



## Preview: 2019 Materials Research Society Fall Meeting & Exhibit

Hynes Convention Center and Sheraton Boston Hotel, Boston, Massachusetts  
Meeting: December 1–6 • Exhibit: December 3–5 • [mrs.org/fall2019](http://mrs.org/fall2019)

The Materials Research Society (MRS) will hold its 2019 MRS Fall Meeting and Exhibit at the Hynes Convention Center and the Sheraton Boston Hotel in Boston, Mass., December 1–6. The Meeting will include technical programming, tutorials, an award ceremony, poster sessions, a career fair, and other special activities.

MRS meetings focus on leading interdisciplinary materials research in both fundamental and applied areas, coordinated by more than 200 scientists from both academia and industry worldwide. The Meeting's core is its technical program, which includes 54 symposia that are organized into eight clusters.

### Symposium clusters

**Broader Impact** includes a symposium on Materials Data Science—Transformations in Interdisciplinary Education. Topics will include interdisciplinary communications, teaching data science skills at the undergraduate and graduate levels, and data life cycle and duration.

The **Electronic, Photonic and Magnetic Materials** cluster focuses on a broad

range of advanced functional materials for electronics, multiferroics, and magnetoelectrics. The five symposium topics range from emerging material platforms and approaches for plasmonics, metamaterials, and metasurfaces to molecular and organic ferro- and piezoelectrics.

The **Energy and Environment** cluster includes 17 selected topics that highlight everything from challenges in battery technologies for next-generation electric vehicles, to green electrochemical energy-storage solutions, and nanomaterials for sensing and control of energy systems.

The **Fabrication of Functional Materials and Nanomaterials** cluster covers six topics from 2D materials beyond graphene, to crystal engineering of functional materials, to advanced atomic layer deposition.

The **Materials for Quantum Technology** cluster features three symposia on materials for quantum computing applications, coherent and correlated magnetic materials for hybrid quantum interfaces, and predictive synthesis and advanced characterization of emerging quantum materials.

**Materials Theory, Computation and Characterization** features seven symposia that cover diverse topics such as advanced atomistic algorithms, using machine learning in high-throughput discovery of new materials, and *in situ/operando* studies of dynamic processes in ferroelectric, magnetic, and multiferroic materials.

**Mechanical Behavior and Structural Materials** includes four symposia that cover a diverse range of topics, including extreme mechanics, high-entropy alloys and other novel high-temperature structural alloys, and mechanics of nanocomposites and hybrid materials.

The **Soft Materials and Biomaterials** cluster has 11 symposia that focus on advanced neural materials and devices, bioelectrical interfaces, hydrogel materials, and bringing mechanobiology to materials.

### Plenary session and awards

The **Plenary Session Featuring The Fred Kavli Distinguished Lectureship in Materials Science** presentation will be held on Monday, December 2, at 6:30 pm in the Sheraton Boston Hotel, Grand

## 2019 MRS FALL MEETING & EXHIBIT

MEETING CHAIRS

**Bryan D. Huey**  
University of Connecticut

**Stéphanie P. Lacour**  
École Polytechnique  
Fédérale de Lausanne

**Conal E. Murray**  
IBM T.J. Watson  
Research Center

**Jeffrey B. Neaton**  
University of California,  
Berkeley, and Lawrence  
Berkeley National Laboratory

**Iris Visoly-Fisher**  
Ben-Gurion University  
of the Negev

Ballroom. This year's plenary speaker is **Sharon C. Glotzer**, University of Michigan.

The **MRS Awards and Recognition Program Featuring the Von Hippel Presentation** will convene on Wednesday, December 4, from 5:30 pm to 7:30 pm in the Sheraton Grand Ballroom. The Von Hippel Award, David Turnbull Lectureship, MRS Medal, Materials Theory Award, The Kavli Foundation Early Career Lectureship in Materials Science, the MRS Nelson "Buck" Robinson Science and Technology Award for Renewable Energy, *MRS Bulletin* Postdoctoral Publication Prize, MRS Postdoctoral Awards, Graduate Student Gold and Silver Awards, and the Arthur Nowick Graduate Student Award will be presented. For up-to-date award recipient information, visit [mrs.org/fall2019](http://mrs.org/fall2019).

