

topics are clearly illustrated by ample use of structures and diagrams. Information is extensively cross-referenced to show the interrelationship of important concepts.

**Mercedes Garaita
John F. Kennedy**

Application of Chitin and Chitosan. Mattheus F.A. Goosen (ed.), Basel, Switzerland, 1997, Technomic Publishing AG, xi + 336 pp., Sfr. 314.00, ISBN 1-56676-449-1.

Chitin and its derivative chitosan, the second most abundant polysaccharide, occur mainly in the exoskeleton of crustaceans, insects and in the cell walls of some microorganisms. With better understanding of the structure and properties of chitin and chitosan, substantial progress has been made over the years on their functionality and applications especially in biotechnological and medical areas.

"Application of Chitin and Chitosan" examines the state-of-the-art of new as well as potential products. Written by various experts, this book has been designed for an audience of diverse background with interest in the application areas. Research students and scientists as well as industrial people would find this a fascinating insight into the subject matter.

"Application of Chitin and Chitosan" is divided into six parts beginning with two comprehensive chapters which make up the overview and four chapters covering structure and properties. Further chapters on applications have been broken down into four sections according to their application areas i.e. food and agriculture, medicine and biotechnology, textiles and polymer and waste-water treatment.

As in many other multi-authored books, overlapping and inconsistencies in the style of writing and depth of discussion have not been avoided. The chapter on 'characterization and solution properties' was very specific and was written in a formal research report format whilst the chapters on 'chitin structure and activity of chitin-specific enzymes and inhibition of molting in chewing insect pest' were rather brief. Despite that, *"Application of Chitin and Chitosan"* is an excellent review of the new as well as potential applications and would be invaluable to students, academic and industrial scientists.

**F.A. Putri
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Trends in Carbohydrate Chemistry – Volume 2. P.L. Soni (ed.), Surya International Publications, Dehra Dun, India, 1996, 139 pp., ISBN 81-85276-57-9

Being a tropical and a large country, India has a great potential of biopolymer resource derived from various types of plants. Hence, a better understanding of the latest technology of carbohydrate chemistry will definitely boost the agricultural and industrial sectors for the benefit of mankind. Therefore, the proceedings of any conference in the form of a book would facilitate the dissemination of knowledge and help the technologists to build up on the scientific know-how into accepting new ideas and methodologies.

"Trends in Carbohydrate Chemistry – Volume 2" is merely a collection of papers presented during Xth Carbohydrate Conference which was held in Gujarat, India. Unfortunately the topics are not organised systematically for the benefit and convenience of the readers searching for their own desired area of interest. The 14 topics are probably aimed at covering the main area of carbohydrate chemistry carried out in various universities and research institutions of India and focussed the ones which have commercial and industrial values.

However, the papers are relatively simple and very informative. Since natural polymers are becoming popular, both the chemical and physical understanding of these biopolymers are essential for the commercial and industrial communities as well as to the researchers in the area of carbohydrate chemistry in order to optimise the usage of biopolymers and to produce higher value-added products. Topics on natural and modified gum products are also well covered and elaborated, particularly the seed gums which are obtained from the seed endosperm of leguminous seeds and which have widespread applications in paper, textile, food, cosmetics, petroleum and pharmaceuticals.

Another area which is highlighted in the book is the study on cassava starch and the various applications of starch in its native and modified forms. The properties of the starch derivatives are discussed and the possible new avenues of applications are also presented. With more information in carbohydrate chemistry, the usage of starch is then further expanded to the non-food application such as biodegradable polymers or plastics.

The book will be a supplementary resource for researchers and academicians in carbohydrate chemistry to gain extra input for better understanding and improvement in the teaching and R & D aspects.

