Additions and Corrections

Intramolecular Electrostatic Interactions Accelerate Hydrogen Exchange in Diketopiperazine Relative to 2-Piperidone [*J. Am. Chem. Soc.* **1996**, *118*, 2694−2698]. WILLIAM R. FORSYTH AND ANDREW D. ROBERTSON*

On page 2695, column 1, second sentence of the third paragraph should read: "...1−1 delay (∼376 μs for **1** and ∼329 μs for **2**)...".

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Computer Software Reviews

MathType 3.1. Design Science, Inc., 4028 Broadway, Long Beach, CA 90803. Tel: (310) 433-0685. Fax: (310) 433-6969. E-mail: mtsales@mathtype.com. List price $199.00. Upgrades: $29.95 (for registered 3.0 users), $49.95 (for registered 2.x and 1.x users).

It has been over five years since MathType 1.55 was reviewed in this journal. At that time, it was concluded that "MathType is an exceptionally versatile mathematical equation editor for Apple Macintosh computers". Although the program will no longer run as a desk accessory, System 7 users can place an alias of MathType on the Apple menu to make it work like a DA. Like a fine wine, this program has aged well, and as a consequence of a complete rewriting and addition of numerous features, it is now even more versatile than its precursors.

As in the previous versions, compatibility with other widely used programs is excellent. MathType equations can be saved as PICT objects on the Clipboard, as PICT or EPS files, or as "embedded objects". MathType has a build-in Tex Translator which converts equations to the Tex typesetting language. In addition, you can transfer equations back into MathType for editing. According to Design Science, these features ensure compatibility with almost all Macintosh word processing programs, including MacWrite, Microsoft Word, PageMaker, Nisus, MacDraw, and many others. For the present review, that compatibility was tested with Microsoft Word 5.1, PageMaker 5.0, PowerPoint 3.0, and Excel. User documentation is excellent and complete, and a Version 3.1 User Manual supplement contains an extensive section on use of the program with Microsoft Word 6.0. The new Word macros described there include equation numbering and cross-referencing macros, which were not tested during the current evaluation, but which should be quite useful.

Features: The program requires a MacIntosh running either the System 6 or System 7 operating systems, about 700K of space on a hard disk, and 512K of RAM memory. It is recommended that 32-bit QuickDraw be available (this is an installation option under System 6). The distribution disk contains both a Power Macintosh "native" version and a Macintosh 680x0 series version for all other Macintosh computers. The PowerMac version running on a 100 MHz Power Macintosh 8100 is noticeably faster than the other version running on either a Powerbook 180 or Powerbook 540C computer. However, with this, as with most equation construction programs, the slow step is the user interaction rather than the computer. This is a very user friendly visually-oriented program which relies upon a combination of Symbol and Template palettes, three customizable Macro, Symbol, and Template bars, and keyboard shortcuts to provide both experienced and inexperienced users with maximum ease of use and flexibility. The bars are just customizable collections of expressions, symbols, or templates one uses regularly. Macro expressions of almost any complexity which are used sufficiently often to justify it can be added to the macro bar, which can contain up to 32 such expressions. Any of these can be invoked by experienced users by use of no more than three or four keystrokes. There are about 120 templates and over 150 special symbols available in the on-screen pull down palette menus. All of the palettes and bars are optionally displayable. In addition to the symbols provided, characters from any font can be added to the Symbol bar, to supplement those already available. Equations are continually displayed as they are constructed, and one can automatically assign various default fonts and sizes to any of the common equation elements. The program is not copy protected.

In summary, this program is a substantial enhancement of its earlier, already very powerful, precursors. There is no question that chemists and scientists in general will find MathType an entirely satisfactory solution to the problem of including appropriate equations in both their manuscripts and presentations. This reviewer can recommend it with enthusiasm.

Charles L. Wilkins, *University of California, Riverside*

JA9558608

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Book Reviews *

Structure of Crystals: Modern Crystallography, 2nd Edition. By B. K. Vainshtein, V. M. Fridkin, V. L. Indenbom (Institute of Crystallography, Moscow). Springer: New York. 1995. xx + 520 pp. $79.00. ISBN 0-387-56848-4.

