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Physics of radiation effects in crystals. Edited by R. A. JOHNSON and A. N. ORLOV. Pp. xii+723. Amsterdam: North-Holland, 1986. Price Dfl 395.00. Available in USA/Canada from Elsevier Science Publishers, 52 Vanderbilt Ave, New York, NY 10017, USA.

This book is Volume 13 of a series *Modern Problems in Condensed Matter Sciences* prepared as a collaborative effort by Soviet and Western scholars, and published in both English and Russian editions. This volume contains eleven excellent review papers and monographs, presented in two parts. Part I of the book is devoted entirely to metals and alloys. Basic defect properties are reviewed by Ehrhart, Robrock & Schober, while Agranovich & Kirsanov discuss defect production mechanisms. Bullough & Wood then cover evolution of stable defect configurations and their effects on microstructure, followed by Wiedersich's review of radiation effects in alloy systems. These papers are carefully selected and coordinated into a comprehensive review of radiation effects in metals. Indeed, Part I published alone would make a very useful book.

Part II contains seven papers dealing with specific types of materials. The varied topics of semiconductors (Vinetskii & Kholodar), superconductors (Snead & Luhman), nonmetals (Clinard & Hobbs), alkali halides (Lushchik), irradiation growth (Zelensky & Reznichenko), creep (Slyozov & Bereznyak) and blistering (Guseva & Martyneko) do not offer the unity so evident in Part I. This is inevitable in view of the diverse subject matter, and the specialist reader will not be inconvenienced.

In keeping with the book's title, the reviews concentrate on understanding and interpreting the effects observed. The result is a state-of-the-art summary of the physics of radiation effects, or as nearly so as the rapidly evolving field will allow. Workers studying radiation effects in metals will find it essential. Specialists in other fields may find the coverage insufficient inducement to procure the book for their personal shelf but should certainly take the first opportunity to peruse a library copy.

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Geometric crystallography. An axiomatic introduction to crystallography. By PETER ENGEL. Pp. viii+266. Dordrecht, Boston, Lancaster, Tokyo: D. Reidel Publishing Co., 1986. Price Dfl. 140.00, US$ 59.00, £41.95.

As emphasized by the author in the preface of his book, important results in the domain of mathematical crystallography have been achieved in the past decade, mainly by the application of algebraic, geometric and group-theoretic methods. Classical crystallography has been extended to dimensions higher than three following the need for a better understanding of dimension-independent crystallographic properties.

A geometric point of view is adopted in accordance with the very nature of crystallography. The approach is axiomatic and the book begins with a few basic definitions and some general properties of discrete point sets in Euclidean space. Apparently, the concept of *stabilizer* is preferred to the notion of *eigensymmetry* which is neither listed in the subject index nor quoted in the text. Special attention is given to Dirichelet domains and their practical calculation. Lattices and reduction of quadratic forms come next, followed by an extensive development of crystallographic symmetry operations and point groups, lattice symmetries, and space groups. An appealing feature of this book is the inclusion of chapters on space partitions and ball packings, thus providing a deeper insight into the structure of Euclidean space. Every chapter begins with definitions and, remarkably, ends with a brief but most useful historical review. The list of references provides important bibliographic information; however, some readers may find it lacks a few authors. Printing directly from a computer typescript may be unattractive but is still very neat.

The presentation of the subjects is concise and the development is certainly above an elementary level. The book will be welcomed by crystallographers who want to improve their knowledge of theoretical and mathematical crystallography.

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