

## Book Reviews \*

**Quantum Chemistry. Classic Scientific Papers. World Scientific Series in 20th Century Chemistry. Volume 8.** Translated and edited by Hinne Hettema (University of Auckland). World Scientific: Singapore; River Edge, NJ; London; Hong Kong. 2000. xxxx + 478 pp. \$90.00. ISBN 981-02-2771-X

This book is a compilation of seminal papers published in Germany during the late 1920s and early 1930s that form the early basis of quantum chemistry. Its target audience is not only physical and theoretical chemists wishing to read these papers in their original, albeit translated forms, but also philosophers of science and scientists interested in the historical development of quantum theory. With this in mind, Hettema has attempted to make faithful translations, even going to the extent of reproducing formulas known to contain errors, which fortunately are enumerated in a brief technical introduction. A second, more extensive philosophical and historical introduction provides an overview of the scientific and cultural contexts in which the papers were written.

JA004781F

10.1021/ja004781f

**Chemistry of Atmospheres. An Introduction to the Chemistry of the Atmospheres of Earth, the Planets, and Their Satellites. Third Edition.** By Richard P. Wayne (University of Oxford). Oxford University Press: Oxford. 2000. xxx + 776 pp. \$57.95. ISBN 0-19-850375-X

This book takes a multidisciplinary approach to explain the basic principles of atmospheric chemistry. Indeed, the author's aim in writing the third edition was not just to introduce new developments in atmospheric chemistry, but to show "how the subject appeared as an even more unified and exciting one than it had before". Thus, the importance and interrelationship of atmospheric chemistry to other scientific disciplines, such as physics, geology, and biology, and to humankind are given due focus.

The subject matter is organized into nine chapters: Chemical Composition: a Preliminary Survey; Atmospheric Behaviour as Interpreted by Physics; Photochemistry and Kinetics Applied to Atmospheres; Ozone in Earth's Stratosphere; The Earth's Troposphere; Ions in the Atmosphere; The Airglow; Extraterrestrial Atmospheres; and Evolution and Change in Atmospheres and Climates. It is very well-referenced—each chapter, in fact, concludes with an extensive annotated bibliography—and should appeal to environmental and atmospheric scientists alike.

JA004780N

10.1021/ja004780n

**Methods in Molecular Biology. Volume 146. Mass Spectrometry of Proteins and Peptides.** Edited by John R. Chapman (Sale, Manchester, UK). Humana Press: Totowa, NJ. 2000. xiv + 538 pp. \$125.00. ISBN 0-896-03609-X

This is the second volume in this series to describe the application of mass spectrometric techniques to the analysis of protein and peptides. The latest in mass spectrometric instrumentation and new ionization techniques are covered, and their application to such complex problems as molecular interaction, ion structures, quantitation, and kinetics is discussed. As with all books in this series, each chapter focuses on a specific analytical problem and includes a Materials and Methods section that gives step-by-step instructions on the mass spectrometric technique associated with solving it. Additional technical information for each technique is provided in a Notes section, and literature references are given as well.

JA004779O

10.1021/ja004779o

**Metal–Organic and Organic Molecular Magnets.** Edited by P. Day (The Royal Institution of Great Britain) and A. E. Underhill (University College of North Wales). Royal Society of Chemistry: Cambridge. 1999. viii + 324 pp. £69.50. ISBN 0-85404-764-6

This book is the product of a discussion meeting in March 1999 organized by the Royal Society of Chemistry that brought together leading experts in the field of molecular-based magnetic compounds. Its 18 chapters cover all aspects of the subject, including both organic and inorganic magnets, the synthesis of magnetic materials from aqueous solution at ambient temperature, and novel methods—such as spin-muon-rotation—for studying molecular magnets, to name a few. The book concludes with the 1999 Bakerian Lecture on the molecular chemistry of magnets and superconductors. Each contribution is accompanied by references.

JA004773Z

10.1021/ja004773z

**Indirect Food Additives and Polymers: Migration and Toxicology.** By Victor O. Sheftel (Ministry of Health, State of Israel, Jerusalem). Lewis Publishers: Boca Raton, FL. 2000. xvi + 1304 pp. \$129.95. ISBN 1-56670-499-5.

This book collects toxicological data from the United States, Europe, and Russia to provide comprehensive information for nearly 2000 potential food contaminants found in the polymeric materials used in packaging of food and water. Basic scientific and toxicological data are listed for each chemical, as are the current U.S., European, and Russian regulations and standards when available.

JA004778W

10.1021/ja004778w

**Contemporary Boron Chemistry.** Edited by M. G. Davidson (University of Bath), Andrew K. Hughes, Todd B. Marder, and Ken Wade (University of Durham). Royal Society of Chemistry: Cambridge. 2000. xvi + 538 pp. \$199.00. ISBN 0-85404-835-9.

The nine chapters in this book were developed from lectures given at the IMEBORON X conference in Durham, UK, in July 1999. The 80 broad-ranging contributions are organized into the following sections: Applications to Polyolefin Catalysis; Materials and Polymers; Medicinal Applications; Cluster Synthesis; Carboranes; Metallaboranes; Metallaheteroboranes; Organic and Inorganic Chemistry of Mono- and Di-boron Systems; and Theoretical and Computational Studies. Most of the papers are accompanied by a list of references that is current through the late 1990s.

JA0047875

10.1021/ja0047875

**Phosphorus 2000. Chemistry, Biochemistry and Technology.** By D. E. C. Corbridge (Harrogate, UK). Elsevier: Amsterdam. 2000. x + 1258 pp. \$573.50. ISBN 0-444-82550-9.

*Phosphorus 2000* is a comprehensive reference book written with the intent to cover all aspects of phosphorus chemistry, from fundamentals to recent developments. The book opens with three chapters that discuss the history, distribution, and properties of phosphorus. These are followed by eight chapters that cover elemental phosphorus and different phosphorus compounds, such as carbophosphorus and azaphosphorus compounds, as well as biopolymers and biophosphorus chemistry. The concluding chapters focus on the applications of phosphorus compounds, special topics, and the analysis and characterization of phosphorus. An appendix that provides additional information about phosphorus, e.g., the nomenclature and hazards of phosphorus compounds, completes the book.

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\*Unsigned book reviews are by the Book Review Editor.