There are a number of applications of alcoholic fuels. Alcoholic, direct fuel cells are used for portable power generation. Methanol, because of its toxicity and miscibility, is less applicable than ethanol. Moreover, ethanol, being renewable and environmentally friendly, plays a role as an alternative supply of hydrogen obtained in the steam reforming process. Biofuel cells, utilizing enzymes (dehydrogenases) as a catalyst for alcohol oxidization, are alternatives for chemical cells. The role of catalysts is taken by enzymes instead of heavy or precious metals. There is also no need to use polymer electrolyte membranes, the most costly part of fuel cell (Chapter 12, Section 3). These applications can be implemented in order to reduce dependency on oil and environmentally toxic power sources.

The book provides chemists, engineers and scientists with information about alternative energy sources and gives clues for managers that concern implementation of alcoholic fuels in a variety of energy conversion devices. Shown examples broaden the scope of view with respect to alternative energy technologies.

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Units and Symbols in Physical Chemistry, Richard E. Cohen, Tomislav Cvitas, Jeremy G. Frey, Bertil Holstrm, Kozo Kuchitsu, Roberto Marquardt, Ian Mills, Franco Pavese, Martin Quack, Jurgen Stohner, Herbert L. Strauss, Michio Takami, Anders J. Thor, Quantities, The Royal Society of Chemistry, Cambridge, UK, 2007 (xiv + 234 pp., £39.95, ISBN: 0-85404-433-7)

The first IUPAC Manual of Symbols and Terminology for Physicochemical Quantities and Units of which this book is a successor, was published in 1969, with the objective of 'securing clarity and precision, and wider agreement in the use of symbols, in different countries, among physicists, chemists and engineers, and by editors of scientific journals.' Attempts to provide a readable compilation of widely used terms, general rules and symbols from many sources for better understandable definitions and explanations of best practise were successful. Thus the current aim is to continue to create this manual to improve the exchange of scientific information among the readers in different disciplines and across different nations.

The first part includes a section on surface structure, and then describes the use of the International System of units (SI) and a few other systems including mathematical symbols, their use in print and conventions in optical spectroscopy. A glossary of terms used in chemical kinetics, photochemistry, electrochemistry, colloid and surface chemistry is given (Chap. 2–4). Revision of the previous editions' material describing fundamental physical constants, properties of elementary particles, elements and nuclides is also provided (Chap. 5–6). Final chapters include equations of electricity, magnetism, outlines for the treatment of uncertainty in physical measurements and provision of relevant references (Chap. 7–10).

For modern industrial economy precise scientific language is important and can be encoded by appropriate definitions of quantities, units and symbols which are crucial for international exchanges in science and technology with important consequences. *Quantities, Units and Symbols in Physical Chemistry* is designed for scientists, science publishers and organisations working across a multitude of disciplines requiring the use of internationally confirmed nomenclature in Physical Chemistry.

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Handbook of fruits and fruit processing, Y.H. Hui (ed.), Blackwell Publishing, Ames, Iowa, USA, 2006 (xii + 697 pp., £125, ISBN: 0-8138-1981-4)

The processing of fruits continues to undergo rapid change. Fruits have always played an important role in human nutrition and we should remember that. *Handbook of fruits and fruit processing* describes the processing of fruits from four perspectives: a scientific basic, production techniques, manufacturing and engineering principles and processing of individual fruits.

Part I presents information about fundamental aspects and processing technology, starting with receipt of fruits and fruit products at the processing plant. There is a prelude to commercial production, describing technological and engineering principles involved in processing fruits. As examples, microbiology, nutrition, heat treatment, freezing, drying, pulsed electric fields, minimal processing, fresh-cut fruits, additives, and waste management are all discussed. Investigating a wide range of food additives including sweeteners, polyols, discussions focus on sugar alcohols, saccharin, cyclamate and aspartame, with applications and the view of the regulatory boards in the USA

with respect to their approval of these alternative sweeteners.

The book considers the manufacture of several categories of fruits products, such as jams, jellies, hydrocolloids, fruit beverages, and fruit as an ingredient. Sanitation and safety in the fruit processing plant are addressed.

Fruits have been part of the human diet since times immemorial. However, the discovery of the role of vitamins and minerals in the human body has triggered substantial changes in eating habits. Fruit consumption has become an everyday need. Appearance of chemical, and biological substances, and the application of new technological procedures, especially aseptic techniques, have resulted in revolutionary developments including effects on the palatibility and safety of fruit products.

The final part of the book discusses individual fruits, covering important groups of fruits such as apples, apricots, citrus fruits, and berries. Included is an insight into the composition of the flavour of strawberries and the sugars involved in providing this and the rich colour they have. Also discussed is the impact on health and how the world market provides this indispensable part of the human diet. Covered in great detail is the citrus market in developed and developing countries and the expansion in world citrus production from 2003 onwards.

The *Handbook of fruits and fruit processing* is primarily aimed at the professional researcher but is also a practical textbook ideal for all individuals involved in the fruit industry.

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Dietary Fibre-Components and Functions, Hannu Salovaara, Fred Gates, Maija Tenkanen, Wageningen Academic Publishers, The Netherlands, 2007 (344 pp., £59, ISBN: 90-8686-019-7)

Numerous papers in the scientific are literature indicate the beneficial role of dietary fibre to health. Industry puts a constant effort to increase the dietary fibre content in food by invention of new process design and applications. However, intake is still generally below recommended levels. The relation between composition of dietary fibres and their physiological effects are of special interest for scientists dealing with bioprocesses and food technology. The volume presents the conclusions presented at the "Dietary Fibre 2006 – Multifunctional Complex of Components" conference, and presents a broad scope concerning dietary fibres, from their formation in plants to their useable roles in human health.

Physiological properties of fibres depend on their origin and plant cell wall structure and appropriately fibre architecture is examined (Chap. 2). The molecular weight of the component macromolecules affects their acceptability and fermentation speed by the gut (*in vitro* assays revealed that partially hydrolysed guar gum is fermented easier than the native form, Chap. 12). However, many aspects of fibre properties remain to be determined. Clearly, dietary fibre and whole grains are thought to have an impact on human health. Together with other synergistic factors such as minerals and vitamins, they play a role as coronary heart disease and metabolic syndrome reducing agents. Moreover, they help maintain proper body weight preventing weight reduction (Chap. 1). It is claimed that β-D-glucans play a key role in lowering cholesterol levels in the blood. However, it is still not known what physical forms of dietary fiber are needed in a food to be active. The sub-division of dietary fibres into soluble and insoluble fractions and testing shows that they possess different physiological effects. Soluble fibres, having 'viscous, gelling' properties and high molecular weights are suggested to excite physiological response (Chap. 6). Wheat, oats and rye fibres, as food additives, alter profiles of products derived from non-digestible carbohydrates (Chap. 14).

Important aspects of fibres emerging include: prebiotic fibres, inulin and oligofructose increase calcium absorption and magnesium levels in post-menopausal women (Chap. 16). Moreover, acacia gum presents prebiotic effects, helps gut transition and improves lipid metabolism in a number of clinical trials. Thanks to their technological functionalities (encapsulating properties) and nutritional properties gums are a good source for healthy food product production (Chap. 17).

The book gives a spotlight on the whole journey of dietary fibre, starting from synthesis in the plant through food processing and digestive process to its role in human health. It covers a broad range of disciplines including plant science, chemistry, microbiology, nutritional science and medicine.

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