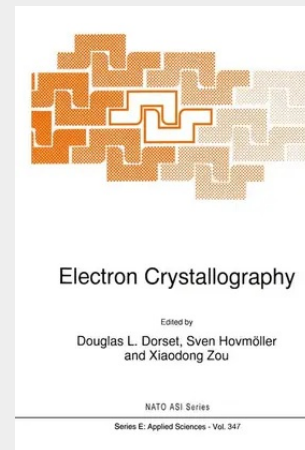


Electron Crystallography

The re-emergent field of quantitative electron crystallography is described by some of its most eminent practitioners. They describe the theoretical framework for electron scattering, specimen preparation, experimental techniques for optimum data collection, the methodology of structure analysis and refinement, and a range of applications to inorganic materials (including minerals), linear polymers, small organic molecules (including those used in nonlinear optical devices), incommensurately modulated structures (including superconductors), alloys, and integral membrane proteins. The connection between electron crystallography and X-ray crystallography is clearly defined, especially in the utilisation of the latest methods for direct determination of crystallographic phases, as well as the unique role of image analysis of high-resolution electron micrographs for phase determination. Even the aspect of multiple beam dynamic diffraction (once dreaded because it was thought to preclude analysis) is considered as a beneficial aid for symmetry determination as well as the elucidation of crystallographic phases, and as a criterion for monitoring the progress of structure refinement. Whereas other texts have hitherto preferentially dealt with the analysis of electron diffraction and image data from thin organic materials, this work discusses - with considerable optimism - the prospects of looking at 'harder' materials, composed of heavier atoms. Could be used with profit as a graduate-level course on electron crystallography. Researchers in the area will find a statement of current progress in the field.

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406,59 €

379,99 € (zzgl. MwSt.)

Lieferfrist: bis zu 10 Tage

Artikelnummer: 9780792348764

Medium: Buch

ISBN: 978-0-7923-4876-4

Verlag: Springer

Erscheinungstermin: 30.11.1997

Sprache(n): Englisch

Auflage: 1997

Serie: NATO Science Series E:

Produktform: Gebunden

Gewicht: 1820 g

Seiten: 440

Format (B x H): 160 x 241 mm

