

CS Publications News

ACS SYMPOSIA

No. 41 Sucrochemistry

Edited by John L. Hickson

This book documents the evolution of the fundamental considerations of the chemistry of sucrose, discusses some industrial applications, and explores the role of sugar as a renewable resource in present and future technologies.

The first section of the book delineates the concepts and evolution of the intriguing, fundamental chemistry of the sucrose molecule. The next three sections illustrate some of the industrial applications of sucrochemistry: surfactants, surface coatings, urethane plastics, and fermentation processes. The final section discusses the business and economic forecasts for sucrochemistry.

Clothbound 297pp 9 $\frac{1}{2}$ " \times 6 $\frac{3}{4}$ " 0 8412 0290 7 £15.50

No. 42 Synthetic Pyrethroids

Edited by Michael Elliott

The twenty-one contributions to this book are devoted to the recently discovered, more stable synthetic pyrethroids, a new class of insecticides which promises to supplement and possibly replace some of the earlier organochlorine, organophosphate, and carbamate compounds on which insect control currently depends. Since 1972, potent new compounds, more stable on leaf surfaces than some of the organophosphates and carbamates but still degraded in soil and in mammals, have been developed. Their favourable properties fit them for many uses in pest control.

The papers in this book deal with all aspects of the new compounds, including their history, insecticidal activity, structure-activity relationships, synthesis, mode of action, metabolism in mammals and plants, stability in light and soil, and analysis.

Clothbound 241pp 9 $\frac{1}{2}$ " \times 6 $\frac{3}{4}$ " 0 8412 0368 7 £12.25

No. 44 Drug Metabolism Concepts

Edited by Donald M. Jerina

The eight chapters in this volume present the procedures and results of research on microsomal enzymes and their metabolic pathways. The first half of the book discusses cytochromes P-450—specifically its role in oxygen activation for drug metabolism, synthetic models for reaction stages, and isolation and resolution of multiple forms. Other chapters cover methods for studying enzyme multiplicity activation and detoxification of benzo[a]pyrene, reactions of 9,10-epoxides of (+) and (-)-*trans*-7,8-dihydroxy-7,8-dihydrobenzo[a]pyrene with polyguanylic acid, and chemical-induced tissue injury.

Scientists working in medicinal chemistry, pharmacology, biochemistry and toxicology will find important information in this volume written by authors representing a broad spectrum of research in drug metabolism.

Clothbound 196pp 9 $\frac{1}{2}$ " \times 6 $\frac{3}{4}$ " 0 8412 0370 9 £12.00

No. 45 Extracellular Microbial Polysaccharides

Edited by Paul A. Sandford and Allen Laskin

This volume focuses on the production and properties of extracellular microbial polysaccharides that are currently being used by industry or that have potentially useful industrial properties. Special emphasis is placed on new areas of research that would improve or stimulate industrial production and use of this valuable class of water-soluble hydrocolloids.

Specific topics covered in the 22 chapters include: culture maintenance and productivity, alginic acid, gum from acid whey, exopolysaccharide synthesis, formation by *Methylomonas*, solution properties, molecular conformation and interactions, spectroscopy, polyelectrolytes, rheology of gum solutions, synergistic gels, bacterial heteropolysaccharides, xanthan properties and products, applications in food and enhanced oil recovery, curdlan, and α -D-glucans.

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No. 47 Enzymes in Food and Beverage Processing

Edited by Robert L. Ory and Allen J. St. Angelo

Great advances in enzyme chemistry over the past few decades have enabled food scientists to select specific enzymes to achieve a desired end product without the guesswork inherent in previously used methods.

This book discusses work on many different types of food and beverages and centres on the application of enzymes which affect their flavour, texture, nutritional value, and general quality.

Clothbound 336pp 9 $\frac{1}{2}$ " \times 6 $\frac{3}{4}$ " 0 8412 0375 X £15.50

No. 48 Cellulose Chemistry and Technology

Edited by Jett C. Arthur, Jr.

Not only is cellulose the most abundant organic material on earth and relatively inexpensive, but in many cases the energy required for its processing into final products is considerably less than that needed for competing materials. Recent increases in the prices of petroleum and natural gas have focused attention on the potential uses of cellulose for chemicals and energy. However, greater reliance on cellulose will depend on technological improvements and yields of cellulose processing and on the properties of the cellulosic materials themselves.

