ECS Annual Report 2011

Looking Beyond the Horizon

Many diverse influences affect the Society's long-term horizon. These influences have driven change during the past several years, and our response to them has led to significant new program initiatives in 2011. On the horizon we realize that technology will continue to drive content providers such as ECS in new directions. We especially appreciate that the increased relevance of electrochemistry and solid state science and technology has created a proliferation of new meetings and journals in our field. The Society has addressed these influences by investing in technology and repositioning our publications so that beyond the horizon we continue to be the steward and preeminent source of information in our science.

There were dramatic changes in our publications last year resulting from our decision to create three new journals. Beginning in July 2012, ECS will publish two full-paper, peer-reviewed journals: our flagship *Journal of The Electrochemical Society*, which will contain papers in electrochemical science and technology (EST); and the new *ECS Journal of Solid State Science and Technology* covering solid state science and technology (SSST). Similarly, we will publish two peer-reviewed letters journals with the papers divided in the same way. These two new letters journals, *ECS Electrochemistry Letters* and *ECS Solid State Letters* will replace *Electrochemical and Solid-State Letters* which, after a successful reign, retires proudly.

As a result of this division of scope, we have made corresponding changes to the Editorial Board that handles the content of the journals. Our single Editorial Board has been split into two Boards appropriately representing the EST and SSST content in the new journals. Additional Board members have been added to provide efficiency and greater editorial leadership and alignment in each technical area within the table of contents (TOC) of the journals. There is a now a Technical Editor assigned for each technical section of the TOC, rather than a single editor for the entire publication.

The connection between ECS publications and our meetings—especially in terms of technical content—is extremely strong, and a driving force in the dissemination of research, the ultimate goal of our Society. Both technology and the relevance of the science have had their impact on ECS meetings. Abstract submissions (4,828) and attendance (5,304) for the 2011 biannual meetings were at an all-time high.

We also introduced our first Electrochemical Energy Summit (E2S) at the fall meeting, which provided attendees with the chance to meet and learn from industry leaders, electrochemical researchers, and other scientists with an understanding of the critical challenges in global energy. This multi-day exchange of information, brainpower, and technological possibilities

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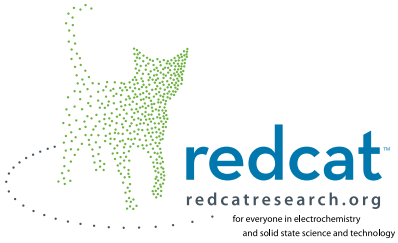
helped foster the communication between policy makers and energy stakeholders—essentially a universal audience—about the opportunities of electrochemical energy systems, and provided researchers with a platform to develop globally critical solutions and systems. E2S was so well-received that a second one is planned for PRiME 2012.

During 2011 we also planned the ECS Clean Water Technologies Symposium, which was successfully presented at our spring 2012 meeting and involved a collaboration with the Bill and Melinda Gates Foundation. Electrochemistry represents solutions to some of the world's greatest environmental and energy challenges and our meeting symposia and attendance reflect the interest and importance in our field.



The influence of all of these important initiatives was one of the motivations that inspired us to create Redcat,™ a community and research website located at redcatresearch.org. As the essential tool for everyone in electrochemistry and solid state science and technology, Redcat provides a unique research and networking opportunity for our entire community. Beyond the horizon of simply providing a dynamic research database, Redcat links people, places, and content together by creating online venues where members may meet in groups, share ideas and work together, discover or schedule events, and be introduced to a global web of connections.

Along with strong participation in our programs comes strong financial support and 2011 was also a record setting year from a financial standpoint. Our net operating surplus of $1.3 million was the largest in ECS history, and these are important funds to support the high cost of technological advancements and program development, and to support our endowments. Growth in our endowments is important because it is clear that there will be pressure to continue generating financial support through membership and subscription revenues, and our broader financial goal is to cover a high percentage of the operating expenses through support from endowments. This is the main reason we have reinitiated fund raising activities through the ECS Development Subcommittee. These activities led to the largest contribution ever received by the Society—$208,000 from Dr. Robert Dean Hancock.

Never in our history have we experienced this level of interest in and importance of our programs. The ECS Board of Directors is looking beyond the horizon to anticipate the needs of our community to serve them better.

Esther Takeuchi
ECS President

Roque Calvo
Executive Director

Publications

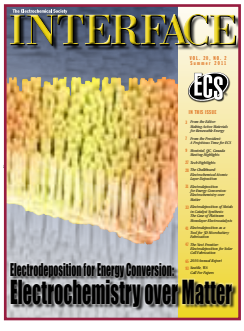
The Electrochemical Society (ECS) is a charitable organization chartered under Section 501(c)(3) of the United States Internal Revenue Code, which is the same classification as a church or institute of higher education, and it enables the same type of charitable tax deductions. Some constituents have misinterpreted the "Inc." (Incorporated) part of the name to identify ECS as a profit-making enterprise, but incorporation in the United States does not define the mission nor the tax status of an organization. ECS was incorporated in 1930 and, among other programs, manages highly professional publications, which might create the impression that we are a commercial enterprise in an industry dominated by profit-making publishers. We are *not* a commercial enterprise, and the Society's mission has been, and continues to be, the dissemination of content in electrochemical and solid state science and technology.

Ten years ago, at a time when the scientific community began discussing the possibility of free or open technical content on the Web, we started building the ECS Publications Endowment as part of our Centennial Campaign. We felt it was important to plan for open access of our technical content because the cost for knowledge slows or deters the advancement of science. It is still our goal and we continue our efforts to find the financial resources to create open access to the ECS Digital Library.

Robert Dean Hancock

In 2011, the Society received a boost toward our goal. We received a generous bequest from the estate of **Robert Dean Hancock**, founder of the Micromanipulator Company. The bequest was a cash gift of over $208,000, along with stock shares in the company. While Dr. Hancock was not a member of ECS, he greatly admired the *Journal of The Electrochemical Society*, and fittingly, his bequest will be added to the Society's Publications Endowment. This is the largest gift received by the Society to date.

Dr. Hancock's company created leading edge analytical probe stations and accessories for semiconductor probing professionals. When the estate was asked why Dr. Hancock, a nonmember, made the donation, we were told that Dr. Hancock recognized the important role ECS played in the advancement of electrochemistry, and he "liked the *Journal*." The answer was wonderfully simple and yet profound; and it reinforced both the importance of our mission and the value of giving to ECS.



As has become the case increasingly over the years, the Society's publications have been at the forefront of energy-related issues. In the summer 2011 issue of *Interface*, **Krishnan Rajeshwar**, Editor of the magazine, wrote about active materials for renewable energy: the daunting hurdles associated with optimizing the efficiency and hence the cost-effectiveness of renewable energy production systems. But replacing fossil fuel-based energy and thus mitigating greenhouse gas emissions has become just a great a need. *Interface* and the Society's technical journals have become the "go to" place to read about these issues.

In the spring 2011 issue of *Interface*, the magazine devoted its pages to the subject of graphene, a "hot topic" in the field. This two-dimensional material has come to the fore from both

fundamental and practical application perspectives. As **Dirk Guldi**, Chair of the ECS Fullerenes, Nanotubes, and Carbon Nanostructures Division noted in the introduction to the featured articles, "Of all the elements in the periodic table, only carbon provides the basis for life on earth. Carbon is also the key for many technological applications ranging from drugs to synthetic materials that have become indispensable in our daily life and have influenced the world's civilization for centuries." The papers on graphene are some of the mostly highly-cited articles in ECS publications.

As a nonprofit organization, ECS been a leader in many aspects of publishing—we were the first Society in our field to: publish online journals as each article became available, digitize archival content, and publish all our content in a Digital Library. Our flagship *Journal of The Electrochemical Society* (JES) has been in publication since our founding in 1902, and continues to be one of the most-highly cited journals in electrochemistry. There are no fees to submit to or publish in any ECS journals, and the Society's Editorial Boards and publications staff have dramatically improved publication lagtime for the journals.

Significant changes to the ECS journals were set in place in 2011. Challenges to the journals—the proliferation in the sheer number of journals, severe competition from for-profit publishers, and debate over open access publishing practices (good and bad)—became more urgent starting in 2010. A small strategy group consisting of the ECS Executive Committee, the journal Editors, and key publishing staff studied those challenges and took a closer look at our publishing practices and plans. In 2011, as a first step, the Society leadership formed a Technical Interest Area (TIA) Task Force, which set about to understand, and attempt to codify, the Society's "technical domain." This resulted in a revised definition of the Society's TIAs. Once the new TIAs were established, the next consideration was "did the Society's technical journals represent the TIAs adequately?" After taking into consideration that the most well-known impact factor (Thomson Reuters *Journal of Citation Reports*) for the journals were adversely affected by their containing both electrochemical and solid state and technology papers, the decision was made to "split" the journals. In 2012, we will continue publishing JES, re-scoped to contain only papers in electrochemistry, and will launch three new journals: *ECS Journal of Solid State Science and Technology*, *ECS Electrochemistry Letters*, and *ECS Solid State Letters*.

In addition to these changes within ECS, in 2011 the American Institute of Physics (AIP), long time online host of ECS content, announced it would no longer provide services to ECS. As a result, the ECS Digital Library will move to Stanford University's outstanding HighWire Press online platform. The Society was also looking for new homes for the manuscript submission software for the journals, meeting abstracts, and *ECS Transactions*.

The Society consistently supports up and coming scientists and engineers through a variety of ways: student travel grants, summer fellowships, and poster session awards. One of the most significant ways in which the Society recognizes their work is through the **Norman Hackerman Young Author Awards** for the best papers from the *Journal of The Electrochemical Society* of the previous year. The awards were established in 1928 for the two best papers published in JES; and a generous gift from **Jerry Woodall**, in honor of Hackerman, enabled the Society to increase the awards.

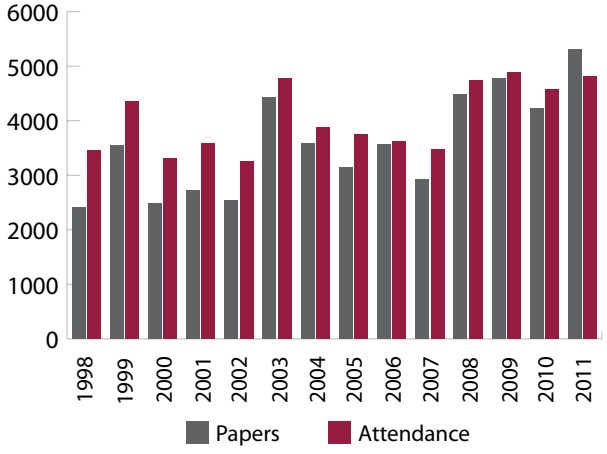
*The **Norman Hackerman Young Author Award** winners received their awards at the Boston meeting from ECS President **Esther Takeuchi** (center). In the category of Solid State Science & Technology, the winners were **Stephen E. Potts** (right), **Erik Langereis** (not present), and **Gijs Dingemans** (left). Also not present in Boston was **Xingbao Zhu**, who received the award in the category of Electrochemical Science & Technology.*

*Still writing…an editor's work is never done. **R. Winston Revie** autographed copies of his new book at the ECS meeting in Montréal, to celebrate publication of the third edition of the classic monograph,* Uhlig's Corrosion Handbook.

John Wiley & Sons provided copies of the newest edition (the 5th) of Modern Electroplating *for a drawing at the Boston meeting.* Modern Electroplating, *the Society's first monograph is edited by **Mordechay Schlesinger** and the late **Milan Paunovic**. **Rob Mantz** (left), one of the winners, received his autographed copy from Professor Schlesinger (far right). Looking on is **Bob Esposito**, Associate Publisher with Wiley.*

Meetings

Since its inception in 1902, ECS has been an international organization, with scientists and technologists from around the world attending the Society's very first conferences: there were nine countries represented on the founding charter. In recent decades, ECS has taken its conferences on the road with increasing frequency, in order to bring the conversation about electrochemistry and solid state science to people doing very exciting work. Research in electrochemistry is happening in more than 75 countries, and true to our mission, we are working with scientific and engineering groups in many different countries to advance the science with the goal of attracting the best research papers for dissemination at our meetings and in our publications, regardless of where the work originates. Not only



does the Society organize and facilitate the exchange of information by organizing meetings, we also support those new to the field by providing travel grants.

In March of 2011, the Society again sponsored the **China Semiconductor Technology International Conference** (CSTIC), held in March, broke some records, with 340 speakers and 741 attendees from around the world. **David Wang** (CEO and President of Semiconductor Manufacturing International Inc. (SMIC), China); **T. C. Chen** (IBM Fellow and Vice-President of Science and Technology, USA); **Chenming Hu** (TSMC Distinguished Chair Professor of Microelectronics of University of California at Berkeley, USA); and **John Lau** (ITRI Fellow of Taiwan, China) delivered the keynote speeches at conference plenary session. Some of the world's leading experts in semiconductor technology gave their keynote and invited speeches in the ten parallel symposia. The conference covers most aspects of semiconductor technology and emerging technology areas such as LEDs and photovoltaics.

*ECS sponsored student poster awards at the 2011 **China Semiconductor Technology International Conference** (CSTIC). Pictured from left to right are: **Mireia Bargallo Gonzalez** (IMEC), award winner; **Roque Calvo**, ECS Executive Director; **Dandan Jiang**, Chinese Academy of Sciences; **Juyuan Xu**, Chinese Academy of Sciences; **Yuanqian Ji** (Grace Semiconductor Manufacturing Corporation), award winner; and **Hua Su**, President of KLA-Tencor China.*

219th ECS Meeting and SOFC XII

Montréal

QC, Canada

May 1-6, 2011

From the Tutorials in Nanotechnology to the 12th iteration of the Solid Oxide Fuel Cells (SOFC XII) symposium, and from the 19th "XYZ for the Rest of US" talk to the "meet and greet" event with the editor of the latest ECS monograph, over 2100 attendees of the **219th ECS Meeting in Montréal** had a wealth of programming from which to choose.

R. Winston Revie, Editor of *Uhlig's Corrosion Handbook*, was on hand to speak with attendees about the latest edition (3rd) of this authoritative guide on corrosion. Two lucky attendees won copies of the book, autographed by Dr. Revie, and generously donated by Wiley-Blackwell. This "meet and greet" was an excellent addition to Monday evening's packed program: the Monday Evening Mixer, the opening of the Technical Exhibit, and the Society's popular Student Poster Session.

Jeffery Dahn of Dalhousie University (Halifax, Nova Scotia, Canada) delivered The ECS Lecture, "How Can One Tell If a Li-Ion Battery Will Last for Decades in Only Three Weeks of Testing?" to a packed Monday evening audience. Professor Dahn is recognized as a leading contributor to the lithium-ion battery technology that is now used worldwide in laptop computers and cell-phones.

Stephen Pearton gave the Gordon E. Moore Medal for Outstanding Achievement in Solid State Science and Technology Award Lecture, which was entitled: "Wide Bandgap Semiconductors for Electronics, Photonics, and Sensing Applications." Professor Pearton is a leading figure in blue/green/UV GaN-based LEDs, laser diodes, and power electronics.

Jeff Dahn *(left), delivered The ECS Lecture at the Montréal meeting. Prof. Dahn received a scroll recognizing his contribution from ECS President* ***Bill Brown*** *(right).*

Stephen Pearton *(right) was the recipient of the Gordon E. Moore Medal for Outstanding Achievement in Solid State Science and Technology. Dr. Pearton received the Medal from ECS President* ***Bill Brown*** *(left) at the Society's meeting in Montréal.*

Annual Report

*The **Annual Society Luncheon and Business Meeting** takes place at the Society's spring meetings. This meeting is where members can learn about the most current business of the Society, and meet the winners of the Student Poster Session. At the lectern is ECS President **Bill Brown**.*

"Semiconductor Nanowires: A Platform for Nanoscience and Nanotechnology" was the latest presentation in the "XYZ for the Rest of Us" lectures, and was presented by Prof. **Charles Lieber** of Harvard University. The talk focused on the interface between nanoelectronics and life sciences involving sensors for disease detection and the neuroscience at both single cell and whole organism levels.

All photos are by Greater Boston Convention & Visitors Bureau.

