

Oct. 29-Nov. 3, 2006

Meeting Program

Welcome

Welcome to beautiful Cancun, Mexico, site of the 2006 Joint International Meeting, which combines the 210th Meeting of The Electrochemical Society (ECS) and the XXI Congreso de la Sociedad Mexicana de Electroquimica (SMEQ); and which is technically cosponsored by the Sociedad Iberoamericana de Electroquimica (SIBAE). This major international conference will be held at the Moon Palace Resort Hotel and will include 50 topical symposia consisting of 2,185 technical presentations.

You are invited to participate not only in the technical program, but also in the other social events planned for the meeting. Prior to the Sunday Evening Get-Together, plan to attend the latest in our series of Sunday general topics, "Polymer Electrolyte Fuel Cells ... for the Rest of Us," this one presented by Dr. James Fenton, Director of the University of Central Florida's Florida Solar Energy Center and professor of mechanical, materials, and aerospace engineering. Don't miss the opening Plenary and Honors and Awards session on Monday morning, honoring Dr. Vittorio de Nora, the 2006 Edward Goodrich Acheson Award winner. As always, you will also have the opportunity to visit the Technical Exhibit, which opens in conjunction with the Monday Evening Mixer and General Student Poster Session, continues with the General Society Poster Session on Tuesday evening, and runs through Wednesday afternoon. You won't want to miss the Cena Baile Dinner and Dance Party on Thursday evening. We hope that you will join us in Cancun, and take part in the 2006 Joint International Meeting.

## **Guide to Meeting Program**

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#### Travel Information

#### **Hotel Reservation Information**

The Moon Palace Resort Hotel is the headquarters hotel for the meeting and all meeting functions will take place there. We encourage you to stay at the Moon Palace, where your stay will be most enjoyable and convenient. Room reservations for the Moon Palace can be made online at www.electrochem.org.

Daily room rates, offered at a special discount for meeting attendees, include all of the following:

- Unlimited meals, snacks, and beverages (including all alcoholic beverages), in twelve onsite restaurants featuring various cuisines, including Italian, Asian, Mexican, Brazilian, and Continental;
- Mini bar in room;
- All gratuities (restaurants, lounges, poolside, bellmen, and housekeeping) and Hospitality Tax;
- Watersport facilities with non-motorized equipment such as sail boats, kayaks, and paddle boats at Moon Palace Marina;
- Complimentary tennis, bicycling, miniature golf, and use of the health club;
- Jacuzzi in every room; and
- Wireless Internet access from your laptop!

The hotel has four water purification plants onsite, so all water is completely safe to drink.

#### Special All-Inclusive Conference Package Rates

All meeting activities will take place in the Moon Palace Conference Center and adjacent Moon Palace Sunrise headquarters hotel. A complimentary shuttle will provide transportation to and from Moon Palace Nizuc to the meeting facilities. All rates are per room, per night. Inquiries regarding student rates and information should be directed to student\_ecs@tpires.com

	Moon Palace Sunrise (Headquarters)	Moon Palace Nizuc
All-Inclusive Single	\$236 USD	\$179 USD
All-Inclusive Double	\$296 USD	\$239 USD
All-Inclusive Triple*	\$376 USD*	\$319 USD*
Child (ages 4-17)	\$40 USD each	\$40 USD each

<sup>\*</sup> Maximum of 3 adults or 2 adults and 2 children (17 years or under), per room.

These special meeting rates are available only for participants booking through Travel Planners, Inc. via the ECS website or by using the mail/fax form, printable from the website. Phone reservations are not accepted. These rates do not apply if bookings are made directly with the hotel or through any other agent.

As a courtesy for guests wishing to spend more time in Cancun, the above rates apply from Thursday, October 26 through Tuesday, November 7, 2006, subject to availability. The 10% Mexican VAT is waived for all participants making their hotel reservations directly through Travel Planners, Inc. Not applicable to Mexican Nationals, reservations made through other agents, or booked directly with the hotel.

The deadline for reservations is September 15, 2006. Reservations attempted after September 15 will be accepted on a space and rate availability basis and cannot be

<sup>\*\*</sup> Children under 4, stay free in room with parents.

guaranteed. Visa, MasterCard, or American Express is required to guarantee hotel reservations or a check in U.S. dollars drawn on a U.S. bank for full prepayment. Credit cards will be charged on arrival. Personal or company checks will not be accepted by the hotel. Cancellations are \$50 USD at any time prior to September 30, 2006. After September 30th, cancellations are \$50 USD, plus two nights stay.

Please direct all hotel reservation inquires, including those regarding student accommodations, cancellations, and changes, via email to electrochem@tpires.com.

Important—For those individuals NOT staying at the Moon Palace: Please note that you will be charged \$180 USD when you pick up your registration materials (or you may pay in advance online at http://www.tpires.com/electrochem/supplement. html), to cover food and beverage expenses while attending the meeting (from Sunday, October 29 after 1800h to Friday, November 3 until 1300h). If you elect to pay onsite, this charge will be collected by the Moon Palace and is payable by cash or credit card only—checks will NOT be accepted. Since there are no restaurants onsite able to accommodate non-Moon-Palace guests, this charge is mandatory. Please also note that cab fare from the hotel zone to the Moon Palace is approximately \$25 USD each way and the nearest restaurant to the Moon Palace is approximately 5 miles away. One-day rate is \$75 USD. Please note that because wristbands for non-Moon-Palace guests are effective starting at 1800h, Sunday, October 29, please plan your arrival at the Moon Palace accordingly.

#### **Ground Transportation**

Ground transportation service is available from Cancun International Airport to the Moon Palace for \$24, one way, per person. Prepaid reservations, which are required for arrivals, and recommended for departures, can be made online from the ECS website. Please direct all ground transportation inquires, via email, to electrochem@tpires.com.

#### **Technical Session Co-Chair Orientation**

We ask that you complete and return the attendance sheets to ECS headquarters to help us with future symposium planning. Instructions for running your session and attendance sheets will be sent via e-mail in advance of the meeting, and will also be available in the ECS headquarters office throughout the week. Please check in with the ECS headquarters staff in Saturn 3 in the Conference Center, Sunrise on the day of your session to receive information on the cancelled papers for the day and to pick up attendance sheets. Additionally, we recommend that session co-chairs attend a brief orientation during the first ten minutes of the Symposium Organizer and Co-Chair Orientation on Sunday at 1500h in the Boardroom in the Conference Center, Sunrise.

