

## *Bakery Products Science And Technology*

Enrobed and filled confectionery and bakery products, such as praline-style chocolates, confectionery bars and chocolate-coated biscuits and ice-creams, are popular with consumers. The coating and filling can negatively affect product quality and shelf-life, but with the correct product design and manufacturing technology, the characteristics of the end-product can be much improved. This book provides a comprehensive overview of quality issues affecting enrobed and filled products and strategies to enhance product quality. Part one reviews the formulation of coatings and fillings, with chapters on key topics such as chocolate manufacture, confectionery fats, compound coatings and fat and sugar-based fillings. Product design issues, such as oil, moisture and ethanol migration and chocolate and filling rheology are the focus of Part two. Shelf-life prediction and testing are also discussed. Part three then covers the latest ingredient preparation and manufacturing technology for optimum product quality. Chapters examine tempering, enrobing, chocolate panning, production of chocolate shells and deposition technology. With its experienced team of authors, Science and technology of enrobed and filled chocolate, confectionery and bakery products is an essential purchase for professionals in the chocolate, confectionery and bakery industries. Provides a comprehensive review of quality issues affecting enrobed and filled products Reviews the formulation of coatings and fillings, addressing confectionery fats, compound coatings and sugar based fillings Focuses on product design issues such as oil, moisture and chocolate filling rheology Most baking books do not focus on the simultaneous heat and mass transfer that occurs in the baking process, thereby ignoring a fundamental facet of process and product development. Addressing the engineering and science elements often ignored in current baking books, Food Engineering Aspects of Baking Sweet Goods explores important topics in understanding the baking process and reviews recent technological advances. With contributions from various international authorities on food science, engineering, and technology, the book covers the rheology of cake batter and cookie dough, cake emulsions, the physical and thermal properties of sweet goods, and heat and mass transfer during baking. It also presents the science of soft wheat products, including the quality of soft wheat, the functions of ingredients in the baking of sweet goods, and the chemical reactions during processing. In addition, the contributors discuss cake and cookie technologies as well as recent advances in baking soft wheat products. The final chapter examines the nutritional issues of consuming fats and sugars and presents general strategies for substituting fats and sugars in baked products. Taking an engineering approach to the field, this volume delineates the complex food process of baking, from ingredients to production to finished product. The stability and shelf-life of a food product are critical to its success in the market place, yet companies experience considerable difficulties in defining and understanding the factors that influence stability over a desired storage period. This book is the most comprehensive guide to understanding and controlling the factors that determine the shelf-life of food products.

Coeliac disease (CD) and other allergic reactions/intolerances to gluten are on the rise, largely due to improved diagnostic procedures and changes in eating habits. The worldwide incidence of coeliac disease has been predicted to increase by a factor of ten over the next number of years, and this has resulted in a growing market for high quality gluten-free cereal products. However, the removal of gluten presents major problems for bakers. Currently, many gluten-free products on the market are of low quality and short shelf life, exhibiting poor mouthfeel and flavour. This challenge to the cereal technologist and baker alike has led to the search for alternatives to gluten in the manufacture of gluten-free bakery products. This volume provides an overview for the food industry of issues related to the increasing prevalence of coeliac disease and gluten intolerance. The properties of gluten are discussed in relation to its classification and important functional characteristics, and the nutritional value of gluten-free products is also addressed. The book examines the diversity of ingredients that can be used to replace gluten and how the ingredient combinations and subsequent rheological and manufacturing properties of a range of gluten-free products, e.g. doughs, breads, biscuits and beer may be manipulated. Recommendations are given regarding the most suitable ingredients for different gluten-free products. The book is directed at ingredient manufacturers, bakers, cereal scientists and coeliac associations and societies. It will also be of interest to academic food science departments for assisting with undergraduate studies and postgraduate research. The Author Dr Eimear Gallagher, Ashtown Food Research Centre, Teagasc - The Irish Agriculture and Food Development Authority, Dublin, Ireland Also available from Wiley-Blackwell Management of Food Allergens Edited by J. Coutts and R. Fielder ISBN 9781405167581 Bakery Manufacture and Quality - Water Control and Effects Second Edition S. Cauvain and L. Young ISBN 9781405176132 Whole Grains and Health Edited by L. Marquart et al ISBN 9780813807775

Breadmaking

Towards a Healthier World

Functional Bakery Products: Novel Ingredients and Processing Technology for Personalized Nutrition

