



2015 **MRS**® SPRING MEETING & EXHIBIT  
April 6–10, 2015 | San Francisco, California

# CALL FOR PAPERS

**Abstract Submission Deadline October 23, 2014**

## Energy

- A Emerging Silicon Science and Technology
- B Thin-Film Compound Semiconductor Photovoltaics
- C Perovskite Solar Cells
- D Organic-Based Photovoltaics
- E Advanced Solar Cells—Components to Systems
- F Biohybrid Solar Cells—Photosynthesis-Based Photovoltaics and Photocatalytic Solar Cells
- G Next-Generation Electrochemical Energy Storage and Conversion Systems—Synthesis, Processing, Characterization and Manufacturing
- H Mechanics of Energy Storage and Conversion—Batteries, Thermoelectrics and Fuel Cells
- I High Capacity Anode Materials for Lithium Ion Batteries
- J Latest Advances in Solar Water Splitting
- K The Development of Oxygen Reduction Reaction (ORR) and Oxygen Evolution Reaction (OER) Materials in Energy Storage and Conversion Systems

## Nanomaterials

- L Bioinspired Micro- and Nano-Machines—Challenges and Perspectives
- M Nanoscale Heat Transport—From Fundamentals to Devices
- N From Molecules to Colloidal Compound Semiconductor Nanocrystals—Advances in Mechanism-Enabled Design and Syntheses
- O Emerging Non-Graphene 2D Materials
- P Nanogenerators and Piezotronics
- Q Externally Actuated Responsive Nanomaterials—Design, Synthesis, Applications and Challenges
- R Photoactive Nanoparticles and Nanostructures
- S Semiconductor Nanowires and Devices for Advanced Applications
- T Graphene and Carbon Nanotubes

## Electronics and Photonics

- U The Interplay of Structure and Carrier Dynamics in Energy-Relevant Nanomaterials
- V Resonant Optics—Fundamentals and Applications
- W Light-Matter Processes in Molecular Systems and Devices
- Y Phase-Change Materials for Data Storage, Cognitive Processing and Photonics Applications
- Z Plasmonics and Metamaterials—Synthesis, Characterization and Integration
- AA Materials for Beyond the Roadmap Devices in Logic, Power and Memory
- BB Innovative Interconnects/Electrodes for Advanced Devices, Flexible and Green-Energy Electronics
- CC Reliability and Materials Issues of Semiconductors—Optical and Electron Devices and Materials III
- DD Tailored Disorder—Novel Materials for Advanced Optics and Photonics
- EE Quantum Photonics, Information Technology and Sensing
- FF Defects in Semiconductors—Relationship to Optoelectronic Properties

## Soft and Biomaterials

- GG Foundations of Bio/Nano Interfaces—Synthesis, Modeling, Design Principles and Applications
- HH Supramolecular Materials—Assembly and Dynamics
- II Organic Bioelectronics—Materials, Processes and Applications
- JJ Exploiting Bioinspired Self-Assembly for the Design of Functional and Responsive Materials

- KK Nanomaterials in Translational Medicine
- LL Soft Electronics—From Electronic Skin to Reliable Neural Interfaces
- MM Crystal Engineering—Design, New Materials and Applications

## General—Fabrication and Characterization

- NN Adaptive Architecture and Programmable Matter—Next-Generation Building Skins and Systems from Nano to Macro
- OO Metal-Assisted Chemical Etching of Silicon and Other Semiconductors
- PP Gold-Based Materials and Applications
- QQ Plasma-Based Materials Science and Engineering
- RR Solution Syntheses of Inorganic Functional/Multifunctional Materials
- SS Oxide Thin Films and Nanostructures for Advanced Electrical, Optical and Magnetic Applications
- TT Metal Oxides—From Advanced Fabrication and Interfaces to Energy and Sensing Applications
- UU Titanium Oxides—From Fundamental Understanding to Applications
- VV Science and Technology of Superconducting Materials
- WW Ultrafast Dynamics in Complex Functional Materials
- XX Multiscale Modeling and Experiments on Microstructural Evolution in Nuclear Materials
- YY Insights for Energy Materials Using *In Situ* Characterization
- ZZ Materials Information Using Novel Techniques in Electron Microscopy

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

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**Hongyou Fan** Sandia National Laboratories  
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Boston, Massachusetts

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**Biomaterials-based strategies for the engineering of mechanically active soft tissues**

Zhixiang Tong and Xinqiao Jia

# MEETING SYMPOSIA



2014 MRS®  
FALL MEETING & EXHIBIT

November 30 - December 5, 2014 | Boston, Massachusetts

[www.mrs.org/fall2014](http://www.mrs.org/fall2014)

