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148th Annual Meeting & Exhibition

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March 10–14, 2019
San Antonio, Texas, USA

JOIN US FOR THIS TMS2019 SYMPOSIUM:

CHARACTERIZATION

Atom Probe Tomography for Advanced Characterization of Metals, Minerals, and Materials II

Atom probe tomography (APT) is an emergent characterization technique that is capable of determining the chemical identity of each individual atom and generating 3D chemical maps imaging the distribution of individual atoms. The technique offers high spatial resolution (better than 0.3 nm achievable in all directions) and high analytical sensitivity (as good as 7 appm). APT provides information on elemental composition of the specimen, 3D visualization of distribution of atoms, composition of phases, morphology and size of precipitates, and solute distribution across interfaces, at grain boundaries and along dislocations. In many APT analyses, crystallographic information has been retained within the data, with the potential to directly relate the composition of specific microstructural features to their crystallography with unprecedented sensitivity and resolution. APT can be utilized in many different fields for advanced imaging and analysis of metals, minerals, and materials, despite some limitations.

This symposium is designed to bring together scientists, engineers, and technicians from across disciplines to discuss the technique of APT, its applications, and limitations. The symposium will encompass research and applications spanning a wide variety of topics. Presentations on experimental, theoretical, and modeling research are solicited.

Topics for this symposium include, but are not limited to:
- Applications of APT in advanced characterization of metals, minerals, and materials
- 3D reconstruction and data analysis
- Impact of specimen and instrument parameters and optimization of acquisition conditions
- Specimen preparation techniques
- Limitations of APT
- Progress in APT technique
- Correlative techniques
- Modelling and simulation

ORGANIZERS
Haiming Wen, Missouri University of Science & Technology, USA
David N. Seidman, Northwestern University, USA
Keith E. Knipling, U.S. Naval Research Laboratory, USA
Gregory B. Thompson, University of Alabama, USA
Simon P. Ringer, The University of Sydney, Australia
Arun Devaraj, Pacific Northwest National Laboratory, USA
Gang Sha, Nanjing University of Science and Technology, China

Nearly 4,000 presentations are planned at more than 80 symposia at TMS2019.

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