CALL FOR ABSTRACTS

THE WORLD COMES HERE.

TMS 2018
147th Annual Meeting & Exhibition

MARCH 11 – 15, 2018
PHOENIX, ARIZONA

SUBMIT AN ABSTRACT TO:

CHARACTERIZATION

ATOM PROBE TOMOGRAPHY FOR ADVANCED CHARACTERIZATION OF METALS, MINERALS, AND MATERIALS

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 1 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:

- 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

ORGANIZERS

Haiming Wen, Idaho State University, USA
Simon Ringer, The University of Sydney, Australia
Gregory Thompson, University of Alabama, USA
Arun Devaraj, Pacific Northwest National Laboratory, USA

Keith Knipling, U.S. Naval Research Laboratory, USA
Gang Sha, Nanjing University of Science and Technology, China
David N. Seidman, Northwestern University, USA
Chantal K. Sudbrack, NASA Glenn Research Center, USA

SPONSORS

TMS Structural Materials Division; TMS Materials Processing & Manufacturing Division
TMS Advanced Characterization, Testing, and Simulation Committee; TMS Nuclear Materials Committee; TMS Phase Transformations Committee