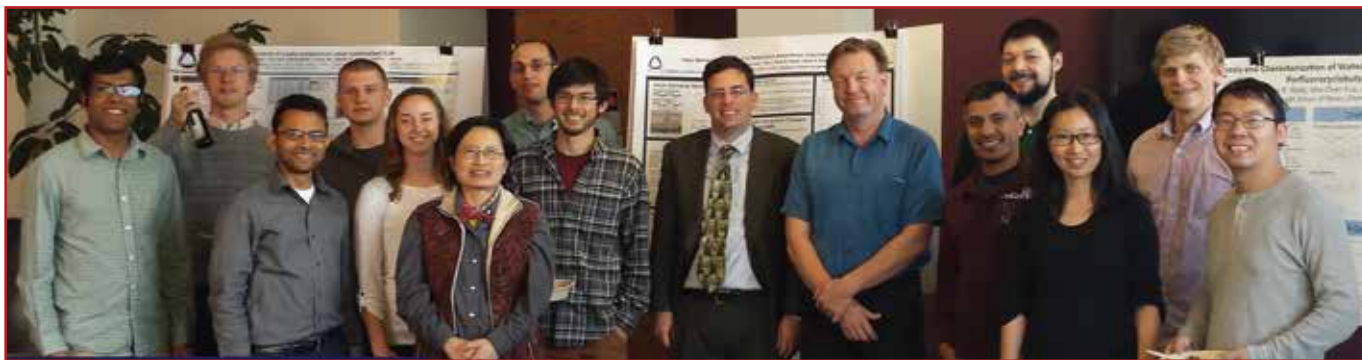


Colorado School of Mines Student Chapter

On April 17, 2015, the **ECS Colorado School of Mines Student Chapter** organized a one-day event in two parts; a morning seminar featuring a speaker and an afternoon ECS poster session with the ECS chapter members. In the morning session, organized in collaboration with the Colorado School of Mines Department of Chemical and Biological Engineering, the Charles W. Tobias Young Investigator Award winner and long time ECS member, Adam Weber from Lawrence Berkeley National Laboratory gave a seminar on “Understanding Transport in Polymer-Electrolyte Fuel Cell Ionomer.” The event was open to all students and faculty members. Several researchers including former Charles W. Tobias Young Investigator Award winner Bryan Pivovar, from National Renewable Laboratory, attended the seminar. The ECS student chapter advisor, Andrew Herring, chaired the session.

The afternoon poster session was facilitated for student chapter members along with the speaker and advisor, Professor Herring. The session started after the ECS student chapter president and the chair of the session, Tara Pandey, provided an update on the ECS activities and thanked all the new ECS student members for joining the chapter. About 10 student ECS members presented their posters related to electrochemistry, with special focus on polymer membranes for fuel cell applications. The chapter members along with the vice president, Himanshu Sarode, helped in organizing the event.

Both the events provided a great opportunity for ECS graduate student members to discuss their work and learn from their fellow ECS members, the speaker and other experts presented.



ADAM WEBER (fifth from right, front row) with the ECS Colorado School of Mines Student Chapter members, ANDREW HERRING (Faculty Advisor, fourth from right), and TARA PANDEY (President, second from left, first row) after the poster session.

Drexel University Student Chapter

The **ECS Drexel University Student Chapter** had a busy winter and early spring 2014/2015. The organization and leadership changed as former Chapter President Kelsey Hatzell graduated, and Boota Muhammad took over as the new Chapter President. Also, Drexel recently experienced an influx of young electrochemistry-focused professors, and the student chapter welcomed Ekaterina Pomerantseva and Maureen Tang as the acting co-advisors (with Yuri Gogotsi).

Kelsey Hatzell, Mohamad Alhabeb, A-yeong Byeon, and Kanit Hantanasirisakul recently led an electrodeposition hands-on tutorial at Our Mother of Sorrows Middle School located locally in West Philadelphia. The chapter helps organize a science club on Tuesday afternoons at the middle school that focuses on hands-on experiments.

