

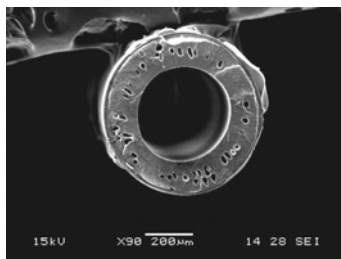
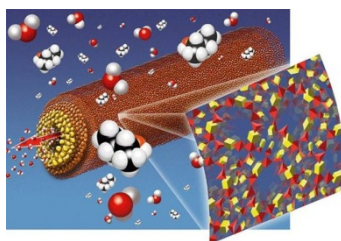
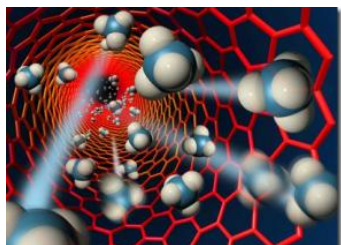
# Advanced Chemical and Membrane Technology – Growth Opportunities in Pharmaceuticals & Life Sciences, Water Reuse, Desalination, and Energy Applications

Date: 5-6<sup>th</sup> May 2009

Venue: Lecture Theatre 3, National University of Singapore

## Overview:

This two-day technical meeting is being co-organized by Singapore-MIT Alliance and Department of Chemical & Biomolecular Engineering, National University of Singapore. This conference will showcase the development and innovation in chemical and membrane technologies for pharmaceuticals, life sciences, water reuse, desalination, biofuel, and clean energy applications. It provides a forum for discussion of these issues with the participation of international academic experts in the field. In addition, the event will bring a great opportunity for networking and collaboration of research activities.



## PROGRAMME

### Day 1: Life Science & Pharmaceuticals

- 09:00 Registration & Coffee**
- 09:20 Introduction and Welcome**
- 09:30 Plenary Talk - Virus Filtration: Challenges and Opportunities**  
Prof. Andrew L. ZYDNEY (Chief Editor, Journal of Membrane Science)– *Dept Head and Walter L. Robb Family Endowed Chair, Dept of Chemical Engineering, The Pennsylvania State University*
- 10:20 Biodegradable Functional Polymers for Substrate-mediated Gene Delivery**  
Prof. Sixue CHENG – *Wuhan University, China*
- 10:50 Morning Tea/Coffee**
- 11:10 Functional Biomedical Polymers**  
Prof. Xianzheng ZHANG – *Wuhan University, China*
- 11:40 Molecularly Imprinted Polymeric Nanoparticles for Protein Separation**  
Prof. Yen Wah TONG – *Dept of Chemical & Biomolecular Engineering, NUS*
- 12:10 Probing Micromechanics at Microscale Domains in Life Sciences for Pharmaceutical Studies**  
Prof. Raj RAJAGOPALAN – *Dept of Chemical & Biomolecular Engineering, NUS*
- 12:40 Lunch**
- 14:00 Achieving the Desired Properties of Polymeric Biomaterials through Chemo-Enzymatic Preparation and Setting of Polyester Oligomers**  
Prof. Zhi LI – *Dept of Chemical & Biomolecular Engineering, NUS*
- 14:30 Anti-Biofouling Membranes Grafted with A Biomimetic Zwitterionic Interface for Biomedical Applications**  
Prof. Yung CHANG – *Chung Yuan Christian University*
- 15:00 Dynamic Microfluidic Emulsions: Nanoliter Drops and Bubbles for Advanced Pharmaceutical Separations**  
Prof. Saif A KHAN – *Dept of Chemical & Biomolecular Engineering, NUS*
- 15:30 Afternoon Tea/Coffee**

## PROGRAMME

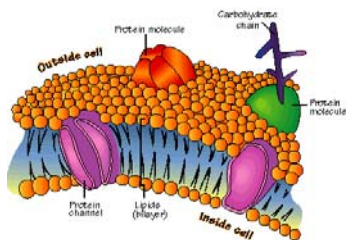
### Day 1: Life Science & Pharmaceuticals - Continued

