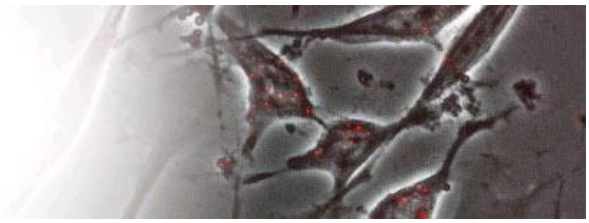
UCLA Engineering

Chemical and Biomolecular Engineering



SEMINARS IN CHEMICAL AND BIOMOLECULAR ENGINEERING

Thursday, May 9, 2019
10:00am - 11:00am
Boelter Hall 5436

Jennifer Schaefer

Assistant Professor
Chemical and Biomolecular Engineering
Notre Dame

"Next generation electrochemical energy storage based upon magnesium"

Advances in energy storage devices are required for the widespread implementation of intermittent renewable electricity generation technologies such as photovoltaics and wind power. In addition, electrification of transportation will allow for the substitution of liquid fossil fuel energy with renewably sourced energy. Energy storage platforms based on more abundant resources are essential for sustainable solutions. Batteries employing magnesium metal anodes are a potential alternative to Li-ion. Magnesium is a good replacement for lithium as it is relatively inexpensive, already recovered commercially from the ocean, and it also has high specific energy capacity. To be a viable option for electric vehicle or grid-scale energy storage technology, the magnesium battery must be safe, efficient, and have a long lifetime. In this talk, I will discuss our recent findings two aspects of magnesium battery electrochemistry: reversibility of magnesium metal anode electrodeposition and stripping as affected by electrolyte speciation, and magnesium-sulfur cathode rechargeability and kinetics.

Jennifer L. Schaefer is an Assistant Professor in the Department of Chemical and Biomolecular Engineering at the University of Notre Dame. Dr. Schaefer received M.Eng. and B.Ch.E. degrees in chemical engineering and a B.S. in chemistry from Widener University in 2008. She completed a Ph.D. in chemical engineering at Cornell University in January 2014. She then held an NRC Postdoctoral Research Associateship in the Materials Science and Engineering Division at the National Institute of Standards and Technology until moving to Notre Dame in July 2015. Her research group studies ion transport, interfacial phenomena, and applied polymer materials in electrochemical and electroactive devices.