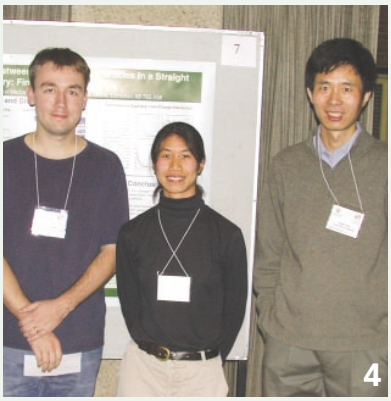

*Photo 1: (FROM LEFT TO RIGHT)—**JIAN-BIN BAO** (left) of the University of Alberta receives a Student Poster Award from Canadian Section Chair **ELENA BABES-DORNEA**; Photo 2: **DR. JAMIE NOËL**, winner of the 2003 Lash Miller Award of the Canadian Section; Photo 3: **DR. SANDRA RIFAI**, winner of the 2003 Student Award of the Canadian Section; and Photo 4: the Canadian Section awarded **JEFF SHEPARD** (left) a Student Travel Award, while **EMILY CHUNG** (center) and **JIAN-BIN BAO** (right) received Student Poster Awards at the Canadian Section Fall Symposium in Edmonton, Alberta.*

Fall 2003 Symposium of the Canadian Section

The Fall 2003 Symposium of the Canadian Section was held in the Department of Chemistry at the University of Alberta on November 8. Mark T. McDermott organized the symposium entitled "Electrochemistry and Nanotechnology." The symposium consisted of seven invited speakers including Professor Jillian Buriak and Dr. Gregory Kiema, both from the University of Alberta, Dr. Dan Wayner from the National Research Council and Professor Richard McCreery of The Ohio State University. In addition, Dr. Jamie Noël of the University of Western Ontario delivered the Lash Miller Award Address entitled "Oxide Growth on Ti and Zr Compared Using Electrochemical and *In Situ* Neutron Reflectometry Methods" (photo 2). Sandra Rifai received the 2003 Student Award of the Canadian Section for work carried out at the University of Ottawa (photo 3). Dr. Rifai presented the work in a talk entitled, "Electrodeposition of Bilayers of Dithiols: A New Route to Complex Organic Interfaces."

A poster session and a wine and cheese reception followed the oral presentations. Eleven students presented posters. Two Student Poster Awards of $100 each were presented to Emily Chung of the University of British Columbia and Jian-Bin Bao of the University of Alberta (photo 1 and 4). In addition, a Student Travel Award of $100 was presented to Jeff Shepherd (photo 4) of the University of British Columbia, who gave an oral presentation at the symposium. ■

Detroit

On October 23, Professor Levi T. Thompson of the Department of Chemical Engineering at the University of Michigan addressed a joint dinner meeting of the Section and the Michigan Catalysis Society held at the Marriott Hotel in Livonia, Michigan. His talk was entitled "Novel Materials and Reactors for Hydrogen Production and Fuel Cells." Dr. Thomson's talk dealt with the design and development of better performing catalysts and reactors for hydrogen production. Hydrogen production from hydrocarbons, despite its nonrenewable connotations, is a necessary route to the hydrogen economy. Advances are necessary in reforming catalysts: sulfur tolerance and operating temperature being to key areas. Work in Thompson's lab developing new catalysts shows promising results in these two key areas.

On February 12, the Section held a dinner meeting at the Ukrainian Cultural Center in Warren, Michigan that featured Mr. Jim Croce, the President and CEO of NextEnergy. NextEnergy was created in 2002 as a comprehensive economic development plan to make Michigan a world leader in the research, development, commercialization, and manufacture of alternative energy technologies such as fuel cells, solar energy, hydrogen, and other renewables. Mr. Croce's talk entitled "Advancing Alternative Energy Development in Michigan: NextEnergy's Power Pavilion" described the plans and progress to date of NextEnergy's showcase power generation and power equipment testing facility in downtown Detroit.

