# News from ECS Student Chapters

## Industrial Electrochemistry & Electrochemical Engineering Division H. H. Dow Memorial Student Achievement Award

**Meng Li** earned a BE in materials science and engineering (MSE) from Beijing University of Aeronautics and Astronautics (BUAA) in 2006, and a PhD in MSE from State University of New York at Stony Brook (SBU) in 2011. Her undergraduate research involved developing anti-corrosion Zn-Sn coatings on AZ91D magnesium alloys under the direction of Liqun Zhu. Li performed her doctoral research under the guidance of Radoslav Adzic at Brookhaven National Laboratory (BNL). Her doctoral research focused on developing new ternary Pt-Rh-$SnO_2$ electrocatalysts for the direct oxidation of ethanol to $CO_2$ at fuel cell anodes. Her project involved developing several synthetic routes to make ternary electrocatalysts, their characterization using a broad range of structural techniques, including ones based on synchrotron radiation, a number of electrochemical techniques for complete determination of reaction kinetics, and *in situ* spectroscopic characterization of reaction intermediates. Li has also received several awards including the Oronzio and Niccolò de Nora Foundation Young Author Prize from International Society of Electrochemistry (ISE), Honorable Mention winner of the 2011 Bernard S. Baker Student Award for Fuel Cell Research, Presidential Fellowship from SBU, and the Atotech Scholarship from BUAA. Currently, Li is a research associate working with Dr. Adzic at BNL. Her research interests include designing and developing novel electrocatalysts for the oxidation of small organic molecules, and *in situ* characterizing electrocatalysts by X-ray absorption spectroscopy (XAS) and FTIR.

## Industrial Electrochemistry & Electrochemical Engineering Division Student Achievement Awards

**Rainer Küngas** received his BSc in chemistry and an MSc in physical and electrochemistry (both with distinction) from the University of Tartu, Estonia. In 2008, Küngas was awarded the prestigious International Fulbright Science and Technology Scholarship for graduate studies in the Department of Chemical and Biomolecular Engineering at the University of Pennsylvania. Working in the group of Raymond Gorte and John Vohs, his research focuses on the development of novel electrode architectures for solid oxide fuel cells and electrolyzers. In particular, Küngas is using infiltration, a fabrication method pioneered at the University of Pennsylvania, to determine key factors affecting oxygen reduction kinetics in perovskite-based fuel cell cathodes. He expects to graduate in May 2012.

Küngas has been active in fuel cell research for more than seven years: his first project (on cobaltite-based cathode materials) with Enn Lust at Tartu dates back to 2004. The large amounts of rare earth elements used in ceramic fuel cells prompted Küngas to conduct an internship with Molycorp-Silmet, one of the largest rare earth manufacturers in Europe (2005). In 2006, he completed a European Commission funded industrial internship with Rolls-Royce Fuel Cell Systems at Loughborough, UK.

An enthusiastic science writer, Küngas has contributed numerous articles to the Estonian popular science magazine *Horisont*. His article about using solid fuels (*e.g.*, coal or oil-shale) in fuel cells recently won the first prize at a popular science contest. Küngas is also this year's honorable mention winner of the Bernard Baker Student Award for Fuel Cell Research.

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**Looking for Student News**

ECS takes an active interest in the affairs of its Student Members, and is always interested in hearing from you about your interests, activities, and accomplishments.

*Send all correspondence to*

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**Start a Student Chapter!**

ECS currently has 28 student chapters around the world, which provide students an opportunity to gain a greater understanding of electrochemical and solid-state science, to have a venue for meeting fellow students, and to receive recognition for their organized scholarly activities. Students interested in starting a student chapter may contact david.harkness@electrochem.org for details.

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## New Chapter at the University of Calgary

The Calgary ECS Student Chapter was recently established by chemistry graduate students at University of Calgary in Alberta, Canada, and is the second ECS Student Chapter to be formed in Canada. Viola Birss, Venkataraman Thangadurai, and Scott Paulson serve as faculty advisors, and post-doctoral fellow Hany El-Sayed, PhD students Corie Horwood, Ehab El Sawy, and Suresh Mulmi were elected as President, Vice-President, Treasurer, and Secretary, respectively. The Calgary ECS Student Chapter includes more than 25 members performing innovative research in electrochemistry.

