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Nota di contenuto

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1.2. Diffraction by an ideal crystal; 1.2.1. A few elements of crystallography; 1.2.1.1. Direct lattice; 1.2.1.2. Reciprocal lattice; 1.2.2. Kinematic theory of diffraction; 1.2.2.1. Diffracted amplitude: structure factor and form factor; 1.2.2.2. Diffracted intensity; 1.2.2.3. Laue conditions [FRI 12]; 1.2.3. Geometric theory of diffraction; 1.2.3.1. Laue conditions; 1.2.3.2. Bragg's law [BRA 13b, BRA 15]; 1.2.3.3. The Ewald sphere; 1.3. Diffraction by an ideally imperfect crystal; 1.4. Diffraction by a polycrystalline sample  
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3.1.3. Spectral width: g3()

Sommario/riassunto

This book presents a physical approach to the diffraction phenomenon and its applications in materials science. An historical background to the discovery of X-ray diffraction is first outlined. Next, Part 1 gives a description of the physical phenomenon of X-ray diffraction on perfect and imperfect crystals. Part 2 then provides a detailed analysis of the instruments used for the characterization of powdered materials or thin films. The description of the processing of measured signals and their results is also covered, as are recent developments relating to quantitative microstructural analysis.