Join us for an evening of **Special Talks and Panel Discussion Featuring MRS Award Recipients** on Tuesday, December 3, at 6:15 pm. This event will feature flash talks (10-minute summaries explaining current research topics) from the following 2019 MRS Fall Meeting Award recipients: EU-40 Materials Prize (E-MRS Award); The Kavli Foundation Early Career Lectureship in Materials Science; Materials Theory; MRS Medal; and David Turnbull Lectureship.

### Special sessions and events

**Symposium X** talks provide Meeting attendees with an overview of leading-edge topics. Featured speakers are Brian Litt, University of Pennsylvania (Monday); Evelyn Wang, Massachusetts Institute of Technology (Tuesday); Francesco Stellacci, École Polytechnique Fédérale de Lausanne (Wednesday); and Alessandra Lanzara, Lawrence Berkeley National Laboratory and University of California, Berkeley (Thursday).

Artificial intelligence/machine learning is featured in two **LATE NEWS—HOT TOPIC symposia** for the Fall Meeting: MT02, Closing the Loop—Using Machine Learning in High-Throughput Discovery of New Materials; and MT03, Automated and Data-Driven Approaches to Materials Development—Bridging the Gap Between Theory

## HOTELS IN BOSTON

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 and minimize the financial risk to MRS, we encourage you to utilize official MRS housing while you are attending an MRS meeting.

Hotels offering discounted rates for the Meeting are listed below. **When making your reservation, please make sure you are doing so through the 2019 MRS Fall Meeting website at [mrs.org/fall2019/hotels](http://mrs.org/fall2019/hotels).**\*

|   |  |
|---|--|
| <p>◆ <b>Sheraton Boston Hotel</b><br/>39 Dalton St., Boston, Mass. 02199<br/>617.236.2000 or 888.627.7054<br/>Group Rate: \$212 single, \$222 double<br/>Additional persons: \$20 ea.**<br/><b>Deadline: November 11, 2019</b></p>  | <p>◆ <b>Hilton Boston Back Bay Hotel</b><br/>40 Dalton St., Boston, Mass. 02115<br/>617.236.1100<br/>Group Rate: \$219 single/double,<br/>\$239 triple/quad**<br/><b>Deadline: November 8, 2019</b></p>  |
| <p>◆ <b>Boston Marriott Copley Place</b><br/>110 Huntington Ave.,<br/>Boston, Mass. 02116<br/>617.236.5800<br/>Group rate: \$206 single, \$223 double,<br/>Additional persons: \$20 ea.**<br/><b>Deadline: November 6, 2019</b></p> | <p>◆ <b>Boston Park Plaza</b><br/>50 Park Plaza at Arlington St.,<br/>Boston, Mass. 02116<br/>800.225.2008 or 617.426.2000<br/>Group Rate: \$180 single, \$200 double,<br/>\$220 triple, \$240 quad**<br/><b>Deadline: November 8, 2019</b></p>  |
| <p>◆ <b>The Westin Copley Place</b><br/>10 Huntington Ave.,<br/>Boston, Mass. 02116<br/>617.262.9600<br/>Group Rate: \$208 single, \$218 double<br/>Additional persons: \$20 ea.**<br/><b>Deadline: November 8, 2019</b></p>        | <p>◆ <b>Embassy Suites Boston at Logan Airport</b><br/>207 Porter St., Boston, Mass. 02128<br/>617.567.5000<br/>Group Rate: \$159 single<br/>Additional persons: \$10 ea.**<br/><b>Deadline: November 10, 2019</b></p>   |
| <p>◆ <b>The Colonnade Hotel</b><br/>120 Huntington Ave., Boston, Mass. 02116<br/>617.424.7000<br/>Group Rate: \$209 single, \$209 double,<br/>\$239 triple, \$269 quad**<br/><b>Deadline: November 11, 2019</b></p>                 | <p>* Unofficial housing bureaus have contacted exhibitors and potential attendees and/or created websites with housing options. These companies are not affiliated with the 2019 MRS Fall Meeting. Only the MRS website will have official housing for the Meeting.</p> <p>** plus applicable taxes and fees</p> |

[mrs.org/fall2019/hotels](http://mrs.org/fall2019/hotels)

and Industry. In addition, a **Quantum Materials Panel Discussion**, organized jointly among the three symposia (MQ01, MQ02, MQ03) in the Materials for Quantum Technology cluster, is planned for Wednesday, December 4, from 3:30 pm to 5:00 pm in Room 202 of the Hynes Convention Center.

