



## Preview: 2015 Materials Research Society Spring Meeting & Exhibit

Moscone West Convention Center, San Francisco  
Marriott Marquis, and Westin San Francisco Market Street,  
San Francisco, California

**Meeting:** April 6–10    **Exhibit:** April 7–8

[www.mrs.org/spring2015](http://www.mrs.org/spring2015)

and the development of oxygen reduction reaction and evolution reaction materials in energy storage and conversion systems.

**Nanomaterials** will cover a wide range of topics, including bioinspired microscale- and nanoscale-machines, nanoscale heat transport, and emerging nongraphene 2D materials. Some symposia will explore the advances in mechanism-enabled design and syntheses of molecules to colloidal compound semiconductor nanocrystals. Other areas covered in this group include nanogenerators and piezotronics, photoactive nanoparticles and nanostructures, semiconductor nanowires and devices, and graphene and carbon nanotubes.

Some of the symposia in **Electronics and Photonics** will focus on the interplay of structure and carrier dynamics in energy-relevant nanomaterials. Other symposia will cover resonant optics, light-matter processes, plasmonics and metamaterials, and quantum photonics. Several symposia in this cluster will cover innovative interconnects/electrodes for advanced devices, reliability and materials issues of semiconductors, and novel materials for advanced optics and photonics.

**Soft and Biomaterials** will include sessions on the foundations of bio/nano interfaces, supramolecular materials, organic bioelectronics, and soft electronics. In addition, there are symposia in this cluster dedicated to exploiting bioinspired self-assembly for the design of functional and responsive materials, nanomaterials in translational medicine, and crystal engineering.

The 2015 Materials Research Society (MRS) Spring Meeting will be held April 6–10, 2015, in San Francisco, Calif. The scientific sessions will include many new and developing areas of materials research as well as some well-established and popular topics. To complement the scientific sessions, tutorials will provide detailed introductions to particularly exciting areas of research, while the exhibit will showcase products of interest to the materials community. The technical meeting and exhibits will be located at the Moscone West Convention Center, San Francisco Marriott Marquis, and Westin San Francisco Market Street.

Making up the core of the Meeting are five topical clusters of the technical program, encompassing 51 symposia.

**Energy** will include symposia with a focus on emerging silicon technology, photovoltaics, perovskite solar cells, as well as next-generation electrochemical energy storage and conversion systems. Other areas covered include high-capacity anode materials for lithium-ion batteries, advances in solar water splitting,



2015 MRS<sup>®</sup>  
SPRING MEETING  
& EXHIBIT

### Meeting Chairs



**Artur Braun**  
Empa—  
Swiss Federal  
Laboratories for  
Materials Science  
and Technology



**Hongyou Fan**  
Sandia National  
Laboratories



**Lia Stanciu**  
Purdue University



**Ken Haenen**  
Hasselt University  
& IMEC



**Jeremy A. Theil**  
Quantumscape, Inc.

### 2015 MRS Spring Meeting Registration Rates

	<b>Pre-Registration</b> Valid before 5:00 p.m. ET on March 20, 2015	<b>On-Site Registration</b> Valid after 5:00 p.m. ET on March 20, 2015
Member	\$505	\$625
Student Member	\$110	\$140
Nonmember	\$630	\$750
Student Nonmember	\$135	\$165
Retired	\$165	\$195
Unemployed	\$135	\$165

## Hotels in San Francisco

MRS receives meeting space at a greatly discounted rate as a result of contracting a large block of sleeping rooms at the official meeting hotels. In order to keep meeting costs as low as possible, we encourage you to utilize official MRS housing while you are attending an MRS meeting. Hotels offering discounted rates for the 2015 MRS Spring Meeting are listed below. To make reservations, visit [www.mrs.org/spring-2015-lodging](http://www.mrs.org/spring-2015-lodging).

### ■ San Francisco Marriott Marquis

780 Mission Street  
San Francisco, California 94103  
877-622-3056 or 415-896-1600  
Group Rate: \$173 single/double, plus applicable taxes and fees  
**Deadline: March 18, 2015**

### ■ Intercontinental San Francisco

888 Howard Street  
San Francisco, California 94103  
415-616-6500  
Group Rate: \$199 single/double, plus applicable taxes and fees  
**Deadline: March 15, 2015**

### ■ The Westin San Francisco Market Street

50 Third Street  
San Francisco, California 94103  
415-974-6400  
Group Rate: \$189 single/double plus applicable taxes and fees  
**Deadline: March 11, 2015**



The **General—Fabrication and Characterization** cluster will round out the meeting with symposia on recent advances in adaptive architecture and programmable matter, and applications in gold-based materials, oxide thin films and nanostructures, metal oxides, and titanium oxides. Other areas include multiscale modeling and experiments on microstructural evolution in nuclear materials and materials information

using novel techniques in electron microscopy.

