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KEY=CHEMISTRY - HERRERA COLE

The Jahn-Teller Effect and Vibronic Interactions in Modern Chemistry

Springer Science & Business Media The first half of the title of this book may delude the uninitiated reader. The term "Jahn-Teller effect," taken literally, refers to a special effect inherent in particular molecular systems. Actually, this term implies a new approach to the general problem of correlations between the structure and properties of any molecular polyatomic system, including solids. Just such a new approach, or concept (in some sense, a new outlook or even a new way of thinking), which leads not to one special effect but to a series of different effects and laws, is embodied in the many (~ 4000) studies devoted to the investigation and application of the Jahn-Teller effect. The term "vibronic interactions" seems to be most appropriate to the new concept, and this explains the origin of the second half of the title. The primary objective of this book is to present a systematic development of the concept of vibronic interactions and its applications, and to illustrate its possibilities and significance in modern chemistry. In the first three chapters (covering about one-third of the book) the theoretical background of the vibronic concept and Jahn-Teller effect is given. The basic ideas are illustrated fully, although a comprehensive presentation of the theory with all related mathematical deductions is beyond the scope of this book. In the last three chapters the applications of theory to spectroscopy, stereochemistry and crystal chemistry, reactivity, and catalysis, are illustrated by a series of effects and laws.

Holt McDougal Modern Chemistry

Modern Chemistry

Handbook of modern chemistry, inorganic and organic

Principles of Modern Chemistry

Cengage AU Long considered the standard for honors and high-level mainstream general chemistry courses, **PRINCIPLES OF MODERN CHEMISTRY** continues to set the standard as the most modern, rigorous, and chemically and mathematically accurate text on the market. This authoritative text features an "atoms first" approach and thoroughly revised chapters on Quantum Mechanics and Molecular Structure (Chapter 6), Electrochemistry (Chapter 17), and Molecular Spectroscopy and Photochemistry (Chapter 20). In addition, the text utilizes mathematically accurate and artistic atomic and molecular orbital art, and is student friendly without compromising its rigor. End-of-chapter study aids focus on only the most important key objectives, equations and concepts, making it easier for students to locate chapter content, while applications to a wide range of disciplines, such as biology, chemical engineering, biochemistry, and medicine deepen students' understanding of the relevance of chemistry beyond the classroom.

Introductory Chemistry: An Active Learning Approach

Cengage Learning Teach the course your way with **INTRODUCTORY CHEMISTRY, 6e**. Available in multiple formats (standard paperbound edition, loose-leaf edition, digital MindTap Reader edition, and a hybrid edition, which includes OWLv2), this text allows you to tailor the order of chapters to accommodate your particular needs, not only by presenting topics so they never assume prior knowledge, but also by including any necessary preview or review information needed to learn that topic. The authors' question-and-answer presentation, which allows students to actively learn chemistry while studying an assignment, is reflected in three words of advice and encouragement that are repeated throughout the book: Learn It Now! This edition integrates new technological resources, coached problems in a two-column format, and enhanced art and photography, all of which dovetail with the authors' active learning approach. Even more flexibility is provided in the new MindTap Reader edition, an electronic version of the text that features interactivity, integrated media, additional self-test problems, and clickable key terms and answer buttons for worked examples. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

The Basics of Chemistry

Greenwood Publishing Group This book covers the basic concepts found in introductory high-school and college chemistry courses.

Modern Alchemy

Occultism and the Emergence of Atomic Theory

Oxford University Press on Demand Alchemists are generally held to be the quirky forefathers of science, blending occultism with metaphysical pursuits. This text challenges the widespread dismissal of alchemy as a largely insignificant historical footnote to science.

An Introduction to Chemistry

Benjamin-Cummings Publishing Company Bishop's text shows students how to break the material of preparatory chemistry down and master it. The system of objectives tells the students exactly what they must learn in each chapter and where to find it.

