



The Electrochemical Society
Seminar Notice: Wednesday, March 17, 2010

Interface Engineered Nano-Composites for Next-Generation Electrochemical Devices

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World energy demand is projected to increase 50% over the next 25 years. Meeting this increased demand in an environmentally responsible manner will require new, cost-effective, device-enabling materials/processing routes for high efficiency chemical-to-electrical energy conversion devices (batteries, fuel cells, etc.) and environmentally actuated devices (electro-chromic coatings, chemical sensors, etc.). Complex crystalline oxides often serve as the functional heart of these devices due to a variety of favorable bulk properties (such as high ionic conductivity, chemical stability, and band gap tunability). The current talk will focus on the ways in which nano-architectures, interface doping, and homo/hetero-junction effects can be used to improve the performance and manufacturability of complex crystalline oxides for use in alternative energy applications.

Jason obtained a B.S. in Geoscience from Franklin & Marshall College in 2000. In 2003 he obtained a Master's Degree in Materials Science from the University of Illinois at Urbana-Champaign for his Brillouin and Raman Spectroscopy work showing the existence of vitreous polymorphs in boron oxide, a common glass former. In 2007 he obtained a PhD in Materials Science from the University of California, Berkeley for experiments conducted at the Lawrence Berkeley National Laboratory on the sintering and electrochemical properties of doped cerium oxide, a common Solid Oxide Fuel Cell (SOFC) electrolyte material. As a Post-Doctoral Researcher at Northwestern University from 2007-2009, he developed nano-structured SOFC electrodes. In January of 2010 Jason joined the Chemical and Materials Sciences Department at Michigan State University. His current interests focus on nano-structured SOFC electrodes, amorphous catalysts, low temperature SOFC development, constrained ceramic sintering, and SOFC heterojunction property enhancements. Updates on his work can be found at <http://www.egr.msu.edu/nicholasgroup/>

Date: Wednesday, March 17, 2010

Location: Lawrence Technological University

21000 West Ten Mile Road, Southfield, MI 48075

Building #5 (Taubman Welcome Center), 4th Floor, Room 406

Use Parking Lot A, C or D (Lots C & D are accessed off NW Highway)

Time: 5:30 pm Reception / 6:30 pm Dinner / 7:30 pm Speaker

Price: \$20 Members / \$22 Guests / \$10 Students

Payment: Cash or Check

RSVP by: Wednesday March 10, 2010 to Kent Snyder

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<http://www.electrochem.org/ecs/sections/detr/detr.htm>



