Emerging Food Packaging Technologies Principles And Practice Woodhead Publishing Series In Food Science Technology And Nutrition Ips By Yam Kit L Author May 03 2012 Hardcover

Food Packaging
Releasing Systems in Active Food Packaging
Edible Food Packaging
Trends in Beverage Packaging
Emerging Food Packaging Technologies

Functional Coatings for Food Packaging Applications
Principles and Practice
Principles and Applications
Innovative Technologies for the Food and Beverage Industry
Integrating the Packaging and Product Experience in Food and Beverages
The Stability and Shelf Life of Food
Innovative Technologies in Seafood Processing
Handbook of Food Engineering
Volume 16: The Science of Beverages
Composites Materials for Food Packaging
A Handbook for Sensory and Consumer-Driven New Product Development
Food Packaging Science and Technology
Markets, Materials and Technologies
Materials and Processing Technologies
Innovations in Food Packaging
Advances in Food Traceability Techniques and Technologies
Modified Atmosphere and Active Packaging Technologies
Trends in Packaging of Food, Beverages and Other Fast-Moving Consumer Goods (FMCG)
Electron Beam Pasteurization and Complementary Food Processing Technologies
Saffron
5-volume set
Emerging Technologies for Food Processing
Improving Quality Throughout the Food Chain
Handbook of Research on Food Processing and

Preservation Technologies
Food Applications of Nanotechnology
Food Packaging Based on Nanomaterials
Nano-Technological Intervention in Agricultural Productivity
Science, Technology and Health
Active Antimicrobial Food Packaging
Sustainable Food Packaging Technology
Principles and Practice, Third Edition
Modified Atmosphere Packaging of Foods
Extraction, Separation, Component Modification and Process Intensification
New Analytical Approaches for Verifying the Origin of Food

RODGERS AXEL

Food Packaging

Elsevier

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 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 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 *Releasing Systems in Active Food Packaging* Springer Nature The Handbook of Research on Food Processing and Preservation Technologies is a 5-volume collection that highlights various design, development, and applications of novel and innovative strategies for food processing and preservation. The roles and applications of minimal processing techniques (such as ozone treatment, vacuum drying, osmotic dehydration, dense phase carbon dioxide treatment, pulsed electric field, and high-pressure assisted freezing) are discussed, along with a wide range of other applications. The handbook also explores some exciting computer-aided techniques emerging in the food processing sector, such as robotics, radio frequency identification (RFID), three-dimensional food printing, artificial intelligence, etc. Some emphasis has

also been given on nondestructive quality evaluation techniques (such as image processing, terahertz spectroscopy imaging technique, near infrared, Fourier transform infrared spectroscopy technique, etc.) for food quality and safety evaluation. The significant roles of food properties in the design of specific foods and edible films have been elucidated as well. The first volume in this set, Volume 1: Nonthermal and Innovative Food Processing Methods, provides a detailed discussion of many nonthermal food process techniques. These include high-pressure processing, ultraviolet light technology, microwave-assisted extraction, high pressure assisted freezing, microencapsulation, dense phase carbon dioxide aided preservation, to name a few. Volume 2: Nonthermal Food Preservation and Novel Processing Strategies introduces several new food processing and preservation technologies that have been investigated by researchers and which have the potential to increase shelf life and preserve the quality of foods. It focuses on nonthermal techniques

such as high-pressure processing, ultrasonication of foods, microwave vacuum dehydration, thermoelectric refrigeration technology, advanced methods of encapsulation, ozonation, electrospinning, and mechanical expellers for dairy, food, and agricultural processing. Volume 3: Computer-Aided Food Processing and Quality Evaluation Techniques presents a number of exciting applications of computer-aided techniques for quality evaluation and secure food quality. The chapter authors present emerging nonthermal approaches for food processing and preservation including detailed discussions on color measurement techniques, RFID, 3D-food printing, potential of robotics, artificial intelligence, terahertz spectroscopy imaging technique, instrumentation techniques and transducers, and more. Volume 4: Design and Development of Specific Foods, Packaging Systems, and Food Safety presents new research on health food formulation, advanced packaging systems, and toxicological studies for food safety. This book covers in detail the design of functional foods for