The Complete Technology Book on Bakery Products (Baking Science with Formulation & Production)4th Edition  
Science, Technology and Practice  
Bakery Food Manufacture and Quality

*Salt, Fat and Sugar Reduction: Sensory Approaches for Nutritional Reformulation of Foods and Beverages* explores salt, sugar, fat and the current scientific findings that link them to diseases. The sensory techniques that can be used for developing consumer appealing nutritional optimized products are also discussed, as are other aspects of shelf life and physicochemical analysis, consumer awareness of the negative nutritional impact of these ingredients, and taxes and other factors that are drivers for nutritional optimization. This book is ideal for undergraduate and postgraduate students and academics, food scientists, food and nutrition researchers, and those in the food and beverage industries. Provides a clear outline of current legislation on global ingredient taxes Demonstrates effective protocols, sensory, multivariate and physico-chemical for salt, fat and sugar reduction Outlines reduction protocols, with and without the use of replacer ingredients for salt, fat and sugar reduction Illustrates the full process chain, consumer to packaging, and the effects of reformulation by reduction of ingredients

*The introduction of the Chorleywood Bread Process was a watershed in baking. It sparked changes in improver and ingredient technology, process and equipment design which have had a profound impact on baking processes and the structure of the industry. Written by two of the world's leading experts on the process, this important book explains its underlying principles and ways of maximising its potential in producing a wide range of baked products. After a brief review of the basic principles of bread making, the book outlines the development and fundamental characteristics of the Chorleywood Bread Process. The following group of chapters review the key steps in the process, beginning with ingredient quality and quantities. Other chapters consider dough mixing and processing. Building on this foundation, the authors then review common quality defects and how they can be prevented or resolved. The book then considers how knowledge-based software systems can help to manage the process. The concluding chapters review the range of bakery products that can be produced using the process, how it can best be applied in different kinds of bakery and likely future developments. The Chorleywood Bread Process is a standard work for all bakers around the world wishing to maximise the potential of the process, and for scientists, technologists and students wanting a better understanding of the process and its place in commercial bread making. The first book to describe the Chorleywood Bread Process Reviews ingredient quality and quantities Considers how knowledge-based software systems can help manage the process*

*Manley's Technology of Biscuits, Crackers and Cookies* is widely regarded as the standard work in its field. Part one covers management issues such as HACCP, quality control, process control and product development. Part two deals with the selection of raw materials and ingredients. The range and types of biscuits is covered in part three, while part four covers the main production processes and equipment, from bulk handling and metering of ingredients to packaging, storage and waste management. Eight expert authors have joined Duncan Manley in extensively updating and expanding the book, which is now some 25% longer than the previous edition. Part one now includes a new chapter on sustainability in the biscuit industry and the discussion of process and efficiency control is more detailed. In part two the information on wheat flour has been extensively revised to reflect recent developments and there are entirely new chapters on fats and oils and packaging materials. Photographs of the major types of biscuits now illustrate chapters in part three, which also includes a newly-composed chapter on the position of biscuits in nutrition. Finally, part four has been comprehensively reviewed and revised with the assistance of an author from a major machinery manufacturer. With its distinguished editor and team of expert contributors this new edition consolidates the position of *Manley's Technology of Biscuits, Crackers and Cookies* as the standard reference work in the industry. Widely regarded as the standard work in its field Covers management issues such as HACCP, quality control, process control and product development Deals with the selection of raw materials and ingredients

*In this comprehensive cookbook, America's Test Kitchen breaks down the often intimidating art and science of bread baking, making it easy for anyone to create foolproof, bakery-quality breads at home. Many home cooks find bread baking rewarding but intimidating. In Bread Illustrated, America's Test Kitchen shows bakers of all levels how to make foolproof breads, rolls, flatbreads, and more at home. Each master recipe is presented as a hands-on and reassuring tutorial illustrated with six to 16 full-color step-by-step photos. Organized by level of difficulty to make bread baking less daunting, the book progresses from the simplest recipes for the novice baker to artisan-style loaves, breads that use starters, and more complex project recipes. The recipes cover a wide and exciting range of breads from basics and classics like Easy Sandwich Bread and Fluffy Dinner Rolls to interesting breads from around the world including Lahmacun, Panettone, and Fig and Fennel Bread.*

