octahedral structures, principal types of inorganic structures. This part ends with a chapter on bonds in molecules and crystals, where the types of structures are correlated with the nature of the bonds.

The 22 chapters of Part II, which constitutes the remaining three quarters of the book (774 pages), deal with descriptions of the crystal structures of the principal elements and inorganic compounds classified according to the nature of the elements and the types of compound. This second part has been substantially updated which makes the book very useful as a reference book particularly concerning general views on the structural properties of classes of inorganic compounds.

In the preface the author explains the purposes and organization of the work, gives a list of contents in the form of titles of chapters and sections, a table of abbreviations for the literature quotations, a formula index and a subject index. Compared with the previous edition, the formula index is increased by about 65% as a consequence of the increased number of compounds considered in the second part. On the other hand the subject index is much less comprehensive being contracted to about one half, and this contraction is perhaps objectionable as it reduces the usefulness of this index. Also the use of non-standard abbreviations for literature quotations is not, in the opinion of the reviewer, an improvement, firstly because it is not justified by space considerations and secondly because new conventions are being added to the jungle of those which already make everyday life so complicated.

The reviewer is frankly happy about this fourth edition as he was about the previous ones, and hopes that it will succeed in fulfilling the purposes the author states in the preface, *i.e.* to make 'the results of structural studies of crystals available in a form intelligible to chemists' and 'to provide teachers of chemistry with facts and ideas which can be incorporated into their teaching'. The importance of structural aspects in inorganic chemistry (and in organic chemistry too) is increasing, and the idea that no sound treatment of the chemical properties of compounds can be made without a clear knowledge of their structures, is widely accepted by researchers and teachers even if sometimes inadequate emphasis is put on these aspects, particularly in teaching. Indeed it is true that in the present teaching of inorganic chemistry the solid state is not developed in most cases as deeply as it should be, but it is also true that when this is done at the right level, the views developed by Professor Wells in his book can be remarkably influential.

The reviewer is pleased to have this book on his shelf both for his research and his teaching activity and he highly recommends it to all researchers, teachers and students who are interested in inorganic chemistry.

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Structure–property relations. Vol. 2. By R. E. NEWNHAM. Pp. ix + 234, Figs. 92, Tables 26. Berlin: Springer-Verlag, 1975. Price (cloth) DM 72 (*ca* U.S. $ 31.00).

Many ideas are packed into this 234 page review of crystal chemistry and materials science. In addition to conventional solid state topics, several recent effects and applications are briefly described, for example semiconductor lamps, bubble memories and superionic conductors, and the properties of many complicated solids are discussed. Tables and diagrams support terse qualitative descriptions of the phenomena, and there is a sprinkling of formulae, few of which are derived. The overall effect is of a sustained essay giving a broad up-to-date insight into the diversity of solid materials, but there is insufficient detail to explain satisfactorily many of the subtle concepts involved, and the book tends to give the impression that things are much simpler than they really are. Occasional lapses also appear: for example, the units of the diffusion coefficient (a quantity never satisfactorily defined) should be cm^2/sec, not cm/sec in Fig. 26. Though the book cannot be recommended as a text for solid state courses, it could provide useful background reading to broaden the perspective of graduate students studying some particular branch of materials science and technology.

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Book Received

The following book has been received by the Editor. Brief and generally uncritical notices are given of works of marginal crystallographic interest; occasionally a book of fundamental interest is included under this heading because of difficulty in finding a suitable reviewer without great delay.

Radioactivity and atomic theory. By FREDERICK SODDY. Pp. xviii + 518. London: Taylor & Francis, 1975. Price £12.00.

During the period 1904–1920 Frederick Soddy provided for the Chemical Society an annual report on the progress of the subjects of radioactivity and atomic theory.

This book begins with a comprehensive introduction which gives an overview of the subject, relating the material to the present state of knowledge. While the subject tends to be treated from the viewpoint of the chemist much of interest to physicists is to be found. The level of the material is such that it could readily be understood by students, science-based or otherwise, with a limited mathematical background.