Modern Chemistry

Section Reviews

Physical Chemistry from Ostwald to Pauling

The Making of a Science in America

Princeton University Press John Servos explains the emergence of physical chemistry in America by presenting a series of lively portraits of such pivotal figures as Wilhelm Ostwald, A. A. Noyes, G. N. Lewis, and Linus Pauling, and of key institutions, including MIT, the University of California at Berkeley, and Caltech. In the early twentieth century, physical chemistry was a new hybrid science, the molecular biology of its time. The names of its progenitors were familiar to everyone who was scientifically literate; studies of aqueous solutions and of chemical thermodynamics had transformed scientific knowledge of chemical affinity. By exploring the relationship of the discipline to industry and to other sciences, and by tracing the research of its leading American practitioners, Servos shows how physical chemistry was eclipsed by its own offspring--specialties like quantum chemistry.

AP Chemistry For Dummies

John Wiley & Sons Gearing up for the AP Chemistry exam? AP Chemistry For Dummies is packed with all the resources and help you need to do your very best. This AP Chemistry study guide gives you winning test-taking tips, multiple-choice strategies, and topic guidelines, as well as great advice on optimizing your study time and hitting the top of your game on test day. This user-friendly guide helps you prepare without perspiration by developing a pre-test plan, organizing your study time, and getting the most out of your AP course. You'll get help understanding atomic structure and bonding, grasping atomic geometry, understanding how colliding particles produce states, and much more. Two full-length practice exams help you build your confidence, get comfortable with test formats, identify your strengths and weaknesses, and focus your studies. Discover how to Create and follow a pretest plan Understand everything you must know about the exam Develop a multiple-choice strategy Figure out displacement, combustion, and acid-base reactions Get familiar with stoichiometry Describe patterns and predict properties Get a handle on organic chemistry nomenclature Know your way around laboratory concepts, tasks, equipment, and safety Analyze laboratory data Use practice exams to maximize your score AP Chemistry For Dummies gives you the support, confidence, and test-taking know-how you need to demonstrate your ability when it matters most.

A History of Science (Complete)

Library of Alexandria

Foundations of Modern Physics

Cambridge University Press Nobel Laureate Steven Weinberg explains the foundations of modern physics in historical context for undergraduates and beyond.

Water's healing powers: Religion or Science?

David Broward In all the ancient spiritual texts water is depicted as the Source of all Creation from which everything else came into existence. All over the world, in our forefathers' traditions and rituals water is associated with the Primordial substance that has the power to heal, give us strength, and take away the sins. At the same time, modern scientific discoveries proved that our ancestors' beliefs, traditions, and rituals are a legacy and not some simple bet-time stories. Learn how your Emotions, Thoughts, and Intentions are influencing your Life, carried by the life-giving substance we call Water. "This book covers a world of topics about water, from different religious texts, the chemistry and physics of H₂O, studies over the past century on observations of fresh water, homeopathy, crystal structure, and different vibrations and forms of water, and back to religion. I learned so much." (Amazon customer review) "A thorough, well-researched discussion of the significance of water--not only as a fundamental element of our biology and the structure of our planet and the universe--but also its metaphysical, philosophical, and theological importance historically and cross-culturally." (Amazon customer review)

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Rex Bookstore, Inc.

CliffsComplete Frankenstein

Houghton Mifflin Harcourt In the CliffsComplete guides, the novel's complete text and a glossary appear side-by-side with coordinating numbered lines to help you understand unusual words and phrasing. You'll also find all the commentary and resources of a standard CliffsNotes for Literature. CliffsComplete Frankenstein is certainly Mary Shelley's greatest literary achievement and one of the most complex literary works of all time. Unlike most Romantic writers, Mary Shelley seems interested in the dark, self-destructive side of human reality and the human soul. Discover how Dr. Frankenstein's creation impacts everyone he meets — and save yourself valuable studying time — all at once. Enhance your reading of Frankenstein with these additional features: A summary and insightful commentary for each chapter Bibliography and historical background on the author, Mary Shelley A look at the historical context and structure of the novel Discussions on the novel's symbols and themes A character map that graphically illustrates the relationships among the characters Review questions, a quiz, discussion topics (essay questions), activity ideas A ResourceCenter full of books, articles, films, and Internet sites Streamline your literature study with all-in-one help from CliffsComplete guides!