**Essentials of Getting Your Work Published**, a professional development offering, is planned as a Hub Stage event on Sunday, December 1.

**Poster sessions** will be held in the evenings. The Meeting chairs will award

prizes of up to \$500 for the best posters during each evening session.

The **Materials Voice Booth** will be in The Hub—Hall D on Tuesday and Wednesday from 11:00 am to 5:30 pm and Thursday from 10:00 am to 1:30 pm. **Tell your US legislators why support of the physical sciences and science education is necessary**—for national security, quality of life, and a strong economy. We invite you to utilize Materials Voice to ensure your message is heard on science policy issues.

The **Government Affairs Committee** will host **Research Funding**



**Opportunities** sessions on Tuesday and Thursday. These sessions provide interaction between government agency presenters and the MRS Membership. Invited talks will be followed by roundtable Q&A sessions with individual program managers.

The **Congressional Science and Engineering Fellowship Program Information Session** will be held on Tuesday, December 3, from 4:15 pm to 5:15 pm. MRS offers exciting opportunities for scientists to learn about the field of science policy by spending one year as a special legislative assistant in the US Congress in Washington, DC. Come learn about the MRS/OSA and MRS/TMS Congressional Science and Engineering Fellowships and hear from current and former Fellows about their experiences as scientists in the US Senate and House of Representatives.

The **iMatSci Innovation Showcase** provides a platform for independent technology leaders and those at universities, research laboratories, and startup companies to demonstrate the

practical applications of their materials-based technologies. The entities behind these innovations will generally be pre-revenue and seed-stage innovators that are actively seeking partners, funding, or avenues for moving toward product commercialization. iMatSci will take place on Tuesday, December 3, from 8:00 am to 9:30 pm.

**Green Cards for Scientific Researchers: How to Win Your EB-1/NIW Case** will take place on The Hub Stage–Hall D on Tuesday from 12:00 pm to 12:45 pm. This presentation will cover and compare the criteria for EB-1A classification for foreign nationals of extraordinary ability in the sciences; EB-1B classification for foreign nationals who are outstanding researchers and professors; and the National Interest Waiver (“NIW”) Category.

Throughout the week, **Science in Video (SciVid)**, a high-impact materials science video competition, will showcase the finalists as they compete for recognition and prizes. Members will be asked to vote on their favorite videos from the SciVid

Competition finalists to determine the People’s Choice winner. A viewing station will be located at the Public Outreach Center in The Hub–Hall D and in several locations throughout the Meeting. The SciVid awards presentation will take place on The Hub Stage on Wednesday, December 4, at 1:00 pm. For more information, visit [mrs.org/sci-vid](http://mrs.org/sci-vid).

**Creating an Effective IP Strategy: What Startups Need to Know** will be held in the Sheraton, Constitution A, from 12:00 pm to 12:45 pm on Tuesday.

The Meeting will also include the **Women’s Workshop and Reception** (Sunday, December 1) and the **Women in Materials Science & Engineering Breakfast** (Wednesday, December 4). Additional information will be available via the MRS website and the MRS Meeting App. Preregistration is required.

The **Careers at Government Laboratories and User Facilities—Panel Discussion** will be held on The Hub Stage–Hall D on Monday, December 2 (4:30 pm–5:30 pm). This discussion is intended for students and early-career

TUTORIALS

### The 2019 MRS Fall Meeting will feature 13 tutorials held on Sunday, December 1, Hynes Convention Center, Level 2.

Tutorials cover a variety of topics to complement the symposium sessions and are free of charge for all registered attendees. Tutorial notes will be available for purchase at the preregistration price of \$35 until November 15. After the preregistration period ends, notes will be available for purchase for \$45 on Sunday at Registration and then at the MRS/Cambridge Publications Booth 100 in the Exhibit Hall during Exhibit hours.

