

Division News

Tenth IE&EE Division Outreach Program



Students assembling and calibrating the fuel cell model car.



Students competing at the fuel cell car race.

The ECS Industrial Electrochemistry and Electrochemical Engineering (IE&EE) Division completed its 10th Fuel Cell Outreach Program at the 220th ECS Meeting in Boston, MA. The outreach program was started by the Division at the 210th ECS Meeting in an international setting, Cancun, Mexico, and has continued to bring awareness about green electrochemical technologies, such as fuel cells, to young minds within the U.S. and abroad (Vancouver, Vienna) ever since. The Division attempts to visit at least one local school during each meeting to conduct the program. The IE&EE Division has successfully organized ten fuel cell outreach program to date and hopes to continue such fruitful efforts in the future.

The newly created Ohio University ECS Student Chapter planned and organized the fall 2011 event. It was a golden opportunity to have an ECS Student Chapter take a leadership role in organizing such an event. It is envisaged that such an arrangement will set an example for other Student Chapters to emulate in future years. IE&EE members Gerardine Botte (Division Vice-Chair; Ohio University), Dennie Mah (Past Division Chair, DuPont Company), and Rui Zhang (Fuel Cell Energy), all IE&EE Division members, along with graduate students Paul Northrop of Washington University in St. Louis, and Ohio University's Damilola Daramola, Lingchong Mai, Santosh Vijapur, Vedasri Vedharathinam, and Wei Yan, conducted the outreach program.

The event was held at the Snowden International School located in the center of Boston. Thirty high school students in the tenth grade, along with their science teacher, Aurora Pacho, participated in the outreach program. The event started with a keynote lecture from Dr. Botte explaining fuel cell and water electrolysis

technologies, followed by a briefing to the students on the fuel cell car competition. The students were divided into five teams to participate in the car competition. The ECS organizers helped the students assemble the cars and assisted the teams with technical information during the competition. Teams calculated the amount of hydrogen produced



The winning team from the Snowden International School, Boston, with ECS facilitators (WEI YAN, DENNIE MAH, and GERARDINE BOTTE).



Snowden International School student participants and ECS facilitators at the IE&EE Fuel Cell Outreach Program in Boston, MA. In the front row, kneeling from left to right are: **PAUL NORTHROP** (Washington University); **DENNIE MAH** (Dupont Company); **GERARDINE BOTTE** (Ohio University); **RUI ZHANG** (Fuel Cell Energy); and **DAMILOLA DARAMOLA**, **VEDASRI VEDHARATHINAM**, **SANTOSH VIJAPUR**, and **WEI YAN** of Ohio University.

by water electrolysis, required to fuel their cars to travel a fixed distance. The teams then competed with each other to make their car travel as close as possible to the assigned distance. Certificates were presented to the winning team (the team that came closest to the assigned distance). As was the case in the past, the fuel cell model cars were donated to the high school to promote similar educational activities in the future. The organizers took great pride in the fact that the pupils showed tremendous enthusiasm during

the outreach and seemed particularly enthralled by green electrochemical technologies such as fuel cells.

ECS and the IE&EE Division congratulate the winning team members (**Taraje Gordon**, **Sgardy Penacarrasco**, **Juan Martinez**, **Jamiles Ortiz**, and **Yasmine Lopez**) on their success, and offer a special thanks to all of the student participants and their science teacher, Ms. Pacho. The Division would like to thank Ohio University's ECS Student Chapter and other volunteers for their time and effort to

make the event a success. Additional thanks to Dan de Vries of Ohio University for identifying the venue for the outreach. We offer special thanks to Vijay Ramani (IE&EE Division Chair) of the Illinois Institute of Technology for purchasing the fuel cell cars and for supporting other parts of the outreach financially through his National Science Foundation CAREER Award. The IE&EE Division looks forward to continued success in conducting this high impact educational outreach program at future meetings. ■

ECS Co-sponsored Conferences for 2012

In addition to the regular ECS biannual meetings, ECS, its Divisions, and Sections cosponsor meetings and symposia of interest to the technical audience ECS serves. The following is a list of the cosponsored meetings for 2012. Please visit the ECS website for a list of all co-sponsored meetings.

