

Film Formation in Coatings. Mechanisms, Properties, and Morphology. Edited by Theodore Provder (Polymer and Coatings Consultants) and Marek W. Urban (University of Southern Mississippi). American Chemical Society: Washington, DC (Distributed by Oxford University). viii + 304 pp. \$130.00. ISBN: 0-8412-3712-3.

In this book, the authors seek to expand our understanding of the process of film formation by exploring mechanisms for their formation, investigating the evolution of film properties in thermoplastic and cross-linkable systems, and examining the resultant morphology and structure of the films through the use of advanced morphological instrumentation, such as transmission electron microscopy, cryogenic scanning electron microscopy, confocal microscopy, environmental SEM, and AFM, as well as routine measurements of gloss film porosity. The book consists of 14 chapters and includes author and subject indexes. Its references are current through the late 1990s.

JA015355C

10.1021/ja015355c

Dictionary of Common Names: Second, Extensively Enlarged Edition. Vol 1–5. Edited by FIZ Chemie Berlin. Wiley-VCH: Weinheim. 2001. 4642 pp. \$2135. ISBN: 3-527-30288-3.

This extensively revised reference work contains over 40 000 structural formulas for more than 51 000 common names. It includes nonsystematic names of simple compounds, such as vinyl chloride or imidazole; the names of natural products of known constitution, such as strychnine; common abbreviations and acronyms, such as IDA or PAS; and trade names of dye-stuffs, pharmaceuticals, and other products. For each common name, this book provides the structure, molecular formula, CAS Registry Number, stereochemical information, and bibliographic data.

JA015360G

10.1021/ja015360g

Solid-Liquid Interface Theory. Edited by J. Woods Halley (University of Minnesota). American Chemical Society: Washington DC (Distributed by Oxford Univ. Press). 2001. xvi + 230 pp. \$110.00. ISBN: 0-8412-3717-4.

The contents of this book are derived from a symposium held during the 1999 ACS meeting in New Orleans. The focus is recent progress in the theoretical analysis of solid–liquid interfaces, particularly as they apply to electrochemistry. The 13 chapters are organized into the following four sections:

Unsigned book reviews are by the Book Review Editor.

Electronic Properties of the Metal–Solvent Interface, Modeling Reaction Rates, Oxides at Liquid–Solid Interfaces, and Organic Liquid–Solid Interfaces.

JA015357X

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Polymer Research in Microgravity: Polymerization and Processing. Edited by James Patton Downey (National Aeronautics and Space Administration) and John A. Pojman (University of Southern Mississippi). American Chemical Society: Washington, DC (Distributed by Oxford Univ. Press). 2001. xiv + 266 pp. \$120.00. ISBN: 0-8412-3744-1.

This book is based on presentations given at the symposium on “Polymer Processing in Microgravity” held in San Francisco in March 2000. Its focus is the effect of gravity on polymerizations and polymer processing and contains reviews of macromolecular research in a microgravity environment. The book’s 16 chapters are organized under the following headings: Background, Sounding Rockets and Orbital Investigations, Parabolic Flight Investigations, and Ground-Based Research. A range of polymer research is covered from the biological production of polymers to inorganic sol–gel systems.

JA015358P

10.1021/ja015358p

Metal Dihydrogen and σ -Bond Complexes: Structure, Theory, and Reactivity. By Gregory J. Kubas, Los Alamos National Laboratory, Kluwer Academic/Plenum Publishers: New York. 2001. xvi + 472 pp. \$95.00. ISBN 0-306-46465-9.

This book will be of use to persons whose research interests include the subject matter of the book, but I also recommend sections of it more broadly. Although not a review, it provides an in-depth summary of the findings that underpin current understandings of the behavior of ligands that bind metals by using intraligand σ -bonding electrons. In so doing, Kubas has been able to show the evolution of thinking about the nature of the interactions of H₂ with metals and its usefulness as a model for analogous systems involving other types of σ bonds. This broader scope, Kubas’ reliance on computational results, his detailed understanding of physical properties and spectra, and his extensive synthetic experience make this book a coherent whole and Kubas an excellent guide to the topic.

I am at a disadvantage in attempting to anticipate the importance of this work to that segment of the chemical community that is not directly involved in the chemistry of coordinated σ bonds, because I have been involved in this sort of chemistry for 20 years. With this disclaimer, I found the book easy to read. Kubas frequently uses a more personal style than

is seen in the scientific literature and allows himself to report some of the excitement that accompanied the discovery of η^2 -H₂ ligation. This will hold the attention of students, although they will surely not be able to digest the entire book. In the more technical parts of the book, the writing is clear, and Kubas gives frequent references to other parts of the book where related discussions can be found. I would take issue with only two aspects of the book. First, I am bothered by the use of acronyms for phrases that really should be spelled out. There is a table at the back that will tell you that BD and OA are "back-donation" and "oxidative addition", but the use of acronyms will be an impediment to the casual reader. Second, there is a brief summary at the end of the last chapter that serves to end both the chapter and the book; I wish that Kubas had written a more extensive summary that would have given him an opportunity to anticipate what will be causing excitement in the field in the next 5 or 10 years. It also would have allowed him an opportunity to underline those things that have not been fully resolved in the work that has appeared thus far.

I strongly recommend the book for those who are involved in the field. It is very well written, and for those who are worried about the time delay between the onset of writing and the publication, some references come from as late as the latter half of 2000.

Ray L. Sweany, *University of New Orleans*

JA0153417

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Handbook of Toxicology. Second Edition. Edited by Michael J. Derelanko (Honeywell International Inc., Morristown, New Jersey) and Manfred A. Hollinger (University of California, Davis). CRC Press: Boca Raton. 2002. xxiv + 1414 pp. \$149.95. ISBN 0-8493-0370-2.

It has been 10 years since the publication of the first edition of this handbook. Many of the chapters have been updated for this edition, and several have been revised extensively. Eleven chapters have been added to the original 22, and these include coverage of ecotoxicology, in vitro toxicology, and the toxicol-

ogy of metals. A listing of the URLs for useful toxicology-related websites is included as well.

JA0153870

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Heme, Chlorophyll, and Bilins: Methods and Protocols. Edited by Alison G. Smith and Michael Witty (University of Cambridge). Humana Press: Totowa, New Jersey. 2002. x + 340 pp. \$125.00. ISBN 1-58829-111-1.

This handy reference book features a collection of techniques written by experts in the field for working successfully with the title classes of compounds. Each method is presented with step-by-step instructions, various tricks of the trade, and time-saving techniques to ensure success in the laboratory and avoidance of common pitfalls. Some of the topics covered include techniques for analyzing tetrapyrroles, hemes, and hemoproteins as well as the biosynthesis and analysis of chlorophylls and bilins.

JA0153868

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Houben-Weyl. Methods in Organic Chemistry. Volume E 23 m. Substance Index: Cyclic Compounds VIII, Polycyclic Compounds I. From the 4th Edition and the Additional and Supplementary Volumes to the 4th Edition. Georg Thieme Verlag: Stuttgart, New York. 2001. x + 772 pp. 3600 DM. ISBN: 3-13-124384-8.

This index volume, together with Volume E23n, lists all polycyclic chemical compounds in the supplementary volumes of E1–E21, including carbocyclic, heterocyclic, and organometallic polycyclic systems.

JA015384N

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