

Narrow gap semiconductors

Semimetals and Narrow-Bandgap Semiconductors. By D. R. Lovett. Pp. viii + 256. (Pion: London, 1977.) £8.50; \$17.50.

AT FIRST GLANCE this book has a pleasing appearance with many clear diagrams and graphs, and a more detailed examination has convinced me that the breadth and depth of coverage should make it a very useful book for those entering the field of electrical properties and applications of narrow gap semiconductors.

The book is basically in two parts. In the first part, there is an excellent and concise introduction to phase diagrams and crystal growing techniques, clearly outlining the many pitfalls and problems which would confront anyone trying to prepare pure and homogeneous materials. The chapter on crystal symmetry and band properties is probably the weakest part of the book, for it is

so concise as to be practically of no help to anyone except those already initiated in the art. The electrical properties is well treated and is somewhat similar to Putley's well-known book *Hall Effect and Related Phenomena*. There is also a chapter briefly reviewing narrow band gap devices.

The real interest of the author is expressed in the second half of the book, dealing with the much more detailed aspects of particular materials, ranging from bismuth-antimony alloys to selenides, tellurides and arsenides. This latter part of the book would certainly be of very considerable use as a source of information for both the researcher as well as those interested in the application of narrow band semiconductors.

At £8.50 this book is certainly value for money for those on the periphery of this field.

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Analysing pure substances

Spectrochemical Analysis of Pure Substances. Edited by Kh. I. Zil'berstein. Translated by J. H. Dixon. Pp. 435. (Plenum: London and New York, 1977.) £27.

THIS English translation of the (1971) Russian edition, stated by the publishers to be thoroughly revised and up-to-date, contains 1,497 references, over half to Russian work, but less than ten after 1971. A vast amount of information on trace analysis is given, most of it in an uncritical review form of Russian and Eastern European work.

In Part I, the first three chapters give excellent, but over-lengthy and unbalanced, sections on evaluating limits of detection, and their improvement by optimising parameters of spectral resolution. Reference to spectrographic equipment by symbol only would have been of more value if a table had been given listing their main features such as focal length. In chapter 4 a long description is given of arc sources which, although biased towards Russian work, describes in detail the various distribution parameters across electrode gaps of d. c. and a. c. arcs, with anode and cathode excitation, and the resulting line-to-background ratios. Techniques for introducing samples into the arc are reviewed and methods of stabilisation, such as the use of external magnetic fields and various forms of constricted arcs are discussed. Other sources are covered in less detail, but the glow discharge is noticeably absent.

Part 2 describes preliminary concentration methods, starting with a rather cumbersome mathematical section on the expression of the concentration factor, followed by more useful sections on concentration by volatilisation, sublimation, crystallisation, zone melting, solvent extraction, ion exchange, coprecipitation and electro-deposition.

Part 3 deals with practical problems including sampling, grinding, laboratory design, purification of reagents and carbon electrodes, and more briefly with the preparation of synthetic standards. The final section, on practical methods of analysing pure substances, is a ten-page list of sample types, noting the trace elements determined, and giving references in the bibliography.

The contents of the book and its translation are excellent. It is full of valuable information, but this can only be found by thorough study, as the index is totally inadequate. I can foresee two types of reader: the spectroscopist, who may obtain some new lines and those who wish to be made aware of Eastern-European work. Both would be justified in purchasing this book. Readers should note, however, that some of the Russian claims to priority are unjustified according to the record of world literature.

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Endocrinology yearbook

The Year in Endocrinology, 1975-1976. Edited by Sidney H. Ingbar. Pp. xviii + 327. (Plenum Medical: New York and London, 1976.) \$27.

'YEARBOOKS' come in many shapes and sizes. Probably the commonest format is the upgraded textbook in which a series of chapters, whose headings embrace non-selectively the whole of the subject under consideration, seek to convey to the reader the principal advances which have taken place since the previous edition. Often, each chapter will consist of summaries of key papers accompanied by editorial comment. The contrary approach is the presentation of a series of highly selective reviews by eminent authorities, usually with a heavy bias towards the work of their own groups. The present volume falls somewhere between the two. Nine chapters by individual authors review the principal endocrine systems except those of the foeto-placental unit and the gut. Most are comprehensive, but there are occasional notable exclusions: for example, the section on neuroendocrinology makes no mention of the posterior pituitary gland, whereas another concentrates on calcitonin and ignores parathyroid hormone. Finally, there are two special essays on ectopic hormone secretion and the mechanisms of steroid hormone action.

The general standard of the individual chapters is high and as a review of the state of the art for readers in 1977 there is no doubt that this is a useful book. The transatlantic flavour, however, is noticeable by the absence of comment on important therapeutic advances. For example, the use of ergot derivatives in the treatment of hyperprolactinaemia is dismissed in a few lines and a single minor reference. This is surprising since the use of Bromocriptine is probably the single most important development in endocrine management of the 1970s, and the bulk of the significant papers on this subject appeared in the time period in which this book purports to cover. Far more space is devoted to the use of the gonadotrophin-releasing hormone, despite the fact that it is unlikely this material will ever be of great practical value. These comments apart, the book can be commended to the practising endocrinologist.

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