

Handbook Of Food Allergen Detection And Control Woodhead Publishing Series In Food Science Technology And Nutrition

Improving and Tailoring Enzymes for Food Quality and Functionality provides readers with the latest information on enzymes, a biological processing tool that offers the food industry a unique means to control and tailor specific food properties. The book explores new techniques in the production, engineering, and application of enzymes, covering sourcing, isolation, and production of enzymes for food applications. In addition, chapters include detailed discussions of enzyme processing, analytical and diagnostic applications of enzymes in the food industry, and enzyme applications in specific food commodities. Provides readers with the latest information on enzymes and their unique applications in the food industry Explores new techniques in the production, engineering, and application of enzymes, covering sourcing, isolation, and production of enzymes for food applications Chapters include detailed discussions of enzyme processing, engineering and analytical and diagnostic applications of enzymes in the food industry, and enzyme applications in specific food commodities Many food ingredients are supplied in powdered form, as reducing water content increases shelf life and aids ease of storage, handling and transport. Powder technology is therefore of great importance to the food industry. The Handbook of food powders explores a variety of processes that are involved in the production of food powders, the further processing of these powders and their functional properties. Part one introduces processing and handling

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technologies for food powders and includes chapters on spray, freeze and drum drying, powder mixing in the production of food powders and safety issues around food powder production processes. Part two focusses on powder properties including surface composition, rehydration and techniques to analyse the particle size of food powders. Finally, part three highlights speciality food powders and includes chapters on dairy powders, fruit and vegetable powders and coating foods with powders. The Handbook of food powders is a standard reference for professionals in the food powder production and handling industries, development and quality control professionals in the food industry using powders in foods, and researchers, scientists and academics interested in the field. Explores the processing and handling technologies in the production of food powders Examines powder properties, including surface composition, shelf life, and techniques used to examine particle size Focusses on speciality powders such as dairy, infant formulas, powdered egg, fruit and vegetable, and culinary and speciality products

This book offers comprehensive coverage of biomarker/biosensor interactions for the rapid detection of weapons of bioterrorism, as well as current research trends and future developments and applications. It will be useful to researchers in this field who are interested in new developments in the early detection of such. The authors have collected very valuable and, in some aspects indispensable experience in the area i.e. in the development and application of portable biosensors for the detection of potential hazards. Most efforts are centered on the development of immunochemical assays including flow-lateral systems and engineered antibodies and their fragments. In addition, new approaches to the detection of enzyme inhibitors, direct enzymatic and microbial detection of metabolites and nutrients are

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elaborated. Some realized prototypes and concept devices applicable for the further use as a basis for the cooperation programs are also discussed. There is a particular focus on electrochemical and optical detection systems, including those employing carbon nanotubes, quantum dots and metal nanoparticles. The authors are well-known scientists and most of them are editors of respected international scientific journals. Although recently developed biosensors utilize known principles, the biosensing devices described can significantly shorten the time required for successful detection and enhance efforts in more time-consuming directions, e.g. remote sensing systems and validation in real-sample analysis. The authors describe advances in all stages of biosensor development: the selection of biochemical components, their use in biosensor assembly, detection principles and improvements and applications for real sample assays.

A much-needed guide to in vitro food functionality evaluation principles, processes, and state-of-the-art modeling There are more than a few books devoted to the assessment of food functionality but, until now, there were no comprehensive guides focusing on the increasingly important subject of in vitro food evaluation. With contributions from the world's foremost experts in the field, this book brings readers up to speed on the state-of-the-art in in vitro modeling, from its physiological bases to its conception, current uses, and future developments. Food functionality is a broad concept encompassing nutritional and health functionality, food safety and toxicology, as well as a broad range of visual and organoleptic properties of food. In vitro techniques bridge the gap between standard analytical techniques, including chemical and biochemical approaches and in vivo human testing, which remains the ultimate translational goal for evaluation of the functionality of food. Although it is a well-

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established field, in vitro food testing continues to evolve toward ever more accurate predictions of in vivo properties and outcomes. Both ethical and highly economical, these approaches allow for detailed mechanistic insights into food functionalities and, therefore, a better understanding of the interactions of food and human physiology. Reviews the core concepts of food functionality and functionality evaluation methodologies Provides an overview of the physiology of the gastrointestinal tract, including host-microbial interactions within it Delves into the physiology of sensory perception of food, taste and texture as they relate to in vitro modeling Explores the challenges of linking in vitro analysis of taste, aroma and flavor to their actual perception Addresses in vitro models of the digestion and absorption of macronutrients, micronutrients, and phytonutrients Describes in vitro evaluations of toxicants, allergens and other specific food hazards Functional Foods and Beverages is an indispensable working resource for food scientists as well as researchers working in government facilities dedicated to tracking food safety.