Boston Massachusetts

220th ECS Meeting & Electrochemical Energy Summit

The Electrochemical Society electrochemical energy summit 2011

For the **220th ECS Meeting**, Boston was the site of many firsts for ECS: the largest attendance at an ECS meeting in continental North America (only PRiME has been larger), the first Electrochemical Energy Summit, the debut of Redcat,™ and the introduction of the ECS mobile meeting app.

With the large attendance, symposia were well-attended and the all-meeting events, such as the Sunday Evening Get-Together and the Monday Evening Mixer, were buzzing with activity. The two evening events were particularly lively as people got a first look at **Redcat** (redcatresearch.org), the new research and professional networking site for everyone involved in electrochemistry and solid state science and technology. The essential tool for researchers, Redcat is the online destination for discovering cutting-edge research, connecting with peers, and sharing content and ideas. Visitors to the Redcat booths not only had the opportunity to see this powerful new research tool, but they also had a chance to win one of two Apple iPads. The Society unveiled its new **mobile app** for the meetings, available for both iOS and Android devices. Users of the app were able to locate symposia, special events, receive special announcements and last-minute schedule changes, and even communicate with other meeting attendees.

***Koji Hashimoto** (right) received the 2011 ECS Olin Palladium Award from ECS President **Esther Takeuchi** (left) at the ECS meeting in Boston. The Olin Palladium Award was established in 1950 for distinguished contributions to the field of electrochemical or corrosion science.*

The Olin Palladium Award lecture, entitled, The Use of Renewable Energy in the Form of Methane via Electrolytic Hydrogen Generation," was given by **Koji Hashimoto** on Monday. The awardee was introduced by past ECS President Barry MacDougall, who noted an illustrious list of past winners of this award that included names such as Wagner, Evans, Frumkin, Uhlig, Levich, and Gerischer. Professor Hashimoto was recognized for his far-reaching contributions in the areas of corrosion-resistant amorphous electrode materials, electrodes for water electrolysis and catalysts for fuel production, and the role of nanostructure on corrosion resistance.

*At the fall meeting in Boston, The ECS Lecture was given by **Mark Verbrugge**, Director of Chemical Sciences and Materials Systems Laboratory, General Motors.*

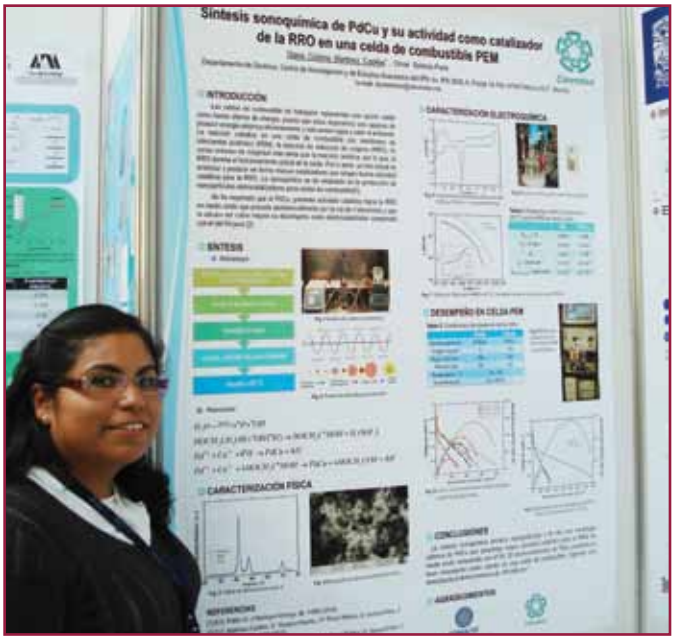
In a break from the usual practice, and because of scheduling constraints imposed by the first-ever ECS Electrochemical Energy Summit, The ECS Lecture was scheduled on Sunday. It was given by **Mark Verbrugge** of General Motors Corporation on the topic of "Energy and Personal Transportation." He began his lecture with an historical discussion of the evolution of the automobile. Dr. Verbrugge also discussed energy options for new-generation vehicles including electricity, liquid fuels such as compressed natural gas (CNG), and hydrogen; and discussed trends and challenges in personal transportation. The talk closed with a fascinating futuristic video on an electrified network vehicle (EN-V) concept designed to combat the global energy and environmental issues.

The first **Electrochemical Energy Summit (E2S)** was convened on October 10. The objective of the first E2S was to initiate an international forum to discuss electrochemical means to address world-wide, societal energy needs. The Summit brought together researchers and policy makers from around the world to ask questions about what are energy needs and answer how electrochemical science and technology can address societal needs. The assembled participants in the E2S indeed provided international representation of both questions and novel solutions in the field of electrochemical energy. Formal events at the E2S included the plenary lecture, a panel discussion on energy, and a multi-day poster session on electrochemical scientific and technological solutions to social energy challenges.

*The first **Electrochemical Energy Summit** included a lively panel discussion. In the front row (from left to right) are: panelist **Eric Isaacs**, panelist and moderator **Krishnan Rajeshwar**, Summit organizer **Johna Leddy**, Summit organizer **Christina Bock**, and panelist **Detlef Stolten**. In the back row (from left to right) are: ECS Senior Vice-President **Tetsuya Osaka**, panelist **John A. Turner**, ECS President **Esther Takeuchi**, panelist **Mark Verbrugge**; and panelist **Tatsuya Shinkawa**.*

*A view of he first **Electrochemical Energy Summit Poster Session** at the ECS meeting in Boston,*

*Sponsored by ECS was the **From Nanoparticles and Nanomaterials to Nanodevices and Nanosystems** (IC4N) meeting, which held its third iteration on the Greek island of Crete in June. Session Chair **Krishnan Rajeshwar** (left) joined **Phaedon Avouris** (center), a keynote speaker, and **Stathis Meletis** (right), IC4N organizer.*



***Diana Cristina Martinez Casilla** was the winner of the best student poster award at a joint meeting of SME and the ECS Mexico Section. The winning poster was entitled, "On the Sonochemical Synthesis of PdCu and Its Activity as Catalyst for the RRO in a PEM Fuel Cell."*

*ECS sponsored the Best Poster Award at the IC4N meeting. From left to right are: **C. Politis** (Univ. Patras, Hellas, IC4N co-organizer), **Hadiyah-Nicole Green** (Best Poster Award winner), and **Stathis Meletis** (IC4N organizer).*

ECS also sponsored the XXVI Meeting of Sociedad Mexicana de Electroquímica (SMEQ) with the 4th Meeting of the **ECS Mexico Section of ECS**, which was held in Mexico City, from May 30 to June 3, 2011. The local organizing committee included **Francisco Rodríguez Gómez** (President), **Atahualpa O. García**, **Vianey Torres-Mendoza**, **Sergio López-León**, **Fernando Flores-Álvarez**, and students from the Corrosion Laboratory of the Universidad Nacional Autónoma de México (UNAM). The meeting focused on the use of electrochemistry as a tool for sustainable development and had a broad audience, including members of SMEQ, individuals from industry, students, and distinguished international professors. Six plenary lectures were delivered by distinguished ECS members including ECS members **Mark E. Orazem** and **Bernard Tribollet**, co-authors of the Society's monograph, *Electrochemical Impedance Spectroscopy*.

The latest edition of the **3rd International Conference: From Nanoparticles and Nanomaterials to Nanodevices and Nanosystems (IC4N)** series came on the heels of two very successful predecessors held in Halkidiki and on the Greek island of Rhodes respectively. Both these earlier conferences as well as the 3rd IC4N were co-sponsored by ECS. The 3rd IC4N featured four keynote lectures, of which the one given by ECS award winner **Phaedon Avouris** ("Graphene-Based Electronics and Optoelectronics") perhaps represented a topic most familiar to the ECS membership. The technical program featured both invited and contributed oral talks spanning eight parallel symposia ranging from Energy Conversion & Storage to Functional Nanomaterials and Nanomedicine/Biotechnology. All in all, this event fulfilled the over-arching goal set forth for the forum in identifying current barriers and promising research avenues in the area of nanoscience and nanotechnology.

Technical Divisions

Snowden International School *student participants and ECS facilitators at the* ***IE&EE Fuel Cell Outreach Program*** *in Boston, MA. In the front row, kneeling from left to right are:* ***Paul Northrop*** *(Washington University);* ***Dennie Mah*** *(Dupont Company);* ***Gerardine Botte*** *(Ohio University);* ***Rui Zhang*** *(Fuel Cell Energy); and* ***Damilola Daramola***, ***Vedasri Vedharathinam***, ***Santosh Vijapur***, *and* ***Wei Yan*** *of Ohio University.*

Like many of the Society's other very active Divisions, the **IE&EE Division** presents symposia and offers awards; but it also has created a most unique activity, the **Fuel Cell Outreach Program**. The program was started by the Division at the 210th ECS Meeting in an international setting, Cancun, Mexico, and has continued to bring awareness about green electrochemical technologies, such as fuel cells, to young minds within the U.S. and abroad (Vancouver, Vienna) ever since. The Division attempts to visit at least one local school during each meeting to conduct the program. The IE&EE Division has successfully organized ten fuel cell outreach program to date and hopes to continue such fruitful efforts in the future.

The IE&EE Division offers another unique program, the **New Electrochemical Technology (NET) Award**, which recognizes excellence in the commercialization of new electrochemical technology, which typically represents a multidisciplinary team approach. The joint recipients of the 2011 NET Award were: **U.S. Army Engineer Research and Development Center**, **Construction Engineering Research Laboratory (ERDC-CERL)**, Champaign, IL; and **Electro Tech CP**, Accord, NY. The award was given in recognition of their development of electro-osmotic pulse (EOP) technology.

The ***IE&EE Division*** *presented the* ***2011 NET Award*** *at the ECS meeting in Montréal. IE&EE Division Chair* ***Vijay Ramani*** *(far left) presented awards to the recipients (from left to right): (Ramani);* ***Ilker R. Adiguzel***, *ERDC-CERL;* ***Orange S. Marshall, Jr.***, *ERDC-CERL;* ***Paul A. Noyce***, *Electro Tech CP;* ***Vicki van Blaricum***, *ERDCCERL; and* ***Vincent F. Hock, Jr.***, *ERDC-CERL.*

Greta Uhlig *(fourth from left), widow of Herbert H. Uhlig, at the Corrosion Division Award Reception at the ECS meeting in Boston. From left to right are:* ***Hongbo Cong*** *(2011 Corrosion Division Morris Cohen Graduate Student Award winner),* ***Patrik Schmuki*** *(2011 Corrosion Division H. H. Uhlig Award winner),* ***Barry MacDougall*** *(ECS Fellow and 1995 ECS Carl Wagner Award winner), (Mrs. Uhlig),* ***Koji Hashimoto*** *(2011 Palladium Award winner),* ***Robert Frankenthal*** *(ECS Fellow, 2008 Edward G. Acheson Award winner, and 1989 H. H. Uhlig Award winner),* ***Gerald (Jerry) Frankel*** *(ECS Fellow and 2010 H. H. Uhlig Award winner), and* ***John Scully*** *(ECS Fellow and 2009 H. H. Uhlig Award winner).*

Robert Haddon *(third from left) received the Fullerenes, Nanotubes, and Carbon Nanostructures Division Richard E. Smalley Research Award at the Montréal meeting. With Dr. Haddon are:* ***Jean-François Nierengarten*** *(far left), Division Secretary;* ***Dirk Guldi*** *(second from left), Division Chair; and* ***R. Bruce Weisman*** *(far right), Division Vice-Chair.*

Philippe Allongue *(left) accepted the 2011 ECS Electrodeposition Division Research Award in Boston from* ***Christian Bonhôte*** *(right), Chair of the Division. After receiving the award, Dr. Allongue delivered his lecture on "Ultra Thin Magnetic Films: Why Choosing the Electrochemical Route." Professor Allongue is Research Director at the Centre National de la Recherche Scientifique (CNRS) at the Ecole Polytechnique, Physique de la Matière Condensée, in Palaiseau (France).*

The ECS **Corrosion Division** was honored to have Greta Uhlig, widow of the late Herbert H. Uhlig, attend the annual Corrosion Division Business Luncheon, the Uhlig Award and Cohen Award lectures, and a reception for the Corrosion Division award winners at the meeting in Boston. While at the luncheon and reception, Mrs. Uhlig renewed old friendships with former associates of Dr. Uhlig as well as new and current members of the Division. In addition, Mrs. Uhlig graciously donated to the Society Dr. Uhlig's Palladium Award Medal and his Acheson Award Medal. These items, as well as a first edition of the *Uhlig's Corrosion Handbook*, were on display at the Corrosion Division Award Reception for everyone to admire and enjoy. Her visit brought together many Corrosion Division and Society members, all of whom made Mrs. Uhlig feel especially welcome.

Membership

*ECS President **Esther Takeuchi** (back row, center) inducted the **2011 Class of ECS Fellows** at the Boston meeting. Pictured in the front row (from left to right) are: **Karim Zaghib**, **Arumugam Manthiram**, **Paul Trulove**, and **Hugh DeLong**. In the back row (from left to right) are: **Hubert Gasteiger**, **Giovanni Zangari**, (President Takeuchi), **Thomas Zawodzinski**, and **Ashok Shukla**.*

ECS members are what makes the Society such a vibrant and forward-looking organization. Members not only develop technical programming at our meetings, and publish their best work in our journals, but they also volunteer their time by serving on committees. One of the ways we recognize these contributions is through the designation of ECS Fellow. This is given for current active participation in the affairs of The Electrochemical Society as well as individual contributions and leadership in the achievement of science and technology. Every year we are proud to induct a new Class of ECS Fellows.

*ECS President **Esther Takeuchi** (center) was inducted into the National Inventors Hall of Fame (NIHF). At left is **David Kappos**, Under Secretary of Commerce for Intellectual Property and Director of the USPTO. At right is **Edward Gray**, Chair of the NIHF Board of Directors.*

Not only are ECS members stars within the organization, but they shine outside of it as well. It's not possible to list the entire "constellation" here; but one of the United States' most important awards was given to an ECS member for 2011. **Esther Takeuchi**, ECS President for 2011-2012, was recently inducted into The National Inventors Hall of Fame.™ Takeuchi is responsible for having led efforts to invent and refine the lifesaving lithium/silver vanadium oxide battery (Li/ SVO) technology, which is utilized in the majority of today's implantable cardiac defibrillators. The National Inventors Hall of Fame honors those who have created great technological advances that make human, social, and economic progress possible.

***David Cawlfield** (left), of Olin Corporation – Chlor Alkali Products Division, received a Legacy Level Leadership Circle Award from ECS President **Bill Brown** (right) at the ECS meeting in Montréal. The company was one of ECS's first Corporate Members, over 70 years ago.*

*At the ECS meeting in Montréal, **Karim Zaghib** (right), of Hydro Québec, received a Bronze Level Leadership Circle Award presented to the company for five years of Corporate membership from ECS President **Bill Brown** (left).*

***Jean L'Heureux** (left), of TIMCAL Graphite and Carbon Limited, received a Gold Level Leadership Circle Award presented to the company for 25 years of Corporate Membership from ECS President **Bill Brown** (right) at the ECS meeting in Montréal.*

Individual members are not the only contributors to our organization's health. The ECS **Corporate Membership** program enables organizations concerned with solid-state and electrochemical science to partner with ECS, benefit from Society activities, and help advance our objectives. In 2011, five organizations were recognized with the **Leadership Circle Award** for continuous service to the ECS including: **Hydro-Québec**; **Nissan Motor Co., Ltd**; **Olin ChlorAlkali Products Division**; **Sanyo Electric Co., Ltd**; and **TIMCAL Graphite and Carbon Ltd.** ECS had 78 Corporate Members at the end of 2011.

