

An introduction to Atom Probe Tomography and its applications

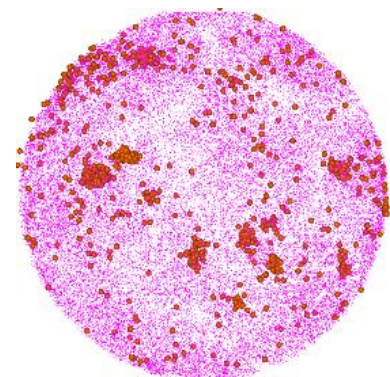


Atom Probe Tomography (APT) is a technique used to analyze the composition of solid materials and thin films by evaporating individual ions from the surface of the material with a voltage or laser pulse. By combining ToF mass spectrometry with 3D position information, a 3D model of the specimen can be created, providing near-atomic spatial resolution.

Optimized for localized chemical analysis, APT has been used in many applications including:

- Material and nuclear sciences,
- Semiconductor development and process control,
- Solar photovoltaic cell technology,
- Metallurgy
- Ceramics and oxides
- Grain boundary and cluster analysis

making APT an extremely versatile technique able to support the R&D and production needs of academia, government, and industry.



**each dot represents an individual ion*

PROGRAM

The seminar will include :

- An introduction to the APT technique
- Sample preparation requirements
- A survey of applications from different research fields including geology, and additive manufacturing of metals.
- Q&A session.

SPEAKER

Dr. Katherine Rice is an Applications Scientist with CAMECA Instruments in Madison, WI. She received her PhD in Chemical Engineering from the University of Colorado-Boulder and completed an NRC postdoc at NIST-Boulder before joining CAMECA in 2014. She obtained her MBA from the University of Wisconsin-Whitewater in 2018. Her research interests include transmission EBSD, nanoparticle synthesis, and atom probe tomography.