- **10th Spring Meeting of the International Society of Electrochemistry**, April 15-19, 2012, Perth, Australia
- **Workshop on Knudsen Effusion Mass Spectrometry**, April 23-25, 2012, Juelich, Germany (Sponsored by ECS High Temperature Materials Division)
- **Fifteenth Meeting of the Symposium on Polymers for Microelectronics**, May 8-10, 2012, Wilmington, Delaware, USA
- **11th Spring Meeting of the International Society of Electrochemistry**, May 23-25, 2012, Washington, D.C., USA
- **63rd Annual Meeting of the International Society of Electrochemistry**, August 19-24, 2012, Prague, Czech Republic

To learn more about what an ECS co-sponsorship could do for your conference, including information on publishing proceeding volumes for co-sponsored meetings, or to request an ECS co-sponsorship of your technical event, please contact ecs@electrochem.org.

Division News

Division Officer Slates Announced

New officers for the 2012-2014 term have been nominated for the following Divisions. All election results will be reported in the summer 2012 issue of *Interface*.



Dielectric Science & Technology Division

Chair

Oana Leonte, Berkeley Polymer Technologies, Inc.

Vice-Chair

Dolf Landheer, National Research Council - Canada

Secretary

Peter Mascher, McMaster University

Treasurer

Yaw Obeng, NIST

Awards Chair

Vimal Desai Chaitanya, New Mexico State University

Symposium Chair

Ana Londergan, Qualcomm MEMS Technologies

Membership Chair

Purushothaman Srinivasan, Texas Instruments, Inc.

Members-at-Large (up to 30 to be elected)

Sacharia Albin

Gautam Banerjee

William Brown

Toyohiro Chikyow

Uros Cvelbar

Stefan De Gendt

John Flake

Reenu Garg

Dennis Hess

Michel Houssa

Hiroshi Iwai

P. C. Joshi

Samares Kar

Zia Karim

Paul Kohl

G. Swami Mathad

Durgamadhab Misra

Hazara S. Rathore

R. Ekwah Sah

Sudipta Seal

Krishna Shenai

Mahendra Sunkara

John Susko

Robin Susko

Ravi M. Todi

Katalin Voros

Kerstin Worhoff



Fullerenes, Nanotubes, and Carbon Nanostructures Division

Chair

R. Bruce Weisman, Rice University

Vice-Chair

Jean-François Nierengarten, Laboratoire de Chimie de Coordination

Secretary

Slava V. Rotkin, Lehigh University

Treasurer

Dirk Guldi, University of Erlangen-Nurnberg

Members-at-Large (up to 2 to be elected)

Olga Boltalina, Colorado State University

Francis D'Souza, Wichita State University

Shunichi Fukuzumi, Osaka University

Karl M. Kadish, University of Houston

Prashant Kamat, University of Notre Dame

Nazario Martin, Universidad Complutense de Madrid

Maurizio Prato, University of Trieste

David Schuster, New York University

Lon Wilson, Rice University



Industrial Electrochemistry & Electrochemical Engineering Division

Chair

Gerardine Botte, Ohio University

Vice-Chair

Venkat Subramanian, Washington University in St. Louis

Secretary/Treasurer

John Staser, Antilles Renewable Energy, LLC

E. Jennings Taylor, Faraday Technologies, Inc.

Staff News

Karen Baliff Ornstein Promoted



KAREN BALIFF ORNSTEIN, who joined ECS as Marketing Manager at the end of 2010, has been promoted to Associate Director of Sales and Marketing. She will be responsible for developing and

managing the Society's marketing programs and subscription sales. Ensuring that ECS remains at the forefront of the electrochemical and solid state science and technology community remains an ever present goal, especially as three new publications join the *Journal of The Electrochemical Society* in 2012. Working with a newly-formed sales department, Karen will identify and target new sales opportunities and develop and implement marketing campaigns to institutions to raise brand awareness and increase subscriptions. Simultaneously, marketing efforts will be directed to potential authors to maximize usage and help grow submissions to all ECS journals.

Working with all staff members, Karen will assist in coordinating Society-wide marketing efforts and the launch of the Redcat community website (redcatresearch.org).

Karen began her career in the production department of the Academic Press Journals Division, and soon found that the marketing aspects of publishing interested her most. Having developed and implemented marketing strategies for scholarly and trade publications, consumer and business-to-business books and newsletters, and community newspapers, over the course of her career she has achieved a wealth of experience in all areas of the industry. She continues to redefine and enhance her skills as the tenor of publishing embraces expanding digital applications and delivery and social media.