#### Information for Presenters & Audio-Visual

#### **Oral Presentations and Audio-Visual**

Oral presentations must be in English. Only LCD projectors will be available for oral presentations. Authors will be required to bring their own laptop computers for presentation. We strongly suggest that presenting authors verify laptop/projector compatibility in the speaker ready room at the meeting. Speakers requiring special equipment must make written request to ECS headquarters

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## **General Meeting Information**

#### **Key Locations**

Meeting Registration	Registration Area, Conference Center, Sunrise
Information/Message Center	Registration Area, Conference Center, Sunrise
ECS Headquarters Office	Saturn 3, Conference Center, Sunrise
ECS Satellite Headquarters Office	Delta, 2 <sup>nd</sup> Floor, Expo Center
Speaker Ready Rooms	
	Beta, 2nd Floor, Expo Center
Employment Interview Room	Alpha, 2nd Floor, Expo Center

### **Meeting Registration**

The meeting registration area will be located in the Conference Center in the Sunrise Building. Registration will open on Sunday and the technical sessions will be conducted Sunday through Friday.

#### **Advance Registration**

Advance registration is encouraged. Register online at www.electrochem.org, or send your Advance Registration form to: The Electrochemical Society, 65 South Main Street, Pennington, NJ 08534, USA. Attendees prepaying by credit card are encouraged to use our online system, or send the form by fax. If you send a registration by fax, please do not send another copy by mail, as this may result in duplicate charges. The deadline for advance registration is September 15, 2006. Refunds are subject to a 10% processing fee and will only be honored if written requests are received by September 22, 2006. All participants of the 2006 Joint International Meeting are required to pay the appropriate registration fees. Advance and onsite payments must be made in U.S. Dollars via Visa, MasterCard, American Express, check or money order payable to ECS.

#### **Registration Hours**

Sunday, October 29	0800-1830h
Monday, October 30	0730-1730h
Tuesday, October 31	0730-1600h
Wednesday, November 1	0730-1600h
Thursday, November 2	0730-1500h
Friday, November 3	0730-1400h

#### **Registration Fees**

ALL PARTICIPANTS AND ATTENDEES ARE REQUIRED TO PAY THE APPROPRIATE REGISTRATION FEE LISTED BELOW. Payment can be made by cash, check or travelers' checks in U.S. funds drawn on a U.S. bank. Visa, MasterCard or American Express are also accepted.

	<u>Advance</u>	On-Site
Technical Registrant	\$450	\$535
Student Registrant	\$160	\$210
One Day Registrant	\$305	\$390
ECS Emeritus & Honorary Member	\$0	\$0
Nontechnical	\$70	\$95

All students must send verification of student eligibility along with their registration. All technical registrations include a copy of Meeting Abstracts (on CD-ROM only). Attendees who wish to have paper copies of abstracts in advance of the meeting should download copies from the ECS website, free of charge.

#### **Financial Assistance**

Financial assistance is limited and generally governed by the symposium organizers. Individuals may inquire directly to the symposium organizers of the symposium in which they are presenting their paper to see if funding is available. Individuals requiring an official letter of invitation should write to the ECS headquarters office; such letters will not imply any financial respon sibility of ECS.

#### **Contact Information**

ECS—The Electrochemical Society 65 South Main Street Pennington, NJ 08534-2839, USA

Phone: 609.737.2743 W-mail: ecs@electrochem.org Web: www.electrochem.org

#### Information for Presenters...

(continued from previous page)

(meetings@electrochem.org) no later than three weeks before the meeting, and appropriate arrangements will be made at the expense of the author.

#### **Poster Presentations and Sessions**

Poster presentations must be in English, on a board approximately 4 feet high by 8 feet wide (1.22 m by 2.45 m), corresponding to the abstract number and day of presentation in the final program. Please arrive approximately two to four hours before the start of your session to begin setting up your poster displays. Students may start setting up their presentations in the exhibit hall no earlier than 1500h on Monday. Please do not begin setting up your poster until all the poster boards have been numbered. Plan your display to fit on one upright panel approximately 4 feet high by 8 feet wide (1.22 m by 2.45 m). Present displayed information from left to right, starting at the top left of the panel. The paper title, number, names, and affiliations of all authors MUST be at the top of the display. The recommended print size for the title is approximately 1" to 2" (2.5 cm to 5 cm) high. Authors should minimize written text but use it when necessary to emphasize essential data and/or to stimulate discussion. All illustrations, drawings, charts, pictures, graphs, figures, and written text should be large enough to allow easy reading from a distance of 5' (1.5 m). Matted and finished photographs are recommended to enhance visibility. Pins, tape, and/or thumbtacks will be supplied at the meeting. Commercial advertisements or publicity will NOT be permitted in poster presentations. Authors violating this regulation will be asked to remove their presentations immediately. Authors are responsible for setting up their displays, for being present during the entire scheduled poster session, and for removing their displays at the conclusion of the poster session. No posters will be displayed without author participation. NO EXCEPTIONS WILL BE GRANTED. Authors are responsible for the security of their displays and all items of value. ECS will not assume any responsibility for lost, stolen, or broken articles. Additional information or special requirements should be addressed to the individual symposium organizers prior to the meeting.

The General Society Student Poster Session will be held as a part of the Monday Evening Mixer and Technical Exhibit, which features instruments, materials, systems, publications, and software of interest to meeting attendees. All meeting registrants are invited to attend. Judging of the posters will begin at 1700h; formal presentations will begin at 1800h. Students may start setting up their presentations in the exhibit hall no earlier than 1500h.

#### **Speaker-Ready Room**

Two Speaker-Ready Rooms will be available Sunday through Friday, in Mars 1/3, Conference Center, Sunrise, and Beta, 2<sup>nd</sup> Floor, Expo Center. These rooms are available to allow speakers the opportunity to preview and prepare for their presentations. We highly recommend that speakers verify their laptop's compatibility with the sample LCD projector that will be located in these rooms, prior to their presentation. Additionally, there will be audiovisual technicians available in the Conference and Expo Centers for your assistance.

#### Speaker Indemnification

The ideas and opinions expressed in the technical sessions, conferences, and any handout materials provided are those of the presenter. They are not those of The Electrochemical Society (ECS), the Sociedad Mexicana de Electroquimica (SMEQ), nor the Sociedad Iberoamericana de Electroquimica (SIBAE); nor can any endorsement by ECS, SMEQ, nor SIBAE be claimed.

#### Discussion

No recording will be made of the oral discussions. Those contributing to the discussion of a paper and desiring their

remarks to be published should send the discussion to the Director of Publications, *Journal of The Electrochemical Society*, 65 South Main Street, Pennington, New Jersey 08534-2839, USA. The discussion will then be referred to the author for a reply. Publication of the discussion and the comments of the author(s) depend on the publication of the paper in the *Journal*. Written discussion of a published paper should be submitted within two months following publication of the article.

#### No Recording Allowed

Photographing of presentations will NOT be permitted unless specifically allowed by the speaker. Photo flash and photo floods are prohibited. Tape recordings, except on behalf of ECS, are prohibited. Anyone taking unauthorized photographs will be asked to leave the session.

