UNIVERSITY OF CALIFORNIA, IRVINE

THE DEPARTMENT OF MATERIALS SCIENCE AND ENGINEERING

Is Proud to Host a Seminar by:

PROFESSOR SARA SKRABALAK

Department of Chemistry

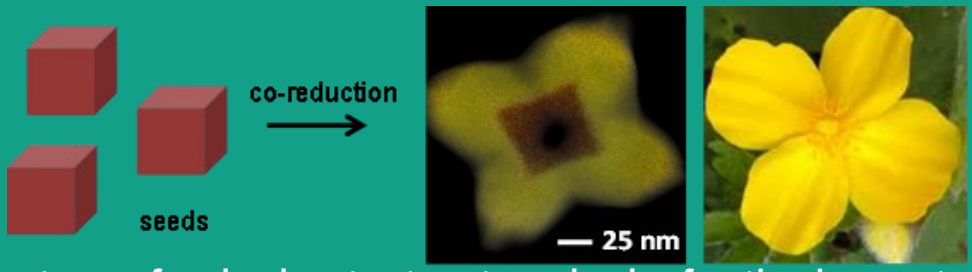
Indiana University Bloomington

Thursday, April 6, 2023

2:00-3:20 PM

Zoom Meeting ID: 920 8631 0946, Passcode: 855539

Multimetallic Nanomaterials By Design



Abstract: The importance of molecular structure to molecular function is a central tenet in modern chemistry and materials science, with the lock-and-key model of enzyme activation representing a classic example. Likewise, the function of inorganic nanomaterials depends on structural parameters that include crystallite size and shape as well as architecture (*e.g.,* hollow *versus* solid). To realize the function of such materials, these structural parameters must be precisely controlled, and the Skrabalak group is creating the synthetic toolkit to achieve such advanced nanostructures. This seminar will highlight the use of seed-mediated co-reduction as a route to shape-controlled alloy nanoparticles including high entropy alloy materials as well as hierarchical nanocrystals. These synthetic advances, in turn, are enabling previously unimagined nanostructures to be accessed with new function for applications in chemical sensing and electrocatalysis. Ultimately, understanding the relationship between nanostructure form and function will allow this relationship to be inverted to achieve materials by design. Still, the synthetic toolkit must exist to realize this vision and achieve desired nanomaterials on demand.

Bio: Sara Skrabalak received her B.A. in chemistry from Washington University in St. Louis in 2002 where she conducted research with Professor William Buhro. She then moved to the University of Illinois at Urbana-Champaign, completing her Ph.D. in chemistry in fall of 2006 with the tutelage of Professor Kenneth Suslick. After postdoctoral research at the University of Washington – Seattle with Professors Younan Xia and Xingde Li, she began her independent career in the Chemistry Department at Indiana University – Bloomington in 2008, where she was named the James H. Rudy Professor in 2015. She is a recipient of many accolades, including the 2014 ACS Award in Pure Chemistry and most recently being named a fellow of the American Association for the Advancement of Science in 2020. Professor Skrabalak is Editor-in-Chief for both *Chemistry of Materials* and *ACS Materials Letters*. Her research group focuses on nanomaterial design and synthesis for applications in catalysis, solar energy use, secured electronics, chemical sensing, and more (https://skrablab.sitehost.iu.edu/).