

# Speaker Sessions

---

## **Nanotechnology for Next Generation Electronics and Photonics**

Mona Jarrahi, University of California, Los Angeles, United States

Mohammed Amer, King Abdulaziz City of Science and Technology, Saudi Arabia

*Contemporary and Potential Opportunities for 2D Flexible Nanoelectronics and Nanosystems*

Deji Akinwande, The University of Texas – Austin, United States

*Challenges for Electronics Design on the Nano-Scale and its Implications on High Performance Computing*

Yehea Ismail, Zewail City and the American University in Cairo, Egypt

*Next Generation of Integrated Circuits: Silicon Photonics for on-Chip Interconnects and Optical Sensing*

Markus Dahlem, Masdar Institute, United Arab Emirates

*The art of falling apart: exploiting nanomaterial disassembly for health sciences*

Adah Almutairi, UC San Diego United States

## **Solar Energy and Water for Sustainable Living**

Hassan Arafat, Masdar Institute of Science and Technology, United Arab Emirates

Nicholas Xuanlai Fang, Massachusetts Institute of Technology, United States

*Engineering Flows in Nanostructured Membranes for Water Purification and Separations*

Rohit Karnik, Massachusetts Institute of Technology, United States

*Systematic design approaches for optimal water-energy and desalination network synthesis*

Patrick Linke, Texas A&M University at Qatar, Qatar

*Overview of water treatment and desalination options for unconventional oil and gas wastewater in North America*

Prakash Govindan, Gradiant Corporation, United States

*Use of Nanotechnology in Photovoltaics*

Ammar Nayfeh, Masdar Institute, United Arab Emirates

## Exploring the Brain

Mohammad A. Qasaimeh, NYU Abu Dhabi, United Arab Emirates

Amina Qutub, Rice University, United States

*Biomolecular Engineering for Non-Invasive Imaging and Control of Biological Function*

Mikhail G. Shapiro, California Institute of Technology, United States

*Ultrastructural analysis of cellular and subcellular brain structure: an old fashion method revised using virtual reality to investigate brain metabolism*

Corrado Cali, King Abdullah University of Science and Technology, Saudi Arabia

*Biology of individual variation: the interface of genes and experience in shaping behavior and mental health*

Zoe Donaldson, University of Colorado, Boulder, United States

*The Cognitive Mechanism of Action of SSRI Antidepressants in Responder and Non-Responder Patients with Major Depressive Disorder*

Mohammad M. Herzallah, Al-Quds University, Palestine, Rutgers University, NJ, USA

*Neural Circuits Regulating Mood Disorders*

Dipesh Chaudhury, New York University, Abu Dhabi, United Arab Emirates

## Advances in Petroleum Geosciences, Oil and Gas Exploration

Fajhan Al Mutairi, Schlumberger, Kuwait

Masa Prodanovic, University of Texas, United States

*Nanotechnology for oil and gas industry: are we there yet?*

Simone Musso, Schlumberger, United States

*Nano-Additives as Drilling Fluids Performance Modification and Heavy Oil Viscosity Reduction*

Majid Al-Ruqeishi, Sultan Qaboos University, Oman

*Controlling fluid flow from pore- to field-scales through nanotechnology*

Jacinta Conrad, University of Houston, United States

*A Novel Hybrid EOR Using Electrokinetic driven Nano/Surfactant in Developing SMART EOR in Abu Dhabi Carbonate Conventional and Tight Reservoirs*

Mohammed Haroun, Petroleum Institute, United Arab Emirates

## **New Spacecraft Technologies for Earth and Space Exploration**

Maoruane Temimi, Masdar Institute of Science and Technology, United Arab Emirates

Bethany L. Ehlmann, California Institute of Technology, United States

### *The 'Hope Probe' Emirates Mars Mission*

Fatima Al Aydarroos, UAE Space Agency, United Arab Emirates

### *Small Explorations of a Big Solar System*

Andrew Klesh, Jet Propulsion Laboratory, United States

### *Going to Space to Discover Earth*

Haithem Altwaijry, King Abdulaziz City of Science and Technology, Saudi Arabia

### *Risk Reduction Ground-Based Technology to Emulate Exploring Missions*

Ahmad Bani Younes, Khalifa University, United Arab Emirates

### *Frontiers for automation and semi-autonomous operations in robotic and human exploration*

Jessica Marquez, National Aeronautics and Space Administration, United States