

Book Reviews

Advances in Free-Radical Chemistry, Volume 5.

This, the latest volume in a well-established series, contains five reviews covering widely differing topics of interest principally but not exclusively to the free-radical chemist. The authorship is international and distinguished. R. Bolton and G. H. Williams provide a comparatively short but detailed account of homolytic substitution reactions of polyfluoroaromatic compounds. After a discussion of the effect of fluorine substitution on the behaviour of a system they consider homolytic replacement of a fluorine atom attached to an aromatic nucleus and the reactions of the pentafluorophenyl radical itself. There follows a survey by W. A. Pryor and L. D. Lasswell of the spontaneous polymerisation of vinyl monomers, a process of theoretical as well as commercial interest. There is a wide-ranging discussion of the various aspects of the polymerisation of styrene but other aromatic, heterocyclic, and aliphatic systems are also mentioned. E. K. Fields and S. Meyerson then examine the formation and reactions of free-radicals derived from the pyrolysis of aliphatic and aromatic nitro compounds. The most extensive contribution, by J. K. Kochi, concerns the use of e.s.r. spectroscopy as a probe into the configurations and conformations of alkyl radicals in solution. Other group IVB centred radicals are included together with conformational aspects of rearrangements and bridging by heteroatoms. This chapter collates a large quantity of spectroscopic data which will be invaluable to those working in the field. Finally R. Kaptein surveys the theoretical background to and applications of chemically induced dynamic nuclear polarisation, including a brief discussion of experimental techniques. This review should have by far the widest appeal of those in this volume.

The original articles were submitted in 1973 but production difficulties delayed publication until 1975; however the authors have attempted to update their contributions either within the text itself or by the addition of an addendum. The volume also offers a comprehensive subject index, but referencing is by the rather clumsy "author (year)" method.

The rather specialised interest of most of the reviews and high price of the volume will deter the individual from adding this to his bookshelf though it will undoubtedly be a useful addition to departmental libraries.

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