

UNIVERSITY OF HOUSTON
CULLEN COLLEGE OF ENGINEERING
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SPEAKER SERIES

PRESENTS

Strategies for Utilizing Silicon Anodes for Lithium Ion Batteries



Dr. Sibani Lisa Biswal

Chemical and Biomolecular Engineering (CHBE) and
Material Science and Nanoengineering (MSNE)
Rice University, Houston, TX

Friday, March 2, 11:15 am

Classroom and Business Building, Room 122

LECTURE ABSTRACT

Silicon based anodes for lithium-ion batteries have drawn significant attention over the past decade. Though there have been a number of successful half-cells, translating silicon into full-cell batteries remain challenging. In this talk I will address various strategies we have examined to successfully utilize silicon as an anode material. In particular, I will describe how results with a porous silicon composited anode and a lithium iron phosphate (LFP) cathode. Additionally, I will illustrate a series of cycling strategies to extend cycle life by different C-rates and pretreatments.

SPEAKER BIOSKETCH

Dr. Sibani Lisa Biswal is an Associate Professor at the Department of Chemical and Biomolecular Engineering at Rice University in Houston, TX and leads the Soft Matter Engineering Laboratory. Her research interests cover a variety of colloidal and interfacial systems, including magnetically driven colloidal assemblies, microfluidic systems to study multiphase flows, and sensitive nanomechanical biosensing devices. She has a B.S in chemical engineering from Caltech (1999) and a Ph.D. in chemical engineering from Stanford University (2004). She then was a CPRIT postdoctoral fellow at UC Berkeley (2004-2006). She is the recipient of an ONR Young Investigator Award (2008), National Science Foundation CAREER award (2009), the Southwest Texas Section AICHE Best Fundamental Paper Award (2014), 2015 Abu Dhabi International Research and Development Conference (ARDAC) Innovation Award, and George R. Brown Award for Superior Teaching (2015).

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