

reactions, oxidation and reduction reactions and, finally, industrial applications. Reactions such as hydrolysis which are routinely performed in water are not included, and enzyme reactions and phase-transfer-catalysed reactions are only mentioned briefly because of their specialist nature. Within each chapter several different reactions are discussed that have been performed in water; for example, in Chapter 2 on pericyclic reactions, Diels–Alder, Alder–ene, 1,3-dipolar cycloadditions, sigmatropic rearrangements and photochemical reactions are all mentioned. The authors have clearly had to be selective, which has resulted in some sections being fairly brief, but this does not necessarily detract from the overall usefulness of the work because it is well referenced. The final chapter on industrial applications is particularly short; it contains a few selected examples.

Overall the work is well presented and comprehensively referenced and gives the reader a taste for what reactions can be successfully carried out in water. The amount of published information on organic reactions in aqueous media is comparatively small, and bringing it together within this work is extremely useful. It highlights the fact that although many of these areas of research are still in their infancy there are many potential applications. This book should appeal to anyone considering water-based reactions, and it extends Li's earlier review which focused on carbon–carbon bond-forming reactions in water.

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Progress in Organosilicon Chemistry

B. Marciniec and J. Chojnowski (Eds)

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This volume was only recently received for review although it appeared in 1995. It presents most of the plenary and invited lectures delivered at the very successful Tenth Jubilee International Symposium on Organosilicon Chemistry held in Poznan, Poland, in August 1993. After a most interesting personal account by Eugene Rochow of his very important invention of the direct process bearing his name and some other fundamental aspects of silicon chemistry in Section I, the book is divided into three main sections, namely: Section II, Synthesis, Structure and Properties of Molecular Organosilicon Compounds; Section III, Reactions and Intermediates in Organosilicon Chemistry; and Section IV, Silicon Polymers and Other Silicon-based Materials.

It is not practicable to attempt to present here assessments of the 33 individual contributions, and in picking out possible highlights a reviewer is inevitably attracted to the articles falling in his own areas of special

interest. Thus in Section II, I was struck particularly by J. Schraml's account of 'Steric factors in ^{29}Si chemical shifts', a phenomenon of which I had been previously unaware, and one that should be drawn particularly to the attention of organic chemists since, for example, the effects can be utilized for determination of the structures of trimethylsilylated steroids. It is of interest that the first two articles in this section both deal with compounds containing so-called 'supersilyl' groups; however, it is unfortunate that in the first, by N. Wiberg, this term denotes a tri-*t*-butylsilyl group whereas in the second, by H. Bock and his colleagues, it denotes the tri(trimethylsilyl)silyl group! If I had to suggest which of these usages should be abandoned it would be the former, since it seems to have little advantage over the correct chemical name that has been used without ambiguity for 50 years. However, for the $(\text{Me}_3\text{Si})_3\text{Si}$ group my preference would be for the shorter and simpler 'sisyl' in view of the wide acceptance of the term 'trisyl' for the corresponding carbon-centred group $(\text{Me}_3\text{Si})_3\text{C}$.

In Section III, I liked particularly A. R. Bassindale's article entitled 'Coordination and Reactivity in Organosilicon Chemistry', which brings out clearly the great complexity of the mechanisms of nucleophilic substitution at silicon, and concludes with the words, "All observations on mechanisms in silicon chemistry should be tempered by the knowledge that silicon exhibits, in one situation or another, almost all known mechanistic pathways. The major rule in mechanistic organosilicon chemistry is 'seek and you will find'."

In Section IV, I was attracted by J. W. White's survey of 'Recent Achievements in Industrial Silicon Polymer Science', which provides a well-written outline of the state of knowledge of silicon-based polymers with actual or potential industrial uses; it would provide an excellent brief introduction for newcomers to the field. Since in his article Professor Rochow expresses scepticism about the possibility of obtaining useful organosilicon nitrogen polymers (a view I advanced myself in my 1960 book), it is noteworthy that Dr White's account includes one such species, although it is not used directly as such but for production of stable silicon carbide–carbon composites suitable for a variety of fabrication techniques and moulding applications.

As with most compilations of papers given at symposia, the value of this one is limited by the fact that all or almost all the new material will have since been published elsewhere. The book will not be attractive to individual purchasers, but in libraries it could serve as a useful introduction to the main areas of activity in organosilicon chemistry in the mid-1990s, with the important exception that the vast field of the use of organosilicon compounds in organic synthesis is hardly touched upon.

The book has a rather better subject index than is usually found these days in such compilations.

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