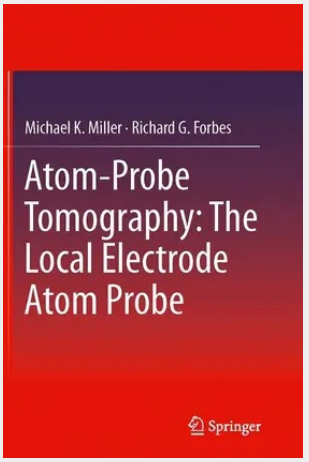
Miller / Forbes

Atom-Probe Tomography

The Local Electrode Atom Probe



Nanocharacterization by Atom Probe Tomography is a practical guide for researchers interested atomic level characterization of materials with atom probe tomography.

Readers will find descriptions of the atom probe instrument and atom probe tomography technique, field ionization, field evaporation and field ion microscopy. The fundamental underlying physics principles are examined, in addition to data reconstruction and visualization, statistical data analysis methods and specimen preparation by electropolishing and FIB-based techniques. A full description of the local electrode atom probe – a new state-of-the-art instrument – is also provided, along with detailed descriptions and limitations of laser pulsing as a method to field evaporate atoms. Valuable coverage of the new ionization theory is also included, which underpins the overall technique.

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