

## Book Reviews \*

**Supercritical Fluid Engineering Science. Fundamentals and Applications.** ACS Symposium Series 514. Edited by Erdogan Kiran (University of Maine) and Joan F. Brennecke (University of Notre Dame). American Chemical Society: Washington, DC. 1992. xii + 410 pp. \$98.95. ISBN 0-8412-2513-3.

This book was developed from the symposium sponsored by the American Institute of Chemical Engineers at their 1991 Annual Meeting held in Los Angeles on November 17–22, 1991. After a preface by the editors, the book contains 30 chapters organized under the following headings: Phase Behavior and Transport Properties; Molecular Interactions and Simulations; and Applications. The book also contains author, affiliation, and subject indexes.

**Polymer Solutions, Blends, and Interfaces.** Edited by I. Noda and D. N. Rubingh (Procter and Gamble Co.). Elsevier: Amsterdam, The Netherlands. 1992. xii + 486 pp. \$225.00. ISBN 0-444-89397-0.

This book was developed from papers presented at the Procter and Gamble UERP Symposium on Polymer Solutions, Blends, and Interfaces sponsored by the ACS Division of Surface and Colloid Chemistry (202nd ACS National Meeting) held on August 26 and 27, 1991, in New York. After a preface by the editors, the book contains 23 chapters as well as author and subject indexes.

**Phenolic Compounds in Foods and Their Effects on Health. II. Antioxidants and Cancer Prevention.** ACS Symposium Series 507. Edited by Mou-Tuan Huang (Rutgers), Chi-Tang Ho (Rutgers), and Chang Y. Lee (Cornell). American Chemical Society: Washington, DC. 1992. xiv + 402 pp. \$84.95. ISBN 0-8412-2476-5.

This book was developed from a symposium sponsored by the Division of Agricultural and Food Chemistry of the American Chemical Society (202nd National Meeting of the ACS) held in New York on August 25–30, 1991. After a preface by the editors, this book contains 30 chapters organized under the following headings: Perspectives; Sources of Phenolic Antioxidants; Chemical and Biological Activities of Phenolic Antioxidants; Flavonoids and Cancer Prevention; and Other Phenolic Compounds and Cancer Prevention. There are also author, affiliation, and subject indexes.

**Biosensor Design and Application.** ACS Symposium Series 511. Edited by Paul R. Mathewson and John W. Finley (Nabisco Foods Group). American Chemical Society: Washington, DC. 1992. xii + 202 pp. \$54.95. ISBN 0-8412-2494-3.

This book was developed from symposia sponsored by the Divisions of Agricultural and Food Chemistry, Agrochemicals, Biochemical Technology, and Small Chemical Businesses (201st National Meeting of the ACS) held in Atlanta on April 14–19, 1991. After a preface by the editor, the book contains 15 chapters and author, affiliation, and subject indexes.

**<sup>13</sup>C-NMR of Natural Products. Volume 2. Diterpenes.** By Attar-Rahman and Viqar Uddin Ahmad (University of Karachi). Plenum: New York. 1992. x + 796 pp. \$125.00. ISBN 0-306-43898-4.

This book is the second of a series and is dedicated to the <sup>13</sup>C-NMR of diterpenes found in the literature up to 1989. The entries are organized by structural type and then in increasing molecular weight. This book also contains indexes of the compounds according to name, source, compound type, molecular formula, and molecular weight.

**Harnessing Biotechnology for the 21st Century. Conference Proceedings Series.** Edited by Michael R. Ladisch (Purdue University) and Arindam Bose (Pfizer Central Research). American Chemical Society: Washington, DC. 1992. xxiv + 616 pp. \$149.95. ISBN 0-8412-2477-3.