|   |  |
|---|--|
| <div style="background-color: #2e7d32; color: white; padding: 2px 5px; font-weight: bold; margin-bottom: 5px;">EL01</div> <b>Optical Metasurfaces—<br/>Materials, Designs and Advanced Applications</b><br>8:30 am–5:00 pm  | <div style="background-color: #2e7d32; color: white; padding: 2px 5px; font-weight: bold; margin-bottom: 5px;">FF03</div> <b>Aggregation-Induced Emission</b><br>8:30 am–5:00 pm   |
| <div style="background-color: #2e7d32; color: white; padding: 2px 5px; font-weight: bold; margin-bottom: 5px;">EL04</div> <b>Introduction to Chalcogenide Discovery and Design</b><br>8:30 am–12:00 pm  | <div style="background-color: #2e7d32; color: white; padding: 2px 5px; font-weight: bold; margin-bottom: 5px;">FF06</div> <b>Advanced Manufacturing and Computational Tools for Reactive Materials Science</b><br>8:30 am–5:00 pm      |
| <div style="background-color: #2e7d32; color: white; padding: 2px 5px; font-weight: bold; margin-bottom: 5px;">EN08</div> <b>Processing and Device Optimization Strategies for High Efficiency Solar Cells</b><br>1:30 pm–5:00 pm   | <div style="background-color: #2e7d32; color: white; padding: 2px 5px; font-weight: bold; margin-bottom: 5px;">MQ01</div> <b>Introduction to Quantum Spintronics</b><br>1:30 pm–5:00 pm  |
| <div style="background-color: #2e7d32; color: white; padding: 2px 5px; font-weight: bold; margin-bottom: 5px;">EN11</div> <b>Silicon Photovoltaics—<br/>Device Concepts, Materials and Interfaces<br/>Engineering, Fabrication, Testing and Applications</b><br>1:30 pm–5:00 pm | <div style="background-color: #2e7d32; color: white; padding: 2px 5px; font-weight: bold; margin-bottom: 5px;">MQ02</div> <b>Introduction to Ion Trap and Superconducting Qubits and Their Material Challenges</b><br>8:30 am–12:00 pm |
| <div style="background-color: #2e7d32; color: white; padding: 2px 5px; font-weight: bold; margin-bottom: 5px;">EN17</div> <b>Nuclear Materials and Damage—<br/>Design and Impact</b><br>1:30 pm–5:00 pm   | <div style="background-color: #2e7d32; color: white; padding: 2px 5px; font-weight: bold; margin-bottom: 5px;">MT02/<br/>MT03</div> <b>Applied Machine Learning for<br/>Materials Research and Development</b><br>8:30 am–5:00 pm      |
| <div style="background-color: #2e7d32; color: white; padding: 2px 5px; font-weight: bold; margin-bottom: 5px;">FF01</div> <b>Advances in Large-Scale Synthesis of Beyond Graphene 2D Materials</b><br>1:30 pm–5:00 pm   | <div style="background-color: #2e7d32; color: white; padding: 2px 5px; font-weight: bold; margin-bottom: 5px;">MT04</div> <b>Advanced Materials Exploration with Neutrons</b><br>8:30 am–5:00 pm                                       |
|   | <div style="background-color: #2e7d32; color: white; padding: 2px 5px; font-weight: bold; margin-bottom: 5px;">SB06</div> <b>Molecules and Materials in Mechanobiology</b><br>1:30 pm–5:00 pm  |

[mrs.org/fall2019/symposium-sessions/tutorial-sessions](http://mrs.org/fall2019/symposium-sessions/tutorial-sessions)

professionals interested in learning more about potential career paths at national laboratories.

The **How to Develop an Effective Proposal for User Facilities** workshop on Tuesday, December 3 (4:00 pm–8:00 pm), will help guide students through the proposal writing process to conduct research at a user facility or national laboratory. Representatives from various user facilities and students who have already completed research will give advice to prospective students regarding the submission process, seeking funding, and preparation for their visit.