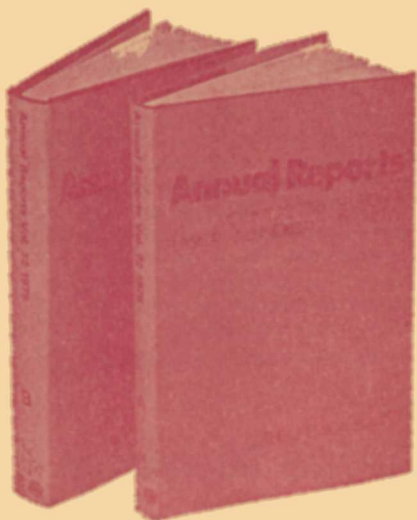
The focus of this book is on the structure, properties, and reactions of cellulose. Specific topics include X-ray diffraction, infrared and Raman spectroscopy studies, microbial polysaccharides, pyrolysis, grafting, secondary lignification, delignification, teichoic acids, and non-aqueous solvents.

Clothbound 407pp 9 $\frac{1}{2}$ " \times 6 $\frac{3}{4}$ " 0 8412 0374 1 £16.00

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CS Publications News

ANNUAL REPORTS



Annual Reports on the Progress of Chemistry Vol. 73 Part B

Senior Reporters:

Professor P. G. Sammes, *City University, London*

Dr. J. H. P. Utlej, *Queen Mary College, London*

"The present volume covers all of organic chemistry in twenty chapters, ranging from physical methods and techniques to enzyme mechanisms. The large group of reporters who made this volume possible are to be thanked for so competently digesting the enormous amount of material before them and presenting it in a readable form with restrained but helpful critical evaluation. It is certainly a welcome aid for keeping up, not with one's own specialty, but with organic chemistry as a whole."—*Journal of the American Chemical Society* reviewing Vol. 71, 1974

Volume 73 is again divided into two parts.

Part B covers organic chemistry as follows:

Introduction; Physical Methods and Techniques; Theoretical Chemistry; Reaction Mechanisms; Arynes, Carbenes, Nitrenes, and Related Species; Organometallic Chemistry; Electro-organic Chemistry; Photochemistry; Aliphatic Compounds; Aromatic Compounds; Heterocyclic Chemistry; Alicyclic Chemistry; Synthetic Methods; Biological Chemistry.

Part B (Organic Chemistry)

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ACS SYMPOSIA No. 38

Electrochemical Studies of Biological Systems

Edited by Donald T. Sawyer

During the past decade electrochemical methods have been used increasingly to characterize biological systems. Organic, inorganic, and biological chemists have found that electrochemical methods are uniquely effective for determining the stoichiometries, thermodynamics, and kinetics of electron-transfer reactions.

Although several chapters in this volume cover the development of improved electrochemical techniques and instrumentation, the major emphasis is on the study of the redox properties of model compounds for biological systems. Specifically, the 12 chapters cover vitamin B₁₂ and related cobalamins, cytochrome c, ligand structural modifications, metalloporphyrins, N-bridged dimers, reduction of nitrogenase substrates, redox model for mitochondrial superoxide dismutase, interfacial behaviour of purines, mediator-titrants, rotating ring disc enzyme electrode, model for a mammalian heart, and analysis of NTA and EDTA in water samples.

Clothbound 224pp 9½" × 6½" 0 8412 0361 X £12.00

ACS SYMPOSIA No. 39

Synthetic Methods for Carbohydrates

Edited by Hassan S. El Khadem

This book is an investigation of new synthetic methods for producing the naturally occurring substances responsible for protecting man and animal against disease.

A problem in synthesizing naturally occurring antibiotics such as C-nucleosides, lies in the nature of the link between the heterocyclic systems—i.e., a solid carbon-carbon bond not subject to hydrolytic or enzymological cleavage. To circumvent its lack of reactivity, one must first create a stable intermediate in which the desired linkage occurs. Several studies in this volume are concerned with this type of approach. Other potential paths include original studies with the chemistry of D-gucal. Also, the introduction of heteroatoms other than oxygen into the sugar ring has had some favourable effects, especially with sulphur as the heteroatom. In completing the coverage of the difficult synthesis of chemicals which are integral parts of the body's defence mechanism, the actual synthesis of biogenic amines and serologically active glycolipids is described.

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