Specialty Oils and Fats in Food and Nutrition: Properties, Processing and Applications examines the main specialty oils and fats currently in use in food processing, as well as those with significant potential. Specialty oils and fats have an increasing number of applications in the food industry, due to growing consumer interest in “clean label functional foods and the emerging markets in “free-from and specialist foods. Part One of this book covers the properties and processing of specialty oils and fats, with a focus on the chemistry, extraction, and quality of different fats and oils, including chapters on shea butter, tropical exotic oils, and structured triglycerides. Part Two looks at the applications of specialty oils and fats in different food and nutraceutical products, such as confectionary, ice cream, and margarine. Specialty

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Oils and Fats in Food and Nutrition is a key text for R&D managers and product development personnel working in the dairy, baking, and dairy analogue sectors, or any sector using fats and oils. It is a particularly useful reference point for companies reformulating their products or developing new products to alter fat content, as well as academics with a research interest in the area, such as lipid scientists or food scientists. Authored by an industry expert with 35 years of experience working for Unilever and Loders Croklaan Broad coverage encompasses tropical exotic oils, tree nut oils, algal oils, GM vegetable oils, and more Addresses growing application areas including nutraceuticals, infant formula, and ice cream and confectionery The book introduces the bioinformatics resources and tools available for the study of allergenicity. Allergy symptoms affect more than 25% of the population in industrialized countries. At the same time, biotechnology is a rapidly developing field, which often involves the introduction of potentially allergenic novel proteins into drugs or foods. It is essential to avoid transferring a gene that encodes a major allergenic protein (from any source) into a drug/food crop that did not previously contain that protein. Accurately distinguishing candidate genes from allergens before transferring them into a drug or food would aid preventive efforts to curb the rising incidence of allergies. Several public databases have been created in response to increasing allergen data. The resources provided by these databases have paved the way for the creation of specialized bioinformatics tools that allow allergenicity to be predicted. The book is a useful resource for biologists and biomedical informatics scientists, as well as clinicians. Dr. Ailin Tao is the chief of Guangdong Province Key Laboratory of Allergy & Clinical Immunology, Principal Investigator of the State Key Laboratory of Respiratory Disease, the Second Affiliated Hospital of Guangzhou Medical University; Dr. Prof. Eyal Raz is a

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Professor of Medicine at University of California, San Diego, La Jolla, California, USA. They collaborate very well on allergy research and this book editing.

Continuing food poisoning outbreaks around the globe have put fresh produce safety at the forefront of food research. *Global Safety of Fresh Produce* provides a detailed and comprehensive overview of best practice for produce safety throughout the food chain, and unique coverage of commercial technologies for fresh produce safety. Part one covers the production and regulation of fresh produce on the agricultural level, including issues of niche farm fresh products, FDA regulation, and zoonotic transfer of pathogens from animals to farm products. Part two moves on to look at safety and environmental issues surrounding fresh produce processing, such as postharvest washing, alternative sanitizers, and using produce waste as animal feed. Part three focuses on current and emerging commercial solutions for fresh produce safety, like ionizing radiation and edible coatings, and part four covers methods of laboratory testing and related legislation. The final section of the book covers a series of case studies of fresh produce safety breaches, including European E. coli outbreaks in sprouts and leafy greens, and the illegal use of fluorescent whitening agents (FWAs) in China. This book is an essential text for R&D managers in the fresh produce industry, quality control professionals working with fresh produce throughout the food chain, postgraduate students, and academic researchers with an interest in fresh produce safety. Provides a comprehensive overview of best practice for produce safety Examines the production and regulation of fresh agricultural produce Looks at safety and environmental issues surrounding fresh produce processing

Allergens in food and their detection, management and elimination constitute a key issue for

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food manufacturers, especially in terms of safety. This book reviews current and emerging technologies for detecting and reducing allergens, as well as issues such as traceability, regulation and consumer attitudes. Following an introductory chapter by a distinguished expert, part one covers allergen management throughout the food chain. Part two details current and emerging methods of allergen detection in food, and part three covers methods for reducing and eliminating allergens in food. Finally, part four focuses on the control and detection of individual food allergens and the risks each one presents in food manufacture. Reviews current and emerging technologies for detecting and reducing allergens, as well as issues such as traceability, regulation and consumer attitudes Covers allergen management throughout the food chain and reviews current and emerging methods of allergen detection Examines methods for reducing and eliminating allergens in food and provides a detailed overview of the control and detection of individual food allergens

Non-equilibrium States and Glass Transitions in Foods: Processing Effects and Product Specific Implications presents the tactics needed to understand and control non-equilibrium states and glass transitions in food, an essential element in maintaining the shelf-life and quality of foods. After brief introductory chapters introduce the science behind non-equilibrium states and glass transitions in foods, the book details how glass transition temperature is affected by composition and the ways it influences processability and physico-chemical changes during the storage of foods, also exploring how these effects can be controlled. The second section looks at individual foods, highlighting the implications of non-equilibrium states and glass transitions within these foods. Maintaining and improving the quality of food is of upmost importance to food companies who have to ensure that the shelf life of their products is