beneficial gut microflora and microbiota; composite probiotic dairy products; encapsulation technology for development of specific foods; edible, biodegradable, and alternative food packaging technologies; ozonation in surface modification of food packaging polymers; characterization applications and safety aspects of nanomaterials used in food and dairy industry; and more. Volume 5: Emerging Techniques for Food Processing, Quality, and Safety Assurance discusses various emerging techniques for food preservation, formulation, and nondestructive quality evaluation techniques. Each chapter covers major aspects pertaining to principles, design, and applications of various food processing and nondestructive quality evaluation techniques, such low-temperature-based ultrasonic drying, hypobaric processing, viability of high-pressure technology, pulsed electric fields in food preservation, green nanotechnology, advanced methods of encapsulation, the use of robotic engineering for quality and safety, and more. Together, the 5 volumes of the Handbook of Research on Food Processing

and Preservation Technologies will prove to be valuable resource for researchers, scientists, students, growers, traders, processors, and others in the food processing industry. Elsevier Undoubtedly the applications of polymers are rapidly evolving. Technology is continually changing and quickly advancing as polymers are needed to solve a variety of day-to-day challenges leading to improvements in quality of life. The Encyclopedia of Polymer Applications presents state-of-the-art research and development on the applications of polymers. This groundbreaking work provides important overviews to help stimulate further advancements in all areas of polymers. This comprehensive multi-volume reference includes articles contributed from a diverse and global team of renowned researchers. It offers a broad-based perspective on a multitude of topics in a variety of applications, as well as detailed research information, figures, tables, illustrations, and references. The encyclopedia provides introductions, classifications, properties, selection, types, technologies, shelf-life,

recycling, testing and applications for each of the entries where applicable. It features critical content for both novices and experts including, engineers, scientists (polymer scientists, materials scientists, biomedical engineers, macromolecular chemists), researchers, and students, as well as interested readers in academia, industry, and research institutions. *Edible Food Packaging* Woodhead Publishing Provides detailed information about the use of nanotechnology in remediating waste and pollution in agriculture Nano-Technological Intervention in Agricultural Productivity explores sustainable, eco-friendly technologies for remediating wastes and contaminated areas in both water and land ecosystems. Focusing on nano-technological innovations that use microbes and microbial agents to improve the quality and pollutant discharge of contaminated sites, this comprehensive volume also discusses molecular approaches for the characterization of nanoparticles, the biosynthetic pathways of microbes, gene and protein expression studies for bio-deterioration

techniques, and more. Organized into nine chapters, the book opens with a thorough overview of the functions, classification, properties, synthesis, and applications of nanoparticles. Following a discussion of the environmental and agricultural implications of nanotechnology, the authors examine the current role and future prospects of nanotechnology in managing plant diseases, improving agri-food production, and increasing agricultural productivity. Subsequent chapters cover lignin nanoparticles, various applications of nanotechnology in agriculture, and nano-based advances in plant and microbial science. Offering an up-to-date account of the role of nanotechnologies in agricultural bioremediation, this book: Explores biotechnological advances in the development of sophisticated green technologies for waste minimization and waste control Emphasizes the use of microbes for degradation and removal of various xenobiotic substances Discusses bioremediation approaches in relation to the impact of increased urbanization and industrialization on the environment Covers a

variety of applications of nanotechnology in agriculture, including nano-fertilizers, nano-biosensors, nano-pesticides, and nanoparticle protection in plants Nano-Technological Intervention in Agricultural Productivity is a valuable resource for students in plant biotechnology and agricultural science and engineering, as well as an important reference for researchers in plant biotechnology and agricultural sciences, particularly those with interest in the use of nanomaterials for pollution remediation and sustainable development.

Trends in Beverage Packaging Elsevier

As the complexity of the food supply system increases, the focus on processes used to convert raw food materials and ingredients into consumer food products becomes more important. The Handbook of Food Engineering, Third Edition, continues to provide students and food engineering professionals with the latest information needed to improve the efficiency of the food supply system. As with the previous editions, this book contains the latest information on the thermophysical properties

of foods and kinetic constants needed to estimate changes in key components of foods during manufacturing and distribution. Illustrations are used to demonstrate the applications of the information to process design. Researchers should be able to use the information to pursue new directions in process development and design, and to identify future directions for research on the physical properties of foods and kinetics of changes in the food throughout the supply system. Features Covers basic concepts of transport and storage of liquids and solids, heating and cooling of foods, and food ingredients New chapter covers nanoscale science in food systems Includes chapters on mass transfer in foods and membrane processes for liquid concentration and other applications Discusses specific unit operations on freezing, concentration, dehydration, thermal processing, and extrusion The first four chapters of the Third Edition focus primarily on the properties of foods and food ingredients with a new chapter on nanoscale applications in foods. Each of the eleven chapters that follow has a

focus on one of the more traditional unit operations used throughout the food supply system. Major revisions and/or updates have been incorporated into chapters on heating and cooling processes, membrane processes, extrusion processes, and cleaning operations.