New England

The Section met on November 11 at Northeastern University in Boston, Massachusetts. Dr. Andy Chan, staff scientist at Bayer Healthcare in Medfield, Massachusetts, was the featured speaker. Dr. Chan's research interests are electrolyte, metabolite, and gas sensors designed for *in vitro* diagnostic applications on human whole blood. Dr. Chan spoke on "The Electrochemistry inside Bayer's Rapid Point 400 Critical Care Analyzer." He explained that this system was designed specifically for ease of care use in point of care medical testing applications by non lab personnel.

The Section met on January 13 at Northeastern University in Boston, Massachusetts. Dr. William Bowden of Duracell/Gillette spoke on "Recent Developments in MnO_2 Chemistry," specifically, a study of the discharge behavior of MnO_2 and its relation to the structure(s) of electrolytic manganese dioxide (EMD) was discussed.

San Francisco

The Section had a meeting in San Jose, California on November 13. There were two featured speakers: Dr. Alain Harrus of Compass Venture Partners, and Dr. Joseph Stetter of the Illinois Institute of Technology.

The first talk was entitled, "Common Pitfalls in Marketing Early-Stage Start-

Ups to Investors," and was given by Dr. Harrus. His talk covered the process of venture capital (VC) funding in general, with specific cases his company has funded, recent business environment, and finally the VC criteria of choosing a company, with emphasis on what an entrepreneur should avoid when working with a VC.

The second talk was entitled, "Entrepreneurship and Nanotechnology," given by Dr. Stetter. First, he discussed the general trend of nanotechnology, including the history, the economics, and potential area of application. Second, he emphasized the necessary elements of a successful entrepreneurship, with discussion of some concepts, such as invention *vs*. innovation, product *vs*. business concept, and sales *vs*. marketing.

The Section had a meeting in San Jose, California on December 3. The speaker was Dr. Chien Chiang of Novellus Systems. The topic of the talk was, "Another Crossroad for Low-k dielectrics." Dr. Chiang gave a chronology of the development of low-k material based on his own experience in this area. He talked about the choice of materials, the necessary properties, and process options. Examples of materials include parylene, SiOF, carbon-doped oxide, and many proprietary materials. Besides having low dielectric constant, the material must be mechanically strong and thermally stable. In addition, the process involves the formation of the dielectric. Several other process steps, such as CMP and cleaning, must be modified for low-k dielectrics. Dr. Chiang ended his talk with the comment that the future of low-k dielectrics is still wide open and very unpredictable.

The Section had a joint meeting with the Northern California Applied Spectroscopy Association in Mountain View, California on January 15, 2004. Professor Steven Boxer of Stanford University gave a presentation entitled, "Patterning and Manipulating Supported Bilayers and Tethered Vesicles." Professor Boxer first talked about lipid bilayers on a glass plate. The bilayer is essentially a two-dimensional liquid that demonstrates kinetic phenomena such as diffusion and electrophoresis. A lipid array can be prepared by dividing the areas on the glass plate with barrier strips, then placing different lipids on different areas. A protein array can also be prepared by embedding membrane proteins in the bilayer. This technique avoids denaturing of the protein. Furthermore, the lipid in the bilayer on a glass plate and that of a vesicle can be derivatized with DNA oligomers complimentary to each other. Highly selective binding can be achieved between the bilayer on the glass plate and the vesicles. This provides a means to make a pattern array of tethered vesicles of different properties. The application in biomedical diagnostic is promising.

The Section had a meeting on Feburary 3, in San Jose, California. The presentation "When will we be able to buy and drive Fuel Cell Electric Vehicles" was given by Dr. Fritz Kalhammer. The speaker talked about the history, the technology, and the economics of fuel cell electric vehicles and supporting infrastructure. Pre-1970 work was mostly on alkaline hydrogen fuel cell. Recent work focuses on proton exchange membrane fuel cells. The talk was enjoyed by a audience of diverse background. There were some interesting questions after the talk. Several questions were about comparison between battery EV and fuel cell EV, as well as feasibility of battery/fuel cell hybrid EV. ■