Food Hydrocolloids Journal Elsevier

It is widely accepted that the creation of novel foods or improvement of existing foods largely depends on a strong understanding and awareness of the intricate interrelationship between the nanoscopic, microscopic and macroscopic features of foods and their bulk physiochemical properties, sensory attributes and healthfulness. With its distinguished editor and array of international contributors, Understanding and controlling the microstructure of complex foods provides a review of current understanding of significant aspects of food structure and methods for its control. Part one focuses on the fundamental structural elements present in foods such as polysaccharides, proteins and fats and the forces which hold them together. Part two discusses novel analytical techniques which can provide information on the morphology and behaviour of food materials. Chapters cover atomic force microscopy, image analysis, scattering techniques and computer analysis. Chapters in part three examine how the principles of structural design can be employed to improve performance and functionality of foods. The final part of the book discusses how knowledge of structural and physicochemical properties can be implemented to improve properties of specific foods such as ice-cream, spreads, protein-based drinks, chocolate and bread dough. Understanding and controlling the microstructure of complex foods is an essential reference for industry professionals and scientists concerned with improving the performance of existing food products and inventing novel food products. Reviews the current understanding of significant aspects of food structure and methods for its control Focuses on the fundamental structural elements present in foods such as proteins and fats and the forces that hold them together Discusses novel analytical techniques that provide information on the morphology and behaviour of food materials

Advances in food science, technology, and engineering are occurring at such a rapid rate that obtaining current, detailed information is challenging at best. While almost everyone engaged in these disciplines has accumulated a vast variety of data over time, an organized, comprehensive resource containing this data would be invaluable to have. The
Based on the proceedings of the 10th international Cellucon Conference held in Turku/Abo, Finland, this book offers a comprehensive overview of research undertaken in all aspects of cellulosic pulps, fibres and materials including the production and processing of pulp and paper fibre.

This book covers the production, management and changing patterns of global wood and fibre resources, with emphasis on the inter-disciplinary character of wood and related plant materials in terms of their resource value.

Issues in Life Sciences—Cellular Biology / 2013 Edition is a ScholarlyEditions™ book that delivers timely, authoritative, and comprehensive information about Cells and Materials. The editors have built Issues in Life Sciences—Cellular Biology: 2013 Edition on the vast information databases of ScholarlyNews™. You can expect the information about Cells and Materials in this book to be deeper than what you can access anywhere else, as well as consistently reliable, authoritative, informed, and relevant. The content of Issues in Life Sciences—Cellular Biology: 2013 Edition has been produced by the world’s leading scientists, engineers, analysts, research institutions, and companies. All of the content is from peer-reviewed sources, and all of it is written, assembled, and edited by the editors at ScholarlyEditions™ and available exclusively from us. You now have a source you can cite with authority, confidence, and credibility. More information is available at http://www.ScholarlyEditions.com/

The proceedings of the Cellucon Trust conference held in Lund, Sweden, in 1993. The latest scientific advances are covered, environmental concerns and the consequent economic costs are dealt with. The papers have surprisingly wide applications across a number of industries, including forest processing, pharmaceuticals, chemical processing, civil engineering and composite materials production.

Second edition (1997): We have taken this opportunity to revise the original and to add new information about developments since 1990. . . . Since 1990 there have been considerable changes in the nature of the fibers being produced, the production methods and in consumers values and expectations. . . . Since 1990, the march of high-tech fibers has continued with an ever-increasing sub-division to meet the specialised applications, as in high-performance, high-function and high-sense fibers. New research and development has produced fibers with high tenacity and modulus to give the super-fibers now used as industrial materials. . . . [new . . . ultrafine fibers can emulate the functionality and ambience of biological fibers. The synthetic cellulosics have made a particular resurgence since 1990, and the various solvent-spun fibers . . . are now making a great impact on the market. They now offer the processability of synthetics along with the in-built advantages of natural cotton. We hope . . . that the approach of the 1st edition is now extended to illustrate the dynamism of this frontier industry, pointing the way forward into the next century. If you think fiber technology is a mature technology, this new book may change your mind. It examines many new high-performance, application-specific synthetic fibers recently introduced. Included are details of chemistry, research and development, properties and performance, processing, and specific industrial, propel, consumer and medical applications. This extensive survey of new fibers and fiber technology serves the information needs of all those involved in the development and commercialization of new and improved fibers. (It also provides fascinating reading for all those interested in this subject.)