#### **Employment Services**

Companies desiring to recruit employees may place their announcements on a designated bulletin board in the registration area. Please note that these announcements should be no larger than 8 ½" by 11." Alpha,  $2^{\rm nd}$  Floor, Expo Center will be available as an Employment Interview Room from 0800-1700h Monday through Friday for representatives from those companies or institutions that would like to interview applicants during the meeting.

#### ADA Accessibility

Special accommodations for disabled attendees will be handled on an individual basis provided that adequate notice is given to the ECS headquarters office.

## **Professional Development Workshops**

ECS will sponsor the following three professional development workshops at no extra cost to meeting registrants. All workshops are taught by John R. Susko, retired corporate executive, and will be held in *Universal 22*, 1st Floor, Expo Center.

#### Writing an Effective Cover Letter and Resume

Sunday, October 29, 2006 ......1500-1545h Monday, October 30, 2006 .....1100-1145h

This informal workshop will discuss the need for the cover letter, how to write it, the many "do's" and "don'ts" in preparing such a letter and tips for drafting an effective resume.

#### **Job Interviewing Tips**

This informal workshop will discuss the art of interviewing: how to improve your chances of impressing the interviewer, key questions to ask, and other important pointers for the interviewing process.

#### **Resume Round Table**

Monday, October 30, 2006...... 1430-1700h

This informal round table workshop is designed to provide feedback on resumes by publicly critiquing participants' resumes and offering suggestions on ways to make them more effective. To take full advantage of the workshop, please bring a copy of your current professional resume.



# ecstransactions

### Volume 3-CANCUN, MEXICO

from the ECS Cancun meeting, October 29-November 3, 2006

The following issues of ECS Transactions are from symposia held during the Cancun meeting. All issues are available in online editions, which may be purchased by visiting http://ecsdl.org/ECST/. Some issues are also available in hard-cover editions. Please visit the ECS website for all issue pricing and ordering information.

#### Available Issues—Hard Cover & Online

#### Vol. 3 Proton Exchange Membrane

No. 1 Fuel Cells 6

Editors: Fuller, Bock, Nguyen, Mathias, Jarvi, Gasteiger, Ramani, Cleghorn, Stuve. and Zawodzinski

#### Vol. 3 Advanced Gate Stack, Source/Drain No. 2 and Channel Engineering for Si-Based

CMOS 2: New Materials, Processes, and Equipment

Editors: Roozeboom, Öztürk, Kwong, Timans, Iwai, and Gusev

#### Vol. 3 Physics and Technology of High-k

No. 3 Gate Dielectrics 4

Editors: Kar, De Gendt, Houssa, Landheer, Iwai, and Misra

#### Vol. 3 High Purity Silicon 9

No. 4 Editors: Claeys, Falster, Watanabe, and Stallhofer

 Vol. 3 State-of-the-Art Program on Compound

No. 5 Semiconductors 45 (SOTAPOCS 45)
-and- Wide Bandgap Semiconductor
Materials and Devices 7

Editors: Ren, Stokes, Bardwell, Chang, Johnson, and Shen

Vol. 3 Semiconductor Wafer Bonding 9:

No. 6 Science, Technology, and Applications Editors: Baumgart, Hobart, Bengtsson,

 Suga, Moriceau, and Colinge

 Hard-cover
 M \$67.00, NM \$84.00

 Online
 M \$71.60, NM \$89.50

Vol. 3 SiGe and Ge: Materials, Processing,

No. 7 and Devices

Editors: Harame, Boquet, Cressler, Rim, Tillack, Caymax, Masini, Reznicek, Koester, and Zaima

Vol. 3 Thin Film Transistor Technology 8

No. 8 Editor: Kuo

Vol. 3 Nanostructured Metal Oxides:

Processing and Applications
Editors: Traversa, Oskam, Hunter,
and Penn

Vol. 3 Chemical Sensors 7 -and-

No. 10 MEMS/NEMS 7

Editors: Hesketh, Hunter, Akbar, Bhansali, Brand, Bruckner-Lea, Carter, Davidson, Enikov, Hillman, Kranz, Li, Maboudian, Mukundan, Roper, Shoji, Simonian, and Tabib-Azar

#### Available Issues—Online Only

Vol. 3 Science and Technology of Dielectrics No. 11 for Active and Passive Photonic Devices

 Vol. 3 Electrochemistry of Supramolecular No. 12 and Fullerene Systems

#### **Forthcoming Issues**

If you would like to receive information on any of these issues when they become available, please e-mail ecst@electrochem.org. Please include your name, full mailing address, e-mail address, and all issues in which you are interested.

Cancun B1 Electrochemical Capacitors 2006

Cancun B2 Intercalation Compounds for Batteries and Hybrid Supercapacitors

Cancun B3 Lithium Ion Batteries: Materials and Devices

Cancun B4 Metal/Air and Metal/ Water Batteries

Cancun D3 Corrosion of Infrastructure

Cancun D4 Critical Factors in Localized
Corrosion 5: A Symposium in Honor
of Hugh Isaacs

**Cancun D5** High Temperature Corrosion and Materials Chemistry 6

Cancun E3 Atomic Layer Deposition Applications 2

Cancun E5 Chemical Mechanical Polishing 8

Cancun E9 Multifunctional Carbon Materials for Electrochemical and Electronic Applications **Cancun F1** Electrochemical Deposition on Non-Metallic Surfaces, Patterned

Substrates, and Templates

**Cancun F3** Magnetic Materials, Processes, and Devices 9

Cancun I3 Electrochemical Surface Science: Recent Advances in the Study of the Electrode-Electrolyte Interface

Cancun 14 Molten Salts 15, in Memory of Robert Osteryoung

## **General Functions**

#### Sunday, October 29, 2006

#### Symposium Organizer and Co-Chair Orientation

We encourage all symposium organizers and Technical Session co-chairs to attend this important informational session in the Boardroom in the Conference Center, Sunrise, from 1500-1700h. The Co-Chair Orientation will take place during the first 10 minutes of the meeting.

#### "Polymer Electrolyte Fuel Cells ... for the Rest of Us"

This series of Sunday evening talks provides an opportunity to learn more about other areas of electrochemical and solid-state research within ECS, as well as to meet colleagues and other members. This evening's talk, entitled "Polymer Electrolyte Fuel Cells ... for the Rest of Us," will be delivered by James Fenton from 1830-1930h in Universal 12-16 in the Expo Center.