(continued on page 90)

ECS Membership Statistics

(as of October 1, 2011)

Table I. ECS Membership by Class

Category	2005	2006	2007	2008	2009	2010	2011	2011/2010 %Change
Active	5126	5061	4974	5082	5129	4858	4874	0.3
Member Reps	61	73	89	116	98	126	137	8.7
Life	46	46	45	46	46	49	53	8.2
Emeritus	230	229	234	248	266	282	293	3.9
Honorary	25	24	26	25	24	23	23	0.0
Subtotal Active in Good Standing	**5488**	**5433**	**5368**	**5517**	**5563**	**5338**	**5380**	**0.8**
Delinquent	1054	1014	941	945	1130	1503	1115	-25.8
Total Active on Record	**6542**	**6447**	**6309**	**6462**	**6693**	**6841**	**6495**	**-5.1**
Students	792	864	1206	1428	1592	1466	1541	5.1
Delinquent	450	440	304	512	648	946	719	-24.0
Total Students	**1242**	**1304**	**1510**	**1940**	**2240**	**2412**	**2260**	**-6.3**
Total Individual Members	**7784**	**7751**	**7819**	**8402**	**8933**	**9253**	**8755**	**-5.4**

Table II. ECS Membership by Sections

Section	2005	2006	2007	2008	2009	2010	2011	2011/2010 %Change
Arizona	115	132	118	150	116	127	109	-14.2
Brazilian	39	42	54	71	58	65	65	0.0
Canada	292	258	283	267	292	380	381	0.3
Chicago	162	166	208	184	188	159	182	14.5
China			62	78	123	101	81	-19.8
Cleveland	122	114	114	138	134	125	123	-1.6
Detroit	81	92	105	91	99	98	118	20.4
Europe	1062	1019	1043	1081	1266	1256	1105	-12.0
Georgia	161	154	172	168	151	165	171	3.6
India						58	58	0.0
Israel	30	28	25	23	35	31	39	25.8
Japan	755	757	756	789	920	791	771	-2.5
Korea	192	175	187	212	246	262	243	-7.3
Mexico			66	28	38	36	31	-13.9
National Capital	186	200	188	182	181	159	159	0.0
New England	326	318	327	311	321	291	381	30.9
Pittsburgh	88	89	98	98	87	87	87	0.0
San Francisco	383	387	366	364	425	415	413	-0.5
Taiwan			122	126	207	97	122	25.8
Texas	178	181	167	174	160	160	144	-10.0
Twin Cities	92	91	91	87	85	86	74	-14.0

Table III. ECS Membership by Division*

Division	2005	2006	2007	2008	2009	2010	2011	2011/2010 %Change
Battery	2549	2511	1378	1450	1130	1575	1711	8.6
Corrosion	1656	1584	531	521	515	476	444	-6.7
Dielectric Science & Technology	1339	1278	377	375	377	301	306	1.7
Electrodeposition	1782	1727	509	509	500	471	474	0.6
Electronics & Photonics	1999	1812	815	759	821	671	661	-1.5
Energy Technology	2427	2434	929	1060	1145	1196	1239	3.6
Fullerenes, Nanotubes and Carbon Nanostructures	687	713	194	205	212	176	155	-11.9
High Temperature Materials	1096	991	205	196	209	203	212	4.4
Industrial Electrochemistry & Electrochemical Engr	1393	1343	277	297	301	303	313	3.3
Luminescence & Display Materials	793	701	110	120	122	102	100	-2.0
Organic & Biological Electrochemistry	1122	1026	188	215	222	188	175	-6.9
Physical & Analytical Electrochemistry	2554	2426	643	664	652	596	597	0.2
Sensor	1382	1271	242	247	276	222	242	9.0

*From 2007 Division statistics include only primary interests. Previous years' include primary and secondary interests.

Table IV. ECS Membership by Occupation

Occupation	2005	2006	2007	2008	2009	2010	2011	2011/2010 %Change
Academic		2244	2274	2446	2558	2467	2410	-2.3
Industry		2412	2334	2456	2160	2034	2197	8.0
Government		399	388	431	436	391	394	0.8
Retired			69	77	119	112	112	0.0

(continued from page 88)

Sections

Jean-Marie Tarascon (University of Picardie, Jules Verne, Amiens) presented a lecture at a meeting of the ***ECS India Section.*** *Attending the meeting were (from left to right):* ***S. A. Ilngovan*** *(Vikram Sarabhai Space Center Trivandrum;* ***T. Prem Kumar*** *(Central Electrochemical Research Institute, Karaikudi and Vice-Chair ECS India Section);* ***Vijayamohanan K. Pillai*** *(Central Electrochemical Research Institute, Karaikudi);* ***Jean-Marie Tarascon****;* ***A. K. Shukla*** *(Indian Institute of Science, Bangalore and Chair, ECS India Section);* ***Aninda J. Bhattacharyya*** *(Indian Institute of Science, Bangalore); and* ***K. T. Jacob*** *(Indian Institute of Science, Bangalore; Counselor, ECS India Section; and President, Society for Advancement of Electrochemical Science and Technology).*

ECS Sections

Asia/Japan
- China
- Japan
- Korea
- Taiwan

Europe
- Europe

Latin America
- Brazil
- Chile
- Mexico

Middle East
- Israel

North America
- Arizona
- Canada
- Chicago
- Cleveland
- Detroit
- Georgia
- National Capital
- New England
- Pittsburgh
- San Francisco
- Texas
- Twin Cities

Southern Asia
- India

ECS Sections help promote and support member activities in electrochemistry and solid-state science within specific regions. The 22 ECS Sections are currently located in **Asia**, **Europe**, **Latin America**, the **Middle East**, **North America**, and **Southern Asia**. Sections offer members networking opportunities as well as, key programming, symposia, grants, and activities. Sections also support Society objectives and help to advance the science.

Section highlights from 2011 include formation of the **Chile Section**, the most recent ECS Section to be established. Professor **Jose H. Zagal**, a member of Society since 1977 was elected as Chair of the Section. The newly formed Chile Section has an impressive set of goals: to promote electrochemical science and technology in Chile, sponsor national meetings and workshops, recruit new members, open Student Chapters, promote the participation of Chilean scientists and students in ECS meetings, and create prizes for outstanding PhD students. In addition to Zagal, the other officers for the first two years are **Arturo Squella**, **Maritza Paez**, **J. Francisco Silva**, and **Alejandro Vargas-Uscategui**.

The **India Section** held an important five day lecture series on Advances in Lithium Batteries by Professor **Jean-Marie Tarascon**, High Merit Professor of Chemistry at the University of Picardie "Jules Verne," Amiens, France. The program was organized in association with the **Society for Advancement of Electrochemical Science and Technology**, India, and was conducted at the Indian Institute of Science, Bangalore, in July. Professor Tarascon's marathon discourse lasted about 20 hours over five days, and covered an entire gamut of topics in lithium battery science and technology.

Gianluigi Botton *delivered the keynote presentation at the spring 2011 symposium of the Canada Section.*

Amanda Quirk *(left) received the First Place Award in the Student Poster Session from conference organizers* ***Bradley Easton*** *(center) and* ***Gregory Jerkiewicz*** *(right) at the spring 2011 symposium of the Canada Section.*

Jesse Allan *(left) received the Second Place Award in the Student Poster Session from conference organizers* ***Bradley Easton*** *(center) and* ***Gregory Jerkiewicz*** *(right) at the spring 2011 symposium of the Canada Section.*

Rebecca Holmberg *(left) received the Third Place Award in the Student Poster Session from conference organizers* ***Bradley Easton*** *(center) and* ***Gregory Jerkiewicz*** *(right) at the spring 2011 symposium of the Canada Section.*

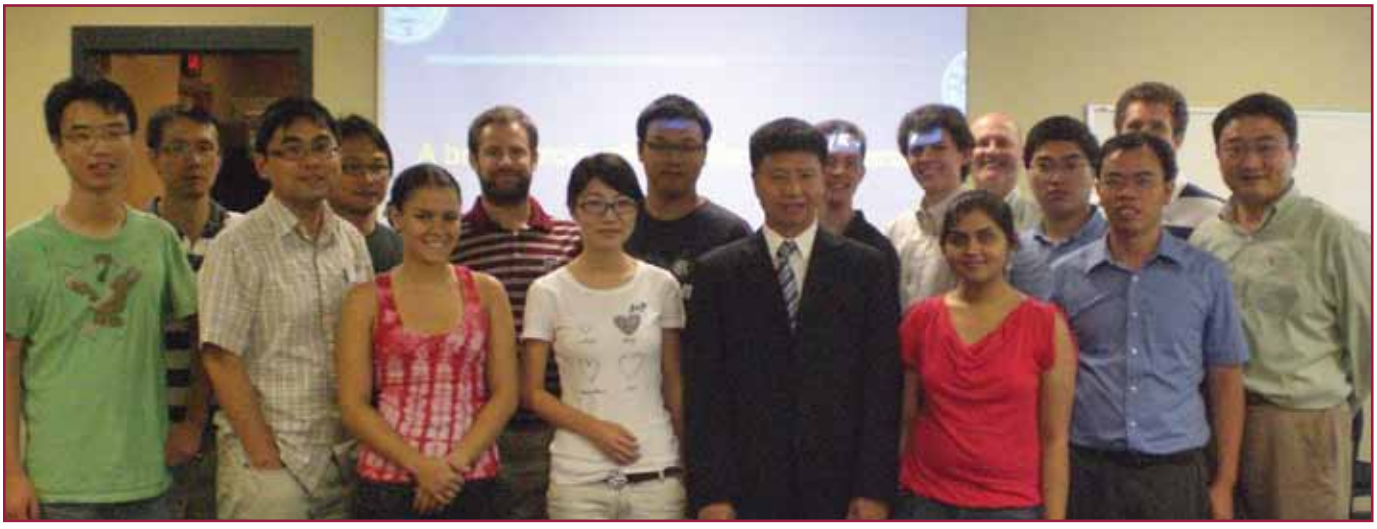
The **Canada Section** 2011 spring symposium was held in April, with a theme of "Modern Electrochemistry and Electrocatalysis." **Gianluigi Botton** (McMaster University) delivered the keynote presentation, entitled "Application of Ultrahigh-Resolution Electron Microscopy on the Study of Complex Catalyst Nanoparticles." Eleven other invited speakers presented lectures throughout the morning and afternoon, followed by three minute student mini presentations. Three student poster awards were presented to: **Amanda Quirk** (First Place, University of Guelph), **Jesse Allan** (Second Place, University of Ontario Institute of Technology), and **Rebecca Holmberg** (Third Place, Queen's University).

Students

How often have you heard it said that students are the future? Just take a good look at the activity of ECS student members and you'll see that there is a great deal of truth in that statement. From Student Chapters to poster sessions at our meetings and sponsored meetings, the Society's student members are extraordinarily active in our technical universe; and they have a good time while they're at it!

Each year ECS awards **Summer Fellowships** to assist students in continuing their graduate work during he summer months in a field of interest to the Society. Congratulations to the following five 2011 Summer Fellowship recipients. **Abrin Schumucker** (Northwestern University) was the recipient of the 2011 ECS Edward G. Weston Summer Fellowship; **Tae-Ho Shin** (Kyushu University) received the 2011 ECS Colin Garfield Fink Summer Fellowship; **Jeyavel Velmurugan** (CUNY) was the recipient of the 2011 Joseph W. Richards Summer Fellowship; **James Whitaker** (Colorado State University) received the 2011 F.M. Becket Summer Fellowship; and **Swetha Puchakayala** (VIT University) received the 2011 H. H. Uhlig Summer Fellowship.

*At the ECS meeting in Montréal, the winners of the **Student Poster Session Awards** received their recognition at the Society Annual Luncheon and Business Meeting. From left to right are: **François Goy**, President, Bio-Logic (France), sponsor of the awards; **Vijay Ramani**, judge; **Neil Spinner**, award winner; **Kirsten Marie Jensen**, award winner; ECS President **William D. Brown**; **Simon Lux**, award winner; **Javed Khan**, award winner; **Kalpathy Sundaram**, organizer; and **Bill Eggers**, President, Bio-Logic (USA), sponsor of the awards.*



***Shi-Gang Sun** (center) surrounded by members of the **ECS Student Chapter at the University of South Carolina** and their faculty advisor, **Xiao-Dong Zhou** (far right).*

ECS **Student Chapters** provide students with opportunities to better understand electrochemical and solid-state science. The 28 ECS Student Chapters are located at academic institutions throughout the world. Students have a venue to meet and network with fellow students, participate in a wide range of programs and activities, receive recognition for scholarly activities, and develop career preparation skills.

The Society welcomed four new Student Chapters in 2011 including the **Calgary Student Chapter**, **Ohio University Student Chapter**, **University of California, Riverside Student Chapter**, and **University of Maryland Student Chapter**. Student Chapters are officially approved and recognized by the Board of Directors at ECS biannual meetings.

*At a **Montréal Student Chapter** meeting, participants followed three invited talks and seven student talks.*

*At a 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**.*

Annual Report

ECS Student Chapters

- **Atlanta Student Chapter at Georgia Tech**, *founded 2008*, Peter J. Hesketh, Faculty Advisor
- **Auburn University Student Chapter**, *founded 2007*, Jeffrey Fergus, Faculty Advisor
- **Boston Student Chapter**, *founded 2009,* Eugene Smotkin, Faculty Advisor; Northeastern University, Harvard University, and MIT
- **Technical University Brno Student Chapter**, *founded 2006,* Jiri Vondrak, Faculty Advisor
- **Calgary Student Chapter,** *founded 2011,* Viola Birss, Faculty Advisor
- **University of California - Berkeley Student Chapter,** *founded 2006,* John Newman, Faculty Advisor
- **University of California - Riverside Student Chapter**, *founded 2011,* Alexander Balandin, Faculty Advisor
- **University of Central Florida Student Chapter**, *founded 2000,* Kalpathy Sundaram, Faculty Advisor
- **Central Illinois Student Chapter.** *founded 2008,* Andrzej Wieckowski, Faculty Advisor
- **University of Cincinnati Student Chapter**, *founded 2007,* Marc Cahay, Faculty Advisor
- **ECS Cleveland Section and Ernest B. Yeager Center for Electrochemical Sciences Joint Student Chapter**, *founded 2005,* James D. Burgess, Faculty Advisor
- **Florida International University Student Chapter**, *founded 2009,* Chunlei Wang, Faculty Advisor
- **University of Florida Student Chapter**, *founded 2005,* Juan Nino, Faculty Advisor
- **Grand Valley State University Student Chapter**, *founded 2008,* Cory M. DiCarlo, Faculty Advisor
- **Kerala, India Student Chapter at CUSAT,** *founded 2008,* M. K. Jayaraj, Faculty Advisor
- **Lahore, Pakistan Student Chapter**, *founded 2008,* Inam Ul Haque, Faculty Advisor
- **University of Maryland Student Chapter**, *founded 2011,* Eric Wachsman, Faculty Advisor
- **Montreal Student Chapter**, *founded 2010,* Steen B. Schougaard, Faculty Advisor
- **New York Capital Region Student Chapter**, *founded 2006,* Dan Lewis, Faculty Advisor
- **The Ohio State University Student Chapter**, *founded 2006,* Anne Co, Faculty Advisor
- **Ohio University Student Chapter**, *founded 2011,* Gerardine Botte, Faculty Advisor
- **Research Triangle Student Chapter**, *founded 2009,* Wesley Henderson, Faculty Advisor
- **South Brazil Student Chapter**, Univ. Fed. do Rio Grande do Sul, *founded 2010,* Luis Frederico P. Dick, Faculty Advisor
- **University of South Carolina Student Chapter**, *founded 2010,* Xiao-dong Zhou, Faculty Advisor
- **Tel Aviv University Student Chapter**, *founded 2009,* Eliezer Gileadi and Yosi Shacham-Diamand, Faculty Advisors
- **University of Texas at Austin Student Chapter**, *founded 2006,* Ram Manthiram, Faculty Advisor
- **Tyndall National Institute Student Chapter**, *founded 2010,* Alan O'Riordan, Faculty Advisor
- **University of Virginia Student Chapter**, *founded 2006,* Rob Kelly, Faculty Advisor

The **University of Maryland Student Chapter** was established in 2011, when a group of materials science and chemical engineering students formed the new Chapter at the College Park, Maryland campus. ECS Fellow **Eric D. Wachsman** is the faculty advisor, and doctoral candidates **Colin Gore**, **William Gibbons**, and **Ashley Lidie** serve as the President, Vice-President, and Secretary/Treasurer, respectively.

In an effort to stress the importance of electrochemical energyresearch 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 U.S. Army's applications. She devoted specific attention to fuel cells and lithium ion batteries for portable power applications.

