMA), and pathogens remains low, because of the low separation capability of RO process and the limited availability of water quality monitoring technologies for a continuous assurance of their removal. My presentation will cover the development and pilot-scale demonstrations of two innovative online monitoring technologies—NDMA analyzer and real-time bacteriological counter—for improving the credibility of RO process for their removal in potable reuse. Our research goal is to improve the value of RO process by providing high rejection RO membranes and online monitoring technologies for ensuring the membrane integrity. By the end of this presentation, the audience will be able to: (a) explain the benefits of online monitoring of NDMA and bacterial counts; (b) evaluate the potential and limitation in the online water quality monitoring strategies at pilot and full scale; and (c) develop a monitoring approach using the online water quality monitoring technologies.

***Biography:***

Taka has over 5 years' experience as a project manager for ozone systems in the water industry. He received his MEng, MSc, and PhD degrees from Hiroshima University, UNESCO-IHE (Netherlands), and University of Wollongong (Australia), respectively. Taka was also a board member (secretary role) of Membrane Society of Australasia from 2013 to 2015. Taka started his Associate Professor position at Nagasaki University in 2015. His research interests center on reverse osmosis membrane treatment for potable reuse.

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