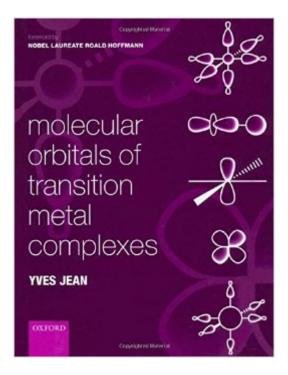
The book was found

# Molecular Orbitals Of Transition Metal Complexes





## Synopsis

This book starts with the most elementary ideas of molecular orbital theory and leads the reader progressively to an understanding of the electronic structure, geometry and, in some cases, reactivity of transition metal complexes. The qualitative orbital approach, based on simple notions such as symmetry, overlap and electronegativity, is the focus of the presentation and a substantial part of the book is associated with the mechanics of the assembly of molecular orbital diagrams. The first chapter recalls the basis for electron counting in transition metal complexes. The main ligand fields (octahedral, square planar, tetrahedral, etc.) are studied in the second chapter (sigma interactions) and the structure of the "d block" is used to trace the relationships between the electronic structure and the geometry of the complexes. The third chapter studies the change in analysis when the ligands have pi-type interactions with the metal. All these ideas are then used in the fourth chapter to study a series of selected applications of varying complexity (structure, reactivity). The fifth chapter deals with the "isolobal analogy" which points out the resemblance between the molecular orbitals of inorganic and organic species and provides a bridge between these two subfields of chemistry. The last chapter is devoted to a presentation of basic Group Theory with applications to some of the complexes studied in the earlier chapters.

### **Book Information**

Hardcover: 263 pages Publisher: Oxford University Press; 1 edition (June 2, 2005) Language: English ISBN-10: 0198530935 ISBN-13: 978-0198530930 Product Dimensions: 9.8 x 0.8 x 7.5 inches Shipping Weight: 1.6 pounds (View shipping rates and policies) Average Customer Review: 4.3 out of 5 stars Â See all reviews (3 customer reviews) Best Sellers Rank: #1,447,274 in Books (See Top 100 in Books) #24 in Books > Science & Math > Chemistry > Organic > Organometallic Compounds #73 in Books > Science & Math > Chemistry > Physical & Theoretical > Quantum Chemistry #208 in Books > Science & Math > Physics > Nuclear Physics > Atomic & Nuclear Physics

#### **Customer Reviews**

This book was assigned for my introductory inorganic chemistry course at Caltech. Its strong points are that it covers most common inorganic complex shapes and derives their MO diagrams in a

simple and easy-to-follow way. The exercises are also relatively well-written and contain answers. The caveat is that you have to do some work on the side to understand what is going on, and some diagrams could be better listed. For example, the LGOs are shown 150+ pages away (in the appendices) from where their relevant groups are discussed, and a brief introduction to the Huckel method would have been appreciated. The source of character tables could have been explained a bit more clearly as well, and there is little to no underlying derivation of the group theory (the words dihedral group, etc. are never mentioned). But all in all, it's an OK introduction.

I highly recommend this book if you try to have insights into the details of structure and reactivity in organometallic chemistry and catalysis. Very helpful for further understanding of MO theory.

The book arrived in a timely manor and was in excellent condition. The price was good. I would recommend to others using the text for a class, or looking for a good reference book.

#### Download to continue reading...

Molecular Orbitals of Transition Metal Complexes Metal-Ligand Multiple Bonds: The Chemistry of Transition Metal Complexes Containing Oxo, Nitrido, Imido, Alkylidene, or Alkylidyne Ligands Organometallics 1: Complexes with Transition Metal-Carbon \*s-bonds (Oxford Chemistry Primers) (Vol 1) An Introduction to Molecular Orbitals Molecular Orbitals and Organic Chemical Reactions: Reference Edition Metalloporphyrins Catalyzed Oxidations (Catalysis by Metal Complexes) Photochemistry and Photophysics of Metal Complexes (Modern Inorganic Chemistry) Poverty in Transition and Transition in Poverty: Recent Developments in Hungary, Bulgaria, Romania, Georgia, Russia, and Mongolia The Mechanisms of Reactions at Transition Metal Sites (Oxford Chemistry Primers) Transition Metal Sulphides: Chemistry and Catalysis (Nato Science Partnership Subseries: 3) Landmarks in Organo-Transition Metal Chemistry: A Personal View (Profiles in Inorganic Chemistry) Metal Detecting: Without A Detector: How To Find Treasure When You Can't Use Your Metal Detector (Gold, Coins & Jewelry) The Metal Lathe (Build Your Own Metal Working) Shop From Scrap Series Book 2) Blacksmithing: 15 Modern DIY Metal Projects for Beginners: (Blacksmithing, Metal Work) (Knife Making, Bladesmith) Learn to Weld: Beginning MIG Welding and Metal Fabrication Basics - Includes techniques you can use for home and automotive repair, metal fabrication projects, sculpture, and more Building Fences of Wood, Stone, Metal, & Plants: Making Fence with Wood, Metal, Stone and Living Plants Manual De Torno Para Metal: Torno Para Metal (Coleccion Como Hacer Bien Y Facilmente) (Spanish Edition) Metal Ions in Biological Systems: Volume 29: Biological Properties of Metal Alkyl Derivatives 7 More Psychological Complexes That

You Didn't Know Existed: Cinderella Complex, Superman Complex, Napoleon Complex, Messiah Complex, Phaedra Complex, ... Complex (Transcend Mediocrity Book 125) The Chemistry of Macrocyclic Ligand Complexes (Cambridge Texts in Chemistry and Biochemistry)

<u>Dmca</u>