and Giegé, that are the bedrock chapters of this volume, the ones that will attract the wider readership.

The hardcover version reviewed here is not bound in the traditional manner, the one most readers expect. While the front and back covers are impressively hard, the binding is loose leaf and pages are strung onto a coil-like spine of wire. This binding provides some helpful features. For one, the book may be left open on a desk or countertop with the confidence that, when next checked, the selected page will be presented. For those who prefer, a paperback version is offered ($50.00, ISBN 0-19-963246-4).

Howard M. Einspahr, *The Upjohn Company*

Solid Supports and Catalysis in Organic Synthesis. Organic Chemistry Series. Edited by Keith Smith (University College of Swansea). Ellis Horwood PTR Prentice Hall: New York and London. 1992. xiv + 338 pp. $68.00. ISBN 0-13-639998-3.

This book written by 13 different contributors covers a variety of solid materials, both inorganic and organic, and their use in organic and biological chemistry as well as in catalysis. The book contains a survey that is more encyclopedic than critical with literature extending to 1990 and a few more recent references.

The two chapters of Part I contain overviews of inorganic and organic supports, respectively. While the chapter on organic support is thorough despite its heavy focus on polystyrene resins, the treatment of inorganic supports would have benefited from an exploration of the vast patent literature that is so important to this area. Part II is an in-depth survey of organic reactions carried out with solid supports or catalysts. The survey covers clays, zeolites, and, finally, polymeric resins. Part III focuses on coverage of the solid-phase synthesis of polypeptides and oligonucleotides from the first reports of Merrifield and Letsinger to most of the recent approaches. The last section of this part of the book contains a very compact chapter on immobilized biocatalysts that only hints at the potential of this type of catalysis. Finally, Part IV is a collection of special topics starting with a useful chapter on hydrogeneration catalysts, followed by a somewhat unconventional personal account by P. Laszlo on the use of clays in catalysis. The last chapter concerns the use of microwave in organic reactions carried out in the presence of solid supports.

Overall, this is a timely book that puts into perspective much of the work done over the past two decades with the solids that are used in supported catalysis. It is a useful complement to other books in this area especially in view of its good coverage of inorganic materials.

Jean M. J. Fréchet, *Cornell University*

Heterocyclic Chemistry. Second Edition. By T. L. Gilchrist (University of Liverpool). J. Wiley and Sons: New York. 1992. xviii + 396 pp. $35.95. ISBN 0-470-218053.

The second edition of *Heterocyclic Chemistry* is a considerably more detailed version of the first edition and not a minor updated revision. The overall readability could be clearer, but it should be satisfactory for an advanced student of organic chemistry with a good background in the standard methods of organic synthesis. All of the common heterocyclic structural types are discussed, from both a physical organic and synthetic viewpoint. The problems at the end of each chapter are particularly well thought out and interesting. The ring synthesis chapter is a difficult subject to present in an all encompassing manner, and the author succeeds to some extent. The material would have been more interesting if some historical perspective had been introduced. This is a common failing of most modern textbooks; they are dry reading and convey little or none of the excitement of discovery and research. Overall this is one of the better texts covering heterocyclic chemistry, and it draws a good balance between the properties and synthesis of the more commonly used ring systems.

Philip D. Magnus, *University of Texas*

Molecular Databases for Protein Sequence and Structure Studies. By John A. A. Sillince and Maria Sillince (British-Sheffield University). Springer-Verlag: Berlin and Heidelberg. 1991. xvi + 236 pp. $69.00. ISBN 0-387-54332-5.

The wealth of information concealed in protein sequences offers scientists one of the greatest outstanding problems—the prediction of protein structure (and function) from its sequence. With this in mind I looked forward to reviewing this work, as databases will surely play an important part in solving these problems. Readers hoping for new ideas to apply to their research in this area are likely to be disappointed—the emphasis of the book is definitely on molecular databases rather than on protein sequence and structure studies. Large sections of the book are devoted to small molecule databases (for example, the Chemical Abstracts Service on-line) and address such questions as why use on-line databases and what is the most appropriate representation of molecular structure. As information scientists, the authors' main concerns are related to issues such as database descriptions, database design, search strategies, and how they may possibly be improved. Researchers with similar interests may well find the book interesting. Researchers more interested in simply using databases as a tool may find useful information (such as references and descriptions of the main databases, along with useful address lists) but will probably be disappointed in the molecular science content, particularly as most of the references predate 1990.

