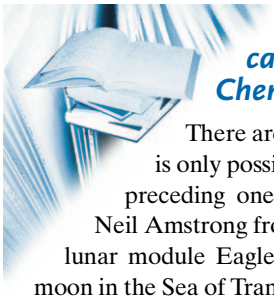

Reagents for Radical and Radical Ion Chemistry

There are moments when one step is only possible because it follows the preceding ones, such as that taken by Neil Amstrong from the landing pad of the lunar module Eagle onto the surface of the moon in the Sea of Tranquility. Although it is this particular moment that will become important, contributions from others that helped to pave the road to achievement must, for factual accuracy, be honored to a similar degree. Without visions, creativity, financial support, and a plethora of highly competent idealists, moments like the first landing on the moon cannot become reality.

In a similar way, the 11th book of the series *Handbook of Reagents for Organic Synthesis* reflects the history of free radical chemistry, from the days of Gomberg and Wieland to the development by Hass, McBee, and Weber of the selectivity rules for gas-phase chlorination of alkanes and to the decade of sustainable selective synthesis using free radical intermediates. The volume is based on results and data originating from many groups worldwide over a number of generations. It merits its place next to the other published volumes of the series, through the consistent implementation of the underlying concept. The 722-page volume is designed to serve as a reference source covering the chemistry of radical progenitors, mediators, trapping reagents, initiators, and metal compounds for the control of selectivity. The chosen concept does not exclude overlap between individual topics, but in fact there are relatively few instances of multiple descriptions.

The contents of the book are accessible through an alphabetical index of topic headings, a subject index, and a formula index. In particular, the subject index has been compiled with a high degree of technical competence and care. I found few inconsistencies or gaps. The selection of cross-references has been made with skill and awareness of the needs of the user. For example, a reader seeking information about tin compounds for synthetic or kinetic applications will be directed not only to a page containing valuable hints for handling the reagents but also to one about separating troublesome tin residues after the reaction. Further cross-references will guide the reader to pages that give up-to-date and in-depth information about alternative tin-free procedures.

Articles from the original version of the EROS series have been updated, and some have received two updates. In accordance with the standards defined for the series, all the contributions have been written by experts in their specialist areas.

One of the inside pages of the cover contains a comprehensive list of abbreviations. The inside of the back cover could have been used in a similar way, possibly for a compilation of methods for generating radicals from compound classes covered in the book or of useful rate constants.

An interesting feature is the listing of selected monographs and articles related to the aspects "General and Physical Organic Aspects", "Radical Anion Chemistry", "Radical Cation Chemistry", and "Neutral Radical Chemistry". Although the basic idea is good, it is not clear who is most likely to find this compilation useful. Free radical chemists will go through the list and affirm the selections with a nod. However, those who are less familiar with the subject may not be aware that many important publications are missing. On the other hand, as it is not the intention of the handbook to impart principles of radical chemistry, the selection can perhaps be justified in spite of the concern. From my point of view, it would have been helpful to separate citations under monographs, reviews, and original contributions, with a further subdivision into specialized fields of radical chemistry. This approach would have been particularly useful for those who, above all, seek rapid information.

Although the information collected in the book has been available online for some time, this book belongs in every chemistry library. Readers who have held the book in their hands and reflected on its contents will not return it to the shelf without revising any prejudice that free radicals are difficult-to-control intermediates (if there are still any who hold that view). Although the book was conceived as a reference work, I have been reading the illustrative articles night after night, by following the cross-references. This reveals an amazing number of transformations (reactivities) and their applications in stereoselective synthesis. The progress in this discipline within the last decade has been enormous, and it is described in summary form in the present volume. However, reading the book inevitably raises the question of why radical reactions are not given as much importance as ionic transformations in organic chemistry teaching courses. If they were, synthetic chemists would make greater use of radical reactions when planning syntheses of chiral target molecules. Antiquated views that their significance is limited to explaining the gas-phase chlorination of methane or butane would then be consigned to the history books. This book, skillfully edited by David Crich, makes an important step in that direction.

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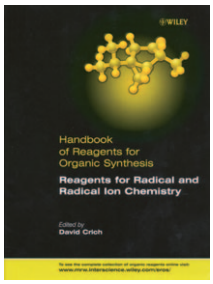

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