**John F. Kennedy
W.H. Wan Hassan**

Food Colloids, Proteins, Lipids and Polysaccharides. E. Dickinson and B. Bergenstahl (eds.), Royal Society of Chemistry, Birmingham, UK, 1997, x + 401 pp., price £89.50, ISBN 0-85404-776-X

The study of food colloids is concerned with structural and dynamic aspects of multi-phase food systems-dispersions, emulsions, foams and gels viewed from a physical chemistry perspective. Relating the chemical and particulate components to physical properties of a multi-phase food system has direct industrial applications in final product production. This text seeks to relate structural stability and rheological properties to the interactions between the individual components.

The text is composed of a series of seminars from the international conference on 'Food Colloids' held at Ystad, Sweden, 24-26th April 1996. The coverage is very thorough, consisting of a combination of review articles and descriptions of the latest findings in the field. Six main topics are covered under the chapter headings sensory perception, association and adsorption of emulsifiers, aggregation phenomena, interactions at interfaces, control of gelation, and the making of emulsions and foams. Each chapter contains up to eight different lectures giving a good overall picture of the type of work which is being carried out in these fields. The lectures themselves contain clear diagrammatic representations which are fully referenced. Data and techniques presented are 'state-of-the-art' with model systems related directly to real food products.

An extremely useful text for graduates and researchers working in the area of food science providing an up to date view of food colloids and their uses. A very worthwhile read.

John F. Kennedy
John R. Woods

Thermal Analysis of Polymers - Rapra Review Report 95. M.P. Sepe (ed.), Rapra Technology, Shawbury, UK, 1997, 119 pp., price £70.00, ISBN 1-85957-107-7

The generic term 'thermal analysis' covers a range of analytical techniques capable of providing information relating to changes in the structure and properties of a material as a function of temperature. These techniques, which are complementary in the information they provide, are normally applied to polymeric materials where structural changes directly affect physical properties. It has been the development of the polymer industry, where materials are designed and produced with defined properties for specific applications, that has driven the need for analytical techniques capable of measuring parameters unique to polymeric materials - the thermal analysis methods.

'*Thermal Analysis of Polymers*', number 95 in the series of Rapra Review Reports which are written as expert overviews covering the science and technology of rubber and plastics, follows the established format of being compiled by a recognised expert in the field.

The book is divided into two main sections which are approximately equivalent in size. The initial section is the overview of the techniques covered and contains brief introductions and summaries of the information which can be obtained by the individual techniques which make up "thermal analysis". Included in this section are differential scanning calorimetry, differential photocalorimetry, thermogravimetric analysis, thermomechanical analysis, dynamic mechanical analysis, dielectric analysis, thermally stimulated current/relaxation map analysis and thermal conductivity analysis. These introductions to the techniques are both readable and informative and very valuable for somebody relatively new to the techniques. The second section contains the references obtained from the Rapra Abstracts Database. Here the entries are numbered and consist of the journal, title, authors, abstract, and copy request order number. Again there is sufficient information to allow identification of those papers containing the required additional information. The book concludes with an excellent subject reference.

Although this is only a small book it is packed with valuable information and enables the reader to easily identify and source additional information be it relating to synthetic polymer analysis or to natural polymers including for example starch blends, cellulosic ester and wood-based materials. It is recommended reading for those new to the techniques of thermal analysis and also as a reference work for recent publications in the area.

Linda L. Lloyd
John F. Kennedy

Biochemistry, 2nd edition and **Solutions Manual**. D. Voet and J. G. Voet, John Wiley & Sons, New York, USA, 1995, 1360 pp. Price £27.50, ISBN 0-471-58651-X. Solutions Manual, 214 pp. Price £32.50, ISBN 0-471-05861-0.

Biochemistry is one of the scientific disciplines which have undergone exceptionally rapid growth during the present decade and therefore it is essential that student textbooks are available which are continually revised to contain the most recent advances.

This book '*Biochemistry*' is the second edition of what for many students of the subject has become the standard textbook. It follows the same successful format of discrete but interrelated chapters with each one having a chapter summary, reference list and problems for progress assessment. The detailed answers to all of the end of chapter problems are contained in the accompanying *Solutions Manual*. There is also an associated CD-ROM which contains most of the text illustrations which can be used to prepare slides or transparencies and a disk which