tected version will cost $150.00 more, but the improvement in performance may be worth it. In the meantime, programs such as Wordperfect, Microsoft Word, or WordStar are superior for straight wordprocessing. For chemical structures, MacDraw (*J. Am. Chem. Soc.* **1985**, *107*, 6140) or the related program ChemDraw are vastly superior. The sole area where TechWriter may offer an advantage is writing that uses a lot of complicated mathematical equations; in these applications, TechWriter's lack of speed may be tolerable.

Yau-Man Chan, Karl M. Smith, and Clayton H. Heathcock, *The University of California at Berkeley*

Molecular Graphics on the IBM PC Microcomputer. Enhanced Version 2.0. By J. G. Henkel and F. H. Clarke. Academic Press: New York. $129.50.

"Molecular Graphics on the IBM PC Microcomputer" is a program designed to draw and manipulate molecules in three-dimensional space. Although this program is designed for the IBM PC, a companion package is available from Academic Press for the Apple. The operation of the program requires access to proprietary IBM files which must be copied from the operating system diskette (DOS 1.1, 2.0, or 3.0) before the system will function. The program, which allows for the creation of a working diskette as a backup and does not strongly admonish against copying, is available at a list price of $129.50 from Academic Press. This software is a scaled-down version of visualization and orientation programs which are available at much greater expense from a number of sources.

This program allows one to determine conformation and to organize molecules, for example, in crsytal lattices or in enzyme pockets. It will accommodate systems as large as 1199 atoms and bonds. Its input geometry requires Cartesian coordinates as raw data and allows the user to establish connectivity. From the input structure it is easily possible to calculate bond and torsional angles, to enter atomic distances, to scale to internal coordinate systems, to zoom size presentation, to highlight one structure in the presence of others, or to emphasize one atom or group of atoms in a molecule. It is possible to use the program to invert coordinates or to move molecules or parts of molecules in either rotational or translational modes. The program's greatest strength is in allowing two molecules to be superimposed, so that chemists can examine "fit" into macromolecular arrays. The program allows screen display enhancement with molecules portrayed as balls and sticks, as interconnected lines, or as space-filling atoms.

The major limitation of the program is its quite tedious requirement for data entry. The practicing chemist must have available Cartesian coordinates, either calculated from standard bond distances or as available from X-ray structure data. Such coordinates could also be obtained from either molecular mechanics for semiempirical calculations, and the program does allow for the use of auxiliary programs, e.g., the "space tablet", for direct input of drawn molecules. The string of commands used in the program is sometimes cryptic, although the authors do provide a help command which lists available commands as well as their interpretation. The accompanying manual is straightforward and easy to use. The program also has a good series of prompt messages when input or size exceeds program capabilities.

The program is not intended to replace physical molecular models, and the difficulty of entering data will undoubtedly make this application unwieldy for simply constructed molecules. In studies in which intermolecular interactions of large similar systems are of interest and in which input parameters need not be started from scratch but can be used to manipulate an existing structure on file, the program may find high utility. The images produced from screen dump onto a printer can also be useful as a graphic representation fit for public presentation. The manual is clear and well organized, so that nonexperts can easily use the package. In our opinion the software will be of great use to chemists required to perform "docking" operations as a method for study of intermolecular interactions and as a method for depiction of molecules in two dimensions.

Marye Anne Fox and David Shultz, *University of Texas*

*Book Reviews**

Minerals and Rocks. Volume 18. Natural Zeolites. Edited by Glauco Gottardi and Ermanno Galli (Universita di Modena: Modena, Italy). Springer-Verlag: New York. 1985. xii + 409 pp. $59.00. ISBN 0-387-13939-7.

This book is the first monograph devoted completely to the subject of natural zeolites. The treatise opens with a tutorial in the topology of tetrahedral frameworks observed in natural zeolites. By careful comparisons of framework topologies, the natural zeolites of known structure are categorized into six groups. The six chapters which follow are devoted to the history, crystallography, chemistry, and physicochemical properties of each naturally occurring zeolite, one chapter per framework category. The closing chapter provides data for several natural zeolites with unknown structure. These eight chapters are organized well and presented clearly. The text also provides two appendices containing X-ray powder patterns and some infrared spectra of the natural zeolites. The monograph includes many useful features such as excellent references and fine details, e.g., unit cell parameters accompany X-ray powder patterns. This comprehensive text on natural zeolites is an excellent reference for those working in the areas of mineralogy and zeolite science.

Mark E. Davis, *Virginia Polytechnic Institute and State University*

Drugs and the Human Body. Second Edition. By Ken Liska (San Diego Mesa College). Macmillan Publishing Company: New York. 1986. xiv + 386 pp. $14.00. ISBN 0-02-371070-5.

Drug use and misuse are topics of intense public and medical interest. The term drug, defined broadly here as "any absorbed substance that changes or enhances any physical or psychological function in the body", covers a multitude of sins. This book examines the pharmacology and legal aspects of a variety of chemical substances ranging from relatively innocuous OTC preparations to the hardest narcotics and street drugs. Topics covered in depth include marijuana, the Pill, hallucinogens, tranquilizers, pain killers, and stimulants. There is also an extensive index, a glossary of technical and street terminology, and an appendix on structure/activity relationships.

If the book is written for "students with little or no background in science". In keeping with its intended use as a textbook for nonscience students, each chapter begins with a check-off list of significant facts and concludes with a set of study questions. If style is somewhat condescending, the level of presentation seems appropriate for the target audience. Written in lay language, the book is eminently readable and is crammed with factual information on drugs and their effects. Although much of the material appears to have been taken from compendia such as the *Physicians's Desk Reference*, rarely is there a citation to the source of the information. This is unfortunate. The nonscientific reader, in particular, should be made aware that what we accept as fact is the product of basic research and has appeared in print in refereed journals or other technical publications. At the very least the author should have included a list of supplementary references for persons wishing to pursue a topic in greater detail.

It is the author's intention to provide objective information about drugs without passing judgement on their use. For the most part he succeeds, but on certain topics his tone becomes rather preachy. This is especially true in the chapters dealing with alcohol and caffeine consumption, in which his comments border on the evangelistic. On other occasions the author, a licensed pharmacist and college chemistry teacher, offers authoritative (albeit undocumented) medical opinions. His recommendations seem reasonable and prudent, but, in this era of litigation, medical advice should be left to the physician. Regardless, the reader would be well advised to heed the recurrent message of moderation and to take seriously the warnings of drug hazards.

Even a casual reading uncovered a number of chemical and typographical errors which should have been eliminated in this second edition. Chemical inaccuracies, such as the incorrect structural formula for pentothal sodium (p 346) or the synonymous use of the terms ethylene glycol and diethylene glycol (p 64) are excusable given the intended market. The typographical errors are merely an annoyance, but in at least one case (T. 12.2) the misprint was substantial. The net effect of the poor proofreading is to cheapen the work and ultimately to damage its credibility. Despite its imperfections, this is an interesting, informative, and often entertaining book. The level of scientific discourse may not be the highest, but the subject matter is timely, and the data are up to date. The book would make a fine text for a science course for nonmajors or could serve as a useful supplement to an elective upper-division chemistry course. Its merits outweigh its shortcomings.

