

2009 Oronzio de Nora Industrial Electrochemistry Award Recipient



VIJAYASEKARAN BOOVARAGAVAN is the 2009 recipient of the Oronzio de Nora Industrial Electrochemistry Fellowship of ECS. This year's fellowship is the third time he has received this prestigious international award. (See his report on page 64 of the winter 2008 issue of *Interface*; his 2009 report will be published in an upcoming issue.)

Dr. Boovaragavan (Vijay) received his Master of Engineering degree in chemical engineering from Annamalai

University, India, in 2002 and his PhD in chemical engineering from Central Electrochemical Research Institute (CECRI), India, in 2005. He is involved in studying electrochemical processes namely electro-organic synthesis, electrochemical power sources, and electroplating using mathematical models with novel simulation schemes and dynamic optimization procedures. He did his doctoral research under the supervision of Dr. Ahmed Basha, scientist and Dean. It included the evaluation of exact optimal control strategy for electrochemical reactors, successful development of simple mathematical model for lead-acid batteries, and formulation of a novel simulation scheme for elucidating tertiary current distribution in electrochemical cells for different geometries. He was a Junior and Senior Research Fellow at the Council for Scientific and Industrial Research (CSIR), India, which supported his entire doctoral research. He received the Young Scientist Award at CECRI twice in a row for the years 2003 and 2004 for his outstanding research output. His work on dynamic optimization of electrochemical reactors gained him international recognition through the 2006 Oronzio de Nora foundation's young author award of the International Society of Electrochemistry.

In the spring of 2006, Vijay joined the research group of Venkat Subramanian in the department of Chemical Engineering at Tennessee Technological University (TTU) in

Cookeville, Tennessee as a postdoctoral associate. At TTU, he has coauthored ten research articles focusing mainly on the development of a novel reformulated model for lithium-ion batteries that can predict the battery behavior in milliseconds. At TTU, he has helped three graduate students in their thesis and research, and has taught a course for undergraduates entitled Chemical Engineering Operations. He is currently working on modeling corrosion in electrodes, cycling/capacity-fade analysis of lithium-ion batteries using a reformulated real-time model, and overcoming the numerical and computational difficulty associated with different electrochemical models like impedance and fuel cell models. The successful development and implementation of an efficient reformulated model and computational schemes will help pave the way for using electrochemical power sources in niche applications such as hybrid vehicles, satellites, online control, and monitoring. He has 19 peer-reviewed journal publications, two book chapters and 23 scientific presentations to his credit.

The Oronzio de Nora Industrial Electrochemistry Fellowship was established in 2003 to assist a postdoctoral scientist or engineer in the research of the field of industrial electrochemistry. The award, funded by the Oronzio de Nora Foundation, is in the amount of \$25,000 for one year, twice renewable based on successful research progress as judged by the award's committee.

2008 Young Author Award Winners

The Society is pleased to announce the recipients of the 2008 Norman Hackerman Young Author Awards. The awards are given annually for the two best papers published in the *Journal of The Electrochemical Society* (JES) by authors under 31 years of age. The awards were established in 1928 and renamed for Dr. Norman Hackerman, former Editor of JES. (**Ed. Note:** See the ECS Classics piece on Dr. Hackerman in the summer 2008 issue of *Interface*, p. 23.) The selection subcommittees were chaired by Randy Leising, Greatbatch, Inc., for the Electrochemical Science and Technology Subcommittee; and Mike Kelly, Sandia National Laboratory, for the Solid-State Science and Technology Subcommittee.

(continued on next page)

Call for Nominations

For details on each award, including a list of requirements for award nominees, and in some cases, a downloadable nomination form, please go to the ECS website (www.electrochem.org) and click on the "Awards" link. This will take you to a general page that will then lead to the individual awards. The awards are grouped in one of four categories: Society Awards, ECS Division Awards, Student Awards, and ECS Section Awards. Click on one of these sub-links to find the individual award. Please see each for information about where nomination materials should be sent; or you may contact the ECS headquarters office by using the contact information on the awards Web page. For student awards, please see the Student News Section in this issue.