This revised edition of an encyclopedic treatment of crystallography displays the marvelous breadth of crystallography. In a text of moderate size and price, a group of authors from the Russian Academy of Sciences reviews everything that can be crystallized—from elements to macromolecular assemblages. They also cover liquid crystals, polymers, band structure of crystals, lattice dynamics, phase transitions, and a variety of solid state defect structures. Most of the book is a very lightly revised version of the 1982 edition, and a new chapter, entitled Advances in Structural Crystallography, has been added to bring some topics up to date. Most of the references in the original chapters are pre-1982, but this is not inappropriate in dealing with the basics of a well-established subject. Some highlights of the book are an enlightening discussion of atomic and ionic radii, a review of organic crystal structures that could serve as a catalog of molecular recognition motifs, and a thorough treatment of phase transitions. Some of the coverage is disappointing. The section on biological structures is marred by lack of any clear organizing principles, a series of particularly muddy black and white illustrations, idiosyncratic spelling, and a failure to update some earlier material. In general, the book succeeds better in the more physical and mathematical topics and less well in the more descriptive ones. The justification for the new edition is the last chapter, and the recent material certainly continues the tradition of diverse topics. While the added discussion of crystallographic data banks is perfunctory, the remaining topics are handled competently. It is hard to imagine a reader who could appreciate all of them, but I found the discussions

*Unsigned book reviews are by the Book Review Editor.

of fullerenes, especially phase transitions in C60, the use of X-rays to study the distributions of bonding electrons, the structure of superconductors, and modular structures—structures composed of standard building modules—to be most interesting. Other topics include the recent crystal chemistry of silicates and related compounds, organic crystal structures and biomolecular crystals, ordering in liquid crystals, Langmuir−Blodgett films, and photo- and thermostimulated phase transitions. It is unlikely that anyone needs to have this book in a personal library, but it would make a nice addition to many institutional libraries.

Jon Clardy, *Cornell University*

JA965526R

S0002-7863(96)05526-6

Environmental Chemodynamics: Movement of Chemicals in Air, Water and Soils, 2nd Edition. By Louis J. Thibodeaux (Louisiana State University). Wiley: New York. 1996. xx + 593 pp. $69.95. ISBN 0-471-61295-2.

This is a much welcome updating of the useful text that Louis Thibodeaux first authored in 1979, shortly after environmental chemodynamics emerged as a distinct subfield of environmental chemistry and environmental engineering. It is aimed at senior and first year graduate students in engineering or chemistry programs, for whom an introduction to the theories and models used in determining the transport and fate of chemicals in the environment is of interest.

Thibodeaux has retained the logical organization of the first edition, which begins with three general introductory chapters devoted to the fundamentals of phase equilibria and material transport, followed by individual chapters that examine air/water, water/soil, air/soil, and intraphase transport. All chapters have been appropriately updated, incorporating the results of the intense study of chemodynamics that has resulted from the increased focus on environmental chemical phenomena during the past two decades. Of particular value to teachers who will use this text is the significant increase in the number of example problems and exercises.

As appropriate in an introductory text, the basic models introduced to examine the complex phenomena described are presented in simplified or approximate forms, which require only a facility with algebra for their interpretation. Reference is made to more sophisticated models that require a knowledge of calculus and differential equations. One general theme that is not discussed in sufficient detail is the extent to which approximations or assumptions used in developing simplified models may result in errors or limitations in the practical application of the models.

The literature citations at the end of each chapter have been greatly expanded and brought up to date. Users of the book will also appreciate the reworking and expansion of the many useful tables of mathematical, physical, chemical, and environmental information included in the appendices.

Theodore D. Goldfarb, *State University of New York at Stony Brook*

JA965577O

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Guidebook to the Small GTPases. Edited by Marino Zerial (European Molecular Biology Laboratory) and Lukas A. Huber. Oxford University Press: New York. 1995. xix + 476 pp. $65.00. ISBN 0-19-859944-7.

Since the discovery that Ras-related small GTP-binding proteins constitute a superfamily with the members serving as "molecular switches" in the regulation of numerous cellular events, there has been widespread interest in understanding the role and function of this ubiquitous superfamily of proteins. However, the list of small GTPases is growing rapidly, due to application of molecular cloning techniques. This guidebook was designed to organize our current knowledge of small GTPases in an accessible form and make it available to a broad audience. Overall, this goal was achieved, providing a well-organized and timely guide for scientists in all fields.

