

SECTION NEWS

National Capital

The Section held a joint meeting with NACE and ASM on November 5. Dr. Howard Diamond presented "Biological Applications for Electrochemical Sensors."

Electrochemical sensors are prevalent in a large number of medical instrumentation systems, both for diagnostic and monitoring applications. These sensors can range from the very simple pH probe to the sophisticated sensors used for glucose monitoring of diabetes or in complex feedback systems such as the artificial pancreas. While the sensor design may be straightforward, one must note that ultimately these are components in a system that must function in a highly charged regulatory environment fraught with legal, professional, and marketing/business "potholes," and the system design is profoundly affected by this environment. The talk focused on three designs with the above in mind: A simple pH monitor for fetal monitoring, a blood gas and electrolyte monitor for open heart surgery, and a sulfide sensing system for detecting early stage periodontal disease in dentistry. The talk covered also the nontechnical aspects such as raising venture capital for the project(s), going through the FDA approval process and finally, bringing the system to market.

The Section met on January 14 to discuss "Novel Sacrificial Coatings by Electrodeposition of Mn Alloys." The discussion was led by Dr. Giovanni Zangari of the University of Virginia.

The presentation focused on the development and characterization of a set of novel Mn alloys presenting both improved stability and better corrosion performance than pure Mn.

New England

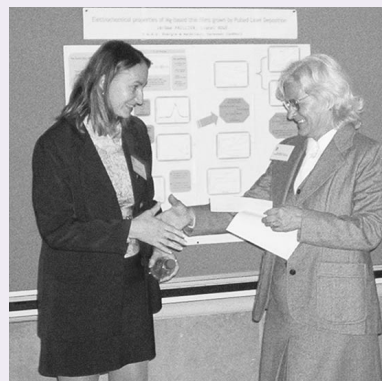
On October 8, the Section held its first dinner meeting at Northeastern University in Boston, Massachusetts. The featured speaker was Dr. Yang Shao-Horn of the Department of Mechanical Engineering at Massachusetts Institute of Technology (MIT) who spoke on "Characterization and Design of Positive Electrode Materials for Lithium Rechargeable Batteries."

Lithium transition metal oxides and phosphates have been studied intensively as positive electrode materials.

Canadian Section Fall Symposium



Jean Lessard (center) of the Université de Sherbrooke receives the Electrochemical Award from Canadian Section Chairperson, Christina Bock, and Université de Sherbrooke Dean of Science, Jean Goulet.



Elena Babes-Dornea (right) presents the award for the best student poster to Mioara Rauliuc of the Université de Québec à Montréal.

The fall 2002 symposium of the Canadian Section was organized by Elena Babes-Dornea and held at the Université de Québec à Montréal, in Montréal, on October 4. Seven speakers presented lectures on Sensors for Energy Technology to sixty participants.

Three awards of the Section were presented to the following: Ernest E. Criddle received the Jacobson Award; Jean Lessard received The Electrochemical Award and subsequently presented the plenary lecture entitled "Organic Electrochemistry and Electrocatalysis at Sherbrooke;" and Vladimir Zamlynny received the 2002 Student Award of the Canadian Section and subsequently presented a seminar entitled "Quantitative Studies of Ultrathin Films of Insoluble Surfactants at the Gold - Electrolyte Interface Using Polarization Modulation Fourier Transform Infrared Reflection Absorption Spectroscopy."

A poster session followed the oral presentations. A \$100 award for the best student poster was given to Mioara Rauliuc (Université de Québec à Montréal) and a \$50 award was given to Bruno Théoret (McGill University). A student travel grant of \$100.00 was also given to Bill Santos (University of Western Ontario), who presented a poster at the meeting. ■

High energy and high power output in these rechargeable systems require these materials to accommodate one lithium atom per transition metal atom. Lithium intercalation and de-intercalation processes often induce changes in crystal structure, and electric and magnetic properties of these materials. This presentation focused on the study of these phase transformations and sought solutions to suppress these transformations and thereby optimize the electrochemical performance of these materials.

The Section held a dinner meeting on November 12 at the Egan Research Center, Northeastern University in Boston, MA.

The featured presenter was Robin Susko, Vice-President of The

Electrochemical Society and a member of the staff of IBM.

The two part presentation focused on the present national and international status of ECS and future plans and projected developments were discussed. The second part of the lecture dealt with the "Challenges of Lead-Free Manufacturing in the Electronics Industry." The make-up and testing of a variety of tin and silver containing solders was discussed. The deficiencies, failures, and prospects were evaluated and promising materials discussed.

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