Additions and Corrections

Molecular Dynamics Simulation of a PNA·DNA·PNA Triple Helix in Aqueous Solution [*J. Am. Chem. Soc.* **1998**, *120*, 5895−5904]. GEORGE C. SHIELDS, CHARLES A. LAUGHTON, AND MODESTO OROZCO*

Page 5902: Table 5 should be replaced by the following table.

Table 5. Intrastrand, Interstrand, and Total Stacking Energies for the Central Portion (First and Last Triplex Steeps Were Removed, See Text) of the Triple Helix, for Different Bases Triplex Arrangements[a]

structure	E_{stack}(intra)	E_{stack}(intra)	E_{stack}(total)
A-type DNA triplex	−128	−50	−178
B-type DNA triplex	−135	−57	−192
PNA·DNA·PNA crystal	−107	−76	−183
PNA·DNA·PNA (⟨A⟩)	−120	−68	−188
PNA·DNA·PNA (⟨B⟩)	−118	−69	−187
PNA·DNA·PNA (⟨P⟩)	−112	−73	−185

[a] All the values are in kcal/mol.

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Book Reviews *

Oxford Dictionary of Biochemistry and Molecular Biology. Edited by A. D. Smith, S. P. Datta, G. Howard Smith, P. N. Campbell, R. Bentley, and H. A. McKenzie. Oxford University Press: New York. 1997. 740 pp. $60.00. ISBN 0-19-854768-4.

This dictionary of biochemistry and molecular biology provides a comprehensive survey of current biochemistry and molecular biology. The entries are short but informative, providing up-to-date information on a broad range of topics. There are over 17 000 main entries, which give details of biochemical substances and the processes in which they are involved, define methods and concepts in molecular biology, and give definition to biochemical symbols and abbreviations. Alternative names for biochemical compounds are listed and will refer the reader to the main entry where the international recommended biochemical nomenclature is used.

Entries also include the structures and activities of chemical compounds of interest to biochemists, with over 800 illustrations of chemical structures.

The Dictionary also contains over 2000 protein and enzyme entries, which describe the functions they perform and/or the reactions they catalyze, and include database codes to facilitate locating their entries in sequence databases. Brief biographical details are provided for relevant Nobel Laureates and for eponyms.

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Protein Purification: Principles, High-Resolution Methods, and Applications. Second Edition. Edited by Jan-Christer Janson and Lars Rydén (Uppsala University). John Wiley & Sons: New York. 1988. 695 pp. ISBN 0-471-18626-0.

The science of protein purification involves study of the preparative and analytical methods that can lead to separation of individual protein species to homogeneity. This book is a collection of 18 chapters written by university and industrial researchers, primarily from Europe, that review this topic. The book is divided into three main sections: Part I is a brief and useful introduction to protein purification. Part II examines various types of chromatography that are used to separate and purify proteins, including reviews on gel filtration, ion exchange chromatography, chromatofocusing, high-resolution reversed phase chromatography, hydrophobic interaction chromatography, immobilized metal ion affinity chromatography, covalent chromatography, affinity chromatography, and affinity partitioning of proteins using aqueous two-phase systems. Part III focuses on electrophoresis, including reviews on isoelectric focusing, immunoelectrophoresis, protein mapping by two-dimensional polyacrylamide electrophoresis, protein elution and blotting techniques. and capillary electrophoretic separations. Each chapter deals with a theoretical treatment of the analytical system under review and presents tables and subsections containing pertinent equations, symbols, definitions, and structures of relevant compounds and packing materials that provide a convenient, time-saving reference source. Even though literature coverage for each chapter is excellent, the book is somewhat outdated with most of the recent citations from 1994 and 1995. The book contains a subject index, but no author index. Fast protein liquid chromatography (FPLC) is commonly used by protein biochemists; however, there was no mention of this methodology in the book. Nonetheless, for a modern, cross-sectional view of chromatography in its wider chemical and biological context, this second edition of the book will be warmly welcomed. I recommend this book as a classroom text or as a guide to students interested in chromatography and experimental methods applied to protein purification.

W. David Nes, *Texas Tech University*

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Basic Gas Chromatography: Techniques in Analytical Chemistry. By Harold M. McNair (Virginia Polytechnic Institute & State University) and James M. Miller (Drew University). Wiley-VCH: New York. 1997. $49.95. xii + 200 pp. ISBN 0-471-17260-X.

This book represents a basic overview of the very popular analytical technique of gas chromatography. This introductory treatment of the technique may be viewed as the second edition of *Basic Gas Chromatography*, by McNair and Bonelli published several decades

*Unsigned book reviews are by the Book Review Editor.

ago; some material has also been abstracted from the more recently published book, *Chromatography: Concepts and Contrasts*, by Miller.

Separate chapters are devoted to basic concepts and terms, stationary phases, packed columns, and inlets as well as capillary columns and inlets, detectors, qualitative and quantitative analysis, programmed temperature operation, and special topics (the final chapter). There is also a handy list of appendices which should be helpful to the beginner. The authors are to be commended for presenting the essence of gas chromatography (which is no easy task) in a well-written, organized fashion, limiting their coverage to fundamental aspects or the more popular or commonly used components in gas chromatographs. For example, coverage of detectors (Chapter 7 is restricted to three of the more common detectors, flame ionization, thermal conductivity, and electron capture detectors). The same may be said for capillary inlet systems in Chapter 6 where only the split and splitless modes of injection are emphasized.