The Chapter held its first Winter Mixer in December 2011 at El Centro in Washington DC. The event recruited new members and helped build camaraderie among existing ECS members at University of Maryland. Members of the Chapter also collaborated with the Adventures in Science program at the National Institute of Standards and Technology (NIST) in Gaithersburg, Maryland. Through the program, students from the Chapter presented simple electrochemical demonstrations, like building wet-cell batteries, and explained relevant science concepts to groups of middle school students.

The **University of Texas Austin Student Chapter** hosted a seminar on the patent and start-up process in academia with faculty member speakers from the University of Texas at Austin. The program 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 Student Chapter also helped organize and set up the poster session for the annual Center for Electrochemistry (CEC) workshop conducted in February. To build camaraderie among the student members, the Student Chapter co-sponsored the screening of "The PhD Comics: The Movie," which is a parody on the graduate student experience.

The Student 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 Institute de Research d'Hydro-Québec. Dr. Zaghib presented 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.

The newly formed **Ohio University Student Chapter** got off to a great start by hosting a seminar on timely and key topics impacting electrochemistry. The invited distinguished professors included: **Robert Savinell** (Case Western University), **Alan West** (Columbia University), **Perla Balbuena** (Texas A&M University), and **Krishnan Rajeshwar** (University of Texas-Arlington.).

In other activities, the Chapter members participated in "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 Center for Electrochemical Engineering Research (CEER.)

During the fall 2011 ECS meeting in Boston, the Chapter organized a student outreach activity with support from the IE&EE Division. Forty students from the Snowden International School had the privilege to learn about and operate model Fuel Cell Cars.

University of Texas at Austin Student Chapter *officers with their guest speaker,* ***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).*

Members of the ***Ohio University Student Chapter****. In the first row are (from left to right):* ***Luis Diaz-Aldana*** *(Vice-President),* ***Vedasri Vedharathinam*** *(President),* ***Santosh Vijapur*** *(Secretary),* ***Gerardine Botte*** *(Faculty Advisor), and* ***Ramasamy Palaniappan*** *(Treasurer). In the second row are (from left to right):* ***Brian Hassler****,* ***Geetha Poondi Krishnan****,* ***Alex Miller****, and* ***Fei Lu****. In the third row are (from left to right):* ***Dan Wang****,* ***Rita Chaudhari****,* ***Mercy Aggrey****,* ***Wei Yan****,* ***Oludamilola Daramola****, and* ***Xiaoyong Xia****.*

The ***Cochin University of Science and technology (CUSAT) Student Chapter*** *celebrated its third anniversary; shown here are students doing spectroscopy experiments with an Nd:YAG laser.*

*Organizers of the **University of California-Riverside Student Chapter** gathered in front of Alexander A. Balandin's Nano-Device Laboratory. From left to right are: graduate students **Jie Yu**, **Guanxiong Liu**, **Martin Somesla**, **Khan M.**, and **Farhan Shahil**; **Professor Balandin**; undergraduate student researcher **Ana Bowlus**; graduate students **Desalegne Teweldebrhan**, **Javed Khan**, **Zhong Yan**, **Pradyumna Goli**, **Vivek Goyal**, and **Samia Subrina**; visiting researcher **Denis Nika**; and graduate students **Muhammad Rahman**, **Craig Nolen**, and **M. Zahid Hossain**.*

*Maccor was the sponsor of the **Student Poster Session Awards** at the ECS meeting in Boston. Winners from the Student Poster Session awards gathered with ECS President **Esther Takeuchi** (sixth from left) and Session Chair **Venkat Subramanian** (seventh from left), their advisors, and with some of the judges from the selection committee. **Mark Hulse** (fifth from left), Maccor V.P. of Sales and Marketing, represented the company.*

*The poster session winners were: **Jesse Benck** (Stanford University) and **Zhebo Chen** (Stanford University), First Place, Electrochemical Science & Technology Award; **Francis Richey** (Drexel University), First Place, Solid State Science & Technology Award; **Damilola Daramola** (Ohio University) and **Lingchong Mai** (Ohio University), Second Place, Electrochemical Science & Technology Award; and **Benjamin Caire** (Colorado School of Mines), **Ashley Maes** (Colorado School of Mines), and **Melissa Vandiver** (Colorado School of Mines), Second Place, Solid State Science & Technology Award.*

*The poster session can't happen without the dedicated help of the award selection committee: **Frank Chen** and **Marca Doeff** (Battery Division); **Vicki Geling** and **Matt Strom** (Corrosion); **Oana Leonte** and **Ravi Todi** (DS&T); **Paul Trulove** (Physical & Analytical Electrochemistry Division); **Emiliana Fabbri** (High Temperature Materials Division); **Vijay Ramani**, **John Staser**, and **Cynthia York** (IE&EE Division); **Zoraida Aguilar** and **Alexander Simonian** (Sensor Division); and **N. Prasanth Kumar** and **James Murphy** (Luminescence & Display Materials Division).*

Finance

We are pleased to present the audited financial reports of ECS for the year ending December 31, 2011. These reports indicate that we met the Society's objectives for the year, and that our financial health continues to be strong.

The financial objectives of ECS are designed to provide funding to support the Society's mission, which is to advance electrochemical and solid state science by disseminating technical content. This requires that we generate sufficient financial support to develop and produce excellent technical programs and enable broad distribution of the content developed in these programs. In order to meet our objectives, ECS deploys a balance of conservative pricing and maximum utilization of resources targeted at annually generating surpluses of 10% over expenses.

During the past fiscal year we significantly exceeded that objective, and the Statement of Changes in Net Assets shows a net surplus from operations of $1.3 million. The large surplus came from greater than expected total operating revenues of $6.9 million, which was mainly the result of growth in meeting and exhibit income. The combined attendance of 5,304 at our biannual meetings was the highest in ECS history. Other significant variances in the revenue categories included less publications revenue than the previous year due to the elimination of page charges, the continuing decline in membership revenue, and a major gift donation which significantly increased contribution revenue.

The total operating expenses decreased from the previous year to $5.6 million primarily due to lower publication costs. A change in our publishing services vendors and renegotiation of contracts led to significant savings, and should provide some containment of publication costs over the next few years. The general and administrative costs were also lower due to staff turnover resulting in extended vacancies and lower expenses in this category. However, the staff positions have been filled and we anticipate further increases in the staff size to manage the growth in meetings, publications, and technological requirements driving the Society's future.

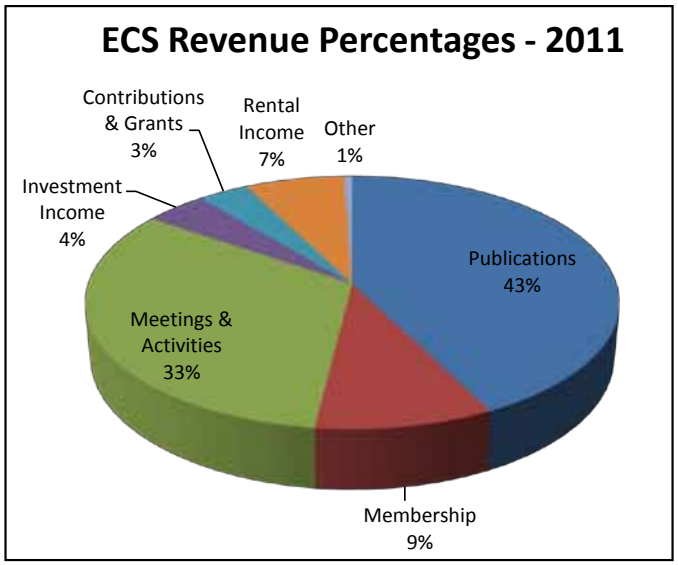
In the near future, we expect some major changes in ECS programs to impact our expenses. The Society will introduce three new journals in July 2012, which creates increases in editorial and administrative expenses. In addition, this past fall we developed a beta version of a new professional networking website called Redcat. Development costs will be amortized over a three year period, but the ongoing development and management of this program will place a heavier burden on the Society finances.

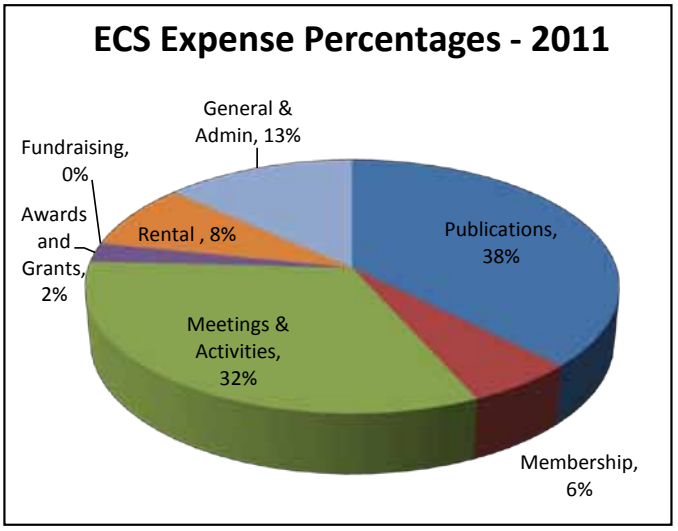
The Society's Statement of Financial Position reflects growth in assets to $14.1 million of which 57% are either custodial or endowment funds. Growth in these funds is important because it is clear that there will be pressure to continue generating financial support through membership and subscription revenues, and our broader financial goal is to cover a high percentage of the operating expenses through support from endowments. This is the main reason we have reinitiated fund raising activities through the new ECS Development Subcommittee.

The year 2011 was a good year for ECS from a financial perspective; the surplus was actually the largest in our history. But the implications of competition and extraordinary technological changes will represent future financial challenges, which we are well prepared to tackle.

Christina Bock, *Treasurer*

Paul Grote, *Director of Finance*





The Electrochemical Society is a nonprofit international association of scientists and engineers chartered as a tax exempt organization under Section 501(c)(3) of the United States Internal Revenue Code. The Board of Directors engages the services of an independent auditor to assure that the Society maintains an effective system of financial management, and continues to operate under its nonprofit charter. The Board of Directors received an unqualified or clean opinion from their independent auditors, WithumSmith+Brown for the fiscal year ending December 31, 2011.

Financial Summary

Consolidated Statement of Financial Position *(For the years ended December 31, 2011 and 2010)*

Assets	2011	2010
Cash and cash equivalents	$ 918,461	$ 1,275,099
Accounts receivable, net	44,464	257,990
Prepaid expenses, deposits, and other assets	133,278	90,112
Investments in marketable securities	7,473,725	6,638,935
Custodial account investments	721,568	740,584
Deferred rent	68,656	67,094
Investments in real estate:		
Land	1,603,427	1,603,427
Buildings, less accumulated depreciation of $$432,847	2,965,735	2,932,017
Intangible assets	225,747	-
Total assets	**$14,155,061**	**$13,605,258**
Liabilities and Net Assets		
Liabilities		
Accounts payable and accrued expenses	$ $200,378	$ 482,022
Deferred revenue	832,572	1,088,811
Custodial account liability	721,568	740,584
Security deposits	33,487	34,382
Deferred compensation	34,391	26,432
Net assets		
Unrestriced	11,092,450	10,013,098
Temporarily restricted	407,247	404,571
Permanently restricted	832,968	815,358
Total net assets	12,332,665	11,233,027
Total liabilites and net assets	**$14,155,061**	**$13,605,258**

Consolidated Statement of Changes in Net Assets *(For the years ended December 31, 2011 and 2010)*

Revenues		
Publications	$ 2,954,166	$ 3,122,834
Membership	654,036	693,200
Society meetings and activities	2,271,796	1,947,271
Interest and dividend income	302,242	388,814
Contributions and grants	243,345	68,488
Rental income	482,192	496,339
Other revenues	40,346	141,741
	$6,948,123	**$ 6,858,687**
Expenses		
Program services		
Publications	$ 2,100,260	$ 2,784,909
Membership	323,710	270,840
Society meetings and activities	1,816,715	1,823,663
Awards, fellowships, and grants	134,075	172,373
	$4,374,760	**$ 5,051,785**
Supporting services		
General and administrative	747,048	535,904
Fundraising	685	28,058
Rental operations	471,915	462,378
	$1,219,648	**$ 1,026,340**
Increase in net assets from operations	$ 1,353,715	$ 780,562
Net change in fair value of investments	(254,077)	304,457
Other non-operation revenue	-	5,847
Change in net assets	1,099,638	1,090,866
Net assets, beginning of year	11,233,027	10,142,161
Net assets, end of year	$12,332,665	$11,233,027

These financial statements are a condensed version of the audited statements of ECS for the years ending December 31, 2011 and 2010. ECS will be pleased to provide complete copies along with all footnotes and the unqualified report of our auditors upon request.

Notes to Financial Statements

1. Summary of Significant Accounting Policies

The consolidated financial statements include the accounts of The Electrochemical Society, Inc. and its Divisions, Groups and Sections, and the LLC. All intercompany balances and transactions have been eliminated in consolidation.

The consolidated financial statements have been prepared to focus on The Electrochemical Society, Inc. and Subsidiary (the Society) as a whole, and to present balances and transactions according to the existence or absence of donor-imposed restrictions. Accordingly, net assets and changes therein are classified as follows: Unrestricted net assets – net assets not subject to donor-imposed stipulations; Temporarily restricted net assets – net assets subject to donor-imposed stipulations that will be met by actions of the Society and/or by the passage of time; Permanently restricted net assets (endowment funds) – net assets subject to donor-imposed stipulations that they be maintained permanently by the Society.

2. Income Tax Status and Income Taxes

ECS and its Divisions, Groups, and Sections qualify as a tax-exempt organization described under Section 501(c)(3) of the Internal Revenue Code and all of its income, except income generated through the advertising included in its publications, is exempt from Federal income taxes.

As a single-member limited liability company, LLC is treated as a "disregarded entity" for income tax purposes and, as such, its financial activity is reported in conjunction with the Federal income tax filings of ECS. The Society has adopted the accounting pronouncement that provides guidance on uncertain tax positions. The Society has no unrecognized tax benefits at December 31, 2011.

3. Investments

Investments in equities and fixed income instruments are reported at fair market value, and investment in real estate is reported at cost. Investment income and realized and unrealized net gains and losses on investments of permanently restricted net assets are reported as follows: as increases or decreases in temporarily restricted net assets if the terms of the gift impose restrictions on the use of the income and/or net gains; as increases or decreases in unrestricted net assets in all other cases. Cost, market value and unrealized appreciation (depreciation) at December 31, 2011 are summarized as follows:

	Cost	Market Value	Unrealized Appreciation (Depreciation)
Money Market Funds	$ 1,541	$ 1,541	$ -
Stocks and Mutual Funds	4,207,936	4,203,075	(4,861)
Certificate of Deposit	1,427,636	1,429,510	1,874
Corporate and U.S. Bonds	1,998,443	2,261,167	262,724
Real Estate	5,002,009	5,002,009	--
Real Estate Trust	300,000	300,000	
Total	$12,937,565	$13,197,302	$ 259,737

4. Endowment Funds

The Society's endowment funds consist of several funds established to fund awards, as well as an educational endowment fund, publications endowment fund and an ECS endowment fund. The endowment funds include both donor-restricted funds and funds designated by the Board of Directors to function as endowments. As required by generally accepted accounting principles (GAAP), net assets associated with endowment funds are classified based on the existence or absence of donor-imposed restrictions.

The Society's policy requires the preservation of the fair value of the original gift as of the gift date of the donor-restricted endowment funds absent explicit donor stipulations to the contrary. As a result, the Society classifies as permanently restricted net assets the original value of gifts donated to the permanent endowment and the original value of subsequent gifts to the permanent endowment. The remaining portion of the donor-restricted endowment fund that is not classified in permanently restricted net assets is classified as temporarily restricted net assets until those amounts are appropriated for expenditure by the Society.

5. ECS Holdings, LLC

ECS Holdings LLC was chartered in 1998 to manage the real estate assets of the Society. Current real estate holdings include five buildings at Howe Commons in Pennington, NJ valued at a cost of $5,002,009. The Society occupies one of the buildings and the other four are classified as an investment. ECS Holdings LLC leases office space in these four buildings to various tenants under operating leases arrangements expiring through 2019. Rental income under the aforementioned leases totaled $482,192 (net of Society's rentals of $71,591) for the year ended December 31, 2011.

