

## ECS Summer Fellowship Winners

Each year ECS gives up to four Summer Research Fellowships to assist students in continuing their graduate work during the summer months in a field of interest to the Society. Congratulations to the following 2006 Summer Fellowship recipients. The reports of the 2006 Summer Fellows will appear in a future issue of *Interface*.

### 2006 Summer Fellowship Award Subcommittee

**Robin L. McCarley**, Chair,  
Louisiana State University

**Gary Blanchard**,  
Michigan State University

**Stanton Ching**,  
Connecticut College

**Daniel Higgins**,  
Kansas State University

**Theodore Kuwana**,  
University of Kansas

**Jordan Poler**,  
University of North Carolina  
at Charlotte

**Mary Elizabeth Williams**,  
Pennsylvania State University

**Francis Zamborini**,  
University of Louisville

**C. J. Zhong**,  
State University of New York  
at Binghamton



**FRANÇOIS LAFORGE** is the recipient of the Society's Edward G. Weston Summer Fellowship. He was admitted in 1990 to the École Normale Supérieure de Cachan and obtained an MS in applied physics in 1992 and an MS in chemical physics in 1996. He spent two years (1993-95) in Manila, Philippines, teaching science as part of the French National Service. His foreign experience inspired him to move to Boston where he taught physical science to French-American high school students. In 2001 he left teaching to pursue a PhD in physical chemistry at Queens College, CUNY, New York, under the supervision of Prof. Michael Mirkin. He is the recipient of the Rose Kfar Rose Dissertation Award, CUNY. His current research focuses on the study of charge transfer at the liquid-liquid interface, single cell metabolism, and the differentiation of cancerous cells with a scanning electrochemical microscope. He has presented his work in two publications and two conferences.



**ALEX MARTINSON** is the recipient of the Society's Colin Garfield Fink Summer Fellowship. He is a third year graduate student in chemistry and a member of Prof. Joseph Hupp's group at Northwestern University. His research interests include the application of the physical sciences, especially chemistry, to the fields of alternative and renewable energy. Alex received his BA in chemistry and mathematics from Luther College in 2003. In 2005, he won a Link Foundation Energy Fellowship to investigate interdigitated organic photovoltaics. Martinson is currently exploring novel device architectures for dye-sensitized solar cells to better understand their charge migration and recombination dynamics.



**JULIEN BRÉGER** is the recipient of the Society's Joseph W. Richards Summer Fellowship. He received his Diplôme d'Ingénieur Chimiste (equivalent to MSc) in 2002 from the Ecole Nationale Supérieure de Chimie de Paris (France), with a specialization in materials science. In 2003, he joined Prof. Clare P. Grey's research group at the State University of New York at Stony Brook (NY, USA), where he is currently finishing his PhD in solid-state chemistry. He has been working on layered lithium nickel manganese oxides, as promising, cheap, and non-toxic alternative positive electrode materials to the commercial  $\text{LiCoO}_2$  electrode used in Li-ion batteries. His research focuses on the structural study of the  $\text{LiNi}_{0.5}\text{Mn}_{0.5}\text{O}_2\text{-Li}_2\text{MnO}_3$  solid solution. High-energy X-ray and neutron diffraction techniques, coupled with ex- and in-situ Pair Distribution Function (PDF) analysis, Reverse Monte Carlo calculations and  $^6\text{Li}$  MAS NMR, are used to study the local and long-range structure of  $\text{Li}_x\text{Ni}_{0.5}\text{Mn}_{0.5}\text{O}_2$ , in order to investigate the nature of cation ordering and the effect of this local structure upon electrochemical cycling.



**YUMIN YANG** is the recipient of the Society's F. M. Becket Summer Fellowship. He received his bachelor's degree in industrial chemistry from Southwest Petroleum Institute (China) in 1994. He then worked as a research engineer in the National Engineering Research Center for Silicon in China until 2001. In 2003 he received his MS degree in chemistry from Louisiana Tech University supported with a Louisiana Tech University Excellent Graduate Student Research Award. Yang conducted a joint research project there between the chemistry department and the Institute for micromanufacturing in Dr. Frank Ji's group to develop new microcantilever sensor system. Currently he is a PhD candidate in analytical chemistry at Louisiana State University under the direction of Professor Robin L. McCarley. His work involves development of new electrochemically, stimuli-responsive surfactant structures, and the study of the corresponding redox-induced aggregation properties of these surfactants. They can serve as ideal small-molecule containers. He has coauthored four journal publications.