This volume is a record of a conference, which was the fourth in a series held at NWEI, in Wrexham. It brought together scientists with interests in the broadly based subject of ion exchange, with the aim to cover aspects of its application as well as advances in the theory of ion exchange.

Electronic Journal Management SystemsExperiences from the Field

Psychology Press

Starches for Food Application: Chemical, Technological and Health Properties examines the scientific, technological and nutritional knowledge of different types of starches, including their production and application in food, health and the environment. The book covers the links between biosynthesis, structure and the environmental impact on processing and nutrition. In addition, it covers starch identification and evaluation methods, along with production methodologies for food application, new sources of starch, modified starches for food application, and the relationship between starch, nutrition and health. Covers all aspects of starch in relation to foods, i.e., from the production and modification of starch, to the function and application of starch in food Offers a practical reference guide that compiles information on new sources of starch in food, starch application, modification and new starches for health benefits Brings scientific, technological and nutritional knowledge of starch for food applications to bridge the gap between health and environment.

The explosive growth of electronic journals presents unique challenges for libraries. Electronic Journal Management Systems: Experiences from the Field comprehensively examines these complex topics, including explanations of the automated systems libraries have developed or adopted, licensing issues, and the provision of access to electronic journals. Respected library professionals discuss their own experiences in the implementation and use of electronic journal management systems, helping readers to easily apply effective strategies in their own library. This book includes screen shots, tables, and diagrams to clearly illustrate concepts and information.

As energy demands continue to surge worldwide, the need for more efficient and environmentally neutral energy production also becomes increasingly apparent. Renewable Resources and Renewable Energy: A Global Challenge presents a well-rounded perspective on the development of bio-based feedstocks, biodegradable plastics, hydrogen energy, fuel

This volume provides an overview of the latest research findings on the physics, physiology, and psychology of food oral consumption, as well as the experimental techniques available for food oral studies. Coverage includes the main physical and physiological functionalities of the mouth; the location and functionalities of various oral receptors; the main sequences of eating and drinking, and the concomitant food
disintegration and destabilisation. Chapters also explain oral processing and its relation to flavour release and texture perception, and there is an introduction to the principles of food rheology as they relate to eating. Food Oral Processing is directed at food scientists and technologists in industry and academia, especially those involved in sensory science and new product development. It will also be of interest to oral physiologists, oral biologists and dentists. The book will be a useful reference for undergraduate and postgraduate students of these disciplines.