6. Report of the ECS Audit Subcommittee

The ECS Audit Committee provides oversight of The Electrochemical Society's financial reporting process on behalf of the Board of Directors. Management (ECS Staff Directors and Officers) is responsible for the financial statements and the financial reporting process, including the system of internal control. In fulfilling its oversight responsibilities, the Committee discussed the financial statements in the annual report with management, including a discussion of quality, not just the acceptability, of the accounting principles; the reasonableness of significant judgments; and the clarity of disclosures in the financial statements.

The members of the Audit Committee in 2011 were Peter Fedkiw (Chair), John Susko, Petr Vanýsek, Robert Kelly and Lloyd George.

The ECS Audit Committee discussed with the independent auditors the overall scope and plans for their respective audits. The Committee meets with the independent auditors with and without management present, to discuss the results of their examinations, their evaluations of the Society's internal control, compliance with laws and regulations, and the overall quality of the Society's financial reporting.

Based on the discussions referenced above, the ECS Audit Committee has recommended for acceptance to the Board of Directors the audited financial statements for the year ended December 31, 2011.

Annual Report

Board of Directors

(as of October 2011)

Esther Takeuchi
President and Board Chair

Fernando Garzon
First Vice-President

Tetsuya Osaka
Second Vice-President

Paul Kohl
Third Vice-President

Johna Leddy
Secretary

Christina Bock
Treasurer

William D. Brown
Immediate Past President

Roque J. Calvo
Executive Director

Zoraida Aguilar, Sensor Division

Christian Bonhôte, Chair, Electrodeposition Division

Pablo Chang, Electronics & Photonics Division

Lloyd George, Nonprofit Financial Professional

Dirk Guldi, Chair, Fullerenes, Nanotubes, & Carbon Nanostructures Division

Douglas Hansen, Corrosion Division

Arumugam Manthiram, Battery Division

Shelley Minteer, Physical & Analytical Electrochemistry Division

Kailish Mishra, Chair, Luminescence & Display Materials Division

Dennis Peters, Organic & Biological Electrochemistry Division

Vijay Ramani, Chair, Industrial Electrochemistry & Electrochemical Engineering Division

Jean St-Pierre, Energy Technology Division

Kalpathy Sundaram, Chair, Dielectric Science & Technology Division

Enrico Traversa, Chair, High Temperature Materials Division

ECS Editorial Boards

(as of December 31, 2011)

Electrochemical Science and Technology Editorial Board
Daniel Scherson, *Editor*
Doron Aurbach
Gerald S. Frankel
Thomas F. Fuller
Andrew A. Gewirth
Raymond J. Gorte
Takayuki Homma
Charles L. Hussey
Rangachary Mukundan
Dennis G. Peters
John Weidner
Martin Winter

Solid State Science and Technology Editorial Board
Dennis Hess, *Editor*
Jennifer A. Bardwell
George Celler
Stefan De Gendt
Francis D'Souza
Yue Kuo
Kailash C. Mishra

Interface
Krishnan Rajeshwar, *Editor*

Interface Advisory Board
Tim Armstrong, High Temperature Materials Division
Albert Fry, Organic & Biological Electrochemistry Division
Uwe Happek, Luminescence & Display Materials Division
Andrew Hillier, Physical & Analytical Electrochemistry Division
Andrew Hoff, Electronics & Photonics Division
Prashant V. Kamat, Fullerenes, Nanotubes, & Carbon Nanostructures Division
Mani Manivannan, Energy Technology Division
Arumugam Manthiram, Battery Division
Durga Misra, Dielectric Science & Technology Division
Barbara Shaw, Corrosion Division
John Staser, Industrial Electrochemistry & Electrochemical Engineering Division
Nick Wu, Sensor Division
Giovanni Zangari, Electrodeposition Division

ECS Transactions
John W. Weidner, *Editor*
James M. Fenton, *Associate Editor*
D. Noel Buckley, Electronics and Photonics Division
Bryan A. Chin, Sensor Division
Hugh De Long, Physical and Analytical Electrochemistry Division
James M. Fenton, Energy Technology Division
Dirk Guldi, Fullerenes, Nanotubes and Carbon Nanostructures Division
Turgut Gur, High Temperature Materials Division
Bor Yann Liaw, Battery Division
Kailash C. Mishra, Luminescence and Display Materials Division
Durgamadhab Misra, Dielectric Science and Technology Division
Elizabeth Podlaha-Murphy, Electrodeposition Division
Dennis Peters, Organic and Biological Electrochemistry Division
Sanna Virtanen, Corrosion Division
John Weidner, Industrial Electrochemistry and Electrochemical Engineering Division

Journals Editorial Advisory Committee
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S. V. Babu
Teng-Ming Chen
Ray Hua Horng
Daniel Lincot
Arumugam Manthiram
Thomas P. Moffat
S. J. Pearton
Tae-Yeon Seong
Gery R. Stafford
Bernard Tribollet
Rong-Jun Xie

Headquarters Staff

(as of June 30, 2012)

Roque J. Calvo, Executive Director

Mary E. Yess, Deputy Executive Director & Publisher

Dinia Agrawala, *Interface* Production Manager

Karen Chmielewski, Finance Associate

Paul Cooper, Editorial Manager

Ann F. Goedkoop, Director of Publications

Paul Grote, Director of Finance

Andrea L. Guenzel, Journals Production Assistant

David Harkness, Director of Constituent Services

Mary Hojlo, Constituent Services Assistant

Colleen Klepser, Executive Administrator

John Lewis, Associate Director of Conference Publications

Heather McAlinn, Publications Production Assistant

Winnie Mutch, Web Manager

Anna Olsen, Constituent Services Associate

Karen Baliff Ornstein, Associate Director of Sales and Marketing

Stephanie Plassa, Director of Meetings and Exhibits

Beth Schademann, Publications Production Assistant

Stacy Schlags, Meetings Coordinator

Beth Anne Stuebe, Conference Publications Production Assistant

Ellen M. Tiano, Constituent Services Associate

Paul J. Urso, Associate Director of Technical Programming

ECS Donors

The following individuals and organizations have helped support ECS's many activities. We thank them for their generous support of the Society.

Endowed Funds

We are grateful to the following donor for his generous support of our Publications Endowment. This endowment helps to insure the continuation of bold advances in electrochemical and solid-state science and technology.

Robert D. Hancock Trust

Businesses, Corporations, and Organizations

We are grateful to the following businesses, organizations, and corporations for their generous support of $5,000 and above in support of our mission.

Asahi Kasei E-materials Corp.
Bio-Logic USA
Duracell
FMC Corporation, Peroxygens Division
Gelest, Inc.
General Electric Global Research
Hydro-Quebec
Industrie De Nora S.p.A.
Saft Batteries, Specialty Batteries Group
Scribner Associates

Government

We are grateful to the following government institution for its generous support of $5,000 and above in support of our mission.

Office of Naval Research

Individuals

We are grateful to the following individual for his generous gifts of $1,000 and above in support of our mission.

James Acheson

The Legacy Society

The Legacy Society honors benefactors who have provided for the Society in a variety of ways—through their wills, a charitable trust, a life-income arrangement, a life insurance policy, or a retirement plan.

Robert P. Frankenthal

Corporate Partners

3M Company

Advance Research Chemicals, Inc.

Agilent Technologies

Air Liquide

AIXTRON

AJA International

ALS Co., Ltd

American Elements

AMETEK Scientific Instruments

Applied Materials

Arbin Instruments

Asahi Kasei E-Materials Corp

Ballard Power Systems

Bio-Logic USA/ Bio-Logic SAS

Bitrode

Bruker AXS Inc.

C. Uyemura & Co., Ltd.

Cabot Corporation

Cambridge NanoTech, Inc.

CAMECA

Central Electrochemical Research Institute

Chemat Scientific, inc.

Chemtrace Corp

Chris Hillseth Enterprises Corporation

Coolohm, Inc.

Co-Operative Plating Company

DET Norske Veritus, (DNV)

Dow Chemical Co., Chlor-Alkali Assets Business

Duracel

Dynatronix, Inc.

eDAQ, Inc.

EDAX Inc.

EI-Cell GmbH

ElectroChem, Inc.

Electrosynthesis Company, Inc.

ENEOS CELLTECH Co., Ltd.

Energizer

ENrG, Inc.

ESL Electro-Science

Evans Analytical Group

Evonik GmbH

Ezelleron GmbH

Faraday Technology, Inc.

FMC Corporation.

Fortu Research GmbH

FSI International

Fuel Cell Technologies

Fuel Con AG

Fuelcellmaterials.com

Gamry Instruments

Gelest, Inc.

General Electric Co.

General Motors Research Laboratories

Gifford Krass

Giner, Inc.

Greatbatch, Inc.

GS-Yuasa Corp.

Heka Electronics, Inc.

Honda R&D Co., Ltd.

Hosokawa Micron Powder Systems

Hydro-Québec

Hyosung Corporation

Hysitron Inc.

IBM Corporation

Industrie De Nora S.p.A.

INFICON

International Lead Zinc Research Organization

INVIUM Technologies

Ion Power

Johnson Controls Hybrid & Recycling

Johnson Matthey Technology Centre

Kerafol Keramische Folien GmbH

Lam Research

Lawrence Berkeley National Lab

Leclanche, S.A.

Maccor, Inc.

Materials Mates Italia

Mattson Technology, Inc

Medtronic, Inc. Energy and Component Center

Metrohm Autolab

Metrohm Autolab USA

Metrohm USA Inc.

MTI Corporation

N.E. Chemical Corporation

Nacional de Grafite, LTDAI

National Research Council-Canada

National Research Institute for Electrical Engineering

Netzsch Instruments North America, LLC

Next Energy-EWE-Forshungzentrum fuer Energie Technologie

Ningbo Intstitute of Material Science Technology and Engineering

Nissan Motor Co., Ltd.

NuVant Systems, Inc.

Occidental Chemical Corp.

Olin ChlorAlkali Products Division

OM Group, Inc.

Panasonic Corporation

PEC North America

Permascand AB

Permelec Electrode, Ltd.

Pine Research Instrumentation

Plasmionique, Inc.

PPG Industries, Inc.

ProSys, Inc.

QualComm MEMS Technologies

Quallion, LLC

Radiant Technologies, Inc.

Robert Bosch GmbH

Rockwood Lithium

SAFC Hitech

Saft Batteries, Specialty Battery Group

Sandia National Labs

SANYO Electric Co., Ltd.,

Scribner Associates, Inc.

Siltronic AG

SOFC Society of Japan

SRI International

Strem Chemicals

Tanaka Kikinzoku Kogyo K K

TDK Corporation

Technic, Inc.

Teledyne Energy Systems

TIMCAL Graphite and Carbon Ltd.

Tokuyama Corporation

Tokyo Electron

Toyota Central Research & Development Labs, Inc.

Toyota Motor Engineering & Manufacturing, North America Inc.

Umicore AG & Co.

Uniscan Instruments

Uniscan Instruments

US Naval Research Laboratory

UTC Power

Wildcat Discovery Technologies, Inc.

Yeager Center for Electrochemical Sciences at CWRU

ZSW, Center for Solar Energy & Hydrogen Research

ECS Honor Roll

Past Presidents of the Society

J. W. Richards 1902-1904
H. S. Carhart 1904-1905
W. D. Bancroft 1905-1906
C. Hering 1906-1907
C. F. Burgess 1907-1908
E. G. Acheson 1908-1909
L. H. Baekeland 1909-1910
W. H. Walker 1910-1911
W. R. Whitney 1911-1912
W. L. Miller 1912-1913
E. F. Roeber 1913-1914
F. A. Lidbury 1914-1915
L. Addicks 1915-1916
F. A. J. FitzGerald 1916-1917
C. G. Fink 1917-1918
F. J. Tone 1918-1919
W. D. Bancroft 1919-1920
W. S. Landis 1920-1921
A. Smith 1921-1922
C. G. Schluederberg 1922-1923
A. T. Hinckley 1923-1924
H. C. Parmelee 1924-1925
F. M. Becket 1925-1926
W. Blum 1926-1927
S. C. Lind 1927-1928
P. J. Kruesi 1928-1929
F. C. Frary 1929-1930
L. Kahlenberg 1930-1931
B. Stoughton 1931-1932
R. A. Witherspoon 1932-1933
J. Johnston 1933-1934
H. S. Lukens 1934-1935
J. H. Critchett 1935-1936
D. A. MacInnes 1936-1937
W. G. Harvey 1937-1938
R. L. Baldwin 1938-1939
H. J. Creighton 1939-1940
F. C. Mathers 1940-1941
R. R. Ridgway 1941-1942
E. M. Baker 1942-1943
R. M. Burns 1943-1944
S. D. Kirkpatrick 1944-1945
W. R. Veazey 1945-1946
W. C. Moore 1946-1947
G. W. Heise 1947-1948
J. A. Lee 1948-1949
A. L. Ferguson 1949-1950
C. L. Faust 1950-1951
R. M. Hunter 1951-1952
J. C. Warner 1952-1953
R. J. McKay 1953-1954
M. J. Udy 1954-1955
H. H. Uhlig 1955-1956
H. Thurnauer 1956-1957
N. Hackerman 1957-1958
S. Swann 1958-1959
W. C. Gardiner 1959-1960
R. A. Schaefer 1960-1961
H. B. Linford 1961-1962
F. L. LaQue 1962-1963
W. J. Hamer 1963-1964
L. I. Gilbertson 1964-1965
E. B. Yeager 1965-1966
H. J. Read 1966-1967
H. C. Gatos 1967-1968
I. E. Campbell 1968-1969
N. C. Cahoon 1969-1970
C. W. Tobias 1970-1971
C. V. King 1971-1972
T. D. McKinley 1972-1973
N. B. Hannay 1973-1974
D. A. Vermilyea 1974-1975
T. R. Beck 1975-1976
M. J. Pryor 1976-1977
D. N. Bennion 1977-1978
D. R. Turner 1978-1979
J. B. Berkowitz 1979-1980
E. M. Pell 1980-1981
R. J. Brodd 1981-1982
F. J. Strieter 1982-1983
J. B. Wagner, Jr. 1983-1984
P. C. Milner 1984-1985
R. C. Alkire 1985-1986
R. E. Enstrom 1986-1987
F. G. Will 1987-1988
B. E. Deal 1988-1989
E. J. Cairns 1989-1990
J. M. Woodall 1990-1991
L. R. Faulkner 1991-1992
W. L. Worrell 1992-1993
R. P. Frankenthal 1993-1994
J. A. Amick 1994-1995
K. R. Bullock 1995-1996
D. W. Hess 1996-1997
B. Miller 1997-1998
G. M. Blom 1998-1999
D.E. Hall 1999-2000
C. M. Osburn 2000-2001
J. Talbot 2001-2002
K. Spear 2002-2003
B. Scrosati 2003-2004
R. Susko 2004-2005
W. Smyrl 2005-2006
Mark Allendorf 2006-2007
Barry MacDougall 2007-2008
D. Noel Buckley 2008-2009
Paul Natishan 2009-2010
William D. Brown 2010-2011

Past Secretaries of the Society

C. Hering 1902
C. J. Reed 1902-1904
S. S. Sadtler 1904-1907
J. W. Richards 1907-1921
C. G. Fink 1921-1947
R. M. Burns 1947-1949
H. B. Linford 1949-1959
I. E. Campbell 1959-1965
R. F. Bechtold 1965-1968
D. R. Turner 1968-1974
P. C. Milner 1974-1980
F. A. Trumbore 1980-1984
J. A. Amick 1984-1988
E. W. Brooman 1988-1992
J. McBreen 1992-1996
R. Susko 1996-2000
P. Natishan 2000-2004
P. Vanýsek 2004-2008

Past Treasurers of the Society

P. G. Salom 1902-1920
F. A. Lidbury 1920-1924
A. Smith 1924-1931
R. M. Burns 1931-1943
W. W. Winship 1943-1949
E. G. Widell 1949-1955
L. I. Gilbertson 1955-1961
E. G. Enck 1961-1964
R. H. Schaefer 1964-1967
R. H. Cherry 1967-1973
F. J. Strieter 1973-1976
J. L. Griffin 1976-1982
J. Kruger 1982-1986
R. P. Frankenthal 1986-1990
R. E. White 1990-1994
W. M. Bullis 1994-1997
Y. H. Wong 1997-1998
W. D. Brown 1998-2002
P. Fedkiw 2002-2006
J. Susko 2006-2010

