a result of press and media coverage of the importance of a healthy diet and the possibility of harmful effects of additives used in the food industry.

This book not only informs the reader about the molecular structure of the components of food, but also attempts to explain the chemical changes that take place during food handling and processing. The major dietary components, such as carbohydrates (mono-, oligo- and polysaccharides), lipids and proteins are described in some detail in Chapters 1–5, followed by colours, flavours, vitamins, minerals and water in subsequent chapters. The much publicised E-numbers are dealt with in a chapter on preservatives and even less attractive components such as agricultural residues are considered in a chapter on 'undesirables'. Throughout the book, the aim is not only to discuss what food is made of but also to try to explain how it 'behaves'. The author is at pains to point out the interdisciplinary nature of the material, making excursions into topics from physics to biology as required. Chemical structures are presented simply and systematically using neat, clear diagrams. The book is pitched at a standard that is easily accessible to science undergraduates and, although it is obviously designed to form the basis of an undergraduate course in food chemistry, at £14.50 it would be an interesting addition to the bookshelf of anyone with a scientific background and a desire to learn about the structure of food components and the chemistry of cooking.

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Nuclear Magnetic Resonance: Concepts and Methods. D. Canet (ed.), John Wiley and Sons, Chichester, UK, 1996, x + 260 pp., price £55.00, ISBN 0-471-94234-0

Nuclear magnetic resonance spectroscopy (NMR) is one of the most powerful analytical techniques known to scientists. Like other forms of spectroscopy, for instance, infrared and ultraviolet, NMR deals with the measurement of energy gaps between states of different energy. However, unlike most other forms of spectroscopy, the phenomenon requires the presence of an external magnetic field and concerns nuclei rather than electrons. At present, NMR is the most powerful technique for structural analysis because it defines the environment of all occurring functional groups, as well as of fragments such as hydrogen atoms attached to carbon. In addition, it is a non-destructive method. Therefore, the analysed samples can be reused. NMR may also be utilised for quantitative determination even though its sensitivity, compared with optical techniques, gas chromatography, and mass spectrometry, is lower.

This book is the English translation of the original book which was written in French in 1990–1991. The opening chapter presents an overview of the important concepts of NMR. It includes the basic approach to the interpretation of common NMR spectra in the liquid state and in the anisotropic medium. It also involves the advanced mathematics and quantum mechanics (Fourier transformation, product-operator formalism, signal processing techniques, etc.). It explains some concepts of spin relaxation which deal with spin dynamics in relation to molecular motions including rational and translational motions in a more general way. The final chapter is a survey of the major multipulse and multidimensional methods of present day NMR including selective excitation, correlation spectroscopies and NMR imaging.

This is a very educational and comprehensive book providing many aspects of NMR and a detailed insight into the new area of the analytical techniques. Therefore, it is suitable for advanced undergraduate level in most fields of science, including chemistry, physics, biology, biomedicine, surface science and environmental analysis.

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Carbohydrate Chemistry for Food Scientists. Roy L. Whistler and James N. BeMiller (eds.), Eagan Press, St. Paul, MN, USA, 1997, 241 pp, price $114.00, ISBN 0-913250-92-9

Food scientists and engineers deal more with carbohydrates than with other food ingredients because of their abundance, low price, food value, and excellent ability to control the physical properties of foods. They are amenable to both chemical and biochemical modification and both modifications are employed industrially to improve their properties and extend their use.

"Carbohydrate Chemistry for Food Scientists" deals with the chemistry and functionality of carbohydrates in natural foods, food product formulations, and food processing, storage and preparation. Chemical and physiochemical properties of natural and modified carbohydrates of all sizes are extensively treated. Explanations of how industry professionals apply this knowledge to the properties and use of carbohydrate ingredients are also included.

Information is also provided on the biochemistry and metabolism of carbohydrates to give an understanding of caries formation, of carbohydrate digestion and of other changes in carbohydrates as they pass through the human gastrointestinal tract. The physiological and nutrition aspects of carbohydrates are also treated.

"Carbohydrate Chemistry for Food Scientists", an introduction to the basis of carbohydrate chemistry in food science, is an easy-to-read guide for advanced students or for food scientists and engineers. Complex