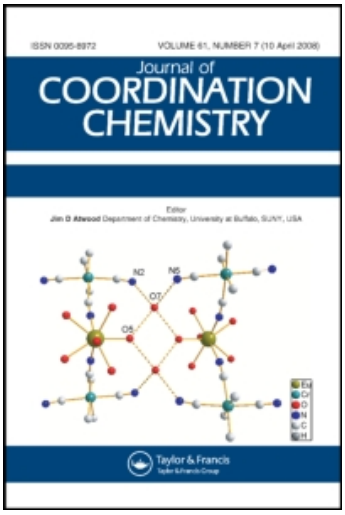

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George B. Kauffman[a]
[a] California State University, Fresno, Fresno, CA 93740-8034, USA

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Book Review

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Comprehensive Coordination Chemistry II (CCC-II) is a sequel to Elsevier's critically acclaimed seven-volume *Comprehensive Coordination Chemistry (CCC-I)* (1987), a companion series to Pergamon's *Comprehensive Organometallic Chemistry* (1982, 1995). It maintains the consistently high standards of Pergamon's "Comprehensive" major reference series. Like *CCC-I*, it provides a contemporary overview and serves as both a convenient first source of information and a stimulus for further advances in the field. The editors have adopted the same general approach as the earlier set and have surveyed state-of-the-art developments in coordination chemistry since 1982 in an authoritative and critical manner, taking into account significant new trends in biology, materials science, supramolecular chemistry and other areas.

The 211 chapters with references as recent as 2003 were written by 320 internationally recognized researchers from 25 countries. Considering the large number of authors involved, the set is remarkably free of errors. Unlike *CCC-I*, *CCC-II* has different editors responsible for individual volumes and features a greater emphasis on coordination chemistry in medicine and industry. The highly readable chapters, several of which are of book length, range in length from two pages with seven references to 308 pages with 2579 references. The set contains innumerable figures, tables, formulas, equations and reaction schemes, and 72 color plates.

Each separately paginated volume contains a periodic table (inside front cover), contents with page numbers for that particular volume, contents of all volumes (without page numbers), a preface, an introduction to that particular volume by the Volume Editor (except for Volume 10), a contributors list to that particular volume (a complete contributors list for all volumes in Volume 10 only), and a subject index for that volume (instead, Volume 10 contains a cumulative subject index). Every volume also contains "Coordination Chemistry: The Past, Present, and Possible

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Future''—''some thoughts gleaned by the Editors-in-Chief from conversations with the International Advisory Board''—lists of successes and current ''hot topics'' along with predictions.

Volume 1, ''Fundamentals: Ligands, Complexes, Synthesis, Purification, and Structure'' (A. B. P. Lever, Volume Editor, xxiv + 837 pp; 46 chapters), and Volume 2, ''Fundamentals: Physical Methods, Theoretical Analysis, and Case Studies'' (A. B. P. Lever, Volume Editor, xxv + 831 pp; 66 chapters), deal with basic topics that are exemplified in the following chapters. Volumes 3–6 describe the coordination chemistry of the metallic elements and contain numerous cross-references to Volume 9, ''Applications of coordination chemistry.'' The information provides a nearly comprehensive coverage of new discoveries, new interpretations of experiment and theory, and applications where relevant. The discussion of element properties of bioinorganic and industrial relevance is intentionally limited as these issues are addressed separately in subsequent volumes and are extensively cross-referenced.

Volume 3, ''Coordination Chemistry of the s, p, and f Metals'' (G. F. R. Parkin, Volume Editor, xx + 629 pp; 7 chapters), surveys trends in the chemistry of 1s and 2s metals, increased use of sterically bulky ligands, importance of non-ionic interactions, ''spectator'' role of s-block ions, application of computational methods, Sc, Y, lanthanides, actinides (separation and nuclear technology), Al, Ga, In, Tl, As, Sb, Bi, Ge, Sn and Pb. Volume 4, ''Transition Metal Groups 3–6'' (A. G. Wedd, Volume Editor, xx + 866 pp; 12 chapters), discusses Sc, Y, Ti, Zr, Hf, V, Nb, Ta, Cr, Mo, W, mononuclear, polynuclear and cluster compounds, and metallofullerenes. Volume 5, ''Transition Metal Groups 7 and 8'' (E. C. Constable and J. R. Dilworth, Volume Editors, xx + 876 pp; 6 chapters), covers Mn, Re, Fe (including biomimetic aspects), Ru and Os. As a review of Tc was not included in *CCC-I*, its chemistry from the earliest discoveries to present-day applications is provided. Volume 6, ''Transition Metal Groups 9–12'' (D. E. Fenton, Volume Editor, xx + 1321 pp; 9 chapters), the longest volume, discusses Co, Ir, Ni, Pd, Pt, Cu, Ag, Au, Zn, Cd and Hg. The proposed chapter on Rh was unavailable in time for publication but it will be made available online later.

Volume 7, ''From the Molecular to the Nanoscale: Synthesis, Structure, and Properties'' (M. Fujita, A. Powell and C. A. Creutz, Volume Editors, xxvi + 845 pp; 13 chapters), deals with electron transfer, photochemical and photophysical, optical and magnetic characteristics of coordination complex-based super- and supramolecules, clusters, nanoparticles, species ranging from ''traditional'' monomeric complexes to ligand-stabilized multimetallic assemblies, metal or semiconductor nanoparticles, dendrimers, other polymer-based assemblies and mesogenic materials. Volume 8, ''Bio-Coordination Chemistry'' (L. Que, Jr. and W. B. Tolman, Volume Editors, xxi + 840 pp; 29 chapters), considers metal ions involved in biological processes, relevant biochemical issues, structure, function and properties of metal centers in biomolecules, and synthetic models and/or functional mimics. Volume 9, ''Applications of Coordination Chemistry'' (M. D. Ward, Volume Editor, xxi + 1108 pp; 23 chapters), deals with actual and potential applications of coordination compounds in catalysis, medicine, technology of dyes and optical materials, solar energy, hydrometallurgical extraction and MOCVD precursors for new electronic materials. Volume 10, ''Cumulative Subject Index'' (266 triple-column pp), is the shortest volume.

Comprehensive Coordination Chemistry II provides far more cutting-edge data than any other books on the subject and is the first place to consult before undertaking research in the field. Its informative, critical assessments and suggestions of gaps

in existing knowledge make it *the* primary reference source for chemists from academic, industrial or governmental laboratories as well as for students and other persons interested in coordination chemistry. Because of its excellent balance between synthetic chemistry, structure and bonding data, chemical reactions and mechanistic studies, I recommend it as essential reading for persons seeking a detailed, accurate, authoritative overview of the entire field or of any of the numerous topics with which it deals. As the most detailed account of present-day coordination chemistry available today, its print and updated online versions should serve as a definitive reference source for many years to come.

Professor George B. Kauffman
California State University, Fresno
Fresno, CA 93740-8034
USA
E-mail: George_kauffman@csufresno.edu