Emerging Food Packaging Technologies

MDPI

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 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 Functional Coatings for Food Packaging Applications Woodhead Publishing The second edition of Emerging Technologies in Food Processing presents essential, authoritative, and complete literature and research data from the past ten years. It is a complete resource offering the latest technological innovations in food processing today, and includes vital information in research and development for the food processing industry. It covers the latest advances in non-thermal processing including high pressure, pulsed electric fields, radiofrequency, high intensity pulsed light, ultrasound, irradiation, and addresses the newest hurdles in technology where extensive research has been carried out. Provides an extensive list of research sources to further research

development Presents current and thorough research results and critical reviews Includes the most recent technologies used for shelf life extension, bioprocessing simulation and optimization Principles and Practice Elsevier Nanotechnology for Food Packaging: Materials, Processing Technologies, and Safety Issues showcases the latest research in the use of nanotechnology in food packaging, providing an in-depth and interdisciplinary overview of the field. Nanoscale advances in materials science, processing technology and analytical techniques have led to the introduction of new, cheaper and safer packaging techniques. Simultaneously, the increasing use of renewable nanomaterials has made food packaging more sustainable. Chapters provide a comprehensive review on materials used, their structure–function relationship, and new processing technologies for the application and production of nanotechnology-based packaging materials. In addition, the book discusses the use of functional materials for the development of active, smart and intelligent packaging,

possible migration and toxicity of nanomaterials for foods and regulatory aspects, and commercial applications. Provides detailed information on the use of nanomaterials and methodologies in food packaging, possible applications and regulatory barriers to commercialization Presents an interdisciplinary approach that brings together materials science, bioscience, and the industrial and regulatory aspects of the creation and uses of food packaging Helps those undertaking research and development in food packaging gain a cogent understanding on how nanotechnology is leading to the emergence of new packaging technologies *Principles and Applications* Woodhead Publishing A complete guide to the principles and practical application of modified atmosphere packaging Modified atmosphere packaging (MAP) is one of the most cost-effective, versatile, and commonly used methods of preserving food products available today. Employed in both ambient and chilled conditions, it can prolong shelf-life and preserve the quality of a wide array of items via careful processes of atmospheric engineering. The essential scientific

principles underlying this technology can, however, be difficult to grasp and effectively apply. With Modified Atmosphere Packaging of Foods, esteemed food science professor Dong Sun Lee provides a thorough and practical explanation of all aspects of MAP. Chapters covering the development, impact, and day-to-day application of the technique give a well-rounded understanding of its pivotal role in the food industry, while accounts of other active packaging methods help to provide broader context. This important new book includes: Detailed guidance on all aspects of MAP – from its scientific background to its practical application Information on how specific MAP products may be developed according to their particular engineering principles Coverage of the related active and intelligent packaging techniques Discussion of relevant food safety issues and regulations Containing vital information for industry professionals and food science researchers alike, Modified Atmosphere Packaging of Foods is an essential text for all those working to improve the quality and shelf-life of the food we eat.

Innovative Technologies for the Food

and Beverage Industry CRC Press
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 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

Integrating the Packaging and Product Experience in Food and Beverages

CRC Press Trends in Beverage Packaging, volume 16 in the Science of Beverages series, presents an interdisciplinary approach that provides a complete understanding of packaging theories, technologies and materials. This reference offers a broad perspective regarding current trends in packaging research, quality control techniques, packaging strategies and current concerns in the industry. Consumer demand for bottled and packaged beverages has increased, and the need for scientists and researchers to understand how to analyze quality, safety and control are essential. This is an all-encompassing resource for research and development in this

flourishing field that covers everything from sensory and chemical composition, to materials and manufacturing . Includes information on the monitoring of microbial activity using antimicrobial packaging detection of food borne pathogens Presents the most up-to-date information on innovations in smart packaging and sensors for the beverages industry Discusses the uses of natural and unnatural compounds for food safety and good manufacturing practices