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as long as possible. A large amount of research has been performed into glass transitions in food over the last few years, however there has not been a comprehensive review. This book fills that gap. Provides the only book on the market that covers non-equilibrium states and glass transitions in food from a practical standpoint Presents food industry professionals in the area of food quality with essential information on the effects of glass transitions and non-equilibrium states on the shelf life of specific products Edited by global leaders in glass transition technology in foods

Instrumental measurements of the sensory quality of food and drink are of growing importance in both complementing data provided by sensory panels and in providing valuable data in situations in which the use of human subjects is not feasible. Instrumental assessment of food sensory quality reviews the range and use of instrumental methods for measuring sensory quality. After an introductory chapter, part one goes on to explore the principles and practice of the assessment and analysis of food appearance, flavour, texture and viscosity. Part two reviews advances in methods for instrumental assessment of food sensory quality and includes chapters on food colour measurement using computer vision, gas chromatography-olfactometry (GC-O), electronic noses and tongues for in vivo food flavour measurement, and non-destructive methods for food texture assessment. Further chapters highlight in-mouth measurement of food quality and emerging flavour analysis methods for food authentication. Finally, chapters in part three focus on the instrumental assessment of the sensory quality of particular foods and beverages including meat, poultry and fish, baked goods, dry crisp products, dairy products, and fruit and vegetables. The instrumental assessment of the sensory quality of wine, beer, and juices is also discussed. Instrumental assessment of food

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sensory quality is a comprehensive technical resource for quality managers and research and development personnel in the food industry and researchers in academia interested in instrumental food quality measurement. Reviews the range and use of instrumental methods for measuring sensory quality Explores the principles and practice of the assessment and analysis of food appearance, flavour, texture and viscosity Reviews advances in methods for instrumental assessment of food sensory quality

Integrating the Packaging and Product Experience in Food and Beverages: A Road-Map to Consumer Satisfaction focuses on the interrelationship between packaging and the product experience. In both industry and academia there has been a growing interest in investigating approaches that capture consumer responses to products that go beyond traditional sensory and liking measures. These approaches include assessing consumers' emotional responses, obtaining temporal measures of liking, as well as numerous published articles considering the effect of situation and context in the evaluation of food and beverage products. For fast-moving consumer goods (FMCG) products in particular, packaging can be considered as a contributor to consumer satisfaction. Recent cross-modal research illustrated consumers' dissatisfaction or delight with a product can be evoked when there is dissonance between the packaging and the product experience. The book includes an extensive overview of an adapted satisfaction scale that has been tailored for the food and beverage sector and which identifies varying satisfaction response modes such as contentment, pleasure, and delight with a product. This is an important development as it provides insights about products that can be used to market specific categories and brands of foods and beverages. The book demonstrates the value of this approach by bringing together case studies that consider the interrelationships between

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packaging design, shape, on-pack sensory messages, expectations, and consumer satisfaction with the product. Focuses on the inter-relationship between packaging and the product experience, specifically in the context of the food and beverage sector Presents the expectancy disconfirmation model of satisfaction, which is well developed within the social sciences, to the food and beverage sector Contains case studies demonstrating how these practices can be used in industry to better enhance customer's responses to products Includes an extensive overview of an adapted satisfaction scale that has been tailored for the food and beverage sector and which identifies varying satisfaction response modes such as contentment, pleasure, and delight with a product

This fifth edition provides information on techniques needed to analyze foods for chemical and physical properties. The book is ideal for undergraduate courses in food analysis and is also an invaluable reference to professionals in the food industry. General information chapters on regulations, labeling, sampling, and data handling provide background information for chapters on specific methods to determine chemical composition and characteristics, physical properties, and objectionable matter and constituents. Methods of analysis covered include information on the basic principles, advantages, limitations, and applications. Sections on spectroscopy and chromatography along with chapters on techniques such as immunoassays, thermal analysis, and microscopy from the perspective of their use in food analysis have been expanded. Instructors who adopt the textbook can contact the editor for access to a website with related teaching materials.

A healthy diet is only 'healthy' if it works for you and YOU are unique. Eating the wrong diet for you can lead to physical and mental problems, affect your appearance, alter your behaviour

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and limit your life. Changing your diet can truly change your life. Offering no gimmicks and no promises of a quick fix, *Change Your Diet and Change Your Life* guides you gently through understanding the ways in which food intolerance can make you ill. Detailed information on individual foods and food chemicals ensures this book is a comprehensive handbook of food intolerance and food allergy. Research evidence is presented covering a range of conditions including asthma, behaviour problems, dermatitis, fatigue, migraine, tinnitus, urticaria, and weight problems. The role of food chemicals (including amines, benzoates, caffeine, lectins, MSG, salicylate, and sulphites) is explained, and the difficulties that can be caused by individual foods is also outlined. This book is unique in presenting an easy to follow seven step plan that will help you identify if food intolerance is at the root of your health problems.

