LOCAL SECTION NEWS

Detroit

The Section held a meeting on November 2 in Warren, Michigan. Featured was a presentation entitled "Lithium Ion Battery Electrode Material Developments at T/J Technologies." The presentation was given by Dr. Michael Wixom, Vice-President of Research and Development at T/J Technologies. Performance characteristics of tin/metal carbide and metal nitride based electrode materials for Li-ion batteries developed by the Ann Arbor company were discussed.

National Capital

The National Capital section held its December, "Spouses Night" meeting jointly with NACE International Baltimore/Washington Section and the Washington Section of ASM International, on December 14 in Chevy Chase, MD.

The evening began with an informative presentation by Janet G. Douglas, an art preservation expert for the Smithsonian Institution, entitled "Toward an Understanding of Asian Art: Cultural Context, Manufacturing Techniques, Authenticity, and Degradation." Douglas works as an Conservation Scientist at the Freer Gallery of Art and the Arthur M. Sackler Gallery at the Smithsonian in Washington, DC. Her presentation focussed on the scientific research in the Department of Conservation and Scientific Research (DCSR). Throughout the presentation, which consisted of many beautiful slides of art work, Douglas wove detailed examples of studies on bronzes, jade, wood, lacquer, and pigments. A greater appreciation was gained for the painstaking procedures involved in authenticating, preserving, and presenting ancient works of art, and of the role of scientific techniques in this effort.

New England

On January 11, the Section held a dinner meeting at Northeastern University in Boston. The featured speaker was Dr. Richard Carlin of the Office of Naval Research. Dr. Carlin is currently program officer for the Electrochemistry S&T Program and the Undersea Propulsion Program, Acting Division Director for Physical Sciences S&T Division; chair of the ONR Diversity Committee; and technical coordinator for DoN S&T Grand Challenge in Electric Power Sources for the Navy and Marine Corps.

In his presentation, Dr. Carlin detailed the structure, organization, and areas of responsibility within ONR and, especially, within the S&T Division. The time line for the development of products for the Navy was explained as well as the interaction of the various divisions of ONR with each other and outside contractors.

Dr. Carlin then described various ongoing research programs at ONR involving low rate energy sources, rechargeable lithium cells, and solid catholyte fuel cells.

On February 8, Dr. Mildred Dresselhaus, Physics Department, Massachusettes Institute of Technology (MIT), addressed a dinner meeting at Northeastern University, Boston, MA. Dr. Dresselhaus' topic was "The Remarkable Properties of Fullerenes and Carbon Nanotubes."

Professor Dresselhaus, coauthor of three books on carbon science, presented a brief overview of the exceptional properties and structure of both fullerenes and nanotubes and the relationships between these structures and properties. Emphasis was on nanotubes, which have found practical application although discovered less than ten years ago.

Several of these applications and future possible applications of nanotubes were extensively discussed.

Pittsburgh

The Section held a dinner meeting on November 18, which featured a presentation by Dr. Adrian C. Michael of the University of Pittsburgh. Dr. Michael spoke on "Probing Brain Chemistry with Electrochemical Tools." The objective of the presentation was to illustrate the obstacles to investigations of the chemical perturbations, to explain why electrochemical methods are well suited to overcoming those obstacles, and to report recent progress of *in vivo* electrochemical experiments in the living mammalian brain.

San Francisco ES&T

On November 17, the Section held a meeting where George Licina of Structural Integrity Associates delivered a discussion on The BIVGEORGE System, an electrochemical method for online monitoring of microbiological fouling. The system was developed to provide online and real-time indications of biofilm activity on typical metallic surfaces. The local environments at the probe surfaces are modified by a daily polarization that encourages biofilms to form more rapidly on probe surfaces than on plant piping and heat exchanger tubes by. As a result, the probe provides an early warning of the biofouling conditions that are occurring on the piping and heat exchangers. The effectiveness of treatments can also be tracked online by monitoring the probe's response to the treatment.

On January 26, the Section held a joint meeting with the SSS&T subsection of the San Francisco Local Section in Sunnyvale, CA. Professor William D. Brown of the Electrical Engineering Department of the University of Arkansas, presented "Aluminum-induced Crystallization and Doping of Amorphous Silicon at Low Temperatures."

On February 17, the Section held a meeting in Santa Clara, CA, which offered a plant tour of the Santa Clara Plating Co., Inc. The company provides plating, anodizing, and electroplating services and processes parts for the semiconductor, medical, and electronics industries. Mr. Al Becker, technical sales manager, conducted the tour in the following areas: aluminum anodizing, chromate conversion coating for aluminum, stainless steel electropolishing, stainless steel passivation, bright nickel plating on steel, analyical lab and SPC process control, and packaging and inspection.

Twin Cities

The Section held a meeting on December 8 at the University of Minnesota in Minneapolis. Professor Robert F. Cook of the University spoke on "Stress-Corrosion Cracking of Microelectronic Materials." In his talk, Professor Cook examined the stress-corrosion cracking behavior of a range of materials used in the microelectronics industry. Data from constant-stressing-rate indentation-strength tests and thin-film residual stress tests in benign environments (water) are used

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to demonstrate the connection between macroscopic fracture behavior and the underlying kinetics of bond rupture. Zero-stress aging experiments in severe environments (buffered-HF) are used to explore the competition between these bond-rupture kinetics and those of flaw removal. Materials include: alumina, silica, cordierite glass-ceramic, silicon, and low dielectric-constant organic-inorganic spin-on glasses.

The Section held their February meeting at the University of Minnesota in Minneapolis. Featured was a discussion on the challenges and opportunities facing The Electrochemical Society as we enter the 21st century, given by ECS president, Dale Hall. Dr. Hall explained how changing scientific demographics have led the Society to become increasingly international and how our role in information dissemination has changed and will continue to do so in the future. ■

Local Section Services

The Society headquarters offers a number of different services to Local Sections upon request. These include: blank award certificates for use at Local Section fairs and contests, and past chairman pins for retiring Local Section chairmen. Also available are copies of the Council of Local Sections Handbook, which includes the Section Reporting Guidelines and a Directory of Officers for other Local Sections. For more information, contact Ellen Tiano at Society headquarters, tel.: 609.737.1902, ext. 111.

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