





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

Distinguished Public Lecture (Online)

Nanofluidic membranes for fast molecular and ionic separations

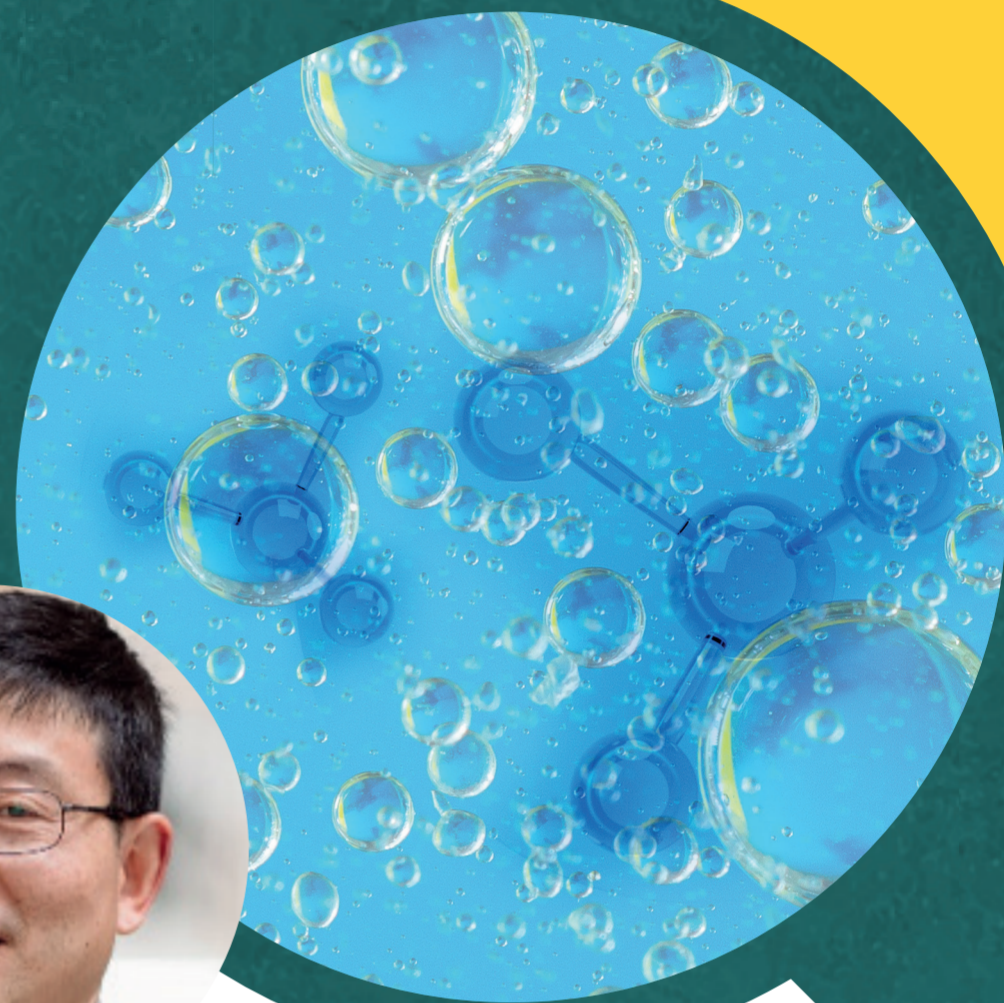
 Date: 25 April 2022 (Mon)

 Time: 10:00 a.m.-11:20 a.m. (Hong Kong Time)

 via Zoom <https://hku.zoom.us/j/99913859301> (Meeting ID: 999 1385 9301)

Professor Huanting Wang

Department of Chemical and Biological Engineering Director,
Monash Centre for Membrane Innovation
Monash University, Australia



About the Speaker

Dr Huanting Wang is a Professor and an Australian Research Council (ARC) Australian Laureate Fellow in the Department of Chemical and Biological Engineering and Director of the Monash Centre for Membrane Innovation at Monash University. He received his PhD in material science and engineering from the University of Science and Technology of China, he completed a postdoctoral research fellowship at the California Institute of Technology and University of California Riverside. Prof Wang was awarded an ARC QEII Fellowship in 2004, an ARC Future Fellowship in 2010, RACI R.K. Murphy Medal in 2019, the Membrane Society of Australasia Tony Fane Award in 2020 and an ARC Australian Laureate Fellowship in 2020, and IChemE Underwood Medal in 2021. He was inducted to the Monash University Honour Roll in 2020. He is a Fellow of The Royal Society of Chemistry, The American Institute of Chemical Engineers, and The Australian Academy of Technology and Engineering. His research focuses on membranes and nanomaterials for gas separation, water desalination, water purification, chiral separation, ion transport and separation, and electrochemical energy applications. He has co-authored over 350 journal papers and had nine patents licensed for commercialisation, and his research has led to the establishment of three startup companies.

Abstract

Membranes are indispensable for a wide range of separation and ion conduction processes such as in the fields of energy, water, food, healthcare, mining, chemical and pharmaceutical manufacturing. When membrane pore sizes decrease to the sizes of molecules and ions, new physical constraints (known as nanoconfinement) strongly affect the behaviour of the fluid, inducing new properties not observed in larger structures. Nanomaterials such as metal-organic frameworks (MOFs) and 2D materials have been explored for construction of nanofluidic membranes for a range of separation applications such as gas separation, chiral separation, and ion separation due to their structural diversity, and tuneable chemistry and functionality. Over many years, we have been researching nanofluidic membranes for transport and separation of molecules and ions, with aims at gaining a better understanding of how the structures and chemistry of membranes can be tailored and functionalised to achieve desirable separation properties. In this presentation, I will focus on design of nanofluidic membranes for molecular and ionic transport and separation, and highlight some challenges in developing this type of membranes for practical applications.



Registration is required:

https://hkuems1.hku.hk/hkuems/ec_hdetail.aspx?guest=Y&ueid=80667

Note: Prof. Huanting Wang'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/>.



FREE ADMISSION
ALL ARE WELCOME

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