Mark R. DeCamp, *University of Michigan—Dearborn*

*Unsigned book reviews are by the Book Review Editor.

Polymer Degradation and Stabilisation. By Norman Grassie (University of Glasgow) and Gerald Scott (University of Aston in Birmingham). Cambridge University Press: New York. 1985. viii + 222 pp. $54.50. ISBN 0-521-24961-9.

The field of polymer degradation and stabilization was born with the development of the first polymer. Since then, considerable effort has been expended to elucidate the degradation processes of literally thousands of polymers. With this in mind, it is quite remarkable that the authors have managed successfully to combine a variety of widely diverse topics, all germane to the problem of polymer degradation, into a single compact text which can easily be read by anyone versed in polymer science. After covering the standard topics dealing with thermal, photo, and oxidative degradation of polymers, the book treats the elements involved in stabilization of polymers with excellent clarity and breadth. The book is completed with chapters on polymer flammability and degradation in special environments such as polluted atmospheres and high humidity. Overall the book would be a valuable asset for anyone wishing to acquaint themselves with the complete field of polymer degradation. It should serve equally well as an educational text in an academic institution or as a source for the practicing polymer or materials scientist wishing to gain an introduction to the field. One feature of the book which should prove to be particularly helpful to readers new to the field is its complete bibliography on each subject covered.

Charles E. Hoyle, *University of Southern Mississippi*

Principles of Instrumental Analysis. Third Edition. By Douglas A. Skoog (Stanford University). Saunders College Publishing: Philadelphia. 1985. xii + 879 pp. $40.95. ISBN 0-03-01229-5.

"Principles of Instrumental Analysis" continues to be the standard text for chemical instrumentation and measurements with the publication of the updated and expanded Third Edition. This edition is not only a fine textbook but an excellent reference manual, providing authoritative and well-organized descriptions of all the important instrumental methods.

Perhaps the greatest strength of this edition is the increased emphasis on the fundamentals of measurement science. The first five chapters and two appendices cover this important aspect of chemical measurements. Chapter 1 deals with analytical signals, statistics, and figures of merit of analytical methods, such as detection limit and sensitivity. Propagation of error, a frequently overlooked topic, is also included. Chapter 2 and Appendices 1 and 2 provide a basic treatment of electronics, while operational amplifiers, noise, and signal enhancement techniques are also covered. Microcomputers and Microprocessors in Chemical Instrumentation is the title of Chapter 3, a new section. While this material is extremely simplified, it is useful in helping some students keep their bits, bytes, and baud straight while learning to operate the more sophisticated computerized instruments. Chapters 4 and 5 deal with interactions of electromagnetic radiation with matter and components of optical spectrometers, respectively. The most notable feature of these introductory chapters is the clear focus on measurement science, both basic and applied aspects being treated.

Thirteen chapters are devoted to spectroscopic methods, from UV–vis to IR to NMR. A new chapter, Electron Spectroscopy, contains concise descriptions of such instrumental techniques as X-ray photoelectron spectroscopy and Auger emission spectroscopy. A prominent feature in the chapter on mass spectrometry is in-depth coverage of ionization techniques and ion-cyclotron resonance. These welcome additions reflect the author's commitment to up-to-date coverage of instrumentation research and development.

Of the remaining eleven chapters, five are devoted to electrochemistry, four to separations, and one each to thermal methods and automated methods of analysis. Electrochemistry is covered in the same format as in the Second Edition: an introductory chapter and one chapter each on potentiometry, coulometry, voltammetry, and conductometric methods. All of the fundamentals are intact, but sections on differential potentiometry, voltammetry at stationary solid electrodes, and oscillometry have been deleted. The expanded section on modified voltammetric techniques somewhat compensates, however. In the chromatography section, a chapter on planar methods has been added as well as strengthening of the liquid chromatography chapter, now entitled High Performance Liquid Chromatography. While two recent instrumentation developments, the ion trap detector for gas chromatography and supercritical fluid chromatography, have been added, no treatment of kinetic performance of chromatographic media or the fundamentals of capillary columns are presented. Still, there is a nice section on solvent optimization and one on selection of stationary phases for gas chromatography. The final chapter, Automated Methods of Analysis, is a much-needed treatment of such techniques as flow injection and continuous flow analyses, centrifugal fast analysis, and multilayer film-based analysis, common in clinical chemistry laboratories.

This is a comprehensive, up-to-date textbook and reference manual that provides excellent coverage of the field of chemical instrumentation and measurement science. From the quality and detail of the illustrations to the straightforward end-of-chapter problems, this edition is a great value and one that I highly recommend.

Dennis C. Shelly, *Stevens Institute of Technology*

The Chemistry of the Liquid Alkali Metals. By C. C. Addison (University of Nottingham, England). John Wiley and Sons: New York. 1985. x + 330 pp. $64.95. ISBN 0471-90508-9.

Recent interest in the liquid alkali metals has been stimulated by the demands of nuclear energy technology. The lighter of the alkalies provide a suitable medium for cooling reactor cores because of their low viscosity and density and high coefficients of thermal conductivity. Much of the literature on liquid metals pertains to their use in heat exchangers and deals with techniques of purification, handling and containment, corrosive properties, and the monitoring of trace impurities.

This book is a collective review of the physical and chemical properties of liquid alkali metals, alloys and solutions and their applications in modern technology. The first eight chapters outline the methodology involved in purification, manipulation, and containment of the elemental liquids and analytical techniques for the determination of various physical and chemical properties including solubility, solvation, and speciation in the liquid alkalies. Possible solution mechanisms are considered for different solutes based on the free electron model and electrical resistivity, vapor pressure, and freezing point depression measurements.

A substantial portion of the text is devoted to a discussion of chemical interactions between liquid alkali metals and other elements and compounds. Among these are reactions involving other alkalies, alkaline earth, first row, and transition metal elements, hydroxide, amide, and halogen compounds, water, and simple hydrocarbons. A discussion is included of wetting and corrosion of transition metals and their alloys commonly used to contain the liquid metals. The final chapter describes the use of liquid alkalies in nuclear reactors, electrochemical cells, and other applications.

Throughout the book emphasis is placed on solutions of hydrogen, oxygen, nitrogen, and carbon, since their affect on the reactivity of the solution is so important in industrial processes. Many of the discussions are supported by tables of solubility, solution enthalpy, and resistivity data, and numerous phase diagrams are provided. An extensive bibliography with references through 1983 is included.

S. Michael Sterner, *Virginia Polytechnic Institute and State University*

AGA Gas Handbook. Edited by Kersti Ahlberg. Almqvist & Wiksell International: Stockholm, Sweden. 1985. x + 582 pp. Kr. 275.00. ISBN 91-970061-1-4.

This book presents a general guide to the physical and chemical characteristics of 67 compressed and condensed gases followed by a more detailed discussion of 22 gases most often used in industrial processes. Specific information is provided on the manufacture, applicaton, handling, transport, storage, and potential safety hazards for each of these gases. A brief theoretical review of physical properties prefaces tabulations of density, viscosity, compressibility, heat capacity, entropy, enthalpy, etc., which are presented over a range of pressure and temperature appropriate to the common commercial application of each gas.