*Technology of Breadmaking*

*Advances in Baking Technology*

*Baking Science with Formulation & Production*

*The Technology of Wafers and Waffles I*

*Salt, Fat and Sugar Reduction*

*Science and Technology of Enrobed and Filled Chocolate, Confectionery and Bakery Products*

*The Technology of Wafers and Waffles: Operational Aspects* is the definitive reference book on wafer and waffle technology and manufacture. It covers specific ingredient technology (including water quality, wheat flour, starches, dextrans, oils and fats) and delves extensively into the manufacturing elements and technological themes in wafer manufacturing, including no/low sugar wafers, hygroscopic wafers, fillings and enrobing. The book explains, in detail, operating procedures such as mixing, baking, filling, cooling, cutting and packaging for every type of wafer: flat and shaped wafers for making biscuits, ice cream cones, cups, wafer reels, wafer sticks (flute wafers) and biscuit wafers. It also explores the various types of European (Belgian) waffles and North American frozen waffles. Serves as a complete reference book on wafer and waffle technology and manufacturing, the first of

its kind Covers specific ingredient technology such as water quality, wheat flour, starches, dextrans, oils and fats for wafer and waffles Explores wafer and waffle product types, development, ingredients, manufacturing and quality assurance Explains the scientific background of wafer and waffle baking Informs both artisan and industrial bakers about many related areas of bakery product manufacturing

Water is the major contributor to the eating and keeping qualities and structure of baked products. Its management and control during preparation, processing, baking, cooling and storage is essential for the optimisation of product quality. This successful and highly practical volume describes in detail the role and control of water in the formation of cake batters, bread, pastry and biscuit doughs, their subsequent processing and the baked product. Now in a fully revised and updated second edition, the book has been expanded and developed through the inclusion of new information and references related to the formation and processing of batters and dough into baked products. The new edition includes a selection of case studies based on practical experience in the manufacture and optimisation of baked products. Each case study, illustrated as appropriate, considers the various roles that water may play in different manufacturing contexts. The book is aimed at food scientists and technologists in bakery companies; ingredient suppliers; flour millers; researchers and students in academic food science departments.

Handbook of Dough Fermentations describes the preparation of ferments and utilization of starters in the commercial baking and food industries and offers in-depth discussion on the modification of sourdough processes in the production of common bakery products, as well as the microbiological principles, fermentation pathways, product formulations,

Modified atmosphere packaging (MAP) has proved to be one of the most significant and innovative growth areas in retail food packaging of the past two decades. Bulk modified atmosphere packs have been an accepted form of packaging for meat and poultry in the USA since the early 1970s, but MAP is only now of being widely adopted. Today there is a substantial wholesale on the verge market for bulk packaged fresh vegetables and fruit, and the most significant retail MAP products are fresh pasta, pre-cooked poultry and sausage, and biscuits (a unique American product). The United Kingdom is the biggest single market for the modified atmosphere packaging of fresh chilled food products, accounting for about half of the total European market. A further quarter is represented by France. The success of MAP in both the British and French markets can be attributed to the large, highly sophisticated food retailing multiples and dense populations existing in both countries.

Confectionery Science and Technology

Bakery Technology

The Science of Bakery Products

Gluten-Free Baked Products

Baking Problems Solved

How Baking Works

***Ever wondered why bread rises? Or why dough needs to rest? From cakes and biscuits to flat breads and standard loaves, the diversity of products is remarkable and the chemistry behind these processes is equally fascinating. The Science of Bakery Products explains the science behind bread making and other baked goods. It looks at the chemistry of the ingredients, flour treatments, flour testing and baking machinery. Individual chapters focus on the science of breads, pastry, biscuits, wafers and cakes. The book concludes with a look at some experiments and methods and goes on to discuss some ideas for the future. The Science of Bakery Products is an interesting and easy to read book, aimed at anyone with an interest in everyday chemistry.***

