

Book reviews

Advances in Organometallic Chemistry, Volume 21, edited by F.G.A. Stone and R. West, Academic Press, New York, 1982, VII + 304 pages, U.S. \$ 52.00.

This continuing series of reviews now constitutes an invaluable part of the organometallic chemical literature. Comprehensive, timely and authoritative, it must surely be one of the first places to turn to for basic information for teaching or research. This present volume maintains the standard of excellence established by the earlier volumes.

There are five contributions. The first, by D.W. Macomber, W.P. Hart and M.D. Rausch, is concerned with functionally substituted cyclopentadienyl-metal compounds. The discovery of the "aromatic" nature of ferrocene was an exciting departure for organometallic chemistry. Such reactivity is actually rather limited, but this stimulated research into a variety of methods of obtaining substituted derivatives. This is detailed here, along with an account of the preparation and properties of substituted cyclopentadienides and related species.

The second contribution, by C.E. Housecroft and T.P. Fehlner, concerns metalloboranes and their relationships to metal-hydrocarbon complexes and clusters. It includes a survey of metalloboranes and their preparations and a theoretical analysis of the parallels between hydrocarbons and boranes. The differences are also highlighted.

The mechanistic pathways for substitution processes in metal carbonyls are reviewed by D.J. Darensbourg. This subject is concerned with a wide variety of physical techniques. As well as the long established dissociative pathway for 18-electron systems, there is also some evidence for associative pathways involving formal 20-electron intermediates.

The two last reviews are by authors discussing work to which they have made very significant contributions, 1,4-diazabutadiene complexes (G. van Koten and K. Vrieze) and multiply bonded germanium species (J. Satgé). Both show a wide breadth of attack, and interesting analysis.

In summary, a valuable addition to the secondary literature, and of wide general interest.

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