This Student chapter provides a valuable link between students studying electrochemistry and industries located in Alberta. The Chapter aims to create opportunities for interaction with researchers and scientists from both academia and industry. The first Calgary ECS Student Chapter event was held on November 4, in conjunction with the annual meeting of the ECS Canadian Section. This successful event attracted new student members to the student chapter and to ECS.


**Hany El-Sayed**, *President of the Calgary Student Chapter, encourages students to become members of the newly formed Chapter.*

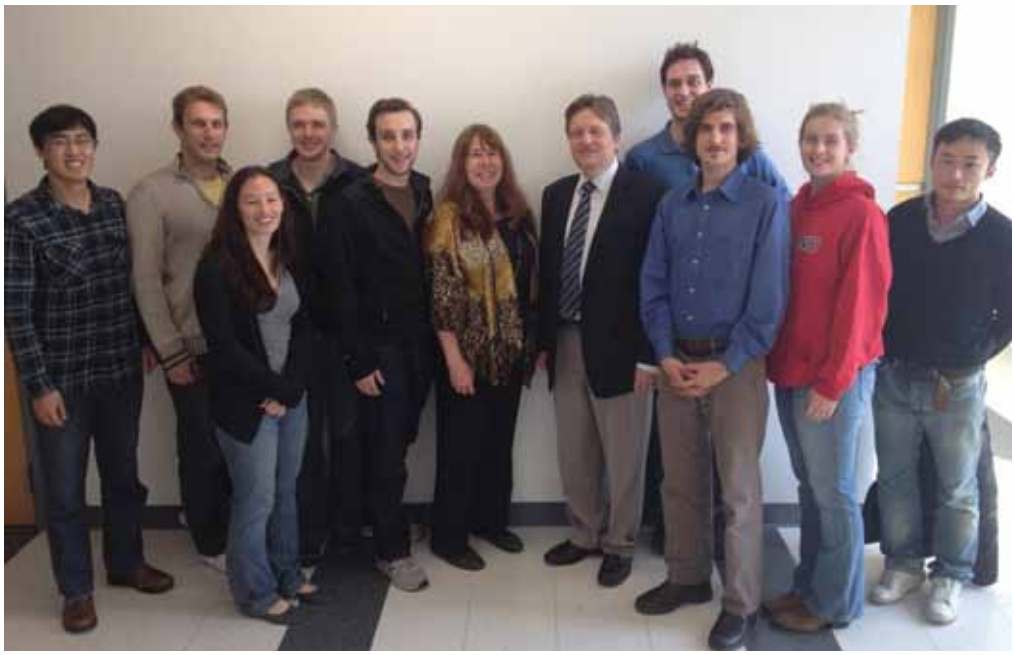

*Pictured from left to right are Calgary Student Chapter leaders:* **Suresh Mulmi**, **Hany El-Sayed**, **Venkataraman Thangadurai**, **Viola Birss**, **Ehab El-Sawy**, *and* **Corie Horwood**.

**Viola Birss**, *Faculty Advisor of the Calgary Student Chapter, provides a talk on the importance of becoming a student member of ECS during the Chapter's first event.*

*Calgary Student Chapter members enjoy a pizza mixer during the first event.*

## New Chapter at the University of Maryland

In 2011, a group of materials science and chemical engineering students formed a new ECS Student Chapter, the University of Maryland Student Chapter, at the University of Maryland, College Park, MD. The Chapter was approved at the October 2011 ECS fall meeting in Boston. ECS Fellow, Eric D. Wachsman, advises the new Chapter, and doctoral candidates Colin Gore, William Gibbons, and Ashley Lidie serve as the President, Vice-President, and Secretary/Treasurer, respectively. The new student chapter will interact closely with the ECS National Capital Section, of which Dr. Wachsman is currently the Section Chair.



*At a recent meeting of the new University of Maryland Student Chapter were (from left to right):* **Ke-Ji Pan, Greg Hitz, Jennie Moton, William Gibbons, Aaron Fisher, Cynthia Lundgren, Eric Wachsman, Alex Kozen, Colin Gore, Ashley Lidie,** *and* **Yi-Lin Huang.**

In an effort to stress the importance of electrochemical energy research on campus, the Chapter and the University of Maryland Energy Research Center (UMERC) co-sponsored a seminar in early November featuring Cynthia Lundgren from the U.S. Army Research Lab (ARL). Dr. Lundgren's seminar, "Electrochemical Power and Energy in Support of the Warfighter," provided an overview of the power requirements for many of the Army's applications. She devoted specific attention to fuel cells and lithium ion batteries for portable power applications. Before the seminar, ten members of the student chapter met with Dr. Lundgren for a lunch discussion where she shared advice from her admirable career in electrochemistry, which includes 17 years as a chemist at DuPont and her current position leading the Electrochemistry Branch in the Power and Energy Division at ARL. Dr. Lundgren remarked that the informal setting of the talk was refreshing and she was delighted to have the chance to speak candidly with researchers whose careers are just beginning.

