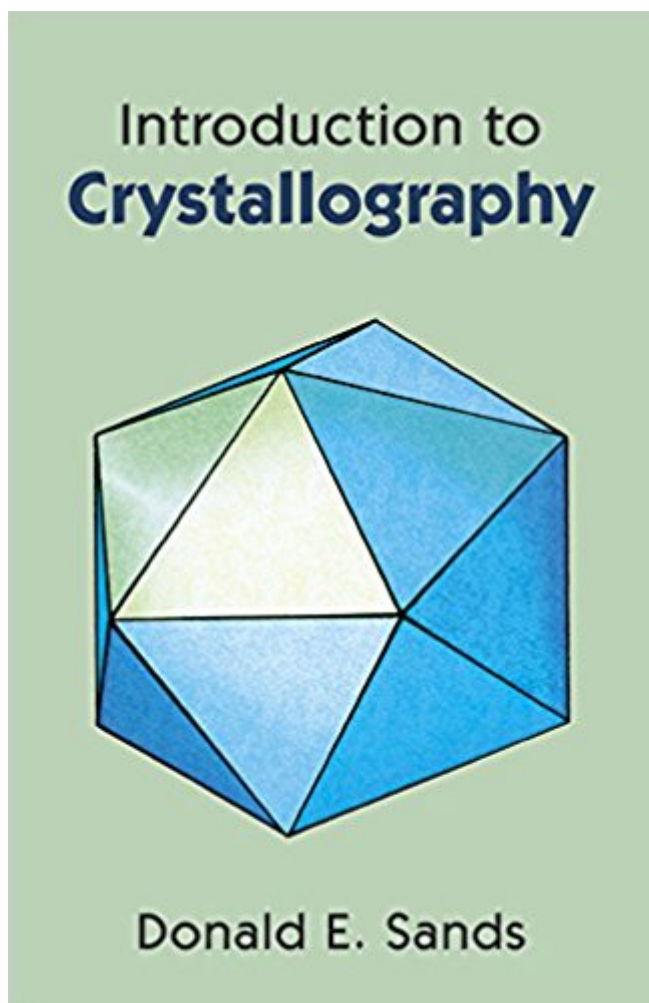




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Introduction To Crystallography (Dover Books On Chemistry)



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

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Customer Reviews

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.

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

Want to know what space group are and what those mysterious symbols "Pmm2" are? This is the book you should start from.

Written well

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.

A very helpful book for studying the course of X-ray diffraction or solid state chemistry, whose content is clearly and easy to understand.

This is a classic and a must have for any Materials Science and Engineering student. For the price you can't get a text in the subject as good as this one. I strongly recommend supplementing this text with an undergrad structures class.

Together with *Group Theory and Chemistry* this book makes a good guide to the world of chemical, and geological crystals. Crystallography has a very bad notation problem between Schoenflies symbols for point groups and Hermann-Mauguin symbols for space groups (and

several other types of notation that are used like Miller indices). A basic grounding in symmetry groups used in point groups helps to understand the unit cell symmetries used in space groups. Both of these books fails in the larger Mathematical picture of Lie algebras for two and three dimensions. One can't reward a book or author for making his students intellectual cripples when faced with the more general mathematical groups.

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