

scientist or administrator who fails to become aware of the new issues raised here does so at his peril.

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Theory of natural diffraction

ELEMENTS OF X-RAY CRYSTALLOGRAPHY. By Leonid V. Azároff. 610 pp. McGraw-Hill, New York, 1968. \$15.75

by Richard B. Zipin

My own introduction to crystal geometry came seven years ago as a beginning graduate student in a course in which we depended on lecture notes. As the instructor was not completely satisfied with any of the textbooks available at that time, he was therefore writing his own. As far as I know, my former instructor's book has not yet been published, but here at last is a book that will fill the sorely-felt gap in my personal library. Many sections of the book were familiar to me even before I read them, as Leonid Azároff, the author of this book, and

the man who taught me both got their crystallographic educations at MIT.

In his preface, the author warns that many readers may be reminded of lectures that they have had. He and my own professor presumably listened to the same lectures, and I have only had such lectures secondhand. Nevertheless, on opening this book I became reunited with an old friend—a clear and fairly complete introductory exposition of x-ray crystallography that should be welcomed by students and teachers alike. The author is already well-known to students of the solid state, not only for his research, but also for his previously published textbooks.

This text is based on the concept that diffraction spectra of single crystals constitute a reciprocal-lattice array. The author has separated his material into four distinct areas: crystal geometry, x-ray physics, diffraction theory and experimental methods. His personal interests are readily apparent in that the latter two subjects comprise more than two thirds of the book. The appendixes include material aimed at helping the students who will use the book as a text; there is some mathematical development, a set of tables, a short bibliography, and answers to some of the problems that appear at the end of each chapter. There is adequate material included so that in-

structors will find the book suitable for an introductory course at either the undergraduate or beginning graduate level.

My own preferences would have been better satisfied with a book that deals more extensively with the group-theoretic concepts in crystal geometry and the physics of x rays, rather than a book that concentrates so much on experimental techniques; but each author must write a book that satisfies himself. I can only recommend this book to those who require a good introduction to x-ray crystallography written with students in mind.

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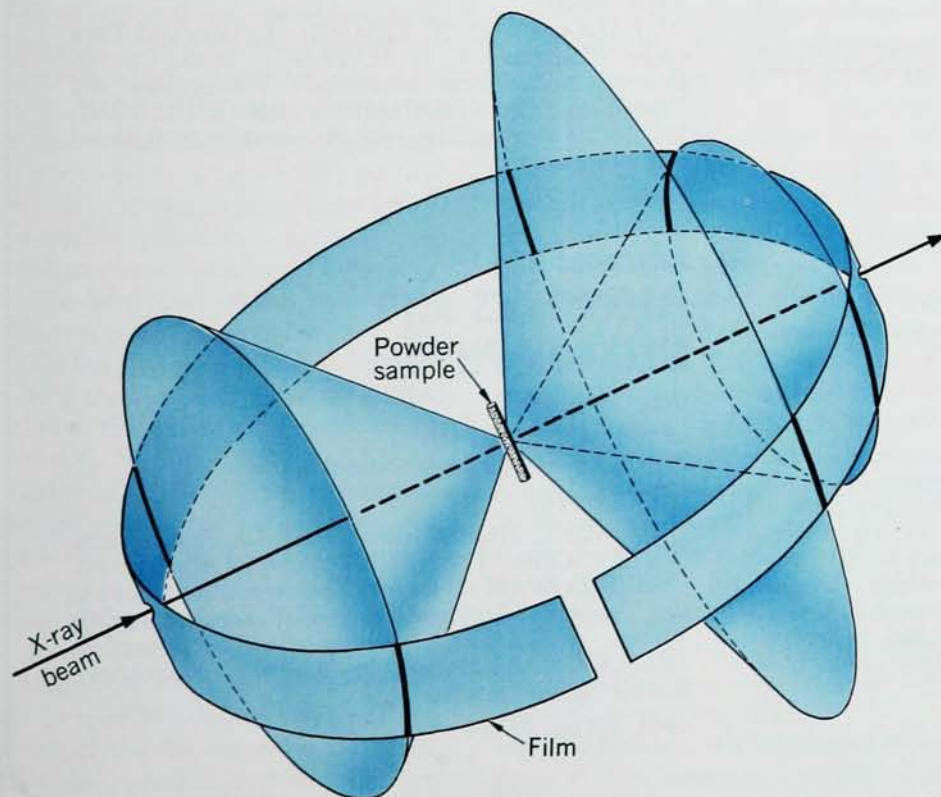
Mössbauer spectroscopy

MOSSBAUER EFFECT METHODOLOGY, Vol. 3. Conf. proc. (New York, Jan. 1967) Irwin J. Gruverman, ed. 250 pp. Plenum Press, New York, 1967. \$12.50

by H. H. Wickman

For the past four years (1965–68) the New England Nuclear Corp (a supplier of Mössbauer sources) has sponsored a Mössbauer-Effect Methodology Symposium held prior to the annual meeting of the American Physical Society. The present volume, edited by Irwin Gruverman of New England Nuclear, contains proceedings of the third symposium held in New York, in January, 1967. The volume is composed of two sections, the larger being a collection of applications of Mössbauer spectroscopy in the area of material sciences; the second section is devoted to the methodology of several relatively recently developed Mössbauer nuclides. The level of the articles is generally introductory and for the most part the discussions are accessible to nonspecialists.

Not all of the articles contained in the material sciences section could be considered to be in the mainstream of current research in which gamma-ray nuclear resonance is involved. Among the articles that should be of fairly general interest is a concise description of chemical and magnetic order in alloy phases written by Clyde W. Kimball, who considers in some detail the



POWDER METHOD. The diffraction cones emanating from a cylindrical sample are shown intersecting a film strip; the strip is also placed cylindrically to intercept all the cones produced. (From *Elements of X-Ray Crystallography*).