

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.

Linda L. Lloyd
John F. Kennedy

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.

John F. Kennedy
W. H. Wan Hassan

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.

With the aid of more than 220 helpful tables, illustrations, drawings and equations, *Liquid Chromatography Analysis* is a valuable resource for analytical work in a wide range of disciplines and research areas, particularly to advanced level undergraduates and postgraduate students in these exciting disciplines. The information presented by various authors from different backgrounds and expertise can help the reader to choose the best chromatographic method for optimal results.

W. H. Wan Hassan
John F. Kennedy

Food Trades Directory of the UK & Europe 1996. Newman Books, London, 1996, 2 Vols, Vol. 1 (UK) xiv + 1074 pp., Vol. 2 (Europe) xiv + 865 pp., Price £140.00, ISBN 0-7079-6971-9.

Food is an essential resource for the entire population and thus information regarding its availability, in terms of whole food and ingredient producers and suppliers is of paramount interest to many areas of the food industry sector. Increasing consumer interest and awareness of better diets has resulted in a general improvement in many areas of food commodities and has led to the production of an abundance of so-called 'functional foods' which are reputed to have direct beneficial health effects. Recent food scares, such as BSE in beef and the cases of *E. coli* poisoning in Scotland have highlighted the necessity of stringent legislation to ensure good safe food practices.

These volumes comprise the 25th, and most complete and comprehensive, edition of the '*Food Trades Directory*'. The first volume of the directory covers the UK, whilst the second, and noticeably smaller, volume deals with the rest of continental Europe. Volume 1 is essentially divided into two sections, the first of which provides detailed information on UK food suppliers, outlets, services, and British food authorities. Food supplier information is well presented and generally provides the reader with addresses, telephone and fax numbers, the names of various members of staff, and information on annual turnover and number of employees, where available. Some information on the range of products produced/supplied is also provided.

Information on food outlets is presented alphabetically within the abundance of subsections, e.g. breweries, department stores, wholesalers, etc., and generally provides addresses, telephone numbers, and the names of various staff members. The food services section covers companies who have expertise in the storage, handling and distribution of food, and in automatic vending, whilst the food authorities section lists regulatory authorities with interests in meat, poultry and fish, eggs, dairy produce and other agricultural produce.

The second section of volume 1 is the food industry

directory, which tackles plant equipment and packaging machinery, hygiene, and packaging materials. This section is of particular use to those in the food industry factory construction business, since alphabetical lists of companies are provided, with addresses and telephone numbers, as well as an alphabetical list of applications/machinery and the companies that can provide equipment for such end-uses. Similar subcategorisation and information is provided in the packaging materials section, where you can, for example, locate manufacturers of laminated soup packets.

The second volume supplies similar information as the first, but for suppliers and industry in the rest of continental Europe. The food suppliers section is subdivided into respective countries with alphabetical listings within each country section. A small section is also devoted to other countries, outside of Europe, and provides some general information and contacts within their respective food industries. Likewise, the food industry directory within volume 2 is subdivided into sections for each country.

The directory is also provided on floppy disk (3½"), to be run on an IBM compatible PC using DOS 3.3 or higher. The idea behind this addition is that the user thus has the ability to define and extract targeted mailing and marketing information from the wealth of information contained within the directory. This comes with an easy to follow user manual and is a valuable addition to the hard copy version of the directory. Overall, these volumes are an invaluable aid to individuals with interests in the food sector, and provide an opportunity for buyers to assess whole food and ingredient producers and suppliers throughout the UK and the rest of Europe.

Charles J. Knill
John F. Kennedy

Chitin Enzymology, Vol. 2, 1996. Edited by Riccardo A. A. Muzzarelli, Atec Edizioni, Grottammare, 1996, xvi + 620 pp., ISBN 88-86889-00-3.

Chitin is the second most abundant polysaccharide, after cellulose, in the world. It plays principal structural roles in many invertebrates, especially arthropods, in many protozoa, and in all fungi. Chemically, it is a (1 → 4)-linked homopolymer of 2-acetamido-2-deoxy-β-D-glucopyranose (*N*-acetyl-D-glucosamine). Now chitin is becoming more and more interesting and important in industrial and academic research. Research in this field is accelerating with the emphasis being focused on the chitin-related enzymes. Degradation of chitin to its monomer is performed by a chitinolytic system consisting of two hydrolases, chitinase and *N*-acetyl-β-D-glucosaminidase, that act consecutively. The former hydrolyses the polymers of *N*-acetyl-