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References
Questions; 3 Transmission Electron Microscopy; 3.1 Instrumentation; 3.1.1 Electron Sources; 3.1.2 Electromagnetic Lenses; 3.1.3 Specimen Stage; 3.2 Specimen Preparation; 3.2.1 Pre-Thinning; 3.2.2 Final Thinning; 3.3 Image Modes; 3.3.1 Mass-Density Contrast; 3.3.2 Diffraction Contrast; 3.3.3 Phase Contrast; 3.4 Selected Area Diffraction; 3.4.1 Selected Area Diffraction Characteristics; 3.4.2 Single-Crystal Diffraction; 3.4.3 Multi-Crystal Diffraction; 3.4.4 Kikuchi Lines; 3.5 Images of Crystal Defects; 3.5.1 Wedge Fringe; 3.5.2 Bending Contours; 3.5.3 Dislocations; References
Questions
4 Scanning Electron Microscopy; 4.1 Instrumentation; 4.1.1 Optical Arrangement; 4.1.2 Signal Detection; 4.1.3 Probe Size and Current; 4.2 Contrast Formation; 4.2.1 Electron Specimen Interactions; 4.2.2 Topographic Contrast; 4.2.3 Compositional Contrast; 4.3 Operational Variables; 4.3.1 Working Distance and Aperture Size; 4.3.2 Acceleration Voltage and Probe Current; 4.3.3 Astigmatism; 4.4 Specimen Preparation; 4.4.1 Preparation for Topographic Examination; 4.4.2 Preparation for Micro-Composition Examination; 4.4.3 Dehydration; References; Questions; 5 Scanning Probe Microscopy
5.1 Instrumentation
5.1.1 Probe and Scanner; 5.1.2 Control and Vibration Isolation; 5.2 Scanning Tunneling Microscopy; 5.2.1 Tunneling Current; 5.2.2 Probe Tips and Working Environments; 5.2.3 Operational Modes; 5.2.4 Typical Applications; 5.3 Atomic Force Microscopy; 5.3.1 Near-Field Forces; 5.3.2 Force Sensors; 5.3.3 Operational Modes; 5.3.4 Typical Applications; 5.4 Image Artifacts; 5.4.1 Tip; 5.4.2 Scanner; 5.4.3 Vibration and Operation; References; Questions; 6 X-ray Spectroscopy for Elemental Analysis; 6.1 Features of Characteristic X-rays; 6.1.1 Types of Characteristic X-rays
6.1.2 Comparison of K, L and M Series

Sommario/riassunto

This book covers state-of-the-art techniques commonly used in modern materials characterization. Two important aspects of characterization, materials structures and chemical analysis, are included. Widely used techniques, such as metallography (light microscopy), X-ray diffraction, transmission and scanning electron microscopy, are described. In addition, the book introduces advanced techniques, including scanning probe microscopy. The second half of the book accordingly presents techniques such as X-ray energy dispersive spectroscopy (commonly equipped in the scanning electron microscope), fl