Nanoencapsulation of Food Ingredients by Specialized Equipment, Third Edition, a new volume in the Nanoencapsulation in the Food Industry series provides an overview of specialized developed equipment for the nanoencapsulation of food ingredients. Electro-spinning, electro-spraying, nano-spray dryer, micro/nano-fluidics systems and sonication devices are just some of the equipment analyzed in the book. Each chapter reviews the mechanisms of innovative devices for preparation of nanostructures, exploring the key factors in each device to control the efficiency of nanoencapsulation and revealing the morphologies and properties of nanoencapsulated ingredients produced by each equipment. Authored by a team of global experts in the fields of nano and microencapsulation of food, nutraceutical, and pharmaceutical ingredients, this title is of great value to those engaged in the various fields of nanoencapsulation. Thoroughly explores the mechanisms of nanoencapsulation by specialized equipment. Elucidates the key factors in each device to control the efficiency of nanoencapsulation Discusses the morphologies and properties of nanoencapsulated ingredients produced by each equipment The tenth volume of "Gums and Stabilisers for the Food Industry" provides an up-to-date account of the latest research developments in the characterisation, properties and applications of polysaccharides and proteins used in food. This latest edition of the most internationally respected reference in food chemistry for more than 30 years, Fennema's Food Chemistry once again meets and surpasses the standards of quality, comprehensive information set by its predecessors. This edition introduces new editors and contributors, who are recognized experts in their fields. All chapters reflect recent scientific advances and, where appropriate, have expanded and evolved their focus to provide readers with the current state-of-the-science of chemistry for the food industry. The fourth edition presents an entirely new chapter, Impact of Biotechnology on Food Supply and Quality, which examines the latest research in biotechnology and molecular interactions. Two former chapters receive extensive attention in the new edition including Physical and Chemical Interactions of Components in Food Systems (formerly "Summary: Integrative Concepts") and Bioactive Substances: Nutraceuticals and Toxicants (formerly "Toxic Substances"), which highlights bioactive agents and their role in human health and represents the feverish study of the connection between food and health undertaken over the last decade. It discusses bioactive substances from both a regulatory and health standpoint. Retaining the straightforward organization and detailed, accessible style of the original, this edition begins with an examination of major food components such as water, carbohydrates, lipids, proteins, and enzymes. The second section looks at minor food components including vitamins and minerals, colorants, flavor, and additives. The final section considers food systems by reviewing basic considerations as well as specific information on the characteristics of milk and the postmortem physiology of edible muscle and postharvest physiology of plant tissues. Useful appendices provide keys to the international system of units, conversion factors, log P values calculation, and the Greek alphabet. This work contains the proceedings of a conference on gums and stabilisers for the food industry. Contributions are concerned with the structure-function relationships of various polysaccharides and protein systems, as well as progress on mixed biopolymer systems. Unique in its broad range of coverage, Food Carbohydrates: Chemistry, Physical Properties and Applications is a comprehensive, single-source reference on the science of food carbohydrates. This text goes beyond explaining the basics of food carbohydrates by emphasizing principles and techniques and their practical application in quality control, product development, and research. The editor incorporates information on analytical methods, the structural analysis of polysaccharides, physical properties, molecular conformation and characterization, and industrial applications of polysaccharide gels. The analytical methods and structural analysis of polysaccharides are rarely presented in books on food carbohydrates - topics this text fully illustrates. It also presents particulars on starch and starch modification, with a focus on reaction principles, improved functional properties, and practical applications. Food Carbohydrates: Chemistry, Physical Properties and Applications is the only known current reference to include basic chemistry, analytical methodologies, structural analysis, conformation and functional properties, and rheological and thermal properties of food carbohydrates all in one text. This book is ideal as a professional reference for researchers, engineers, and those interested in food carbohydrates, as well as a textbook for graduate students. Hyaluronan and its derivatives has developed very quickly in the last few years from a scientific novelty into an important new material for a diverse range of medical and biomaterial applications. This landmark conference focused on developments and applications in the use of hyaluronan in tissue repair and reconstruction, drug delivery systems, anti-cancer treatments and joint recovery and engineering. The entire range of hyaluronan progress is covered in depth by the more than 135 individual papers: Analytical chemistry Structural elucidation and basic chemistry Electron microscopy and atomic force microscopy Production, purification and characterisation Quality in production systems Chemical modification Derivatives and properties Cross-linking Free radical modification Physical characteristic Rheology Aggregation phenomena Interaction with water and solution properties Cell biology Control and regulation of HA synthases Cell surface chemistry HA cell receptors and cell signalling Interaction with proteins and other biological ligands Biophysical aspects Effects on pain receptors Neurobiology Role in organisation of extracellular matrix Role in development (embryogenesis): cell movement/migration Medical applications Uses in cartilage and wound repair Inflammation Wound regenerative healing Surgery and tissue engineering Viscosupplementation / osteoarthritis Viscoaugmentation and viscoprotection Anti-adhesion applications Drug delivery systems Binding onto tumour cells and metastases Outlines the proceedings of the landmark conference which focused on key developments and applications in the use of hyaluronan in tissue repair and reconstruction, among other uses. The entire range of hyaluronan processes is dealt with in depth by more than 135 individual papers presented in two volumes Covers analytical chemistry, chemical modification, physical characterisation, cell biology and medical applications The first guide devoted to the functions, structures, and applications of natural hydrocolloids In today’s health-conscious climate, the demand for natural food products is growing all the time. Natural hydrocolloids, therefore, have never been more popular. With their thickening, stabilizing, gelling, fat replacing, and binding qualities, these naturally occurring, plant-based polymers can fulfil many of the same functions as commercial ingredients like xanthan, guar, gum Arabic, pectin, and starch. Moreover, certain health benefits have been linked with their often biological active compounds and high-fiber compositions, including potential prebiotic effects and the reduction of blood cholesterol levels. Application of these novel hydrocolloids is, however, still underexplored. Emerging Natural Hydrocolloids aims to remedy this by providing a thorough overview of their structure–function relationships,
rheological aspects, and potential utility in mainly the food and pharmaceutical industries. This accessible, quick-reference guide features: A comprehensive and up-to-date survey of the most significant research currently available on natural hydrocolloids. Examinations of the major functions and rheological aspects of novel hydrocolloids. Information on the potential applications of biopolymers within both foods and pharmaceutical systems. Collaborations from an international team of food scientists. Emerging Natural Hydrocolloids: Rheology and Functions offers scientists, engineers, technologists, and researchers alike a unique and in-depth account of the uncharted world of novel hydrocolloids, their uses, properties, and potential benefits.