***Bakery Science and Cereal Technology is one of the important courses being offered to undergraduate students as a professional elective. Through this course the students shall acquire adequate knowledge of structure, nutrient composition and processing of various cereals particularly those which are used in bakery industry, milling of wheat, physico-chemical and functional properties of cereals, role and storage of ingredients used in baking, types and grades of flour, baked products prepared by hard and soft wheat, viz., bread, cakes, crackers, cookies, wafers etc, losses in baking, quality evaluation, standards, packaging and sale of bakery products, and prospects and problems of bakery industry. This book containing the above information can also be used as a technical guide and reference book to personnel engaged in bakeries. Contents Chapter 1: Importance of Cereals; Chapter 2: Nutrient Composition of Cereal Grains; Chapter 3: Structure of Cereal Grains; Chapter 4: Milling of Wheat; Chapter 5: Types and Grades of Flour; Chapter 6: Processing and Parboiling of Rice; Chapter 7: Processing of Maize; Chapter 8: Processing of Sorghum; Chapter 9: Processing of Barley; Chapter 10: Processing of Oats; Chapter 11: Quality Evaluation and Functional Properties Used in Baking; Chapter 12: Characterization and Importance of Wheat Gluten Protein in Baking; Chapter 13: Role of Bakery Ingredients; Chapter 14: Bread Making; Chapter 15: Quality Control of Bread Making; Chapter 16: Baked Products from Soft Wheat; Chapter 17: Macaroni Products; Chapter 18: Storage of Bakery Ingredients; Chapter 19: Bakery Norms and Setting of Bakery Unit; Chapter 20: Specification for Raw Material Used in Bakery; Chapter 21: Losses in Baking; Chapter 22: Packaging and Sale of Baked Products; Chapter 23: Bakery Sanitation and Personal Hygiene; Chapter 24: Prospects and Problems in Bakery; Appendix I: Cake Faults; Glossary of Baking Terms.***

***□Baking, referred to as the oldest form of cooking, is used for producing everyday products like bread, cakes, pastries, pies, cookies, and donuts. These products are prepared using various ingredients like grain-based flour, water and leavening agents. They are considered fast-moving consumer goods (FMCG) and are consumed daily. Owing to their palatability, appearance and easily digestible nature, they are highly preferred for both formal and informal occasions. Nowadays, most traditional baking methods have been replaced by modern machines. This shift has enabled manufacturers to introduce innovative bakery products with different ingredients, flavors, shapes and***

**sizes. The book is invaluable reading for those starting their own baking business or any baker looking to improve their existing business in order to increase profits. The Global Bakery Market size is predicted to reach USD 4.36 billion by 2030 with a CAGR of 3.8% from 2020-2030. Bakery products are a part of the processed food class. They include cake, pastries, biscuits, bread, breakfast cereals, and customized baker products. The growing per-capita consumption trends of bakeshop products indicates the untapped growth potential. The market potential is high particularly in the growing markets of Asia and South America; whereby, client demand is increasing for ready to eat bakery products, as a results of the influence of Western culture and additionally for its convenience. The book covers various aspects related to different bakery products with their manufacturing process and also provides contact details of raw material, plant and machinery suppliers with equipment photographs and their technical specifications. It provides a thorough understanding of the many new developments shaping the industry and offers detailed technical coverage of the manufacturing processes of bakery products. Food Mixer, Cookie Extruder, Rotary Oven, Biscuit Sandwiching Machine, Tunnel Gas Oven, Flour Mixer, Cookies Rotary Moulder, Bun Divider Moulder, Planetary Mixer, Spiral Mixer, Pillow Packing Machine, Oil Spray Machine are the various equipments described in the book with their photographs and technical specifications. A total guide to manufacturing and entrepreneurial success in one of today's most baking industry. This book is one-stop guide to one of the fastest growing sectors of the bakery industry, where opportunities abound for manufacturers, retailers, and entrepreneurs. This is the only complete handbook on the commercial production of bakery products. It serves up a feast of how-to information, from concept to purchasing equipment.**

**Trends in Wheat and Bread Making provides a comprehensive look at the state-of-the-art in bread making from ingredient to shelf-life, with a focus on the impact of processing on the nutritional value and consumer acceptability of this global staple. The book also includes chapters on new breads and bakery products fortified with plant-processing-by-products and/or natural antioxidants, and explores efforts to improve biotechnological processes and fermentation for bread making. It is an excellent resource for researchers, industry professionals and enterprises hoping to produce enhanced bread products through processing-related nutritional and quality improvements. Addresses gluten free products, organic farming and production techniques, enzymatic and biotechnological techniques, fortification of breads with plant by-products, and phenol-rich substrates Fills the gap in current resources, focusing on the application of new technologies for processing practices Provides a guide to industrial and commercialized applications of innovative breadmaking**

