

## PRiME 2008 Student Poster Session Awards

The **STUDENT POSTER SESSION AT PRiME 2008** received 254 posters. The recipients received their awards at a special lunch-time event in the Technical Exhibit. Free pizza was served to the first 500 guests. Thanks to sponsorship from two companies, **GS YUASA** and **PANASONIC**, the selection committee was able to award 2 more cash prizes. Organizers were V. Desai, G. Botte, P. Kulesza, H. Martin, V. Subramanian, M. Watanabe, and X. Zhang. The large number of posters required the involvement of nearly 25 judges. The results of the competition were as follows.

First Place (one of two) in the Electrochemical Science & Technology category was sponsored by GS Yuasa. It was awarded to Paper #23, "Alkaline Urea Electrolysis and Possible Applications," by **BRYAN K. BOGGS** (Ohio University); Gerardine Botte (Ohio University), advisor.

First Place (two of two) in the Electrochemical Science & Technology category was sponsored by ECS. It was awarded to Paper #159, "Electrochemical Measurement of the Surface Alloying Kinetics of Underpotentially Deposited Ag on Au(111)," by **JOSHUA SNYDER** (Johns Hopkins University); Jonah Erlebacher (Johns Hopkins University), advisor.

An Honorable Mention in the Electrochemical Science & Technology category was given to Paper #61, "Time/Space Distributions of O<sub>2</sub> in Running Fuel Cells," by **KENJI TAKADA** and **YUTA ISHIGAMI** (University of Yamanashi); Masahiro Watanabe, Junji Inukai, Kenji Miyatake (University of Yamanashi), and Hiroyuki Nishide (University of Waseda), advisors.

Another Honorable Mention in the Electrochemical Science & Technology category was given to Paper #81, "A STM Investigation on Step Dynamics during Cu Electrodeposition," by **RALF PEIPMANN** (Technische Universität Dresden); Benedetto Bozzini (Università del Salento), advisor.

First Place in the Solid State Science & Technology category was sponsored by Panasonic. It was awarded to Paper #237, "All-Copper Chip-to-Substrate Connections," by **TYLER OSBORN** (Georgia Institute of Technology); Paul A. Kohl (Georgia Institute of Technology), advisor.

Second Place in the Solid-State Science & Technology category was sponsored by ECS. It was awarded to Paper #245, "Synthesis of Ordered Lead Dioxide Nanowires using an Electroplating Template Method," by **PHILIPPE PERRET** (INRS-EMT); Daniel Guay (INRS-EMT), advisor.

An Honorable Mention in the Solid-State Science & Technology category was given to Paper #154, "Investigation of Reactively-Sputtered BCN Thin Films," by **VINIT TODI** (University of Central Florida); B. Shantheyanda, P. Mani, A. Warren (University of Central Florida); and K. B. Sundaram (Univ. of Central Florida), advisors.

An additional Honorable Mention in the Solid-State Science & Technology was given to Paper #209, "Investigation on Crystal and Electronic Structures and Oxide Ionic Conduction Path by Neutron and Synchrotron X-ray Diffractions, and Oxygen Nonstoichiometry of LaGaO<sub>3</sub>-Based Oxide Ionic Conductors," by **TOMOMASA SUGIYAMA** (Tokyo University of Science); Y. Idemoto (Tokyo University of Science), advisor.

## Student Chapters



The **AUBURN UNIVERSITY ECS STUDENT CHAPTER** welcomed Frank Dalton of Pine Research Instrumentation on September 9 for an equipment demonstration and pizza party. Student leader Narendhiran Pari and faculty advisor Jeffrey W. Fergus hosted the event, providing the students in the chapter with an opportunity to observe Pine Research's new portable WaveNow USB potentiostat system. Due to the success of the program, the Society hopes to schedule future events like this with our vendor partners.

## The Student Chapter at the University of Florida Reaches Its Potential!

by Eric Armstrong and Cynthia Kan

Since its inception in 2005, the ECS Student Chapter at the University of Florida (ECS@UF) has made an impact in the advancement of the theory and practice of electrochemistry at the University of Florida and in the surrounding community. The chapter had humble beginnings and grew each year under the guidance of faculty advisors Eric D. Wachsman and Mark E. Orazem, both of whom are prominent ECS Fellows. Student

leaders have implemented several successful programs while still having a lot of fun.