Practical aspects of gas applications are emphasized so that the book contains much technical information pertinent to the design and operation of gas systems. Appropriate choice of materials and suitable geometries for larger gas systems are discussed together with the details of calculations such as those involved in determining pipe diameter, flow rate, and pressure drop.

Information is presented in an easily accessible format. Gases are arranged in alphabetical order, each with its own table of contents. A glossary, subject index, and table of conversion factors are included. References, arranged by subject matter, are grouped collectively at the end of the book.

S. Michael Sterner, *Virginia Polytechnic Institute and State University*

Transport and Diffusion Across Cell Membranes. By W. D. Stein (The Hebrew University of Jerusalem). Academic Press, Inc.: London, U.K., and Orlando, FL. 1986. xvii + 685 pp. $79.50. ISBN 0-12-664660-0.

Here is a substantial single-author work on a subject relevant to most workers in the biological sciences. Dr. Stein, of course, is an internationally recognized scientist in the area of membrane transport and wrote in 1967 the highly respected "Movement of Molecules Across Cell Membranes". Clearly, much has happened in the intervening 20 years or so and the current text brings the reader up to date through approximately the beginning of 1985. The text is long, comprehensive, and

well-illustrated and will become an essential resource for researchers delving into the mysteries of membrane transport.

The objective of the book is to find answers to the following questions: How do molecules and ions move across cell membranes? How does the cell membrane act as a barrier to such movements? How do specialized membrane components allow specific substrates to overcome this barrier? All discussion proceeds from a solid foundation of basic physicochemical principles. Novices in the area are cautioned to have their kinetics and thermodynamics knowledge securely in place if they wish to extract the best use from this treatise.

The text is divided into six chapters, the first two of which summarize respectively the physical basis of membrane transport and the features of passive diffusion across biological barriers. Chapters 3 through 6 comprise the "meat" of the book and address channels, carriers, co-transport systems, and chemiosmosis. Each of these sections is about 100 pages or more. The references are up to date and indicate, in their breadth, the extent of Dr. Stein's awareness.

The book is, on the whole, well-written and nicely produced. However, because of the length of the chapters, one occasionally loses sight of the original objective. Some signposts, short summaries of most pertinent facts, key points to remember, etc., interspersed through the text, would have helped considerably. Nevertheless, most of us will be delighted to have this cohesive overview of membrane transport available. One can only look forward to Dr. Stein's promised further work on transport regulation, water movement, and osmosis.

Richard H. Guy, *University of California, San Francisco*

Collection of Simulated XRD Powder Patterns for Zeolites. By Roland von Ballmoos (Mobil Research, Princeton). Butterworth Scientific: Guildford, U.K. 1984. 106 pp. £9.95. ISBN 407-004122.

This compilation is a welcome response to a clear need. Diffraction data on zeolites usually appear in the workaday laboratory in the form of powder patterns. These cannot be easily compared with the results of the best structure determinations. The tables of structural parameters in those reports need to be recast into the form of powder patterns to allow quick interpretations to be made. This is exactly what this book has done.

Here are 49 detailed X-ray powder diffraction patterns of zeolites, clearly presented and easy to use, for identification or to judge structural purity. On each left-hand page throughout the body of the book, one finds the composition used, the crystallographic data, the d spacings, the Miller indices, and the relative intensities and diffraction angles for Cu Kα radiation. On each opposing (right-hand) page is a nice large plot of the corresponding diffraction pattern. It is calculated from the best structural data available, usually single-crystal work, to which reference is given. All of the zeolites in the "Atlas of Zeolite Structure Types" (W. M. Meier and D. H. Olson, 1978, Polycrystal Book Service, American Crystallographic Association), and a few new ones, are included.

In a few cases a zeolite is presented twice, in its hydrated and dehydrated forms or with two common compositions, but aside from this no attempt is made to include data on any of the many modified forms that each zeolite can have, due to ion-exchange, for example. For each naturally occurring zeolite, the composition on which the best crystallography was done is reported. For synthetic zeolites, the composition as synthesized usually satisfies that criterion and is selected.

Karl Seff, *University of Hawaii*

Gene Structure and Expression. By John D. Hawkins. Cambridge University Press: Cambridge and New York. 1985. xii + 173 pp. $14.95 (PB); $34.50 (HC). ISBN 0-521-258243 (hard cover); 0-521-277264 (paperback).

This small book is a brief review of current molecular biology with special emphasis on genes and their expression. It was intended mainly for medical students for keeping up with advances in the field and for graduate students in the biosciences as a concise review of some current research. It is organized into introductory chapters concerning the structure and function of nucleic acids, a discussion of basic methodology which are followed by several chapters devoted to the review of such current topics as procaryotic and eucaryotic gene organization, retroviruses and oncogenic viruses, haemoglobin genes, genes of the immune system, hormone genes, mitochondrial genomes, etc.

The book will be most useful to those who have a good grasp of the fundamentals of molecular biology. For those who do not, the scanty introductory chapters will not be satisfactory. These readers will often need to consult basic textbooks dealing with the illustrated details of DNA replication, transcription, and translation. (It appears that Dr. Hawkin's book would reach a broader readership if such fundamentals were given a little more space and more lucid illustrations.)

On the not-so-fundamental level this reviewer missed the discussions of DNA repair, highly repetitive (satellite) DNA, replisomes, the role of the Golgi apparatus in protein processing, and an adequate treatment of DNA supertwisting. The awkward placement of illustrations and tables in the book (exclusively at the top or bottom of pages) was of some concern, also.

On the positive side, the chapters on methodology (nucleases, restriction endonucleases, DNA sequence-determinations, nucleic acid hybridization, etc.), the operon concept, retroviruses, the special topics of immunogenes, mitochondrial genomes, and haemoglobin and hormone genes were excellent. The book is published in a handy format and will serve its readership well.

Molecular biology is a field which is exploding with new information and new concepts. Books such as this will help bridge the wide gap between textbooks and current literature.

Eugene Hamori, *Tulane University*

Aromatic Diazo Compounds. Third edition. By K. H. Saunders and R. L. M. Allen. Edward Arnold: Baltimore. 1985. xxv + 899 pp. $175.00. ISBN 0-7131-3499-2.

The title of this book is potentially misleading, for the book is actually about diazonium compounds. The first two editions were written by the late K. H. Saunders, who had prepared a draft for a third edition before his death in 1975. Dr. Allen, an erstwhile colleague, took on the heavy task of bringing the draft up to date and rewriting the entire book. The result is a massive reference work, with literature citations at least as recent as 1981.

The authors's background is reflected in their insight about reactions of industrial importance, especially in the dye industry, and in their attention to the patent literature. A chapter is devoted to photolysis and the use of diazonium compounds in photocopying. In general, however, they give a balanced treatment, which includes much historical as well as practical information. The first three chapters deal with preparation (diazotization) and the stability, constitution, and general properties of diazonium compounds. There follow 13 chapters on reactions of "diazo compounds" (by which is meant "diazonium"), taking up the subject in a clearly organized fashion. Many laboratory procedures are interspersed in the text. The references are given in an unusual format: the customary numbered citations are listed, followed by sections of "Other Publications", not keyed to the text, but identifiable as to content because the full titles of the papers are given.

