

Oxidative Folding of Peptides and Proteins. Edited by Johannes Buchner (Technical University of Munich, Garching, Germany) and Luis Moroder (Max Planck Institute, Martinsried, Germany). Royal Society of Chemistry: Cambridge. 2009. xxii + 430 pp. \$189. ISBN 978-0-85404-148-0.

This multiauthor book covers the folding of disulfide-bonded proteins and peptides in the following well-referenced chapters: (1) Oxidative Folding of Proteins *in vivo*; (2) Oxidative Folding of Proteins *in vitro*; (3) Redox Potentials of Cysteine Residues in Peptides and Proteins: Methods for their Determination; (4) Engineered Disulfide Bonds for Protein Design; (5) Selenocysteine as a Probe of Oxidative Protein Folding; (6) Oxidative Folding of Peptides *in vitro*; (7) Cystine-based Scaffolds for Functional Miniature Proteins; and (8) Selenocystine Peptides—Synthesis, Folding and Applications. Chapters 1, 2, and 6 are further divided into subchapters, each written by different authors, and constitute the bulk of the book. A subject index completes the book.

JA902638Z

10.1021/ja902638z

Atomic Charges, Bond Properties, and Molecular Energies. By Sándor Fliszár (Emeritus, University of Montreal, Canada). John Wiley & Sons, Inc.: Hoboken, NJ. 2009. xii + 234 pp. \$99.95. ISBN 978-0-470-37622-5.

In this book, atomic charges, chemical bonds, and bond-energy additivity of organic molecules are investigated using quantum mechanical methods, and relevant thermochemical properties are described. The 17 chapters are organized into the following three sections: Charge Distributions; Chemical Bonds; Energy Calculations; and Applications. There is also a three-part appendix of working formulas of (1) Charge-NMR Shift Correlations, (2) General Energy Formulas, and (3) Bond Energy Formulas. A bibliography and subject index complete the book.

JA902554Z

10.1021/ja902554z

Metallic Nanomaterials. Edited by Challa S. S. R. Kumar (Louisiana State University). WILEY-VCH Verlag GmbH & Co. KGaA: Weinheim. 2009. xxvi + 572 pp. \$215. ISBN 978-3-527-32151-3.

This book is Volume 1 of the series “Nanomaterials for the Life Sciences”, a successor to the earlier 10-volume series, “Nanotechnologies for the Life Sciences”. It is an in-depth source of information about the synthesis and characterization of noble metal nanomaterials and their applications in the life sciences. The book consists of three distinctive parts. Part One (Chapters 1–8) provides an overview of copper, silver, and gold nanomaterials, including spherical and anisotropic ones of different shapes. It also covers known approaches to synthesis, methods of characterization, and current applications in medical diagnosis and therapy, as well as health and environmental aspects of their use. Part Two (Chapters 9–10) gives up-to-date information on palladium and platinum nanomaterials. Again, the emphasis here is on their synthesis, characterization, and applications in the life sciences. The final part is an overview of different metallic nanomaterials. Chapters 11 and 12 cover biology-based approaches to the synthesis and characterization of noble metal nanomaterials, whereas Chapters 13 and 14 highlight the life-science applications of these nanomaterials, in particular their applications to plasmonic laser phototherapy of cancer (Chapter 13) and to textiles (Chapter 14).

Overall, this is a very good reference book for those who wish to understand the versatile approaches to synthesis of noble metal nanomaterials and would like a comprehensive overview of their current applications in the life sciences. Most impressive is the completeness of the preparative methodologies. The beginner as well as the expert in this field will find this text helpful in complementing their tool set. The editor clearly attempted, successfully, to provide a readable, yet informative and comprehensive text that would do this rapidly expanding field justice. The individual chapters are well written and contain up-to-date information. There are only minor redundancies in the descriptions of the syntheses that occur in some chapters. In summary, this is a useful reference book for chemists and students working on preparative aspects of noble metal nanoparticles. I would also recommend it for teaching purposes on the graduate level.

Clemens Burda, Ph.D., *Case Western Reserve University*

JA902592K

10.1021/ja902592k

Unsigned book reviews are by the Book Review Editor.