The first section of the guidebook successfully provides an overview to the Ras superfamily of small GTPases. The early chapters are devoted to introduction of the concept of the GTPase molecular switch, identification of subfamilies within the small GTPase superfamily, sequence and structural information, and finally an overview of the enzymes involved in post-translational modification and localization of the small GTPases. This overview is well-organized and succeeds in presenting a complex topic in manageable form.

The remainder of the guidebook is divided into five additional sections primarily organized around the small GTPase subfamilies: Ras, Rho, Rab, Arf and Sar, and Ran. A fascinating feature of the small GTPases is the diversity of functions that these related subfamilies facilitate. The Ras superfamily has long been known to be an important regulator of cell growth. However, Rho proteins appear to regulate cytoskeletal organization and bud formation in yeast. The Arf and Sar subfamilies are implicated in vesicle budding, while members of the Rab subfamily are implicated in vesicle targeting and fusion. Finally, the newest members of this superfamily, the Ran proteins, appear to regulate multiple nuclear processes.

Each of these sections organized around the subfamilies contains a general introduction summarizing current knowledge of the background and function of the subfamilies. The remainder of these sections consist of short chapters describing each of the proteins identified as within the subfamily. Each chapter across the different sections is organized around common headings: Nucleotide sequence, Protein, Post-translational Modifications, Interacting Components, Localization, Functional Studies, and References. This organization and consistency greatly simplify comparisons and cross-referencing between different small GTPases in the same or different subfamilies.

The references in each section and chapter are quite current. Also impressive is the planned update system that exists to keep readers apprised of new developments in the field (under development on the Worldwide Web). Researchers in the field can theoretically post new research findings that will complement those described in the guidebook.

Given the discovery that binding and hydrolysis of GTP by proteins in this superfamily can regulate so many cellular events, a fundamental understanding of small GTPases is essential for biological scientists. Those in the chemical community interested in protein structure−function relationships and protein−protein interactions will find this guidebook a particularly useful laboratory reference. The breadth and depth of knowledge contained in this guidebook as well as the accessibility of information make it an excellent addition to the other guidebooks in this series.

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JA965633L

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Polymers and Neutron Scattering. Oxford Series on Neutron Scattering in Condensed Matter No. 8. By Julia S. Higgins (Imperial College, London, U.K.) and Henri C. Benoit (Universite Louis Pasteur, Strasbourg, France). Oxford: New York. 1994. xix + 436 pp. $98.00. ISBN 0-19-851003-9.

The availability of neutron scattering techniques for the analysis and characterization of polymeric materials has virtually revolutionized our understanding of their molecular level structure and properties. Although these techniques have been in use for more than two decades, a comprehensive textbook on the subject has been lacking, much to the chagrin of current practitioners and researchers interesting in learning the techniques. Thanks to the efforts of two pioneers in the field, our dreams for such a text have now been answered. The stated objective of the collaboration by Julia Higgins and Henri Benoit was to produce an introductory text that could introduce new research students to the field of neutron scattering from polymers, but the excellent text they produce goes well beyond this original goal and has something to offer us all, from novice to expert.

The text is well written in a delightfully simple and unassuming style that softens its strong technical content. For example, Chapter 2 is entitled Neutron production and detection: the nuts and bolts, and answers the questions "where do neutrons come from" and "how do I handle them". The subsequent chapter on spectrophotometer design begins with a brief muse regarding "when we are going to get to the 'meat' and discuss scattering from polymers", just at the moment when the reader is thinking the same thing. The authors anticipate the reactions of the reader with appropriately timed humor and keep the reader interested in a subject that, if improperly handled, could have come across as very dry.

Make no mistake however in thinking that this text is overly simplified. There is sufficient depth here to satisfy even the specialist.

Having been schooled by Professor Benoit, I was pleased to see the inclusion of many of the elegant and clever derivations of scattering theory that I myself had been treated to. These derivations have formed the basis of my own graduate lectures over the years and have been very successful in elucidating complex concepts of polymer physics to my students. The complementary nature of the authors' expertise is evidenced by the lucid treatment of polymer dynamics, based in large part on the many research contributions of Prof. Higgins, and the comprehensive coverage of the practical aspects of setting up a neutron scattering experiment.