Structural formulas are clearly drawn and abundant. The nomenclature is on the whole standard, but there are some peculiarities, such as the omission of terminal "e's" (e.g., "triazen" for "triazene") and the incorrect joining of the class term azide to the name of the radical bearing it (e.g., "phenylazide" instead of "phenyl azide"). Two indexes, authors and subjects, round out the book. They are thorough, but the latter consists mostly of names of compounds, and might have been easier to use if inverted names had been used. Altogether, this is a work of great practical and reference value, and it is an important addition to the literature of organic nitrogen chemistry.

Rodd's Chemistry of Carbon Compounds. Second edition. Volume IV. Heterocyclic Compounds. Parts C and D. Part C. By M. Sainsbury and R. Theobald. Part D. By M. Sainsbury. Edited by M. F. Ansell. Elsevier Science Publishers: Amsterdam and New York. 1986. Part C: xxv + 592 pp. $214.75. ISBN 0-444-42555-1. Part D: xix + 273 pp. $107.50. ISBN 0-444-42556-X.

Part C covers five-membered heterocyclic compounds with two heteroatoms from groups V and/or VI in the ring, and Part D covers those with more than two heteroatoms in the ring. Together, they provide a comprehensive appraisal of the literature up to January 1981. Part C contains a tribute to the late Samuel Coffey, who planned and edited the preceding volumes of the second edition.

What a pleasant relief it is to see "Rodd's" once again set in type instead of a hetrogeneous mixture of typescripts! The production and appearance are excellent, and the structural formulas are professionally drawn. The content is lucid and informative, and it conveys a good insight into the perplexing maze of this area of chemistry. As is customary in this series, properties, reactions, and syntheses are treated evenly, and specific data for individual compounds are given freely. Structural formulas are abundant, but tables are uncommon.

Some of the heterocyclic systems in these two volumes (indazoles, for example) have not been reviewed in recent years, or at all, and for this reason these two volumes are especially welcome. The volumes are independently indexed and can be bought and used separately from the full set. The indexes are outstandingly professional and make a major contribution to the usefulness of the work. These volumes will retain their value for decades.

Solubility Data Series. Volume 23: Copper, Silver, Gold, Zinc, Cadmium, Mercury Oxides and Hydroxides. Edited by T. P. Dirkse. Pergamon

Press: Oxford and New York. 1986. xix + 360 pp. $100.00. ISBN 0-08-032497-5.

For the six elements listed, critically evaluated solubility data are presented for the oxides and hydroxides. Aqueous systems predominate. The style is that established for the series, and the data presented include purity of materials, methods and procedures used, estimates of error, and the full references to the sources. There are both author and compound indexes.

Dynamic Light Scattering: Applications of Photon Correlation Spectroscopy. Edited by Robert Pecora (Stanford University). Plenum Press: New York and London. 1985. 420 pp. $59.50. ISBN 0-306-41790-1.

In this book, almost 10 years after the two monographs by Chu (Academic, 1974) and by Berne and Pecora (Wiley-Interscience, 1976), the editor presents reviews of selected specialized areas in applications to polymeric, biological, and colloidal systems and to critical phenomena. The book covers such a wide scope, as the editor suggests, that it is probably no longer possible for one or two authors to write a monograph on all the advances with the same expertise as exhibited by the twelve individual authors. With patience and an authoritative command in the field, Pecora is, in many respects, an ideal editor. Nevertheless, the twelve renowned experts have obviously been difficult to coordinate. The level of review is uneven. For example, in Chapter 2, Ford presents a clear and understandable introduction to the uninitiated reader on the practice of light scattering. I would recommend this excellent chapter as essential reading material for anyone not familiar with light-scattering experiments. If the same reader finds Chapter 2 difficult, then the formal theoretical review in Section 4.3 of Chapter 4 by Pusey and Tough should simply be omitted so as not to provide unnecessary discouragement to the beginner who is less theoretically inclined. On the contrary, Chapter 4 on particle interactions is one of the best extensive chapters in the book. It is written with lucidity and is developed from fundamental principles. I reread several sections and was able to learn subtle facts of this exciting new area which should have many useful and potential applications in colloid science. The second difficulty encountered by the editor was the prescheduled deadline which was not kept by some of the experts, including one who never made the book. If we examine the latest reference publication date in the chapters, many end in 1981, including Chapter 7, which was subsequently updated by adding a few references between 1981 and 1983. In fact, the latest reference date vary from 1980 to 1984. Thus, unlike the NATO ASI series, some of the reviews are outdated by many more years than they should be. For example, Chapter 2 was unable to mention the more recent development on the structurator. In order to update Chapter 4, Pusey and Tough added 64 references to the original 133 in the addendum. They would also have written Section 4.3 differently. Thirdly, the styles vary. Chapters 5 and 6 are subjective reviews emphasizing more on the interests of the authors. The use of quasielastic light scattering as an emerging tool for speciality polymer characterizations and interesting studies of dilute optical (polymer) probes in isorefractive semidilute polymer solutions have been omitted. Schaefer and Han stated in their conclusion that in many cases their interpretation conflicted with that of the experimenters, but ignored alternative interpretations because of space limitations. So, readers beware. Chapter 10, with 408 references, provides a general survey and a good reference source until 1981. Perhaps the broad area and limited space have prevented Bloomfield from discussing the intricacies of how laser light scattering can be used to solve some of the important problems in biology in detail.

On balance, Pecora's book is timely and covers several important aspects on recent advances in the applications of photon correlation spectroscopy. There are many excellent review chapters, including Chapters 8 and 9. Chapter 8 by Mazer illustrates how laser light scattering can be used to determine the size, shape, structure, interactions, and thermodynamic properties of micellar systems. It has made an otherwise complex application relatively simple. The reader could use the book as an essential reference in laser light scattering; but it could not be used as a text. I have recommended that our library purchase a copy.

Ben Chu, *State University of New York*

Hot Atom Chemistry—Recent Trends and Applications in the Physical and Life Sciences and Technology. Edited by T. Matsuura (Rikkyo University). Elsevier Science Publishers: Amsterdam and New York; and Kodansha: Tokyo. 1984. xii + 532 pp. $111.50 (USA and Canada); Dfl. 290 (rest of the World).

Hot-atom chemistry is concerned with the study of the bond-making, electron-exchange, and energy-transfer processes that follow the generation of high-energy free atoms. While nuclear recoil is the most convenient means for making hot atoms and thus lies within the province of radiochemists, the best known practitioners have been physical chemists, such as Richard Wolfgang and Sherry Rowland, and organic chemists, like Al Wolf. It is a quirk in the history of contemporary science that few subdisciplines encompass such a broad area of interest and yet are as little recognized as hot-atom chemistry. This book sets out to remedy that situation by explaining the goals and methodology of hot-atom chemistry and its connections with other fields of science.

