LOCAL SECTION NEWS

The Gwendolyn B. Wood Award

Excellence Is Rewarded—*The 1999 Gwendolyn B. Wood Local Section Excellence Award was presented to Peter Hesketh, (right), chairman of the Chicago Local Section by ECS President Dale Hall.*

Canadian

Alireza Zolfaghari-Hesari, University of Ottawa, has been awarded the 1999 Lash Miller Award. Created in 1967, the award honors the memory of the late Dr. W. Lash Miller. Formerly a Society president and head of the Department of Chemistry at the University of Toronto, the award is presented every two years to recognize outstanding technical contributions to the field of electrochemistry.

The Section announced the winners of the 1999 Student Poster Awards at the spring 1999 meeting in Seattle: first place went to Ian Burgess of the University of Guelph; second place went to Christopher Hitz of the University of Sherbrooke.

Chicago

The Section held a dinner meeting on September 23 at the University of Illinois at Chicago. Dr. Chad A. Mirkin Charles E. and Emma H. Morrison Professor of Chemistry at Northwestern University, presented two separate but related talks on "Nanoparticle-Based Methods for Detecting DNA" and "'Dip-Pen' Nanolithography," respectively. Professor Mirkin described nanoparticle-based methods for detecting DNA. These methods, which are based upon metallic and semiconductor quantum dot materials, offer significant advantages over conventional methods with regard to speed, selectivity, sensitivity, and ease of use. In addition, "Dip-Pen" is a new nanoscale technique based on AFM, which has enormous potential for practical applications.

On October 24 the Section held a meeting at the Engineering Research Facility of the University of Illinois at Chicago. Prof. Tejal Desai presented "Microfabricated Tissue Engineering Constructs: Biocapsules and Beyond." She discussed the challenges in cell encapsulation for bioimplants and methods of encapsulation that provide a semipermeable barrier for immunoisolation of cells. She then went on to describe therapeutic applications of BioMEMS, in particular the implantation of islet cell for the treatment of diabetes. She also reported work on pin arrays acting as scaffolds for cellular growth with applications in tissue engineering.

European

The first annual 3-day meeting of electrochemists was held on September 1-3 in Portsmouth, England. Held for the first time, the event was co-sponsored by the Royal Society of Chemistry, the Society for Chemical Industry, the Institute of Corrosion, the Institute of Metal Finishing, and the International Society of Electrochemistry.

The symposium, which ran over two days, began with an introduction by Dr. Keld West of the Danish Technical University. Dr. West presented his pioneering work on "Electro-chemomechanics of poly(pyrrole)-dodecyl benzene sulphonate."

Professor Phillipe Allonge, of the Université P. & M. Curie de Paris, gave the opening plenary lecture titled "Atomic Processing of Silicon Surfaces," and was then awarded the Faraday Medal of the Royal Society of Chemistry.

The second plenary lecture, "Structure and Electrochemistry of Solid Oxides," was presented by the recieptient of the Society of Chemical Industry's Beilby Medal, Professor John Irvine of the University of St. Andrews, Scotland.

The next meeting in this series, "Electrochem 2000" will be held in Dublin, Ireland September 13-15. For more information please see http://sci.mond.org/conference.

Georgia

The Section held a meeting on September 28. Professor Harlan U. Anderson, of the Electronic Materials Applied Research Center, University of Missouri-Rolla, spoke on polymeric precursor preparation of oxide powders and thin films. His talk focused on solution processing techniques that produce species that can be converted into powders or thin films of pure or mixed oxides. These oxides have diverse applications in the areas of ceramic conductors, dielectric films, and magnetic materials.