Annual Report

Edward Goodrich Acheson Award

E. G. Acheson....1929
E. F. Northrup....1931
C. G. Fink....1933
F. J. Tone....1935
F. M. Becket....1937
F. C. Frary....1939
C. F. Burgess....1942
W. Blum....1944
H. J. Creighton....1946
D. A. MacInnes....1948
G. W. Vinal....1950
J. W. Marden....1952
G. W. Heise....1954
R. M. Burns....1956
W. J. Kroll....1958
H. B. Linford....1960
C. L. Faust....1962
E. A. Gulbransen....1964
W. C. Vosburgh....1966
F. L. LaQue....1968
S. Ruben....1970
C. W. Tobias....1972
C. V. King....1974
N. B. Hannay....1976
D. A. Vermilyea....1978
E. B. Yeager....1980
H. C. Gatos....1982
N. Hackerman....1984
E. M. Pell....1986
H. H. Uhlig....1988
T. R. Beck....1990
D. R. Turner....1992
J. B. Wagner, Jr.....1994
R. C. Alkire....1996
J. M. Woodall....1998
L. R. Faulkner....2000
B. Deal....2002
W. L. Worrell....2004
V. de Nora....2006
Robert P. Frankenthal....2008
John Newman....2010

Olin Palladium Medal Award

(formerly the Palladium Medal Award, 1951-1977)

C. W. Wagner....1951
N. H. Furman....1953
U. R. Evans....1955
K. F. Bonhoeffer....1957
A. N. Frumkin....1959
H. H. Uhlig....1961
N. Hackerman....1965
P. Delahay....1967
T. P. Hoar....1969
L. Brewer....1971
V. G. Levich....1973
M. J. N. Pourbaix....1975
H. Gerischer....1977
R. Parsons....1979
I. M. Kolthoff....1981
M. Cohen....1983
M. Fleischmann....1985
A. J. Bard....1987
B. E. Conway....1989
J. Newman....1991
J.-M. Savéant....1993
J. Kruger....1995
R. W. Murray....1997
J. B. Goodenough....1999
N. Sato....2001
E. Gileadi....2003
R. Rapp....2005
Sergio Trasatti....2007
Dieter M. Kolb....2009
Koji Hashimoto....2011

Gordon E. Moore Medal for Outstanding Achievement in Solid-State Science and Technology

(formerly the Solid State Science & Technology Award, 1973-2005)

W. G. Pfann....1973
H. C. Gatos....1975
R. N. Hall....1977
M. B. Panish....1979
G. L. Pearson....1981
N. Holonyak, Jr.....1983
J. M. Woodall....1985
A. Y. Cho....1987
J. F. Gibbons....1989
J. D. Plummer....1991
B. E. Deal....1993
W. L. Worrell....1995
K. E. Spear....1997
I. Akasaki....1999
A. Reisman....2001
R. B. Fair....2003
D. Hess....2005
Tak H. Ning....2007
C. Grant Willson....2009
Stephen Pearton....2011

Vittorio de Nora Award in Electrochemical Engineering and Technology

(formerly the Electrochemical Science and Technology Award, 1974-1977)

A. Brenner....1974
R. B. MacMullin....1976
F. T. Bacon....1978
H. B. Beer....1980
J. C. Schumacher....1982
D. E. Danly....1984
K. Kordesch....1986
A. Heller....1988
C. W. Tobias....1990
E. B. Yeager....1992
L. T. Romankiw....1994
R. Baboian....1996
W. G. Grot....1998
D. R. Turner....2000
R. C. Alkire....2004
F. Mansfeld....2006
John S. Newman....2008
Derek Pletcher....2010

Carl Wagner Memorial Award

A. J. Bard....1981
G. C. Wood....1983
R. C. Alkire....1985
R. W. Murray....1987
W. L. Worrell....1989
D. D. Macdonald....1991
J. Jorné....1993
B. R. MacDougall....1995
M. J. Weaver....1997
C. R. Martin....1999
P. A. Kohl....2001
R. M. Crooks....2003
J. Hupp....2005
F. Mansfeld....2006
Philip N. Bartlett....2007
Henry S. White....2009
Peter Bruce....2011

Henry B. Linford Award for Distinguished Teaching

C. W. Tobias 1982
B. E. Conway 1984
A. J. Bard 1986
L. Brewer 1988
J. Newman 1990
K. Nobe 1992
J. O'M. Bockris 1994
T. C. Franklin 1996
R. A. Rapp 1998
G. Stoner 2000
D. Peters 2002
R. M. Latanision 2004
D. Pletcher 2006
Eliezer Gileadi 2008
Daniel T. Schwartz 2010

Charles W. Tobias Young Investor Award

Stuart B. Adler 2004
Hock Min Ng 2006
Yang Shao-Horn 2008
Thomas J. Schmidt 2010

Honorary Members

Charles F. Chandler 1919
Edgar F. Smith 1919
Carl Hering 1922
Edward G. Acheson 1923
Wilder D. Bancroft 1925
Edward Weston 1926
Thomas A. Edison 1928
W. Lash Miller 1929
Edward Dean Adams 1930
Charles F. Burgess 1932
Frederick M. Becket 1934
L. H. Baekeland 1936
Robert A. Witherspoon 1940
Archer E. Wheeler 1941
W.R. Whitney 1944
Paul J. Kruesi 1944
Colin G. Fink 1946
Oliver W. Brown 1946
John W. Marden 1947
William Blum 1953
Robert M. Burns 1959
George W. Heise 1959
Frank C. Mathers 1959
Stanislaus Skowronski 1962
Oliver W. Storey 1962
A. Kenneth Graham 1963
Howard A. Acheson 1971
Charles L. Faust 1971
Cecil V. King 1973
Herbert H. Uhlig 1973
Norman Hackerman 1973
Henry B. Linford 1974
Sherlock Swann 1974
Ernest G. Enck 1975
W. C. Gardiner 1975
Ivor E. Campbell 1976
Ernest B. Yeager 1977
David A. Vermilyea 1977
Charles W. Tobias 1977
Harry C. Gatos 1978
Ralph M. Hunter 1979
Dennis R. Turner 1980
Henry F. Ivey 1980
Walter J. Hamer 1980
Michael J. Pryor 1981
Francis L. LaQue 1981
N. Bruce Hannay 1982
Theodore R. Beck 1982
Vittorio de Nora 1982
John L. Griffin 1983
Erik M. Pell 1983
Samuel Ruben 1983
Paul C. Milner 1986
Harold J. Read 1986
Forrest A. Trumbore 1986
Douglas N. Bennion 1987
Ralph J. Brodd 1987
Jerome Kruger 1987
Glenn W. Cullen 1990
James C. Acheson 1990
Richard C. Alkire 1991
Bertram Schwartz 1991
J. Bruce Wagner, Jr. 1991
V. H. Branneky 1991
R. S. Karpiuk 1996
F. J. Strieter 1996
W. L. Worrell 1996
Barry Miller 1999
Jefferson Cole 2001
L. Faulkner 2003
R. Frankenthal 2003
L. Romankiw 2003
Gordon E. Moore 2007
John S. Newman 2007
Jerry M. Woodall 2007

Honorary Associate Members

Mrs. Colin G. Fink

Fellows of The Electrochemical Society

Allen J. Bard 1990
Robert B. Comizzoli 1990
Glenn W. Cullen 1990
Theodore I. Kamins 1990
Paul C. Milner 1990
Edward H. Nicollian 1990
Robert A. Osteryoung 1990
Arnold Reisman 1990
Lubomyr T. Romankiw 1990
Geraldine C. Schwartz 1990
Ben G. Streetman 1990
J. Bruce Wagner, Jr. 1990
Theodore R. Beck 1991
Elton J. Cairns 1991
Bruce E. Deal 1991
Werner Kern 1991
William A. Pliskin 1991
Charles W. Tobias 1991
Rolf Weil 1991
Richard C. Alkire 1992
Vittorio de Nora 1992
Jerome Kruger 1992
Barry Miller 1992
Dennis R. Turner 1992
Jerry M. Woodall 1992
Richard P. Buck 1993
Larry. R. Faulkner 1993
Dennis W. Hess 1993
Vik J. Kapoor 1993
Rolf H. Muller 1993
Carlton M. Osburn 1993
Robert A. Rapp 1993
George L. Schnable 1993
Y. H. Wong 1993
Petr Zuman 1993
George K. Celler 1994
Sung-Nee George Chu 1994
John P. Dismukes 1994
Richard B. Fair 1994
Adam Heller 1994
Richard A. Oriani 1994
Boone B. Owens 1994
Wayne L. Worrell 1994
Fred Anson 1995
Laurence D. Burke 1995
Brian E. Conway 1995
Robert P. Frankenthal 1995
Karl M. Kadish 1995
Digby D. Macdonald 1995
Gleb Mamantov 1995
Florian Mansfeld 1995
Royce W. Murray 1995
John Newman 1995
Yutaka Okinaka 1995
Howard W. Pickering 1995
George Rozgonyi 1995
Mordechay Schlesinger 1995
Karl E. Spear 1995
John M. Blocher, Jr. 1996
Hans K. Böhni 1996
Der-Tau Chin 1996
Hugh Isaacs 1996
Wolfgang J. Lorenz 1996
S. J. Pearton 1996
Subhash C. Singhal 1996
Venkataraman Swaminathan 1996

Annual Report

Fellows *(continued)*

James A. Amick 1997
Denis Noel Buckley 1997
Eliezer Gileadi 1997
Michel J. Froment 1997
Koji Hashimoto 1997
Chung-Chiun Liu 1997
Edward McCafferty 1997
Theodore D. Moustakas 1997
Shyam P. Muraka 1997
Stella W. Pang 1997
Joachim Walter Schultze 1997
James D. Sinclair 1997
Norman L. Weinberg 1997
Lawrence Young 1997
Huk Y. Cheh 1998
Donald E. Danly 1998
Dennis H. Evans 1998
Fumio Hine 1998
Dennis C. Johnson 1998
Zoltan Nagy 1998
Katsumi Niki 1998
Jun-ichi Nishizawa 1998
Fan Ren 1998
Antonio J. Ricco 1998
David A. Shores 1998
William H. Smyrl 1998
George Thompson 1998
Eric Brooman 1999
Stanley Bruckenstein 1999
Kathryn Bullock 1999
Shimshon Gottesfeld 1999
Yue Kuo 1999
Dieter Landolt 1999
Jerzy Ruzyllo 1999
Norio Sato 1999
Ralph White 1999
William Yen 1999
Cammy Abernathy 2000
Kuzhikalail M. Abraham 2000
John C. Angus 2000
W. Ronald Fawcett 2000
David S. Ginley 2000
Yasuhiko Ito 2000
Howard Huff 2000
Robert F. Savinell 2000
Roger Staehle 2000
Charles W. Struck 2000
Sergio Trasatti 2000
Dieter M. Kolb 2001
David J. Lockwood 2001
James McBreen 2001
Patrick J. Moran 2001
Shohei Nakahara 2001
William E. O'Grady 2001
Supramanian Srinivasan 2001
Mark Allendorf 2002
William Brown 2002
Cor Claeys 2002
Martin Kendig 2002
Kim Kinoshita 2002
Paul Kohl 2002
Zempachi Ogumi 2002
Tetsuya Osaka 2002
Krishnan Rajeshwar 2002
Israel Rubinstein 2002
Sigeru Torii 2002
Toshio Shibata 2002
Sorin Cristoloveanu 2002
David Duquette 2003
Peter Fedkiw 2003
Charles Hussey 2003
Richard McCreery 2003
Frank McLarnon 2003
Robin Susko 2003
Darrel Untereker 2003
Osamu Yamamoto 2003
G. T. Burstein 2004
C. Clayton 2004
G. Davis 2004
M. J. Deen 2004
S. Fonash 2004
M. Meyyappan 2004
J. F. Rusling 2004
M. Seo 2004
M. Shur 2004
J. Simonet 2004
M. Stratmann 2004
J. Talbot 2004
M. S. Whittingham 2004
R. Adzic 2005
J. Davidson 2005
T. Hattori 2005
J. P. Leburton 2005
P. Marcus 2005
C. Martin 2005
P. Natishan 2005
D. Pletcher 2005
B. Scrosati 2005
J. Scully 2005
R. Singh 2005
H. H. Strehblow 2005
M. Williams 2005
A. Baca 2006
S. Bandyopadhyay 2006
T. Fahidy 2006
G. Frankel 2006
C. Jagadish 2006
N. Koshida 2006
J. Lessard 2006
H. Massoud 2006
H. Yokokawa 2006
B. MacDougall 2006
M. Orazem 2006
D. Misra 2006
A. Virkar 2006
A. Wieckowski 2006
Simon S. Ang 2007
Viola Birss 2007
Marc Cahay 2007
James M. Fenton 2007
Dennis G. Peters 2007
Daniel A. Scherson 2007
Eric D. Wachsman 2007
Doron Aurbach 2008
Albert J. Fry 2008
Fernando Garzon 2008
Yury Gogotsi 2008
Curtis F. Holmes 2008
Prashant V. Kamat 2008
Patrik Schmuki 2008
Gery R. Stafford 2008
Joseph R. Stetter 2008
John Stickney 2008
Thomas Thundat 2008
Vladimir Bagotsky 2009
Ugo Bertocci 2009
Manfred Engelhardt 2009
Tom Fuller 2009
Peter Hesketh 2009
Uziel Landau 2009
Dolf Landheer 2009
Thomas P. Moffat 2009
Ikuzo Nishiguchi 2009
Kohei Uosaki 2009
Rudolph G. Buchheit 2010
Francis D'Souza 2010
Toshio Fuchigami 2010
Michel Houssa 2010
Robert G. Kelly 2010
Roger C. Newman 2010
Peter N. Pintauro 2010
Peter C. Searson 2010
David Shoesmith 2010
Bernard Tribollet 2010
John W. Weidner 2010
David J. Young 2010
Hugh C. DeLong 2011
Hubert Gasteiger 2011
Arumugam Manthiram 2011
Ashok Kumar Shukla 2011
Paul C. Trulove 2011
Karim Zaghib 2011
Giovanni Zangari 2011
Thomas A. Zawodzinski 2011

Edward G. Weston Summer Fellowship

(formerly the Edward G. Weston Fellowship, 1930-1945)

E. B. Sanigar 1930
K. Solliner 1931
M. E. Fogle 1932
R. D. Blue 1933
P. A. Jacquet 1934
M. A. Coler 1935
H. B. Linford 1936
G. L. Putnam 1937
V. de Nora 1938
W. P. Ruemmier 1940
R. E. Black 1941
W. E. Roake 1942
R. D. Misch 1947

Edward G. Weston Summer Fellowship
(continued)

M. T. Simnad 1948
R. L. Brubaker 1961
D. Yohe 1962
H. O. Daley, Jr. 1963
M. D. Hawley 1964
T. G. McCord 1965
J. D. McLean 1966
K. B. Prater 1967
K. Doblhofer 1968
L. R. Faulkner 1969
W. J. Horkans 1970
W. J. Horkans 1971
W. J. Bover 1972
B. J. Alexander 1973
S. S. Fratoni, Jr. 1974
M. Suchanski 1975
R. J. Nowak 1976
P. A. Kohl 1977
C. D. Jaeger 1978
L. Bottomley 1979
G. L. McIntire 1980
J. Pemberton 1981
M. E. Kordesch 1982
R. G. Tompson 1983
P. M. Kovach 1984
J. N. Harb 1985
S. E. Creager 1986
X. Zhang 1987
C. Amass 1988
R. J. Phillips 1989
J. E. Franke 1990
S. R. Snyder 1991
P. Pantano 1992
G. J. Edens 1993
B. Idriss 1994
D. Bizzotto 1995
L. A. Lyon 1996
C. Claypool 1997
B. Bath 1998
A. C. Templeton 1999
P. W. Wuelfing 2000
K. Balss 2001
T. Hu 2002
J. Mauzeroll 2003
J. Seegmiller 2004
E. Blair 2005
F. Laforge 2006
Aleix G. Güell 2007
Matthew J. Banholzer 2008
Shulei Chou 2009
Binh-Minh Nguyen 2010
Abrin Schmucker 2011