The text covers virtually all important aspects of the neutron scattering technique as applied to polymers. Each subject is well referenced and amply illustrated with well-selected examples of applications taken from the literature. After digesting this text, the reader should be well on his way to understanding the complete neutron scattering process: how to select and design an appropriate experiment, which spectrometer to employ and its principles of construction, considerations for sample preparation, data analysis treatments, and even interpretation. The authors are diligent in relating their topics to important theories of polymer physics whenever possible and have included appendices that contain useful information on polymer thermodynamics and a requisite tutorial on Fourier transform properties. The conventions and nomenclature have been standardized throughout the text and are summarized in a useful table at the front of the book.

If you are interested in using the neutron scattering technique or simply want to learn more about polymer science, you should definitely add this text to your collection. It is destined to become a classic along the lines of my well-worn copy of the X-ray scattering text by Guinier and Fournet, and has taken an appropriate place of honor on my bookshelf.

Jeffrey T. Koberstein, *The University of Connecticut*

JA9553415

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Irradiation of Polymers: Fundamentals and Technological Applications. Edited by Roger L. Clough (Sandia National Labs) and Shalaby W. Shalaby (Poly-Mid, Inc.). ACS: Washington, DC. 1996. xiii + 433 pp. $109.95. ISBN 0-8412-3377-2.

ACS Sympbosium Series No. 620. Developed from a symposium sponsored by the Division of Polymer Chemistry, Inc., at the 208th National Meeting of the American Chemical Society, Washington, DC, August 21−26, 1994. This book discusses structural and physicochemical effects of irradiation and presents techniques to model and monitor radiation events. The use of radiation as a sterilization method in the biochemical, pharmaceutical, and food industries is discussed. Current topics in the stability and stabilization of polymers exposed to ionizing radiation are examined. Advances in the use of radiation with photosensitive metathesis polymers, chemical amplification, and dry-develop resist technology are reviewed.

JA965709D

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Hydrogels and Biodegradable Polymers for Bioapplications. Edited by Raphael M. Ottenbrite (Virginia Commonwealth University), Samuel J. Huang (University of Connecticut), and Kinan Park (Purdue University). ACS: Washington, DC. 1996. x + 268 pp. $99.95. ISBN 0-8412-3400-0.

ACS Symposium Series No. 627. Developed from a symposium sponsored by the Division of Polymer Chemistry, Inc., at the 208th National Meeting of the American Chemical Society, Washington, DC, August 21−26, 1994. This book examines the use of reversible hydrogels and stimuli-sensitive hydrogels and in vivo application of hydrogels. Current issues in biodegradation including controlled release from degradable matrices, degradation of synthetic materials in marine and soil environments, and time-related degradation of support devices and other applications of biomaterials are discussed. Applications of biomaterials and hydrogels are reviewed.

JA965703O

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Nonlinear Optical Materials: Theory and Modeling. Edited by Shashi P. Karna (U.S. Air Force Phillips Laboratory) and Alan T. Yeates (U.S. Air Force Wright Laboratory). ACS: Washington, DC. 1996. xi + 249 pp. $89.95. ISBN 0-8412-3401-9.

ACS Symposium Series No. 628. Developed from a symposium sponsored by the Division of Computers in Chemistry at the 208th National Meeting of the American Chemical Society, Washington, DC, August 21−25, 1994. This book provides an overview of the theoretical aspects of nonlinear optical materials design. This book examines quantum mechanical theory of nonlinear optical phenomena. First principles, semiempirical, and model Hamiltonian calculations of linear optical properties are discussed. Theoretical modeling of organic and polymeric nonlinear optical materials is examined.

JA965702W

S002-7863(96)05702-2

Springer Series in Surface Sciences, Vol. 32: Scanning Tunneling Microscopy and Its Applications. By Chunli Bai (The Chinese Academy of Sciences). Springer: New York. 1995. xii + 331 pp. ISBN 3-540-59346-2. $89.50.

As the field of scanning probe microscopy (SPM) continues to mushroom to include an increasing number of applications and users, the need for texts that address fundamental concepts that are easily accessible to beginners also grows. This type of book is to be contrasted with monographs that are useful in summarizing the state of research but necessarily omit elementary or introductory material. Of the latter type there seem to be a sufficient number of good books that serve the community well. Of the former there are but a few. In this light the recent book entitled *Scanning Tunneling Microscopy and its Applications* by Chunli Bai is a welcome addition.