## Preregistration Deadline—November 14, 2014

### BIOMATERIALS AND SOFT MATERIALS

- A Organic Bioelectronics
- B Multifunctional Polymeric and Hybrid Materials
- C Medical Applications of Noble Metal Nanoparticles (NMNPs)
- D Materials and Concepts for Biomedical Sensing
- E Hard-Soft Interfaces in Biological and Bioinspired Materials—Bridging the Gap between Theory and Experiment
- F Reverse Engineering of Bioinspired Nanomaterials
- G Plasma Processing and Diagnostics for Life Sciences
- H Micro/Nano Engineering and Devices for Molecular and Cellular Manipulation, Stimulation and Analysis
- I Emerging 1D and 2D Nanomaterials in Health Care

### ELECTRONICS AND PHOTONICS

- J Emerging Non-Graphene 2D Atomic Layers and van der Waals Solids
- K Graphene and Graphene Nanocomposites
- L Optical Metamaterials and Novel Optical Phenomena Based on Nanofabricated Structures
- M Materials and Technology for Nonvolatile Memories
- N Frontiers in Complex Oxides
- O Oxide Semiconductors
- P Hybrid Oxide/Organic Interfaces in Organic Electronics
- Q Fundamentals of Organic Semiconductors—Synthesis, Morphology, Devices and Theory
- R Diamond Electronics and Biotechnology—Fundamentals to Applications

### ENERGY AND SUSTAINABILITY

- S Advances in Materials Science, Processing and Engineering for Fuel Cells and Electrolyzers
- T Wide-Bandgap Materials for Solid-State Lighting and Power Electronics
- U Organic Photovoltaics—Fundamentals, Materials and Devices
- V Sustainable Solar-Energy Conversion Using Earth-Abundant Materials
- W Perovskite-Based and Related Novel Material Solar Cells
- Y Technologies for Grid-Scale Energy Storage
- Z Materials Challenges for Energy Storage across Multiple Scales
- AA Synthesis, Processing and Mechanical Properties of Functional Hexagonal Materials for Energy Applications
- BB Molecular, Polymer and Hybrid Materials for Thermoelectrics
- CC Advanced Materials and Devices for Thermoelectric Energy Conversion
- DD Materials for Advanced Nuclear Technologies
- EE Scientific Basis for Nuclear Waste Management XXXVIII
- FF Materials as Tools for Sustainability

### NANOMATERIALS AND SYNTHESIS

- GG Nanomaterials for Harsh Environment Sensors and Related Electronic and Structural Components—Design, Synthesis, Characterization and Utilization
- HH Flame and High-Temperature Synthesis of Functional Nanomaterials—Fundamentals and Applications
- II Semiconductor Nanocrystals, Plasmonic Metal Nanoparticles, and Metal-Hybrid Structures
- JJ 3D Mesoscale Architectures—Synthesis, Assembly, Properties and Applications
- KK Directed Self-Assembly for Nanopatterning
- LL Semiconductor Nanowires—Growth, Physics, Devices, and Applications

### THEORY, CHARACTERIZATION AND MODELING

- MM Carbon Nanotubes—Synthesis, Properties, Functionalization and Applications
- NN Mathematical and Computational Aspects of Materials Science
- OO *In Situ* Characterization of Dynamic Processes during Materials Synthesis and Transformation
- PP Advances in Scanning Probe Microscopy for Multimodal Imaging at the Nanoscale
- QQ Advances in Nanoscale Subsurface, Chemical and Time-Resolved Studies of Soft Matter
- RR Scaling Effects in Plasticity—Synergy between Simulations and Experiments
- SS Informatics and Genomics for Materials Development
- TT Advanced Materials Exploration with Neutrons and X-Rays—The State-of-the-Art in the International Year of Crystallography

### GENERAL

- UU Structure-Property Relations in Amorphous Solids
- VV Recent Advances in Reactive Materials
- WW Defects and Radiation Effects in Advanced Materials
- XX Bridging Scales in Heterogeneous Materials
- YY Advanced Structural and Functional Intermetallic-Based Alloys
- ZZ Hierarchical, High-Rate, Hybrid and Roll-to-Roll Manufacturing
- AAA Undergraduate Research in Materials Science—Impacts and Benefits

### Meeting Chairs

- Husam N. Alshareef** King Abdullah University of Science and Technology
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- Gerardo Morell** University of Puerto Rico
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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 three 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.

MRS publishes symposia proceedings, the *MRS Bulletin*, and other volumes on current scientific developments. The *Journal of Materials Research*, the archival journal spanning fundamental developments in materials science, is published twenty-four times a year by Cambridge University Press for the MRS.

*MRS Communications* is a full-color letters and perspectives journal focused on groundbreaking work across the spectrum 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 such as the International Union of Materials Research Societies.

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