The Apothecary's Curse

Pyr In Victorian London, the fates of physician Simon Bell and apothecary Gaelan Erceldoune entwine when Simon gives his wife an elixir created by Gaelan from an ancient manuscript. Meant to cure her cancer, it kills her. Suicidal, Simon swallows the remainder--only to find he cannot die. Five years later, hearing rumors of a Bedlam inmate with regenerative powers like his own, Simon is shocked to discover it's Gaelan. The two men conceal their immortality, but the only hope of reversing their condition rests with Gaelan's missing manuscript. When modern-day pharmaceutical company Transdiff Genomics unearths diaries describing the torture of Bedlam inmates, the company's scientists suspect a link between Gaelan and an unnamed inmate. Gaelan and Transdiff Genomics geneticist Anne Shawe are powerfully drawn to each other, and her family connection to his manuscript leads to a stunning revelation. Will it bring ruin or redemption? From the Trade Paperback edition.

Reactivity in Confined Spaces

Royal Society of Chemistry This title combines classical host: guest chemistry with catalysis, reactivity and modern supramolecular chemistry

Lecture Notes on Solution Chemistry

World Scientific This book emphasises those features in solution chemistry which are difficult to measure, but essential for the understanding of both the qualitative and the quantitative aspects. Attention is paid to the mutual influences between solute and solvent, even at extremely small concentrations of the former. The described extension of the molecular concept leads to a broad view ? not by a change in paradigm ? but by finding the rules for the organizations both at the molecular and the supermolecular level of liquid and solid solutions.

Chemical News and Journal of Industrial Science

The Chemical News and Journal of Physical Science

KY HS Test Prac Wkbks W/Corr Sci 2001

Saraswati Chemistry Class 09

New Saraswati House India Pvt Ltd A text book on Chemistry

Modern Carbonyl Chemistry

John Wiley & Sons The carbonyl group is undoubtedly one of the most important functional groups in organic chemistry, both in its role as reactive center for synthesis or derivatisation and as crucial feature for special structural or physiological properties. Vast and profound progress has been made in all aspects modern carbonyl chemistry. These achievements are, however, rather dispersed in the literature and it is often not easy for the researcher obtain a comprehensive overview of a relevant topic. Modern Carbonyl Chemistry overcomes this inconvenience by collating the information for appropriate themes. In this work internationally renowned experts and leaders in the field have surveyed recent aspects and modern features in carbonyl chemistry, such as cascade-reactions, one-pot-syntheses, recognition, or site differentiation.

Serious Glance At Chemistry, A: Basic Notions Explained

World Scientific Publishing Company This book primarily focuses on what is generally taught in the first two years of an undergraduate university chemistry program. Yet, it is suitable not just for students, but professionals in fields where a basic background in chemistry is required as well. Topics in electronic structure of atoms and molecules, biochemistry, chemical reactions, energy production and even modern topics such as quantum chemistry and molecular orbital theory are covered comprehensively, while eschewing the more complex mathematics and technicalities. The authors, thus, place much emphasis on learning concepts in this highly accessible work. At the same time, they have taken care to highlight the pivotal role chemistry has to play in the ongoing challenge of climate change. As the world continues to search for alternative fuel and energy sources, this book discusses the relative merits of the latest trends in alternative energy production, and allows readers to draw their own conclusions on their viability. Clearly, this is a remarkable textbook, unique in its clear presentation of both basic and modern concepts in chemistry. Any reader with a basic understanding of high-school chemistry will find their understanding of the subject deepened, and their perspective broadened./a