The book begins with a good historical perspective which places scanning tunneling microscopy (STM) in context with other surface science techniques and microscopies as well as providing a conceptual introduction to the technique and to tunneling phenomena. A simple introduction to tunneling concepts in Chapter 2 is followed by a thorough development of principles beginning in the 1920s with nuclear decay, through the metal/insulator/metal junctions of the 1950s, with an accessible summary of the concomitant theoretical development. There is a complete treatment of tunneling theory including issues specific to STM, i.e., the form of tip wave functions. The treatment includes, for example, cluster calculations of W tips, double tip effects, calculations of the effect of adsorbates (H) on images, etc. The overall treatment, particularly of the advanced issues, is the most thorough and balanced presentation so far by a single author.

The chapter on spectroscopy follows the strategy of presentation developed to this point, a simple, well-illustrated introduction of concepts followed by an in-depth treatment. The discussion of energy resolution is particularly useful (although I disagree with the conclusion regarding optimal tip geometry). Again there is a good connection to other techniques, and the chapter is illustrated with what have become the classic examples, mostly on Si. While the necessary caution that scanning tunneling spectroscopy (STS) is not chemically specific is directly stated, the issue of the effect of wave function decay length is not addressed. This has been a controversy in the STM community for some time, and the examples supporting both sides are included in this text. The discussion of this topic would have been interesting but does not detract from the usefulness to readers.

The treatment of instrumentation in Chapter 4 is thorough and again uses standard but well-chosen examples. The field has evolved to the point where the general principles of instrument design are now well established.

Chapter 5 surveys the other scanning probe techniques including atomic force microscopy (AFM) and its variants, magnetic and electric force microscopy; ballistic electron emission microscopy (BEEM); scanning conductance microscopy; scanning thermal microscopy; scanning potentiometry; photon scanning microscopy; and near field scanning optical microscopy. While the coverage is broad and the descriptions accurate, the coverage in this chapter seems a bit uneven. For example BEEM is given 3/4 the attention as AFM and is the only technique that warrants an equation to describe the distance dependence of the imaging phenomena. On the other hand this chapter also contains the most thorough description of AFM cantilever fabrication published to date, along with a concise summary of all of the possible force detection mechanisms (while recognizing that optical detection remains

the most common). Applications in this chapter include blood cells, protein, Langmuir−Blodgett films, optical discs, and zeolites.

Chapters 6 and 7 provide a survey of applications on clean and adsorbate-covered surfaces, respectively. Several examples in metals, a complete summary of the conventional semiconductors (Si, Ge, GaAs), the calchogenide layered structures, and superconductors are covered in Chapter 6. The adsorbate discussion in Chapter 7 follows the same pattern: adsorbates on metals; adsorbates on Si; organic adsorbates on a variety of substrates including, in addition to semiconductors, graphite and metals; and fullerenes on metals and Si. Nucleation and growth as well as surface chemical reactions are illustrated. Given the amount of attention devoted to semiconductors I found the lack of reference to E. Williams's work a conspicuous omission.

Two special types of applications are highlighted in individual chapters, those in biological fields (Chapter 8) and surface modification (Chapter 9). An honest presentation of the difficulties in image interpretation of biological molecules is given at the beginning of Chapter 8, but a fuller discussion that included the some of the hypothesis for image contrast might have been useful to the reader. The practical issue of attachment of biological molecules to surfaces is addressed with good examples. The surface modification potential of STM is illustrated with the classic examples of manipulating atoms, as well as with contact- and reaction-based feature formation. The fact that these processes are not commercially viable is ignored, which again may not have any impact on new users, but impressive examples of information storage potential by nanoscale lithography are illustrated.

The clear and logical presentation relies on an appropriate number of illustrations and elementary introductions, thereby lending itself to use by beginners, which is not true of many of the texts currently available. Considerable thought has gone into the choice of figures and presentation of the introductory concepts without sacrificing the rigor of a thorough treatment. There is a good balance of classic research results and recent applications, such as C60 and superconductors, used as examples.