The Stability and Shelf Life of Food

Smithers Pira

The successful employment of food packaging can greatly improve product safety and quality, making the area a key concern to the food processing industry. Emerging food packaging technologies reviews advances in packaging materials, the design and implementation of smart packaging techniques, and developments in response to growing concerns about packaging sustainability. Part one of Emerging food packaging technologies focuses on developments in active packaging, reviewing controlled release packaging, active antimicrobials and nanocomposites in packaging, and edible

chitosan coatings. Part two goes on to consider intelligent packaging and how advances in the consumer/packaging interface can improve food safety and quality. Developments in packaging material are analysed in part three, with nanocomposites, emerging coating technologies, light-protective and non-thermal process packaging discussed, alongside a consideration of the safety of plastics as food packaging materials. Finally, part four explores the use of eco-design, life cycle assessment, and the utilisation of bio-based polymers in the production of smarter, environmentally-compatible packaging. With its distinguished editors and international team of expert contributors, Emerging food packaging technologies is an indispensable reference work for all those responsible for the design, production and use of food and beverage packaging, as well as a key source for researchers in this area. Reviews advances in packaging materials, the design and implementation of smart packaging techniques, and developments in response to growing concerns about packaging sustainability Considers

intelligent packaging and how advances in the consumer/packaging interface can improve food safety and quality Examines developments in packaging materials, nanocomposites, emerging coating technologies, light-protective and non-thermal process packaging and the safety of plastics as food packaging materials *Innovative Technologies in Seafood Processing* CRC Press Food safety is a constant challenge for the food industry, and food irradiation technology has developed significantly since its introduction, moving from isotope irradiation to the use of electron beam technology. Electron Beam Pasteurization and Complementary Food Processing Technologies explores the application of electron beam pasteurization in conjunction with other food processing technologies to improve the safety and quality of food. Part one provides an overview of the issues surrounding electron beam pasteurization in food processing. Part two looks at different thermal and non-thermal food processing technologies that complement irradiation. Finally, a case study section on the commercial applications of e-beam processing

provides examples from industry.

Handbook of Food Engineering

John Wiley & Sons

The edible food packaging industry has experienced remarkable growth in recent years and will continue to impact the food market for quite some time going into the future. Edible Food Packaging: Materials and Processing Technologies provides a broad and comprehensive review on recent aspects related to edible packaging, from processing to potential applications, and covering the use of nanotechnology in edible packaging. The book's 14 chapters promote a comprehensive review on such subjects as materials used, their structure-function relationship, and new processing technologies for application and production of edible coatings and films. Specific topics include edible film and packaging using gum polysaccharides, protein-based films and coatings, and edible coatings and films from lipids, waxes, and resins. The book also reviews stability and application concerns, mass transfer measurement and modeling for designing protective edible films, and edible packaging as a vehicle for functional compounds. The authors

explore antimicrobial edible packaging, nanotechnology in edible packaging, and nanostructured multilayers for food packaging by electrohydrodynamic processing. Additionally, they show how to evaluate the needs for edible packaging of respiring products and provide an overview of edible packaging for fruits, vegetables, and dairy products. Lastly, they examine edible coatings and films for meat, poultry, and fish.

Volume 16: The Science of Beverages

Smithers Pira 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 editors who have a background in both the industry and academia

Composites Materials for Food Packaging

John Wiley & Sons

Antimicrobial packaging systems are those that beneficially interact with the food or with the surrounding environment, inhibiting microorganism growth or reducing their counts to improve the quality and extend the shelf-life of industrially produced foods. They have undoubtedly become a fully accepted alternative to the direct addition of preservatives to foods, with excellent future prospects.This book will help develop a working knowledge and understanding of antimicrobial packaging, it includes a description of the antimicrobial agents most commonly used and their mechanisms

of action, the manufacturing methods available to fabricate the active system, the critical parameters to make an effective product and the tools to optimise them, and the various in vitro and in vivo methods for measuring the goodness of the antimicrobial system for validation purposes.The reader will develop the ability to understand why a specific agent is selected for a particular food product, or why a specific polymeric material and manufacturing technology are chosen. The reader will also become familiar with the different procedures for improving the activity of the packaging solution that is being developed and ways of testing its efficacy. This will accelerate the formulation of the active packaging concept, reducing development-time with respect to the trial and error processes common in many literature reports. Finally, it will help to identify the best and most cost-effective solutions. This volume is intended to be a practical guide to antimicrobial packaging and a quick reference for students and researchers from both academia and industry.

