Book Reviews

Works intended for notice in this column should be sent direct to the Book-Review Editor (J. H. Robertson, School of Chemistry, University of Leeds, Leeds LS2 9JT, England). As far as practicable books will be reviewed in a country different from that of publication.

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Semi-metals & narrow-bandgap semiconductors. By *D. R. Lovett*. Pp. viii + 256, Figs. 149, Tables 26. London: Pion Limited, 1977. Price £8·50, US $17.50.

This book deals with the preparation, physical properties and applications of semi-metals and compound semiconductors having energy bandgaps less than $10kT \simeq 0{\cdot}26$ eV at room temperature.

The book is divided into two parts. In Part I the following are discussed generally: crystal growth, energy-band structure, electron-transport phenomena and applications in various fields such as electronics, optics and energy conversion. This part is well written and will be easily understood if readers have a standard knowledge of solid-state physics, but they will find the chapter on the energy-band structure rather difficult as some knowledge of group theory is required.

Part II deals with semi-metals, binary compound semiconductors of II–VI type (such as HgSe, HgTe), of IV–VI type (such as PbSe, PbTe, SnTe), of V_2–VI_3 type (such as Bi_2Te_3) and others. Pseudo-binary compound semiconductors, $Pb_{1-x}Sn_xTe$, $Hg_{1-x}Cd_xTe$ are also included. For each material, the preparative techniques, the band structure, the electrical property and the device application are given in general.

It seems to the reviewer that the sequence of materials appearing in Part II is rather complicated; a more reasonable classification of semiconductors could be found if the crystal structure and/or the geometrical configuration of chemical bonds were considered.

The reviewer believes that some ternary (not pseudo-binary) compounds, for example Cu_3SbSe_4, are of narrow bandgap, though these materials are less common and not cited in Part II.

This book may be valuable as a source of information and bibliography for physicists and device engineers who are interested in these materials.

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Books Received

The following books have been received by the Edotor. 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.

Electron diffraction 1927–1977 (Conference Series No. 41). Edited by *P. J. Dobson, J. B. Pendry* and *C. J. Humphreys*. Pp. xi + 442. The Institute of Physics, Bristol and London, 1978. Price £25.00, US $49.00. A review of this book, by Shizuo Miyake, has been published in the March 1979 issue of *Acta Crystallographica*, Section A, pages 349–350.

Elements of X-ray diffraction (2nd edition). By *B. D. Cullity*. Pp. xii + 555. Addison–Wesley, 1978. Price US $21.95, £16.50. A comment on this book, by the Book Review Editor, has been published in the March issue of *Acta Crystallographica*, Section A, page 350.