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KEVIN RALSTON was awarded the 2008 Young Author Award in the category of Electrochemical Science & Technology for his paper, "Corrosion Inhibition of Aluminum Alloy 2024-T3 by Aqueous Vanadium Species" (JES, **155**, C350, 2008).

Dr. Ralston received his doctorate this past December from The Ohio State University where he worked in the Fontana Corrosion Center within the Department of Materials Science and Engineering. He also earned his Bachelor's degree in 2003 and Master's degree in 2007 from the same department. Dr. Ralston's research interests have been focused on the corrosion of light alloys, most specifically aluminum. His graduate work focused on the use of vanadate-based inhibitors in conjunction with anion-exchange clay pigments to inhibit corrosion of aircraft grade aluminum.

Dr. Ralston is currently a research fellow in the ARC Centre of Excellence for Design in Light Metals at Monash University located near Melbourne, Australia. His current projects on aluminum and other light alloys include the exploration of the relationships between grain size and corrosion resistance, and the possible role of processing on corrosion; and the development and evaluation of highly corrosion resistant medium strength Al-Cu-Mg alloys through microstructure manipulation.



YUDI SETIAWAN and **EU JIN TAN** were awarded the 2008 Young Author Award in the category of Solid-State Science & Technology for their paper, "Materials and Electrical Characterization of $\text{Er}(\text{Si}_{1-x}\text{Ge}_x)_{2-y}$ Films Formed on $\text{Si}_{1-x}\text{Ge}_x(001)$ ($x = 0-0.3$) via Rapid Thermal Annealing" (JES, **155**, H26, 2008).

Yudi Setiawan received his BEng and PhD in materials science and engineering from Nanyang Technological University (NTU), Singapore, in 2004 and 2008, respectively. In 2004, he obtained a scholarship sponsored by Chartered Semiconductor Manufacturing Ltd to pursue his PhD studies at NTU. His doctoral topic was "Pulsed-Laser Annealed Silicides for Advanced MOS Applications." His doctoral work focused on the thermodynamic and kinetic investigation on metal-semiconductor compound (silicide) formation during nano-second high-energy laser annealing, thermal and mechanical properties of laser-annealed silicides, and electrical properties of silicide/semiconductor interfaces.

Dr. Setiawan was the recipient of the "E-MRS 2007 Young Scientist Award" for his paper on a novel method to form an atomically abrupt silicide/silicon interface using laser annealing. He has authored or co-authored more than 20 technical papers and conferences. Since September 2008, he has been working as a Senior Engineer at Chartered Semiconductor Manufacturing Ltd and is working on development of sub 32 nm technology nodes.



Eu Jin Tan received his doctorate from the Nanyang Technological University (NTU), Singapore in 2009. He majored in electrical and electronic engineering, and his thesis is entitled, "Study of Erbium Disilicide and Its Application in Schottky Source/Drain Silicon Nanowire MOSFETs." In 2004, he obtained a scholarship sponsored by the Institute of Materials Research Engineering (IMRE) to pursue his PhD studies for the subsequent four years.

His work included the investigation of Si based metal semiconductor contacts and nanodevices. From 2002 to 2004, he worked as a Product Engineer with DenseLight Semiconductors Pte Ltd. His job scope included the testing and development of distributed feedback lasers for optical communication applications. Since April 2008, he has been working as an engineer at Chartered Semiconductors Manufacturing Ltd.

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The **EDWARD GOODRICH ACHESON AWARD** was established in 1928 for distinguished contributions to the advancement of any of the objects, purposes, or activities of ECS. The award consists of a gold metal, wall plaque, and a prize of \$10,000. The next award will be presented at the ECS fall meeting in Las Vegas, Nevada, October 10-15, 2010.

Vegas, Nevada, October 10-15, 2010.

Nominations and supporting documents should be sent to Paul Kohl, Georgia Tech, School of Chemical & Biomolecular Engineering, 311 Ferst Drive, Atlanta, GA 30331-0100, USA; e-mail: paul.kohl@chbe.gatech.edu. **Materials are due by March 1, 2010.**



The **GORDON E. MOORE MEDAL FOR OUTSTANDING ACHIEVEMENT IN SOLID STATE SCIENCE AND TECHNOLOGY** was originally established in 1971 (as the Solid State Science and Technology Award) for distinguished contributions to the field of solid state science. The award recognizes outstanding contributions to the fundamental understanding and technological

applications of solid state materials, phenomena, and processes. The award consists of a silver medal, a wall plaque, and prize of \$7,500. The next award will be presented at the ECS fall meeting in Montreal, Canada, May 1-6, 2011.