The chapter also had great attendance at the Philly Materials Day on February 7. The Philly Materials Day is spearheaded by Drexel's Material Science Department, and raises public awareness of the importance of science and engineering. Nearly 1,300 individuals attended the event, and ECS student members were active in leading science demonstrations.

Finally, to wrap up the winter quarter, the ECS chapter got together to prepare science demonstrations on hydrogen generation to send to students at the University of Makerere in Uganda. Drexel's ECS chapter coupled with SciBridge, a non-profit group started by Veronica Augustyn (NC State). SciBridge engages researchers and scientists from U.S. and Africa with the hope of bridging the continents and initiating connections.



Electrodeposition tutorial at Our Mother of Sorrows Middle School.



MALLORY CLITES and BRYAN BYLES demonstrate how a fruit battery works at Philly Materials Day.

University of California, San Diego Student Chapter

The ECS University of California, San Diego Student Chapter gained several new members during the past winter quarter and had a successful turnout at two meetings. First, they met on February 3, 2015 for a seminar by Shyue Ping Ong (UCSD), a visionary in the area of computational materials science. Professor Ong received his PhD in Materials Science from Massachusetts Institute of Technology. Professor Ong first discussed the history of the lithium ion battery and how it took two decades to commercialize. He then went on to discuss his research, and how it involves significantly reducing the amount of time between technology research in laboratories and commercialization.

Professor Ong then explained how first principles methods have become an integral part of materials design, and can access a broad range of chemistries. He stressed how much computing power and informatics have revolutionized materials design in energy storage, focusing specifically on the electrochemical components. Professor Ong also discussed how first principles methods have helped construct one of the world's largest materials property databases, which has been used to identify completely novel electrode and electrolyte chemistries. Lastly, he also shared his vision of the future of data-driven materials design in electrochemistry. This seminar allowed for people to consider the significance and promise of computational materials science.

The chapter also took great strides in hosting their first industry seminar, where they were joined by Marissa Caldwell, on March 6,

2015. Dr. Caldwell hails from Wildcat Discovery Technologies (San Diego, CA), a company that specializes in high-throughput methods for discovering and optimizing better battery components. Borrowing techniques from pharmacology, Wildcat Technologies goes through hundreds or thousands iterations of a particular battery component, such as the cathode, while slightly tweaking the processing parameters or additives to optimize a material.

In this seminar, Dr. Caldwell walked the audience through three case studies that highlighted the capabilities of Wildcat Technologies. First, she covered coatings in carbon monofluoride batteries, which are prized by the military for applications that require extreme robustness and durability. Wildcat Technologies created a variety of coatings with subtle changes in constituent elements that mostly had generally improved voltage and power characteristics. The second case study dealt with the infamous solid-electrolyte interphase (SEI) issue that plagues silicon anode batteries. Over 2000 different electrolyte combinations with a myriad of additives and solvents were synthesized and tested with the silicon anodes, with some configurations offering dramatic improvements in anode performance. Lastly, Dr. Caldwell covered Wildcat's work on solid-state batteries and the formulation of solid-state electrolytes that do away with the use of volatile and dangerous organic solvents used in today's liquid electrolytes. With this seminar, students were able to see the industrial side of science and engineering, one they are not often exposed to.



SHYUE PING ONG during his presentation at the meeting of the UCSD Student Chapter.



MARISSA CALDWELL (third from right) of Wildcat Discovery Technologies with faculty and students of UCSD. From left: YING SHIRLEY MENG, SHYUE PING ONG, JUDITH ALVARADO, Marissa Caldwell, HAODONG LIU, and HAN NGUYEN.



Look Out!

We want to hear from you!

Students are an important part of the ECS family and the future of the electrochemistry and solid state science community . . .

- What's going on in your Student Chapter?
- What's the chatter among your colleagues?
- What's the word on research projects and papers?
- Who's due congratulations for winning an award?

Send your news and a few good pictures to interface@electrochem.org.

We'll spread the word around the Society. Plus, your Student Chapter may also be featured in an upcoming issue of *Interface*!