Six students also presented papers. Phil Radford of Clemson University presented "A New Signal Amplification Scheme for Amperometric Electrochemical Detection in Flowing Streams," Tazrien Kamal of Georgia Tech presented "Removal of Organic Films and Contaminants Using Low Molecular Weight Alcohols," Bing Dang of Auburn University presented "The Effect of Alloying Additives on the Oxidation of Gamma Titanium Aluminide Alloys," Jessica Johnson of Georgia Tech presented "Electrochemical Membrane Conversion of Gaseous Hydrogen Chloride to Chlorine," Billy Flowers of the University of Georgia presented "Preparation of Superlattice with Electrochemical Atomic Layer Epitaxy (ECALE)," and Fanglin Chen of Georgia Tech presented "Preparation of Mesoporous Materials for Electrochemical and Catalytic Applications." Awards, sponsored by EG&G Instruments and Test Solutions, were given for the best presentations.

Lipkowski Receives the 1999 Gold Medal Award of the Canadian Local Section

Professor Jacek Lipkowski was presented with the 1999 Gold Medal Award of the Canadian Local Section of The Electrochemical Society for his outstanding achievements in electrochemistry at the Ottawa ECS Symposium. Held on May 21, 1999, he presented a talk entitled: "Surface Electrochemistry - Surface Science with Joystick," in which he described the measurements, applications, and information that can be obtained with surface science using electrochemistry to control surface reactions.

After receiving his degrees of BSc, PhD, and DSc from the University of Warsaw, Poland, his career has included positions as a visiting scientist at the Free University of Brussels, associate professor at the University of Warsaw, and visiting scientist at CNRS, Meudon, France. Professor Lipkowski has continued to be a highly active researcher in Canada since his arrival at the University of Guelph in 1983. His awards include the Senior Humbolt Research Award in 1995, the highly prestigious Prix Jacques Tacussel Award in 1996 by the International Society of Electrochemistry, and the ALCAN Lecture Award in 1998 from the Canadian Society of Chemistry. He is the author of more than 100 papers, three book chapters, and co-editor of the series, *Frontiers of Electrochemistry*; a member of the advisory board for *Langmuir*, the ACS *Journal of Surface and Colloids*, and a member of the editorial board for the international *Journal of Electroanalytical Chemistry*.

His research interests cover a board area from novel materials for electrocatalysis and levelling agents for electroplating to absorption of organic molecules at solid electrodes. He has developed the first systematic investigations of effect of crystallographic orientation on the thermodynamic parameters for adsorption and has also developed a comprehensive theory explaining the influence of adsorption of organic compounds on the rate of ion and electron transfer reactions. He has been the first to use synchrotron radiation to determine molecular adsorption spectra for molecules adsorbed at the metalsolution interface. His work on corrosion inhibitors for the protection of nuclear reactors has resulted in the development of a mixture of inhibitors for the protection of primary coolant circuits.

He is not only a highly respected scientist internationally, but is extremely well regarded by his many graduate students, who have been successful in achieving a number of awards under his guidance and have gone on to very rewarding careers. ■

Israel

The second annual Israel Electrochemical Symposium was a tremendous success, with 120 electrochemists in attendance from Israel's academia and industry. Organized by the Israel Section of the Society, the June 13, 1999 Symposium was held in Haifa at the Technion's Department of Chemistry.

The 1999 Israel Electrochemical Symposium was delighted to have as keynote speaker the globally renowned Material's Scientist Stanford Ovshinsky, a principle inventor of both amorphous silicon solar cells and metal hydride batteries. His talk on "The Scientific and Technological Impact of Disordered Materials on Electrochemistry" generated a lively discussion. Plenary presentations included stimulating lectures by Prof. Israel Rubinstein on "Metal-Organic Coordination in Molecular Films on Gold," and Prof. Doron Aurbach on "Electrode - Electrolyte Solution Interactions in High Energy Density, Non-Aqueous Batteries and Supercapacitors." In addition to feature talks by eminent electrochemists, this year's Symposium included awards and technical sessions including 22 student lectures and posters on electrochemical storage, electroanalytical & microelectrochemistry, and interfacial electrochemistry.

The Section presented two awards to recognize and encourage the next generation of electrochemists. The 1999 recipient of the student poster award was Tama Tel-Vered, and the 1999 recipient of the student lecture award was G. Kalyuzhny. Both awards consist of a parchment certificate, a monetary award, and student membership in The Electrochemical Society.

