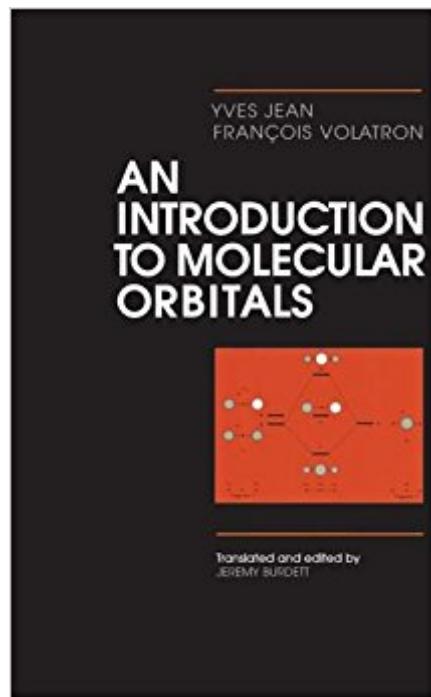


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An Introduction To Molecular Orbitals



Synopsis

This text for advanced undergraduate and graduate students guides the reader through a smooth progression from the most elementary ideas of molecular orbital theory to an understanding of the electronic structure, geometry, and reactivity of large molecules. It starts with simple molecules and proceeds to relatively large organometallic complexes. The slant is theoretical, but in the last chapter the authors strengthen the link between theory and experiment. Focusing on basic concepts, the authors take a qualitative approach, which enables this text to fill a void in the undergraduate curriculum. The book is intended as a core or supplementary text in an advanced chemistry course.

Book Information

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Customer Reviews

This book introduces the ideas behind electronic structures and how these structures affect the overall molecular orbitals. A substantial content of this book discusses mechanics of assembling reasonable molecular orbitals for different geometries. Begin with the periodic trends of atoms, the treatment MO progresses to many-electrons systems and complicated molecules. It also emphasizes the role of symmetry in forming appropriate (allowed) molecular orbitals. The second-third of the book discusses the use of fragment orbital method in assembling MO for linear, triangular, tetrahedral, and hexagonal system. The text concludes with application of MO to chemical reactivity pattern. Examples include cycloaddition, aromatic transition state, conjugated pi system and the Markovnikov's Rule. This book would be appropriate for students who have finished

one year of organic chemistry and at least one semester of inorganic chemistry that focuses on chemical structure and bonding. Not an easy text for first year student.

Most undergraduate chemistry courses talk about MO, but they really don't care the audience. "The rest is silence." But this kindly written book by Jean, literally a student-oriented book, says not so much things, but we can talk about MO in effect. If you really want to know what your professor is saying in your chemistry class, this book is indispensable! Without mathematics, you can get the feeling for MO. Answer to excercise is a wonderful bonus, too.

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