D-glucosamine, and the latter cleaves the dimer of the polymer repeat unit diacetylchitobiose.

This book, *Chitin Enzymology Vol. 2, 1996*, reports proceedings of the second international symposium on chitin enzymology which was held in May 1996, in Senigallia, Italy with the support of the University of Ancona. The book gives up-to-date information about enzymes of chitin and its derivatives related to human helath and their roles in animal food digestion. Structure, mechanisms, activities and synthesis are also discussed. Chitinolytic enzymes play important roles not only in humans, and in animals but also in plants in the biocontrol of fungal pathogens. An alternative system for degrading chitin is via deacetylation to chitosan via the enzyme chitin deacetylase. Isolation and characterisation of the organisms, enzymes and genes involved in chitin deacetylase are presented. In addition, this book covers current advances in the biosynthesis of chitinolytic enzymes and the application of immobilised enzymes in various industries such as food, pharmaceutical and chemical industries.

Many valuable ideas and information from the research work presented in this book can be important sources for biological development, both at present and in the future. Therefore, this book is a comprehensive and informative reference for chemists, biotechnologists and anyone who is interested in this subject.

Pawadee Methacanon
John F. Kennedy

Capillary Electrophoresis Technology. Edited by Norberto A. Guzman, Marcel Dekker New York, 1993 xv + 857 pp., Price $190.00, ISBN 0-8247-9042-1.

Capillary electrophoresis (CE) is one of the most exciting separation techniques in analytical chemistry developed significantly within the past few years. It is suitable for trace amounts of samples. Furthermore, it is quite compatible with biological samples such as proteins, nucleic acids and polysaccharides.

Capillary Electrophoresis Technology is divided into five parts. The opening part presents the basics of the electrophoretic process. The operational modes of capillary electrophoresis: buffer systems, and capillary columns are discussed in the following parts. Buffer plays a central role, especially in capillary zone electrophoresis since it influences migration time and resolution. With the aim of higher resolution and miniaturisation in chromatographic systems, fused silica capillaries and polymer-coated capillaries have been adopted mainly to increase the efficiency of separations. The connection of the capillary electrophoresis to the other powerful techniques such as mass spectrometry, UV spectrometry, refractive index detection and laser-induced fluorescence detection also increase power in separation and detection of trace amount of analytes. The details of the instrumentation are provided in part 4. Finally, this book covers a generous treatment of applications: chemical, biological and medical applications such as quantitative analysis with capillary zone electrophoresis and the use of capillary electrophoresis in clinical diagnosis.

This book covers all important aspects of capillary electrophoresis. Each chapter provides a very interesting reference work of direct relevance for research in this field. This book is recommended to all libraries concerned with chemistry and biochemistry.

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Synthesis in Lipid Chemistry. Edited by J. H. P. Tyman, The Royal Society of Chemistry, Cambridge, UK, 1996, ix + 232 pp., Price £59.50, ISBN 0-85404-716-6

To organise lecture materials into one book from a meeting or workshop is not an easy task since there will be a diversity of the topics or areas presented on the same main subject. However, the editor of 'Synthesis of Lipid Chemistry' managed to produce a book which contains a balanced contribution from different areas of the subject which is based on a two-day workshop on the synthesis in lipid chemistry. The book is divided into three main sections: firstly, glycerides and fatty acids; secondly, phospholipids; and glycolipids; and thirdly, biological, biotechnological and pheromone chemistry.

Besides carbohydrates and proteins, lipids are also available in large quantity and are a renewable source of natural products. With better understanding of the chemical and biochemical aspects of lipids particularly their synthesis, more information can be extracted for the following applications: (i) their nutritional value in diet; (ii) novel use of lipids in the treatment of disease and medical applications; (iii) application of lipid products and their derivatives in oleochemical and fine chemical industries. The importance of lipids in the food industry and their nutritional value have to some extent influenced the lifestyle and eating habits of people throughout the world. There is a shift of the consumption of lipid from animal-derived fat, particularly lard, to plant or vegetable-based lipid, since the latter contains high amounts of polyunsaturated fatty acid.

The book ends with chapters on recent developments in the biotransformation of lipids and the synthesis of pheromones. With the emergence of biotechnological development, the application of lipases for upgrading triglycerides to high added-value lipid-based products is considered one of the areas to be further exploited for the benefit of mankind. The existence of lipases and other relevant enzymes as powerful biocatalysts in organic synthesis, the advent of biocatalysts in low-water envir-

onment, modified enzymes working in organic media, coupled with an increasing awareness of the ecological and health benefits associated with bioprocessing, has triggered the search for new biotechnological processes and products. This challenging and interesting discipline is highly applicable in the food, pharmaceutical and fine chemical sectors.

The book is designed to meet predominantly the needs of researchers and academia with advanced knowledge of lipid chemistry. However, the price is rather expensive to justify the value of materials presented in the book. From the title of the book, one might expect the contents would include a general discussion on the chemistry and biochemistry of lipid synthesis in plants, animals and microorganisms. Nevertheless, the book highlights the latest state of the synthesis of lipids with many possible and commercial applications in food, nutrition, medicine and oleochemical sectors. People working in a lipid-based area of research will find the book an extra asset to broaden their knowledge of the chemistry of fats and oils.

W. H. Wan Hassan
John F. Kennedy

Dietary Fibre Analysis. D. A. T. Southgate, Royal Society of Chemistry, Cambridge, 1995, x + 174 pp., Price £37.50, ISBN 0-85404 556 2.

Dietary Fibre Analysis is the first book in the new RSC Food Analysis Monograph series. The aim of this series is to provide guidance and advice to the practising food analyst. The primary reason for measuring 'dietary fibre' is the hypothesis that a high intake is protective against a range of chronic degenerative diseases such as obesity, diabetes, coronary heart, gall stones, diverticular disease, large bowel cancer, etc.

'Dietary fibre' is a collective term for the plant cell wall material in food. The major components are polysaccharides which make up about 80–90% of most cell walls. Other substances present are aromatic polymers, lignin, complex lipids and waxes. The analytical measuring of dietary fibre therefore requires the design of analytical procedures which are capable of measuring a wide range of types of substances which are principally polysaccharides. The central role of analytical measurement is linked to how the chemical and physical properties are related to physiological effects which, in turn, are linked to the epidemiological questions and the development of dietary recommendations, all of which depend on quantitative information on the amounts of dietary fibre in food and the diet as a whole.

This book is divided into eight chapters: The Dietary Fibre Hypothesis; Chemistry of Dietary Fibre, Analytical Strategies, Sampling and Analytical Quality Assurance; The Total Fibre Method; the Non-Starch Polysaccharide Methods; Other Components; Choice of Analytical Method. It introduces the origins of the concept of dietary fibre, gives an account of its chemistry and properties, and examines the analytical strategies involved in its measurement and characterisation. It covers food sampling and quality assurance, the evolution of major analytical methods and the range of alternatives.

Dietary Fibre Analysis deals with an area which is currently of considerable interest to professional analysts, lecturers in food chemistry, nutrition researchers and scientists with an interest in cellulose. Indeed, a useful book from a well known and established author in the field.

M. R. Kosseva
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