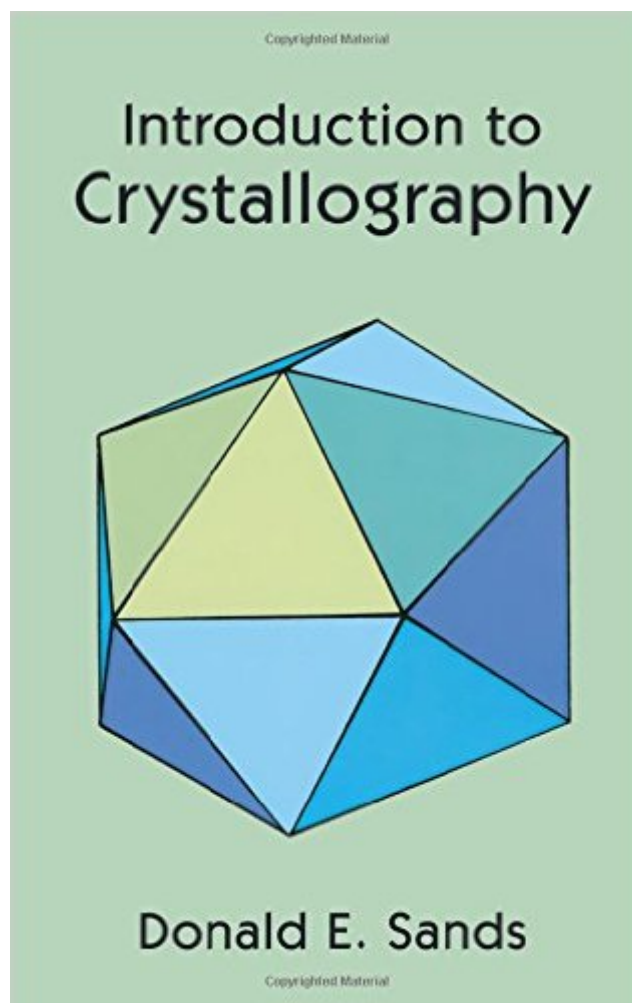


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Introduction To Crystallography (Dover Books On Chemistry)



Synopsis

"This is truly a delightful monograph." — Canadian Chemical Education
Designed as a useful, accessible introduction to the logical development of basic crystallographic concepts, this book presents important principles in a clear, concise manner that will enable the nonspecialist to read and comprehend crystallographic literature. Explanations are concise and mathematical prerequisites have been kept to a minimum. In the first four chapters, the author presents the vocabulary of crystallography, with discussions of lattice points, unit cells, symmetry, point groups, crystal systems, space groups, and equivalent positions. The principles of x-ray diffraction and methods of determining crystal structures are summarized in the next two chapters. The final chapter describes various simple structures. Appendixes list the 230 space groups, introduce the reciprocal lattice, and describe the powder method. A well-chosen selection of problems (with solutions) encourages self-study. Ideal as the basis for a course in crystallography and highly useful as an adjunct to physical chemistry courses, this book will also serve as an excellent reference for practicing chemists, mineralogists, metallurgists, and other workers in the field. 1969 edition.

Book Information

Series: Dover Books on Chemistry

Paperback: 192 pages

Publisher: Dover Publications; Revised ed. edition (January 7, 1994)

Language: English

ISBN-10: 0486678393

ISBN-13: 978-0486678399

Product Dimensions: 5.4 x 0.4 x 8.5 inches

Shipping Weight: 7 ounces (View shipping rates and policies)

Average Customer Review: 4.6 out of 5 stars — See all reviews (13 customer reviews)

Best Sellers Rank: #192,446 in Books (See Top 100 in Books) #4 in Books > Science & Math > Chemistry > Crystallography #90 in Books > Science & Math > Chemistry > Physical & Theoretical #524 in Books > Science & Math > Chemistry > General & Reference

Customer Reviews

This book is definitely a good starting point to learn Crystallography. As a matter of fact the title is in my opinion a little misleading since the book really introduces the reader to X-ray Crystallography... The book starts with a concise yet elementary discussion of crystal lattices, point groups and space groups. The chapters are nicely woven together so that the reader easily develops a sense of

continuity as the the concepts are introduced. Principles of diffraction phenomena and determination of atomic positions are very densely discussed. However the treatment is "crystal" clear and no vital details are ignored for the sake of "simplicity". The overall treatment is very elementary and requires an extremely modest amount of mathematical background. Fourier series a briefly introduced in the discussion of electron density and structure factors in an effective manner. The effect of glide planes and screw axes on the structure factor (systematic absences) are elegantly described in the examples. I wish D. Sands would have written an longer book and have included more material in structure determination as well as powder diffractometry itself (that's why the books is rated 4 stars only). He certainly has the ability to effectively get the points across throughout his book in a elegant fashion making the book easily readable. The book is ideally suited for those who would like to make their first steps into X-ray crystallography. In addition, the price is so right (as is the case with all Dover Series) you can not go wrong. I highly recommend it.

This book is an excellent introduction to crystallography. If you aren't interested in group theory, which most material scientists aren't, this is the book for you. The book covers the international crystallography notation well, describes some x-ray diffraction and reciprocal lattice topics, and overall conveyed the topics better than some professors can. For the price, I highly recommend picking this up!

This book is a must for beginners in the study of crystallography. It covers with worked out examples many of the themes, techniques, and approaches of structure determination, from a historical perspective and almost as a "Cliff Notes" version of the foundations, techniques and approaches within current crystallography. Easy to follow terms and descriptions. Lattice geometries, symmetries, fourier terms, intensities, structure factors and electron densities; it's all there. This works as my "bible" in addition to my actual Holy Bible. I can't say enough good things about this book. Lastly, it's supremely affordable. Buy it.

The title is extremely accurate. Though the information in this book is decades old, it's short and to the point and a great starting point for beginners. Highly recommended to physicists, chemists and "of course" biochemists who are looking for a gentle introduction to this enormously important technique.

This is a nice little book covering basic crystallography. Weighing in at a paltry 165 pages, Sands

covers crystals, symmetry, groups, and experimental crystallography. Although brief, he is not overly concise (a good thing for an introductory text). He goes into enough detail to get you the basic idea without bogging you down in the details. For example, most scientists and engineers could care less about group theory; Sands gives the rigorous mathematical definition of a group and then steps immediately back into discussing how they help us as crystallographers. The explanations are, for the most part, lucid and easy to follow. The diagrams are thought out pretty well and help the discussion. The chapters are speckled with short exercises for you to test yourself. I would strongly recommend this book if you need a crash course or refresher in crystallography, or as a supplement to other books.

I love Dover books because they are cheap and easy to read. It is a good place to start and will allow one to get a good general idea of the topic, follow this by reading a more current text or literature.

Truly a good book, the author has succeeded in explaining every basic concept clearly. It is a must for someone learning crystallography.

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