**Improving Quality**

**The Chorleywood Bread Process**

**Hand Book Of Polymer & Plastic Technology**

**Baked Products**

**Encyclopedia of Food Science and Technology**

**Principles and Applications of Modified Atmosphere Packaging of Foods**

**Baking Problems Solved, Second Edition, provides a fully revised follow-up to the innovative question and answer format of its predecessor. Presenting a quick bakery problem-solving reference, Stanley Cauvain returns with more practical insights into the latest baking issues. Retaining its logical and methodical approach, the book guides bakers through various issues which arise throughout the baking process. The book begins with issues found in the use of raw materials, including chapters on wheat and grains, flour, and fats, amongst others. It then progresses to the problems that occur in the intermediate stages of baking, such as the creation of doughs and batters, and the input of water. Finally, it delves into the difficulties experienced with end products in baking by including chapters on bread and fermented products, cakes, biscuits, and cookies and pastries. Uses a detailed and clear question and answer format that is ideal for quick reference Combines new, up-to-date problems and solutions with the best of the previous volume Presents a wide range of ingredient and process solutions from a world-leading expert in the baking industry**

**The Book Covers Basic Concept Of High Polymer Systems, Raw Materials, Phenoplasts, Aminoplasts, Polyesters, Epoxy Resins, Silicones, Polyurethanes, Po Lyolefins, Polyvinyls, Polyamides, Acrylic Polymers, High Performance Thermoplastics, Natural And Modified Rubbers, Plasticisers, Stabilisers And Related Additives, Fillers, Colourants, And Special Additives, Extrusion, Injection Moulding And Blow Moulding, Thermoforming, Powder Coating, Miscellaneous Processing Techniques, Physical And Chemical Testing Of Plastics.**

**A new study of the challenges presented by manufacturing bakery products in a health-conscious world The impact of bakery products upon human nutrition is an increasingly pressing concern among consumers and manufacturers alike. With obesity and other diet-related conditions on the rise, the levels of salt, fat, and sugar found in many baked goods can no longer be overlooked. Those working in the baking industry are consequently turning more and more to science and technology to provide routes toward healthier alternatives to classic cake, bread, and pastry recipes. With Baking Technology and Nutritional Research, renowned food scientist Stanley P. Cauvain and co-author Rosie H. Clark present an innovative and much-needed study of the changes taking place in the world of baking. Their discussion focuses on the new avenues open to bakers looking to improve the nutritional value of their products and encompasses all related issues, from consumer preferences to the effects of nutritional enhancement upon shelf-life. Featuring an abundance of new research and insights into the possible future of modern baking, this unique text: Offers practical guidance on developing, delivering, and**

*promoting high-nutrition bakery products Discusses reducing ingredients such as salt, fat, and sugar for improved nutrition while preserving quality and consumer acceptability Explores how wheat-based products can be ideal vehicles for improving the nutrition of major sectors of populations Suggests real-world solutions to problems rising from poorly defined quality guidelines and inadequate dialogue between bakers and nutritionists Baking Technology and Nutrition is an indispensable and timely resource for technologists, manufacturers, healthcare practitioners, or anyone else working in today's food and nutrition industries.*

*Advances in Food and Nutrition Research, Volume 99 highlights new advances in the field, with this updated volume presenting interesting chapters on a variety of topics, including Personalizing bakery products using 3D food printing, Dietary fiber in bakery products: source, processing, and function, The realm of plant proteins with focus on their application in developing new bakery products, Guiding the formulation of baked goods for the elderly population through food oral processing: challenges and opportunities, Gluten free bakery products: Ingredients and processes, Enhancing health benefits of bakery products using phytochemicals, Sugar, salt and fat reduction of bakery products, and more. Provides the authority and expertise of leading contributors from an international board of authors Presents the latest release in the Advances in Food and Nutrition Research series Includes the latest information on Functional Bakery Products*

