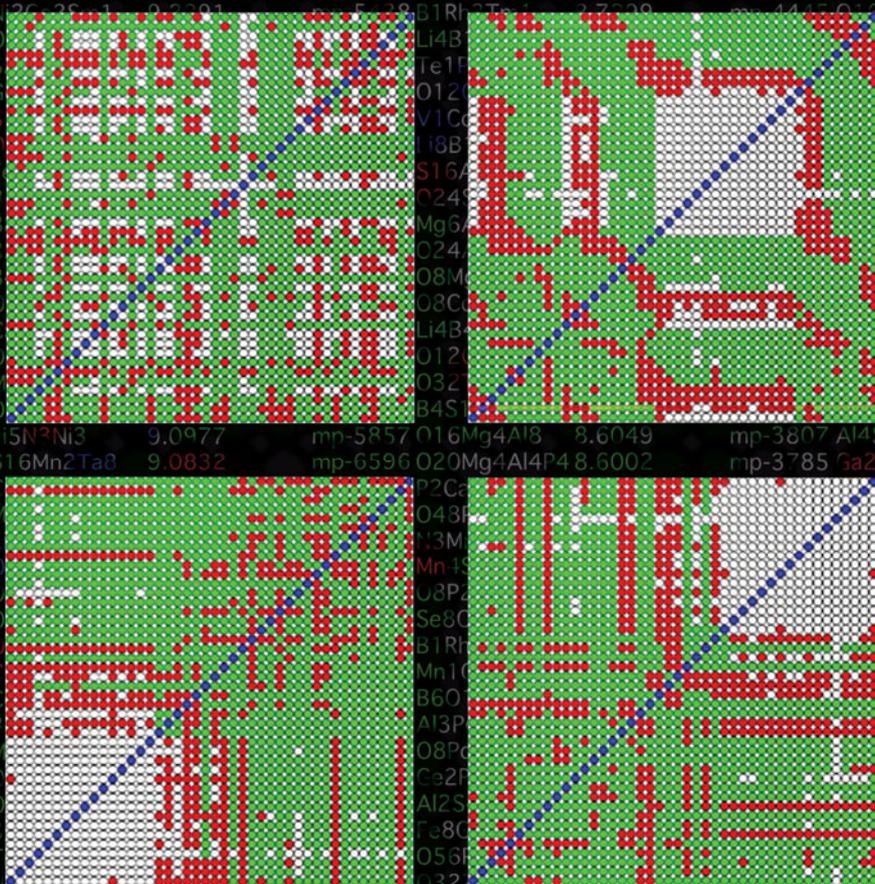


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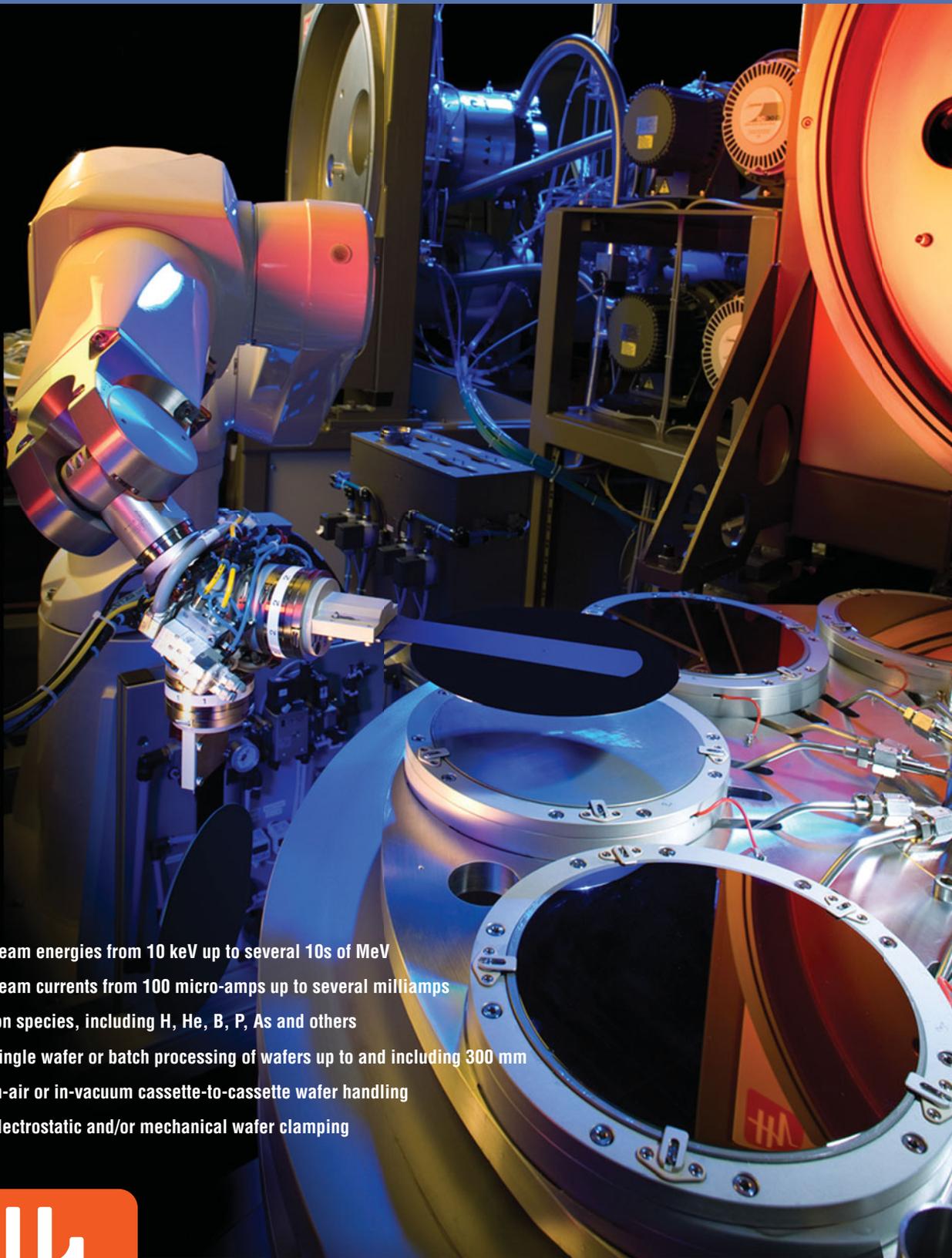
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PREREGISTRATION OPENS MID-SEPTEMBER

Fall Meeting registrations include MRS Membership January – December 2019

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

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- 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
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- ET05 Fundamental Aspects of Halide Perovskite (Opto)electronics and Beyond
- ET06 Advanced Materials and Chemistries for High-Energy and Safe Rechargeable Batteries
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- GI02 Materials for Next-Generation Robotics
- GI03 Synthetic Biology—An Accelerator of Materials Research and Development

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

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- PM02 Conductive Materials Reliability in Flexible Electronics
- PM03 Hierarchical, Hybrid and Roll-to-Roll Manufacturing for Device Applications
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- 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

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- TP02 Thermal Analysis—Materials, Measurements and Devices
- TP03 Emerging Low-Temperature Thermal Energy Conversion Technologies

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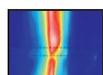
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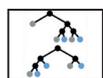
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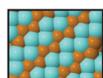
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Data-centric science for materials innovation. With the development and availability of high-speed computers, networks, and huge data storage, researchers can utilize a large volume and wide variety of materials data generated by experimental facilities and computations. The emergence of these big data as well as advanced analytical techniques has opened unprecedented opportunities for materials research. The cover shows

miscibility maps for various combinations of elements in binary alloys. The maps are constructed using data derived from experimental thermodynamic databases, electronic-structure databases, along with data predicted by harnessing machine-learning methods on existing repositories of electronic-structure data. Red and green symbols indicate immiscible and miscible systems, respectively. The white symbols represent systems without available experimental data, while the blue symbols indicate the boundary of alloys consisting of dissimilar elements. The background shows 5000 predicted thermal conductivity results. See the technical theme that begins on p. 659.

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The Society's interdisciplinary approach differs from that of single-discipline professional societies because it promotes information exchange across many scientific and technical fields touching materials development. MRS conducts three major international annual meetings and also sponsors numerous single-topic scientific meetings. The Society recognizes professional and technical excellence and fosters technical interaction through University Chapters. In the international arena, MRS implements bilateral projects with partner organizations to benefit the worldwide materials community. The Materials Research Society Foundation helps the Society advance its mission by supporting various projects and initiatives.

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