Glycolipids from Fungi and Protozoa by E. B. Bergter and M. H. S. Villas Boas, Potential Bioactive Conformations of Hormones of the Gastrin Family by L. Moroder and J. Lutz, Human IgG1 Hinge-Fragment as a Core Structure for Immunogens by L. Moroder, G. Hübener, and M. Gemeiner, and ^{13}C-NMR Spectroscopy of Coumarins and their Derivatives: A Comprehensive Review by B. Mikhova and H. Duddeck. The chapter titled New Developments in Brassinosteroid Research by G. Adam *et al.* covers some recent synthetic studies, but emphasizes structure and metabolism of these compounds.

The book was prepared from camera-ready copy provided by the authors, but all figures and structures are well done, and the slightly different formats are not a distraction. The index provides a reasonable mechanism to find the various compound classes, but is of very limited utility otherwise. Most authors do not provide a table of contents that would make browsing (and reading) easier. This volume provides excellent chemistry covering a broad range of natural products topics presented in an attractive, readable format. However, the ability for this type of volume to meet the needs of organic chemists interested in natural products is reduced dramatically because of the high cost of these volumes. Few libraries are likely to order this series automatically (neither the library at my institution nor the library at another nearby major research institution possess all volumes in this series), and faculty are likely to request purchase of such an expensive volume only if it includes a review of particular importance to their research.

Kenn E. Harding, *Texas A&M University*

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Handbook of Nanophase Materials. Edited by Avery N. Goldstein (The Dow Chemical Company). Dekker: New York. 1997. vii + 369 pp. $165.00. ISBN 0-8247-9469-9.

The *Handbook of Nanophase Materials* edited by Avery Goldstein is a careful collection of topics on nanophase materials, a rapidly evolving field especially over the last decade as new experimental techniques and simulation methods have been developed suitable for short length and time scales. Nanophase materials are considered by many as a new state of matter, with some materials exhibiting unique properties (e.g., magnetic, mechanical, optical, reaction, etc.) which are simply not an interpolation between simple molecules and the bulk. From a scientific point of view, the way molecules self-organize themselves at short length scales to eventually form bulk materials can provide invaluable insight into the growth mechanisms. From a technological point of view, nanophase materials have tremendous promise for opticoelectronics, enhanced magnetic storage, adsorption, and catalytic applications, with the appealing feature of tuning their sizes and shapes down to the atomic level for molecular control of the aforementioned properties.

With the tremendous progress over the last few years on our understanding of nanophase materials and their potential for numerous applications, there is definitely a need for such a handbook, especially for people entering this field, as a large collection of various topics is covered. Despite the rapid evolution of research, most of the selected chapters contain many up-to-date citations, which makes the handbook a valuable source of information.

The first part of the handbook is focused mostly on materials synthesis and potentially interesting properties, whereas the second part focuses more on materials characterization. Many deposition techniques are covered including sol−gel, electrodeposition, molecular beam epitaxy, and plasma-assisted deposition. In addition, a variety of materials is discussed including metals, polymers, ceramics, semiconductors, glasses, zeolites, colloids, and metal oxides. Several articles give an excellent background and review on the state-of-the art of a specific subject (e.g., the papers on molecular beam epitaxy, sol−gel, and electrodeposition, to mention a few), whereas other articles focus more on the specific work of the author.

While experimental techniques for different materials and properties measurement are discussed throughout the handbook, there is unfortunately little attention to theoretical work (with a few brief exceptions such as on damage modeling in Chapter 2). With the advent of computer power, molecular and quantum based simulations have become a powerful tool in exploring structures and properties of nanophase materials. In fact, much of our current understanding on nanoclusters comes from theoretical work. Inclusion of a few selected papers would have definitely given a much broader view to a reader about recent theoretical advances.

While some of the contributors refer to current problems and possible future trends and needs in this field, it would have been valuable to see more comments along these lines. Also, it would have been valuable to include more articles from industry, and address questions regarding the potential for short term commercialization of new techniques, how much industry has been affected by the revolution of nanophase materials over the last several years, and how large the market of nanophase materials is. Such issues would add another important facet to the handbook, especially for engineers working in this field.

In summary, I believe that this handbook is a collection of many interesting articles which most people working on nanophase materials would find worth looking at. Its real strength lies in providing a survey of various topics, deposition and etching techniques, materials, and characterization methods with up-to-date references in most cases.

Dion G. Vlachos, *University of Massachusetts at Amherst*

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Progress in Ion Exchange: Advances and Applications. Edited by A. Dyer (University of Salford, U.K.), M. J. Hudson (University of Reading, U.K.), and P. A. Williams (North East Wales Institute, Wrexham, U.K.). American Chemical Society: Washington, DC. 1997. xii + 498 pp. $174.00. ISBN 0-85404-791-3.

This book contains a diverse collection of papers on ion exchange processes. Divided into five parts the papers cover novel materials and novel applications, ion chromatography and electrophoresis, resins as biosorbents, ion exchange for environmental cleanup, and ion exchange in inorganic materials and its theory. Each part is highlighted by a plenary paper that presents a topical review of the area.

The most striking aspect of the book is its wide variety of applications. Papers on the synthesis of novel nanocomposite materials, new inorganic ion exchange materials for iodide, and the application of anion exchanges as phase transfer catalysts are just some of the topics covered in the novel materials and applications portion.

Topics covered on ion chromatography include new column design, possible applications of capillary ion electrophoresis in the power industry, and a review of the current status of the determination of inorganic anions. Other sections contain papers on ion exchange in the pharmaceutical industry and bioproduct purification, and a large number of contributions highlight the application of ion exchange to the environmental cleanup of radioactive materials and heavy metals.

The final section of this book contains a number of papers on the theory and mechanism of the ion exchange process. These include the application of solid-state NMR to facilitate understanding of the unusual selectivities of tin and titanium antimonates, simulation of multicomponent ion exchange dynamics, and suggestions for consistent ion exchange nomenclature.

In summary, this book contains a collection of papers on the ion exchange processes that cover topics from theoretical to practical applications. It would serve as a reference text for a chemist wanting a current review of the field of ion exchange. The authorship of the papers is limited to mainly European scientists and contains no contributions from prominent U.S. researchers, which omits a significant body of current research in this area.

Dale D. Ensor, *Tennessee Technological University*

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