From an admittedly fieldcentric perspective, I find that most STM books overlook the field of materials science. There are a wide range of applications that are making significant impact: fractography, film growth (beyond the first few monolayers), fractal characterization of surface roughness, dislocation and slip step development in monotonic and cyclic loading, grain boundary properties, corrosion, adhesion, and friction, etc. This community constitutes a large user base of SPM techniques. This comment is not directed so much as Professor Bai's treatment as to all of us in the field, since his book does present a few such examples, notably in Chapter 5. I strongly recommend that Professor Bai's book be a part of any library that serves surface scientists, biochemists, biophysicists, materials scientists, and students of any science or engineering field as a complement to the small handful of similar texts on scanning probe microscopy. There is no doubt that this is one of the better (most thoughtful) texts.

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JA9655303

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Advances in Molecular Modeling, Vol. 3. Edited by Dennis Liotta (Emory University). JAI Press: Greenwich, CT. 1995. ix + 230 pp. $97.50. ISBN 1-55938-326-7.

This volume, like the two which preceded it, is, using the editor's own words, "a potpourri of articles dealing with several aspects of molecular modeling". One would indeed need an extraordinarily extensive scientific background to be able to accurately review every article it contains.

The volume contains three contributions co-authored by the editor, Dennis Liotta, and Deborah K. Jones, which aim at understanding, through molecular modeling, the stereospecificity and enantioselectivity of various reactions. These begin with a review of experimental data available for the studied reaction and present the chosen methodology and molecular modeling results. They are well written and supported with appropriate figures. It is unfortunate that no articles dealing with similar subjects but written by other authors are included, since this would have allowed comparing the choice of methodologies more easily.

An article presenting the basics of semiempirical methods is contributed by Quentin McDonald. Considering the fact that three articles dealing with organic chemistry modeling using semiempirical methods appear in this volume, this article affords an interesting complement. The author does a good job at explaining the backgrounds of the various existing methods in a historical perspective. However, the lack of examples make it too theoretical for the average organic chemist. The best part of the article is undoubtedly the last section, where the author compares the merits of semiempirical vs ab initio methods.

The protein field is represented by an article on the 3D structure of the HIV type 1 reverse transcriptase contributed by George R. Painter, C. Webster Andrews, David W. Barry, and Phillip A. Furman from the Burroughs Wellcome Company. This gives a good overall view of the approach specific to proteins, which is a field in itself. Closer to my own expertise, an excellent critical review by D. Ross Boswell, Edward E. Coxon, and James M. Coxon of molecular modeling of carbohydrates is included. A second article by the same authors appears dealing with the calculation of the potential energy surface via molecular mechanics. Although similar texts abound in the literature, the authors deliver a highly readable up to date version, which I will undoubtedly suggest as a reference for molecular modeling introduction courses.

As a whole, the quality of the articles is excellent. It is a worthy contribution to the field of molecular modeling, and undoubtdely one that should find its place in scientific libraries.

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JA965629+

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Enzyme Catalysis in Organic Synthesis: A Comprehensive Handbook: Vol. 1. Edited by K. Drauz (R&D Pharmaceuticals/ Intermediates, Germany) and H. Waldmann (Universität Karlsruhe, Germany). VCH: New York. 1995. xxv + 504 pp. DM498.00. ISBN 3-527-28479-6.

This book is the first volume in a two-volume set on the title subject. On the basis of evaluation of this volume and the Table of Contents for the set, it appears to be a truly comprehensive compilation of theory, design considerations, methods, and specific applications of enzyme catalysis in organic synthesis, with chapters written by the leading authorities in the field. In organization, the book is reminiscent of March's *Advanced Organic Chemistry* in that the first several chapters (Section A) cover guiding principles and the later chapters (Section B) give extensive examples of reactions by types of bonds involved, i.e., C−O, C−N, C−C, etc. In utility, this handbook is also like March's treatise in that it provides an extensive entry into the primary literature of, in this case, specific enzyme-catalyzed bond formations used in organic synthesis. A valuable Section C is included at the end of the set that provides lists of commercially available enzymes and suppliers. This first volume specifically includes Section A, which provides a basic introduction to enzymes and factors affecting their function and stability, methods of large-scale production and isolation, enzyme immobilization, principles of reaction engineering, and microbial transformations using cells, and Sections B-1 and B-2, which cover examples of transformations involving C−O and C−N bonds, respectively. The introductory sections include references to some of the most up-to-date methods used in industrial synthesis, as well as excellent older references on the basic concepts. Sections B-1 and B-2 are comprehensive in providing both a historical perspective in the field and the most recent activity in each area examined. In summary, this book should be an excellent leading reference into the primary literature of this field.

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JA955380G

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