

MRS Bulletin

January 2016 Vol. 41 No. 1

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Atom probe tomography

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nonlinear optics

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2016 **MRS**[®] SPRING MEETING & EXHIBIT
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2016 MRS SPRING MEETING SYMPOSIA

CHARACTERIZATION AND MODELING OF MATERIALS

- CM1 New Frontiers in Aberration Corrected Transmission Electron Microscopy
- CM2 Quantitative Tomography for Materials Research
- CM3 Mechanics and Tribology at the Nanoscale—*In Situ* and *In Silico* Investigations
- CM4 Verification, Validation and Uncertainty Quantification in Multiscale Materials Simulation

ENERGY AND ENVIRONMENT

- EE1 Emerging Materials and Phenomena for Solar Energy Conversion
- EE2 Advancements in Solar Fuels Generation—Materials, Devices and Systems
- EE3 Materials and Devices for Full Spectrum Solar Energy Harvesting
- EE4 Electrode Materials and Electrolytes for Lithium and Sodium Ion Batteries
- EE5 Next-Generation Electrical Energy Storage Chemistries
- EE6 Research Frontiers on Liquid-Solid Interfaces in Electrochemical Energy Storage and Conversion Systems
- EE7 Mechanics of Energy Storage and Conversion—Batteries, Thermoelectrics and Fuel Cells
- EE8 Grid-Scale Energy Storage
- EE9 Hydrogen and Fuel Cell Technologies for Transportation—Materials, Systems and Infrastructure
- EE10 Recent Advances in Materials for Carbon Capture
- EE11 Caloric Materials for Renewable Energy Applications
- EE12 Radiation Damage in Materials—A Grand Multiscale Challenge
- EE13 Actinides—Fundamental Science, Applications and Technology
- EE14 Titanium Oxides—From Fundamental Understanding to Applications
- EE15 Materials for Sustainable Development—Integrated Approaches

ELECTRONICS AND PHOTONICS

- EP1 Organic Excitonic Systems and Devices
- EP2 Silicon Carbide—Substrates, Epitaxy, Devices, Circuits and Graphene
- EP3 Perovskite-Based Photovoltaics and Optoelectronic Devices
- EP4 Emerging Silicon Science and Technology
- EP5 Metal Oxide Hetero-Interfaces in Hybrid Electronic Platforms
- EP6 Integration of Heterovalent Semiconductors and Devices
- EP7 Material and Device Frontiers for Integrated Photonics
- EP8 Resonant Optics—Fundamentals and Applications
- EP9 Materials and Processes for Nonlinear Optics
- EP10 Optoelectronic Devices of Two-Dimensional (2D) Materials
- EP11 Novel Materials for End-of-Roadmap Devices in Logic, Power and Memory
- EP12 Materials Frontiers in Semiconductor Advanced Packaging
- EP13 Tailoring Superconductors—Materials and Devices from Basic Science to Applications
- EP14 Materials for Next-Generation Displays
- EP15 Diamond Power Electronic Devices

MATERIALS DESIGN

- MD1 Materials, Interfaces and Devices by Design
- MD2 Tuning Properties by Elastic Strain Engineering—From Modeling to Making and Measuring
- MD3 Functional Oxide Heterostructures by Design
- MD4 Phase-Change Materials and Applications
- MD5 Fundamentals of Organic Semiconductors—Synthesis, Morphology, Devices and Theory
- MD6 Electronic Textiles
- MD7 Advances in Lanthanide Materials for Imaging, Sensing, Optoelectronics and Recovery/Recycling
- MD8 Multiscale Behavior of Materials in Extreme Environments
- MD9 Magnetic Materials—From Fundamentals to Applications
- MD10 Micro-Assembly Technologies

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- NT2 Oxide and Chalcogenide-Based Thin Films and Nanostructures for Electronics and Energy Applications
- NT3 Carbon Nanofluidics
- NT4 Emerging Non-Graphene 2D Materials
- NT5 Nanodiamonds—Fundamentals and Applications
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- SM9 Structure and Properties of Biological Materials and Bioinspired Designs
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Don't Miss These Future MRS Meetings!

2016 MRS Fall Meeting & Exhibit
November 27 – December 2, 2016
Boston, Massachusetts

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

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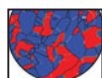
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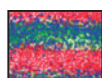
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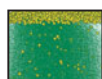
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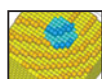
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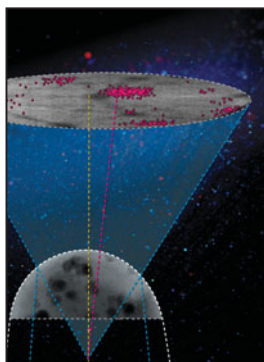
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Atom probe tomography. APT has become a versatile tool to address fundamental questions in materials science and for practical materials analysis. This issue focuses on recent developments and the broadening range of materials classes and applications studied using APT. The cover shows an APT tip, with the sample composed of small Ag-rich precipitates embedded in an Al crystalline matrix. The tip, defined

by geometric features (tip radius and angle of the shaft), is at a certain distance from the detector in a straight flight path configuration. Evaporated atoms are projected from the tip surface position to the detector position, which records this information atom by atom. The chemical identity of the ions is determined by their time of flight. The specimen volume is thus reconstructed. See the technical theme that begins on page 13.

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About the Materials Research Society

The Materials Research Society (MRS), a not-for-profit scientific association founded in 1973 and headquartered in Warrendale, Pennsylvania, USA, promotes interdisciplinary materials research. Today, MRS is a growing, vibrant, member-driven organization of over 16,000 materials researchers spanning over 80 countries, from academia, industry, and government, and a recognized leader in the advancement of interdisciplinary materials research.

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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