Metabolomics enables valuable information about the biochemical composition of foods to be rapidly obtained. Since the biochemical profile of food largely determines key food properties such as flavour and shelf life, the information gained using metabolomics-based methods will enable greater control of food quality and also help to determine the relationship between diet and health. *Metabolomics in food and nutrition* provides an overview of their current and potential use in the food industry. Part one reviews equipment, methods and data interpretation in metabolomics including the use of nuclear magnetic resonance (NMR), statistical methods in metabolomics, and metabolic reconstruction databases and their application to metabolomics research. Part two explores applications of metabolomics in humans, plants and food. Chapters discuss metabolomics in nutrition, human samples for health assessments, and current methods for the analysis of human milk oligosaccharides (HMOs) and their novel applications. Further chapters highlight metabolomic analysis of plants and crops,

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metabolomics for the safety assessment of genetically modified (GM) crops, and applications of metabolomics in food science including food composition and quality, sensory and nutritional attributes. With its distinguished editors and team of expert contributors, Metabolomics in food and nutrition is a technical resource for industrial researchers in the food and nutrition sectors interested in the potential of metabolomics methods and academics and postgraduate students working in the area. Provides an overview of the current and potential future use of metabolomics in the food industry Chapters focus on key applications and review the analytical methods used and the bioinformatics techniques involved in processing the results Discusses metabolomics in nutrition, human samples for health assessments, and current methods for the analysis of human milk oligosaccharides (HMOs) and their novel applications

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

A Handbook for Sensory and Consumer Driven New Product Development explores traditional and well established sensory methods (difference, descriptive and affective) as well as taking a novel approach to product development and the use of new methods and recent innovations. This book investigates the use of these established and new sensory methods, particularly hedonic methods coupled with descriptive methods (traditional and rapid), through multivariate data analytical interfaces in the process of optimizing food and beverage products effectively in a strategically defined manner. The first part of the book covers the sensory methods which are used by sensory scientists and product developers, including established and new and

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innovative methods. The second section investigates the product development process and how the application of sensory analysis, instrumental methods and multivariate data analysis can improve new product development, including packaging optimization and shelf life. The final section defines the important sensory criteria and modalities of different food and beverage products including Dairy, Meat, Confectionary, Bakery, and Beverage (alcoholic and non-alcoholic), and presents case studies indicating how the methods described in the first two sections have been successfully and innovatively applied to these different foods and beverages. The book is written to be of value to new product development researchers working in large corporations, SMEs (micro, small or medium-sized enterprises) as well as being accessible to the novice starting up their own business. The innovative technologies and methods described are less expensive than some more traditional practices and aim to be quick and effective in assisting products to market. Sensory testing is critical for new product development/optimization, ingredient substitution and devising appropriate packaging and shelf life as well as comparing foods or beverages to competitor's products. Presents novel and effective sensory-based methods for new product development—two related fields that are often covered separately Provides accessible, useful guidance to the new product developer working in a large multi-national food company as well as novices starting up a new business Offers case studies that provide examples of how these methods have been applied to real product development by practitioners in a wide range of organizations Investigates how the application of sensory analysis can improve new product development including packaging optimization Recent advances in array-based detectors and imaging technologies have provided high throughput systems that can operate within a substantially reduced timeframe and other

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techniques that can detect multiple contaminants at one time. These technologies are revolutionary in terms of food safety assessment in manufacturing, and will also have a significant impact on areas such as public health and food defence. This book summarizes the latest research and applications of sensor technologies for online and high throughput screening of food. The book first introduces high throughput screening strategies and technology platforms, and discusses key issues in sample collection and preparation. The subsequent chapters are then grouped into four sections: Part I reviews biorecognition techniques; Part II covers the use of optical biosensors and hyperspectral imaging in food safety assessment; Part III focuses on electrochemical and mass-based transducers; and finally Part IV deals with the application of these safety assessment technologies in specific food products, including meat and poultry, seafood, fruits and vegetables. Summarises the latest research on sensor technologies for online and high-throughput screening of food Covers high-throughput screening and the current and forecast state of rapid contaminant detection technologies Looks at the use of optical and electrochemical biosensors and hyperspectral imaging in food safety assessment and the application of these technologies in specific food products

This book is focused on the expansive and highly demanding subject of Food Industry "Technical & Quality Management". As the world's most vital industry "Food Production" is complex, multifaceted and continuously scrutinised. Food scares and product recalls, on national and international scales, demonstrate the persistent challenge to identify, monitor and control all hazards, and also address the increasing criminal threats of Food Fraud, Adulteration & Intentional Contamination. With the benefit of unique perspectives gained by