Following the success of its initial seminar, the Chapter plans to sponsor more invited lectures and lunch discussions with prominent electrochemists in 2012. The Chapter held its first Winter Mixer in December 2011 at El Centro in Washington DC. The purpose of the event was to recruit new members and to build camaraderie among existing ECS members at University of Maryland. In an effort to promote electrochemistry to a younger audience, members of the student chapter are also collaborating with the Adventures in Science program at the National Institute of Standards and Technology (NIST) in Gaithersburg, MD. Through the program, students from the Chapter present simple electrochemical demonstrations, like building wet-cell batteries, and explain relevant science concepts to groups of middle school students. The members of this Chapter look forward to building even more momentum in the coming months to enhance electrochemistry at the University of Maryland and the surrounding community.

## Boston Chapter

On January 27 the ECS Boston Student Chapter held its first meeting at Northeastern University (NEU). Twenty three young electrochemists from NEU introduced themselves to the community and shared their research interests with each other. Over lunch, sponsored by ECS, students and post-docs from Eugene Smotkin's lab (Faculty Advisor of the ECS Boston Student Chapter, Fuel Cell Electrochemistry Laboratory and founder of NuVant Systems), and Sanjeev Mukerjee's lab (Laboratory for Electrochemical Advanced Power, and Director of the Northeastern University Center for Renewable Energy Technology NEUCRET), and Elizabeth Podlaha-Murphy's lab (Electrochemical Deposition Laboratory) listened to poster presentations from their colleagues, discussed results, and provided further suggestions and constructive critique. The open atmosphere of the meeting provided students with a great opportunity to interact, network, and showcase their areas of expertise. Urszula Tylus's poster on"Non-PGM Electrocatalysts for ORR: Structure and

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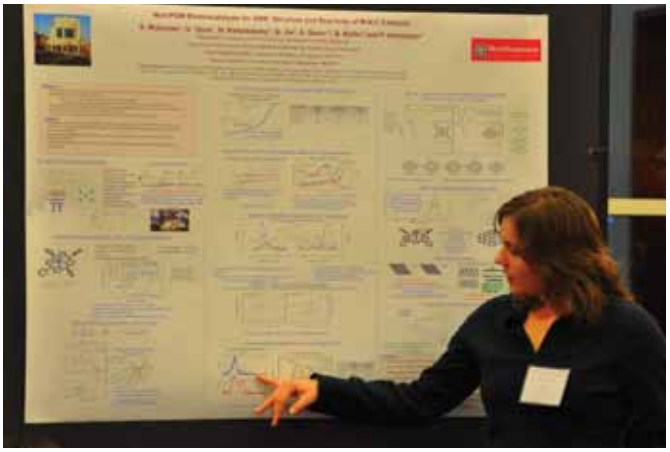

**Urszula Tylus** *explains the electrochemistry of the ORR catalyst.*

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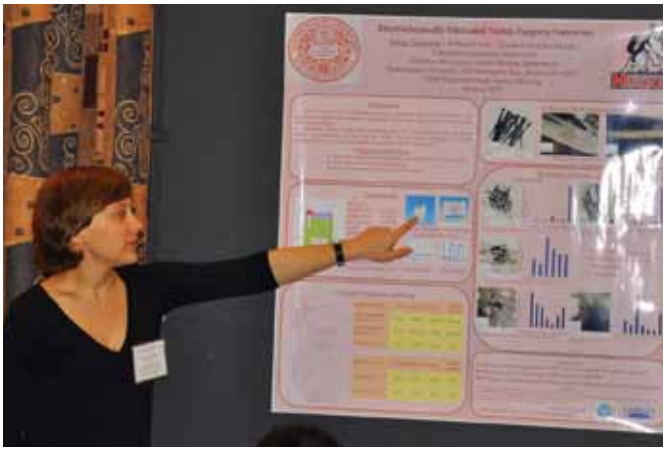
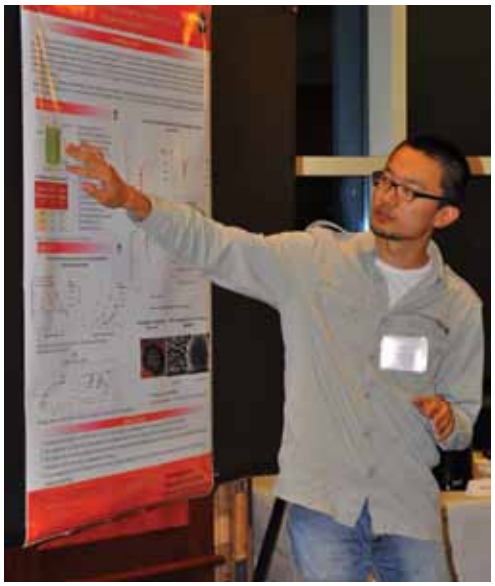
*Students of the Boston ECS Student Chapter's first meeting on January 27 at Northeastern University, Boston, MA.*