The **How to Prepare for Your ABET Accreditation** session will help materials departments prepare for their ABET visit. The training will be held on Tuesday, December 3, from 7:15 pm to 9:30 pm, and the session may be attended without registering for the Meeting. Remote access will be available if unable to attend in person. Preregistration is recommended via [mrs.org/ABET-training](http://mrs.org/ABET-training).

**Meet Your New Faculty Candidate—Poster Session** is a new poster session being held in The Hub–Hall D on Wednesday, December 4 (4:00 pm–7:00 pm), for those who are seeking a faculty position. This poster session will offer a unique and interactive setting that will help faculty candidates and recruiting departments find their best matches more efficiently. Faculty candidates registered for the MRS Fall Meeting are invited to submit an abstract for this poster session by October 15, 2019. Search committees and current faculty are encouraged to attend to meet this year's faculty candidates. Additional information is available at [mrs.org/fall2019/meet-your-new-faculty-candidate](http://mrs.org/fall2019/meet-your-new-faculty-candidate).

The **Frontiers Reception–Building Communities** featuring **PowerPoint Karaoke** will be held on Thursday, December 5. Attendees are invited to participate in PowerPoint Karaoke from 5:30 pm to 6:45 pm, where they can showcase their research in an interactive and fun way. Preregister to be a presenter or submit a slide. Information can be found at [mrs.org/fall2019/powerpoint-karaoke](http://mrs.org/fall2019/powerpoint-karaoke).

Following PowerPoint Karaoke, from 7:00 pm to 8:00 pm, attendees can join in the Frontiers Reception–Building

| 2019 MRS FALL MEETING REGISTRATION RATES                 |  |  |
|--|--|--|
|  | PREREGISTRATION<br>before 11:59 pm (ET)<br>November 15, 2019 | ON-SITE REGISTRATION<br>after 11:59 pm (ET)<br>November 15, 2019 |
| Meeting Registration                                     | \$750  | \$890  |
| Meeting Registration with MRS Member Discount            | \$590  | \$740  |
| Student Registration (Proof of student status required.) | \$180  | \$210  |
| Student Registration with MRS Member Discount            | \$140  | \$170  |
| Retired  | \$190  | \$215  |
| Unemployed   | \$160  | \$200  |

*2019 MRS Fall Meeting registration includes a complimentary one-year membership to MRS beginning January 1, 2020, through December 31, 2020.*

Communities. “Quantum! Sustainability! Artificial Intelligence! Bio! Responsive & Adaptive Materials! YOUR Emerging Areas of Interest!” Will these emerging frontiers change the process of materials research? Help MRS chart a course to build new materials communities. Be a part of this interactive brainstorming mixer. Appetizers and beverages are included.

During the **Real-Life Challenges and Opportunities in Sustainable Product Design Seminar**, attendees will learn how to incorporate sustainability principles into research in a more comprehensive way while considering real-world applications in product design and manufacturing. This popular seminar will be held on Sunday, December 1, from 6:30 pm to 7:30 pm and Tuesday, December 3, from 5:30 pm to 6:30 pm, and is aimed at materials researchers at all career stages.

The **“Materials Needs for Energy Sustainability by 2050”** series of panel sessions is jointly organized by the MRS Focus on Sustainability Subcommittee and the *MRS Energy and Sustainability* journal. The program, planned for Monday, December 2, from 5:15 pm to 6:15 pm, focusing on plastics, will convene top experts to discuss scientific, technological, and sociological complexities relating to energy, the environment, and sustainability. This event will include an audience Q&A as well as real-time interactive audience polling, so bring your smartphone and be ready to participate

in this provocative session. This event is sponsored by the National Science Foundation and Thermo Fisher Scientific.

The **National Science Foundation (NSF)** will be participating at the Public Outreach Center. The Division of Materials Research will be present to schedule personal interviews with program directors to discuss diversity, sustainability, funding opportunities, and how to write a successful proposal.

**Speed Coaching with the NSF Division of Materials Research** will be featured in The Hub–Hall D on Tuesday from 9:00 am to 5:00 pm.

### For more information

Registration for the 2019 MRS Fall Meeting includes a complimentary one-year membership to MRS beginning January 1, 2020, through December 31, 2020. **The deadline to preregister for the Meeting is November 15, 2019, 11:59 pm (ET).** International travelers are reminded to allow ample time to obtain a visa, if needed.