#### **Sunday Evening Get-Together**

An informal Get-Together will be held on the Moon Light Terrace, Sunrise, from 1930-2130h. In the event of inclement weather, this event will take place in the Galactic Ballroom,  $2^{\rm nd}$  floor, Sunrise

#### Monday, October 30, 2006

#### Continental Breakfast

A continental breakfast will be served from 0745-0830h outside of the Universal Ballroom, 2<sup>nd</sup> Floor, Expo Center

#### Plenary and Honors and Awards Session

The joint Plenary and Honors and Awards Session will begin at 0830h, in the Universal Ballroom, 2<sup>nd</sup> Floor, Expo Center. Vittorio de Nora will be presented with the 2006 Edward Goodrich Acheson Award.

#### Coffee Break

Immediately following the Plenary and Honors and Awards Session, a coffee break will be held outside of the Universal Ballroom, 2<sup>nd</sup> Floor, Expo Center.

### Monday Evening Mixer, Student Poster Session, and Technical Exhibit

Along with the grand opening of the Technical Exhibit, an informal gathering will be held in the Exhibit Hall in the Universal Ballroom, 2<sup>nd</sup> Floor, Expo Center, from 1800-2000h. Beer, snacks and other refreshments will be served on a complimentary basis. The General Society Student Poster Session will be held as a part of the Monday Evening Mixer. Students may start setting up their presentations in the exhibit hall no earlier than 1500h. Judging of the posters will begin at 1700h and formal presentations will begin at 1800h. The Technical Exhibit will feature instruments, materials, systems, publications, and software of interest to meeting attendees. All meeting registrants are invited to attend.

#### Tuesday, October 31, 2006

#### Technical Exhibit

The Technical Exhibit will be held in the Exhibit Hall in the Universal Ballroom, 2<sup>nd</sup> Floor, Expo Center from 0900-1400h and again from 1900-2100h along with the evening's Poster Session. The exhibit will feature instruments, materials, systems, publications, and software of interest to attendees. The coffee break is scheduled for 0930h and complimentary lunch available 1200-1400h in the Exhibit Hall on Tuesday and Wednesday to allow meeting attendees additional time to browse through the exhibits.

#### Coffee Break

A coffee break will be held from 0930-1000h in the Exhibit Hall in the Universal Ballroom, 2<sup>nd</sup> Floor, Expo Center.

#### **Complimentary Lunch**

Lunch will be available, on a complimentary basis, from 1200-1400h in the Exhibit Hall in the Universal Ballroom, 2<sup>nd</sup> Floor, Expo Center.

#### ECS Corporate Membership Committee Reception

Corporate support has enhanced ECS since 1941 while providing our industry partners with numerous benefits. This informational event (**by invitation only**) will help you and your company learn how you can benefit from a relationship with ECS. The reception will take place from 1430-1530h in Star 5, Conference Center, Sunrise.

#### Technical Exhibit and Evening Poster Session

The Technical Exhibit will again be open in conjunction with a general poster session covering several technical symposia and 399 posters in the Exhibit Hall in the Universal Ballroom, 2<sup>nd</sup> Floor, Expo Center from 1900-2100h.

#### Wednesday, November 1, 2006

#### Technical Exhibit

The Technical Exhibit will be held in the Exhibit Hall in the Universal Ballroom, 2<sup>nd</sup> Floor, Expo Center, from 0900-1400h, in conjunction with a coffee break at 0930h.

#### Coffee Break

A coffee break will be held from 0930-1000h, in the Exhibit Hall in the Universal Ballroom, 2<sup>nd</sup> Floor, Expo Center.

#### Complimentary Lunch

Lunch will be available, on a complimentary basis, from 1200-1400h in the Exhibit Hall in the Universal Ballroom,  $2^{nd}$  Floor, Expo Center.

#### ECS Corrosion Division Award Reception

The Corrosion Division will hold its annual Award Reception at 1800h in Star 4, Conference Center, Sunrise. Tickets are sold separately for \$10, subject to availability, and are nonrefundable.

#### ECS Battery Division Award Reception

The ECS Battery Division Award Reception will be held at 1900h in Star 5, Conference Center, Sunrise. Tickets are sold separately for \$10, subject to availability, and are nonrefundable.

#### ECS Hugh Isaacs Symposium Banquet

There will be a banquet held in conjunction with the symposium, "Critical Factors in Localized Corrosion 5, a Symposium in Honor of Hugh S. Isaacs," at 1900h in Star 1/2, Conference Center, Sunrise. Tickets are sold separately for \$10, subject to availability, and are nonrefundable.

### ECS Max Bredig Award in Molten Salt Chemistry Banquet and Address

A dinner will be held, starting at 1900h, in Star 7/8, Conference Center, Sunrise, to honor John S. Wilkes, who will deliver the Max Bredig Award Address, "Molten Salts and Ionic Liquids: Are They Not the Same Thing?" Tickets are sold separately for \$10, subject to availability, and are nonrefundable.

#### Thursday, November 2, 2006

#### Coffee Break

A coffee break will be held from 0930-1000h in the Lobby, 1st Floor, Expo Center and Registration Area, Conference Center, Sunrise.

#### Cena Baile Dinner & Dance Party

The Cena Baile Dinner & Dance Party is an event not to be missed. Please join us at 2000h on the Moon Light Terrace for dinner, live music and dancing under the stars. Tickets are sold separately for \$10, subject to availability, and are nonrefundable. In the event of inclement weather, this event will take place in the Universal Ballroom, 2<sup>nd</sup> Floor, Expo Center.

#### Friday November 3, 2006

#### Coffee Break

A coffee break will be held from 0930-1000h in the Lobby, 1st Floor, Expo Center and Registration Area, Conference Center, Sunrise.

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1000h	ECS Physical & Analytical Electrochemistry Division Symposium
	Planning Committee, Jupiter 6, Conference Center, Sunrise

- 1500h ECS Electronics & Photonics Division Subcommittee on Compound Semiconductors, Star 1, Conference Center, Sunrise
- 1500h ECS Electronics & Photonics Division Subcommittee on ULSI Science & Technology, Star 2, Conference Center, Sunrise
- 1600h ECS Interface Advisory Board, Jupiter 2, Conference Center, Sunrise
- 1600h ECS Nominating Committee, Jupiter 3, Conference Center, Sunrise
- 1700h ECS Electronics & Photonics Division Symposium Planning & Technical Directions Subcommittee, Star 1, Conference Center, Sunrise
- 1700h ECS Dielectric Science & Technology Division Governing Body / Long Range Planning Committee & Symposium Planning Meeting, Star 2, Conference Center, Sunrise
- 1700h ECS Corrosion Division Executive Committee, Jupiter 4, Conference Center, Sunrise
- 1730h ECS Fuel Cell Subcommittee, Jupiter 5, Conference Center, Sunrise
- 1800h ECS Battery Division Executive Committee & Symposium Planning Subcommittee, Jupiter 1, Conference Center, Sunrise
- 1830h ECS Council of Sections, Star 7, Conference Center, Sunrise
- 1900h ECS Electronics & Photonics Division General Meeting, Star 8, Conference Center, Sunrise
- 1930h ECS Luminescence & Display Materials Division Executive Committee, Saturn 1, Conference Center, Sunrise
- 2000h ECS Sensor Division Executive Committee, Saturn 2, Conference
- 2000h ECS Electronics & Photonics Division Executive Committee, Boardroom, Conference Center, Sunrise