The volume begins with an introductory chapter in which general statements about the nature of hot-atom chemistry are combined with personal reminiscences of its pioneers and even a waspish put-down of the field by one of its successful former practitioners. This mingling of memory and desire reminds one of T. S. Eliot, and ordinary readers would be well advised to skip those first 33 pages and begin with the excellent second chapter, entitled Hot Atom Chemistry and Chemical Kinetics. E. Tachikawa and D. S. Urch explain clearly the power of hot-atom experiments in exploring quantitatively those regions of potential surfaces for reaction systems above the minimum energy pathways. Such studies are of value even in an era of readily available beams apparatus, and the possibilities for finding entirely new reactions are underscored by the discovery by A. P. Wolf and E. Rack of halogen atom substitution by a Walden inversion. The description by D. J. Malcolme-Lawes of the role of kinetic models and theoretical calculations in deriving quantitative information from hot-atom experiments delineates both the difficulties and the potential for enlightenment. K. Yoshihara and Yuan Lee relate instrumental ion–molecule and beam reaction studies to nuclear recoil experiments and conclude that the techniques reinforce each other. Connections between radiation chemistry and hot-atom chemistry are made by M. Nishikawa via consideration of the thermalization of high-energy electrons, and the application of hot-atom techniques to a broad range of structural and mechanistic problems is surveyed in separate sections by D. S. Urch and F. Cacace.

Chapter III, Hot Atom Chemistry and Solid State Chemistry, exemplifies both the opportunities and difficulties encountered by hot-atom chemists. The processes following nuclear recoil in solids are of importance for the synthesis of simple compounds that can be converted into a variety of useful molecules. There are also obvious implications of solid-state recoil chemistry for materials science and reactor technology. Unfortunately, the most widely practiced experimental technique in solid-state hot-atom chemistry, the dissolving of the solid reaction mixture followed by separation and identification of the end products of recoil-reaction sequences, has rarely succeeded in elucidating the primary reaction processes because these are often obscured by secondary transformations, during dissolution and analysis. Heroic efforts have been made to understand these effects, and G. Dupatre chronicles the use of labeled dopants in crystal lattices as models for stabilized recoil species. A more encouraging approach is to treat nuclear recoil in a solid as a matrix-isolation experiment and to apply in situ methods for analysis of the results. Mössbauer emission spectroscopy, surveyed by H. Sano and P. Gütlich, has revealed changes in charge state, ligands, and ligand geometry of atoms following nuclear recoil on the time scale of 10^{-9} to 10^{-7} s.

Chapter IV, Hot Atom Chemistry in Nuclear Science, begins with two further in situ techniques. P. Boyer and A. Baudry describe measurements of the perturbed angular correlation of emitted γ-rays caused by the coupling of nuclear moments with extranuclear electromagnetic fields. These measurements are capable of providing information about the local environment of a recoiling atom on a nanosecond time scale following a nuclear transformation. Perturbed angular correlation experiments can answer the most basic questions in solid-state hot-atom chemistry: What fraction of the recoiling atoms remains in the chemical form of the target atom? What is the nature of the recoil species generated? What reactions do the recoiling atoms undergo? Perturbed angular correlation measurements are also feasible for liquid and inhomogeneous systems, and their applications include the determination of the rate of interconversion of active and inactive forms of enzymes. Another useful in situ method is the measurement of the variation in the intensity ratios of emitted X-rays and γ-rays due to changes in the chemical environment of the emitting recoil atom. The chapter ends with somewhat arcane descriptions of hot positronium and muonium reactions.

Chapter V covers the role of hot-atom chemistry in the preparation of labeled compounds, including radiopharmaceuticals, and describes the effects on biomolecules of the decay of radioactive atoms incorporated in them. Recoil processes facilitate the isolation of radioisotopes in high specific activities by delivering the product of a nuclear transformation in a different chemical form from that of the target nucleus. Since high-energy recoiling atoms can easily surmount activation barriers, their reactions can be quite unselective. Hence the use of recoil reactions to provide labeled compounds directly has been limited to such simple reaction systems that the number of reaction channels is small. This has led to the practice of recoil labeling of small molecules such as $^{11}CO_2$ and

$H^{11}CN$ which are converted by chemical synthesis into larger molecules, no mean feat with half-lives as short as 20 min (^{11}C) and 2 min (^{15}O). As an example of what can be done, T. Ido and R. Iwata report that proton irradiation of calcium nitride can produce ^{11}C cyanamide in better than 50% radiochemical yield, that can be converted into benzylguanidine in 60% yield within 60 min. A. Halpern surveys the after-effects of the decay of ^{3}H, ^{32}P, ^{33}P, and ^{125}I on biomolecules. As expected from the much larger amount of energy deposited via the Auger effect following K-capture in the decay of ^{125}I vs. the energy deposited following β-decay of the other isotopes, DNA strand breakage has been found as far as 70 Å from the location of an iodine label. The vacancy cascade following K-capture can also be triggered by inner-shell photoionization with monochromatic X-rays, and with the availability of synchrotion light sources this should become a widely used technique in hot-atom chemistry. Chapter V concludes with an interesting treatment of geochemical aspects of hot atom chemistry by M. Sakanoue and T. Hashimoto.

The final chapter treats the important subject of the hot-atom chemistry that occurs in fission and fusion reactors. Recoil processes can lead to attack of the encapsulation material of fuel elements in fission reactors and to the liberation of radioactivity from cooling systems of reactors and during fuel reprocessing. In fusion reactors recoil reactions are of concern with regard to the integrity of the wall material exposed to the plasma in which the thermonuclear reaction takes place. The fate of the tritium formed in reactors blanketed by breeder reactions also depends on hot-atom processes, as does the efficient utilization of the energy carried out of the fusion plasma by fast neutrons.

T. Matsuura has done a valuable job by bringing together timely and succinct essays that clearly describe the broad panorama of his subject. The position of hot-atom chemistry at the intersection of many subdisciplines has been a key to the broad scope of its contributions and its potential for future development as described in this volume, but it is also responsible for an unhealthy anonymity. Due to Matsuura and his collaborators, the anonymity of hot-atom chemistry should disappear for readers of this volume, and it is hoped that the book will succeed in awakening new interest in a challenging but rewarding area.

Peter Gaspar, *Washington University*

Organomercury Compounds in Organic Synthesis. Volume 22. Reactivity and Structure Concepts in Organic Chemistry. By R. C. Larock. Springer-Verlag: Heidelberg and New York. 1985. 432 pp. $94.00. ISBN 0-387-13749-1.

This book deals with the use of "Organomercury Compounds in Organic Synthesis" minus "Solvomercuration–Demercuration". The latter topic, which even today represents probably the most important use of mercury in organic synthesis, is to be discussed in a separate monograph by the same author. Although there have been at least two extensive monographs on organomercury compounds, i.e., Makarova, L. G.; Nesmeyanov, A. N., Eds. *The Organic Compounds of Mercury*, *Methods of Elements-Organic Chemistry*, North Holland: Amsterdam, 1967, Vol. 4; and *Metallorganische Verbindung-Hg*, *Houben-Weyl*: *Methoden* der *Organischen Chemie*, 4th ed.; Thieme; Stuttgart, 1974, Vol. 13/2b; this book is the first and only extensive monograph devoted to the use of organomercury compounds in organic synthesis.