Food chemistry is the study of chemical processes and interactions of all biological and non-biological components of foods. The biological substances include such items as meat, poultry, lettuce, beer, and milk as examples. It is similar to biochemistry in its main components such as carbohydrates, lipids, and protein, but it also includes areas such as water, vitamins, minerals, enzymes, food additives, flavours, and colours. This discipline also encompasses how products change under certain food processing techniques and ways either to enhance or to prevent them from happening. An example of enhancing a process would be to encourage fermentation of dairy products with lactic acid; an example of a preventing process would be stopping the Maillard reaction on the surface of freshly cut Red Delicious apples whether by hand or mechanical methods. This book presents the recent research from around the world in this field.

Food powders are an increasingly important aspect of processed food worldwide. Essential factors such as ease of storage and transport and usage convenience have greatly benefited the food industry and promise further advancements in processing techniques. Food powders can be stored for a longer period of time than other food products, making them essential for food supply in many regions of the world. There have been numerous research works on food powders properties and characterization, but there has not been an updated comprehensive review in this field. Food Powders Properties and Characterization is designed as an essential reference for individuals in the food industry and academia seeking a singular source that covers most of the basic aspects of food powders. With chapters focusing on the general properties of food powders, characterization of particle and bulk properties, adhesion and surface properties, this text presents comprehensive and fully up to date coverage of this challenging and important field.

Issues in General Food Research / 2011 Edition is a ScholarlyEditions™ eBook that delivers timely, authoritative, and comprehensive information about General Food Research. The editors have built Issues in General Food Research: 2011 Edition on the vast information databases of ScholarlyNews.™ You can expect the information about General Food Research in this eBook to be deeper than what you can access anywhere else, as well as consistently reliable, authoritative, informed, and relevant. The content of Issues in General Food Research: 2011 Edition has been produced by the world’s leading scientists, engineers, analysts, research institutions, and companies. All of the content is from peer-reviewed sources, and all of it is written, assembled, and edited by the editors at ScholarlyEditions™ and available exclusively from us. You now have a source you can cite with authority, confidence, and credibility. More information is available at http://www.ScholarlyEditions.com/.

