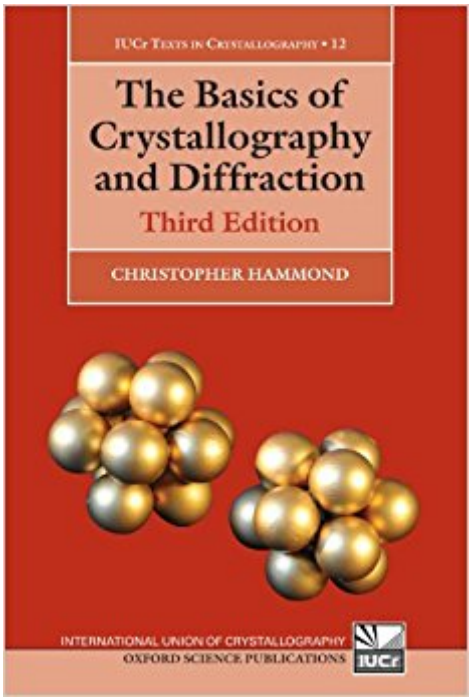
The Basics Of Crystallography And Diffraction: Third Edition (International Union Of Crystallography Texts On Crystallography)



Synopsis

This book provides a clear introduction to topics which are essential to students in a wide range of scientific disciplines but which are otherwise only covered in specialised and mathematically detailed texts. It shows how crystal structures may be built up from simple ideas of atomic packing and co-ordination, it develops the concepts of crystal symmetry, point and space groups by way of two dimensional examples of patterns and tilings, it explains the concept of the reciprocal lattice in simple terms and shows its importance in an understanding of light, X-ray and electron diffraction. Practical examples of the applications of these techniques are described and also the importance of diffraction in the performance of optical instruments. The book is also of value to the general reader since it shows, by biographical and historical references, how the subject has developed and thereby indicates some of the excitement of scientific discovery.

Book Information

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Customer Reviews

Review from previous edition: "This is a timely, well-constructed book which should be seriously considered by every teacher of crystallography and can be recommended to anyone who wants to get to grips with crystallography and diffraction." --Journal of Microscopy"The book is aimed at students in all the disciplines which use crystallographic methods. If they are seriously interested in crystallography, this book is as close to ideal as they are likely to get, and very good value too. I thoroughly recommend Hammond’s book as an enjoyable way of re-visiting old haunts." --J.E.Chisholm, Mineralogical Magazine"The fundamentals of crystallography and diffraction are set

out in a convincing way in this book. The author has succeeded in explaining the two fields in a very communicative and relatively condensed way." --Journal Solid State Electrochemistry"Throughout, this book is well written and thoughtfully illustrated. It provides an excellent grounding in crystallgraphy. It may be the only book that bewildered non-crystallographers need." --Microscopy and Imaging News

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Thank you.

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This book was intended as a reference in a graduate course in mechanical engineering. It is divided in 13 chapters. The first 6 chapters perfectly served the purpose by clarifying concepts that are not as well described in other sources. The other chapters, about diffraction, are very important as well and will be address later. The book content is structured in what may be regarded as the traditional black and white technical format devoid of any distracting inserts and unnecessary figures and colors. The book was a good deal for the price.

This book represents a fair introduction to the world of crystallography and crystal structure determination. The chapters on structure determination are the best, although some of the more advanced material, e.g. EBSD, is lightly sketched, and should perhaps have been omitted.The early chapters are somewhat more problematic: much is stated about crystal structures without justification, and this makes for a hard and often unilluminating read. Overall, though, the author has succeeding in writing a reasonable introductory text for a difficult field.

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I used this text for a course on material structures in which we covered most of this book for about half the semester and then moved onto topics such as polymer structure, liquid crystals, and basic

quantum mechanics behind orbitals and the formation of atomic bonds. I must say the most painful parts of the course were those covered in this book. We used another text created by the professor in lieu of chapter one, and the difference was remarkable. Fairly easy topics are shrouded in heavy text and lack of clear explanations. I had alternate sources for each and every chapter in the book because the book never provided enough information to truly grasp the material.Most sections go as follows: historical and other non-important details mixed with some useful information, then an introduction to a new topic and why it's useful, a short but inadequate explanation of the topic, skips the section where a student would learn to arrive at a conclusion, states the conclusion without a real explanation. This approach works fine for some chapters and horribly for others (the Ewald sphere chapter is a nightmare).I'm sure this seems great to someone who already knows the material (it proved awesome for studying for the final since my mind was filling in the blanks in the text), but it really is lacking as a teaching text. It's not set up like a textbook (no examples and few exercises), and should not be used as one.

for my friend , it is recommend. comfortable,nice . excellent. Great little business. Lovely, friendly follow-up. Awesome bread product. Go get yourself one.

For an undergrad reader, Hammond develops the theory and explains the experiments you can do in crytallography. The theory of scattering from a single crystal explains the diffraction patterns. The latter are what you observe, and the text shows how you can work back from these to deduce what the underlying crystal structure might be.There are variations on this approach. Especially the powder method, where you do not have a single crystal, but a powder of microcrystals. Which can be visualised as spinning the Bravais lattice around its origin, to give the diffraction patterns.More recent observations like quasicrystals are also covered.A good introduction to crystallography.

Chemistry, Crystallography, X-ray Powder Diffraction, Mineral and Rock Identification, and Ore Mineralogy Structure of Materials: An Introduction to Crystallography, Diffraction and Symmetry Astrometric Techniques: Proceedings of the 109th Symposium of the International Astronomical Union Held in Gainesville, Florida, U.S.A., 9Ã¢â ¬â œ12 January 1984 (International Astronomical Union Symposia) X-Ray Crystallography: An Introduction to the Investigation of Crystals by Their Diffraction of Monochromatic X-Radiation Third Eye: Third Eye Activation Mastery, Easy And Simple Guide To Activating Your Third Eye Within 24 Hours (Third Eye Awakening, Pineal Gland Activation, Opening the Third Eye) Books of Breathing and Related Texts -Late Egyptian Religious Texts in the British Museum Vol.1 (Catalogue of the Books of the Dead and Other Religious Texts in the British Museum) The Government and Politics of the European Union (The European Union Series) Be Free or Die: The Amazing Story of Robert Smalls' Escape from Slavery to Union Hero: The Amazing Story of Robert Smalls' Escape from Slavery to Union Hero The Political System of the European Union (The European Union Series) One Big Union: A History of the Australian Workers Union 1886-1994 Principles of Protein X-ray Crystallography (Springer Advanced Texts in Chemistry) Fundamentals of Powder Diffraction and Structural Characterization of Materials, Second Edition Crystallography Made Crystal Clear, Third Edition: A Guide for Users of Macromolecular Models (Complementary Science) High Energy Electron Diffraction and Microscopy (Monographs on the Physics and Chemistry of Materials)