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working across Quality, Technical and Operations Management roles at all levels within the food industry, Swainson's Handbook of Technical and Quality Management considers the very diverse remits and particular challenges of those working to assure product Quality, Safety and Legality in the sector. This book provides insights and guidance on the "Applied Practice" of Industrial Quality and Technical Management, written from the perspective of the industry practitioner. "Knowing what to do is half of the challenge, but being able to then make it happen is crucial" – a fact which is often less well considered in food sector information resources. Split into two sections, the book first reviews generic aspects of Food Quality and Technical Management activities with particular regard to: Food Sector Challenges and the Role of Technical and Quality Management; Defining Technical and Quality Standards; The Food Safety and Quality Management System; Raw Materials and Packaging Supplier Control; Site Standards; Product Control and HACCP Considerations; Operations and Process Control; Personnel Control; Audits; Non-Conformance, Recall & Crisis Management; Managing the Technical Department. In the second part of the book Guest Authors share their expertise on a range of specialist topics, providing significant breadth and depth to the content which includes: Review of Third party audit schemes; Insights into supplying supermarkets with regard to good technical and quality management practices; Enforcement authority perspectives on the food manufacturing sector. Also covered are the specific sector challenges of food quality and safety assurance in Fruit and vegetables; Herbs and spices, Cereals, Baked products, Canning and "Cook – Chill" Ready Meals, Soups and Sauces. Compiled expertise of food sector specialists with extensive industrial experience. Edited by an industry and academic expert with over 25 years experience of technical and quality management in

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the food sector. Contains Technical and Quality Management information that is relevant to a wide range of sectors in the food industry. Also examines Technical and Quality Management practice in specific food applications and reviews relevant compliance standards.

This book explains the role of food-oriented (or 'food-centric') quality system standards in the modern food and beverage industry. It discusses food safety schemes based on the international norm ISO 9001 and the "Hazard Analysis and Critical Control Points" approach, and also introduces the new Global Standard for Food Safety (GSFS) and the International Featured Standard (IFS, 7th ed.), outlining standardization for international equivalence (while maintaining the necessary flexibility and independence – which is not always an easy task). Providing selected specific examples, it examines the problems of chemical additives and possible cross-contaminations between different production lines, as well as adequate reactions to and handling of intentional adulterations. In addition, it includes a chapter focusing on quality audits and technical data sheets in the food industry, and a final chapter describing the certification of food-grade lubricants in the food industry, especially with regard to allergenic substances.

This valuable volume addresses the growing consumer demand for novel functional food products and for high-value, nutritionally rich products by focusing

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on the sources and applications of bioactives from food. The chapters in the book describe functional properties and discuss applications of the selected food ingredients obtained from various sources, including culinary banana, phalsa, pseudocereals, roselle calyces, asparagus, and more. Several chapters address the resurgence of interest in pseudocereals due to their excellent nutritional and biological values, gluten-free composition, and the presence of some health-promoting compounds. The book also looks at utilizing industrial byproducts for making functional and nutraceutical ingredients. The chapters on prebiotics and probiotics highlight different functional properties, and a chapter on food allergens discusses advancements in detection and management in the food manufacturing industries.

Handbook on Natural Pigments: Industrial Applications for Improving Food Colour is unique in its approach to the improvement of food colors. The book is written with industrial applications in mind, with each chapter focusing on a color solution for a specific commodity that will provide food scientists with a one-stop, comprehensive reference on how to improve the color of a particular food product. The first section of the book looks at the legal frameworks which underpin natural food colorings, also investigating the consumer expectations of food color. The second section of the book focuses on specific industrial

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applications of natural colorants with chapters covering the use of natural colorants in aqueous food products, cereal-based foods, and meat products, amongst many other topics. The various pigments which can be used to effectively color these commodities are presented with information on safety and testing included throughout. The final section in the book looks at recent developments and future perspectives in natural food colorings. There are chapters which cover the health benefits of natural pigments, the use of novel fruits and vegetables in pigments, and stable natural solutions for blue colorings. Presents recent advances in consumer demand and worldwide legislation regarding natural food colorants Discusses the use of natural food colorants for one specific product category per chapter rather than one pigment class per chapter – this makes the book extremely useable for industrialists working in a specific sector Contains a comprehensive array of product-specific coloration approaches, from using pigment-enriched feed additives to the direct addition of color formulations

Computational modeling is an important tool for understanding and improving food processing and manufacturing. It is used for many different purposes, including process design and process optimization. However, modeling goes beyond the process and can include applications to understand and optimize

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food storage and the food supply chain, and to perform a life cycle analysis. Modeling Food Processing Operations provides a comprehensive overview of the various applications of modeling in conventional food processing. The needs of industry, current practices, and state-of-the-art technologies are examined, and case studies are provided. Part One provides an introduction to the topic, with a particular focus on modeling and simulation strategies in food processing operations. Part Two reviews the modeling of various food processes involving heating and cooling. These processes include: thermal inactivation; sterilization and pasteurization; drying; baking; frying; and chilled and frozen food processing, storage and display. Part Three examines the modeling of multiphase unit operations such as membrane separation, extrusion processes and food digestion, and reviews models used to optimize food distribution.

