

Study of New Materials for Next Generation Lithium-Sulfur Batteries

**Monday,
January 24, 2021
10:30 AM
EB1 1011**



Dr. Vibha Kalra

Drexel University

Host: Dr. Saad Khan

Rechargeable batteries with conversion type electrodes are attractive due to their ability to achieve higher capacity through multi-electron transfer reactions. Elemental sulfur is one of the most interesting materials amongst all conversion-based cathodes because of its high theoretical capacity (~1675 mAh/g – 5-10-fold higher than Li-ion batteries), natural abundance, non-toxicity, and cost-effectiveness. In this talk, I will present our group's research on integrating material design and fabrication, in-operando and postmortem spectroscopy, and device assembly and testing to study and develop next generation lithium-sulfur batteries.

Refreshments will be served
from 11:40-12:00 noon in
EB1 2014

Bio

Vibha Kalra is George B. Francis Chair Professor and Director of the PhD Program in the Department of Chemical and Biological Engineering at Drexel University. Additionally, she serves as the associate editor of *Chemical Engineering Science* journal, since 2013. Kalra received her BS from the Indian Institute of Technology (IIT), Delhi, India in 2004 and PhD from Cornell University in 2009, both in Chemical Engineering. Prior to joining Drexel in the Fall of 2010, Kalra worked in the electronic packaging research division at Intel Corporation. Her research group combines material assembly & characterization, study of fundamental electrochemical behavior, in-situ spectroelectrochemistry, and device assembly and testing to develop energy storage devices, including next-generation batteries and supercapacitors. She has published over 55 peer-reviewed journal articles and has nine pending/issued patents in the field of energy storage. Kalra is a recipient of several awards including the NSF CAREER award (2012), ONR summer faculty fellowship (2013), AIChE DVS Outstanding Faculty of the Year Award (2015), Department of Chemical and Biological Engineering Outstanding Service Award (2018) and the College of Engineering Outstanding Research Award, both at assistant professor level (2015) and at mid-career level (2020)) and the Provost Award for Outstanding Mid-Career Research Achievement (2020).