Reviews in Computational Chemistry

John Wiley & Sons THIS VOLUME, LIKE THOSE PRIOR TO IT, FEATURES CHAPTERS BY EXPERTS IN VARIOUS FIELDS OF COMPUTATIONAL CHEMISTRY. TOPICS COVERED IN VOLUME 20 INCLUDE VALENCE THEORY, ITS HISTORY, FUNDAMENTALS, AND APPLICATIONS; MODELING OF SPIN-FORBIDDEN REACTIONS; CALCULATION OF THE ELECTRONIC SPECTRA OF LARGE MOLECULES; SIMULATING CHEMICAL WAVES AND PATTERNS; FUZZY SOFT-COMPUTING METHODS AND THEIR APPLICATIONS IN CHEMISTRY; AND DEVELOPMENT OF COMPUTATIONAL MODELS FOR ENZYMES, TRANSPORTERS, CHANNELS, AND RECEPTORS RELEVANT TO ADME/TOX. FROM REVIEWS OF THE SERIES "Reviews in Computational Chemistry remains the most valuable reference to methods and techniques in computational chemistry." -JOURNAL OF MOLECULAR GRAPHICS AND MODELING "One cannot generally do better than to try to find an appropriate article in the highly successful Reviews in Computational Chemistry. The basic philosophy of the editors seems to be to help the authors produce chapters that are complete, accurate, clear, and accessible to experimentalists (in particular) and other non-specialists (in general)." -JOURNAL OF THE AMERICAN CHEMICAL SOCIETY

Traffic and Granular Flow ' 03

Springer Science & Business Media These proceedings are the fifth in the series Traffic and Granular Flow, and we hope they will be as useful a reference as their predecessors. Both the realistic modelling of granular media and traffic flow present important challenges at the borderline between physics and engineering, and enormous progress has been made since 1995, when this series started. Still the research on these topics is thriving, so that this book again contains many new results. Some highlights addressed at this conference were the influence of long range electric and magnetic forces and ambient fluids on granular media, new precise traffic measurements, and experiments on the complex decision making of drivers. No doubt the "hot topics" addressed in granular matter research have diverged from those in traffic since the days when the obvious analogies between traffic jams on highways and dissipative clustering in granular flow intrigued both communities alike. However, now just this diversity became a stimulating feature of the conference. Many of us feel that our joint interest in complex systems, where many simple agents, be it vehicles or particles, give rise to surprising and fascinating phenomena, is ample justification for bringing these communities together: Traffic and Granular Flow has fostered cooperation and friendship across the scientific disciplines.

Modern Nucleophilic Aromatic Substitution

John Wiley & Sons This book provides a comprehensive overview of nucleophilic aromatic substitutions, focusing on the mechanistic and synthetic features that govern these reactions. The first chapter presents a detailed mechanistic analysis of the factors determining the feasibility of S_NAr substitutions, providing decisive information to predict regioselectivity of many reactions and to define the conditions for concerted S_NAr processes. Reflecting the key role played by these species as intermediates in most S_NAr reactions, chapter

2 then discusses the chemistry of anionic sigma-complexes. Chapter 3 describes the concept of superelectrophilicity in SNAr substitutions, as it has recently emerged from the reactivity of strongly electron-deficient aromatic and heteroaromatic structures. The numerous synthetic applications are considered in depth in the chapters 4 and 5 that follow on intermolecular and intramolecular nucleophilic aromatic substitutions. Then, chapter 6 focuses on substitutions proceeding formally through displacement of a hydride ion, a hot topic in the field. The final chapter brings together concise yet comprehensive discussions surrounding SNAr photosubstitutions, radical substitutions, and ANRORC substitutions. Authored by a highly respected chemist who has contributed greatly to the field over the past two decades, this is a valuable information source for all organic chemists working in academia or the pharmaceutical and agrochemical industries.

Environmental Chemistry in Society, Second Edition

CRC Press Everyone can benefit from having some understanding of environmental science and the chemistry underlying issues such as global warming, ozone depletion, energy sources, air pollution, water pollution, and waste disposal. *Environmental Chemistry in Society, Second Edition* presents environmental science to the non-science student, specifically focusing on environmental chemistry, yet requiring no background in chemistry. This book is a self-contained text, offering all the information necessary for readers to understand the topics discussed. It provides a foundation in science, chemistry, and toxicology, including the laws of thermodynamics, chemical bonding, and environmental toxins. This information then allows readers to delve into environmental topics, such as energy in society, air quality, global atmospheric concerns, water quality, and solid waste management. The arrangement of the book allows instructors flexibility in how they present the material, with the crucial topics being covered first. This second edition had been updated throughout and contains the following revisions: Addition of a glossary of important terms Extensive revision of the discussion questions at the end of each chapter to require more critical thinking skills Updates to the environmental data The division of the foundational chapter on chemistry into two chapters, so each one is more palatable Coverage of fracking, the Fukushima nuclear disaster, and the 2010 Gulf oil spill The book provides a qualitative approach, presenting the chemistry of the environment in such a way that students who have little or no science background can gain understanding and appreciation of this important subject.

