



The Electrochemical Society – Detroit Section

Seminar Notice: Monday, October 30th, 2006

The New Generation of Cathode Materials for Advanced Lithium Battery for Transportation Applications

Professor Linda Nazar, University of Waterloo

The overwhelming success of the layered LiCoO₂/carbon battery has advanced lithium-ion storage systems to a new era. However, safety issues along with the high cost of cobalt have driven research to replace it, in whole or in part, with other transition metals to meet future demands for large scale rechargeable batteries such as HEV's. Amongst the contenders in the new generation of cathode materials are lithium transition metal phosphates and fluorophosphates, related either to fast-ion conducting phases, or minerals such as olivine and tavorite. Owing to the inherently low electronic conductivity of these materials, however, it is essential to optimize their properties to maximize crystallinity, minimize crystallite size, control morphology, and also deposit conductive species on the surface that can feed electrons reversibly into the phosphate lattice. As important is the creation of solid solutions over a wide lithium concentration range to facilitate coupled ion and electron transport. This presentation will focus on the manipulation of these factors, as well as discussing synthetic routes to new materials.

Professor Linda Nazar is one of the world authorities on materials aspects of advanced lithium batteries, particularly the lithium phosphate cathodes and her work has been acknowledged internationally. She has completed her Honors BSc at the University of British Columbia, and received her PhD degree at the University of Toronto in the area of zeolite materials chemistry. After her postdoctoral fellowship at Exxon Corporate Research she joined the University of Waterloo in 1987, and became a full professor in 1997. Professor Nazar was awarded a Senior Canada Research Chair in Solid State Materials in 2004. As a visiting professor she spent sabbaticals at UCLA Department of Materials Science; the Institute for Materials in Nantes, France; and at the CNRS Laboratoire de Cristallographie in Grenoble, France. She has numerous publications, book chapters and patents on advanced electrochemical materials. Her research is in the area of solid state materials chemistry, with a special focus on energy storage materials, and lithium-ion batteries.

Date: *Monday, October 30th, 2006*

Location: Lawrence Technological University
21000 West Ten Mile Road
Southfield, MI 48075

Building # 8 (Technology Bldg. in the Gallery, Main Floor

Enter from 10 Mile Rd. Use Parking Lot A or H (Parking Lot H is across 10 Mile Rd.)

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

Price: \$20 Members / \$22 Guests / \$15 Students

Payment: Cash or Check

RSVP by: **Thursday, October 26th, 2006 to Alvaro Masias**
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For Directions

Area Map: <http://www.ltu.edu/contacts/directions.asp>

Campus Map: <http://www.ltu.edu/contacts/campusmap.asp>

