

1. Record Nr.	UNINA9910830565703321
Titolo	Methods II [[electronic resource] /] / edited by S. Amelinckx ... [et al.]
Pubbl/distr/stampa	Weinheim, : VCH, 1997
ISBN	1-281-76465-5 9786611764654 3-527-62052-4 3-527-62053-2
Descrizione fisica	1 online resource (509 p.)
Collana	Handbook of microscopy : applications in materials science, solid-state physics, and chemistry ; ; [v. 2]
Altri autori (Persone)	AmelinckxS
Disciplina	502.82 502/.8/2
Soggetti	Microscopy Materials - Microscopy
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Handbook of Microscopy, Applications in Materials Science , Solid-state Physics and Chemistry; Contents; IV Electron Microscopy; 2 Scanning Beam Methods; 2.1 Scanning Reflection Electron Microscopy; 2.1.1 Introduction; 2.1.2 Instrumentation; 2.1.3 Performance; 2.1.4 Modes of Operation; 2.1.4.1 Secondary Electron Imaging; 2.1.4.2 Backscattered Electrons; 2.1.4.3 Special Techniques; 2.1.5 Conclusions; 2.1.6 References; 2.2 Scanning Transmission Electron Microscopy; 2.2.1 Introduction; 2.2.2 Scanning Transmission Electron Microscopy Imaging Modes 2.2.3 Scanning Transmission Electron Microscopy Theory2.2.4 Inelastic Scattering and Secondary Radiations; 2.2.5 Convergent-Beam and Nanodiffraction; 2.2.6 Coherent Nanodiffraction, Electron Holography, Ptychology; 2.2.7 Holography; 2.2.8 STEM Instrumentation; 2.2.9 Applications of Scanning Transmission Electron Microscopy; 2.2.10 References; 2.3 Scanning Transmission Electron Microscopy: Z Contrast; 2.3.1 Introduction; 2.3.2 Incoherent Imaging with Elastically Scattered Electrons; 2.3.3 Incoherent Imaging with Thermally Scattered Electrons

2.3.4 Incoherent Imaging using Inelastically Scattered Electrons; 2.3.5 Probe Channeling; 2.3.6 Applications to Materials Research; 2.3.6.1 Semiconductors; 2.3.6.2 Ceramics; 2.3.6.3 Nanocrystalline Materials; 2.3.7 References; 2.4 Scanning Auger Microscopy (SAM) and Imaging X-Ray Photoelectron Microscopy (XPS); 2.4.1 Introduction; 2.4.2 Basic Principles of Auger Electron Spectroscopy (AES) and X-Ray Photoelectron Spectroscopy (XPS); 2.4.2.1 Auger Electron Spectroscopy (AES); 2.4.2.2 X-Ray Photoelectron Spectroscopy (XPS); 2.4.2.3 Quantitative Analysis in AES and XPS; 2.4.3 Scanning Auger Microscopy (SAM) and Imaging XPS; 2.4.3.1 Basic Principles of Imaging; 2.4.3.2 General Aspects of Analyzers; 2.4.3.3 Energy Resolution of Deflecting Electrostatic Analyzers; 2.4.3.4 Cylindrical Mirror Analyzer (CMA) versus the Concentric Hemispherical Analyzer (CHA); 2.4.3.5 Imaging Techniques; 2.4.3.6 Magnetic Fields in Imaging XPS; 2.4.4 Characteristics of Scanning Auger Microscopy Images; 2.4.4.1 General Aspects; 2.4.4.2 Background Slope Effects; 2.4.4.3 Substrate Backscattering Effects; 2.4.4.4 Topographic Effects; 2.4.4.5 Beam Current Fluctuation Effects; 2.4.4.6 Edge Effects; 2.4.5 Conclusion; 2.4.6 References; 2.5 Scanning Microanalysis; 2.5.1 Physical Basis of Electron Probe Microanalysis; 2.5.1.1 Electron Interactions with Solids; 2.5.1.2 X-Ray Emission Spectra; 2.5.1.3 Characteristic X-Ray Spectra; 2.5.1.4 Soft X-Ray Spectra; 2.5.1.5 X-Ray Continuum; 2.5.1.6 Overview of Methods of Scanning Electron Beam Analysis; 2.5.1.7 Electron Probe X-Ray Microanalyzers; 2.5.1.8 Analytical Electron Microscopes; 2.5.1.9 Multipurpose Electron Probe Analytical Systems; 2.5.1.10 X-Ray Emission Spectrometry; 2.5.1.11 Wavelength-Dispersive Spectrometry; 2.5.1.12 Energy-Dispersive Spectrometry

Sommario/riassunto

Comprehensive in coverage, written and edited by leading experts in the field, this Handbook is a definitive, up-to-date reference work. The Volumes Methods I and Methods II detail the physico-chemical basis and capabilities of the various microscopy techniques used in materials science. The Volume Applications illustrates the results obtained by all available methods for the main classes of materials, showing which technique can be successfully applied to a given material in order to obtain the desired information. With the Handbook of Microscopy, scientists and engineers involved in m