This book was developed from a symposium sponsored by the American Chemical Society Division of Biochemical Technology held in Crystal

City, VA, on August 16–21, 1992. After a preface by the editors, the book contains 139 chapters organized under the following headings: Frontiers in Polypeptide Production, Symposium I; Frontiers in Production of Metabolites, Symposium II; Microbiology and Physiology, Symposium III; Biocatalysis and Biotransformation, Symposium IV; Bioreactor Engineering, Symposium V; Downstream Processing, Symposium VI; Bioinstrumentation and Bioprocess Control, Symposium VII; Policy Issues in Biotechnology, Symposium VIII; Environmental Engineering and Biology, Symposium IX; Agriculture and Food Biotechnology, Symposium X; and Biotechnology in Developing Countries, Symposium XI. This book also contains a subject index.

**Electrochemistry in Transition. From the 20th to the 21st Century.** Edited by Oliver J. Murphy (Texas A&M University), Supramaniam Srinivasan (Texas A&M University), and Brian E. Conway (University of Ottawa). Plenum Press: New York. 1992. xviii + 684 pp. \$125.00. ISBN 0-306-43946-8.

This book was developed from the symposium sponsored by the Division of Colloid and Surface Science during the 195th National Meeting of the ACS held in Toronto on June 5–11, 1988. The book contains 41 chapters organized under the following headings: Double Layer; Spectroscopic Studies; Electrode Kinetics and Electrocatalysis; Photoelectrochemistry; Hydrogen Technologies, Organic Electrochemistry; Bioelectrochemistry; Electrodeposition and Electrodissolution, High-Temperature Electrochemistry; Passivity, Corrosion, Steels, and Minerals; and Electrochemical Energy Conversion. This book also contains a subject index.

**Pollution Prevention in Industrial Processes. The Role of Process Analytical Chemistry.** ACS Symposium 508. Edited by Joseph J. Breen and Michael J. Dellarco (U.S. Environmental Protection Agency). American Chemical Society: Washington, DC. 1992. x + 316 pp. \$79.95. ISBN 0-8412-2478-1.

This book was developed from the symposium sponsored by the Division of Environmental Chemistry (201st National Meeting of the ACS) held in Atlanta on April 14–19, 1991. After a preface by the editors, there are 24 chapters organized under the following headings: Perspectives on Pollution Prevention; Real-World Process Analytical Chemistry; Membrane Interfaces and Process Analytical Chemistry; and Analytical Approach to Process Analytical Chemistry. This book has author, affiliation, and subject indexes.

**Photodissociation of Simple Molecules in the Gas Phase.** Edited by Hiroyasu Sato (Mi'e University). Bunshin: Tokyo. 1991. vi + 158 pp. 1 100 yen. ISBN 4-89390-092-7.

This book is a compilation of photodissociation experimental data collected from papers published between 1970 and 1991. It contains four chapters, two tables (photodissociation of simple molecules and photodissociation of van der Waals molecules and clusters), and references to Tables I and II. Organometallic compounds used for chemical vapor deposition are also included.

**Mixed Surfactant Systems.** ACS Symposium Series 501. Edited by Paul M. Holland (General Research Corporation) and Donn N. Rubingh (Procter and Gamble Company). American Chemical Society: Washington, DC. 1992. xii + 452 pp. \$99.95. ISBN 0-8412-2468-4.

This book was developed from the symposium sponsored by the ACS Division of Colloid and Surface Chemistry (The 65th Colloid and Surface Science Symposium) held in Norman, OK, on June 17–19, 1991. After a preface by the editors, this book contains 29 chapters organized under the following headings: Overview; Approaches to Modeling Mixed Surfactant Aggregates; Phenomena in Mixed Micellar Solutions; Surfactant Mixtures with Unusual Surfactant Types; and Adsorption of Mixed Surfactant Systems. This book contains author, affiliation, and subject indexes.

**Proton Transfer in Hydrogen-Bonded Systems.** NATO ASI Series, Series B: Physics Volume 291. Edited by T. Bountis (University of Patras, Patras, Greece). Plenum: New York. 1992. xiv + 366 pp. \$95.00. ISBN 0-306-44216-7.

This book is part of a series presenting the results of work by the NATO Special Program on Chaos, Order, and Patterns sponsored by the

\*Unsigned book reviews are by the Book Review Editor.

