

STUDENT NEWS



P. M. Gomadam

IE&EE Division

Student Achievement Award Winner



PARTHASARATHY M. GOMADAM is currently a doctoral student in the Department of Chemical Engineering at the University of South Carolina. He obtained his bachelor's degree in chemical and electrochemical engineering from the Central Electrochemical Research Institute, India, in 1998.

Gomadam's PhD is focused on electrochemical-thermal modeling of lithium-ion batteries. He developed a method for estimating the reversible heat generated in a battery from its voltage and temperature responses during constant-current discharge and used this method to estimate the state-of-charge dependent entropy of a lithium-ion battery. Gomadam also developed an electrochemical-thermal model for a spirally wound lithium-ion battery and optimized some of its design and operating conditions in order to obtain from it the maximum specific energy, without crossing a safe temperature limit.

Gomadam is currently studying the relative advantages and disadvantages of the plate-type and spiral designs in order to be able to decide which design is better under given conditions of operation. He is also developing semi-empirical models to describe the non-isothermal discharge behavior of lithium-ion batteries. The solutions to these models are analytical and can be used in modeling capacity fade and cycle-life behavior of lithium-ion batteries. Gomadam can be contacted via e-mail at pmgomada@engr.sc.edu. ■



Jingxin Zhang

IE&EE Division

H. H. Dow Memorial Student Achievement Award Winner



JINGXIN ZHANG is currently a graduate student in the Department of Chemical Engineering at Worcester Polytechnic Institute. He is pursuing his PhD degree under the direction of Professor Ravindra Datta. Zhang obtained both his bachelor's and master's degree in chemical engineering at Dalian University of Technology in Dalian, China.

Zhang began his research on PEM fuel cell at the Fuel Cell R&D Center in Dalian Institute of Chemical Physics, China, in 1997. His research includes preparation and characterization of supported electrocatalysts, electrode structure optimization, and MEA fabrication. He joined Worcester Polytechnic Institute in 1999 and his PhD thesis focused on the development of CO tolerant PEM fuel cells. Through a systematic approach, Zhang found the significant effect of anode inlet flow rate and cathode oxygen partial pressure on fuel cell performance. He fully explained this phenomenon with a theoretical model. He also published the first detailed study on the anode potential oscillations found in PEM fuel cell. The dynamic anode model he developed has successfully predicted the oscillatory behavior both qualitatively and quantitatively. In addition, Zhang established an on-line monitoring technique to study the CO electrooxidation kinetics and mechanisms on different electrocatalysts at real PEM fuel cell operating conditions.

Zhang received the Dr. Chue-San Yoo Fellowship in August 2001. ■

Student Achievement Awards



H. H. Dow Memorial

Student Achievement Award

The H. H. Dow Memorial Student Achievement Award was established by the Industrial Electrolysis and Electrochemical Engineering Division to recognize promising young engineers and scientists in the fields of electrochemical engineering and applied electrochemistry. This award was made possible by a gift from the Dow Chemical Company Foundation and is intended to encourage the recipient to continue a career in electrochemical engineering or applied electrochemistry. The award honors the memory of H. H. Dow, a prolific inventor and tenacious businessman, and one of the principal organizers and a charter member of The Electrochemical Society.

This award, which consists of a certificate and a check in the amount of \$1,000 is made each year and is intended to be used to pay for expenses associated with the recipient's education or research project, tuition, books, equipment, or supplies. The next award will be presented at the Society's spring 2004 meeting in San Antonio, TX.

To be eligible to receive this award, candidates must be enrolled in a college or university as a graduate student or have been accepted for enrollment. The application for the award must include: (1) transcripts of all post-secondary school academic work; (2) a description of the research project to be engaged in during the next year; (3) a statement which describes the relationship of the project to the field of electrochemical engineering or applied electrochemistry; and (4) a biography, resume, or curriculum vitae. The description and

statement should be no longer than two double-spaced typewritten pages. The application must also include a letter of recommendation from the applicant's research supervisor (or department advisor for new graduate students).

The recipient shall be notified by the chairman of the Industrial Electrolysis and Electrochemical Engineering Division and shall be requested, as a condition of the award, to submit to the Division chairman a written summary of research accomplished during the year in which he or she was an award recipient. The chairman will have the option of distributing this summary to members of the Division or submitting it to the editor of the *Journal* for consideration for publication.

All application materials should be sent to Dr. Peter Foller, PPG Industries,

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Student News

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Inc., Chemicals Technical Center, 440 College Park Dr., Monroeville, PA 15146, USA; tel: 724.235.5181, fax: 724.325.5105, e-mail: foller@ppg.com.

The deadline for receipt of completed applications is September 1, 2003.



IE&EE Division Student Achievement Award

A second equivalent award will be made and funded by the IE&EE Division and the recipient will be selected from among the applicants for the H. H. Dow Memorial Award. The award will be presented at the Society's spring 2004 meeting in San Antonio, TX. This award also consists of a certificate and a check in the amount of \$1,000. Again, the award is to be used to pay for expenses associated with the recipient's education or research project. As with the H. H. Dow award, the recipient will be required to submit a written summary of the research accom-

plished during the award year to the chairman of the Division.

All application materials should be sent to Dr. Peter Foller, PPG Industries, Inc., Chemicals Technical Center, 440 College Park Dr., Monroeville, PA 15146, USA; tel: 724.235.5181, fax: 724.325.5105, e-mail: foller@ppg.com.

The deadline for receipt of completed applications is September 1, 2003.

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/student/student.htm. ■



For the latest details
on all ECS travel grants,
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The Divisions of the Society are offering Awarded Student Memberships to qualified full-time students. Eligible students must be in their final two years as undergraduates or be enrolled in a graduate program in science, engineering, or education (with a science or engineering degree). Awarded memberships are renewable for up to four years; applicants must reapply each year. Memberships include subscriptions to the *Journal* online, *Letters* online, and *Interface*.

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The Electrochemical Society, Inc.

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ecs@electrochem.org

Information and applications available at:

www.electrochem.org/student/student.htm

ECS is an international, educational organization with more than 8,000 scientists and engineers in over 70 countries. Members of ECS are engaged in a broad range of technical interests including: Batteries, Corrosion, Dielectric Science & Technology, Electrodeposition, Electronics, Energy Technology, Fullerenes, High Temperature Materials, Industrial Electrolysis & Electrochemical Engineering, Luminescence & Display Materials, Organic & Biological Electrochemistry, Physical Electrochemistry, and Sensors.