

Co-hosts: Michigan State University, University of Michigan, Wayne State University, University of Toledo

AEESP Distinguished Lecturer



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High-Performance Membranes for Energy-Efficient Desalination and Wastewater Reuse

Lincoln Room, Kellogg Hotel and Conference Center
East Lansing MI

4:00 p.m. Wednesday March 15, 2017

Hors d'Oeuvre reception to follow

RSVP to espp@msu by March 1

Abstract: “Water scarcity is one of the greatest global crises of our time. Increasing water supply beyond what is obtainable from the hydrological cycle can be achieved by seawater desalination and wastewater reuse. Highly effective, low-cost, robust technologies for desalination and wastewater reuse are needed, with minimal impact on the environment. Recent advances in the science and technology of desalination and wastewater reuse will be presented, focusing on membrane-based processes. Major developments in these technologies are possible due to recent advances in materials science, nanotechnology, and the fundamental understanding of the solid-water interface. In this presentation, we will show how we can exploit novel nanomaterial and polymer architectures to develop better approaches to design and fabricate membranes. By integrating the facile processability, light-weight, and low-cost features of organic polymers with functionality provided by inorganic nanostructures, we can develop a new membrane materials platform with applications in desalination and wastewater reuse. Among the examples that will be discussed in this presentation are the development of antifouling membranes, biofouling-resistant membranes, and next-generation membranes that overcome inherent limitations of existing technologies.”

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