Colin Garfield Fink Summer Fellowship

P. Brown 1962
W. G. Lemmermann 1963
W. G. Stevens 1964
J. P. Carney 1965
S. Piekarski 1966
B. S. Pons 1967
R. E. Bonewitz 1968
L. Papouchado 1969
R. G. Reed 1970
R. Fike 1971
D. L. McAllister 1972
R. R. Chance 1973
P. I. Lee 1974
J. B. Flanagan 1975
J. S. Hammond 1976
P. D. Tyma 1977
S. M. Wilhelm 1978
J. D. Porter 1979
R. S. Glass 1980
E. E. Bancroft 1981
T. D. Cabeika 1982
B. L. Wheeler 1983
E. T. T. Jones 1984
D. A. Van Galen 1985
J. S. Hanson 1986
P. Gao 1987
D. T. Schwartz 1988
A. E. Russell 1989
J. Xue 1990
C. K. Rhee 1991
M. J. Shane 1992
C. M. Pharr 1993
J. M. Lauerhaus 1994
S. M. Hendrickson 1995
J. C. Hutchinson 1996
P. V. A. Pamidi 1997
G. S. Hwang 1998
W. Baker 1999
A. Crown 2000
R. Maus 2001
S. Peper 2002
M. Alpuche-Aviles 2003
A. Mugweru 2004
G. Lica 2005
A. Martinson 2006
Prabeer Barpanda 2007
Sau Yen Chew 2008
Hyea Kim 2009
Brian Adams 2010
Tae-Ho Shin 2011

Joseph W. Richards Summer Fellowship

V. E. Hauser, Jr. 1960
M. J. Schaer 1961
R. E. Visco 1961
A. K. Postma 1962
C. C. Liu 1963
M. J. Vasile 1964
M. J. Vasile 1965
C. C. Liu 1966
B. N. Baron 1967
L. P. Zajicek, Jr. 1968
K. R. Bullock 1969
S. H. Cadle 1970
J. W. Webb 1971
C. P. Keszthelyi 1972
M. Shabrang 1973
D. H. Karweik 1974
T. P. DeAngelis 1975
D. L. Feke 1976
H. Faulkner 1977
D. M. Novak 1978
B. R. Karas 1979
R. M. Cohen 1980
R. N. Dominey 1981
R. M. Ianniello 1982
D. F. Tessier 1983
N. T. Sleszynski 1984
C. M. Lieber 1985
J. L. Valdes 1986
R. Q. Bligh 1987
D. W. Conrad 1988
S. A. Schofield 1989
J. A. Roberts 1990
M. S. Freund 1991
L. Gao 1992
H. Gasteiger 1993
J. Schoer 1994
S. Morin 1995
N. Madigan 1996
S. Petrovic 1997
J. J. Sumner 1998
A. Wijayawardhana 1999
B. Liu 2000
C. Noble 2001
C. B. France 2002
P. Ramadass 2003
J. Carroll 2004
K. Salaita 2005
J. Breger 2006
Sadagopan Krishnan 2007
Meng Jiang 2008
Haizhou Liu 2009
Mohammad Rez Khajavi 2010
Jeyavel Velmurugan 2011

F. M. Becket Summer Fellowship

(formerly the F. M. Becket Memorial Award 1962-1999)

R. B. Johnson 1962
J. K. Johnstone 1964
K. Lehman 1966
H. K. Bowen 1967
T. E. Parker 1971
G. M. Crosbie 1973
N. A. Godshall 1975
J. D. Hodge 1977
W. Cheng 1979
P. Davies 1981
P. A. Barron 1983
G. J. Miller 1985
M. Rosenbluth 1987
J. D. Cotton 1989
J. Philliber 1991
P. Agarwal 1993

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F. M. Becket Summer Fellowship
(continued)

H. C. Slade 1995
K. S. Weil 1997
G. S. Hwang 1999
J. Parrish 2001
S. Wasileski....2002
E. Clark....2003
F. Deng 2004
S. Harrison....2005
Y. Yang 2006
Michael Orthner 2007
Marcos Jose Leitos Santos 2008
Steve Rhieu....2009
James Whitaker 2011

Herbert H.Uhlig Summer Fellowship
Natalia Shustova 2008
Venkatasubramanian Viswanathan....2009
Swetha Puchakayala 2011

Energy Research Summer Fellowship
(supported by the U.S. Department of Energy)
M. R. Deakin 1985
P. B. Johnson 1985
D. A. La Hurd 1985
S. E. Morris....1985
D. P. Wilkinson....1985
D. G. Frank....1986
K.-C. Ho 1986
R. G. Kelly 1986
I.-H. Yeo....1986
J. Kwak 1986
L. C. Dash 1987
S. A. Naftel....1987
T. R. Nolen 1987
D. Schwartz....1987
T. H. Wong 1987
S. D. Fritts....1988
D. A. Koos....1988
D. A. Hazlebeck 1988
M. O. Schloh 1988
S. S. Perine 1988
J. E. Baur 1989
C.-P. Chen 1989
D. W. Eng 1989
R. L. McCarley 1989
C. J. Murphy 1989
C. K. Nguyen 1990
I.-H. Oh 1990
T. G. Strein 1990
J. W. Weidner....1990
S. E. Gilbert....1990
C. S. Johnson....1991
H. Huang....1991
D. R. Lawson 1991
B. D. Pendley 1991
C. C. Streinz 1991
P. A. Connick....1992
A. C. Hillier....1992
D. L. Taylor....1992
K. K. Lian 1992
T. T. Nadasdi....1992
D. G. Jensen....1993
J. C. Bart 1993
G. Seshadri 1993
J. A. Poirier 1993
K. W. Vogt....1993
Z. Shi 1994
C.-C. Hsueh....1994
V. A. Adamian....1994
K. M. Maness....1994
K. M. Richard....1994
Y.-E. Sung 1995
J. C. Conboy....1995
L. A. Zook....1995
W. R. Everett 1995
H. Zhang 1995
S. Grabtchak 1996
J.-B. Green....1996
S. Motupally....1996
C. Nasr 1996
S. Nayak....1996
K. Hu....1997
M. E. Williams....1997
A. Zolfaghari....1997
C. R. Horne 1997
G. K. Jennings....1997
M. Zhao....1998
S. Sriramulu....1998
J. Ritchie....1998
M. A. Elhamid....1998
S. Zou 1998
K. Cooper....2000
K. Grant....2000
D. Hansen 2000
J. F. Hicks....2000
Z. Liu....2000

Oronzio de Nora Industrial Electrochemistry Fellowship
N. Mano 2004
N. Mano 2005
N. Mano 2006
Vijayasekaran Boovaragavan....2007
Vijayasekaran Boovaragavan....2008
Vijayasekaran Boovaragavan....2009
Wenjing (Angela) Zhang....2010

Norman Hackerman Young Author Award
(formerly the Young Authors Prize, 1929-1988)
W. C. Gardiner....1929
D. K. Alpern....1930
F. L. Jones....1931
F. W. Godsey, Jr.....1932
B. L. Bailey....1933
J. R. Heard, Jr. 1934
U. B. Thomas, Jr. 1935
W. A. Johnson....1936
R. S. Soanes 1937
N. B. Nichols 1938
G. A. Moore....1939
J. S. Mackay....1940
E. Adler 1941
S. Speil....1942
W. G. Berl....1943
J. P. Coyle 1944
A. E. Hardy 1945
N. A. Nielsen 1946
H. Leidheiser, Jr. 1947
M. A. Streicher 1948
J. C. Griess, Jr.....1949
G. W. Murphy....1950
J. T. Byrne 1951
W. E. Kuhn 1952
J. Halpern....1953
M. J. Pryor 1954
M. Stern 1955
R. S. Cooper....1956
P. Ruetschi 1957
M. Stern 1958
F. A. Posey 1959
A. C. Makrides....1960
J. D. Newson....1961
M. J. Dignam 1962
J. A. Cunningham....1963
R. E. Westerman 1964
R. E. Visco 1965
J. Newman 1966
H. W. Pickering 1967
G. G. Charette....1968
G. Dryhurst 1969
J. Newman 1969
W. R. Parrish....1969
A. J. Appleby....1970
D. C. Johnson 1970
D.-T. Chin 1971
M. S. Whittingham 1971
M. A. Hopper....1972
F. Kuhn-Kuhnenfeld....1972
M. J. Bowden....1973
L. Thompson....1973
D. Simonsson 1973
S. H. Cadle 1974
A. D. Dalvi 1974
L. R. Faulkner....1975
S. Solmi 1975
P. Negrini....1975
B. MacDougall....1976
S. K. Ubhayakar 1976
C. W. Manke....1977
W. J. Horkans....1977
A. G. Gonzalez....1978
C. H. Tsang....1978
D. A. Antoniadis 1978
D. Y. Wang 1979
C. W. Magee....1979
E. Takayama 1980
H. Reller....1980

Norman Hackerman Young Author Award
(continued)

W. J. P. Van Enckevort....1981
M. W. M. Graef....1981
C. Y. Chao....1981
L. F. Lin....1981
D. W. Sittari....1982
T. P. Chow....1982
P. G. Pickup....1983
K. F. Jensen....1983
D. B. Graves....1983
N. A. Godshall....1984
E. K. Broadbent....1984
J. C. Farmer....1985
G. S. Oehrlein....1985
J. Richer....1986
T. Tanaka....1986
C. P. Wilde....1987
P. N. Bartlett....1987
J. Maier....1987
J. A. Bardwell....1988
C.-J. Han....1988
A. E. Husser....1989
D. H. Craston....1989
J. M. Rosamilia....1989
J. H. Comfort....1989
M. W. Verbrugge....1990
C. J. Giunta....1990
T. J. Mountziaris....1991
J. V. Cole....1991
D. W. Suggs....1991
B. W. Gregory....1991
D. B. Bonham....1992
E. S. Aydil....1992
P. P. Apte....1993
A. West....1993
H. A. Gasteiger....1994
F. R. Myers....1994
R. Vidal....1995
G. D. Papasouliotis....1995
J. H. Nordlien....1996
J. Lee....1996
A. K. Padhi....1997
S. M. Han....1997
A. D. Robertson....1998
Y. Shao-Horn....1998
S. R. Kaluri....1998
A. Bautista....1999
P. A. O'Neil....1999
R. T. Leah....2000
J. W. Klaus....2000
J. F. Whitacre....2001
P. Feichtinger....2001
T. J. Pricer....2002
P. S. Lee....2002
K. Jambunathan....2003
S. Noda....2003
M. Miyamoto....2003
R. Akolkar....2004
Y.-K. Hong....2004
S. Borini....2005
M. Kunimatsu....2005
Mathieu Bervas....2006
Pradeep Dixit....2006
Steffen Eccarius....2007
A. T. J. van Niftrik....2007
Kevin Ralston....2008
Eu Jin Tan....2008
Yudi Setiawan....2008
Paul Albertus....2009
Louis Hutin....2009
Gijs Dingemans....2010
Erik Langereis....2010
Stephen E. Potts....2010
Xingbao Zhu....2010
Igor Volov....2011
Claudia Fleischmann....2011
Sebastien Couet....2011
Koen Schouteden....2011
Philipp Hönicke....2011

ECS General Society Student Poster Session Awards

F. Forouzan....1993
D. L. Taylor....1993
L. Abraham....1994
A. J. Aldykiewicz....1994
A. Dalmia....1994
M. Murthy....1994
R. Munkundan....1995
A. E. Thomas....1995
C. E. Ramberg....1995
W. Wang....1995
S. Chen....1996
K. Kowal....1996
C. Leger....1997
E. Potteau....1997
K. Bera....1998
E. Dickenson....1998
G. Q. Lu....1998
M. W. Riley....1998
J. Pearton....1999
A. Templeson....1999
N. Baydokhi....2000
A. Pismenny....2000
A. Besing....2001
V. Sochnikov....2001
S. Dimovski....2002
P. Maitra....2002
H. Ohtsuka....2002
T. Wiley....2002
P. Kavanagh....2003
B. Monahan....2003
O. Rabin....2003
P. Scopece....2003
K. Yasuda....2003
M. Guan....2004
K. Kanaizuka....2004
A. Oide....2004
R. M. Todi....2004
W. J. Cheong....2005
J. Chmiola....2005
S. Chrisanti....2005
C. Drake....2005
D. L. Gonzalez-Parra....2006
Naoko Kamiura....2006
T. Takeyasu....2006
Arun Vijayakumar....2006
Naoaki Hashimoto....2007
Daisuke Kikutani....2007
Toyoki Okumura....2007
Gholamreza Rostamikia....2007
Arun Vijayakumar....2007
Rajwant Singh Bedi....2008
Bryan K. Boggs....2008
John Chmiola....2008
Yuta Ishigami....2008
J. S. O'Brien....2008
Tyler Osborn....2008
Ralf Peipmann....2008
Philippe Perret....2008
Kenji Takada....2008
Vinit Todi....2008
Natalia B. Shustova....2008
Joshua Snyder....2008
Tomomasa Sugiyama....2008
Anasuya Adibhatla....2009
Magdalena Gizowska....2009
Frederik Golks....2009
Karina Kangas....2009
Kiera A. Kurak....2009
Manale Maalouf....2009
Debasish Mohanty....2009
Natalia Shustova....2009
Joko Sutrisno....2009
Jaroslaw Syzdek....2009
Alex Avekians....2010
Shayna Brocato....2010
Pablo de la Iglesia....2010
Christian Desilets....2010
Ayesha Maria Hashambhoy....2010
Carolin Lau....2010
Raja S. Mannam....2010
Joshua P. McClure....2010
Sarvesh Pasem....2010
Robert Sacci....2010
Misato Tashiro....2010
Jesse Benck....2011
Benjamin Caire....2011
Zhebo Chen....2011
Damilola Daramola....2011
Kirsten Marie Jensen....2011
Javed Khan....2011
Simon Lux....2011
Ashley Maes....2011
Lingchong Mai....2011
Francis Richey....2011
Neil Spinner....2011
Melissa Vandiver....2011

Annual Report

ECS Sponsored Meeting Student Poster Award Winners

Simposio Brasileiro de Electroquimica e Eletroanalitica (SIBEE)
L. M. Nunes 2009
V. Dos Santos.....2011

China Semiconductor Technology International Conference (CSTIC)
C. Santini 2009
L. Ma.....2010
M. B. Gonzalez 2011

Euro CVD Award
A. Szkudlarek 2011

IC4N: From Nanoparticles and Nanomaterials to Nanodevices and Nanosystems
M. Gharbi 2009
H. N. Green 2011

Sociedad Mexicana de Electroquímica (SMEQ) and ECS Mexican Section Meeting
A. Mendez-Albores.....2008
L. S. Hernandez-Munoz.....2009
C. Avila-Gonzalez.....2010
D. C. Martinez-Casillas 2011

Turner Book Prize

S. Speil.....1942
W. G. Berl.....1943
J. P. Coyle 1944
J. T. Waber.....1945
B. Cartwright.....1946
A. E. Hardy 1947
M. A. Streicher 1948
R. E. Hoeckelman.....1949
P. Delahay 1950
K. H. Stern 1951
C. C. Templeton.....1951
P. T. Gilbert.....1952
R. B. Holden.....1953
D. A. Vermilyea 1954
J. G. Jewell.....1955
J. H. Westbrook 1956
A. C. Makrides.....1957
J. P. Pemsler 1958
R. G. Carlson.....1959
R. E. Meyer 1960
P. C. Milner.....1960
H. Freitag 1961
P. J. Boddy 1962
E. J. Cairns.....1963
M. Weinstein.....1963
R. W. Bartlett.....1964
E. M. Hofer.....1965
C. S. Tedmon, Jr.....1966
F. P. Kober 1967
J. M. Hale.....1968

Leadership Circle Awards

Legacy Level
Dow Chemical Co., Central Research, received in 2011
Olin Chlor Alkali Products Division, received in 2011