Nominations and supporting documents must be submitted electronically (additional hard copy submissions are optional) to Jerzy Ruzyllo, Penn State University, 214 Electrical Engineering West, University Park, PA 16802-2701, USA; e-mail: jruzyllo@psu.edu. **Materials are due by May 1, 2010.**



The award of **ECS FELLOWS** was established in 1989 for individual contribution and leadership in the achievement of science and technology in the area of electrochemistry and solid-state sciences and current active

participation of the affairs of ECS, and consists of a scroll, lapel

pin, and announcement in a Society publication. The next Fellows will be presented at the ECS fall meeting in Las Vegas, Nevada, October 10-15, 2010.

Nominations and supporting documents should be sent to Andrzej Wieckowski, University of Illinois, Chem/RAL 58B Box 56-5, 600 S. Mathews Ave., Urbana, IL 61801-3602, USA; e-mail: andrzej@scs.uiuc.edu. **Materials are due by January 15, 2010.**



The **CHARLES W. TOBIAS YOUNG INVESTIGATOR AWARD** was established in 2003 to recognize outstanding scientific and/or engineering work in fundamental or applied electrochemistry or solid-state science and technology by a young scientist or engineer. The award consists of a certificate, a prize of \$5,000, ECS Life Membership, and travel assistance to the meeting of the award presentation (up to \$1,000). The next award will be presented at the ECS fall meeting in Las Vegas, Nevada, October 10-15, 2010.

Nominations and supporting documents should be sent to Krishnan Rajeshwar, University of Texas, 700 Planetarium Place CPB 130, PO Box 19065, Arlington, TX 76019-0065, USA; e-mail: rajeshwar@uta.edu. **Materials are due by January 15, 2010.**



The **ORONZIO DE NORA INDUSTRIAL ELECTROCHEMISTRY FELLOWSHIP OF THE ELECTROCHEMICAL SOCIETY** was established in 2003 to assist a postdoctoral scientist or engineer in the research of the field of

industrial electrochemistry, and consists of a \$25,000 scholarship for one year, twice renewable based on successful research progress as judged by the award's committee. The next award will be announced April 1, 2010.

Nominations and supporting documents should be sent to Albert L. Barnes, Eltech Systems Corp., 625 East Street, Fairport Harbor, OH 44077-5668, USA; e-mail: al.barnes@denora.com. **Materials are due by January 1, 2010.**

ECS Division Awards



The **BATTERY DIVISION RESEARCH AWARD** was established in 1958 to recognize outstanding contributions to the science and technology of primary and secondary cells and batteries and fuel cells. The award consists of a scroll, a prize of a \$2,000, travel assistance to the meeting if required, and membership in the Battery Division for as long as the winner is an ECS member. The next award will be presented at the ECS fall meeting in Las Vegas, Nevada, October 10-15, 2010.

Nominations and supporting documents should be sent to KM Abraham, E-Kem Sciences, 57 Colonial Rd., Needham, MA 02492-1612, USA; tel. 781.444.8453; e-mail: kmabraham@comcast.net. **Materials are due by March 15, 2010.**



The **TECHNOLOGY AWARD OF THE BATTERY DIVISION** was established in 1993 to encourage the development of battery and fuel cell technology. The award

consists of a scroll, prize of \$1,000 and membership in the Battery Division for as long as the winner is a Society member. The next award will be presented at the ECS fall meeting in Las Vegas, Nevada, October 10-15, 2010.

