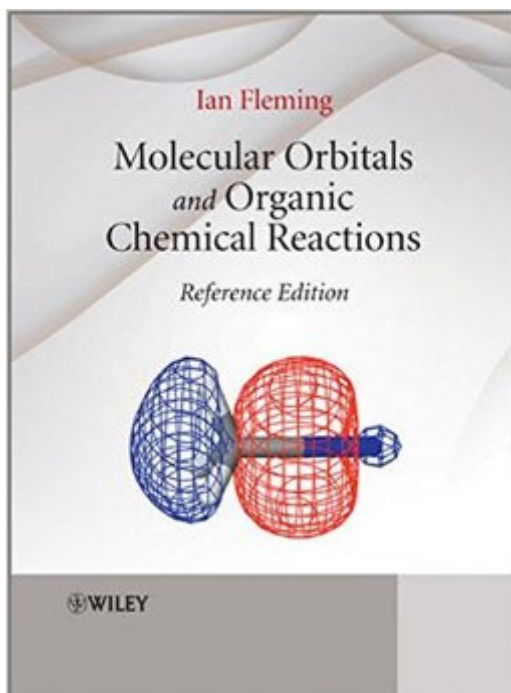


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# Molecular Orbitals And Organic Chemical Reactions: Reference Edition



## Synopsis

Winner of the PROSE Award for Chemistry & Physics 2010 Acknowledging the very best in professional and scholarly publishing, the annual PROSE Awards recognise publishers' and authors' commitment to pioneering works of research and for contributing to the conception, production, and design of landmark works in their fields. Judged by peer publishers, librarians, and medical professionals, Wiley are pleased to congratulate Professor Ian Fleming, winner of the PROSE Award in Chemistry and Physics for *Molecular Orbitals and Organic Chemical Reactions*. Molecular orbital theory is used by chemists to describe the arrangement of electrons in chemical structures. It is also a theory capable of giving some insight into the forces involved in the making and breaking of chemical bonds – the chemical reactions that are often the focus of an organic chemist's interest. Organic chemists with a serious interest in understanding and explaining their work usually express their ideas in molecular orbital terms, so much so that it is now an essential component of every organic chemist's skills to have some acquaintance with molecular orbital theory. *Molecular Orbitals and Organic Chemical Reactions* is both a simplified account of molecular orbital theory and a review of its applications in organic chemistry; it provides a basic introduction to the subject and a wealth of illustrative examples. In this book molecular orbital theory is presented in a much simplified, and entirely non-mathematical language, accessible to every organic chemist, whether student or research worker, whether mathematically competent or not. Topics covered include: Molecular Orbital Theory Molecular Orbitals and the Structures of Organic Molecules Chemical Reactions – How Far and How Fast Ionic Reactions – Reactivity Ionic Reactions – Stereochemistry Pericyclic Reactions Radical Reactions Photochemical Reactions This expanded Reference Edition of *Molecular Orbitals and Organic Chemical Reactions* takes the content and the same non-mathematical approach of the Student Edition, and adds extensive extra subject coverage, detail and over 1500 references. The additional material adds a deeper understanding of the models used, and includes a broader range of applications and case studies. Providing a complete in-depth reference for a more advanced audience, this edition will find a place on the bookshelves of researchers and advanced students of organic, physical organic and computational chemistry. The student edition of *Molecular Orbitals and Organic Chemical Reactions* presents molecular orbital theory in a simplified form, and offers an invaluable first textbook on this important subject for students of organic, physical organic and computational chemistry. Further information can be viewed [here](#). "These books are the result of years of work, which began as an attempt to write a second edition of my 1976 book *Frontier Orbitals and Organic Chemical Reactions*. I wanted to give a rather more thorough introduction to molecular orbitals, while maintaining my focus on the

organic chemist who did not want a mathematical account, but still wanted to understand organic chemistry at a physical level. I'm delighted to win this prize, and hope a new generation of chemists will benefit from these books." -Professor Ian Fleming

## Book Information

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## Customer Reviews

Out of all the "graduate level" textbooks I've searched for and encountered, Fleming's "Molecular Orbitals and Organic Chemical Reactions" is, in my opinion, the very best a graduate student/lecturer/researcher currently has access too. I should elaborate greatly on that, but put simply the fundamental understanding of modern organic chemistry necessary is provided in this relatively short book. In other words, buy it--- the content and knowledge the book provides (I think) most committee members would expect you to gain/know/understand from your first year and on to your PhD candidacy exam. Undoubtedly then, this book is a very useful asset to your chemical-library. Of course the reading of primary literature and utilizing other sources is inevitable. The text may be disappointing to those looking for elegant synthetic examples presented throughout(\*), but will most certainly please those ultimately faced with learning the background absolutely essential for planning and understanding complex organic synthesis. The outline and flow of the book is very appropriately planned and reads as if you were in Fleming's lecture course. The only complaint I have is the illustrations of structures and orbitals aren't as beautifully drawn (or large) compared to his classic Frontier Orbitals & Organic Chemical Reactions (1976). Also, the ever increasing proper use of color (cf. Kurti & Czako's

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