#### Monday, October 30, 2006

- 0645h ECS Physical & Analytical Electrochemistry Division Executive Committee, Jupiter 6, Conference Center, Sunrise
- 0700h ECS High Temperature Materials Division Executive Committee, Star 4, Conference Center, Sunrise
- 0700h ECS Industrial Electrolysis & Electrochemical Engineering Division Executive Committee, Star 1, Conference Center, Sunrise
- 0930h ECS Gordon E. Moore Award Subcommittee, Saturn 1, Conference Center, Sunrise
- 1030h ECS Education Committee, Saturn 2, Conference Center, Sunrise
- 1330h ECS Development Committee, Jupiter 1, Conference Center, Sunrise
- 1400h ECS Nanotechnology Subcommittee, Jupiter 2, Conference

Star 2, Conference Center, Sunrise

- 1500h ECS New Technology Subcommittee, Jupiter 3, Conference Center,
- 1500h ECS Society Meeting Committee, Jupiter 4, Conference Center,
- 1500h ECS Transactions Steering Committee / ECST Editorial Board, Jupiter 5, Conference Center, Sunrise
- 1600h ECS Honors & Awards Committee, Saturn 1, Conference Center,
- 1630h ECS Letters Advisory Board, Jupiter 6, Conference Center, Sunrise
- 1700h ECS European Section Executive Committee, Jupiter 3, Conference Center, Sunrise
- 1800h ECS European Section Meeting, Star 4, Conference Center, Sunrise
- ECS Electrodeposition Division Executive Committee, Jupiter 2, Conference Center, Sunrise
- 1900h ECS Energy Technology Division Executive Committee, Star 5, Conference Center, Sunrise

#### Tuesday, October 31, 2006

- ECS Symposium Subcommittee, Boardroom, Conference Center,
- 0730h ECS JES/ESL Editorial Board, Jupiter 1, Conference Center, Sunrise
- ECS Corporate Membership Committee, Jupiter 2, Conference 0730h Center, Sunrise
- ECS Council of Past Presidents, Star 5, Conference Center, Sunrise
- 0900h ECS Publication Committee, Saturn 1, Conference Center, Sunrise
- ECS Individual Membership Committee / Division / Section 1000h Representatives, Jupiter 3, Confe rence Center, Sunrise
- ECS Technical Affairs Committee, Saturn 1, Conference Center, 1330h Sunrise
- 1530h ECS Finance Committee, Jupiter 1, Conference Center, Sunrise
- 1800h SMEQ Business Meeting, Star 7, Conference Center, Sunrise

#### Wednesday, November 1, 2006

- 1000h ECS Ways & Means Committee, Star 1, Conference Center, Sunrise
- ECS Financial Policy Advisory Committee, Jupiter 1, Conference Center, Sunrise
- 1330h ECS Development Solicitation Subcommittee, Jupiter 2, Conference Center, Sunrise

#### Thursday, November 2, 2006

0900h ECS Board of Directors Meeting, Star 4/5, Conference Center, Sunrise

the Universal Ballroom, 2nd Floor, Expo Center

### **Luncheons, Business Meetings, and Special Events**

Luncheon tickets are \$5. Banquet and reception tickets are \$10. All luncheon and special event tickets are nonrefundable and should be purchased in advance.

_	Monday, October 30	1215h	ECS Luminescence & Display Materials Division Luncheon &
1215h 1215h	ECS Battery Division Luncheon & Business Meeting, Star 1/2, Conference Center, Sunrise ECS High Temperature Materials Division Luncheon & Business Meeting, Star 7, Conference Center, Sunrise	1800h 1900h	Business Meeting, Star 7, Conference Center, Sunrise ECS Corrosion Division Award Reception, Star 4, Conference Center, Sunrise ECS Battery Division Award Reception, Star 5, Conference Center, Sunrise
	Tuesday, October 31	1900h	ECS Hugh Isaacs Symposium Banquet, Star 1/2, Conference
1215h 1215h	ECS Corrosion Division Luncheon & Business Meeting, <i>Star 1, Conference Center, Sunrise</i> ECS Sensor Division Luncheon & Business Meeting, <i>Star 2,</i>	1900h	Center, Sunrise ECS Max Bredig Award Banquet and Address, Star 7/8, Conference Center, Sunrise
	Conference Center, Sunrise		Thursday, November 2
	Wednesday, November 1	2000h	Cena Baile Dinner & Dance Party, <i>Moon Light Terrace, Sunrise.</i> In the event of inclement weather, this event will take place in
1215h	ECS Electrodeposition Division Luncheon & Business Meeting,		the Universal Ballroom, 2 <sup>nd</sup> Floor, Expo Center

## Short Courses

The Society will sponsor seven short courses in conjunction with the 2006 Joint International Meeting. These courses will be held on Sunday, October 29, 2006, from 0900h to 1630h. The registration fee is \$470 for standard registrants and \$235 for students. The registration fee for the course covers the course, luncheon, coffee breaks, and text materials; it is not applicable to any other activities of the meeting. The deadline for registration for a course is September 15, 2006. Interested parties may register using the Advance Registration form in this program. Written requests for refunds will be honored only if received at Society headquarters before September 22, 2006. All courses are subject to cancellation pending an appropriate number of advance registrants. Visit the ECS website for full course descriptions and instructor biographies.

#### #1-Basic Electrochemical Measurements

#### Instructor: Bill Eggers (Princeton Applied Research, USA)

The course is targeted at scientists and engineers who are tasked with using electrochemical techniques in a variety of application areas: fuel cells, capacitors and batteries, corrosion, physical electrochemistry, electrodeposition, and sensors. The course will take a look at the basics of electrochemistry, the instruments and cells used in performing the experiments, the techniques available, and the interpretation of results. The techniques discussed will include those used in voltammetry, corrosion measurement, impedance spectroscopy, pulse plating, and more.

