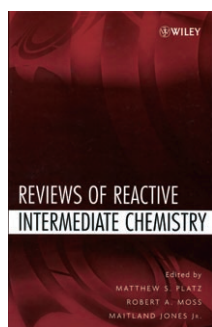




### Reviews of Reactive Intermediate Chemistry



Edited by Matthew S. Platz, Robert A. Moss, and Maitland Jones. John Wiley & Sons, Hoboken 2007. 472 pp., hardcover € 99.90.—ISBN 978-0-471-73166-5

A second title for this book published recently by Wiley-Interscience is “New Insights into Reactive Intermediates that Can Help You Design New Reactions”. The volume is intended as a supplement to the book *Reactive Intermediate Chemistry*, which was edited by the same experienced team: Matthew S. Platz, Robert A. Moss, and Maitland Jones, Jr. Like the previous work, this too is essentially a collection of reviews of important topic areas and methods of physical organic chemistry, although this one also touches on some related topics in the biosciences (“The Chemical Reactions of DNA—Damage and Degradation”) and theoretical chemistry (“Conical Intersection Species as Reactive Intermediates”).

The book is divided into two parts, “Reactive Intermediates” and “Methods and Applications”. The first part, the shorter one, consists of two review articles, entitled “Tetrahedral Intermediates Derived from Carbonyl Compounds” and “Silicon-, Germanium-, and Tin-Centered Cations, Radicals, and Anions”. The former one presents a very nice systematic discussion of

the role of tetrahedral intermediates in the reactions of carbonyl compounds.

The second, longer, part of the book begins with chapters on various modern methods of physical organic chemistry, such as time-resolved resonance Raman spectroscopy, time-resolved infrared spectroscopy, and the application of mass spectrometry techniques to the characterization of highly reactive molecules. Although these chapters do not provide introductions to help the reader towards mastering these complicated techniques (which anyway would not be a sensible aim for a volume of this kind), they will at least enable the reader to evaluate the potential of the methods described. Moreover, each chapter ends with a list of recommended literature for further reading, which is certainly helpful for readers who want to explore the subjects in greater depth. The subsequent chapters of the book describe applications of the various methods to investigations of specific topical problems, such as “Reactive Intermediates in Combustion”, “Reactive Intermediates in Crystals”, the previously mentioned review article on damage to DNA caused by reactive intermediates, and one on conical intersection species, ending with a very nice detailed review article on the role of quantum-mechanical tunneling in the chemistry of reaction intermediates.

Like almost every other book, this one is not entirely free of errors. To mention two examples: benzophenone is a very unsuitable precursor molecule for the photochemical synthesis of diphenylcarbene (Murray and co-workers used diphenyldiazomethane), and although the photolysis of santonin in the crystalline phase does indeed give a highly unstable cyclopentadienone derivative, this dimerizes spontaneously (pp. 272, 273). However, I found no other factual errors.

I certainly recommend that one should buy this book, especially to be used together with *Reactive Intermediate Chemistry*, which is also published by Wiley-Interscience. The two books in combination should provide everybody interested in organic chemistry and related fields with important and stimulating ideas—exactly in the way descri-

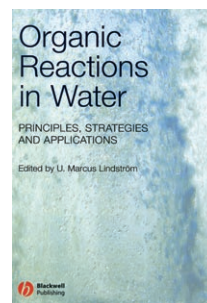
bed by the second title mentioned at the beginning of this review.

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### Organic Reactions in Water



Edited by U. Marcus Lindström. Blackwell, Oxford 2007. 414 pp., hardcover € 99.50.—ISBN 978-1-4051-3890-1

Organic reactions in water have attracted increasing interest in the last few decades, and they have become an important alternative for many types of reactions. That popularity is based firstly on the cheapness and environmentally benign properties of this solvent, but also on some special benefits with regard to reaction rates and selectivity. This book is not original in its choice of subject, but its structure gives it a unique character. It consists of 12 more or less independent chapters in which outstanding experts discuss problems in the area of chemical reactions in water, some of which are already well known and others that are highly topical today. The youthful editor proves himself to be a good “overview man”.

The book begins with a sort of self-portrait: Ronald Breslow, a pioneer in the area of organic chemistry in water, reviews his research over a period of 50 years, and in that context offers an insight into the interplay between system and chance as a route to understanding. Especially for interested younger readers, this can serve as more than just a historical reminiscence.

The second chapter (by J. B. F. N. Engberts) is devoted to the structure and properties of water, and aims to give an insight into the special characteristics