question sets which would have been beneficial where the book is used as a teaching text. There are author and subject indexes.

The Editor's Desk

Inorganic Reactions and Methods, edited by J. J. Zuckerman (Founding Editor) and A. P. Hagen, VCH Publishers, New York. *Vol. 4, Formation of Bonds to Halogens*, Part 2, 1991, 491 pp., DM 385.00, ISBN 0-89573-250-0 (set). *Vol. 5, Formation of Bonds to Group VIB (O, S, Se, Te, Po) Elements*, Part 1, 1991, 567 pp., DM 385.00, ISBN 0-89573-250-5 (set). *Vol. 9, Formation of Bonds to C, Si, Ge, Sn, Pb*, Part 1, 1991, 604 pp., DM 385.00, ISBN 0-89573-250-5 (set). *Vol. 17, Oligomerization and Polymerization. Formation of Intercalation Compounds*, 1990, 431 pp., DM 385.00, ISBN 0-89573-267-X.

This series of monographs specialises in describing the methods available to form specific bonds between elements. It aims, through the foresight of its founding editor, Jerry Zuckerman, now deceased, to provide an unprecedented coverage of synthetic inorganic chemistry classified through bond formation and type of reaction.

A very considerable amount of experimental detail is provided, all backed up by a detailed bibliography, allowing the interested researcher enough information to decide upon a particular pathway.

There is an author index to the experimental work, and, very usefully, a detailed compound index which lists all the species mentioned in the text with their section headings. This index is ordered C,H, alphabetical as in Chemical Abstracts, but the entries are permuted such that all species containing, for example, titanium can be found under Ti irrespective of any other elements they contain. The non-permuted entries are followed by keywords indicating the context in which they are described.

Volume 17 differs slightly from Volumes 4, 5, and 9. It is focussed, in part, on the formation of specifically bonded oligomers and polymers, and contains a detailed survey of ring–ring and ring–polymer interconversions and a brief survey of the experimental methods usable to study these polymers. Volume 17 also contains experimental methods used to form intercalation compounds, subdivided into the formation of clathrates, tunnel structures and sheet structures.

Each volume in this edited series has contributions from some 10–30 expert researchers responsible for the various sections.

This is an extremely valuable series of books for the experimental researcher; a definite purchase for their library.

The Editor's Desk

Electron Correlations in Molecules and Solids, by Peter Fulde (Springer Series in Solid-State Sciences, Vol. 100, edited by Helmut K.V. Lotsch, M. Cardona, P. Fulde, et al.) Springer-Verlag, Heidelberg, 1991, DM 98.00. ISBN 3-540-53623-X.

This book is written to the high quality standards typical of the *Springer Series in Solid-State Science*, and provides valuable instruction and reference to the rapidly growing field of solid-state computational chemistry.

The first third of the book is dedicated to the introduction and development of the basic formalisms most commonly employed in the quantum mechanical description of molecules. Throughout these opening discussions are parallel descriptions contrasting methods based on the limits of weak electron correlation (Hartree–Fock approach) and strongly correlated electrons (Heitler–London). The reader is taken, fairly rigorously, from basic principles through local spin density and post-Hartree–Fock methods. Included in the discussions are ab initio and semiempirical methods, density functional theory (Thomas–Fermi, Hohenberg–Kohn–Sham, X-alpha, LDA, LSD), configuration interaction, multireference CI, coupled-cluster methods, and many-body perturbation theory.

The latter two-thirds of the book then expands into the area of semiconductors, homogeneous and mixed metallic systems, magnetic properties of solids, electrical conductivity and superconductivity (describing conventional BCS theory as well as theories of the new high-Tc superconductors). Calculated molecular and solid-state properties are frequently compared between methods and with experimental data. The book is well-written and topics are covered in-depth, although the uninitiated may find it mathematically somewhat intensive.

Finally, an extensive up-to-date bibliography is included, and should provide a valuable resource for anyone involved in, or becoming involved in solid-state computational chemistry.

Professor Fulde is to be commended on a contribution which will, deservingly, enjoy wide readership.

W. J. Pietro