NATO Science Committee. The book is dedicated to Stephanos Pnevmatikos, who was responsible for organizing the special program represented by this book. It contains 30 chapters organized under the following headings: Proton Transfer and the Hydrogen Bond; Proton Transfer and Solution Dynamics; Proton Transfer in Biochemistry and Biology; Proton Transfer in Water and Ice Physics; Proton Transfer in Solutions; and General Methods and Models. There is a list of contributors and a short subject index.

**Theoretical and Applied Rheology. Volumes 1 and 2.** Edited by P. Moldenaers (Katholieke Universiteit Leuven) and R. Keunings (Universite Catholique de Louvain). Elsevier: Amsterdam, The Netherlands. 1992. lxxiv + 1036 pp. \$340.00. ISBN 0-444-89007-6.

These books were developed from the Proceedings of the XIth International Congress on Rheology sponsored by the International Committee on Rheology held in Brussels on August 17–21, 1992. After a preface by the editors and the secretary's report for 1988 and 1992, the books contain 255 papers and 204 posters organized under the following headings. Volume 1: Plenary Papers; Keynote Papers; Contributed Papers; Molecular Theories: Posters; Constitutive Equations: Posters; Theory: Oral Communications and Posters; Fluid Mechanics: Oral Communications and Posters; Numerical Simulation: Oral Communications and Posters; Melts and Polymer Processing: Oral Communications and Posters; Polymer Solutions: Oral Communications and Posters. Volume 2: Liquid Crystals: Oral Communications and Posters; Suspensions: Oral Communications and Posters; Foams and Emulsions: Oral Communications and Posters; Food Rheology; Biorheology: Oral Communications and Posters; Electrorheology: Oral Communications and Posters; Rheology of Solids: Oral Communications and Posters; Composite Materials: Oral Communications and Posters; Rheometry and Experimental Methods: Oral Communications and Posters; Rheometry and Experimental Methods: Oral Communications and Posters; Instrumentation: Oral Communications and Posters; and Late Submissions. Both volumes contain author indexes.

**Studies in Organic Chemistry. 45. Crown Ethers and Analogous Compounds.** Edited by M. Hiraoka. Elsevier: Amsterdam, The Netherlands. 1992. xiv + 485 pp. \$228.50. ISBN 0-444-8:

The stated intent of this interesting volume is "to present knowledge of crown ethers and analogous compounds." It does ably through 1988—there are also a handful of references from 1989 and at least one from 1990. The title is appropriately ambiguous, since many of the included compounds are structurally unrelated to crown ethers, although the reviews are comprehensive only concerning crown compounds.

M. Hiraoka presents an overview that is necessarily brief but includes many valuable leading references. M. Okahara and Y. Nakatsuji review crown ether synthesis. H. Tsukube presents a general review of host-guest chemistry, discussing topics from molecular topology to membrane transport to inclusion complex formation by cyclodextrins. K. Kimura and T. Shono review ion sensors and liquid chromatography based on crown compounds. S. Sasaki and K. Koga briefly discuss enzyme modeling with crown ethers. An extensive review of chromogenic crown compounds is presented by T. Kaneda. S. Shinkai discusses recent developments in crown compounds that can be "switched" on or off. E. Kimura presents a review of new developments in macrocyclic polyamine chemistry with a special emphasis on his own chemistry. I found the latter three chapters especially interesting and readable. A useful index contains many of the terms coined by investigators in the field.

The strength of the volume lies in an emphasis on the applications of crown compounds. This perspective makes it a useful resource for experts and novices alike.

James W. Canary, *New York University*

**Biocatalyst Design for Stability and Specificity. ACS Symposium Series 516.** Edited by Michael E. Himmel (National Renewable Energy Laboratory) and George Georgiou (University of Texas, Austin). American Chemical Society: Washington, DC. 1993. xiv + 336 pp. \$89.95. ISBN 0-8412-2519-4.