The Section also co-sponsored, with Tadiran Batteries and the Technion, a popular interactive battery exhibit in April 1999 at the Israel National Science Museum. The second full year of the Israel Section has been a busy and constructive one, and a tribute to the origins, growth and contributions of the Israeli electrochemical community.

National Capital

This Section joined the NACE-Baltimore-Washington Section for a dinner meeting on October 28 at the Eisenhower Metro Center Holiday Inn, Alexandria, VA. The speaker was Dr. John Scully, Associate Professor of Materials Science & Engineering at the University of Virginia. Using his (and his graduate students') research in corrosion and passivation as applied to the problem of long-term nuclear waste containment, Dr. Scully presented a very intriguing illustration of the corrosion engineers quandary of "Choosing Between Corrosion 'Allowance' and Immunity." Dr. Scully explained that the choice of "thermodynamic" immunity is a rare and expensive option.

New England

The Section held its first dinner meeting of the 1999-2000 season on September 9, in Boston, MA. Held in association with the Northeastern Section of the American Chemical Society, the meeting featured Professor Pam Mabrouk of Northeastern University who spoke on "Insight into Metalloprotein Structure and Function from Spectroelectrochemical Studies in Nonaqueous Media." Dr. Mabrouk reported on a direct spectroelectrochemical study of horse myoglobin on gold electrodes in dimethyl sulfoxide, a CV study accompanied by a Resonance Raman spectral study. Dr. Mabrouk's group has found that the use of nonaqueous solvents leads to increased thermal stability of enzymes, different substrate specificity, and changes in selectivity of enzyme action.

Dr. Saran Sarangapani of ICET, Inc., addressed the second dinner meeting of

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the 1999-2000 season on October 12. Held at the Egan Research Center of Northeastern University, Boston, Dr. Sarangapani detailed his own experiences and also discussed the present state of development of "Electrochemical Sensors." Special emphasis was placed on biomedical and environmental sensors, as well as, the problems of development and exploitations of various glucose and carbon monoxide sensors.

San Francisco ES&T

Dr. David A. Dudek, a staff engineer at IBM Materials Library, Storage Systems Division, was the guest speaker at the Section's September 29 meeting held in San Jose, CA. Dr. Dudek discussed the many differences and similarities of measuring diffusion coefficients of Complexed ions; the current distribution of copper deposition from cyanide electrolyte; and a QCM study of copper corrosion in alkaline carbonates solutions.

San Francisco SSS&T

The Section held a dinner meeting on September 21 at the National Semiconductor University in Sunnyvale, CA. Dr. Dehuan Huang of Stanford University presented "Single Atom Manipulation and Atomic Scale Devices." In this talk, examples of single Si and H atom manipulation on surfaces by scanning tunneling microscopy (STM) are used to demonstrate the possibility of atomic-scale device fabrication. Dynamic atomic point contact has been observed and ultra-small nanodots can be formed on the surface by the breaking of the nanobridge between the STM tip and the surface. First proof of the existence of Coulomb blockade oscillation at room temperature in a single atom double junction, consisting of a single atom on the nanotip pyramidal apex as the central island, shows the future possibility of atomic-scale devices based on Coulomb blockade effect such as a single electron transistors.

The Section held another meeting on October 28 at the National Semiconductor University. Dr. Sing-Pin Tay, Director of Process Development at Steag RTP Systems in San Jose, presented "Applications of Rapid Thermal Processes (RTP) in ULSI Fabrication." Important RTP applications in areas such as: rapid thermal oxidation (RTO) for thin dielectrics growth; rapid thermal annealing (RTA) for ultra-shallow junction formation; and rapid thermal silicidation (RTS) for contact metallization were discussed.

Twin Cities

The Section held a meeting on October 27 in Minneapolis, MN. Featured was a presentation by Professor Larry L. Miller of the University of Minnesota. The lecture covered several aspects of research from the speaker's laboratory which focused on solid polymeric conductors. Of particular interest were the effects of vapors on the conductivity of these materials, and the use of these effects to make vapor sensors, including electronic noses. ■

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