

compounds. Chapter 6 describes the different interesting properties of the electron-transfer series of the transition-metal 1,2-dithiolates, stackings of flat molecules (or ions) of this series with long-distance metal-metal contacts, and their magnetic and electrical properties. A change of subject takes place again in chapter 7, in which TCNQ spin-Peierls transitions are the subject of discussion. The interesting, thermally stable, electrically conducting polypyrroles, which can be prepared electrochemically, and the application of these polymers as electrode materials is well described in chapter 8. Finally, chapters 9 and 10 are devoted to preparations and physical methods respectively, the latter being the determination of the way in which the stackings of different units in the crystals are ordered.

The reviewer agrees fully with Boller's comments on the first two volumes: 'The standard of all contributions is high throughout . . .'. However, the ordering of the 30 papers is almost random and therefore 'chains of papers' are missing through the three volumes.

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*Acta Cryst.* (1983). B39, 656

**Uses of synchrotron radiation in biology.** Edited by H. B. STUHRMANN. Pp. xii + 348. London: Academic Press, 1982. Price £36.40.

Synchrotron radiation is becoming increasingly utilized as a research tool in many disciplines. The radiation itself (SR for short) is produced in copious quantities over a continuum from X-ray to infrared wavelengths by electron or positron storage rings or synchrotrons. These machines are available at a relatively small number of sites around the world and have consequently led to a substantial change in the working lifestyle of many research scientists now using these centralized facilities. This is especially true of the structural biologist whose samples are particularly demanding of sources of radiation. As a result he/she is one of the major users of SR sources today. This book deals with these uses of SR in biology and, in particular, in the techniques of diffraction, spectroscopy and microscopy applied to the structural study of biological macromolecules and their aggregates in a variety of sample states. The book owes much to the energy and enthusiasm of the editor, H. B. Stuhrmann. There are 12 chapters in all with a plentiful supply of approximately 600 references covering research up to 1981. The chapters on radiation damage and fluctuation scattering are refreshingly new in such a book. The whole volume is written as a collection of reviews by some of the

leading experts in Europe. The book counterbalances the dominantly American-oriented authorship of *Synchrotron Radiation Research* edited by H. Winick and S. Doniach (1980) [see *Acta Cryst.* (1981), A37, 447 for a brief review], though the latter does strike a better balance from this point of view than the present book.

The bias of the present work appears to aim at satisfying the research scientist rather than offering a didactic approach for the research student; it is in any case rather expensive for someone on a grant rather than a salary. The ordering of the chapters seems a little peculiar and would have been better perhaps with the instrumentation sections (detectors and data acquisition) placed after the first chapter on SR and its properties. A chapter on optical beam conditioning is badly missed since it would have given a more flowing treatment and avoided overlap between several of the chapters in this area. There also seems to be no need for the use of identical figures in different chapters; that is, Fig. 5 of ch. 6 is Fig. 6 of ch. 1, and Fig. 1 of ch. 3 is Fig. 4 of ch. 2. There are a sizeable number of proof errors, which are distracting to the reader, the most unfortunate of which, in the context of *Acta Cryst.*, is 'the phrase problem of crystallography' (p. viii). The overall layout of the book is, however, very well done and the quality of the figures is very good. There is also an extensive subject index. The book would serve as a valuable research reference work.

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### Book Received

*The following books have 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.*

**Landolt-Börnstein: numerical data and functional relationships in science and technology. Group III. Crystal and solid state physics. Vol. 7. Crystal structure data of inorganic compounds. Part b3: Key elements S, Se, Te.** Edited by K.-H. HELLWEGE & A. M. HELLWEGE. Pp. xxvii + 435. Berlin, Heidelberg, New York: Springer-Verlag, 1982. Price DM 740, US \$296.00.