With roots in academic publishing, prior to joining ECS Karen held positions at Transaction Publishers, where she was responsible for promoting nearly 100 social science books and journals each year through direct response and general advertising channels, conference planning, public relations efforts, and direct sales and marketing efforts, and Rutgers University Press. She co-founded a marketing agency that served the education

and trade markets. Representing clients such as *Archaeology Magazine* and HCI Books, the firm was presented with a Clarion award from the Association of Women in Communications for a multimedia campaign for Zoobooks that utilized print, radio, and television marketing strategies. As Director of Marketing for HCI Books she conceived marketing and branding efforts for the successful *Chicken Soup for the Soul* series of books and promoted HCI's growing list of publications and professional conferences. Karen graduated from Rutgers University and holds an MS in education from Nova Southeastern University.

Mary Yess, ECS Deputy Executive Director and Publisher comments, "Beginning with the 2013 subscriptions year, ECS has brought all of the sales, circulation, and fulfillment management back in-house. This is a major undertaking for the Society, which hasn't been handled completely in-house since 2005. Karen has already accomplished a great deal in the marketing area, and I'm sure her expertise, enthusiasm, and hard work will make a substantial difference in helping to further expand the dissemination of our journals and other publications."

Have you moved or are you planning to move?

Please take a moment to fill out this form with your updated contact information and return it to ECS.
(The Electrochemical Society, 65 South Main Street, Building D, Pennington, NJ, 08534-2839, USA)

(Please print clearly)

Name _____ Membership No. _____

Old address

Organization _____

Address _____

City _____

State/Province _____

Postal Code _____

Country _____

E-Mail _____

New address

Organization _____

Address _____

City _____

State/Province _____

Postal Code _____

Country _____

E-Mail _____

Phone _____

Fax _____



ECS 221st ECS Meeting

Seattle, WA

May 6-10, 2012

Annual Society Luncheon and Business Meeting

The Annual Society Luncheon and Business Meeting will take place on Tuesday, May 8, starting at 1215h. The President, Secretary, and the Treasurer will give brief reports on the current state of the Society, and the Student Poster Award presentation will take place at this annual business luncheon. All members and meeting attendees are encouraged to participate in this event. Tickets are \$32.00 onsite.

Corporate Member News

Spotlight on Pine Research Instrumentation



Pine's electrochemistry product line was born of a fortuitous interaction between an undergraduate student, Ted Hines, and a graduate student, Dennis Johnson, and a well known electrochemist, Stanley Bruckenstein, at a time in the 1960s when all three were at the University of Minnesota. Dr. Johnson describes this time period as "the days when rotated ring-disk electrodes (RRDEs) had been thrust to the forefront of electroanalytical thought."

After graduation, Ted Hines went on to found Pine as a small machine shop while Dr. Johnson joined the Iowa State faculty and Dr. Bruckenstein moved to SUNY Buffalo. As the two professors expanded their RRDE research, they approached Ted Hines and asked if Pine could develop a commercial rotating electrode system. On the strength of an initial estimate that Pine might eventually sell ten or twenty instruments to a handful of academic customers, Pine began to manufacture rotating electrode systems.

Now, over forty years (and thousands of rotating electrodes) later, Pine is a leading supplier of rotating disk, cylinder, and ring-disk electrodes. In addition to supplying bipotentiostats necessary for RRDE voltammetry, Pine has recently introduced low-cost, portable USB potentiostats that are small enough to fit into a laptop bag, a coat pocket, or a glove box. Pine also offers unique patterned electrodes fabricated by screen-printing conductive inks on to inert substrates. Three-electrode cell patterns, inexpensive enough to be considered disposable, are available along with other more sophisticated patterns which fit into tight spaces like spectroelectrochemical cuvettes.

Pine recently relocated its electrochemical sales and support offices to North Carolina. Pine welcomes any electrochemists who are travelling in the Research Triangle Park area to drop by and visit for a little while. On the Web at www.pineinst.com/echem.

Spotlight on Saft Batteries, Specialty Battery Group



Saft is a world leader in the design and manufacture of advanced technology batteries for industry, offering a wide range of battery solutions for diverse markets including such applications as satellites, military ground

vehicles, portable soldier equipment, commercial aircraft, trains and buses, automated meter readers, emergency lighting, and many niche applications.