Christopher A. Reynolds, *University of Essex*

Selectivity in Catalysis. ACS Symposium Series 517. Edited by Mark E. Davis (California Institute of Technology) and Steven L. Suib (University of Connecticut). American Chemical Society: Washington, DC. 1993. xii + 412 pp. $99.95. ISBN 0-8412-2519-2.

This book was developed from the symposium sponsored by the Catalysis and Surface Science Secretariat at the Fourth Chemical Congress of North America (202nd National Meeting of the ACS) held in New York on August 25–30, 1991. After a preface and an introductory chapter by the editors, there are 26 additional chapters organized under the following headings: Stereoselectivity; Clusters, Alloys, and Poisoning; Shape Selectivity; and Reaction Pathway Control. There are also author, affiliation, and subject indexes.

Magnetic Resonance of Carbonaceous Solids. Advances in Chemistry Series 229. Edited by Robert E. Botto (Argonne National Laboratory) and Yuzo Sanada (Hokkaido University). American Chemical Society: Washington, DC. 1993. xiv + 664 pp. $49.95. ISBN 0-8412-1866-8.

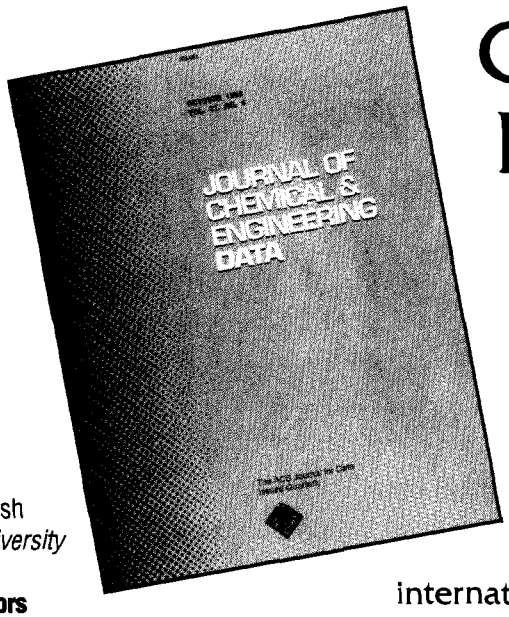
This book was developed from a symposium sponsored by the International Chemical Congress of the Pacific Basin Societies held in Honolulu on December 17–22, 1989. After a preface by the editors, there are 33 chapters organized under the following headings: Overviews; NMR Spectroscopy; Electron Paramagnetic Resonance Spectroscopy; and Conclusion. There are also author, affiliation, and subject indexes.

Surfactants in Lipid Chemistry: Recent Synthetic, Physical, and Biodegradative Studies. Edited by J. H. P. Tyman (Brunel University). Royal Society of Chemistry: Cambridge, England. 1992. x + 182 pp. £39.50. ISBN 0-85186-395-7.

This book was developed from the one-day meeting called the Surface Active Lipids held in September 1991 at Brunel University. After a preface by the editor, this book contains nine chapters, in typescript form, organized under the following headings: Synthesis and Physical Properties; and Synthesis, Structure and Biodegradation. There is a short subject index.

The Enzymes. Volume XX. Mechanisms of Catalysis. Third Edition. Edited by David S. Sigman (University of California, Los Angeles). Academic Press: San Diego, California. 1992. x + 546 pp. $99.00. ISBN 0-12-122720-0.

This book is the second in a two-part series on the Mechanisms of Catalysis. After a preface by the editor, there are 10 chapters with the following titles: Transient-State Kinetic Analysis of Enzyme Reaction Pathways; Metal Ions at Enzyme Active Sites; Phosphate Ester Hydrolysis; Nucleotidyltransferases and Phosphotransferases; Stereochemistry and Covalent Intermediates; Glycosidases and Glycosyltransferases; Catalytic Strategies in Enzymic Carboxylation and Decarboxylation; Mechanisms of Enzymic Carbon–Carbon Bond Formation and Cleavage; Enzymic Free Radical Mechanisms; Molecular Mechanism of Oxygen Activation by P-450; and Mechanism of NAD-Dependent Enzymes. There are also an author index and a subject index.



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ISSN 0021-9568

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