

Book Review

**Photochemistry and Photophysics of Coordination Compounds I. Topics in Current Chemistry, 280** Edited by Vincenzo Balzani (Università di Bologna, Italy) and Sebastiano Campagna (Università di Messina, Italy) Springer: Berlin, Heidelberg, New York. 2007. xiv + 274 pp. \$269.00. ISBN 978-3-540-73346-1.

Patrick E. Hoggard

*J. Am. Chem. Soc.*, **2008**, 130 (6), 2115-2116 • DOI: 10.1021/ja0770227

Downloaded from <http://pubs.acs.org> on February 8, 2009

**More About This Article**

---

Additional resources and features associated with this article are available within the HTML version:

- Supporting Information
- Access to high resolution figures
- Links to articles and content related to this article
- Copyright permission to reproduce figures and/or text from this article

[View the Full Text HTML](#)



**ACS Publications**  
High quality. High impact.

**Organic Reactions, Volume 69.** Editor-in-Chief: Larry E. Overman (University of California, Irvine). John Wiley & Sons, Inc.: Hoboken, NJ. 2007. viii + 704 pp. \$135.00. ISBN 978-0-470-22397-0.

This volume of *Organic Reactions* features the following two chapters: "Dioxirane Oxidations of Compounds Other Than Alkenes" by Adam, Zhao, and Jakka and "Electrophilic Fluorination with N–F Reagents" by Baudoux and Cahard. A Cumulative Chapter Titles by Volume, an Author Index for Volumes 1–69, and a Chapter and Topic Index for Volumes 1–69 complete the book.

JA711337Y

10.1021/ja711337y

**Corrosion Handbook: Corrosive Agents and Their Interaction with Materials. Volume 9: Potassium Hydroxide, Ammonium and Ammonium Hydroxide. Completely Revised and Extended 2nd ed.** Edited by Gerhard Kreysa and Michael Schütze (DECHEMA e.V., Frankfurt, Germany). Wiley-VCH Verlag GmbH & Co. KGaA: Weinheim and DECHEMA e.V.: Frankfurt. 2007. xiv + 554 pp. \$510. ISBN 978-3-527-31125-5.

As exemplified by its title, this book provides data for the influence of potassium hydroxide on approximately 1000 materials and the effect of ammonium and ammonium hydroxide on some 1100 materials. The materials are categorized under the following groups—metallic materials, nonmetallic inorganic materials, organic materials and plastics, and materials with special properties—which are further subdivided according to their chemical formulas and alloys. For each agent, there is also the section "Materials Recommendations", providing information on resistance for the four groups of materials, and a Bibliography. The book concludes with a "Key to materials compositions", an "Index of materials", and a "Subject index".

JA800017R

10.1021/ja800017r

**Japanese-English Chemical Dictionary: Including a Guide to Japanese Patents and Scientific Literature.** Edited by Markus Gewehr (BASF AG, Limburgerhof, Germany). Wiley-VCH Verlag GmbH & Co. KGaA: Weinheim. 2007. xviii + 662 pp. \$215.00. ISBN 978-3-527-31293-1.

This book is written for "the researcher who has some need for information from Japanese sources, patent attorneys dealing with Japanese patent applications, and translators active in the field of chemistry", to quote from the Preface. It is divided into three parts. Part I, entitled "General Part", provides an introduc-

tion to the basic principles of the Japanese language and a guide to Japanese in scientific documents, the naming of chemical compounds in Japanese, and Japanese patent documentation. This section concludes with an overview of Japanese patent law. Part II consists of the dictionary itself, which lists over 15,000 technical terms from all chemical disciplines in kanji/kana script and also includes the introductory chapter "Dictionary Structure and Explanations". The final part consists of a bibliography of further resources and a subject index.

JA8000419

10.1021/ja8000419

**Photochemistry and Photophysics of Coordination Compounds I. Topics in Current Chemistry, 280** Edited by Vincenzo Balzani (Università di Bologna, Italy) and Sebastiano Campagna (Università di Messina, Italy). Springer: Berlin, Heidelberg, New York. 2007. xiv + 274 pp. \$269.00. ISBN 978-3-540-73346-1.

