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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
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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