Comprehensively reviews the various applications of modeling in conventional food processing Examines the modeling of multiphase unit operations and various food processes involving heating and cooling Analyzes the models used to optimize food distribution

Encyclopedia of Food Chemistry is the ideal primer for food scientists, researchers, students and young professionals who want to acquaint themselves with food chemistry. Well-organized, clearly written, and abundantly referenced,

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the book provides a foundation for readers to understand the principles, concepts, and techniques used in food chemistry applications. Articles are written by international experts and cover a wide range of topics, including food chemistry, food components and their interactions, properties (flavor, aroma, texture) the structure of food, functional foods, processing, storage, nanoparticles for food use, antioxidants, the Maillard and Strecker reactions, process derived contaminants, and the detection of economically-motivated food adulteration. The encyclopedia will provide readers with an introduction to specific topics within the wider context of food chemistry, as well as helping them identify the links between the various sub-topics. Offers readers a comprehensive understanding of food chemistry and the various connections between the sub-topics Provides an authoritative introduction for non-specialists and readers from undergraduate levels and upwards Meticulously organized, with articles structured logically based on the various elements of food chemistry

Modifying Food Texture, Volume 1: Novel Ingredients and Processing Techniques discusses texture as an important aspect of consumer food acceptance and preference, and the fact that specific consumer groups, including infants, the elderly, and dysphagia patients require texture-modified foods. Topics covered include ingredients and processing techniques used in texture

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modification of foods, an overview of food texture issues, the novel use of processing techniques for texture modification, and the uses of food ingredients in texture-modified foods. Discusses texture as an important aspect of consumer food acceptance and preference Presents findings and tactics that address the special needs of infants, the elderly, and dysphagia patients Topics covered include ingredients and processing techniques used in texture modification of foods, along with an overview of food texture issues, amongst others

Food allergy is an adverse immunological reaction to allergens present in food. Up to 4% adults and 8% children are affected by food allergy. The increase in allergic diseases to food has led to the need for better diagnostics and more effective therapeutic approaches. This book describes the molecular biology and immunology of major food allergens, from laboratory based science to clinical immunology, encompassing novel characterisation and quantification methods, the application of recombinant food allergens in molecular diagnosis and the development of novel therapeutics. This book is the ideal reference tool for researchers, students and allergy clinicians to accurately diagnose and manage food allergies.

The second edition of *The Stability and Shelf-life of Food* is a fully revised and thoroughly updated edition of this highly-successful book. This new edition

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covers methods for shelf-life and stability evaluation, reviewing the modelling and testing of the deterioration of products as well as the use of sensory evaluation methods for testing food spoilage. The first part of the book focuses on deteriorative processes and factors influencing shelf-life, covering aspects such as chemical deterioration, physical instability and microbiological spoilage. The effects of process and packaging on the stability and shelf-life of products are also covered in this part. Part Two reviews the methods for shelf life and stability evaluation. These include sensory evaluation methods and instrumental methods to determine food quality deterioration. The final section of the book covers stability of important ingredient categories, from oils and fats, to beverages such as beer, wine, coffee and fruit juices, in addition to bakery products and meats. With updated chapters reflecting advances made in the field and with the addition of new chapters covering the stability and shelf-life a variety of products, this new edition will provide the latest research for both academics working in the field of food quality as well as providing essential information for food scientists working in industry. Thoroughly revised and updated edition of a very popular and well regarded book Includes dedicated chapters covering the shelf-life and stability of specific products making this book ideal for those working in industry Presents a wide coverage of the processes and factors influencing shelf-life, the evaluation

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of stability and shelf-life and the stability and shelf-life of particular products makes this book valuable for both academics and those working in industry. Food safety and quality are key objectives for food scientists and industries all over the world. To achieve this goal, several analytical techniques (based on both destructive detection and nondestructive detection) have been proposed to fit the government regulations. The book aims to cover all the analytical aspects of the food quality and safety assessment. For this purpose, the volume describes the most relevant techniques employed for the determination of the major food components (e.g. protein, polysaccharides, lipids, vitamins, etc.), with peculiar attention to the recent development in the field. Furthermore, the evaluation of the risk associated with food consumption is performed by exploring the recent advances in the detection of the key food contaminants (e.g. biogenic amines, pesticides, toxins, etc.). Chapters tackle such subject as: GMO Analysis Methods in Food Current Analytical Techniques for the Analysis of Food Lipids Analytical Methods for the Analysis of Sweeteners in Food Analytical Methods for Pesticides Detection in Foodstuffs Food and Viral Contamination Application of Biosensors to Food Analysis

Describes what to do when anaphylaxis happens and how to respond during an attack, recognize the signs, understand the sources and latest theories, take preventive measures,

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and gain insight on how to live a normal life.

