



2016 **MRS**[®] FALL MEETING & EXHIBIT
November 27 – December 2, 2016 | Boston, Massachusetts

2016 MRS FALL MEETING SYMPOSIA

□□□□□□□□□□ Register by November 11th and SAVE!

BROADER IMPACT

- BI1 Today's Teaching and Learning in Materials Science—Challenges and Advances
- BI2 The Business of Materials Technology

BIOMATERIALS AND SOFT MATERIALS

- BM1 Spatiotemporally and Morphologically-Controlled Biomaterials for Medical Applications
- BM2 Stimuli Responsive Organic and Inorganic Nanomaterials for Biomedical Applications and Biosafety
- BM3 Biomaterials for Regenerative Medicine
- BM4 Materials and Manufacturing of Biointerfaces Devices and Stretchable Electronics
- BM5 Materials for Biointegrated Photonic Systems
- BM6 Fabrication, Characterization and Applications of Bioinspired Nanostructured Materials
- BM7 Functional Nanostructured Polymers for Emerging Energy Technologies

ELECTROCHEMISTRY

- EC1 Redox Activity on the Molecular Level—Fundamental Studies and Applications
- EC2 Facilitating Charge Transport in Electrochemical Energy Storage Materials
- EC3 Catalytic Materials for Energy and Sustainability
- EC4 Material, Devices and Systems for Sustainable Conversion of Solar Energy to Fuels
- EC5 Proton Transfer and Transport—From Biological Systems to Energy Applications

ELECTRONICS, MAGNETICS AND PHOTONICS

- EM1 Materials Issues for Quantum Computing
- EM2 Rare-Earths in Advanced Photonics and Spintronics
- EM3 Electronic and Ionic Dynamics at Solid-Liquid Interfaces
- EM4 Structure-Property Relationships of Organic Semiconductors
- EM5 Materials and Mechanisms of Correlated Electronic Phenomena in Oxide Heterostructures
- EM6 Thin-Film Transistors—New Materials and Device Concepts
- EM7 Functional Plasmonics
- EM8 Spin Dynamics in Nonmagnetic Materials and Devices
- EM9 Materials and Nanostructures for Magnetic Skyrmions
- EM10 Emerging Materials and Technologies for Nonvolatile Memories
- EM11 Wide-Bandgap Materials for Energy Efficiency—Power Electronics and Solid-State Lighting
- EM12 Diamond Electronics, Sensors and Biotechnology—Fundamentals to Applications

ENERGY AND SUSTAINABILITY

- ES1 Materials Science and Chemistry for Grid-Scale Energy Storage
- ES2 Materials Challenges for Flow-Based Energy Conversion and Storage
- ES3 Perovskite Solar Cell Research from Material Properties to Photovoltaic Function
- ES4 Thermoelectric Polymers and Composites—Nontraditional Routes to High Efficiency
- ES5 Materials Research and Design for A Nuclear Renaissance
- ES6 Scientific Basis for Nuclear Waste Management

MECHANICAL BEHAVIOR AND FAILURE MECHANISMS OF MATERIALS

- MB1 Intermetallic-Based Alloys—From Fundamentals to Applications
- MB2 Materials under Mechanical Extremes
- MB3 High-Entropy Alloys
- MB4 Glassy, Nanocrystalline and Other Complex Alloy Systems and Their Applications
- MB5 Size Effects and Small-Scale Mechanical Behavior of Materials
- MB6 Cyclic Deformation and Fracture at the Nanoscale
- MB7 Shear Transformation Mechanisms and Their Effect on Mechanical Behavior of Crystalline Materials

NANOMATERIALS

- NM1 Semiconducting Nanowires, Nanoribbons and Heterostructures—Synthesis, Characterizations and Functional Devices
- NM2 2D Layers and Heterostructures beyond Graphene—Theory, Preparation, Properties and Devices
- NM3 Nanotubes and Related Nanostructures
- NM4 Nanomaterials-Based Solar Energy Conversion
- NM5 Nanomembrane Materials—From Fabrication to Application
- NM6 Nanoscale Materials and Devices by High-Temperature Gas-Phase Processes

PROCESSING AND MANUFACTURING

- PM1 Ion Beam-Enabled Nanoscale Fabrication, Modification and Synthesis
- PM2 Plasma Processing via Liquid for Life Sciences and Environmental Applications
- PM3 Science-Enabled Advances in Materials- and Manufacturing-Technologies
- PM4 Novel Materials, Fabrication Routes and Devices for Environmental Monitoring
- PM5 Hierarchical, Hybrid and Roll-to-Roll Manufacturing for Device Applications

THEORY, CHARACTERIZATION AND MODELING

- TC1 *In Silico* Materials Chemistry
- TC2 Design, Discovery and Understanding of Materials Guided by Theory, Computation and Data Mining
- TC3 Materials Issues in Art and Archaeology
- TC4 Advances in Spatial, Energy and Time Resolution in Electron Microscopy

www.mrs.org/fall2016

Meeting Chairs

Bernard Bewlay, GE Global Research
Silvija Gradečak, Massachusetts Institute of Technology
Sarah Heilshorn, Stanford University
Ralph Spolenak, ETH Zürich
T. Venky Venkatesan, National University of Singapore

Don't Miss These Future MRS Meetings!