The more experienced gas chromatographer might be better served by consulting separate texts on inlet systems, columns, and detectors, etc. that have been published. However, this book is strongly recommended and is ideally suited for one unfamiliar with the technique who desires an overview and undergraduate instruction in analytical chemistry.

Eugene F. Barry, *University of Massachusetts, Lowell*

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Supercooled Liquids: Advances and Novel Applications. Edited by John T. Fourkas, Daniel Kivelson, Udayan Mohanty, and Keith A. Nelson. American Chemical Society: Washington, DC. 1997. xii + 352 pp. $110.95. ISBN 0-8412-3531-7.

The purpose of this book is to provide a mechanism for publishing symposia materials in book form based on scientific research.

This book represents, from a broad perspective, some of the most exciting recent research on supercooled liquids. Hot topics include domain models of supercooled liquids, inhomogeneity and polymorphism, and mode-coupling theory and its applications. Supercooled water and the connections between supercooled liquids and the conformational dynamics of proteins are covered in depth. The detailed introduction covers the terminology of the field, the major problems, and the currently popular theoretical and experimental approaches.

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Phototonic and Optoelectronic Polymers. Edited by Samson A. Jenekhe (University of Rochester) and Kenneth J. Wynne (Office of Naval Research). American Chemical Society: Washington, DC. 1997. 575 pp. $144.95. ISBN 0-8412-3519-2.

This book provides comprehensive coverage of the photonic and optoelectronic properties of polymers, including wave guiding, optical amplification, electrooptic modulation, second harmonic generation, digital and holographic optical memories, photorefractive effects, ultrafast optical switching, and electroluminescence. Using an interdisciplinary approach, the book also explores the design, synthesis, and processing of diverse photonic and optoelectronic polymers for applications, as well as novel approaches to processing these polymers into thin films, multilayers, fibers, gratings, and device structures.

The book also discusses new classes of polymers, such as proton transfer polymers, photorefractive polymers, electroluminescent polymers, and high-temperature NLO polymers, and assesses the progress on high-performance thin film transistors from organic materials.

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Organic Coatings for Corrosion Control. ACS Symposium Series 689. Edited by Gordon P. Bierwagen (North Dakota State University). Oxford Press: New York. 1998. xiii + 448 pp. ISBN 0-8412-3549-X.

This series is based on a symposium sponsored by the Division of Polymeric Materials: Science and Engineering (PMSE) at the 211th National Meeting of the American Chemical Society. The included thirty-five original papers start with a review paper by the editor and are grouped evenly into six categories arranged in the following order: Coatings Characterization Studies-Impedance; Coatings Properties and Corrosion Control; Coatings Testing for Specific Environments; Coatings for Unique Substrates and Environments; Inhibitors, Pigments and Pretreatment; and New Materials for Corrosion Control. Electrochemical testing methods for the coatings and the examination of these testing methods are extensively covered in Chapters 1−8, 11−12, 14, and 34. Corrosion protection under various environmental exposure conditions is discussed in the middle two categories. Topics perhaps most attractive to organic chemists are grouped in the last two categories. For example, Chapters 31 and 32 address the interesting issues about corrosion protection by polyaniline films, and Chapter 33 considers corrosion inhibition of copper using self-assembled monolayers of alkanethiols, a new technology in the area.

This series does cover a variety of topics, both engineering and theoretical. It is also rich in figures and illustrations. In addition, one-third of the papers are contributed from authors from ten foreign countries, reflecting an international effort. An average of ten to twenty references are attached in each chapter at the end, spanning mostly from the late 1980s to the early 1990s, up to 1996 when the symposium was held. An author index and a subject index are included at the end of the book. The series is suitable for researchers at any level and thus is an essential to any research library.

Zheng Chai, *University of Texas at Austin*

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Molecular Design of Polymeric Materials. Edited by Koichi Hatada. Marcel Dekker, Inc.: New York. 1997. ISBN 0-8247-9465-6.

Polymer science and the industries that produce and utilize polymers have made tremendous progress over the last three decades, and the use of polymeric materials is ever-increasing.

The objective of this book is to present the most current, up-to-date achievements in the field of polymer science and technology. Emphasisis placed on the design of macromolecular architecture, properties and function of polymers, and higher order structures of polymeric materials.

Generously illustrated and containing over 2500 bibliographic citations, this book is an outstanding guide for copolymer scientists, plastic engineers, materials scientists, professionals in the paint, ceramics, and optics industries, and upper-level undergraduate and graduate students in these disciplines.

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Therapeutic Protein and Peptide Formulation and Delivery. Edited by Zahra Shahrokh, Victoria Sluzky, Jeffrey L. Cleland, Steven J. Shire, and Theodore W. Randolph. American Chemical Society: Washington, DC. 1997. 240 pp. $89.95. ISBN 0-8412-3528-7.

This book reviews protein stability and the analytical and biophysical characterization of proteins. It presents drug delivery approaches, especially local delivery through the skin. Including both academic and industrial perspectives from companies such as Genentech, Amgen, and Merck, this book also discusses novel drug delivery polymers and the development of pharmaceutical protein formulations.

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