

Book reviews

Progress in Inorganic Chemistry: Bioinorganic Chemistry Volume 38

S J Lippard (ed)

535 pages. £28.30.

ISBN 0-471-50397-5 and 0-471-52945-1 (paperback)

Bioinorganic chemistry was first introduced in 1973 as an important theme into this well-known and widely respected series of review volumes, found in most chemistry libraries.

This volume is linked in with the 4th International Conference on Bioinorganic Chemistry held on the MIT campus in 1989 and mainly contains plenary lectures and other special keynote chapters. There are eight chapters involving 23 co-authors, many of whose names are essential to the reference list of any PhD thesis in bioinorganic chemistry, e.g. R. H. Holm, A. M. Sargeson, H. B. Gray, S. J. Lippard, etc.

The chapters reflect the immense relevance and depth of bioinorganic chemistry involving physics, biology and medicine. They cover (4Fe-4S) cubane-type clusters, indoleamine 2,3-dioxygenase, Fe- and Mn-oxo sites, metal phosphates, electron transfer, heavy-metal biosensors, nucleic acid complexes and DNA-Pt compounds.

It is interesting to note the trend of the subject to interface with new areas such as complexes with polymers, complex bonds involving carbon (the main thrust of this journal) and medicine (both therapy and diagnosis). Special features of the book include its rapid production, by-passing galley-proof reading, and the large number of references quoted (1366 in total).

I recommend this volume to all researchers in the general field of bioinorganic chemistry and to pure inorganic chemists wishing to increase the relevance of their research topics to practical applications.

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Organometallic Chemistry: A Unified Approach

R C Mehrotra and A Singh

Wiley, New York, 1991

634 pages. £33.95.

ISBN 047021992

This is a useful, straightforward book on organometallic chemistry. The style and content are slightly dated as

the manuscript was submitted to the publishers in 1986, and those who imagine that the book is a bargain at the price should be warned that the quality of the paper is low.

The authors say that the main focus of the book is to reflect the interdisciplinary character of the current status of the subject. There must be some doubt as to how far this has been achieved as there is a tendency to separate Main Group and transition-metal components throughout the book. However, the links between organometallic chemistry and other areas such as catalytic industrial reactions, biological applications and environmental considerations are adequately described.

The book has seven chapters and two appendices, but three chapters comprise more than three-quarters of the book. The three large chapters are: Organometallic compounds of the Main Group elements (115 pages), organometallic compounds of the transition metals (211 pages) and synthetic and catalytic aspects of organometallic chemistry (152 pages). The first two of these chapters have considerable sections on structure and bonding and no less than 16 pages are devoted to the applications of spectroscopic techniques in the elucidation of structural features of Group IV organometallics.

The treatment of the subject matter is sound and the text is suitable for students in the year before graduation and above. I noted a few points where the student might be misled or confused: (a) on pages 360 and 371 the temperature-dependent NMR spectrum of $\text{Et}_3\text{P} \cdot \text{CuC}_5\text{H}_5$ is described, but we are not told that in the solid state this is a π -complex; (b) on page 247 we are told that the most stable structure of ferrocene in the gas phase is the eclipsed D_{5h} structure, but on page 272 the molecular orbital diagram is given for the D_{5d} structure.

An unusual and interesting feature of the book is the inclusion in Appendix 1 of either extracts from, or the complete, Nobel Lecture of Ziegler, Wilkinson, Brown and Hoffmann. Appendix 2 is concerned with the nomenclature of organometallic compounds. References to supplementary reading are given at the end of each chapter, but these are mainly to other books or reviews, making it difficult to follow up a specific point. The index is only four pages long and is therefore inadequate.

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