

# UWA Separation and Sensing Workshop

Thursday 6<sup>th</sup> Oct 2016

- 8:30.** Coffee on arrival
- 8:45-9:00.** Overview of Centre for LNG Futures and Gas Separation and Sensing Research Themes (E. May)

## Session 1:

- 9:00-9:25.** Adsorbent Innovation for Methane Recovery and Nitrogen Rejection (K. Li)
- 9:25-9:50.** High Performance Pressure Swing Adsorption Processes (E. May)
- 9:50-10:15.** Carbon Dioxide and Nitrogen Removal by Scrubbing (J. Xiao)
- 10:15-10:35.** *Morning coffee/tea break*

## Session 2:

- 10:35-11:00.** On-Line, Sample-Free Composition Monitoring of High-Pressure Systems with Raman Spectroscopy (P. Stanwix)
- 11:00-11:25** Non-invasive Emulsion Characterisation using NMR (M. Johns)
- 11:25-11:50.** PPM Oil-in-Water Detection: An Alternative to Optical Techniques (L. Wagner/E. Fridjonsson)

## Invited Talk:

- 11:50-12:20.** Challenges and New Approaches to Monitoring Flue Gas Emissions (M. Moldover of NIST)

## Working Lunch:

- 12:20-13:00.** Feedback from Attendees on Presentations

## Optional Reception:

- 13:00-14:00.** Meeting with students and tour of laboratory facilities

## Meeting location: Australian Resources Research Centre

26 Dick Perry Avenue  
Technology Park  
Kensington WA 6151

**Site contact:** Kevin Li 0414 740 604 or Leigh Hucker 0466 887 168

## Biographies



### **Professor Eric May**

Eric is the Chevron Chair in Gas Processing at UWA and together with Professor Michael Johns leads the Fluid Science and Resources Division in the School of Engineering, Computing and Mathematics. He is also the Director for the Australian Research Council Industrial Transformation Training Centre for LNG Futures. In 2012 Eric was awarded the Malcolm McIntosh Prize for Physical Scientist of the Year for outstanding achievement in science that advances, or has the potential to advance, human welfare or benefits society. Eric's research expertise is in the area of Gas Processing including thermophysics, gas separations and hydrates.



### **Professor Michael Johns**

Mike's research expertise is in the area of utilising NMR (Nuclear Magnetic Resonance) techniques in various applications including emulsions for the oil, food and agrochemical industries, biofouling of membrane, rock characterisation and earth's field NMR. Joining UWA from Cambridge University in 2011 Mike has been focused on establishing a world leading research group in mobile and robust low magnetic field NMR/MRI. Together with Eric May, Mike leads the Fluid Science and Resources Division in the UWA School of Engineering, Computing and Mathematics.



### **Dr. Michael Moldover, National Institute of Standards and Technology**

For over 50 years, Dr. Michael Moldover has measured the thermophysical properties of fluids and used theory to predict and correlate these properties. He developed quasi-spherical acoustic and microwave resonators to perform the world-best measurements of the Boltzmann constant. To better understand the singularities in fluid properties near critical-points, Dr. Moldover devised novel optical and acoustical techniques and he exploited the microgravity environment of the Space Shuttle. Under Dr. Moldover's leadership, NIST's Fluid Metrology Group measured the properties of reactive semiconductor process gases and environmentally-benign candidate replacement refrigerants. Now, the Group is combining its expertise in thermophysical properties and flow measurements to develop standards for measuring the CO<sub>2</sub> emitted by coal-burning power plants and for metering high-pressure hydrogen gas as it is dispensed into hydrogen-fueled vehicles.

Dr. Moldover is a Fellow of NIST, of the American Physical Society, and of the Acoustical Society of America. NIST's management and the US Department of Commerce have recognized Moldover's service with Bronze, Silver, and Gold Medals, the Stratton Award for Research Excellence, and the Presidential Rank Award. Dr. Moldover received the American Society of Mechanical Engineer's Yoram S. Touloukian Award in 2012.

## Meeting Location and Directions

The meeting will be held in the Australian Resources Research Centre (ARRC), located in the Technology Park: 26 Dick Perry Avenue, Kensington, WA 6151. The ARRC facility is located 15 minutes drive from Perth CBD, and includes free parking. Parking spaces are accessible from the North side of Dick Perry Ave to the front and at the rear of the building

