

The Basics of Crystallography and Diffraction: Fourth Edition (International Union of Crystallography Texts on Crystallography)

By Christopher Hammond

Download now

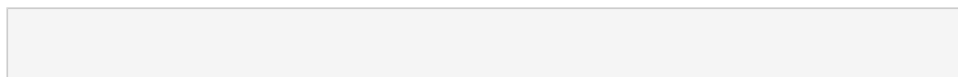
Read Online ➔

The Basics of Crystallography and Diffraction: Fourth Edition (International Union of Crystallography Texts on Crystallography) By Christopher Hammond

This book provides a clear and very broadly based introduction to crystallography, light, X-ray and electron diffraction - a knowledge which is essential to students in a wide range of scientific disciplines but which is otherwise generally covered in subject-specific and more mathematically detailed texts. The text is also designed to appeal to the more general reader since it shows, by historical and biographical references, how the subject has developed from the work and insights of successive generations of crystallographers and scientists.

The book shows how an understanding of crystal structures, both inorganic and organic may be built up from simple ideas of atomic and molecular packing. Beginning with (two dimensional) examples of patterns and tilings, the concepts of lattices, symmetry point and space groups are developed. 'Penrose' tilings and quasiperiodic structures are also included. The reciprocal lattice and its importance in understanding the geometry of light, X-ray and electron diffraction patterns is explained in simple terms, leading to Fourier analysis in diffraction, crystal structure determination, image formation and the diffraction-limited resolution in these techniques. Practical X-ray and electron diffraction techniques and their applications are described. A recurring theme is the common principles: the techniques are not treated in isolation.

The fourth edition has been revised throughout, and includes new sections on Fourier analysis, Patterson maps, direct methods, charge flipping, group theory in crystallography, and a new chapter on the description of physical properties of crystals by tensors (Chapter 14).



 [**Download** The Basics of Crystallography and Diffraction: Fou ...pdf](#)

 [**Read Online** The Basics of Crystallography and Diffraction: F ...pdf](#)

The Basics of Crystallography and Diffraction: Fourth Edition (International Union of Crystallography Texts on Crystallography)

By Christopher Hammond

The Basics of Crystallography and Diffraction: Fourth Edition (International Union of Crystallography Texts on Crystallography) By Christopher Hammond

This book provides a clear and very broadly based introduction to crystallography, light, X-ray and electron diffraction - a knowledge which is essential to students in a wide range of scientific disciplines but which is otherwise generally covered in subject-specific and more mathematically detailed texts. The text is also designed to appeal to the more general reader since it shows, by historical and biographical references, how the subject has developed from the work and insights of successive generations of crystallographers and scientists.

The book shows how an understanding of crystal structures, both inorganic and organic may be built up from simple ideas of atomic and molecular packing. Beginning with (two dimensional) examples of patterns and tilings, the concepts of lattices, symmetry point and space groups are developed. 'Penrose' tilings and quasiperiodic structures are also included. The reciprocal lattice and its importance in understanding the geometry of light, X-ray and electron diffraction patterns is explained in simple terms, leading to Fourier analysis in diffraction, crystal structure determination, image formation and the diffraction-limited resolution in these techniques. Practical X-ray and electron diffraction techniques and their applications are described. A recurring theme is the common principles: the techniques are not treated in isolation.

The fourth edition has been revised throughout, and includes new sections on Fourier analysis, Patterson maps, direct methods, charge flipping, group theory in crystallography, and a new chapter on the description of physical properties of crystals by tensors (Chapter 14).

The Basics of Crystallography and Diffraction: Fourth Edition (International Union of Crystallography Texts on Crystallography) By Christopher Hammond Bibliography

- Sales Rank: #1285089 in Books
- Brand: imusti
- Published on: 2015-07-28
- Released on: 2015-06-11
- Original language: English
- Number of items: 1
- Dimensions: 6.10" h x 1.20" w x 9.10" l, 1.00 pounds
- Binding: Paperback
- 528 pages



[Download The Basics of Crystallography and Diffraction: Fou ...pdf](#)

 [Read Online The Basics of Crystallography and Diffraction: F ...pdf](#)

Download and Read Free Online The Basics of Crystallography and Diffraction: Fourth Edition (International Union of Crystallography Texts on Crystallography) By Christopher Hammond

Editorial Review

Review

"This updated, clearly written edition of a highly successful book is nearly 100 pages longer than its predecessor... Overall, a complete and valuable resource for any practicing crystallographer or upper-level student in crystallography. Highly recommended." --*CHOICE*

"[A] very good introduction to crystallography." --*Crystallography Reviews*

"[T]his is a fine book for anyone wanting to learn about crystallography. It is an enjoyable and informative read, and is one of my favorite books to recommend to students and colleagues alike. It should have a place on the shelf of any physicist, chemist, materials scientist or biologist, who has to navigate this subject." --*Mike Glazer, infocus*

About the Author

Christopher Hammond, *University of Leeds, Institute for Materials Research*

Christopher Hammond was educated at The Gateway School, Leciester, The University of Cambridge (BA, 1964) and The University of Leeds (Ph.D, 1968). From 1968 to 2005 he was Lecturer, then Senior Lecturer, in the Department of Metallurgy (later the Insitute for Materials Research) and carried out research on titanium alloys. He is a Fellow of the Royal Microscopical Society and a Life Fellow of the University of Leeds. He has long experience of teaching with the University and RMS courses.