ECS@UF holds biweekly meetings featuring student speakers and professional guests. Over the last two years the student chapter has been honored to have many prominent speakers participate in the professional lecture series. These events are special and attract upward of 30-60 students and

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The **UNIVERSITY OF FLORIDA ECS STUDENT CHAPTER** enjoyed their outing to the ECS meeting in Washington, DC. Enjoying some downtime are (from left to right): Jinsoo Ahn, Jianlin Li, Sean Bishop, Bryan Blackburn, Martin Van Assche, Christine Ho, Cynthia Kan, and Sunil Roy.



Eric Armstrong and Cynthia Kan, of the **UNIVERSITY OF FLORIDA ECS CHAPTER**, use a miniature proton exchange membrane fuel cell car and a power house incorporating renewable power generation to demonstrate applications of electrochemistry to high school students visiting the university.

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faculty at the University of Florida. Most notably, John O'M. Bockris, author of the *Modern Electrochemistry* series, gave a two-part lecture series at the end of 2007 and the beginning of 2008 entitled, "Fundamental Aspects of Electrochemistry" and "Fundamentals of Fuel Cells." Dr. Bockris answered questions regarding his expertise in electrochemistry theory, cold fusion, and his experience with the evolution of experimental techniques as technology has advanced. As someone who has made many significant contributions to the field of electrochemistry, his participation was greatly appreciated by students and faculty.

Other professional lecturers from academia included our own Professors Wachsmann and Orazem, who gave students some "Tips on How to Give Technical Presentations." Enrico Traversa from the University of Rome, Tor Vergata, was one of our first international visitors. This was followed by Janusz Nowotny from the University of New South Wales, Australia. Most recently, new UF professor Shirley Y. Meng gave a talk about her research on lithium ion batteries.

As part of the professional lecture series, experts from industry and international research laboratories were also invited to visit the student chapter at UF. Subhash C. Singhal, director of fuel cells research at the Department of Energy's Pacific Northwest National Laboratory, gave a talk about the latest in fuel cell technology. Kenneth Church, CEO and Chair of nScript, Inc., spoke about frontiers in materials deposition and the novelty of a three-dimensional direct write system. Ingo A. Schneider from the Electrochemistry Laboratory at the Paul Scherrer Institut in Switzerland spoke about insights into phenomena caused by convective gas flow in PEFC diagnostics.

Graduate and undergraduate students have also had the opportunity to present and discuss their own research. In the past two years, there have been eleven graduate presentations and one undergraduate presentation. The program has been a great platform for peer-to-peer discussion and education of electrochemistry research. It has had the additional effect of exposing the group to different areas of electrochemical research including, but not limited to brain sensors, corrosion protection of pipelines, fuel cells, gas sensors, thermoelectric materials, and experimental techniques.


The Chapter also hosted an electrochemical impedance spectroscopy (EIS) short course in 2007 taught by Prof. Orazem, co-author (with Bernard Tribollet) of the recently published ECS book, *Electrochemical Impedance Spectroscopy*. Taught annually at ECS meetings for members world wide, the course material was tailored for an audience with limited EIS experience. Approximately 30 students and one faculty attended the course.

Following the Phoenix ECS meeting, the Chapter hosted an EIS day at the University of Florida. Experts from Canada, France, and the United States came to participate before completing their journey home. In the morning, EIS experts each gave an approximately 30-minute presentation about their research and answered questions. After lunch, presenters and the audience, which included professionals and students, gathered together for round table discussions. The status and future of EIS experimentation and publications were discussed with an emphasis on how data can be standardized to reduce inconsistencies in literature. Members from industry were advised how to use EIS as a quality control for battery manufacturing.

Because conference experience is such an important part of participating in ECS, the UF Student Chapter hosted student abstract competitions and awarded two travel grants to the ECS meeting in Washington, DC in 2007, and five travel

grants to the ECS meeting in Hawaii in 2008. Awards granted for both meetings totaled \$2,300, and allowed more students than ever before to participate. Professor Wachsmann and Professor Orazem served as judges.

To fill the void of electrochemistry theory in the elementary through high school course curriculum, the Chapter created a Science Development Project Coordinator position to organize and lead fundamental electrochemistry demonstrations and lessons for local schools. Demonstrations include potato clocks, electroplating and alloying of pennies, a proton exchange membrane fuel cell car, and a miniature power house that incorporates renewable power generation. Eight demonstrations have been conducted in the past two years to students from first grade to honors chemistry high school students. Furthermore, there are plans to expand the curriculum to include voltaic cells and more in-depth electroplating experiments with science kits purchased with support from the UF engineering council. Students will soon be able to learn about solid state electrochemistry with dry cell battery kits.