Balzani and Carassiti's 1970 book, *Photochemistry of Coordination Compounds*, not only was the first monograph to summarize the status of inorganic photochemistry but also was responsible for sparking rapid growth in what was then a nascent field. In their opus, an extensive introduction to the experimental techniques and theoretical principles of photochemistry and photophysics was followed by an element-by-element review of the photochemistry of metal complexes. In 1975, *Concepts of Inorganic Photochemistry* edited by Adamson and Fleischauer appeared. Its chapters were organized thematically, rather than by element. This was followed by two notable textbooks, each quite different in its approach: Ferraudi's *Elements of Inorganic Photochemistry* (1988) and Roundhill's *Photochemistry and Photophysics of Metal Complexes* (1994). In combination with Horváth and Stevenson's *Charge Transfer Photochemistry of Coordination Compounds* (1993), these rounded out the general surveys of the field.

In undertaking what might be thought of as an update of the classic 1970 volume, Balzani and Campagna faced the problem of too much information: an encyclopedic review of inorganic photochemistry was no longer conceivable, nor was it feasible for a small group of authors to speak authoritatively on the entire field. Like the original work, *Photochemistry and Photophysics of Coordination Compounds* consists of chapters on individual elements, but each is written by specialists in the topic discussed. Volume I comprises an overview of general concepts and chapters on chromium, copper, ruthenium, and rhodium. Volume II will cover the lanthanides, rhenium, osmium, iridium, platinum, and gold. There are currently no plans for a third volume to address, for example, the many first-row transition elements that are not reviewed. This is, however, in keeping with the emphasis in these two volumes on the currently most heavily studied systems.

Unsigned book reviews are by the Book Review Editor.

The overview chapter by Balzani et al. is much briefer than the collection of introductory chapters in the 1970 book, but it is an absolute gem. A very well-selected set of concepts is described in qualitative and pictorial terms or by means of equations in the approximate forms most commonly used by practicing inorganic photochemists. I doubt one could find anywhere such a useful collection of equations in such a small space. For a more detailed development of the fundamentals, one or more of the books referenced above (including the 1970 monograph) can always be consulted. A great deal of this introductory chapter is devoted to the discussion of supramolecular systems, what can be done with them, and what kinds of problems they are designed to address. The overview is quite useful in setting the stage for the remaining chapters, several of which refer explicitly to points discussed in the overview. If there is a theme to the volume as a whole, it is the incorporation of photochemically or photophysically active metal complexes into larger structures to achieve energy or electron transfer.

Each of the five chapters contends somewhat differently with the problem of what to choose to review. Kane-Maguire concentrates almost entirely on chromium photochemistry reported since 1999, when a review by Kirk appeared, and is able to review work in this time period comprehensively. Armaroli et al. concentrate almost entirely on the photochemistry of copper(I) diimine and diphosphine complexes as well as copper(I) clusters, whereas Indelli et al. focus on electron transfer in polynuclear units involving diimine and cyclometalated complexes of rhodium(III). Both chapters very effectively

bring the reader to an understanding of what is currently driving research in the photochemistry of copper and rhodium.

The chapter by Campagna et al. on ruthenium is a *tour de force*. Ruthenium complexes constitute the most numerous and widely investigated materials in all of inorganic photochemistry, and achievements in ruthenium photochemistry have often served to spur attempts to make analogues or modifications using other metal centers. By concentrating on Ru(II) polypyridine complexes and the many ways they can be incorporated into di- and polynuclear species to donate or accept electrons or energy, Campagna et al. succeed perfectly in capturing the thrust of the field. What raises it above an ordinary review of the literature is the development of each topic almost as if it involved a purposeful sequence of hypotheses and experiments in a single laboratory. The authors have taken especially good care in presenting the questions to be addressed, the experiments undertaken to answer them, the results, and the subsequent questions raised, all with useful pictorial detail. It is not simply a review, it is also excellent pedagogy.

This volume is required reading for inorganic photochemists, and new entrants to the field will find themselves brought up to date surprisingly swiftly. It is a highly recommended addition to the collections of comprehensive science libraries.

**Patrick E. Hoggard**, *Santa Clara University*

JA0770227

10.1021/ja0770227