The book is divided into ten chapters. A very brief (3 pages) introduction touching on the history and toxicity of organomercury compounds as well as the makeup of the book is followed by a 150-page chapter describing various methods for preparing organomercury compounds. Over 1500 references are cited in this chapter alone. The remaining eight chapters (259 pages) discuss various synthetic reactions involving organomercury intermediates, i.e., *hydrogen and halogen substitution* (Chapter III), *substitution by other heteroatoms* (Chapter IV), *dimerization* (Chapter V), *alkylation* (Chapter VI), *alkene and alkyne addition and substitution* (Chapter VII), *carbonylation* (Chapter VIII), *acylation* (Chapter IX), and *divalent carbon transfer reactions* (Chapter X). Over 1200 references are cited in these eight chapters. As claimed in the Preface, the reference coverage appears to be thorough through 1980, and the majority of the noteworthy works published through mid-1983 are also covered. There is a subject index but no author index.

Larock's presentation is systematic and mostly factual. Yield figures are abundantly cited, and the scopes of various reactions are delineated not only in the text but also in equations or in tables. These features make this book very useful from the synthetic viewpoint. On the other hand, very little mechanistic discussion is presented. Also lacking is a discussion of the fundamental aspects of mercury and organomercury compounds. As one thumbs through this book, one may wonder why the reactions of organomercury compounds with some of the common carbon electrophiles, such as aldehydes, ketones, esters, amides, nitriles, epoxides, and so on, are not discussed. A brief discussion of the property of mercury and that of organomercury compounds would have provided a reasonable answer to such a question. Another valid question is what some of the advantages and disadvantages of the organomercury methods might be relative to the other known methods. This matter appears to be almost entirely left to the readers. Despite these shortcomings, the book provides, in a highly organized manner, a wealth of knowledge in the title field.

The only other item this reviewer would have liked to find in this book is a more detailed description and discussion of the toxicity and handling of organomercury compounds. On p 1, the author states that organomercurials should be handled with respect. He also states that the vast majority of organomercurials are fairly high-melting, crystalline solids whose handling requires no undue precautions. As has been the case with most of the "toxic" chemicals, the toxicity of mercury might have been overly exaggerated by the practicing synthetic chemists. Be that as it may, this reviewer still believes that the widespread use of organomercury compounds in organic synthesis may most critically depend on how successful the chemists can be in overcoming the "toxicity" aspect of mercury. If so, a more detailed discussion of this matter would have been a very valuable inclusion.

Ei-ichi Negishi, *Purdue University*

Molecular Connectivity in Structure–Activity Analysis. By Lemont B. Kier (Virginia Commonwealth University) and Lowell H. Hall (Eastern Nazarene College). John Wiley and Sons, Inc.: New York. 1986. xvii + 262 pp. $59.95. ISBN 0-471-90983-1.

Kier and Hall's 1976 book on molecular connectivity in chemistry and drug research has been the standard reference in this area for 10 years, and now they have published this updated and revised book. The present volume is directed toward readers interested in structure–activity relationships, and it is aimed at preparing the reader to use molecular connectivity in QSAR studies. The book seems rather short for the quantity of material that it covers, and some additional detail would have been welcome in a number of places.

The book is not typeset but printed directly from word processor output. Several unfortunate consequences of this choice are the following: molecular connectivity indices are usually denoted by the Greek letter χ, and they are referred to as χ values in this book, but they are printed as captial exes (X); the originator of the concept of molecular connectivity was Milan Randić, but his name is printed here without the accent mark; in some parts of the book, the impression is not crisp and clear. There are no running headers or footers, which makes finding sections by flipping through the pages more difficult. Without particularly looking for them, I stumbled across several small errors that more careful proofreading would have eliminated, such as misspelled names of authors in references.

Chapter 1 gives some basic introduction to the graph theoretical concepts underlying molecular connectivity and traces the stepwise refinements of the molecular connectivity concept. Chapter 2 describes the use of molecular connectivity for the development of structure–property relationships. Properties discussed include molar refraction, water solubility, molar volume, chromatographic retention data, and several thermodynamic parameters. Equations with good statistical properties are presented, but with almost no discussion regarding importance, interpretation, etc.

Chapter 3 presents information showing that molecular connectivity indices are related to structural properties of molecules. Molecular connectivity correlates well with physical properties that are dependent on volume. Chapter 4 discusses the connections between molecular connectivity and electronic aspects of molecules. For example, a method is shown for calculating Hammett σ constants.

Chapter 5 is concerned with the statistical methods that are used in building correlations between molecular connectivity indices and physical properties or biological activities. It begins with elementary material, e.g., linear least squares, and progresses to more advanced concepts such as multiple linear regression.

Chapter 6 deals with the uses of molecular connectivity indices in structure–activity studies, including how to select the proper indices for a set of compounds under study and the use of nonlinear equations as models. Chapter 7 presents a number of example SAR studies with structural interpretation, and Chapter 8 gives 163 references to published work arranged by subject. Chapter 9 briefly assesses the future of molecular connectivity and discusses some open questions that the authors feel should be addressed by researchers in this field in the near future.

Although this book is not without shortcomings, it must be considered the standard reference book dealing with the use of molecular connectivity indices in structure–activity and structure–property studies, and researchers in these areas should have a copy for reference.

Peter C. Jurs, *The Pennsylvania State University*

Unsteady Processes in Catalytic Reactors. By Yu. Sh. Matros (Institute of Catalysis, Novosibirsk). Elsevier Science Publishing Co., Inc.: New

York. 1985. xii + 364 pp. $81.50. ISBN 0-444-42523-3.

In recent years a realization has occurred that reaction and reactor dynamics must be considered when designing and operating catalytic reactors. In this book, the author has focussed on both the processes occurring on individual porous-catalyst particles as well as the phenomena displayed by collections of these particles in fixed-bed reactors. The major topics discussed include the effects of unsteady-state heat and mass transfer, the influence of inhomogeneities and stagnant regions in fixed beds, and reactor operation during forced cycling of operating conditions. Despite the title of the book, attention is also paid to the determination of the number and stability of fixed-bed steady states, with the aim of describing the possibility of controlling reactors at unstable steady states. However, this development is somewhat dated, given the recent literature on multiplicity phenomena and process control.

In attempting to cover this rather wide range of topics, the author has omitted almost all of the steps between the formulation of the relevant equations and the presentation of the results. This limits the usefulness of this book as a primary source for instructional purposes. In addition, certain important dynamic phenomena are totally omitted, or are mentioned only in passing. For example, this has occurred with respect to self-sustained oscillations and chaos in catalytic systems, two phenomena which have recently received a great deal of attention in the literature. However, the real worth of this book stems from the extensive citation of the recent Russian literature concerned with reaction and reactor dynamics. All of those interested in this rapidly growing field should certainly consider examining the contents of this book.

David T. Lynch, *University of Alberta*

Volumes of Proceedings

Archaeological Chemistry. III. Edited by Joseph B. Lambert. American Chemical Society: Washington, DC. 1984. xii + 487 pp. $89.95. ISBN 0-8412-0767-4.

The 22 papers in this volume, which originated in a 1982 symposium sponsored by the Division of the History of Chemistry of the ACS, range from studies on Iranian Obsidian to the Shroud of Turin. They are grouped in the rubrics "Stone materials, soils, bone and shell", "Pottery, glass, pigments, and ink", and "Organic materials". Much of the content is ingeniously and interestingly applied analytical chemistry. Indexed.

