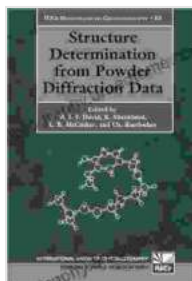


Structure Determination From Powder Diffraction Data

Unraveling the Crystalline Mysteries

Crystallography, the study of the arrangement of atoms and molecules in crystals, plays a pivotal role in understanding the properties of materials. 'Structure Determination from Powder Diffraction Data' offers a profound insight into this captivating field, guiding readers through the principles and techniques involved in determining the structures of crystalline materials from powder diffraction data.



Structure Determination from Powder Diffraction Data (International Union of Crystallography Monographs on Crystallography (13)) by Ferruccio Pinotti

★★★★★ 5 out of 5

Language : English

File size : 5376 KB

Text-to-Speech : Enabled

Screen Reader : Supported

Word Wise : Enabled

Print length : 360 pages

Lending : Enabled

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The book is meticulously written by experts in the field, providing a comprehensive resource for researchers, scientists, and students alike. It seamlessly blends theoretical foundations with practical applications, making it an invaluable tool for both novice and seasoned practitioners.

Deciphering Powder Diffraction Data: A Path to Crystalline Insights

Powder diffraction, a non-destructive technique that uses X-rays or neutrons to probe the atomic arrangements in crystalline materials, forms the cornerstone of structure determination. This text empowers readers with a profound understanding of the principles underlying powder diffraction, equipping them to interpret complex data with confidence.

Through a series of engaging chapters, the book explores the various approaches to structure determination, including:

- Indexing powder diffraction patterns to determine unit cell dimensions
- Using symmetry to simplify structure solution
- Applying direct methods to extract atomic positions from diffraction data
- Employing Rietveld refinement to optimize structural models

Beyond Fundamentals: Applications in Diverse Fields

The book transcends mere theoretical exposition, venturing into the practical realm of applications. It demonstrates how powder diffraction techniques unravel the structures of materials in various fields, including:

- **Pharmaceuticals:** Identifying and characterizing active pharmaceutical ingredients
- **Geology:** Determining the composition and structure of minerals
- **Materials Science:** Probing the atomic arrangements in novel materials, such as nanomaterials and thin films

- **Cultural Heritage:** Analyzing the composition and structure of historical artifacts

Features that Elevate the Learning Experience

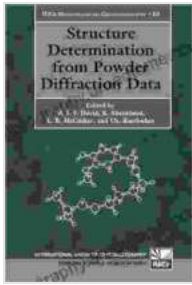
'Structure Determination From Powder Diffraction Data' is not just a textbook; it's an interactive learning companion. It boasts a wealth of features that enhance the reading experience and deepen understanding:

- **Numerous solved examples:** Step-by-step solutions to practical problems illustrate the concepts discussed
- **End-of-chapter exercises:** Test your knowledge and reinforce your comprehension
- **Comprehensive references:** Guide you to further delve into specific topics of interest
- **High-quality illustrations and tables:** Provide visual aids to clarify complex concepts

Unlock the Power of Powder Diffraction: Free Download Your Copy Today

'Structure Determination From Powder Diffraction Data' is an indispensable resource for anyone seeking to delve into the fascinating world of crystallography. Whether you're a student, researcher, or professional, this book empowers you with the knowledge and skills to unravel the structures of crystalline materials.

Free Download your copy today and embark on a journey of discovery, unlocking the secrets of crystals.



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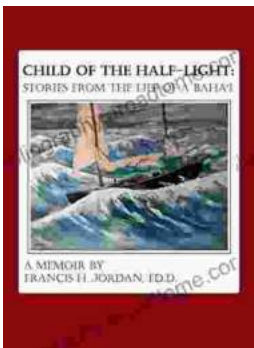
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