





Jointly organized by:  
Faculty of Engineering  
Department of Civil Engineering  
The University of Hong Kong

Distinguished Public Lecture (Online)

# Development of Novel Reverse Osmosis Membranes for Water Reuse and Seawater Desalination

 Date: 22 April 2022 (Fri)

 Time: 2:00 p.m.-3:30 p.m. (Hong Kong Time)

 via Zoom <https://hku.zoom.us/j/96416668986> (Meeting ID: 964 1666 8986)

## Prof. Rong WANG

Professor and President's Chair,  
Nanyang Technological University (NTU), Singapore



### About the Speaker

**Prof. Rong Wang** is a Full Professor and President's Chair at Nanyang Technological University (NTU), Singapore. She also holds the position of Director, Singapore Membrane Technology Centre (SMTTC) at Nanyang Environment and Water Research Institute, NTU since 2012. She is a Fellow of the Academy of Engineering Singapore, and the President of the Aseanian Membrane Society (AMS). Prof. Wang has over 30 years of experience in Chemical and Environmental Engineering, Water and Energy related research and innovation. She served as the Chair of the School of Civil and Environmental Engineering (CEE) at NTU from 2014 to 2020. She has over 320 SCI tracked journal publications and is the inventor of 30 patents/technical disclosures for novel membrane fabrication. Her inventions led to the setup of three membrane-based spin-off companies in Singapore. Prof. Wang serves as an Editor of *Journal of Membrane Science (JMS)*, a flagship journal in the global membrane community, since 2014, and becomes an Editor-in-Chief of *JMS* since 2020. She is on the Editorial Board of *Desalination* since 2011. She was featured among the top 25 leading water researchers globally by Lux Research in 2013, and was the winner of Singapore's Minister for National Development R&D Award in 2013. She received a prestigious "Alternative Water Prize" from Prince Sultan Bin Abdulaziz International Prize for Water (PSIPW), Saudi Arabia in 2016, and was also awarded the Nanyang Research Award in 2018. She was appointed to President's Chair at NTU in 2019, and elected as a Fellow of the Academy of Engineering Singapore in 2020. She was listed in the latest Singapore 100 Women in Tech (SG100WIT) 2021.

### Abstract

The state-of-the-art technology for water reuse and seawater desalination is membrane-based reverse osmosis (RO) process. At the center of the technology are the thin film composite membranes to assure stable operation with high separation performance. However, further exploitation of this technology is limited by the significant specific energy consumption required, which multiplies to high unit costs for clean water production. Increasing R&D efforts are being made to develop highly effective RO membranes to increase water permeability while maintaining high salt rejection in recent years. In this presentation, the recent advances in brackish water RO (BWRO) and seawater RO (SWRO) membranes from the standpoint of membrane materials and fabrication methodologies are consolidated. Our progresses on developing bio-programmable BWRO hollow fiber membrane and biomimetic SWRO flat sheet membrane at Singapore Membrane Technology Center of NTU are introduced in details. The efforts on scaling up the membrane production to raise up the technology readiness level and collaborating with industries to push the technology for commercialization are also highlighted.



Registration is required:

[https://hkuems1.hku.hk/hkuems/ec\\_hdetail.aspx?guest=Y&ueid=80560](https://hkuems1.hku.hk/hkuems/ec_hdetail.aspx?guest=Y&ueid=80560)

**An electronic certificate of attendance will be issued to registered participants after the public lecture.**

Note: Prof. Wang Rong's Distinguished Lecture is also a part of the *Symposium on Membranes and Membrane Processes in the Greater Bay Area*, held online during 22-25 April 2022. Interested parties are welcome to attend the online symposium free of charge. For further information about the programme and the meeting link for the symposium, please refer to <http://www.1st-membr-gba.com/>.



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