### Looking for Student News

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

Send all correspondence to:

The Electrochemical Society  
**INTERFACE**

65 South Main Street  
Pennington, NJ 08534-2839, USA  
Tel: 609.737.1902  
Fax: 609.737.2743  
E-mail: [interface@electrochem.org](mailto:interface@electrochem.org)

[www.electrochem.org](http://www.electrochem.org)

## Award Winners



### 2006 Student Research Award of the Battery Division

**KISUK KANG** received his BS degree in materials science and engineering from Seoul National University, Korea, in 2001 and his PhD in materials science and engineering from the Massachusetts Institute of Technology in 2006 working with Professor Gerbrand Ceder. Currently he is a postdoctoral research associate working for the Massachusetts Institute of Technology. His current interest is to design materials for energy storage using a combined approach of first principles calculations and experiments. His primary research focus to date has been on positive electrode materials of Li rechargeable batteries. He was awarded a Graduate Student Award, Gold Medal, at the fall 2005 Materials Research Society meeting.

### 2006 Morris Cohen Graduate Student Award of the Corrosion Division

**HIROAKI TSUCHIYA** received his bachelor's degree from Osaka University. Tsuchiya received the "Osaka University Engineering Award" (the Kusumoto Award, given to the best student in the department) during his final year in the undergraduate program. Tsuchiya's graduate work was on the semiconductor properties of very thin oxide films, under the direction of Shinji Fujimoto.

As a graduate student, Tsuchiya published five highly regarded papers in international journals. He also made more than 15 presentations at scientific meetings, including a poster presentation at the Gordon Research Conference on Aqueous Corrosion in 2002. During his PhD coursework, Tsuchiya was awarded "Overseas Training Program" funding for travel, stay, residence, research abroad. His travel included a three-month position at the University of Erlangen-Nuremberg. While there, he studied the electrochemical formation and self-organization behavior of porous layers on InP and published two journal papers on this project under the guidance of Patrik Schmuki.

After he received his PhD, he worked in Prof. Fujimoto's research group as a Senior Research Fellow, and then moved to the University of Erlangen-Nuremberg. He is currently the Senior Researcher for the Institute for Surface Science and Corrosion under the supervision of Patrik Schmuki. He is leading a research project on the formation and application of valve metal oxide nanostructures.

## 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.



### 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 \$4,000. The next fellowships will be presented in 2007.

Nominations and supporting documents should be sent to Robin L. McCarley, Louisiana State University, 18537 Plantation Court Drive, Prairieville, LA 70769-3728, USA; tel. 225.578.3239, e-mail: [tunnel@lsu.edu](mailto:tunnel@lsu.edu). **Materials are due by January 1, 2005.**



### 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. The award consists of a scroll, a prize of \$1,000, and membership in the Battery Division as long

as the winner is a Society member. The next award will be presented at the ECS fall meeting in Washington, DC, October 7-12, 2007.

Nominations and supporting documents should be sent to Robert Kostecki, Lawrence Berkeley National Laboratory, 1 Cyclotron Rd # 70-108B, Berkeley, CA 94720-8099, USA; tel: 510.486.6002; e-mail: [r\\_kostecki@lbl.gov](mailto:r_kostecki@lbl.gov). **Materials are due by March 15, 2007.**



The **MORRIS COHEN GRADUATE STUDENT AWARD OF THE CORROSION DIVISION** was established in 1991 to recognize outstanding graduate research in the field of corrosion science and/or engineering. The award consists of a scroll, a prize of \$1,000 and travel assistance to the meeting where the award will be presented (up to \$1,000). The next award will be presented at the ECS fall meeting in Los Angeles, California, 16-21, 2005.