Understanding of the interactions of milk proteins in complex food systems continues to progress, resulting in specialized milk-protein based applications in functional foods, and in protein ingredients for specific health applications. Milk Proteins is the first and only presentation of the entire dairy food chain—from the source to the nutritional aspects affecting the consumer. With focus on the molecular structures and interactions of milk proteins in various processing methods, Milk Proteins presents a comprehensive overview of the biology and chemistry of milk, as well as featuring the latest science and developments. Significant insight into the use of milk proteins from an industry viewpoint provides valuable application-based information. Those working with food and nutritional research and product development will find this book useful. 20% new chapter content — full revision throughout New chapters address: role of milk proteins in human health; aspects of digestion and absorption of milk proteins in the GIT; consumer demand and future trends in milk proteins; and world supply of proteins with a focus on dairy proteins Internationally recognized authors and editors bring academic and industrial insights to this important topic.

Food Materials Science and Engineering covers a comprehensive range of topics in relation to food materials, their properties and characterisation techniques, thus offering a new approach to understanding food production and quality control. The opening chapter will define the scope and application of food materials science, explaining the relationship between raw material structure and processing and quality in the final product. Subsequent chapters will examine the structure of food materials and how they relate to quality, sensory perception, processing attributes and nutrient delivery. The authors also address applications of nanotechnology to food and packaging science. Methods of manufacturing food systems with improved shelf-life and quality attributes will be highlighted in the book.

Hydrocolloids are among the most widely used ingredients in the food industry. They function as thickening and gelling agents, texturizers, stabilisers and emulsifiers and in addition have application in areas such as edible coatings and flavour release. Products reformulated for fat reduction are particularly dependent on hydrocolloids for satisfactory sensory quality. They now also find increasing applications in the health area as dietary fibre of low calorific value. The first edition of Handbook of Hydrocolloids provided professionals in the food industry with relevant practical information about the range of hydrocolloid ingredients readily and at the same time authoritatively. It was exceptionally well received and has subsequently been used as the substantive reference on these food ingredients. Extensively revised and expanded and containing eight new chapters, this major new edition strengthens that reputation. Edited by two leading international authorities in the field, the second edition reviews over twenty-five hydrocolloids, covering structure and properties, processing, functionality, applications and regulatory status. Since there is now greater emphasis on the protein hydrocolloids, new chapters on vegetable proteins and egg protein have been added. Coverage of microbial polysaccharides has also been increased and the developing role of the exudate gums recognised. With a new chapter on Gum Ghatti. Protein-polysaccharide complexes are finding increased application in food products and a new chapter on this topic as been added. Two additional chapters reviewing the role of hydrocolloids in emulsification and their role as dietary fibre and subsequent health benefits are also included. The second edition of Handbook of hydrocolloids is an essential reference for post-graduate students, research scientists and food manufacturers. Extensively revised and
Food Emulsions: Principles, Practice, and Techniques, Second Edition introduces the fundamentals of emulsion science and demonstrates how this knowledge can be applied to better understand and control the appearance, stability, and texture of many common and important emulsion-based foods. Revised and expanded to reflect recent developments, this s

This book covers the production, management and changing patterns of global wood and fiber resources, with emphasis on the inter-disciplinary character of wood and related plant materials in terms of their resource value. Industrial uses of polysaccharides centre on their ability to thicken or structure many times their own weight of water, or in other words to control the rheology of hydrated systems. Until comparatively recently, however, objective characterisation of polysaccharide rheology, except in a few specialist research laboratories, was largely confined to compression of gels, simple measurements of solution viscosity, often in ill-defined geometries, and imitative tests intended to reflect product performance in specific areas of use. Several factors have combined to bring a wider range of rheological techniques into common use. One is the increasing practical importance of systems that cannot adequately be described as solids or liquids, such as 'weak gels' and spreadable pastes. A parallel, routine characterisation of such systems has become economically feasible with the development of a new generation of comparatively inexpensive computer-controlled instruments. There has also been a change of emphasis from phenomenological description of product towards the use of rheological measurements to probe the underlying molecular and supramolecular structures and the processes by which they are formed. As a result, even the most pragmatic producers and users of industrial polysaccharides are probably now familiar with terms such as creep compliance, stress overshoot and the ubiquitous G' and G", although perhaps not fully understanding their precise meaning or practical significance. A definitive text giving a rigorous description of the rheological approaches relevant to polysaccharide systems is therefore appropriate and timely. Romano Lapasin and Sabrina Priel are to be congratulated for tackling the daunting but worthwhile task of producing such a volume.

