

The Munib and Angela Masri Institute of Energy and Natural Resources
cordially invites you to

Advances in Gas Separation Interplay of Experiments and Theory

Friday, October 20, 2017 | 9:30 am–12:30 pm | College Hall, B1

- 9:30 am–10:00 am Registration
- 10:00 am–10:10 am Welcoming Remarks
- 10:10 am–11:00 am Keynote Lecture: **Thermodynamics of fluids under confinement: Molecular models, structure and physical property predictions**
Speaker: Ioannis Economou, PhD Associate Dean for Academic Affairs and Professor of Chemical Engineering at Texas A&M University at Qatar
- 11:00 am–11:15 am Coffee Break
- 11:15 am–11:30 am Presentation 1: **Organic dye removal from aquatic media by hierarchical lanthanum hydroxide microspheres: experiment and theory**
Speaker: Mazen Ghoul, PhD Professor, Department of Chemistry, AUB
- 11:30 am–11:45 am Presentation 2: **Nanotechnology for energy and environment applications**
Speaker: Belal Abu Tarboush, PhD Assistant Professor, Department of Chemical and Petroleum Engineering, AUB
- 11:45 am–12:30 pm Panel Discussion (Q&A)
Panel Moderator: Mohamad Ahmad, PhD Chairperson and Professor, Department of Chemical and Petroleum Engineering, AUB
Panelists:
Ioannis Economou, PhD Associate Dean for Academic Affairs and Professor of Chemical Engineering at Texas A&M University at Qatar
Mazen Ghoul, PhD Professor, Department of Chemistry, AUB
Belal Abu Tarboush, PhD Assistant Professor, Department of Chemical and Petroleum Engineering, AUB

THERMODYNAMICS OF FLUIDS UNDER CONFINEMENT

Molecular models, structure and physical property predictions

Ioannis G. Economou

Associate Dean for Academic Affairs
and Professor of Chemical Engineering
at Texas A&M University at Qatar

Friday, October 20, 2017 | 10:00 am–11:00 am

Abstract: The structure and physical properties of fluids under confinement are significantly different compared to the structure and properties in bulk. Confined fluids are found in applications in chemical engineering and petroleum engineering (i.e., hydrocarbon fluids in geological formations). Molecular simulation using realistic force fields to account for fluid – fluid and fluid – confinement interactions provide valuable information regarding thermodynamic and transport properties over a broad range of temperature, pressure and composition, without any parameter adjustment to experimental data. Examples of direct industrial relevance are discussed.

Dr. Ioannis G. Economou is the Associate Dean for Academic Affairs and Professor of Chemical Engineering at Texas A&M University at Qatar. He worked as a post-doctoral researcher in Delft University of Technology - Netherlands (1993–94); in Exxon Research and Engineering Company - New Jersey, USA (1994–95); research fellow in University College London (1994–96) and Princeton University (2004–15); visiting Professor in the Technical University of Denmark (2001, 2007) and the American College of Greece (2007–09). He consulted extensively for major oil and chemical companies in North America, Europe and Middle East. He published more than 170 peer-reviewed research papers in leading journals in Chemical Engineering, Physical Chemistry and Polymer Science.