Medallion Level
Dow Chemical Co., Central Research, received in 2005
Olin Chlor Alkali Products Division, received in 2005
Occidental Chemical Corp., received in 2007
Atotech USA, Inc., received in 2009
Energizer, received in 2009

Diamond Level
General Electric Co., Corporate Research & Development, received 2001
General Motors Research Laboratories, received 2001
Rayovac, received 2002
Duracell, received 2006
IBM Corporation, received 2006

Gold Level
Toshiba Corp., Research & Development Center, received 1998
Siltronic AG, received 1998
Osram Sylvania, Inc., Chemical & Metallurgical Division, received 1999
Sandia National Laboratories, received 2000
International Lead Zinc Research Organization, Inc., received 2003
Medtronic, Inc., Energy and Component Center, received 2004
Toyota Central Research and Development Labs, Inc., received 2004
Yuasa Corp, received 2004
Princeton Applied Research/Solartron Analytical, received 2005
Saft Batteries, received 2006
CSIRO Minerals, received 2007
Industrie de Nora, received 2007
Ballard Power Systems, Inc., received 2008
ECO Energy Conversion, received 2008
Varta Automotive GmbH, Advanced Battery Division, received 2008
Greatbatch, Inc., received 2010
Leclanche S. A., received 2009
Max-Planck-Institut für Festkörperforschung, received 2009
Giner, Inc., received 2010
Greatbatch, Inc., received 2010
TIMCAL Graphite and Carbon Ltd., received 2011

Silver Level
Eltech Systems Corp., received 1992
Tronox LLC, received 1994
TIMCAL Graphite and Carbon Ltd., received 1996
Japan Storage Battery Co., Ltd., received 1997
3M Company, received 1998
E. I. Du Pont de Nemours & Co., Inc., HD Microsystems, received 1998
Solartron Instruments, received 1999
Central Electrochemical Research Institute, received 2002
TDK Corp., R&D Center, received 2002
Valence Technology, received 2002
DAISO, Co., Ltd., received 2003
Panasonic Corp., received 2003
C. Uyemura & Co., Ltd., Central Research Lab, received 2005
Electrosynthesis Co., Inc., received 2005
FMC Corporation, Active Oxidants Division, received 2005
Nacional de Grafite, LTDA, received 2005
Permelec Electrode, Ltd., received 2005
PG Industries, Inc., Chemicals Group Technical Center, received 2005
Scribner Associates, Inc., received 2005
Technic Inc., received 2005
Advance Research Chemicals, Inc., received 2007
Yeager Center for Electrochemical Sciences at CWRU, received 2007
PEC North America, received 2009
Quallion, LLC, received 2009
UTC Power, received 2009
Broddarp of Nevada, received 2010
Teledyne Energy Systems, Inc., received 2010

Bronze Level
Hach Company, Radiometer Analytical Division, received 2002
De Nora Technologie Elettrochimiche S.r.L., received 2003
BAE Systems Battery Technology Center, received 2005
OM Group, Inc., received 2005
Agilent Laboratories, received 2008
Evonik Degussa GmbH, received 2008
Samsung SDI, received 2008
GAIA-Akkumulatorenwerke GmbH, received 2009
Permascand AB, received 2009
ZSW Center for Solar Energy & Hydrogen Research, received 2009
Coolohm, Inc., received 2010
ElectroChem, Inc., received 2010
Faraday Technology, Inc., received 2010
Johnson Matthey, received 2010
Metrohm USA, received 2010
Pine Research Instrumentation, received 2010
Sanyo Electric Co. Ltd., received 2011
Nissan Motor Co. Ltd., received 2011
Hydro-Québec, received 2011

Battery Division Student Research Award

J. R. Waggoner 1980
K. E. Yee 1980
W. A. van Schalkwijk 1981
C. Y. Mak 1986
T. I. Evans 1987
C. C. Streinz 1988
J. Weidner 1989
M. G. Lee 1990
E. J. Podlaha 1991
G. E. Gray 1992
D. Qu 1993
P. De Vidts 1994
S. Motupally 1995
J. Xu 1996
Y. Shao-Horn 1997
I. Courtney 1998
G.E. Rousse 1999
V. Srinivasan 2000
M. Zhao 2001
V. Subramaniam 2001
L. Fransson 2002
K.-W. Park 2003
A. Weber 2004
C. Delacourt 2005
K. Kang 2006
Feng Jiao 2007
Nonglak Meethong 2009
Yi-Chun Lu 2010
Christopher Fell 2011

Battery Division Research Award

J. J. Lander 1958
D. M. Smyth 1959
T. P. Dirkse 1962
F. G. Will 1964
J. Burbank 1966
C. P. Wales 1966
D. Tuomi 1968
Y. Okinaka 1970
A. C. Simon 1972
S. M. Caulder 1972
J. McBreen 1974
T. Katan 1976
S. Szpak 1976
A. Heller 1978
K. R. Bullock 1980
R. A. Huggins 1982
D. Pavlov 1984
G. H. J. Broers 1985
J. L. Devitt 1986
D. H. McClelland 1986
J. P. Gabano 1987
M. Armand 1988
J. Jorne 1989
A. N. Dey 1990
R. E. White 1991
D. N. Bennion 1992
E. Peled 1993
K. M. Abraham 1995
J. Dahn 1996
B. Scrosati 1997
C. Delmas 1999
J. B. Bates 2000
S. Wittingham 2002
K. Kinoshita 2003
J. Newman 2004
G. Ceder 2004
M. Thackeray 2005
T. Ohzuku 2006
Clare P. Grey 2007
Peter G. Bruce 2008
Linda Nazar 2009
Dominique Guyomard 2010
Yang-Kook Sun 2011

Battery Division Technology Award

Y. Nishi 1994
K. Ozawa 1994
E. S. Takeuchi 1995
S. Gilman 1996
J.-M. Tarascon 1997
G. E. Blomgren 1998
A. Yoshino 1999
H. Y. Cheh 2000
B. B. Owens 2001
D. Wilkinson 2002
M. Winter 2002
J. Yamaki 2003
M. Yoshio 2003
M. Ue 2004
D. Aurbach 2005
P. Novak 2005
K. Lee 2006
Michel Broussely 2007
Hiroshi Inoue 2008
Satoshi Mizutani 2008
Eiji Endoh 2009
Khalil Amine 2010
Jeffrey Dahn 2011

Corrosion Division H. H. Uhlig Award

(formerly the Outstanding Achievement Award of the Corrosion Division 1973-1983)

M. Cohen 1973
D. A. Vermilyea 1975
J. Kruger 1977
M. J. Pryor 1979
T. R. Beck 1981
N. Sato 1983
P. Kofstad 1985
H. W. Pickering 1987
R. P. Frankenthal 1989
H. Leidheiser 1991
H. Isaacs 1993
W. H. Smyrl 1995
M. J. Graham 1997
K. Hashimoto 1999
D. Macdonald 2001
F. Mansfeld 2002
C. Leygraf 2003
R. Newman 2004
P. Marcus 2005
G. T. Burstein 2006
Edward McCafferty 2007
Martin Stratmann 2008
John R. Scully 2009
Gerald S. Frankel 2010
Patrik Schmuki 2011

Corrosion Division Morris Cohen Graduate Student Award

(formerly the Corrosion Division Award for Summer Study 1986-1988)

S. D. Scarberry 1986
C. C. Streinz 1987
R. Bianco 1988
M. A. Harper 1992
R. G. Buchheit 1993
J.-F. Yan 1994
B. V. Cockeram 1995
I. Odnevall 1996
D. G. Kolman 1997
C. S. Brossia 1998
M. Verhoff 1999
S. Yu 2000
S. F. Nitodas 2001
K. Cooper 2002
T. Ramgopal 2003
Q. Meng 2004
D. Chidambaram 2005
H. Tsuchiya 2006
Magnus Johnson 2007
Christopher D. Taylor 2008
Mariano Iannuzzi 2009
Pouria Ghods 2010
Hongbo Cong 2011

Dielectric Science and Technology Division Thomas D. Callinan Award

J. A. Davies 1968
J. P. S. Pringle 1968
G. M. Sessler 1970
J. E. West 1970
C. A. Mead 1971
W. Kern 1972
J. R. Szedon 1973
C. M. Osburn 1975

Dielectric Science and Technology Division Thomas D. Callinan Award
(continued)

T. W. Hickmott....1976
J. R. Ligenza....1977
R. Williams....1978
R. J. Kriegler....1979
B. E. Deal....1982
L. Young....1983
A. K. Sinha....1985
A. C. Adams....1986
S. P. Murarka....1987
R. B. Comizzoli....1988
E. A. Irene....1988
R. A. Levy....1989
M. H. Woods....1990
V. J. Kapoor....1991
S. I. Raider....1992
D. W. Hess....1993
Y.-H. Wong....1994
K. L. Mittal....1995
W. D. Brown....1996
J. P. Dismukes....1997
R. Singh....1998
A. Rohatgi....1999
K. Saraswat....2000
P. Ho....2001
J. Deen....2002
S. K. Banerjee....2003
A. G. Revesz....2003
S. Fonash....2004
Paul A. Kohl....2008
Tsu-Jae King Liu....2011

Electrodeposition Division Research Award

W. Weil....1980
Y. Okinaka....1981
E. B. Budevski....1982
R. C. Alkire....1983
L. T. Romankiw....1984
R. J. von Gutfeld....1984
J. W. Dini....1985
H. R. Johnson....1985
H. Leidheiser....1986
J. P. Hoare....1987
H. Y. Cheh....1988
D. S. Lashmore....1989
S. Nakahara....1990
T. C. Franklin....1991
R. E. White....1992
P. C. Andricacos....1993
M. J. Froment....1994
D. Landolt....1995
T. Osaka....1996
M. Schlesinger....1997
Madhav Datta....1998
R. Winand....1999
H. Honma....2000
D. Kolb....2002
J. Switzer....2003
J. Dukovic....2004
P. Bartlett....2005
T. P. Moffat....2006
Ibro Tabakovic....2007
Olaf Magnussen....2008
John Stickney....2009
Takayuki Homma....2010
Philippe Allongue....2011

Electronics and Photonics Division Award

F. A. Trumbore....1970
F. C. Palilla....1971
M. B. Panish....1972
W. A. Pliskin....1973
B. E. Deal....1974
H. M. Manasevit....1975
M. G. Craford....1976
A. Y. Cho....1977
C. M. Wolfe....1978
E. Sirtl....1979
J. M. Woodall....1980
G. A. Rozgonyi....1981
G. W. Cullen....1982
D. W. Shaw....1983
A. Reisman....1984
S-M. Hu....1985
E. H. Nicollian....1986
B. Schwartz....1987
K. E. Bean....1988
T. Kamins....1989
D. M. Brown....1990
C. M. Osburn....1991
G. S. Oehrlein....1992
B. S. Meyerson....1993
G. K. Celler....1994
L. C. Kimerling....1995
H. Huff....1996
A. F. Tasch....1997
U. M. Gösele....1999
S. N. G. Chu....2000
S. P. Murarka....2001
S. Cristoloveanu....2002
T. Ohmi....2003
C. Claeys....2004
S. Pearton....2005
H. Massoud....2006
Yue Kuo....2007
Fan Ren....2008
Eicke R. Weber....2009
Lih J. Chen....2010
M. Jamal Deen....2011

Energy Technology Division Research Award

M. W. Verbrugge....1994
S. Srinivasan....1996
H. R. Kunz....1998
A. W. Czanderna....1999
R. Selman....2001
I. Uchida....2001
A. Nozik....2003
K. Kinoshita....2004
K. Kanamura....2005
S. Licht....2006
Radoslav Adzic....2007
Yang Kook Sun....2007
Tom Fuller....2008
Krishnan Rajeshwar....2009
Jai Prakash....2009
John Weidner....2010
Karim Zaghib....2010
Claude Levy-Clément....2011

Fullerenes, Nanotubes, and Carbon Nanostructures Richard E. Smalley Research Award

Sumio Ijima....2008
Phaedon Avouris....2009
Robert Haddon....2011

Fullerenes, Nanotubes, and Carbon Nanostructures SES Research Young Investigator Award

Nikhil Koratkar....2009
Mark C. Hersam....2010

High Temperature Materials Division Outstanding Achievement Award

J. B. Wagner, Jr....1986
W. L. Worrell....1988
R. A. Rapp....1990
H. Schmalzried....1992
S. C. Singhal....1994
C. G. Vayenas....1996
C. Bernard....2001
H. Yokokawa....2002

High Temperature Materials Division Outstanding Achievement Award
(continued)

K. Spear 2004
A. Virkar 2006
David J. Young 2008
Harry L. Tuller 2010

High Temperature Materials Division J. B. Wagner, Jr. Young Investigator Award

S. Mohney 1999
S. M. Haile 2001
M. Swihart 2003
R. Mukundan 2005
Xiao-Dong Zhou 2007
Juan Claudio Nino 2009
Toshiaki Matsui 2011

Industrial Electrochemistry and Electrochemical Engineering Division New Electrochemical Technology (NET) Award

Asahi Glass Company 1999
DeNora Tecnologie 2005
E-Tek 2005
Bayer Material Science AG 2005
Ballard Power Systems 2007
FuelCell Energy 2009
U.S. Army Engineer Research and Development Center, Constrction Engineering Research Laboratory, and Electro Tech CP 2011

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

R. Bakshi 1991
G. J. Yusem 1992
J. A. Poirier 1993
S. Siu 1994
M. Vreeke 1995
A. E. Thomas 1996
S. A. Leith 1997
P. Soo 1998
S. Sriramulu 1999
K. M. Jeerage 2000
A. L. Prieto 2001
W. He 2002
J. Zhang 2003
S. Basker 2004
V. Ramani 2005
N. Jalani 2006
Brenda L. Garcia-Diaz 2007
Sunil Roy 2008
Prabeer Barpanda 2009
Brandon Bartling 2010
Long Cai 2011

Industrial Electrochemistry and Electrochemical Engineering Division Student Achievement Award

Y.-E. Sung 1995
J. K. N. Mbindyo 1996
C. A. Smith 1997
J. A. Drake 1998
R. Lowrey 1999
C. Arvin 2000
B. Djurfors 2001
V. Subramanian 2002
P. M. Gomadam 2003
I. AlNashef 2004
V. Sethuraman 2006
Minhua Shao 2007
Vinten Dewikar 2008
Paul Albertus 2009
Satheesh Sambandam 2010
Venkatasailanathan Ramadesigan 2011

Luminescence and Display Materials Division Centennial Award

A. Meijerink 2004
A. Srivastava 2004
H. Guedel 2006
David J. Lockwood 2010

Organic and Biological Electrochemistry Division Manuel Baizer Memorial Award

T. Shono 1994
H. Lund 1996
H. Schäfer 1998
S. Torii 1998
J. Simonet 2000
J. Utley 2000
J. M. Savéant 2002
M. Tokuda 2004
D. Evans 2004
I. Nishiguchi 2006
Albert Fry 2008
Toshio Fuchigami 2010

Physical and Analytical Electrochemistry Division David C. Grahame Award

F. C. Anson 1983
J. Newman 1985
A. Heller 1987
M. J. Weaver 1989
B. Miller 1991
A. T. Hubbard 1993
R. M. Wightman 1995
D. M. Kolb 1997
P. N. Ross, Jr. 1999
D. A. Scherson 2001
A. Wieckowski 2003
H. White 2005
Joseph T. Hupp 2007
Héctor D. Abruña 2009
Masatoshi Osawa 2011

Physical and Analytical Electrochemistry Division Max Bredig Award in Molten Salt Chemistry

M. Blander 1987
G. P. Smith 1990
R. A. Osteryoung 1992
G. Mamantov 1994
N. Bjerrum 1996
H. A. Øye 1998
Y. Ito 1999
G. N. Papatheodorou 2002
M. Gaune-Escard 2004
J. Wilkes 2006
Bernard Gilbert 2008
C. Austen Angell 2010

Sensor Division Outstanding Achievement Award

J. Janata 1994
R. P. Buck 1996
I. Lundström 1998
A. J. Ricco 2000
M. Aizawa 2002
N. Yamazoe 2004
W. Heineman 2006
Chung-Chiun Liu 2008
Thomas Thundat 2010