#### #2-PEM Fuel Cells

#### Instructors: Eric Stuve (Univ. of Washington, USA) and Hubert Gasteiger (General Motors Fuel Cell Activities, USA)

This short-course develops the fundamental thermodynamics and electrocatalytic processes critical to polymer electrolyte membrane fuel cells (PEMFC). In the first part, we will discuss the relevant half-cell reactions, their thermodynamic driving forces, and their mathematical foundations in electrocatalysis theory (e.g., Butler-Volmer equations). Subsequently, this theoretical framework will be applied to catalyst characterization and the evaluation of kinetic parameters. In the second part of the course, we will illuminate the different functional requirements of actual PEMFC components and present basic in-situ diagnostics (Pt surface area, shorting, H<sub>2</sub> crossover, electronic resistance, etc.). This will be used to develop an in-depth understanding of the various voltage loss terms that constitute a polarization curve. Finally, we will apply this learning to describe the principles of fuel cell catalyst activity measurements, the impact of uncontrolled-operation events (e.g., cell reversal), and the various effects of long-term materials degradation. To benefit most effectively from this course, registrants should have completed at least their first two years of a bachelor's program in physics, chemistry, or engineering; or have several years of experience with PEMFCs.

#### #3-Basics of Impedance Spectroscopy

### Mark E. Orazem (U. of Florida, Gainesville, FL, USA) and Pankaj Agarwal (Panitek GmbH, Munich, Germany)

This course will provide an introduction to impedance spectroscopy. The attendee will develop a basic understanding of the technique and how it can be applied to study a broad variety of electrochemical processes. The topics to be covered include:

- the motivation for using impedance spectroscopy advantages as compared to other transient techniques and the conditions under which its use is ideally suited;
- the type of information that can be extracted from impedance measurements, including the limitations of the technique;
- graphical methods for representing impedance data, including preliminary interpretation;
- proper selection of experimental parameters;
- application of electrical circuit analogues; and
- application to different systems including corrosion, chara terization of electronic materials, transport throug membranes such as skin, and fuel cells.

#### #4-Fundamentals and Applications of Electrochemical Capacitors

#### John R. Miller (JME, Inc., USA)

Electrochemical capacitors, sometimes called supercapacitors or ultracapacitors, are receiving increased attention in power sources for many applications. They offer extraordinarily high power density compared with batteries as well as high cycle-life and maintenance-free operation. Recently, emphasis has broadened from the traditional low-power to the emerging high-power applications. Power systems with battery-capacitor combinations, IC engine-capacitor combinations, and fuel cell-capacitor combinations are now appearing. Capacitor technology is being used to increase the energy efficiency of industrial equipment like fork lifts, earth-moving vehicles, and overhead cranes by capturing energy that is normally wasted. Systems developed specifically for power quality applications are appearing. This course is targeted at technologists interested in advancing and/or exploiting electrochemical capacitor technology. The fundamentals part of the lecture covers the nature and significance of "electric double layer" and "pseudocapacitance" charge storage and compares and contrasts these charge storage mechanisms with traditional capacitor and battery technologies. Basic design rules for electrochemical capacitor components are covered.

#### #5-Electrochemical Nanotechnology

### Stephen Lipka (Center for Applied Energy Research, University of Kentucky, USA)

Nanostructured materials are distinguished from conventional polycrystalline materials by the size of the structural units that comprise them: microstructures comprising nanoscale domains in at least one dimension. The ability to control a material's structure and composition at the nano-level has demonstrated that materials and devices can be fabricated possessing properties intrinsically different from their polycrystalline counterparts. As tailoring of fundamental properties becomes possible at the atomic level, the prospect of developing novel materials and devices with unique functionality becomes feasible. The aim of this short course is to introduce the student to selected aspects of nano-material synthesis, characterization, and device fabrication as it relates to electrochemical systems. An overview of recent advances in the synthesis, characterization, and properties of nanomaterials will be presented with particular emphasis on experimental methods and strategies to develop functional nanomaterials and devices applicable to the field of electrochemistry. The course reviews the "tools of the trade" available to the nanotechnologist for characterizing and manipulating materials at the atomic level. Strategies for preparing nanomaterials in the form of rods, wires, tubes, and particles and their application in electrochemical devices such as batteries, fuel cells, electrochemical capacitors, electrochemical actuators, and sensors are presented. Fabrication of nanomaterials and architectures using electrochemical directed self-assembly processes is reviewed.



## 6-Electrical Characterization and Characteristics of MOS Devices with Ultrathin (0.5-1.5 nm) High-k Gate Dielectrics

#### Samares Kar (Indian Institute of Technology, India)

This course is designed to accommodate a diverse group of attendees: chemists, physicists, material scientists, electrical engineers, and chemical engineers; hence will begin with the fundamentals, but, end with a discussion of the current issues and the future directions. The objective of this course is to provide the participants the basic principles and the practical aspects of the electrical characterization techniques for MOS devices with high-k gate dielectrics and an understanding of the important issues of gate dielectric leakage, mobility degradation, gate dielectric degradation, instability, and device reliability.

#### #7-Lithium Ion Battery Materials

Martin Winter (Graz University of Technology, Graz, Austria) and Ying Shirley Meng (Massachusetts Institute of Technology, Cambridge, MA, USA)

This course will cover the following:

- a general introduction into lithium and lithium ion batteries:
- anodes and interface considerations;
- electrolytes;
- cathodes, interface considerations, computational approach;
- cathode vs. anode interactions, inactive components; and
- conclusions and feedback.

## **Nontechnical Registrant Program and Tours**

All family members and guests are encouraged to register for the 2006 Joint International Meeting as a "Nontechnical Registrant." The modest registration fee of \$70 (advance) or \$95 (onsite) includes admission to social events, an exclusive continental breakfast Monday through Thursday on the Gondola Terrace, Sunrise, and the additional activities below.

All nontechnical registrants receive one complimentary \$15 credit to be used toward a spa treatment of your choice at the luxurious Moon Spa.

#### Monday, October 30

"Welcome to Cancun" Orientation ...... 0900-1000h Complimentary for Nontechnical Registrants
Participants are invited to attend a short lecture on Cancun, the surrounding area, its history and culture. In addition to this overview, there will be time allotted to discuss and sign up for optional tours.

#### Tuesday, October 31

Complimentary for Nontechnical Registrants

#### Wednesday, November 1

that the city, with approximately 60 remaining structures, was a trading post and functioned as one of the important ports of the Yucatan. Travel in airconditioned comfort with a bilingual guide. Entry fees, gratuities and taxes included.

Complimentary for Nontechnical Registrants

#### Thursday, November 2

Morning Book Review ...... 0830-0930h

This morning, the group will discuss the novel, *The Years with Laura Diaz*, by Carlos Fuentes. A millennial novel with centennial breadth, *The Years with Laura Diaz* follows one woman through the 20<sup>th</sup> century in Mexico, witnessing its political upheavals, technological advances, and bitterly uneven social and artistic progress. Fuentes is believed to be one of Latin American and Mexican literature's most influential writers and has been awarded the National Mexican Literature Award in 1984, the Cervantes Award in 1987, and the Príncipe de Asturias Award in 1994.

