

up-to-date material for their lecture notes and for research students reading up their subject or writing the introduction to theses. Research institutes and public and private sector laboratories working in the organometallic area should also regard this work as a highly valuable source for their library shelves. The Editor set his authors the task of attaining reasonable coverage of their topics with moderate overlap between the chapters and with a concentration on more recent developments. They have certainly achieved this and in fact have also provided sufficient older background material for the general reader.

There is a good coverage of more recent references, a complete Author Index, and a helpful although not over-long Subject Index. Each chapter has a clear Contents List. The coverage is balanced and in the correct detail; it would be invidious to pick out any particular chapter for special comment as this would probably reflect the interests and taste of the reviewer, rather than inherent merit. The weakness of the book is its price; magisterial in coverage, it is also imposing in price at £199.00. This probably removes it from the range of individual chemists unless they have private means. Libraries and other institutional purchasers should regard it as an essential acquisition.

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### **An introduction to organometallic chemistry**

A W Parkins and R C Poller

Macmillan Publishers Ltd, London. 1986. (252 pages)  
£9.95 paperback; £25.00 hard-cover. ISBN 0-333-36433-3; 0-333-36432-5

This book, which uses an integrated approach to discuss the organometallic chemistry of both Transition Metal and Main Group elements, contains nine chapters. The introductory chapter contains a valuable summary of reviews, journals and textbooks devoted

to organometallic chemistry and, in each of the following chapters, the literature is divided into specialist references and general reading. Although there are half-a-dozen or so references to 1984 papers, in general the most recent citations involve 1983 articles.

Chapter 2 describes the various methods of preparation of organometallic compounds, including the direct reaction from the metal; syntheses from organometallic reagents; metallation; electrochemical processes; and preparative routes from alkenes, alkynes or arenes. Structure and bonding in organometallic compounds are discussed in Chapter 3, with sections on *p*-bonded compounds, carbene, carbyne and *n*-complexes, dynamic behaviour in solution and thermochemistry, whilst organometallic compounds as sources of carbanions are covered in Chapter 4.

Chapter 5 contains a survey of the reactions of organic groups bonded to metals in which the metal-carbon bond is retained and, in Chapter 6, the coordination chemistry of organometallic compounds is explained, with particular emphasis on its effects on structure and reactivity. Carbene chemistry involving organometallic compounds is described in Chapter 7.

The two final chapters are devoted to the applications of organometallics as reagents and intermediates in organic synthesis (Chapter 8) and as catalysts in reactions with organic molecules (Chapter 9). No mention is made of other important uses of organometallic compounds in modern technology, such as the silicone elastomers, alkylsilicon water-repellent treatments and organotin stabilizers for rigid PVC.

This is a clearly written book, free from typographical errors and the paperback edition is particularly reasonably priced. Senior undergraduate and post-graduate students, teachers and research workers will find it very useful.

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