Advances in Food Traceability Techniques and Technologies: Improving Quality Throughout the Food Chain covers in detail a topic of great importance to both the food industry which is obliged to provide clear and accurate labeling of their products and the government and other organizations which are tasked with verification of claims of food quality and safety. The traceability of food products is becoming ever more important as globalization continues to increase the complexity of food chains. Coverage in the book includes the wide range of technologies and techniques which have been utilized in the tracing of food products. In addition, the ways in which the misuse of food traceability will affect the quality of food is also covered throughout. The first part of the book introduces the concept of traceability in the food industry, highlighting advantages of a robust traceability and the difficulties involved in implementing them. The second part looks at the technologies used to trace products, and the third section reviews the legal requirements for food traceability in the EU, the US, and the rest of the world. The final section contains a number of case studies which evaluate how food traceability has been successfully implemented in various foods focusing on the quality of the food. Provides a wide ranging overview of all recent advances in food traceability techniques and technologies Presents case studies covering when food traceability techniques have been applied to a range of food stuffs Covers the legal aspects of food traceability in the EU, the USA, and around the world

This volume identifies gaps in the assessment, management, and communication of food allergen risks. Chapters showcase best practices in managing allergen risks at various stages of the food chain, including during food manufacture/processing; during food preparation in

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food service, retail food establishments, and in the home; and at the point of consumption. The authors highlight key legislative initiatives that are in various stages of development and implementation at the federal, state and community levels. Finally, the volume includes recommendations for ways to build and strengthen education and outreach efforts at the food industry, government, institutional, and community levels. Chapters come from an array of experts, including researchers and key stakeholders from government, the food industry, retail/food service groups, and consumer groups. The information presented will facilitate the development of educational materials and allergen management training programs for food production and service staff, extension specialists, and government inspectors. Consumers and other food safety professionals will also benefit from information on food allergen control measures that have been put in place across the food chain.

Innovative Food Processing Technologies: Extraction, Separation, Component Modification and Process Intensification focuses on advances in new and novel non-thermal processing technologies which allow food producers to modify and process food with minimal damage to the foodstuffs. The book is highly focused on the application of new and novel technologies, beginning with an introductory chapter, and then detailing technologies which can be used to extract food components. Further sections on the use of technologies to modify the structure of food and the separation of food components are also included, with a final section focusing on process intensification and enhancement. Provides information on a variety of food processing technologies
Focuses on advances in new and novel non-thermal processing technologies which allow food producers to modify and process food with minimal damage to the foodstuffs
Presents a strong focus on the application of technologies in a variety of situations
Created by

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editors who have a background in both the industry and academia

Modern Techniques for Food Authentication, Second Edition presents a comprehensive review of the novel techniques available to authenticate food products, including various spectroscopic technologies, methods based on isotopic analysis and chromatography, and other techniques based on DNA, enzymatic analysis and electrophoresis. This new edition pinpoints research and development trends for those working in research, development and operations in the food industry, giving them readily accessible information on modern food authentication techniques to ensure a safe and authentic food supply. It will also serve as an essential reference source to undergraduate and postgraduate students, and for researchers in universities and research institutions. Presents emerging imaging techniques that have proven to be powerful, non-destructive tools for food authentication Includes applications of hyperspectral imaging to reflect the current trend of developments in food imaging technology for each topic area Provides pixel level visualization techniques needed for fast and effective food sample testing Contains two new chapters on Imaging Spectroscopic Techniques Handbook of Food Allergen Detection and Control Elsevier

The second volume of Foods, nutrients and food ingredients with authorised EU health claims continues from Volume 1, which provided a comprehensive overview of many of the permitted health claims for foods and nutrients approved under European Regulation EC 1924/2006. This new volume discusses more of the health claims authorised to date for use in the EU. The chapters cover details of various permitted claims, such as the approved wording, conditions of use, the target group for the claims, the evidence for the claimed health benefits, and where appropriate details of other relevant legislation, consumer-related issues and future trends. The

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book opens with an overview of regulatory developments relating to health claims. Part One reviews authorised disease risk reduction claims and proprietary claims. The second part investigates ingredients with permitted 'general function' claims, with chapters examining ingredients such as red yeast rice, glucomannan and guar gum. The final section of the book explores foods and nutrients with permitted health claims, including chapters on authorised EU health claims for prunes, foods with low or reduced sodium or saturated fatty acids, and claims for essential and long chain polyunsaturated fatty acids. Building on volume 1, this title ensures that the area of EU health claims in food is comprehensively covered Chapters are devoted to individual food ingredients and substances, covering the range of issues related to health claims Health-promoting products are an increasing consumer trend in product development and this book provides key information on these advances

Food contact materials such as packaging, storage containers and processing surfaces can pose a substantial hazard to both food manufacturer and consumer due to the migration of chemicals or other substances from the material to the food, which can cause tainting of flavours and other sensory characteristics, or even illness. This book reviews the main materials used for food contact in terms of the global legislation in place to ensure their safe and effective use. Part One provides an overview of food contact legislation issues such as chemical migration and compliance testing. Part Two looks in detail at the legislation for specific food contact materials and their advantages, hazards and use in industry. Includes global coverage of food contact legislation Features expert analysis of future trends in global food packaging regulation Focus on specific materials such as plastic, paper and rubber materials in contact with food

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Analysis of Food Toxins and Toxicants consists of five sections, providing up-to-date descriptions of the analytical approaches used to detect a range of food toxins. Part I reviews the recent developments in analytical technology including sample pre-treatment and food additives. Part II covers the novel analysis of microbial and plant toxins including plant pyrrolizidine alkaloids. Part III focuses on marine toxins in fish and shellfish. Part IV discusses biogenic amines and common food toxicants, such as pesticides and heavy metals. Part V summarizes quality assurance and the recent developments in regulatory limits for toxins, toxicants and allergens, including discussions on laboratory accreditation and reference materials.