2017 MRS Spring Meeting & Exhibit
April 17 – 21, 2017
Phoenix, Arizona

2017 MRS Fall Meeting & Exhibit
November 26 – December 1, 2017
Boston, Massachusetts

MRS MATERIALS RESEARCH SOCIETY[®]
Advancing materials. Improving the quality of life.

506 Keystone Drive • Warrendale, PA 15086-7573
Tel 724.779.3003 • Fax 724.779.8313
info@mrs.org • www.mrs.org

MATERIALS RESEARCH SOCIETY®

2016 Board of Directors

Officers

Kristi S. Anseth, *President*
Oliver Kraft, *Past President*
Susan Trolier-McKinstry, *Vice President*
Sean J. Hearne, *Secretary*
David J. Parrillo, *Treasurer*
Todd M. Osman, *Executive Director*

Directors

Charles T. Black
Alexandra Boltasseva
C. Jeffrey Brinker
Matt Copel
Paul Drzaic
Yury Gogotsi
Hideo Hosono
Young-Chang Joo
Karen L. Kavanagh
Kornelius Nielsch
Christine Ortiz
Sabrina Sartori
Magaly Spector
Loucas Tsakalacos
Anke Weidenkaff

2016 Publications Committee

R.A. Vaia, *Chair*
S.P. Baker, *Editors Subcommittee*
A.J. Hurd, *New Publication Products Subcommittee*
R.J. Nemanich, *Publications Quality Subcommittee*

2016 MRS Committee Chairs

B.M. Clemens, *Academic Affairs*
A. Polman, *Awards*
K. Whittlesey, *Government Affairs*
D.S. Ginley, *Meetings*

Y. Chabal, *Member Engagement*
E. Kupp, *Public Outreach*
R.A. Vaia, *Publications*

MRS Headquarters

T.M. Osman, *Executive Director*
J.A. Dillen, *Director of Finance and Administration*
D. Dozier, *Director of Government Affairs*
P.A. Hastings, *Director of Meeting Activities*
E.M. Kiley, *Director of Communications*

Journal of Materials Research Founding Sponsors

Allied-Signal Inc.
Xerox Corporation

About the Materials Research Society

The Materials Research Society (MRS®) is a not-for-profit scientific association founded in 1973 to promote interdisciplinary goal-oriented basic research on materials of technological importance. Membership in the Society includes over 16,000 scientists from industrial, government, and university research laboratories in the United States and abroad.

The Society's interdisciplinary approach to the exchange of technical information is qualitatively different from that provided by single-discipline professional societies because it promotes technical exchange across the various fields of science affecting materials development. MRS sponsors two major international annual meetings encompassing many topical symposia, as well as numerous single-topic scientific meetings each year. It recognizes professional and technical excellence, conducts tutorials, and fosters technical exchange in various local geographical regions through Section activities and Student Chapters on university campuses.

Disclaimer: Authors of each article appearing in this Journal are solely responsible for all contents in their article(s) including accuracy of the facts, statements, and citing resources. Facts and opinions are solely the personal statements of the respective authors and do not necessarily represent the views of the editors, the Materials Research Society, or Cambridge University Press.

MRS journals maintain a proud tradition of editorial excellence in scientific literature. The *Journal of Materials Research*, the archival journal spanning fundamental developments in materials science, is published twenty-four times a year by MRS and Cambridge University Press. *MRS Bulletin* is a premier source for comprehensive research trends and a timely scan of professional activities. *MRS Communications* is a full-color letters and perspectives journal focused on groundbreaking work across the spectrum of materials research. *MRS Energy & Sustainability—A Review Journal* publishes reviews on key topics in materials research and development as they relate to energy and sustainability. *MRS Advances* is a peer-reviewed online-only journal featuring impactful and emerging research, designed to reflect the way materials researchers work, write, publish and share their results.

The *Journal of Materials Research* is free electronically to all MRS regular and student members. See inside front cover for subscription rates for *Journal of Materials Research*.

MRS is an Affiliated Society of the American Institute of Physics and participates in the international arena of materials research through associations with professional organizations.

For further information on the Society's activities, contact MRS Headquarters, 506 Keystone Drive, Warrendale, PA 15086-7573; telephone (724) 779-3003; fax (724) 779-8313.



Postmaster—Send change of address notice to:

Cambridge University Press
One Liberty Plaza, 20th Floor,
New York, NY 10006

A publication of the
MRS MATERIALS RESEARCH SOCIETY
Advancing materials. Improving the quality of life.

Periodical Rate Postage Paid at New York, NY
and Additional Mailing Offices

ISSN: 0884-2914