

Name Reactions: A Collection of Detailed Reaction Mechanisms, Second Edition. By Jie Jack Li (Pfizer Global Research and Development, Ann Arbor, MI). Springer-Verlag: Berlin, Heidelberg, New York. 2003. xviii + 466 pp. \$79.95. ISBN 3-540-40203-9.

Like its predecessor, the second edition of *Name Reactions* covers over 300 classical and contemporary name reactions. This edition includes 16 additional reactions, expanded and updated references, an improved index for easier navigation, short descriptions for each name reaction, and a correction of some typographical errors and “dubious mechanisms” that appeared in the first edition. Each entry includes the name of the reaction, a short description of it, the step-by-step mechanism, and a list of references. A subject index completes the book.

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Biochemical Targets of Plant Bioactive Compounds: A Pharmacological Reference Guide to Sites of Action and Biological Effects. By Gideon Polya (La Trobe University, Melbourne, Australia). Taylor & Francis: London, New York. 2003. xii + 848 pp. \$200.00. ISBN 0-415-30829-1.

This book contains a wealth of data on the chemical structure, source, biochemical targets, and physiological effects of the bioactive compounds in plants. The first two chapters cover the structural diversity of plant defensive compounds and summarize the relevant biochemistry, respectively, whereas the remaining 12 review, according to the author, “information about the molecular targets which are mainly proteins (such as receptors and enzymes) but also include polynucleotides (RNA and DNA), phospholipids and reactive oxygen species (ROS).” Most of this information is presented in the form of tables whose column headings cover: “(a) compound name, synonym and general chemical class, (b) plant sources of the compound together with common plant names of well-known plants, plant family and the plant part involved and (c) the biochemical target being considered, a measure of the affinity of the compound for the target, other biochemical targets and in vivo cellular and physiological effects of the compound.” The book also includes a list of tables, an appendix entitled “structures of key parent and representative compounds”, a bibliography, and list of abbreviations. There are four useful indexes: a compound, plant genus, plant common names, and a subject index.

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Supercritical Carbon Dioxide: Separations and Processes. Edited by Aravamudan S. Gopalan (New Mexico State University), Chien M. Wai (University of Idaho), and Hollie K. Jacobs (New Mexico State University). American Chemical Society (distributed by Oxford University Press): Washington, DC. 2003. xiv + 480 pp. \$165.00. ISBN 0-8412-3836-7.

This book is based on presentations at the symposium titled “Separations and Processes Using Supercritical Carbon Dioxide” and held at the 223rd American Chemical Society National Meeting in Orlando, FL in April 2002. To quote the editors, it covers such topics as “extraction/separation of transition metals, actinide ions, and organics” as well as the “development of novel materials including nanoparticles, monitoring methods, molecular modeling, reactivity and catalysis, and formation/use of microemulsions and surfactants in supercritical carbon dioxide”. An author and a subject index complete the book.

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Metal Complexes and Metals in Macromolecules: Synthesis, Structures and Properties. By Dieter Wöhrle (University of Bremen) and Anatoli D. Pomogailo (Russian Academy of Sciences, Chernogolovka). Wiley-VCH: Weinheim. 2003. xviii + 667 pp. \$215.00. ISBN 3-527-30499-1.

This monograph is a comprehensive, well-organized overview of a very broad area involving metals and macromolecules that includes, but is not limited to, polymers as the main theme. The editors, Wöhrle and Pomogailo, have thankfully written most of the book, including a short “Outlook” section at the end, so that this work is much better organized and more comprehensive than many of the more typical edited monographs that contain a smorgasbord of topics. The general organization is that of two approximately equal sections: Synthesis and Structure, and Properties. These are preceded by an introductory section in which macromolecular metal complexes (MMCs) are classified and an interesting historical overview is provided. Biologically important systems including metalloenzymes such as myoglobins, hemoglobins, cytochromes, plastocyanines, and hemocyanines, among others, are also introduced in this section.

The next section is divided into six chapters, beginning with one on the structural organization, thermodynamics, and kinetics of MMCs. The next two chapters tackle synthesis from the perspective of forming MMCs by using metal-containing monomers as precursors or binding metals to preformed polymers. The three chapters that follow deal with a variety of topics including electropolymerization, metallodendrimers, H-bonded networks, coordination polymers, polyrotaxanes, metallocenes, nanoparticle encapsulation, dispersion of metals in membranes, film and matrix techniques, block copolymers, and nanocomposites. I was pleased to see considerable emphasis on the

structure and function of organic bridging ligands and their coordination chemistry.

The section on Properties is divided into six chapters (plus the Outlook chapter mentioned earlier), most of which were written by guest contributors. Here, the main emphasis is on applications of MMCs. The first chapter in this section deals with small-molecule binding and activation, whereas the second is a discussion of optical sensors, especially for dioxygen and self-assembled monolayers on MMCs. The next two chapters deal with homogeneous and heterogeneous catalysis, respectively, with the latter including discussions of olefin polymerization, asymmetric hydrogenation, and hydroformylation. A description of photocatalysis on a molecular level and then through applications of polymeric or polymer-immobilized photosensitizers follows. The remaining chapter addresses issues involving electron and photon transport in MMCs, including an interesting section on organic light-emitting diodes.

The book is well produced. Each chapter includes its own set of references, and there appear to be relatively few errors. The references come mostly from the past 20 years with about 10% being post-2000. A unique feature that this reviewer particularly liked was the inclusion of an Experimental Section at the end of chapters 4–14. Each of these sections contains up to 10 experimental descriptions referenced to the pertinent area of that chapter. These procedures are detailed and complete with illustrations so that those of us who are not experts get a thorough view of experimental techniques. The index is adequate for the work. Overall, I would recommend this book as an excellent resource for any researcher involved in either macromolecular or metal complex chemistry.

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