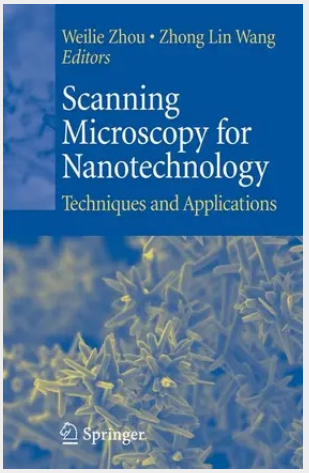
Zhou / Wang

Scanning Microscopy for Nanotechnology

Techniques and Applications



Scanning electron microscopy (SEM) can be exploited not only for nanomaterials characterization but also integrated with new technologies for in-situ nanomaterials engineering and manipulation. addresses the rapid development of these techniques for nanotechnology, in both technique and application chapters by leading practitioners. The book covers topics including nanomaterials imaging, X-ray microanalysis, high-resolution SEM, low kV SEM, cryo-SEM, as well as new techniques such as electron back scatter diffraction (EBSD) and scanning transmission electron microscopy (STEM). Fabrication techniques integrated with SEM, such as e-beam nanolithography, nanomanipulation, and focused ion beam nanofabrication, are major new dimensions for SEM application. Application areas include the study of nanoparticles, nanowires and nanotubes, three-dimensional nanostructures, quantum dots, magnetic nanomaterials, photonic structures, and bio-inspired nanomaterials. This book will appeal not only to a broad spectrum of nanomaterials researchers, but also to SEM development specialists.

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