Nominations and supporting documents should be sent to Martin Winter, Westfaelische Wilhelms Univ., Institute for Physical Chemistry, Muenster Corrensstrasse 28/30, D-4819 Muenster, Germany; tel. +49.251.83.36033; e-mail: martin.winter@uni-muenster.de. **Materials are due by March 15, 2010.**



The **CORROSION DIVISION H. H. UHLIG AWARD** was established in 1972 to recognize excellence in corrosion research and outstanding technical contributions to the field of corrosion science. The award consists of a scroll, a prize of \$1,500, and travel assistance

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to the meeting of the award presentation (if required). The next award will be presented at the ECS fall meeting in Las Vegas, Nevada, October 10-15, 2010.

Nominations and supporting documents should be sent to Robert Kelly, University of Virginia, 860 Charter Oaks Dr., Charlottesville, VA 22901-0630, USA; e-mail: rgk6y@virginia.edu. **Materials are due by December 15, 2009.**



The **HIGH TEMPERATURE MATERIALS DIVISION OUTSTANDING ACHIEVEMENT AWARD** was established in 1984 to recognize excellence in high temperature materials research and outstanding technical contributions to the field of high temperature materials science. The award shall consist of a scroll, prize of a \$1,000, complimentary meeting registration, and travel assistance to meeting of award presentation (up to \$1,000). The next award will be presented at the ECS fall meeting in Las Vegas, Nevada, October 10-15, 2010.

Nominations and supporting documents should be sent to the award chair, Timothy R. Armstrong, Carpenter Technology, Corp. Res. & Dev., PO Box 14662, Reading, PA 19612, USA; tel: 610.208.3923; e-mail: tarmstrong@cartech.com. **Materials are due by January 1, 2010.**



The **CENTENNIAL OUTSTANDING ACHIEVEMENT AWARD OF THE LUMINESCENCE AND DISPLAY MATERIALS DIVISION** was established in 2002 to encourage excellence in luminescence and display materials research and outstanding contributions to the field of luminescence and display materials science. It consists of a scroll and a prize of \$1,000. The next award will be presented at the ECS meeting in Las Vegas, Nevada, October 10-15, 2010.

Nominations and supporting documents should be sent to Anant A. Setlur, GE Global Research Center, 1 Research Circle, Room K1-4A41, Niskayuna, NY 12309, USA; tel: 518.387.6305; e-mail: setlur@research.ge.com. **Materials are due by January 1, 2010.**



The **MAX BREDIG AWARD IN MOLTEN SALT CHEMISTRY OF THE PHYSICAL AND ANALYTICAL ELECTROCHEMISTRY DIVISION** was established in 1984 to recognize excellence in molten salt chemistry research and consists of a scroll and a prize of \$1,500. The next award will be presented at the ECS fall meeting in Las Vegas, Nevada, October 10-15, 2010.

Nominations and supporting documents should be sent to Paul C. Trulove, Chemistry Department, US Naval Academy, 572M Holloway Rd., Stop 9B, Annapolis MD, 21402-5026, USA; tel: 410.293.6622, e-mail: trulove@usna.edu. **Materials are due by January 31, 2010.**



The **OUTSTANDING ACHIEVEMENT AWARD OF THE SENSOR DIVISION** was established in 1989 to recognize outstanding achievement in the science and or technology of sensors and to encourage excellence of work in the field. It consists of a scroll and a prize of \$1,000. The next award will be presented at the ECS meeting in Las Vegas, Nevada, October 10-15, 2010.

Nominations and supporting documents should be sent to Girish M. Kale, Univ. of Leeds, Inst. for Materials Research, Leeds, West Yorkshire LS29JT, UK; tel: +44.113.343.2805; e-mail: g.m.kale@leeds.ac.uk. **Materials are due by January 1, 2010.**

ECS Section Awards

The **ALLESANDRO VOLTA MEDAL OF THE EUROPEAN SECTION** was established in 1998 to recognize excellence in electrochemistry and solid-state science and technology research, and consists of a silver medal and a check for \$500. The next award will be presented at the ECS meeting in Las Vegas, Nevada, October 10-15, 2010.

Nominations and supporting documents should be sent to Pawel J. Kulesza, University of Warsaw, Department of Chemistry, Pasteura 1, PL-02-093 Warsaw, Poland; tel: 48.228220211, ext. 289 (office) or 277 (lab), fax: +48.22 8225996, e-mail: pkulesza@alfa.chem.uw.edu.pl. **Materials are due by March 15, 2010.**

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