

Advances in 3D Characterization Using Focused Ion Beam (FIB) Technology

Nicolas A. Rivas: Thermo Fisher Scientific

Three-dimensional (3-D) characterization has become an indispensable tool for understanding the complex structure–property relationships in advanced materials. To this end, focused ion beam (FIB) technology, when coupled with scanning electron microscopy and complementary analytical methods, enables access to subsurface features with nanometer precision. The aim is to show recent advances in 3-D workflows that integrate serial sectioning with high-resolution imaging and correlate them with different microanalysis techniques.

Emphasis will be placed on strategies to optimize resolution, minimize artifacts, and combine chemical and structural information in a single dataset. Together, these capabilities establish FIB technology as a powerful technique for high-resolution 3-D characterization and microanalysis across a wide range of scientific and industrial applications.