This book was developed from the symposium sponsored by the Division of Biochemical Technology of the American Chemical Society (202nd National Meeting of the American Chemical Society) held in New York on August 25–30, 1991. After a preface by the editors, there are 25 chapters in typescript form, organized under the following headings: Protein Stability; Protein Folding; Multifunctional Proteins; Design of

Cellulases by Recombinant Methods; and Improving Natural Enzymes by Chemical Cross-Linking. There are also author, affiliation, and subject indexes.

**Organized Solutions. Surfactants in Science and Technology.** Edited by Stig E. Friberg (Clarkson University) and Bjorn Lindman (University of Lund). Dekker: New York. 1992. xvi + 410 pp. \$145.00. ISBN 0-8247-8698-X.

This book is written in honor of the 65th birthday of Professor Kozo Shinoda, who pioneered the research of organized solutions. It compiles literature on concepts concerning HLB (hydrophile-lipophile balance) number and temperature and recent developments on the HLB system. After a preface by the editors and a list of contributors, there are 24 chapters organized under the following headings: Fundamental Approach; Phase Behavior of Aqueous Systems; Surfactants in Alternative Polar Solvents; Molecular Interactions, Dynamics, and Association Structures; Emulsions and Detergency; and Chemical Reactions in Surfactant Systems. There is also a short subject index.

**Surfactants in Solution. Volume 11.** Edited by K. L. Mittal (IBM U.S. Technical Education) and D. O. Shah (University of Florida). Plenum: New York. 1991. x + 704 pp. \$149.00. ISBN 0-306-44186-1.

This book was developed from the 8th International Symposium on Surfactants in Solution held in Gainesville, FL, on June 10–15, 1990. After a preface by the editors, this book contains 54 chapters in typescript form organized under the following headings: Plenary Lecture; Invited Presentations; and Contributed Oral and Poster Presentations. The affiliations of the authors are given in the headings of the chapters. There is also a subject index at the end of the book.

**Polymers for Lightwave and Integrated Optics. Technology and Applications.** Edited by Lawrence A. Hornak (AT&T Bell Laboratories). Dekker: New York. 1992. xvi + 744 pp. \$150.00. ISBN 0-8247-8697-1.

This book, the 32nd volume in the Optical Engineering series edited by Brian J. Thompson, is a multiauthored work on polymer integrated optics. After an introduction to the series, a preface by the editors, a list of the advisory board members, and a list of contributors with their affiliations, this book contains 24 chapters which are divided into two parts: Part I on Passive Optical Polymers and Applications and Part II on Nonlinear Optical Polymers and Applications. There is also a subject index.

**The Chemistry of Muscle-based Foods.** Edited by D. E. Johnston (Queen's University, Belfast, Northern Ireland), M. K. Knight (Griffith Laboratory), and D. A. Ledward (Queen's University, Belfast, Northern Ireland). Royal Society of Chemistry: Cambridge, U.K. 1992. x + 330 pp. £57.50. ISBN 0-85186-237-3.

This book was developed from the symposium organized jointly by the Food Chemistry Group of the Royal Society of Chemistry and the Society of Chemical Industry Meat Panel held in Belfast, Northern Ireland, on September 9–11, 1991. After a preface by the editors, this book contains 21 chapters organized under the following headings: Production Factors; Conversion of Muscle into Food; Chemistry of Raw and Cooked Products; and the Chemistry of New and Existing Technologies. This book also has a subject index.

**Chemistry and Technology of Silicon and Tin.** By V. G. Kumar Das (University of Malaya), N. G. Seik Weng (University of Malaya), and Marcel Gielen (University of Brussels). Oxford University Press: New York. 1992. xx + 612 pp. \$165.00. ISBN 0-19-855580-6.

This book was developed from the symposium of the International Chemical Conference on Silicon and Tin held in Kuala Lumpur, Malaysia, on October 23–26, 1989. After a preface by the editors, this book contains 52 chapters organized under the following headings: Plenary and Keynote Lectures; Selected Papers from Oral and Poster Presentations; and Abstracts. There is a short subject index.