A Handbook for Sensory and Consumer-Driven New Product Development

Elsevier Food Processing Technology: Principles and Practice, Fourth Edition, has been updated and extended to include the many developments that have taken place since the third edition was published. The new edition includes an overview of the component subjects in food science and technology, processing stages, important aspects of food industry management not otherwise considered (e.g. financial management, marketing, food laws and food industry regulation), value chains, the global food industry, and over-arching considerations (e.g. environmental issues and sustainability). In addition, there are new chapters on industrial cooking, heat removal, storage, and distribution, along with updates on all the remaining chapters. This updated edition consolidates the position of this foundational book as the best single-volume introduction to food manufacturing technologies available, remaining as the most adopted standard text for many food science and technology courses. Updated edition completely revised with new developments on all the processing stages and aspects of food industry

management not otherwise considered (e.g. financial management, marketing, food laws, and food industry regulation), and more Introduces a range of processing techniques that are used in food manufacturing Explains the key principles of each process, including the equipment used and the effects of processing on micro-organisms that contaminate foods Describes post-processing operations, including packaging and distribution logistics Includes extra textbook elements, such as videos and calculations slides, in addition to summaries of key points in each chapter *Food Packaging Science and Technology* Elsevier Active polymer food packaging is packaging which has been designed to deliberately interact with food or with a direct food environment to reduce oxygen and moisture levels, preserve flavourings and the quality of the food. New concepts of active and intelligent packaging play an increasingly important role by offering numerous and innovative solutions for extending the shelf-life or for maintaining, improving or monitoring food quality and safety. This is the driving force for the food

packaging industry's development of new and improved packaging concepts using nanoparticles. This book gives an overview of applications for various types of nanoparticles, such as different metal based substances, and explains their role in polymer food packaging.The book also elaborates the mechanism of activity of each type of nanoparticle, for example:- Antimicrobial activity- Oxygen absorption (scavengers)- Ultraviolet blocking properties- Water vapour permeabilityThe characterisation of polymer nanocomposite materials and the regulatory aspects of nanomaterials are also discussed.Information is provided about the polymers and polymer nanocomposites, and in addition, the book provides information about new food packaging materials with improved mechanical, barrier and antimicrobial properties to preserve the food during transport and storage.

Markets, Materials and Technologies

CRC Press

The food packaging industry is experiencing one of the most relevant revolutions associated with the transition from fossil-based polymers to new materials of renewable origin. However, high production

costs, low performance, and ethical issues still hinder the market penetration of bioplastics. Recently, coating technology was proposed as an additional strategy for achieving a more rational use of the materials used within the food packaging sector. According to the packaging optimization concept, the use of multifunctional thin layers would enable the replacement of multi-layer and heavy structures, thus reducing the upstream amount of packaging materials while maintaining (or even improving) the functional properties of the final package to pursue the goal of overall shelf life extension. Concurrently, the increasing requirements among consumers for convenience, smaller package sizes, and for minimally processed, fresh, and healthy foods have necessitated the design of highly sophisticated and engineered coatings. To this end, new chemical pathways, new raw materials (e.g., biopolymers), and non-conventional deposition technologies have been used. Nanotechnology, in particular, paved the way for the development of new architectures and never-

before-seen patterns that eventually yielded nanostructured and nanocomposite coatings with outstanding performance. This book covers the most recent advances in the coating technology applied to the food packaging sector, with special emphasis on active coatings and barrier coatings intended for the shelf life extension of perishable foods.

Materials and Processing Technologies CRC Press Towards more sustainable packaging with biodegradable materials! The combination of the continuously increasing food packaging waste with the non-biodegradable nature of the plastic materials that have a big slice of the packaging market makes it necessary to move towards sustainable packaging for the benefit of the environment and human health. Sustainable packaging is the type of packaging that can provide to food the necessary protection conditions, but at the same type is biodegradable and can be disposed as organic waste to the landfills in order to biodegrade through a natural procedure. In this way, sustainable packaging becomes part of the circular economy.

?Sustainable Food Packaging Technology? deals with packaging solutions that use engineered biopolymers or biocomposites that have suitable physicochemical properties for food contact and protection and originate both from renewable or non-renewable resources, but in both cases are compostable or edible. Modified paper and cardboard with increased protective properties towards food while keeping their compostability are presented as well. The book also covers natural components that can make the packaging functional, e.g., by providing active protection to the food indicating food spoilage. * Addresses urgent problems: food packaging creates a lot of hard-to-recycle waste - this book puts forward more sustainable solutions using biodegradable materials * State-of-the-art: ?Sustainable Food Packaging Technology? provides knowledge on new developments in functional packaging * From lab to large-scale applications: expert authors report on the technology aspects of sustainable packaging