Reactivity of M-N-C Catalysts" was voted the winning poster and her first place prize included a complimentary registration to the next ECS Meeting. Congratulations to Urszula!

In the future, the Chapter leaders (Tetiana Bairachna, President, and Sara Evarts, Secretary) plan to hold the event at least biannually. More information about the Chapter and its members can be found in the LinkedIn system – look for Boston/Cambridge ECS Student Chapter. The Chapter hopes that its next meeting will attract young electrochemists from the universities of Cambridge and other nearby universities as well.



**Tetiana Bairachna** *reviews mechanically robust electrodeposited NiW nanowires.*



**Shaopeng Sun** *talks about high-in-molybdenum electrolytic NiMo alloys.*

# University of Texas at Austin Chapter

**Karim Zaghib**, *Project Manager, Conversion and Storage of Energy Group at the Institut de recherche d'Hydro-Québec, giving a talk on the research and development of Li-ion and Li-polymer batteries.*

The ECS Student Chapter at The University of Texas at Austin was founded in 2007 to provide students with an organization to pursue and share their interest and skills in electrochemical science and engineering. Today, the Chapter is comprised of mostly master's students, doctoral students, and post-doctoral researchers working in a multitude of disciplines ranging from micro-electronics to energy materials to electrochemistry. There are approximately 10-15 registered ECS student members with a potential to grow this year. The Student Chapter hosts several events during the year, which are also attended by faculty experts in electrochemical science and engineering and many students who are not registered ECS student members. Arumugam Manthiram (Director of the Texas Materials Institute at UT Austin) is the Faculty Advisor of the ECS Student Chapter at UT Austin.

In 2011, the Chapter hosted a seminar on the patent and start-up process in academia with faculty member speakers from the University of Texas at Austin. It was a great resource for the emerging researchers in electrochemical science and engineering, as they began to appreciate the various opportunities available to them for pursuing their dreams and skills. The Chapter also helped organize and set up the poster session for the annual Center for Electrochemistry (CEC) workshop conducted in February. To build comradely among the student members, the Chapter co-sponsored a screening of "The PhD Comics - The Movie" as a social event, which is a parody on the graduate student experience.

The Chapter's most noteworthy event for the year was a seminar featuring Karim Zaghib, Project Manager for the Conversion and Storage of Energy Group at the Institut de recherche d'Hydro-Québec (IREQ). Dr. Zaghib presented a talk on the research and development of Li-ion and Li-rechargeable batteries. His talk also gave insight into the different aspects of industrial research in the field of electrochemical science and engineering.

This year, the ECS Chapter plans to continue providing the electrochemical community within the university with seminars. Additionally, the Chapter is embarking on an outreach program for children in hopes of inspiring young minds to be interested in the field of electrochemical science and engineering.

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*University of Texas at Austin Student Chapter officers with Karim Zaghib. From left to right:* **Preethi Mathew**, **Katherine Rose Stroukoff**, **Peter Olapade**, **Netzahualcoyotl Arroyo Curras**, **Dr. Zaghib**, **Katharine L. Harrison**, **Karen Scida**, *and* **Arumugam Manthiram** *(Faculty Advisor).*