For additional details about the Meeting, contact MRS Member Services: [info@mrs.org](mailto:info@mrs.org) (email) or 724-779-3003 (phone). Details of various events and activities will be available via the MRS Meeting App and in the Meeting & Exhibit Guide available on-site. The MRS website can also be accessed for updated information on confirmed talks, details of special events, information on obtaining a visa, and preregistration: [mrs.org/fall2019](http://mrs.org/fall2019).



# 2019 MRS® FALL EXHIBIT

[mrs.org/fall2019/exhibit](http://mrs.org/fall2019/exhibit)

## HYNES CONVENTION CENTER, LEVEL 2

Tuesday, December 3 ..... 11:00 am – 5:30 pm

Wednesday, December 4 ..... 11:00 am – 5:30 pm

Thursday, December 5 ..... 10:00 am – 1:30 pm



abcr GmbH  
 Accurion, Inc.  
 Across International LLC  
 ACS Publications  
 Admiral Instruments  
 AdValue Technology, LLC  
 Advanced Polymer Materials Inc.  
 Advanced Research Systems, Inc.  
 AIP Publishing  
 AJA International, Inc.  
 Alemnis AG  
 Allevi, Inc.  
 Allwin21 Corp.  
 American Physical Society  
 ANCORP  
 Andeen-Hagerling, Inc.  
 Angstrom Engineering Inc.  
 Angstrom Sciences, Inc.  
 Angstrom Scientific Inc.  
 Anton Paar  
 Applied Surface Technologies  
 Asahi Spectra Co., Ltd.  
 Asylum Research,  
 an Oxford Instruments Company  
 attocube systems Inc.  
 Barnett Technical Services  
 BASi  
 Bio-Logic USA, LLC  
 Blue Wave Semiconductors, Inc.  
 Bruker  
 Bruker—AFM Probes  
 Bruker Nano  
 Cambridge University Press/  
 Materials Research Society  
 Carl Zeiss Microscopy, LLC  
 Cell Press  
 CELLINK  
 Chemat Scientific  
 Cobolt by HUBNER Photonics  
 CRAIC Technologies, Inc.  
 CrystalMaker Software Ltd.  
 CVD Equipment Corporation  
 DataPhysics Instruments USA Corp.  
 DCA Instruments, Inc.  
 DE GRUYTER  
 Delcom Instruments  
 Delong America Inc.  
 Digital Surf  
 Duniway Stockroom Corporation  
 Ebara Technologies, Inc.  
 Ebatco  
 Ecopia Corp.  
 ECS—The Electrochemical Society  
 EDAX Inc., AMETEK Materials  
 Analysis Division  
 Edinburgh Instruments Ltd.  
 Electron Microscopy Innovative  
 Technologies  
 Electron Microscopy Sciences  
 Electron Optics Instruments LLC |  
 EmCrafts

Elsevier  
 Energetiq Technology, Inc.  
 Enli Technology Co., Ltd.  
 Ereztech LLC  
 ETRI (Electronics and  
 Telecommunications Research  
 Institute)  
 Evactron® by XEI Scientific, Inc.  
 Extrel CMS, LLC  
 FemtoTools AG  
 Fischione Instruments  
 Frontiers  
 Furuya Metal Americas, Inc.  
 Gamry Instruments  
 Gatan  
 Geib Refining Corporation  
 Geowell Vacuum Co., Ltd.  
 Goodfellow Corporation  
 Graphene Square Inc.  
 Hamamatsu Corporation  
 HeatWave Labs, Inc.  
 Heidelberg Instruments Inc.  
 Herzan LLC  
 Hitachi High Technologies America, Inc.  
 HORIBA Scientific  
 Hummingbird Scientific  
 Huntington Vacuum Products  
 ID Quantique SA  
 InRedox LLC  
 Instec, Inc.  
 Integrated Dynamics Engineering  
 Integrated Surface Technologies  
 International Centre for Diffraction Data  
 (ICDD)  
 International Union of Crystallography  
 IONTOF  
 IOP Publishing  
 ISS, Inc.  
 Janis Research Company, LLC  
 Japan Science and Technology Agency  
 JASCO  
 JEOL USA, Inc.  
 JoVE  
 KA Imaging  
 Kaufman & Robinson, Inc.  
 Keysight Technologies  
 KLA Corporation  
 Kleindiek Nanotechnik  
 KP Technology USA Inc.  
 Kurt J. Lesker Company  
 Lake Shore Cryotronics, Inc.  
 Linkam Scientific Instruments  
 LTS Research Laboratories, Inc.  
 M. Braun Inc.  
 Mad City Labs, Inc.  
 Malvern Panalytical  
 Materials Analysis Technology Inc.  
 (MA-tek Inc.)  
 Matheson Tri-Gas, Inc.  
 MilliporeSigma  
 MIT Press