**15:50** Screening of Pharmaceutical Reactive Metabolites using Glutathione Immobilized 96-Well Liver Microsomal Assay

Prof. Chun Yong CHAN, Eric – *Dept of Pharmacy, NUS*

**16:20** Dual-layer hollow fiber membranes for high-performance protein separation

Dr. Li Yi – *Dept of Chemical & Biomolecular Engineering, NUS*



### Day 2: Water Reuse and Desalination

**09:00** Registration & Morning Tea/Coffee

**09:20** Introduction and Welcome

**09:30** Forward Osmosis Membranes for Water Reuses and Desalination

Prof. Neal Tai-Shung CHUNG – *Dept of Chemical & Biomolecular Engineering, NUS*

**10:00** Development of Osmotic Membrane Bioreactor for Water Reclamation

Dr. Guihe TAO - *Senior Research Scientist and Section Head, Centre for Advanced Water Technology*

**10:30** Development of PVDF Hollow Fiber Membrane for Membrane Distillation

Dr. May May TEOH – *Dept of Chemical & Biomolecular Engineering, NUS*

**11:00** Morning Tea/Coffee

### Day 2: Energy, Biofuel and CO<sub>2</sub> Capture

**11:20** Ceramic Membranes for Energy and Environmental Applications

Prof. Wanqin JIN – *Nanjing University of Technology*

**11:50** Molecular Simulations for Gas Storage and Separation in Hybrid and Bio-based Materials

Prof. Jianwen JIANG – *Dept of Chemical & Biomolecular Engineering, NUS*

**12:20** Lunch

**13:30** Membrane-Based Separation: An Efficient Way Facilitating Sustainable Energy Applications

Dr. Lanying JIANG – *Dept of Chemical & Biomolecular Engineering, NUS*

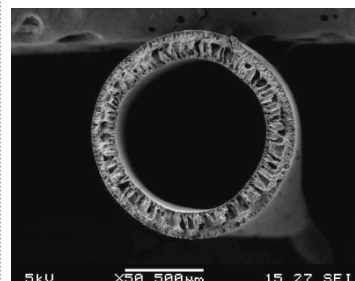
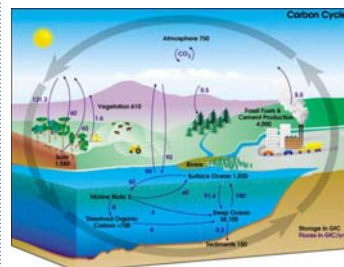
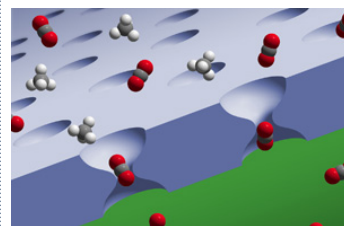
**14:00** From the Materials Design to the Fabrication of Catalytic Ceramic Electrolyte Membrane Reactor

Prof. Liang HONG – *Dept of Chemical & Biomolecular Engineering, NUS*

**14:30** **Plenary Talk – High Temperature Inorganic Membranes for Uses in Energy Production and Carbon Dioxide Capture**

Prof. Jerry Y.S. LIN (Editor, Journal of Membrane Science) – *Chair of Chemical Engineering, Arizona State University*

**15:20** Close



## CONFERENCE REGISTRATION

### Registration Fees

Category	Amount *
Standard Registration Fee for 1-day conference	S\$ 50.00
Standard Registration Fee for 2-day conference	S\$ 80.00
NUS, NTU & Overseas Academic Staffs	S\$ 50.00
NUS, NTU & Overseas Research Staffs	S\$ 20.00 **
Undergraduates and Postgraduates	S\$ 10.00 **

\* Registration fees are quoted in Singapore Dollars. Please note that we only accept payment in cash or cheque.

\*\* For NUS research staffs and students, you are encouraged to register as a group under your PI's account. Please provide the WBS number for internal billing.

Registration fees include four tea receptions & two simple lunches for 2-day conference.

Registration is done online and conference fees will be payable upon application.

#### Registration Contact:

1. Ms. Hew Swee Lim  
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2. Dr. Tin Pei Shi  
[chev29@nus.edu.sg](mailto:chev29@nus.edu.sg)