Users Review

From reader reviews:

Clayton Medina:

Why don't make it to become your habit? Right now, try to prepare your time to do the important take action, like looking for your favorite e-book and reading a book. Beside you can solve your short lived problem; you can add your knowledge by the e-book entitled The Basics of Crystallography and Diffraction: Fourth Edition (International Union of Crystallography Texts on Crystallography). Try to stumble through book The Basics of Crystallography and Diffraction: Fourth Edition (International Union of Crystallography Texts on Crystallography) as your close friend. It means that it can being your friend when you experience alone and beside regarding course make you smarter than ever before. Yeah, it is very fortuneted to suit your needs. The book makes you far more confidence because you can know every little thing by the book. So , we should make new experience and knowledge with this book.

Anne Hernandez:

Within other case, little persons like to read book The Basics of Crystallography and Diffraction: Fourth Edition (International Union of Crystallography Texts on Crystallography). You can choose the best book if you love reading a book. Given that we know about how is important a new book The Basics of Crystallography and Diffraction: Fourth Edition (International Union of Crystallography Texts on Crystallography). You can add knowledge and of course you can around the world by way of a book. Absolutely right, simply because from book you can know everything! From your country until eventually foreign or abroad you may be known. About simple issue until wonderful thing you may know that. In this era, we can open a book or maybe searching by internet unit. It is called e-book. You may use it when you feel bored stiff to go to the library. Let's examine.

Na Urquhart:

What do you in relation to book? It is not important to you? Or just adding material when you require something to explain what yours problem? How about your spare time? Or are you busy particular person? If you don't have spare time to perform others business, it is gives you the sense of being bored faster. And you have spare time? What did you do? Everybody has many questions above. They should answer that question mainly because just their can do that. It said that about publication. Book is familiar in each person. Yes, it is proper. Because start from on jardín de infancia until university need this specific The Basics of Crystallography and Diffraction: Fourth Edition (International Union of Crystallography Texts on Crystallography) to read.

Micah Clark:

That publication can make you to feel relax. This book The Basics of Crystallography and Diffraction: Fourth Edition (International Union of Crystallography Texts on Crystallography) was vibrant and of course has pictures around. As we know that book The Basics of Crystallography and Diffraction: Fourth Edition (International Union of Crystallography Texts on Crystallography) has many kinds or style. Start from kids until teenagers. For example Naruto or Private investigator Conan you can read and believe you are the character on there. Therefore , not at all of book are generally make you bored, any it makes you feel happy, fun and relax. Try to choose the best book for you personally and try to like reading that.

Download and Read Online The Basics of Crystallography and Diffraction: Fourth Edition (International Union of Crystallography Texts on Crystallography) By Christopher Hammond #O1059YXWUJQ

Read The Basics of Crystallography and Diffraction: Fourth Edition (International Union of Crystallography Texts on Crystallography) By Christopher Hammond for online ebook

The Basics of Crystallography and Diffraction: Fourth Edition (International Union of Crystallography Texts on Crystallography) By Christopher Hammond Free PDF d0wnl0ad, audio books, books to read, good books to read, cheap books, good books, online books, books online, book reviews epub, read books online, books to read online, online library, greatbooks to read, PDF best books to read, top books to read The Basics of Crystallography and Diffraction: Fourth Edition (International Union of Crystallography Texts on Crystallography) By Christopher Hammond books to read online.

Online The Basics of Crystallography and Diffraction: Fourth Edition (International Union of Crystallography Texts on Crystallography) By Christopher Hammond ebook PDF download

The Basics of Crystallography and Diffraction: Fourth Edition (International Union of Crystallography Texts on Crystallography) By Christopher Hammond Doc

The Basics of Crystallography and Diffraction: Fourth Edition (International Union of Crystallography Texts on Crystallography) By Christopher Hammond Mobipocket

The Basics of Crystallography and Diffraction: Fourth Edition (International Union of Crystallography Texts on Crystallography) By Christopher Hammond EPub

O1059YXWUJQ: The Basics of Crystallography and Diffraction: Fourth Edition (International Union of Crystallography Texts on Crystallography) By Christopher Hammond