MKS Instruments  
 Montana Instruments  
 MSE Supplies LLC  
 MTI Corporation  
 Naieel Technology  
 Nano-Master, Inc.  
 NanoAndMore USA Corp.  
 NanoMagnetics Instruments  
 Nanosurf, Inc.  
 NANOVEA  
 NBM Design, Inc.  
 neaspec GmbH  
 Neocera, LLC  
 NETA  
 NETZSCH Instruments  
 North America, LLC  
 Nor-Cal Products, Inc.  
 NT-MDT America, Inc.  
 OptiGrate, An IPG Photonics Company  
 OriginLab Corporation  
 Oxford Instruments America, Inc.  
 Park Systems Inc.  
 Photothermal Spectroscopy Corp.  
 PicoQuant Photonics  
 North America, Inc.  
 Pine Research Instrumentation, Inc.  
 Pittcon 2020  
 Plasmaterials, Inc.  
 Princeton Scientific Corp.  
 PROTO  
 Protochips, Inc.  
 PVD Products, Inc.  
 Qnami GmbH  
 Quantum Design, Inc.  
 R.D. Mathis Company  
 Radiant Technologies, Inc.  
 Raith America, Inc.  
 Renishaw Inc.  
 Rigaku  
 Rocky Mountain Vacuum Tech, Inc.  
 Royal Society of Chemistry  
 Royal Society Publishing

SAES Group  
 SAGE Publishing Ltd.  
 Science/AAAS  
 Scienta Omicron, Inc.  
 Scribner Associates Inc.  
 Seki Diamond Systems  
 Semilab USA LLC  
 Sensofar Metrology  
 Sine Scientific Instruments  
 SmarAct Inc.  
 Software for Chemistry & Materials  
 SPECS-TII, Inc.  
 SPEX SamplePrep  
 SPI Supplies, Division of Structure  
 Probe, Inc.  
 Springer Nature  
 SPS-America  
 STAIB Instruments, Inc.  
 Strem Chemicals, Inc.  
 Super Conductor Materials, Inc.  
 Synton-MDP AG  
 TA Instruments  
 Taylor & Francis Group  
 TDK-Lambda Americas—Neptune  
 Ted Pella, Inc.  
 TESCAN-USA  
 Thermo Fisher Scientific  
 THINKY USA, Inc.  
 Toshiba Manufacturing Co., Ltd.  
 Trion Technology, Inc.  
 UC Components Inc.  
 ULVAC Technologies, Inc.  
 Vacuum Technology Inc.  
 VAT Group  
 Verder Scientific, Inc.  
 Vigor Tech USA, LLC  
 Wafer World Inc.  
 Wiley  
 WITec Instruments Corp.  
 J.A. Woollam Company, Inc.  
 World Scientific Publishing  
 Zurich Instruments USA, Inc.

### USER FACILITIES

DIII-D National Fusion Facility  
 Environmental Molecular Sciences Laboratory (EMSL)  
 High Flux Isotope Reactor/Spallation Neutron Source  
 ISS U.S. National Laboratory  
 nanoHUB  
 Nanoscale Science User Facilities  
 National High Magnetic Field Laboratory  
 National Nanotechnology Coordinated Infrastructure  
 Nuclear Science User Facilities (NSUF)  
 PARADIM/Cornell NanoScale Facility  
 Penn State Materials Research Institute  
 Society for Science at User Research Facilities (SSURF)  
 Synchrotron Light Sources  
 UMass Lowell Core Research Facilities