Modern Inorganic Synthetic Chemistry

Elsevier *Modern Inorganic Synthetic Chemistry, Second Edition* captures, in five distinct sections, the latest advancements in inorganic synthetic chemistry, providing materials chemists, chemical engineers, and materials scientists with a valuable reference source to help them advance their research efforts and achieve breakthroughs. Section one includes six chapters centering on synthetic chemistry under specific conditions, such as high-temperature, low-temperature and cryogenic, hydrothermal and solvothermal, high-pressure, photochemical and fusion conditions. Section two focuses on the synthesis and related chemistry problems of highly distinct categories of inorganic compounds, including superheavy elements, coordination compounds and coordination polymers, cluster compounds, organometallic compounds, inorganic polymers, and nonstoichiometric compounds. Section three elaborates on the synthetic chemistry of five important classes of inorganic functional materials, namely, ordered porous materials, carbon materials, advanced ceramic materials, host-guest materials, and hierarchically structured materials. Section four consists of four chapters where the synthesis of functional inorganic aggregates is discussed, giving special attention to the growth of single crystals, assembly of nanomaterials, and preparation of amorphous materials and membranes. The new edition's biggest highlight is Section five where the frontier in inorganic synthetic chemistry is reviewed by focusing on biomimetic synthesis and rationally designed synthesis. Focuses on the chemistry of inorganic synthesis, assembly, and organization of wide-ranging inorganic systems Covers all major methodologies of inorganic synthesis Provides state-of-the-art synthetic methods Includes real examples in the organization of complex inorganic functional materials Contains more than 4000 references that are all highly reflective of the latest advancement in inorganic synthetic chemistry Presents a comprehensive coverage of the key issues involved in modern inorganic synthetic chemistry as written by experts in the field

GENERAL BIOLOGY I

Molecules, Cells and Genes

Dog Ear Publishing **GENERAL BIOLOGY: Investigating Life** is an introductory level college biology textbook that provides students with an accessible and engaging look at the fundamentals of biology. Written for a two-term, undergraduate course of mixed majors and non-majors, this reader-friendly text is concept driven vs. terminology driven. That is, the text is based on the underlying concepts and principles of biology rather than strict memorization of terminology. Written in a student-centered, conversational style, this educational research-based textbook uniquely connects students and our society to living things from various perspectives—economic, ecologic, medical, and cultural, exploring how the biological world and human realm are intimately intertwined. End-of-chapter questions challenge students to think critically and creatively while incorporating science process skills and biological principles.

From Chemical Philosophy to Theoretical Chemistry

Dynamics of Matter and Dynamics of Disciplines, 1800-1950

Univ of California Press How did chemistry and physics acquire their separate identities, and are they on their way to losing them again? Mary Jo Nye has written a graceful account of the historical demarcation of chemistry from physics and subsequent reconvergences of the two, from Lavoisier and Dalton in the late eighteenth century to Robinson, Ingold, and Pauling in the mid-twentieth century. Using the notion of a disciplinary "identity" analogous to ethnic or national identity, Nye develops a theory of the nature of disciplinary structure and change. She discusses the distinctive character of chemical language and theories and the role of national styles and traditions in building a scientific discipline. Anyone interested in the history of scientific thought will enjoy pondering with her the question of whether chemists of the mid-twentieth century suspected chemical explanation had been reduced to physical laws, just as Newtonian mechanical philosophers had envisioned in the eighteenth century.