**Symposium X—Frontiers of Materials Research** will feature lunchtime lectures for the broad materials community on topics at the forefront of materials science and engineering research. Alexandra Navrotsky of the University of California–Davis, will present “Energetics at the Nanoscale: Impacts for Geochemistry,

the Environment and Materials.” Lionel Vayssieres of the International Research Center for Renewable Energy will present “Advanced Low Cost Energy Materials from Aqueous Solutions.” Daniel Vanmaekelbergh from the University of Utrecht will present “Colloidal Nanocrystals: From Individual Quantum Objects to Building Blocks for Honeycomb Semiconductors Hosting Dirac Carriers.”

An awards ceremony will be held to honor this year’s Outstanding Young Investigator and MRS Fellows as well as the recipients of the Innovation in Materials Characterization Award—endowed by Toh-Ming Lu and Gwo-Ching Wang, the Mid-Career Research Award—endowed by Aldrich Materials Science, and the Gold and Silver Graduate Student Awards.

The Meeting will include a plenary address by Samuel I. Stupp, Board of Trustees Professor of Materials Science & Engineering, Chemistry, Medicine, and Biomedical Engineering and Director of the Simpson Querrey Institute for BioNanotechnology at Northwestern University. There will also be a presentation by the recipient of the Fred Kavli Distinguished Lectureship in Nanoscience, yet to be announced.

Poster sessions will be held in the Marriott Marquis on Tuesday, Wednesday, and Thursday from 8:00 p.m. to 11:00 p.m. in the Yerba Buena Salon 7/8/9. The

## MRS OnDemand®

This Spring Meeting, MRS OnDemand will electronically capture a large sampling of rich materials science content presented. This always-on, online community, provides an interactive experience, benefiting on-site and remote attendees both during, and after, the Meeting.

Select presentations from the following categories will be captured and made available for viewing, complete with presentation materials, from the comfort of your home or office, or on the go—it’s **YOUR MRS, YOUR WAY!**

- ▶ Award and Plenary Talks
- ▶ Featured Events
- ▶ Technical Sessions
- ▶ Tutorial Sessions
- ▶ Poster Sessions

[www.mrs.org/on-demand](http://www.mrs.org/on-demand)

meeting chairs will sponsor a Best Poster Award competition, selecting recipients each night on the basis of the posters' technical content, appearance, graphic excellence, and presentation quality.

The popular Science as Art competition will be again held at this Meeting. The competition is open to all registered meeting attendees, with entries to be on display in the Exhibit Hall in the Moscone West Convention Center. Multiple first-place and second-place awards of \$400 and \$200, respectively, will be presented at the Meeting. Guidelines and the deadline for entries will be available on the 2015 MRS Spring Meeting website.

MRS will host a Career Fair as an extension of its new online Career Central Job Board ([jobs.mrs.org](http://jobs.mrs.org)). The Career Fair will provide an opportunity for job seekers and employers to discuss career opportunities.

Graduate students and members of MRS University Chapters are invited to attend the student mixer reception. Also, chapter officers and faculty advisors are invited to attend a meeting of MRS University Chapter representatives to compare notes on recent activities and brainstorm on new projects and issues of common concern. Those interested in starting new chapters are welcome.

The Government Agency Presentations, which include presentations on funding opportunities from US and non-US agencies, and various events for professional development and public outreach are also planned.

Public outreach activities and professional development programs will include seminars and workshops for materials scientists for career development; hands-on activities during coffee breaks; *NanoDays* demonstrations; and information at

the Public Outreach Center about the Society's outreach programs and information seminars, including opportunities for MRS members to participate.

**The deadline to pre-register for the MRS Spring Meeting is March 20, 2015 (5:00 p.m. EST).** International travelers are reminded to begin the visa process early. For additional information on the Spring Meeting, contact MRS Member Services, Materials Research Society, 506 Keystone Drive, Warrendale, PA 15086-7573, USA; email [info@mrs.org](mailto:info@mrs.org); and tel. 724-779-3003.

Details of various events and activities will be published in the *Program & Exhibit Guide* available on-site. The MRS website can be accessed for updated information on confirmed talks and details on special events, information on obtaining a visa, and pre-registration at [www.mrs.org/spring2015](http://www.mrs.org/spring2015).

TUTORIALS

**The 2015 MRS Spring Meeting will feature 12 tutorials covering a variety of topics to complement the scientific sessions. The tutorials are free of charge to all registered 2015 MRS Spring Meeting attendees. All tutorial sessions will be held on Monday, April 6.**

**Tutorial notes will be available for purchase during preregistration and on-site in the Publications Sales area during the Meeting week. Orders can be submitted on the preregistration form, which is available on the MRS website.**

**TUTORIAL A**  
**Silicon and Related Materials for Energy Conversion and Storage**  
9:00 am–5:00 pm | Moscone West, Level 3, Room 3002

**TUTORIAL B**  
**Young Scientist Tutorial on Characterization Techniques for Thin-Film Solar Cells**  
9:00 am–5:00 pm | Moscone West, Level 3, Room 3003

**TUTORIAL L**  
**Bioinspired Micro- and Nanomachines and Devices**  
9:00 am–3:00 pm | Moscone West, Level 3, Room 3008

**TUTORIAL M**  
**Phonons in Thermal Transport and Biological Diagnostics**  
1:30 pm–5:00 pm | Moscone West, Level 3, Room 3001

