

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
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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

contains computer-animated colour images of proteins and nucleic acids which the student can manipulate in three dimensions. These two aids should benefit both teacher and student. As with the first edition of this book the text is authoritative and comprehensive, and the use of colour illustrations throughout enhances the information and facilitates a rapid assimilation of the salient points of the text. The second edition has been updated to reflect the current major areas of advancement in biochemistry, in particular, in relation to molecular and protein structure. There is an increased emphasis on human disease and more extensive molecular biology material. The authors have addressed the question of reporting the results of current research by continuing to publish an annual supplement that highlights the previous year's biochemical advances.

This is a text book for first and second year biochemistry students which has been written by two scientists who obviously have a great enthusiasm for their subject, which is reflected in the way in which the information is presented to the student. It is also obvious from the way the book is organised and the problems which are posed to the student at the end of each chapter that they have a great deal of experience in teaching students of this level. This book presents biochemistry often from a chemist's viewpoint and assumes only a general background in chemistry, organic chemistry, and biology. It is highly recommended for students of biochemistry and also for those working in other disciplines who wish to improve their general scientific knowledge.

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Gas Chromatography, 2nd Edition. Ian A. Fowles, John Wiley & Sons, Chichester, UK, 1995 xix + 258 pp., Price £45.00, ISBN 0-471-95467-5.

Selection of the appropriate method and analytical tool is important for solving analytical problems and obtaining the best possible results. With great advancement and technological developments in analytical chemistry, gas chromatography (GC) plays a very vital role and is considered to be one of the most important and powerful analytical tools in various aspects of chemistry, biological sciences and environmental sciences; with a wide range of applications. This importance of gas chromatography is further enhanced and supported by the development of computer and information technology.

Gas Chromatography is designed as a convenient and flexible way of studying for people who cannot attend conventional education courses in analytical chemistry. By employing a specific approach, the learning objectives of each chapter are clearly stated. As a checking mechanism, the student's understanding of the material

is constantly challenged by self-assessment questions with remedial responses. Overall, the contents are systematically organised, covering the basic concept in gas chromatography, technical aspects, proper usage of the equipment, qualitative and quantitative analysis.

Even though the book is specifically designed for open learning approach, it is also a valuable resource material for beginners in gas chromatography or for first year undergraduate course students. Its simple and interesting approach with the self-assessment technique allows the reader to understand the book in stages. However, its high cost is a drawback.

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Lipid Chromatography Analysis. Edited by T. Shibamoto, Marcel Dekker, New York, USA, 1994, viii + 412 pp., Price US\$ 135.00, ISBN 0-8247-8941-5.

Analysis of the lipids, which are often linked to carbohydrate, has been one of the challenges faced by the analyst in both chemical and biological research. Being insoluble in aqueous medium, it requires the use of organic solvent to separate or extract a lipid from a mixture. Despite the unique nature and characteristics of lipids, they are one of the basic components of living systems as they have a vital role and effects in all biochemical, biological and physiological activities such as growth, cell metabolism, aging, diseases and protection from harmful agents. Development of various aspects of chromatography techniques has made the analysis of volatile and non-volatile components of lipids and its derivatives possible. Furthermore, supercritical fluid chromatography (SFC) using liquid carbon dioxide as a mobile phase has been devised to analyse some materials not separated by gas chromatography (GC) or high performance liquid chromatography (HPLC). However, conventional column chromatography and thin layer chromatography are still important and powerful analytical tools for preparative studies of lipids.

Highlighting the latest detection methods for the first time, *Lipid Chromatographic Analysis* gives a reader a chance to scan through a comprehensive review of a number of important methods for the analysis of lipids. The chapters are divided into 12 segments with a balanced discussion and coverage on gas-liquid chromatography and high pressure liquid chromatography. Other topics are also covered including application of supercritical fluid chromatography for lipids, gas chromatography-mass spectroscopic method for identification of lipids, GC technique for detection of plasmalogen phospholipids and GC analysis of lipid breakdown products for monitoring biological processes such as mutagenesis, carcinogenesis and aging.