Though the study and advancement of electrochemistry is a high priority, the student chapter has also been intentional about having fun and forming long lasting friendships. Socials have included canoeing down the Suwannee River, bowling, and lunch and tubing at nearby Ginnie Springs. In the future, social and educational collaborations with neighboring ECS student chapters will be pursued. For more information please see our website: <http://grove.ufl.edu/~ecsuf/>. 



**THE ELECTROCHEMICAL SOCIETY SUMMER FELLOWSHIPS** were established in 1928 to assist students during the summer months in pursuit of work in the field of interest to ECS. Each fellowship is in the amount of \$5,000. The next fellowships will be presented in 2009.

Nominations and supporting documents should be sent to Vimal H. Desai, New Mexico State University, Office of the VP for Research, MSC 3RES - Box 30001, Las Cruces, NM 88033-8001, USA, e-mail: vimalc@nmsu.edu. **Materials are due by January 1, 2009.**



The **STUDENT RESEARCH AWARD OF THE BATTERY DIVISION** was established in 1962 to recognize promising young engineers and scientists in the field of electrochemical power sources and consists of a scroll, a prize of \$1,000 and membership in the Battery Division as long as a Society member. The next award will be presented at the ECS fall meeting in Vienna, Austria October 4-9, 2009.

Nominations and supporting documents should be sent to Robert Kostecki, Staff Scientist/Engineer and Assist. Division Director Environmental Energy Tech. Division, Lawrence Berkeley National Laboratory, 1 Cyclotron Rd, MS 70R0108B, Berkeley, CA 94720-8168, USA; tel. 510.486.6002, e-mail: r\_kostecki@lbl.gov. **Materials are due by March 15, 2009.**

The **STUDENT AWARD OF THE CANADIAN SECTION** was established in 1987 for a student pursuing, at a Canadian University, an advanced degree in any area of science or engineering in which electrochemistry is the central consideration, and consists of an amount determined by the Executive Committee of the Canadian Section not to exceed \$1,500. The next award will be presented at an upcoming Section meeting.

Nominations and supporting documents should be sent to Aicheng Chen, Lakehead University, Dept of Chemistry, 955 Oliver Rd, Thunder Bay, ON P7B-5E1, Canada; tel. 807.343.8318, e-mail: aicheng.chen@lakeheadu.ca. **Materials are due by February 28, 2009.**

## Student Travel Grants

Several of the Society's Divisions offer travel assistance to students presenting papers at ECS meetings. For details about travel grants for 216<sup>th</sup> ECS Meeting in Vienna, Austria, (October 4-9, 2009), please see page 94; or visit the ECS website: [www.electrochem.org/student/travelgrants.htm](http://www.electrochem.org/student/travelgrants.htm). Please be sure to e-mail the student travel grant contact as each Division requires different materials for approval. **The deadline for submission for the fall 2009 travel grants is April 24, 2009.**

## Awarded Student Memberships Available

ECS Divisions are offering Awarded Student Memberships to qualified full-time students. To be eligible, students must be in their final two years of an undergraduate program or enrolled in a graduate program in science, engineering, or education (with a science or engineering degree). Postdoctoral students are not eligible. Awarded memberships are renewable for up to four years; applicants must reapply each year. Memberships include subscriptions to the *Journal of The Electrochemical Society* online, *Electrochemical and Solid-State Letters* online, and *Interface*. To apply for an Awarded Student Membership, use the application form in this issue or refer to the ECS website at: [www.electrochem.org/awards/student/student\\_awards.htm#a](http://www.electrochem.org/awards/student/student_awards.htm#a).

# call for nominations

For details on each award—including a list of requirements for award nominees, and in some cases, a downloadable application form—please go to the ECS website ([www.electrochem.org](http://www.electrochem.org)) and click on the “Awards” link. Awards are grouped in the following sub-categories: Society Awards, ECS Division Awards, Student Awards, and ECS Section Awards. Please see the individual award call for information about where nomination materials should be sent; or contact ECS headquarters.

VISIT **WWW.ELECTROCHEM.ORG** AND  
CLICK ON “**AWARDS**” LINK.