

Short Notice

Strong Solids

A. Kelly

Second Edition, Clarendon Press, Oxford, 1973, 285 pp, £7

The publication of a second edition of Dr Kelly's *Strong Solids* provides a formal recognition of the undoubted success of the first edition. While the framework of the first edition is retained, some of the content has been significantly up-dated. The "flavour" of the book is provided by the unique grouping of subject matter and, in particular, by the inclusion of a substantial section, almost half the book, on fibre reinforcement (Chapters 5 and 6). Chapter 5, on "Fibre Reinforcement" remains as probably the best general approach to this topic, both from the standpoint of preparing a lecture course or initiating a research project. It has the real merit that the physical nature of the model assumptions is clearly stated. Chapter 6 on "Strong Fibrous Solids", and some of the

Appendices, provide useful practical complements to Chapter 5.

Of the other sections, Chapter 1 is an excellent and comprehensive review of "The Ideal Strength". Chapter 2, on "Cracks and Notches" is rather limited in scope, as a consequence of the rapid advances in fracture mechanics, and there is little mention of the recent elegant work on metals and polymers. The section on "Dislocations" (Chapter 3) remains as a particular approach to this subject in the context of strong solids. Chapter 4 provides a section on "Strong Metals" which gives an imaginative "overview" of this topic and ranges from strengthening mechanisms to steels. The inclusion of practical engineering alloys in this section is applauded, but the metallurgist would probably like a more detailed treatment, while undoubtedly the "non-metallurgical" reader would appreciate some phase diagrams. However, overall, "Strong Solids" is a distinctive and interesting book, which certainly merits consideration by Materials Scientists. W.B.

The Plastic Deformation of Metals

R. W. K. HONEYCOMBE

The book is written primarily for undergraduate students of metallurgy, materials science and Colleges of Technology who need an overall picture of the plastic deformation of metals, in which the theory and the actual behaviour of metals both receive attention.

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Defects in Crystalline Solids

B. HENDERSON

The purpose of this text is to present some of the basic physical phenomena necessary for the understanding of the defect solid state. In part the subject matter is based upon an optional course in Physics which the author taught to Final year undergraduates at the University of Keele, England. The book is, however, intended for a wider readership.

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The Crystal Structures of Solids

P. J. BROWN and J. B. FORSYTH

This book gives an introductory account of the crystal structures found in solid materials. It is intended for the student of solid state physics or materials science who wishes to understand and make use of crystallographic techniques and the results which have been obtained by using them.

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The Dynamics of Atoms in Crystals

W. COCHRAN

This is intended to be an intermediate level text in that it assumes an acquaintance with topics which a student will meet in the first year of an undergraduate course, but makes no claim to lead him to the frontiers of knowledge of the subject. References, mainly to books and review articles, are given at the end of each chapter and will enable the reader to proceed further if he wishes.

Boards £4.60 net Paper £2.30 net

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