Issues in Specialized Chemical and Chemistry Topics: 2013 Edition

ScholarlyEditions *Issues in Specialized Chemical and Chemistry Topics: 2013 Edition* is a ScholarlyEditions™ book that delivers timely, authoritative, and comprehensive information about Magnetic Resonance. The editors have built *Issues in Specialized Chemical and Chemistry Topics: 2013 Edition* on the vast information databases of ScholarlyNews.™ You can expect the information about Magnetic Resonance in this book to be deeper than what you can access anywhere else, as well as consistently reliable, authoritative, informed, and relevant. The content of *Issues in Specialized Chemical and Chemistry Topics: 2013 Edition* has been produced by the world's leading scientists, engineers, analysts, research institutions, and companies. All of the content is from peer-reviewed sources, and all of it is written, assembled, and edited by the editors at ScholarlyEditions™ and available exclusively from us. You now have a source you can cite with authority, confidence, and credibility. More information is available at <http://www.ScholarlyEditions.com/>.

Traveling with the Atom

A Scientific Guide to Europe and Beyond

Royal Society of Chemistry *Traveling with the Atom* is a historical travel guide to the development of one of the most significant and enduring ideas in the history of humankind: the atomic concept. This history covers the notable places and landmarks commemorating this achievement, visiting homesteads, graveyards, laboratories, apartments, abbeys and castles, through picturesque rural villages and working class municipalities. From Montreal to Manchester, via some of the most elegant and romantic cities in Europe, *Traveling with the Atom* guides the reader on a trip through the lives and minds of the great thinkers who collectively unveiled the mystery of the atom. Fully illustrated and interspersed with intriguing and insightful notes throughout, this book is an ideal companion for the wandering scientist, their students, friends and companions or quintessential fireside reading for lovers of science and travel.

Fundamentals of Inorganic Chemistry

An Introductory Text for Degree Studies

Elsevier This work is a foundation course text for first and second year undergraduates in which description and understanding of inorganic chemistry are fully integrated. It covers the main underlying theoretical ideas, taking account of the level of mathematical ability among present-day students commencing university study. Each chapter provides "worked example" problems, supported by additional problem-exercises which test comprehension and serve for revision or self-study. Provides a foundation course text on the fundamentals of inorganic chemistry for first and second year undergraduates Integrates description and understanding of inorganic chemistry Each chapter includes "worked example problems"

Chemistry, Pharmacy and Revolution in France, 1777-1809

Routledge This book explores the history of pharmacy in France and its relationship to the discipline of chemistry as it emerged at the beginning of the nineteenth century. It argues that an appreciation of the history of pharmacy is essential to a full understanding of the constitution of modern science, in particular the discipline of chemistry. As such, it provides a novel interpretation of the chemical revolution (c.1770-1789) that will, no doubt, generate much debate on the place of the chemical arts in this story, a question that has hitherto lacked sufficient scholarly reflection. Furthermore, the book situates this analysis within the broader context of the French Revolution, arguing that an intimate and direct link can be drawn between the political upheavals and our vision of the chemical revolution. The story of the chemical revolution has usually been told by focusing on the small group of French chemists who championed Lavoisier's oxygen theory, or else his opponents. Such a perspective emphasises competing theories and interpretations of critical experiments, but neglects the challenging issue of who could be understood as practising chemistry in the eighteenth century. In contrast, this study traces the tradition of pharmacy as a professional pursuit that relied on chemical techniques to prepare medicines, and shows how one of the central elements of the chemical revolution was the more or less conscious disassociation of the new chemistry from this ancient chemical art.

The Scientific Imagination

With a New Introduction

Harvard University Press Using firsthand accounts gleaned from notebooks, interviews, and correspondence of such twentieth-century scientists as Einstein, Fermi, and Millikan, Holton shows how the idea of the scientific imagination has practical implications for the history and philosophy of science and the larger understanding of the place of science in our culture.

Color Studies

A&C Black *Color Studies* is a complete introduction to color theory and application for students in a broad range of design disciplines.

General Chemistry

Scientific Protocols for Fire Investigation

CRC Press *Scientific Protocols for Fire Investigation* provides comprehensive coverage from historical, developmental, current, and practical perspectives. The author, uniquely qualified with years of experience in both on-site investigations and lab analyses, provides a resource that is unparalleled in depth and focus. The book is distinctive in that it not