# Ohio University Student Chapter

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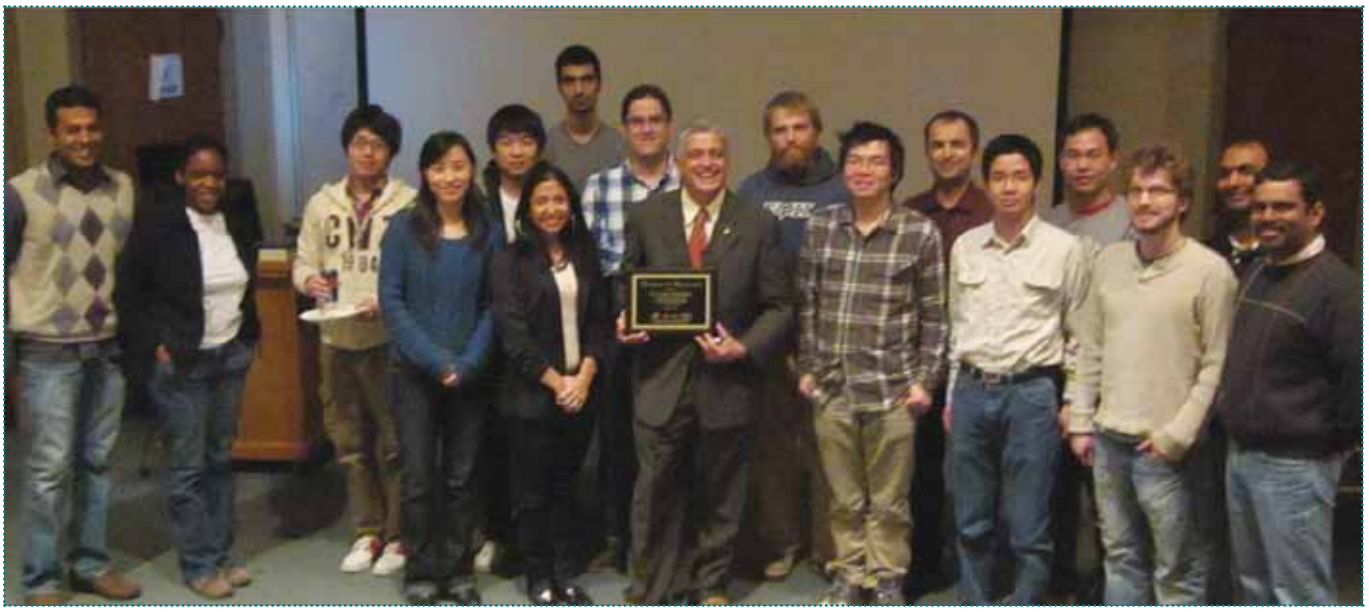
The ECS Student Chapter at Ohio University was established in May 2011 with the goal to educate and keep the students informed of the latest trends in the field of electrochemistry and solid state science and technology. The chapter is advised by Gerardine Botte, who is a Russ Professor and the Director of the Center for Electrochemical Engineering Research (CEER) at Ohio University. She is also the current Vice-Chair for the ECS Industrial Electrochemistry and Electrochemical Engineering (IE&EE) Division.

With the support from its faculty advisor, the Chapter has been able to invite distinguished professors including: Robert Savinell (Case Western University), Alan West (Columbia University), Perla Balbuena (Texas A&M University), and Krishnan Rajeshwar (University of Texas-Arlington and *Interface* Editor) to give a seminar for a colloquium. The students were able to attend various intriguing talks, ranging from "Flow Batteries," "Solar Energy Conversion" and "Environmental Remediation" to "Electrochemical Engineering in Microfabrication" and "Prediction of Physical and Chemical Properties of Materials Using Atomic-Level Simulations."

Apart from increasing the awareness in new areas and aspects of research, this gives the members of the organization an opportunity to meet and discuss with eminent scholars in the field of electrochemistry. During their visit, the professors also have had the opportunity to meet personnel at the CEER, the Institute for Corrosion and Multiphase Technology, Institute for Sustainable Energy and the Environment, the Center for Air Quality, the Ohio Coal Research Center and the Sustainable Energy, and the Advanced Materials Laboratory at Ohio University.

**Krishnan Rajeshwar** *(far left) receives plaque from the ECS Ohio University Student Chapter. Also pictured with Dr. Rajeshwar are (left to right):* **Ramasamy Palaniappan**, *Treasurer;* **Santhosh Vijapur**, *Secretary;* **Luis Diaz**, *Vice-President; and* **Gerardine Botte**, *Faculty Advisor.*

Earlier this year during the fall ECS meeting in Boston, the Chapter had organized the student outreach activity with the support from the IE&EE Division (see page 9 in this issue). Forty students from the Snowden International School had the privilege to learn about and operate model Fuel Cell Cars.