Student Awards

ECS Student Awards & Fellowship Program: Call for Nominations

For more about the ECS Awards & Fellowship Program go to:

electrochem.org/awards

ECS provides a number of fellowships and awards to help students in our field become full-fledged professionals. This is an amazing opportunity to recognize and boost the career of the hard working students you know. Find out more about summer fellowships, awarded student membership, student division and section awards, and more.

ECS student awards and fellowships are open to anyone who meets the ECS criteria for being a student. Specific information for each award, and information regarding rules, past recipients, and nominee requirements are available online. Please note that the nomination material requirements for each award vary.

Email questions to: awards@electrochem.org.



The **ECS OUTSTANDING STUDENT CHAPTER AWARD** was established in 2012 to recognize distinguished student chapters that demonstrate active participation in The Electrochemical Society's technical activities, establish community and outreach activities in the areas of electrochemical and solid state science and engineering education, and create and maintain a robust membership base.

Please visit the student awards page at www.electrochem.org/awards for complete rules and nomination requirements. Nominations are being accepted for the 2016 award, which will be presented at the ECS fall meeting in Honolulu, HI, October 2-7, 2016. For questions or additional information, please contact awards@electrochem.org.

Materials are due by March 31, 2016.



The **ECS SUMMER FELLOWSHIPS** were established in 1928 to assist students during the summer months in pursuit of work in the field of interest to ECS. The next fellowships will be presented in 2016.

Please visit the student awards page at www.electrochem.org/awards for complete rules and nomination requirements. For questions or additional information, please contact awards@electrochem.org.

Materials are due by January 15, 2016.



The **ENERGY TECHNOLOGY DIVISION GRADUATE STUDENT AWARD** was established in 2012 to recognize and reward promising young engineers and scientists in fields pertaining to the Division. The awards are intended to encourage the recipients to initiate or continue careers in this field. Up to two recipients, chosen annually, will receive an appropriately worded certificate and the sum of \$1,000.

Go to www.electrochem.org/student to start the nomination process.

Materials are due by September 1, 2015.



The **INDUSTRIAL ELECTROCHEMISTRY AND ELECTROCHEMICAL ENGINEERING DIVISION H. H. DOW MEMORIAL STUDENT ACHIEVEMENT AWARD** 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 prize of \$1,000 for education expenses.

Go to www.electrochem.org/student to start the nomination process.

Materials are due by September 15, 2015.



The **INDUSTRIAL ELECTROCHEMISTRY AND ELECTROCHEMICAL ENGINEERING DIVISION STUDENT ACHIEVEMENT AWARD** 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.

Go to www.electrochem.org/student to start the nomination process.

Materials are due by September 15, 2015.



The **CORROSION DIVISION MORRIS COHEN GRADUATE STUDENT AWARD** was established in 1991 to recognize and reward outstanding graduate research in the field of corrosion science and/or engineering. The award consists of a certificate and \$1000. The award, for outstanding Masters or PhD work, is open to graduate students who have successfully completed all the requirements for their degrees as testified to by the student's advisor, within a period of two years prior to the nomination submission deadline.

Go to www.electrochem.org/student to start the nomination process.

Materials are due by December 15, 2015.

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STUDENT TRAVEL GRANTS

Several of the Society's Divisions offer **travel assistance** to students, postdoctoral researchers, and young professionals presenting papers at ECS meetings. For details about travel grants for upcoming ECS biannual meetings and to apply, visit the ECS website at www.electrochem.org/travel_grants. Please be sure to review travel grant requirements for each Division. Formal abstract submission is required for the respective meeting you wish to attend in order to apply for a travel grant. For questions or additional information, please contact travelgrant@electrochem.org.

Submission deadlines for upcoming ECS biannual meetings:

- 229th ECS Meeting, San Diego, CA – February 12, 2016
- PRiME 2016, Honolulu, HI – June 10, 2016



AWARDED STUDENT MEMBERSHIPS

ECS Divisions offer **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 ECS Digital Library, and a subscription to *Interface*.

To apply for an awarded student membership, please visit the student awards page at www.electrochem.org/awards. For questions or additional information, please contact customerservice@electrochem.org.



Benefits of ECS Student Membership

Annual Student Membership Dues Are Only \$25

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electrochem.org/membership/student.html

The Electrochemical Society