Complimentary for Nontechnical Registrants

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#### Symposium and Session Organizers

#### A - General Topics

- A1 General Society Student Poster Session G. Botte, V. Desai, and V. Subramanian
- A2 Nanotechnology General Session W. Van Schalkwijk, P. Kamat, and M. Lopez Teijelo

#### B - Batteries, Fuel Cells, and Energy Conversion

- B1 Electrochemical Capacitors and High Power Batteries
  R. Brodd, D. H. Doughty, J. Kim, M. Morita, G. Nagasubramanian, K. Naoi, Z. Ogumi, and P. Simon
- B2 Intercalation Compounds for Batteries and Hybrid Supercapacitors - K. Zaghib, C. Julien, A. Manthiram, and A. Martinez
- B3 Lithium-Ion Batteries G. Amatucci, K. M. Abraham, R. Jow, Y. Sun, and K. Zaghib
- **B4 Metal/Air and Metal/Water Batteries** *J. J. Xu, D. A. Scherson, and K. Zaghib*
- B5 Organic Photovoltaics T. Fuller, B. Gregg, and K. Rajeshwar
  B6 Proton Exchange Membrane Fuel Cells 6 T. Fuller, C. Bock,
  S. Cleghorn, H. A. Gasteiger, T. D. Jarvi, M. F. Mathias, M. Murthy, T.
  V. Nguyen, V. K. Ramani, E. M. Stuve, and T. A. Zawodzinski
- B7 Solid-State and Solid-Electrolyte Batteries J. Akridge, K. Kanamura, D. Sadoway, and W. West

#### C - Biomedical Applications and Organic Electrochemistry

- C1 Biological Nanostructures, Materials, and Applications
  M. C. Demirel, H. De Long, H. C. De Long, J. L. Moran Lopez, and J.
  Rusling
- C2 Molecular Electrochemistry A. J. Fry, B. A. Frontana Uribe, and D. Peters
- C3 Nanoparticles, Electrons, and Photons F. Maran, H. De Long, H. C. De Long, J. Rusling, and R. Whetten
- C4 Pharmaco-Electrochemistry M. Urquidi-Macdonald and I. Gonzalez

#### D - Corrosion, Passivation, and Anodic Films

- D1 Corrosion General Poster Session P. Schmuki
- D2 Corrosion of Electronic Materials and Devices
  L. Garfias, L. Diaz-Ballote, R. Frankenthal, and R. Sorensen
- D3 Corrosion of Infrastructure A. A. Sagues, H. Castaneda-Lopez, P. Castro-Borges, and A. A. Torres-Acosta
- D4 Critical Factors in Localized Corrosion 5, a Symposium in Honor of Hugh S. Isaacs N. Missert, A. J. Davenport, M. P. Ryan, and S. Virtanen
- D5 High Temperature Corrosion and Materials Chemistry 6 E. Opila, J. Fergus, A. Martinez-Villafane, D. Shifler, and E. Wuchina

### E - Dielectric and Semiconductor Materials, Devices, and Processing

- E1 Solid-State Joint General Session K. B. Sundaram and S. Seal
- E2 Advanced Gate Stack, Source/Drain, and Channel Engineering for Si-Based CMOS 2: New Materials, Processes, and Equipment
  - F. Roozeboom, E. P. Gusev, H. Iwai, D. Kwong, M. C. Ozturk, and P. J. Timans
- E3 Atomic Layer Deposition Applications 2 A. Londergan, S. De Gendt, J. Elam, S. B. Kang, G. S. Mathad, and O. Van Der Straten
- E4 High Dielectric Constant Gate Stacks 4 S. Kar, S. De Gendt, M. Houssa, H. Iwai, D. Landheer, D. Misra, and W. Tsai
- E5 Chemical Mechanical Polishing 8 S. Seal, S. Beaudoin, V. Desai, Y. Obeng, and K. B. Sundaram
- E6 Bioelectronics, Biointerfaces, and Biomedical Applications 2 D. Landheer, R. Bashir, M. J. Deen, C. Kranz, C. C. Liu, M. Madou, A. Offenhaeusser, and R. Schasfoort
- E7 High Purity Silicon 9 C. L. Claeys, R. Falster, P. Stallhofer, and M. Watanabe
- E8 Integrated Optoelectronics 3 M. J. Deen, P. C. Chang, and C. Jagadish

- E9 Multifunctional Carbon Materials for Electrochemical and Electronic Applications - G. M. Swain, J. L. Davidson, P. Kamat, R. L. Mccreery, M. D. Porter, D. A. Scherson, and A. Wieckowski
- E10 Wide Bandgap Semiconductor Materials and Devices 7

  E. B. Stokes, J. Bardwell, R. C. Fitch, J. Han, D. W. Merfeld, and P. H. Shen
- E11 Science and Technology of Dielectrics for Active and Passive Devices P. Mascher, D. Misra, and K. Worhoff
- E12 Semiconductor Wafer Bonding 9: Science, Technology, and Applications H. Baumgart, S. Bengtsson, C. A. Colinge, K. D. Hobart, H. Moriceau, and T. Suga
- E13 SiGe: and Germanium Materials, Processing, and Devices D. Harame, M. R. Caymax, J. D. Cressler, D. Houghton, H. Iwai, S. Koester, G. Masini, J. Murota, A. Reznicek, K. Rim, B. Tillack, and S. Zaima
- E14 State-of-the-Art Program on Compound Semiconductors 45 (SOTAPOCS 45) F. Ren, A. G. Baca, P. C. Chang, W. Johnson, J. Kim, J. La Roche, and W. B. Luo
- E15 Thin Film Transistors 8 (TFT8) Y. Kuo, D. Ast, O. Bonnaud, S. J. Fonash, M. Hatano, J. Jang, O. Kwon, E. Lueder, M. Matsumura, P. Migliorato, M. Shur, S. Uchikoga, and Y. Uraoka

#### F - Electrochemical/Chemical Deposition and Etching

- F1 Electrochemical Deposition onto Non-Metallic Surfaces P. M. Vereecken, G. Oskam, P. C. Searson, and K. Strubbe
- F2 Electronics Packaging 2 K. Kondo, D. Barkey, T. Ritzdorf, and B. Wu
- F3 Magnetic Materials Processes, and Devices 9 C. Bonhote, S. R. Brankovic, H. H. Gatzen, Y. Kitamoto, S. Krongelb, T. Osaka, W. Schwarzacher, and G. Zangari
- F4 Molecular Structure of the Solid-Liquid Interface and Its Relationship to Electrodeposition 5 R. C. Alkire and D. M. Kolb
- F5 Nanostructured Metal Oxides: Processing and Applications E. Traversa, G. Hunter, G. Oskam, R. L. Penn, D. A. Scherson, and P. C. Searson

#### G – Electrochemical Synthesis and Engineering

G1 Industrial and Environmental Electrochemistry - D. T. Mah, D. Genders, S. W. Lin, and Y. Meas

