



2018 **MRS**® FALL MEETING & EXHIBIT

November 25–30, 2018 | Boston, Massachusetts

LATE NEWS—HOT TOPIC ABSTRACTS

ACCEPTED SEPTEMBER 4–18, 2018

GENERAL INTEREST

- GI01 Machine Learning and Data-Driven Materials Development and Design
- GI02 Materials for Next-Generation Robotics
- GI03 Synthetic Biology—An Accelerator of Materials Research and Development

BROADER IMPACT

- BI01 Sustainable Development in Materials Science and Related Societal Aspects
- BI02 The Future of Materials Science Academia—Preparing for a Career in Higher Education

BIOMATERIALS AND SOFT MATERIALS

- BM01 3D Printing of Passive and Active Medical Devices
- BM02 Electronic and Coupled Transport in Biology
- BM03 Multiscale Modeling of Soft Materials and Interfaces
- BM04 Biomaterials for Regenerative Engineering
- BM05 Advanced Manufacturing Technologies for Emulating Biological Tissues
- BM06 Plasma Processing and Monitoring for Bioengineering and Biomedical Engineering
- BM07 Bioelectronics—Fundamentals, Materials and Devices
- BM08 Materials-to-Devices for Integrated Wearable Systems—Energy Harvesting and Storage, Sensors/Actuators and Integration
- BM09 Bioinspired Macromolecular Assembly and Inorganic Crystallization—From Tissue Scaffolds to Nanostructured Materials

CHARACTERIZATION, MECHANICAL PROPERTIES AND STRUCTURE–PROPERTY RELATIONSHIPS

- CM01 Solid-State Chemistry of Inorganic Materials
- CM02 Structure–Property Relations in Non-Crystalline Materials
- CM03 *In Situ/Operando* Analysis of Electrochemical Materials and Interfaces
- CM04 Ultrafast Optical Probes for Advanced Materials Characterization and Development
- CM05 Fundamentals of Materials Property Changes Under Irradiation

ELECTRONIC, PHOTONIC AND MAGNETIC MATERIALS

- EP01 New Materials and Applications of Piezoelectric, Pyroelectric and Ferroelectric Materials
- EP02 Materials for Manipulating and Controlling Magnetic Skyrmions
- EP03 Beyond-Graphene 2D Materials—Synthesis, Properties and Device Applications
- EP04 Novel Photonic and Plasmonic Materials Enabling New Functionalities
- EP05 Excitons, Electrons and Ions in Organic Materials

- EP06 Coherent Electronic Spin Dynamics in Materials and Devices
- EP07 Tailored Disorder—Novel Materials for Advanced Optics and Photonics
- EP08 Ultra-Wide-Bandgap Materials and Devices
- EP09 Diamond Electronics, Sensors and Biotechnology—Fundamentals to Applications

ENERGY—TRANSFER, STORAGE AND CONVERSION

- ET01 Solid-State Batteries—Materials, Interfaces and Performance
- ET02 Silicon for Photovoltaics
- ET03 Application of Nanoscale Phenomena and Materials to Practical Electrochemical Energy Storage and Conversion
- ET04 Perovskite Solar Cells—Challenges and Opportunities
- ET05 Fundamental Aspects of Halide Perovskite (Opto)electronics and Beyond
- ET06 Advanced Materials and Chemistries for High-Energy and Safe Rechargeable Batteries
- ET07 Advanced Processing and Manufacturing for Energy Conversion, Storage and Harvesting Devices
- ET08 Emerging Materials and Characterization for Selective Catalysis
- ET09 Materials for Chalcogen Electrochemistry in Energy Conversion and Storage
- ET10 Redox Active Materials and Flow Cells for Energy Applications
- ET11 Emerging Materials and Device Concepts for Flexible, Low-Cost Photovoltaic Technologies
- ET12 Harvesting Functional Defects in Energy Materials
- ET13 Materials for Multifunctional Windows
- ET14 Materials Science Facing Global Warming—Practical Solutions for Our Future
- ET15 Scientific Basis for Nuclear Waste Management

NANOMATERIALS

- NM01 Carbon Nanotubes, Graphenes and Related Nanostructures
- NM02 Nanometal—Synthesis, Properties and Applications
- NM03 Nanowires and Related 1D Nanostructures—New Opportunities and Grand Challenges
- NM04 Nanomaterials and Nanomanufacturing for Sustainability

PROCESSING AND MANUFACTURING

- PM01 Architected Materials—Synthesis, Characterization, Modeling and Optimal Design
- PM02 Conductive Materials Reliability in Flexible Electronics
- PM03 Hierarchical, Hybrid and Roll-to-Roll Manufacturing for Device Applications
- PM04 High-Entropy Alloys
- PM05 Electromagnetic Fields in Materials Synthesis—Far from Equilibrium Effects
- PM06 Advances in Intermetallic-Based Alloys for Structural and Functional Applications
- PM07 Plasma-Based Synthesis, Processing and Characterization of Novel Materials for Advanced Applications

THERMAL PROPERTIES AND THERMOELECTRIC MATERIALS

- TP01 Caloric Materials for Highly Efficient Cooling Applications
- TP02 Thermal Analysis—Materials, Measurements and Devices
- TP03 Emerging Low-Temperature Thermal Energy Conversion Technologies

MEETING CHAIRS

- Kristen H. Brosnan** GE Global Research
- David LaVan** National Institute of Standards and Technology
- Patrycja Paruch** University of Geneva
- Joan M. Redwing** The Pennsylvania State University
- Takao Someya** The University of Tokyo

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2018 iMatSci Innovator Showcase

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