The Biosphere: Problems and Solutions. Edited by T. Nejat Veziroğlu. Elsevier Science Publishers: Amsterdam and New York. 1984. xvi + 712 pp. $139.00. ISBN 0-444-42424-5.

The broad scope of the 1984 symposium responsible for the many short papers in this volume is subdivided into eight parts, many of which are directly concerned with chemistry, such as acid rain, air pollution, chemical waste disposal, and the effect of chemicals on endangered species. The papers are reproduced from the authors' highly varied typescripts, some of which are in the form of inexcusably poor dot-matrix printing, which reproduces unclearly, especially with photoreduction. There is a list of contributors, but no index.

Recent Advances in Phytochemistry. Volume 18: Phytochemical Adaptations to Stress. Edited by Barbara N. Timmermann, Cornelius Steelink, and Frank A. Loewus. Plenum Press: New York. 1984. ix + 334 pp. $49.50. ISBN 0-306-41720-0.

Stress on plants may involve water, nutrients, temperature, mechanical effects, etc. The consequences are to an important extent chemical, and it is these that are addressed in the ten papers in this volume, which derives from a symposium held in 1983, appropriately in phytostressful Arizona.

New Trends in the Photochemistry of Polymers. Edited by Norman S. Allen and Jan F. Rabek. Elsevier Applied Science Publishers: London and New York. 1985. xvii + 321 pp. $67.50. ISBN 0-85334-365-9.

The retirement of Professor Bengt Ranby from the Royal Institute of Technology, Stockholm, was the occasion of an international symposium in 1985. The 18 invited papers are included in this volume, accompanied by a review of Prof. Rånby's contribution by Herman Mark, and a review of 20 years of polymer photochemistry at the Royal Institute of Technology by J. F. Rabek, and a good subject index, all nicely set in type.

EXAFS and Near Edge Structure. III. Edited by K. O. Hodgson, B. Hedman, and J. E. Penner-Hahn. Springer-Verlag: Berlin and New York. 1984. xv + 533 pp. $34.50. ISBN 0-387-15013-7.

The Third International EXAFS Conference was held at Stanford University in 1984 and consisted of 51 invited lectures and a large number of poster presentations. This volume contains the typescript texts of 139 of these events, arranged in such categories as fundamentals, biological systems, surface structure, data analysis, geology and geochemistry, etc. There is no index, but only a list of contributors.

Frontiers of Membrane Research in Agriculture. Edited by Judith B. St. John, Elliott Berlin, and Patricia C. Jackson. Rowman and Allanheld: Totowa, NJ. 1985. xiii + 493 pp. ISBN 0-8476-7426-6.

This is the sort of book of proceedings that one likes to see; it is cleanly set in type; it is clearly identified as to subject and nature of the content; and it has both subject and author indexes. The latter, wonder of wonders, is a true index of authors cited in the many references and not just a list of contributing authors. The content consists of 31 papers in eight categories; Membrane Structure and Function; Membrane Manipulation; Membrane Function in Nutrition and Health; Nutrient Absorption and Transport; Energy Conservation in Membranes; Growth and Reproduction; Membrane Dysfunction under Stressed Conditions; and Membranes and Toxins. They are the invited papers from the 9th Beltsville Symposium in Agricultural Research, held in 1984.

Nutritional Bioavailability of Calcium. Edited by Constance Kies. American Chemical Society: Washington, DC. 1985. vii + 200 pp. $37.95. ISBN 0-8412-0907-3.

A 1984 symposium is the basis of the volume, which contains 15 contributions, for the most part presentations of original research. The complexity of the role of calcium in mammals and especially in human beings is made readily evident by the variety of titles, which range from utilization of calcium in foods, metabolism and calcification, and the influence of other substances, such as zinc and fiber, on nutrition. Indexed.

Phenomena Induced by Intermolecular Interactions. Edited by G. Birnbaum. Plenum Press: New York. 1985. xiv + 792 pp. $125.00. ISBN 0-306-42071-6.

A large number of review papers, in typescript form, make up this volume. They are concerned with both experimental and theoretical aspects of the production of transient dipoles and polarizabilities upon close approach of molecules, with consequences in Rayleigh and Raman scattering and microwave and optical spectroscopy. For each of the five categories of papers, a "workshop report" is appended. There are indexes of contributors, of chemicals, and of subjects.

Catalyst Characterization Science: Surface and Solid State Chemistry. Edited by Marvin L. Deviney and John L. Gland. American Chemical Society: Washington, DC. 1985. xi + 616 pp. $89.95. ISBN 0-8412-0937-5.

The large number of typescript papers in this volume derive from a symposium held at the ACS meeting in Philadelphia in 1984. They are grouped in these categories: Spectral Surface Techniques on Complex Catalyst Systems; Multiple Surface Techniques on Model Catalyst Systems; Catalytic Mechanisms on Well-Defined Surfaces; Characterization of Bimetallic Catalysts; New Perspectives in Catalysis via Electron Microscopy and X-ray Scattering; Vibrational Characterization of Catalytic Reactions; Magnetic Methods in Catalyst Research; and New Techniques in Electrocatalysis. Both an author and a subject index are included.

Ion-Selective Electrodes. 4. Edited by E. Pungor and I. Buzás. Elsevier Science Publishers: Amsterdam and New York. 1985. xviii + 758 pp. $168.50. ISBN 0-444-99553-6.

The fourth symposium on the title subject was held in Hungary in 1984. Any group that can produce a volume this size from a 5-day symposium must be considered productive. There are four plenary lectures, eight keynote lectures, and numerous discussion lectures, all of which are accompanied by the ensuing questions and comments. The volume closes with a "round-table discussion" and an index.

Structure and Statistics in Crystallography. Edited by A. J. C. Wilson. Adenine Press: Guilderland, NY. 1985. vii + 225 pp. $65.00. ISBN 0-940030-10-1.

Contains the texts of papers from a symposium on crystallographic statistics held in Hamburg in 1984. The papers are set in type and are grouped into the categories Intensity Statistics and Estimation of Parameters. Indexed.

Characterization of Heavy Crude Oils and Petroleum Residues. B. Tissot, Symposium Organizer. Éditions Technip: Paris. 1984. xxi + 524 pp. ISBN 2-7108-0475-1.

Proceedings of an international symposium held in Lyon in 1984, consisting of typescript versions of five plenary lectures and a large number of research papers in the areas of geochemical analysis, fractionation and characterization, and relations between structure and properties. Not indexed; softbound.

Magnetic Resonance: Introduction, Advanced Topics and Applications to Fossil Energy. Edited by Leonidas Petrakis and Jacques P. Fraissard. D. Reidel Publishers: Dordrecht and Hingham, MA. 1984. xi + 807 pp. ISBN 90-277-1752-4.

This volume of typescript contributions contains 19 lectures and a large number of shorter papers presented at a NATO Advanced Study Institute held in Crete in 1983. Indexed.