Nominations and supporting documents should be sent to Shinji Fujimoto, Osaka University, Dept-MSP, 2-1 Yamada-oka, Suita, Osaka 565-0871, Japan; tel: 81.668797470; e-mail: [fujimoto@mat.eng.osaka-u.ac.jp](mailto:fujimoto@mat.eng.osaka-u.ac.jp). **Materials are due by December 15, 2006.**

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. The award consists of a prize determined by the Executive Committee of the Society not to exceed \$1,500. The next award will be present at an upcoming section meeting.

Nominations and supporting documents should be sent to Dan Bizzotto, University of British Columbia, Dept. of Chemistry, 2036 Main Mall, Vancouver, BC V6T-1M1, Canada; e-mail: [bizzotto@chem.ubc.ca](mailto:bizzotto@chem.ubc.ca). **Materials are due February 28, 2007.**



### 2006 Oronzio de Nora Fellowship Recipient

**NICOLAS MANO** was born and educated in France. He received his MSc in chemistry and physics in 1997 and his PhD in 2001 from the University of Bordeaux I. His doctoral thesis, under the supervision of Prof.

Alexander Kuhn, was on affinity-assembled multi-layers for dehydrogenase-based biosensors. In his thesis he developed a class of nitrofluorenone-derived redox mediators, allowing the rapid electro-oxidation of NADH at a potential as low as -50 mV vs.

Ag/AgCl with a bimolecular rate constant exceeding  $104 \text{ M}^{-1} \text{ s}^{-1}$ . His building of a well-defined functional redox mediator/ $\text{Ca}^{2+}$ /

NAD<sup>+</sup>/enzyme multilayer at an electrode/electrolyte interface was recognized as the Best Thesis in Chemistry by the Aquitaine Section of the French Chemical Society. In 2001 Dr Mano joined the research group of Prof. Adam Heller's at the University of Texas in Austin as a postdoctoral fellow. In Austin he designed the first effective electrocatalyst for the four-electron reduction of  $\text{O}_2$  to water under physiological conditions, which he applied in glucose oxidizing- $\text{O}_2$  reducing membrane-less biofuel cells. He built the smallest biofuel cell operating under physiological conditions and producing  $0.44 \text{ mW cm}^{-2}$  at +0.52 V. He then showed the functioning of the miniature cell in a living plant, a grape. His work on biofuel cells was recognized by the 2003 Luigi Galvani Prize of the Bioelectrochemical Society, awarded bi-annually to a researcher under the age of 35.

## 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 below 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).

## 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 the spring 2007 meeting in Chicago, Illinois, please 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 spring 2007 travel grants is January 3, 2007.**

## ECS Awarded Membership Application

ECS Divisions are offering Awarded Student Memberships to qualified fulltime students. To be eligible, students must be in their final two years of an undergraduate program or be 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, *Interface* online, and a CD-ROM of the *Journal* and *Letters*.

### Personal Information

Name: \_\_\_\_\_ Date of Birth: \_\_\_\_\_  
Home Address: \_\_\_\_\_  
Phone: \_\_\_\_\_ Fax: \_\_\_\_\_  
Email: \_\_\_\_\_

### School Information

School: \_\_\_\_\_  
(please include Division and Department)  
Address: \_\_\_\_\_  
Undergraduate Year (U) or Graduate Year (G) - circle one: U3 U4 G1 G2 G3 G4 G5  
Major Subject: \_\_\_\_\_ Grade Point Average: \_\_\_\_\_ out of possible: \_\_\_\_\_  
Have you ever won this award before? YES NO If yes, how many times? \_\_\_\_\_

### Divisions (please select only one):

- ☐ Battery
- ☐ Corrosion
- ☐ Dielectric Science & Technology
- ☐ Electrodeposition
- ☐ Electronics and Photonics
- ☐ Energy Technology
- ☐ Fullerenes, Nanotubes, and Carbon Materials
- ☐ High Temperature Materials
- ☐ Industrial Electrolysis & Electrochemical Engineering
- ☐ Luminescence & Display Materials
- ☐ Organic & Biological Electrochemistry
- ☐ Physical and Analytical Electrochemistry
- ☐ Sensor

### Signatures

Student Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
Faculty member attesting to eligibility of full time student:  
Faculty Member: \_\_\_\_\_ Dept.: \_\_\_\_\_  
Signature: \_\_\_\_\_ Date: \_\_\_\_\_