

Book reviews

S-Centered Radicals

Zeev B. Alfassi (ed.)

John Wiley, New York, 1999

382 pages. £120

ISBN 0-471-98687-9

My scientific career has been focused on free radicals, yet in its many aspects sulphur-radical chemistry has been something of a blind spot. Therefore, the opportunity to comment on this new text edited by Zeev Alfassi was especially welcome, and for the most part I have not been disappointed. An initial search for recent data on the structure and ease of formation of sulphur-centred radicals quickly revealed all that I wanted to know. And although not all of the detail which I was seeking was to be found in the two chapters specifically devoted to Structure and to Thermochemistry, the excellent subject index led me quickly to further pertinent information.

The general standard of production is high. The contributors have themselves all added to our current knowledge of the field, and therefore write with authority; their coverage usually includes references well into 1998. In several instances, however, contributors have imposed explicit constraints on the extent of subject coverage. Where this entails omission of the older literature, any deficiency is made good by comprehensive referencing of alternative review sources; in these cases I found no difficulty in following the presentation. Where, occasionally, selectivity has instead excluded certain topics entirely, this may be less satisfactory, although sometimes it is compensated for in other chapters. In this respect, the editor seems to have succeeded in avoiding unnecessary duplication, though a curious omission is the absence of any Editor's Preface—which might have assisted the reader in gaining some impression of the planning and ordering of the book. Perhaps that lot was intended to fall to the reviewer, in which case.... Although the last three chapters cover the structure and organic chemistry of sulphuranyl radicals (X_3S^\bullet), the roles of thiyl radicals in biological systems, and the application of sulphur-centred radicals in organic synthesis, the emphasis in much of the earlier part of the book has a distinctly 'physical' flavour. The general discussions of sulphur-centred radical structures and of thermochemistry start things off, but the middle chapters comprise a series of rather specialized reviews, for which it must have been quite difficult to create a coherent order. These are concerned with: SO_x anion radicals; gas-phase reactions of sulphur-centred radicals—including atmospheric sulphur chemistry; the use of radiation chemical techniques

in the context of sulphur-radical chemistry; aromatic thiyl radicals—with an emphasis on fast reaction kinetic techniques; thiyl radicals in the solid phase; and finally, sulfoxyl radicals—again emphasizing physical aspects.

I believe the omission of an author index from a specialist text of this kind is a mistake. It would also have been helpful if the contents list had included major chapter subdivisions. Nevertheless, Alfassi has managed to compile a book into which chemists from diverse fields will dip with advantage. As such, it can be recommended, but the price is probably too high for more than the most affluent to include in their personal libraries.

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Activation of Unreactive Bonds and Organic Synthesis Topics in Organometallic Chemistry, Vol. 3

S. Murai (ed.)

Springer-Verlag, Berlin, 1999

272 pages. £76

ISBN 3-540-64862-3

The title of this book is rather disarming. As the editor writes in the preface, he was hesitant to use the term 'activation' to describe the type of reaction being reviewed here. The term 'hydrocarbon activation' is well known and is used by organometallic chemists to mean metallation of a hydrocarbon C–H to give C–M. This is the meaning of activation in this book. Another point not clear from the title is that the book is mainly concerned with transition-metal complexes. The material in this monograph is made especially stimulating by describing applications to organic synthesis. As such it is a very useful and informative book, and the editor deserves praise for bringing together such an interesting range of topics.

This is a multi-author book, with ten chapters, but the only index is to previous volumes in the series. The