

Chemical Engineering

seminar

Tailoring Mesoporous Carbons and Related Materials for Energy Applications

April 4th, at 10:30am in BDBB 105

abstract

Carbon materials are ubiquitous in catalysis, separation, and energy storage/conversion. The creation of well-defined carbon architectures is essential for a number of the aforementioned applications. Recently, we have developed several methods for the synthesis of carbon materials with controlled mesostructures and compositions. The mesostructures of these carbon materials are highly stable and can be further tailored via graphitization and surface functionalization for catalysis and energy-storage applications. This presentation will be focused on our recent development in (a) self-assembly approaches to the preparation of carbon composite materials for controlling mesostructures and morphologies and (b) surface modification techniques to control the interfacial chemistry of carbon materials for energy-related applications.

Sheng Dai

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biosketch

Dr. Sheng Dai obtained his B.S. degree (1984) and M.S. degree (1986) in Chemistry at Zhejiang University, Hangzhou, China and his Ph.D. (1990) in Chemistry at the University of Tennessee, Knoxville. He is currently a corporate fellow and group leader at the Oak Ridge National Laboratory (ORNL) and a Professor of Chemistry at the University of Tennessee, Knoxville (UTK). His current research interests include ionic liquids, porous carbon and oxide materials, advanced materials and their applications for separation sciences and energy storage as well as catalysis by nanomaterials. Dr. Dai has published over 500 peer-reviewed papers. He has received a number of awards for his research: 5 RD100 Awards, UT Battelle Technology Commercialization Award (2014), Battelle Distinguished Inventor Award (2013), ORNL Director Award on Science & Technology (2010), ORNL Scientist of Year (2010), Battelle S&T Challenges Award (2002).

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