Since infant formula substitutes for human milk, its composition must match that of human milk as closely as possible. Quality control of infant formula is also essential to ensure product safety, as infants are particularly vulnerable food consumers. This book reviews the latest research into human milk biochemistry and best practice in infant formula processing technology and quality control. The most up to date reference on infant formula processing technology Reviews both human milk biochemistry and infant formula processing technology for broad and applied coverage Focusses exclusively on infant formulae

While there are many books about various aspects of food allergy and allergens, not many comprehensively review the wide range of instrumentation and methods used in this analysis. Covering all of the major recognized food allergens in the US and EU, Food Allergens: Analysis Instrumentation and Methods begins with an introduction to the problem and prevalence of food allergens. It discusses health issues and the presence of allergens in various food products, examines methodologies for analysis and detection, and details specific

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methods for each food type. Maintaining a consistent structure and format, each chapter describes the properties of the allergen, and demonstrates the appropriate sample extraction and clean-up, separation and analysis, and detection and quantification techniques. With discussions of health implications and the presence of plant food and animal-derived allergens in different foodstuffs, the book covers allergens in: Peanut, soybean, and lupin Tree nuts, sesame seeds, mustard, and celery Milk and eggs Cereals Fish, crustaceans, and mollusks A compilation of information about the instrumentation and methods of analyzing allergens, the book provides insight into the extent of problems caused by food allergens. Concise and compact, it provides guidance on how to choose quantitative analyses in order to detect threshold values properly.

Dairy foods account for a large portion of the Western diet, but due to the potential diversity of their sources, this food group often poses a challenge for food scientists and their research efforts. Bringing together the foremost minds in dairy research, Handbook of Dairy Foods Analysis, Second Edition, compiles the top dairy analysis techniques and methodologies from around the world into one well-organized volume. Exceptionally comprehensive in both its detailing of methods and the range of dairy products covered, this handbook includes tools for analyzing chemical and biochemical compounds and also bioactive peptides, prebiotics, and probiotics. It describes noninvasive chemical and physical sensors and starter cultures used in quality control. This second edition includes four brand-new chapters covering the analytical techniques and methodologies for determining bioactive peptides, preservatives, activity of endogenous enzymes, and sensory perception of dairy foods, and all other chapters have been adapted to recent research. All other chapters have been thoroughly updated. Key

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Features: Explains analytical tools available for the analysis of the chemistry and biochemistry of dairy foods Covers a variety of dairy foods including milk, cheese, butter, yogurt, and ice cream Analysis of nutritional quality includes prebiotics, probiotics, essential amino acids, bioactive peptides, and healthy vegetable-origin compounds Includes a series of chapters on analyzing sensory qualities, including color, texture, and flavor. Covering the gamut of dairy analysis techniques, the book discusses current methods for the analysis of chemical and nutritional compounds, and the detection of microorganisms, allergens, contaminants, and/or other adulterations, including those of environmental origin or introduced during processing. Other methodologies used to evaluate color, texture, and flavor are also discussed. Written by an international panel of distinguished contributors under the editorial guidance of renowned authorities, Fidel Toldrá and Leo M.L. Nollet, this handbook is one of the few references that is completely devoted to dairy food analysis – an extremely valuable reference for those in the dairy research, processing, and manufacturing industries.

Updated to reflect changes in the industry during the last ten years, The Handbook of Food Analysis, Third Edition covers the new analysis systems, optimization of existing techniques, and automation and miniaturization methods. Under the editorial guidance of food science pioneer Leo M.L. Nollet and new editor Fidel Toldra, the chapters take an in

Lipid oxidation in food leads to rancidity, which compromises the sensory properties of food and makes it unappealing to consumers. The growing trend towards natural additives and preservatives means that new antioxidants are emerging for use in foods. This book provides an overview of the food antioxidants currently available and their applications in different food products. Part one provides background information on a comprehensive list of the main

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natural and synthetic antioxidants used in food. Part two looks at methodologies for using antioxidants in food, focusing on the efficacy of antioxidants. Part three covers the main food commodities in which antioxidants are used. Reviews the various types of antioxidants used in food preservation, including chapters on tea extracts, natural plant extracts and synthetic phenolics Analyses the performance of antioxidants in different food systems Compiles significant international research and advancements

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