Battered fried foods consistently remain in high demand despite concerns about their health aspects, prompting food processors to develop new methods and alternative oils and batters in the name of healthy, tasty fried foods and high-performance, cost-effective frying oil. With contributions from an international panel of food technology authorities, Advances in Deep-Fat Frying of Foods provides straightforward background on the engineering aspects of deep-fat frying, discusses flavor acquisition during frying, and delineates novel frying technologies employed to make fried foods healthier. With the aid of numerous tables and illustrations, this concise reference examines changes in fried products both at the macroscopic and microscopic levels. It reviews heat and mass transfer and variations found in the physical properties of food during frying. The book discusses information about the rheological properties of batters and the effects of batters on product quality in addition to alternative techniques such as microwave and vacuum frying used to improve the nutritional aspects of fried foods. The text also covers the formation of acrylamide – a potential carcinogen formed during frying – collects existing literature on this newly discovered health risk, and considers how to reduce it. As long as they are in demand, food processors will continue to produce fried foods. Advances in Deep-Fat Frying of Foods demonstrates how to keep up with demand while ideally making fried foods healthier, tastier, and economically more viable.

Biopolymer Nanostructures for Food Encapsulation Purposes, a volume in the Nanoencapsulation in the Food Industry series, guides readers on how to fabricate and apply nanostructures from different proteins, carbohydrates and chemical sources for food encapsulation purposes. This book covers recent and applied research in all disciplines of bioactive and nutrient delivery. Chapters emphasize original results relating to experimental, theoretical, formulations and/or applications of nano-structured biopolymers. Includes updated applications of biopolymer nanostructures from different protein, carbohydrate and chemical sources Discloses the current knowledge and potential of biopolymer nanostructures Brings the novel applications of biopolymer nanostructures for the development of bioactive delivery systems together. The tenth volume of "Gums and Stabilisers for the Food Industry" provides an up-to-date account of the latest research developments in the characterisation, properties and applications of polysaccharides and proteins used in food. Rheology of Semisolid Foods comprehensively covers the rheological behaviors and rheological testing of semisolid foods. Individual chapters focus on semisolid food structure, rheological and sensorial behaviors, testing of various semisolid food behaviors, and factors that impact those behaviors. Special concentration is given to the relationships among semisolid food structures and mechanical properties and textures. The second section of this work presents a series of case studies on acid milk gels and yogurt which provide a practical illustration of the concepts presented in the preceding chapters, allowing readers to gain both conceptual knowledge of semisolid food rheology and an understanding of how that knowledge can be applied to a food system of choice. Individual components, processing parameters, and storage conditions can dramatically impact food functional properties and textures. Changing any of these factors can cause significant microstructural alterations resulting in undesirable changes in product stability, functionality and texture. The lack of knowledge of how these factors impact the final food properties makes development of new food products a process of empirical trial rather than intentional design. A fundamental understanding food structure, function and texture relationships is critical for targeted design of food products. This text is a valuable reference for researchers looking to gain an understanding of how rheology works in semisolid food design and processing. Dietary Fiber: Properties, Recovery and Applications explores the properties and health effects of dietary fiber, along with new trends in recovery procedures and applications. The book covers the most trending topics of dietary fiber applications, emphasizing polyphenol properties, bioavailability and metabolomics, target sources, recovery and emerging technologies, technological aspects, stability during processing, and applications in the food, beverage and nutraceutical sectors. Written by a team of experts in the field of dietary fiber, this book is ideal for chemists, food scientists, technologists, new product developers and academicians. Thoroughly explores dietary fiber properties and health effects in light of new trends in recovery procedures and applications Covers issues in three critical dimensions: properties, recovery and applications Focuses on applications in food additives, as well as recovery from plant processing by-products