**TUTORIAL O**  
**2D Transition Metal Dichalcogenide (TMDC) Materials and Heterostructures—Synthesis, Properties and Applications**  
9:00 am–12:00 pm | Moscone West, Level 3, Room 3004

**TUTORIAL P**  
**Nanogenerators and Piezotronics—From Working Principles to Applications**  
9:00 am–12:00 pm | Moscone West, Level 3, Room 3005

**TUTORIAL S**  
**Structural and Functional Characterization of Nanowires**  
1:00 pm–5:00 pm | Moscone West, Level 3, Room 3004

**TUTORIAL Y**  
**Overview of Phase-Change Materials, Their Physics and Applications**  
9:00 am–2:45 pm | Moscone West, Level 3, Room 3006

**TUTORIAL CC**  
**Reliability and Materials Issues of Semiconductor Optical and Electron Devices and Materials**  
9:00 am–5:00 pm | Moscone West, Level 3, Room 3009

**TUTORIAL OO**  
**Introduction to Metal-Assisted Chemical Etching—Chemistry and Applications**  
9:00 am–12:15 pm | Moscone West, Level 3, Room 3007

**TUTORIAL WW**  
**Measure Ultrafast Dynamics—How and Why**  
1:30 pm–5:00 pm | Moscone West, Level 3, Room 3005

**TUTORIAL XX**  
**Analysis of Radioactive Nuclear Materials**  
1:30 pm–5:00 pm | Moscone West, Level 3, Room 3007

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# 2015 **MRS**<sup>®</sup> SPRING EXHIBIT

## MOSCONE WEST | LEVEL 1

### Exhibit Hours

**Tuesday, April 7**

10:00 am – 5:30 pm

**Wednesday, April 8**

10:00 am – 6:00 pm

AdValue Technology, LLC  
Advanced Research Systems, Inc.  
AIP Publishing  
AIST-NT, Inc.  
AIXTRON SE  
AJA International, Inc.  
Aldrich Materials Science  
American Physical Society  
Annealsys  
Arradance, Inc.  
Asahi Spectra Co., Ltd.  
Asylum Research, an Oxford Instruments Company  
attocube systems Inc.  
Attolight AG  
Barnett Technical Services  
Bio-Logic USA, LLC  
Blue Wave Semiconductors, Inc.  
BNNT, LLC  
Bruker Corporation  
BUCHI Corporation  
Carl Zeiss X-Ray Microscopy, Inc.  
Chemat Technology, Inc.  
CRAIC Technologies, Inc.  
CrystalMaker Software Ltd.  
CVD Equipment Corporation  
Dr. Eberl MBE-Komponenten GmbH  
Duniway Stockroom Corporation  
Electron Microscopy Sciences/Diatome  
Fischione Instruments  
Gatan, Inc.  
Graphenea  
HeatWave Labs, Inc.  
Hitachi High Technologies America, Inc.  
HORIBA Scientific

Hummingbird Scientific  
Huntington Mechanical Laboratories, Inc.  
Hysitron Inc.  
Integrated Dynamics Engineering  
International Centre for Diffraction Data (ICDD)  
IOP Publishing  
Janis Research Company, LLC  
Japan Society of Applied Physics  
JASCO  
JEOL USA, Inc.  
Keysight Technologies  
Koreakiyon Co., Ltd.  
KP Technology USA Inc.  
Kurt J. Lesker Company  
Lake Shore Cryotronics, Inc.  
M. Braun, Inc.  
Metrohm USA, Inc.  
METTLER TOLEDO  
Micro Photonics Inc.  
Microtrac Inc.  
MMR Technologies, Inc.  
MTI Corporation  
Nanomechanics, Inc.  
Nanoscribe GmbH  
NBM Design, Inc.  
Neaspec GmbH  
Neocera, LLC  
NIST/ORM  
Nor-Cal Products, Inc.  
Novocontrol America, Inc.  
Oerlikon Leybold Vacuum  
Oxford Instruments  
Park Systems Inc.  
Physical Electronics

Plasmaterials, Inc.  
Protochips, Inc.  
Quantachrome Instruments  
Quantum Design, Inc.  
R.D. Mathis Company  
Rayonix, L.L.C.  
Renishaw Inc.  
RHK Technology, Inc.  
Rigaku Americas Corporation  
SCIENION US, Inc.  
Seki Diamond Systems  
Semicore Equipment Inc.  
SETARAM, Inc.  
Solartron Analytical (AMETEK)  
SPECS Surface Nano Analysis, Inc.  
SPI Supplies/Structure Probe, Inc.  
Springer  
STAIB Instruments, Inc.  
Strem Chemicals, Inc.  
SVT Associates, Inc.  
Synton-MDP AG  
Ted Pella, Inc.  
Thermo Scientific  
Twente Solid State Technology B.V.  
Vacuum Engineering & Materials (VEM)  
Vacuum Technology Inc.  
Verder Scientific, Inc.  
VG Scienta, Inc.  
Vigor Tech USA  
Yugyokuen Ceramics Co., Ltd.

**For information about exhibit and sponsorship opportunities, visit [www.mrs.org/spring-2015-exhibit](http://www.mrs.org/spring-2015-exhibit)**