Saft is the world's leading supplier of nickel batteries for use in air and rail transportation, standby power applications and emergency lighting, and of primary lithium batteries for use in the electronics and defense industries. The Specialty Battery Group is also the leading European supplier of specialized, advanced technology batteries for defense and space applications and number one worldwide in lithium-ion satellite batteries. The Group's lithium-ion technology is also being deployed in the energy storage, transportation, telecommunication, and defense markets.

Innovation is highly valued at Saft, and the company develops latest generation Li-ion batteries for use in emerging applications, in addition to the Group's traditional business sectors. A current focus for Saft is in developing reliable technologies to enable the adaptation of solar and renewable energy applications, such as energy storage systems for grid stabilization. Saft recently opened its new state-of-the-art factory located in Jacksonville, FL which will focus on producing lithium-ion energy storage systems for such emerging markets.

Saft's 4,000 employees are present in 19 countries. Its 16 manufacturing sites and extensive sales network all contribute to accelerating the Group's growth for the future. www.saftbatteries.com



websites of note

by Zoltan Nagy

Science Prize for Online Resources in Education (SPORE) Winners

The Science Prize for Online Resources in Education (SPORE) has been established to encourage innovation and excellence in education, as well as to encourage the use of high-quality online resources by students, teachers, and the public. Essays from the SPORE winners are published each month in *Science*, and are collected at this site. Large variety of educational sites, covering all fields of science, including chemistry, physics, biology, astronomy, geology, you name it, they have it. The award is sponsored by the American Association for the Advancement of Science.

- <http://www.sciencemag.org/site/special/spore/>

Electrochemical Educational Outreach Sites

Popular science style information for the general public about all aspects of electrochemistry. The Electrochemistry Encyclopedia contains more than forty articles written in simple language by international experts in the field, linked for definitions to the Electrochemistry Dictionary. The latter contains more than one thousand simple definitions of words and phrases often used in electrochemistry. The Encyclopedia articles cover topics such as batteries, fuel cells, electroplating, sensors, electroanalytical chemistry, electrochemical engineering, industrial electrolysis, corrosion, photoelectrochemistry, archaeological uses, animal and plant electrochemistry, just to mention a few. Many more articles are presently written and planned. Hosted by the Ernest B. Yeager Center for Electrochemical Sciences at Case Western Reserve University.

- <http://electrochem.cwru.edu/encycl/>
- <http://electrochem.cwru.edu/ed/dict.htm>

Chemtutor — A General Chemistry Educational Site

Chemistry help is available here for high school or college students. Chemtutor begins with the fundamentals and gives expert help with the most difficult phases of understanding your first course in chemistry.

- <http://chemtutor.com/>

About the Author

ZOLTAN NAGY is a semi-retired electrochemist. After 15 years in a variety of electrochemical industrial research, he spent 30 years at Argonne National Laboratory carrying out research on electrode kinetics and surface electrochemistry. Presently he is at the Chemistry Department of the University of North Carolina at Chapel Hill. He welcomes suggestions for entries; send them to nagyz@email.unc.edu.

In the **NEXT** issue of **INTERFACE**

- **LI ION BATTERY SAFETY** is the theme of the summer 2012 issue of *Interface*. Guest edited by **Dan Doughty** (of Battery Safety Consulting, Inc.), the articles will focus on: a "General Discussion of Battery Safety," by **Dan Doughty and Pete Roth**; "How Electrolytes Influence Battery Safety," by **Chris Orendorff and Pete Roth**; "Battery Safety Qualification," by **Judy Jeevarajan and Clint Winchester**; "Battery Modeling of Safety Events," by **Bob Spotnitz and Rick Muller**; and "How Separators Influence Battery Safety," by **Chris Orendorff and Rick Pekala**.

- **HIGHLIGHTS FROM THE ECS SPRING 2012 MEETING IN SEATTLE...** View some photos from the spring 2012 ECS meeting, including award presentations and a summary of the first-ever Clean Water Technologies Symposium.
- **TECH HIGHLIGHTS** will continue to provide readers with free access to some of the most interesting papers published in the ECS journals.
- Don't miss the next edition of **WEBSITES OF NOTE** which gives readers a look at some little-known, but very useful sites.