CAMECA
SCIENCE & METROLOGY SOLUTIONS / AMETEK®

Introducing
the new
6000
generation of
3D Atom Probes

INVIZO 6000™

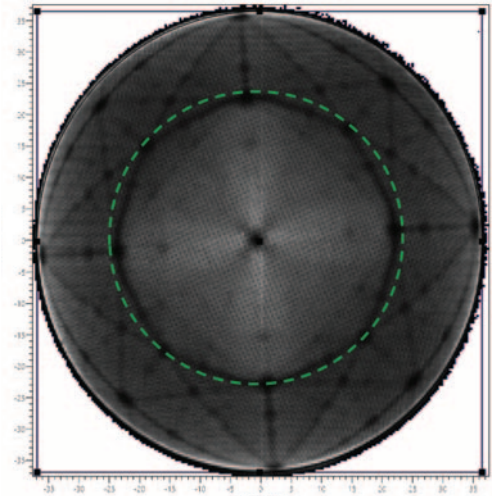


CAMECA Invizo 6000: the 3D Atom Probe with the largest field of view, highest single-specimen yield, greatest analysis volume and most accurate reconstruction, regardless the application!

With the introduction of the Local Electrode Atom Probe (LEAP) in 2003, Atom Probe Tomography (APT) has become a standard material science method enabling 3D nanoscale compositional characterization of metals and alloys, ceramics, semiconductors, biomaterials and geological materials.

Building on decades of success in APT instrumentation and application, CAMECA is ready to launching its next APT product line, the 6000 generation of 3D Atom Probes.

Atom Probe analytical capability with an ultra-wide field of view!



Detector hitmap showing the crystallographic structure of an aluminum specimen.

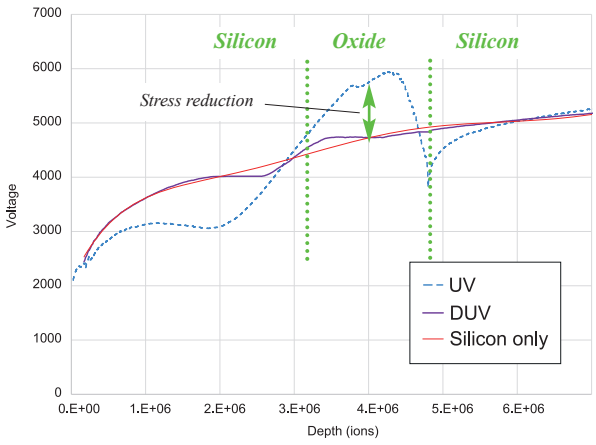
All four {111} poles can be viewed simultaneously demonstrating an angular field of view of more than 110 degrees for Invizo 6000, which is nearly double the normal 60 degree field of view of a LEAP 5000, shown by the inset green circle.

The Invizo 6000 3D Atom Probe microscope introduces major technology breakthroughs to push the boundaries of atom probe analysis.

At the core of CAMECA's new Invizo 6000 3D Atom Probe is a completely new counter electrode concept which, in addition to enabling ion optics with unprecedented APT field of view, allows the symmetric laser illumination of the specimen, thus leading to unrivaled analytical capabilities.

The Invizo 6000 offers a unique combination of the largest field of view of all 3D Atom Probes, while maintaining a high mass resolving power (MRP) thanks to a novel double einzel lens technology. It also incorpororates an advanced 257.5 nm deep UV (DUV) laser module enabling dramatic improvements in specimen yield and data reconstruction quality.

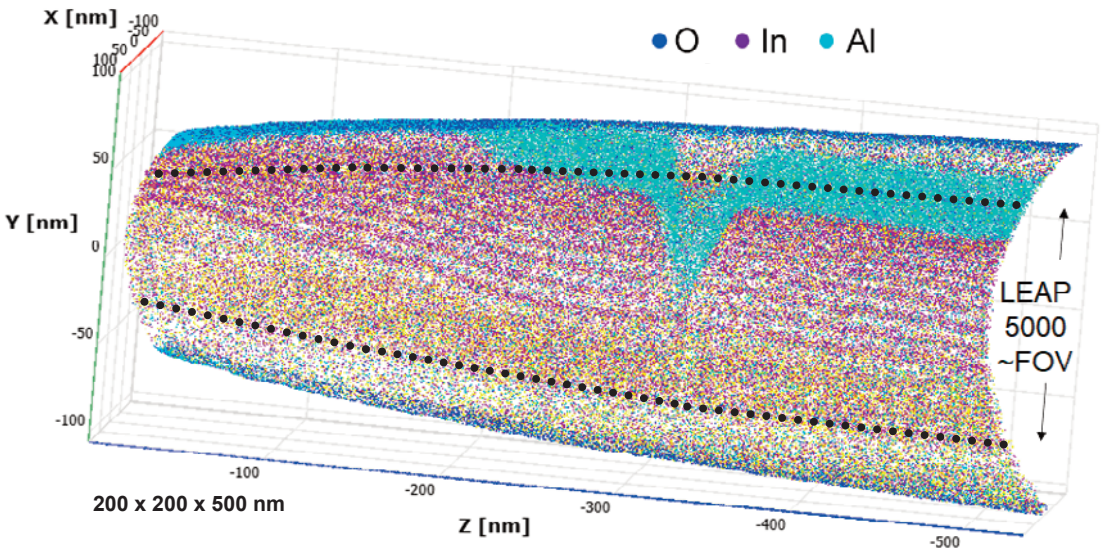
A unique deep UV laser technology enabling a more uniform evaporation field across layers



The deep UV photons interact with layers in an Si/SiO_2 multilayer in such a way that the relative evaporation field differences are significantly reduced, thus providing improved yield and reconstruction accuracy for analysis of structures containing silicon and silicon dioxide.

Micron scale view, nanoscale resolution.

The only 3D Atom Probe capable of capturing the entire internal volume of the specimen!



Analysis of a GaN multi-quantum well LED device demonstrating the benefits of Invizo 6000's unique large field of view optics.

A threading dislocation is captured across the superlattice, quantum wells and AlGaN blocking layer all within a single specimen thanks to the Invizo 6000's ability to capture the entire evaporating volume, as shown by the native oxide layer visible at the surface.

An overview of new features and benefits of the Invizo 6000 3D Atom Probe

Key feature	Result	Benefit
Ultra-wide field of view with long flight path	Capture a greater fraction (>90%) of the specimen with high MRP	• Simplified specimen preparation with a higher chance to capture the region of interest • Obtain better concentration statistics • Improved yield
Deep UV laser wavelength	More uniform heat adsorption and reduced evaporation field differences producing more uniform specimen shapes	• Improved yield • More accurate reconstruction
Dual beam illumination	More uniform heat diffusion resulting in more uniform evaporation	• More accurate reconstruction • Improved MRP uniformity

INVIZO 6000™

The new generation 3D Atom Probe



Uniquely capable of capturing the entire internal volume of your specimen!

Derived from the Latin *viso*, for view, the Invizo is unique among atom probes in the amount of the specimen captured in view, opening new horizons of research.

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