*At a recent meeting of the ECS Ohio University Student Chapter were (from left to right):* **Ramasamy Palaniappan, Shanique Grant, Lingchong Mai, Ping Yu, Wei Yan, Gerardine Botte, Aria Kahyarian, Luis Diaz,** *Krishnan Rajeshwar,* **Arthur Gildea, Fei Lu, Ali Estejab, Yu Ding, Xiaoyong Xia, Alex Miller, Santosh Vijapur, and Madhivanan Muthuvel.**

Recently, Dr. Rajeshwar, during his visit, spent some time with the students to enlighten them about the various benefits and opportunities of being a member of ECS. Among other things, he spoke about networking and the significance of attending the Divisional meetings and student mixers organized by ECS.

In other activities, the Chapter members participate in the "ABCs of Electrochemistry," by attending and presenting lectures on basic aspects and techniques in electrochemistry. The ABCs of Electrochemistry is a series of seminars organized by the CEER. More information on the seminar series can be found at: http://www.ohio.edu/ceer/education/ABCs-of-Electrochemistry.cfm.

The current officers for the Chapter are Vedasri Vedharathinam, President; Luis Diaz Aldana, Vice-President; Ramasamy Palaniappan, Treasurer; and Santosh Vijapur, Secretary. The officers meet once every month to discuss, plan, and organize events that could be beneficial for its members as well as other aspiring students of the university. The Chapter believes that their driving force is their faculty advisor, Gerardine Botte, who constantly motivates and encourages the students to organize and participate in seminars and outreach activities to further their knowledge in science and engineering in society.

The Chapter aspires to organize more events to engage students and enhance their knowledge of electrochemistry.

# 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) 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 here and online for information about where nomination materials should be sent; or contact ECS headquarters.

Visit
**www. electrochem.org**
and click on ***"Awards" link***.

The **H. H. Dow Memorial Student Award of the Industrial Electrochemistry and Electrochemical Engineering Division** was established in 1990 to recognize promising young engineers and scientists in the fields of electrochemical engineering and applied electrochemistry. The award consists of a scroll and a prize of $1,000 for educational purposes. The next award will be presented at the ECS spring meeting in spring meeting in Toronto, Ontario, Canada, May 12-17, 2013.

Nominations and supporting documents should be sent to Venkat Subramanian, Dept. of Energy, Environmental, and Chemical Engineering, Washington University in St. Louis, One Brookings Dr., Box 1180, (Office Location: Cupples II, Room 222), St. Louis, Missouri 63130, USA; e-mail: vsubramanian@seas.wustl.edu. **Materials are due by September 15, 2012.**

The **Student Achievement Award of the Industrial Electrochemistry and Electrochemical Engineering Division** was established in 1989 to recognize promising young engineers and scientists in the field of electrochemical engineering and to encourage the recipients to initiate careers in this field. The award consists of a scroll and a prize of $1,000 for educational purposes. The next award will be presented at the ECS spring meeting in spring meeting in Toronto, Ontario, Canada, May 12-17, 2013.

Nominations and supporting documents should be sent to Venkat Subramanian, Dept. of Energy, Environmental, and Chemical Engineering, Washington University in St. Louis, One Brookings Dr., Box 1180, (Office Location: Cupples II, Room 222), St. Louis, MO 63130, USA; e-mail: vsubramanian@seas.wustl.edu. **Materials are due by September 15, 2012.**

## Travel Grants

Several of the Society's Divisions offer travel assistance to students and young faculty members presenting papers at ECS meetings. For details about travel grants for 223rd ECS Meeting in Honolulu, Hawaii, (October 7-12, 2012), please see the PRiME

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The Electrochemical Society of Japan

## 222nd ECS Meeting
## The Electrochemical Society of Japan—2012 Fall Meeting

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Chinese Society of Electrochemistry

**Japan Society of Applied Physics**
**Korean Electrochemical Society**
**Electrochemistry Division of the Royal Australian Institute**
**Chinese Society of Electrochemistry**

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2012 Call for Papers; or visit the ECS website: 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 2012 travel grants is April 13, 2012.**

## 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 article pack access to the *Journal of The Electrochemical Society* online, *Electrochemical and Solid-State Letters* online, *ECS Transactions* online, and a subscription to *Interface*. To apply for an Awarded Student Membership, use the application form below or refer to the ECS website at: www.electrochem.org/awards/student/student_awards.htm#a.