#### H - Fullerenes, Nanotubes, and Carbon Nanostructures

- H1 Carbon Nanotubes: General Session R. B. Weisman and S. Subramoney
- H2 Recent Advances in Fullerene Science F. D'Souza, S. Fukuzumi, and D. M. Guldi

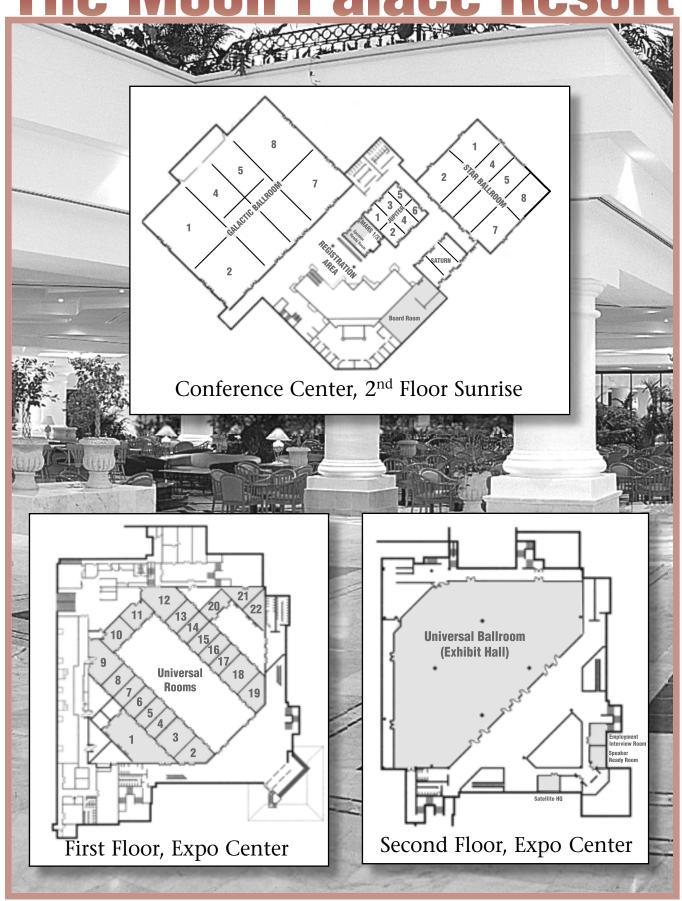
#### I – Physical and Analytical Electrochemistry

- I1 Physical and Analytical Electrochemistry General Session H. De Long
- 12 Electrochemistry at Liquid-Liquid Interfaces P. Vanysek and M. V. Mirkin
- I3 Electrochemical Surface Science: Recent Advances in the Study of the Electrode-Electrolyte Interface M. P. Soriaga and N. Batina
- 14 Molten Salts 15, in Memory of Robert Osteryoung R. Mantz, D. Costa, H. De Long, H. C. De Long, R. Hagiwara, G. Stafford, P. C. Trulove, and K. Zaghib
- **I5 Supramolecular Electrochemistry** *A. Kaifer, F. D'Souza, and L. A. Godinez*

#### J - Sensors and Displays: Principles, Materials, and Processing

- J1 Biomedical and Clinical Sensors = C. Kranz and Y. Chang
- J2 Chemical Sensors 7: Chemical and Biological Sensors and Analytical Systems - G. Hunter, S. Bhansali, and R. Mukundan
- J3 Microfabricated and Nanofabricated Systems MEMS/NEMS 7
  P. J. Hesketh, J. L. Davidson, J. Li, C. S. Roper, and S. Shoji
- J4 Physics and Chemistry of Luminescent Materials 15 A. M. Srivastava, A. Meijerink, and K. Mishra

**The Moon Palace Resort** 



## **Technical Exhibit**

The Technical Exhibit will open on Monday, October 30, in the Exhibit Hall, Universal Ballroom, 2nd Floor, Expo Center, from 1800-2000h, in conjunction with the Monday Evening Poster Session. On Tuesday, the Exhibit will run from 0900-1400h and again from 1900-2100h along with the Tuesday evening Poster Session. The Technical Session coffee break is scheduled for 0930h in the Exhibit Hall on Tuesday and Wednesday to allow meeting attendees additional time to browse through the exhibits. The exhibit will feature instruments, materials, systems, publications, and software of interest to attendees.

**Exhibit Hours** 

Monday, October 30...... 1800-2000h Tuesday, October 31 ..... 0900-1400h .....and 1900-2100h Wednesday, November 1....0900-1400h

#### **Exhibitors as of Press-Time**

#### Advanced Battery Technology/Advanced **Fuel Cell Technology**

Booth 14

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#### Agilent Technologies / Molecular Imaging Booth 38

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#### Applied Microengineering Ltd. (AML) Booth 15

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#### **Materials Today**

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#### **Pine Research Instrumentation**

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#### Radiometer Analytical

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#### Technologies & Devices International, Inc. Booth 25

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## **ECS Co-Sponsored Conferences**

In addition to the regular ECS biannual meetings, ECS and its Divisions also co-sponsor meetings and symposia organized by individuals and/or other organizations, of interest to the technical audience ECS serves. The following is a list of the co-sponsored meetings for 2006/2007.

- SBMicro 2006, August 28-September 1, 2006 (Ouro Preto, Brazil)
- The Fifth International Conference on Electrocatalysis, September 10-14, 2006 (Serbia and Montenegro), www.ecs06.cg.yu
- EUCHEM Conference on Molten Salts and Ionic Liquids, September 16-22, 2006 (Hammamet, Tunisia), iusti.polytech.univ-mrs.fr/EUCHEM2006
- The 2006 Fuel Cell Seminar, November 13-17, 2006 (Hawaii, USA), www.fuelcellseminar.com
- The 2nd Annual Fuel Cell Workshop, February 2-7, 2007 (Florida, USA), www.fsec.ucf.edu
- The 25th International Power Sources Symposium, April 23-27, 2007 (Bath, United Kingdom), www.ipss.org.uk
- 2007 International Society of Electrochemistry Spring Meeting, May 1-4. 2007 (Dublin, Ireland), spring07. ise-online.org
- NACE Northern Area Eastern Conference 2007, September 24-26, 2007 (Ottawa, Canada)

To request an ECS co-sponsorship of your technical event, please contact Amir Zaman, Associate Director of Development, at amir. zaman@electrochem.org or 609.737.1902, ext. 103.



May 6-11, 2007 Chicago, Illinois

Oct. 7-12, 2007 Washington, DC

May 18-23, 2008 Phoenix, Arizona

Oct. 12-17, 2008 Honolulu, Hawaii

For more information on these future meetings, contact the Society Headquarters office
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Fax: 609.737.2743
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