Desorption Induced by Electronic Transitions: DIET II. Edited by W. Brenig and D. Menzel. Springer-Verlag: Berlin and New York. 1985. ix + 291 pp. $32.00. ISBN 0-387-15593-7.

The Second International Workshop, DIET II, held in Bavaria in 1984, is the source of the large number of typescript papers in this volume, arranged according to these group headings: Basic Mechanisms; Ion Desorption via Core Excitations; Angular and Energy Distributions of Ions; Desorption of Neutrals; Desorption from Condensed Material; Electronic Effects in Ion Impact; Laser-induced Processes; and Applications and Related Processes. No subject index.

New Frontiers in Organometallic and Inorganic Chemistry. Edited by Huang Yaozeng, Akio Yamamoto, and Boon-Keng Teo. S. P. Richards Publishing: New Providence, NJ. 1985. xxix + 527 pp. $59.50. ISBN 0-960-8224-1-0.

The second China–Japan–USA Trilateral Seminar on Organometallic and Inorganic Chemistry took place in Shanghai in 1982 and served to commemorate the achievements of the later Professors Minoru Tsutsui and Rowland Pettit. These proceedings consist of 39 plenary lectures and versions of a large group of poster presentations. Indexed.

Molecular Architecture of Proteins and Enzymes. Edited by Ralph A. Bradshaw and Jordan Tang. Academic Press: Orlando, FL. 1985. xv + 323 pp. $50.00. ISBN 0-121-24570-5.

Eighteen papers in typescript form, presented at the second bilateral conference on Proteins in Biology and Medicine between the Peoples' Republic of China and the United States of America, held in Oklahoma City in 1983, make up this volume, which is graced not only with an index but with a group of photos of the conferees in formal and informal poses.

Advances in Materials Characterization II. Edited by R. L. Snyder, R. A. Condrate, Sr., and P. F. Johnson. Plenum Press: New York. 1985. xi + 416 pp. $69.50. ISBN 0-306-42068-6.

The second international conference on the title subject was held at Alfred University in 1984. The typescripts of the 31 papers it generated are arranged under these general headings: Structural and Elemental Characterization; Phase Characterization; Surface and Interface Characterization; and Microstructure Characterization. Indexed.

Mass Spectrometry in the Health and Life Sciences. Edited by A. L. Burlingame and Neal Castagnoli, Jr. Elsevier Science Publishers: Amsterdam and New York. 1985. xx + 638 pp. $133.25. ISBN 0-444-42562-4.

Five plenary lectures, 27 contributed papers, a list of poster papers by title and author, a list of participants, and author and subject indexes, all in typescript, make up this book, which is the record of an international symposium held in San Francisco in 1984.

Advances in Steroid Analysis '84. Edited by S. Görög. Elsevier Science Publishers: Amstersdam and New York. 1985. xi + 604 pp. $139.00. ISBN 0-444-99533-1.

Contains the typescripts of a large number of papers presented at the second symposium on the Analysis of Steroids, held in Hungary in 1984. There are sections on protein and receptor binding, immunological methods, chromatographic techniques, mass spectrometry, enzymatic methods, and photometric methods. Indexed.

Spectroscopy of Biological Molecules. Edited by Alain J. P. Alix, Lucien Bernard, and Michel Manfait. John Wiley & Sons: New York. 1985. xxii + 465 pp. $49.95. ISBN 0-471-90883-5.

The First European Conference on the title subject, held in France in 1985, generated the large number of short (3 to 5 pp) typescript papers that make up this volume, which has an author index but not one of subjects.

Innovative Approaches in Drug Research. Edited by A. F. Harms. Elsevier Science Publishers: Amsterdam and New York. 1986. viii + 482 pp. $90.75. ISBN 0-444-42606-X.

Proceedings of the Third Noordwijkerhout Symposium on Medicinal Chemistry, held in 1985, containing the typescript texts of 29 presentations, including those that were part of satellite programs on "the role of stereochemistry in the development of new selective drugs" and "SAR and design of anti-tumor agents". Indexed.

The Scientific Basis of Antimicrobial Chemotherapy. Edited by D. Greenwood and F. O'Grady. Cambridge University Press: Cambridge and New York. 1985. x + 404 pp. $69.50. ISBN 0-521-30653-1.

The 38th Symposium of the Society for General Microbiology was held at the University of Nottingham in 1985 and featured 14 review papers, with subjects ranging from the chemical (e.g., Antifungal azole derivatives) to the clinical (e.g., Prescriber's needs for the developed and third worlds). The papers are nicely set in type and have extensive lists of references; the subject index is thorough.

Mechanisms of Stimulus-Response Coupling in Platelets. Edited by J. Westwick, M. F. Scully, D. E. MacIntyre, and V. V. Kakkar. Plenum Press: New York. 1985. xi + 444 pp. $65.00. ISBN 0-306-42073-2.

A 1984 symposium held in London produced the large number of typescript papers in this volume, which is divided into these sections: Platelet Receptors; Control of Calcium Mobilization; Phosphorylation of Platelet Proteins and Nucleotide Metabolism; Products of Phospholipid Metabolism; and Functional Platelet Responses. Indexed.

Electrical Double Layers in Biology. Edited by Martin Blank. Plenum Press: New York. 1986. viii + 319 pp. $55.00. ISBN 0-306-42218-2.

A symposium held in Toronto in 1985, organized about a group of apparently unrelated phenomena in biological systems that arise from the special properties of charged surfaces, gave rise to this collection of 22 typescript papers; indexed.

Magneto-Structural Correlations in Exchange Coupled Systems. Edited by R. D. Willet, D. Gatteschi, and O. Kahn. D. Reidel Publishing: Dordrecht and Boston. 1984. viii + 616 pp. $79.00. ISBN 90-277-1876-8.

Contains the texts of 19 papers in varied typescripts from a NATO Advanced Study Institute held in Italy in 1983; indexed.

Solid State Physics under Pressure: Recent Advance with Anvil Devices. Edited by S. Minomura. D. Reidel Publishing: Dordrecht and Boston. 1985. xii + 382 pp. $69.00. ISBN 9-027-71897-0.

Contains the typescripts of three invited papers and 60 other contributions (average length 6 pp) from an international conference held near Tokyo in 1984. Not indexed.

Synthesis and Applications of Isotopically Labeled Compounds 1985. Edited by R. R. Muccino. Elsevier Science Publishers: Amsterdam and New York. 1986. xxxiv + 558 pp. $129.75. ISBN 0-444-42612-4.

Contains the typescript texts of six plenary lectures plus short (ca. 2 pp) versions of a very large number of papers from the Second International Symposium, held in Kansas City in 1985; author and subject indexes.

Microdomains in Polymer Solutions. Edited by Paul Dubin. Plenum Press: New York. 1985. xiii + 457 pp. $75.00. ISBN 0-306-42110-0.

A symposium sponsored by the ACS Polymer Division, held in Las Vegas in 1982, gave rise to the 25 papers in this volume. The rubrics are the following: Intramolecular Micelles; Association, Aggregation, and Gelation; Ordering in Polyelectrolyte Solutions; Microdomains in Nonaqueous Media; and Polymer-Ligand Complexes. There is also a subject index, and a section on the contributors that consists of a paragraph about the professional history and interests of each.