*Exploring the Fundamentals of Baking Science*

*Food Processing*

*Packaging, Nutrition, Product Development, QA*

*Water Control and Effects*

*Handbook of Dough Fermentations*

*Handbook of Food and Beverage Fermentation Technology*

*One of the most rapidly growing segments in the food industry is gluten-free baked products. These goods not only cater to those with medical needs, from celiac disease to gluten intolerance; they also cater to the millions of individuals who seek a gluten-free diet. Gluten-Free Baked Products is a practical guide on the development, manufacturing, and marketing of gluten-free baked products. The book gives readers an entry-level understanding of gluten-free product requirements, their production, and the breadth of ingredients available to baked product developers. This highly relevant book was written as an initial reference for food scientists, including those who need an introduction to gluten-free product development. It was also written as a general reference to those who are indirectly involved with gluten-free products, such as marketers, consultants, and quality assurance and regulatory professionals. Nutrition enthusiasts and consumers following a gluten-free diet for medical reasons will also find this book useful. Gluten-Free Baked Products can serve as a supplemental resource for students and faculty of general food science courses, as well as those covering product development, food allergies, and autoimmune conditions. Whether you are a student, professional in the food industry, or nutrition enthusiast, this book offers an easy way to understand the complex world of gluten-free baking Coverage includes: A detailed discussion on celiac disease, wheat allergies, and gluten intolerance, including symptoms, diagnosis, and nutritional deficiencies A marketing perspective on the consumer segments of gluten-free products, as well as the market size and growth trends Formulations and processing of gluten-free breads, snacks, and pasta products, as well as cookies, cakes, and other batter-based products Manufacturing and supply chain best practices, certification procedures, regulations, and labeling requirements A comprehensive discussion of the ingredients used when formulating gluten-free products, including flours, starches, maltodextrins, corn/maize, millet, oats, rice, sorghum, teff, pseudocereals, inulin, tubers, legumes, noncereal proteins, enzymes, and gums/hydrocolloids*

*An up-to-date, comprehensive guide to understanding and applying food science to the bakeshop. The essence of baking is chemistry, and anyone who wants to be a master pastry chef must understand the principles and science that make baking work. This book explains the whys and hows of every chemical reaction, essential ingredient, and technique, revealing the complex mysteries of bread loaves, pastries, and everything in between. Among other additions, How Baking Works, Third Edition includes an all-new chapter on baking for health and wellness, with detailed information on using whole grains, allergy-free baking, and reducing salt, sugar, and fat in a variety of baked goods. This detailed and informative guide features: An introduction to the major ingredient groups, including sweeteners, fats, milk, and leavening agents, and how each affects finished baked goods Practical exercises and experiments that vividly illustrate how different ingredients function Photographs and illustrations that show the science of baking at work End-of-chapter discussion and review questions that reinforce key concepts and test learning For both practicing and future bakers and pastry chefs, How Baking Works, Third Edition offers an unrivaled hands-on learning experience.*

*Not another book on breadmaking! A forgivable reaction given the length of time over which bread has been made and the number of texts which have been written about the subject. To study breadmaking is to realize that, like many other food processes, it is constantly changing as processing methodologies become increasingly more sophisticated, yet at the same time we realize that we are dealing with a food stuff, the forms of which are very traditional. We can, for example, look at ancient illustrations of breads in manuscripts and paintings and recognize products which we still make today. This contrast of ancient and modern embodied in a single processed foodstuff is part of what makes bread such a unique subject for study. We cannot, for example, say the same for a can of baked beans! Another aspect of the uniqueness of breadmaking lies in the requirement for a thorough understanding of the link between raw materials and processing methods in order to make an edible product. This is mainly true because of the special properties of wheat proteins, aspects of which are explored in most of the chapters of this book. Wheat is a product of*

*the natural environment, and while breeding and farming practices can modify aspects of wheat quality, we millers and bakers still have to respond to the strong influences of the environment.*

*Over the past decade, new applications of genetic engineering in the fermentation of food products have received a great deal of coverage in scientific literature. While many books focus solely on recent developments, this reference book highlights these developments and provides detailed background and manufacturing information.*

*Co-Edited by Fidel*

*The Technology of Cake Making*

*Gluten-Free Food Science and Technology*

*Principles and Applications*

*Food Engineering Aspects of Baking Sweet Goods*

*Manley's Technology of Biscuits, Crackers and Cookies*

*Handbook of Bakery and Confectionery*

The author's aim in writing this book is to integrate currently available knowledge concerning the basic scientific and technological aspects of breadmaking processes diverse breadmaking methods used to manufacture bread in Europe and on the North American continent today. To date, the main technological advances have been in mechanization, starting with oven development, then dough processing or make-up equipment, followed by continuous and batch mixing techniques from the 1950s to present time. On the engineering side, universal emphasis is now being placed on the application of high technology, in the form of microprocessors, computer-controlled equipment and robotization, the long-term objective being computer integrated manufacture (CIM) with full automation within the large chain bakery groups in the capital countries and the state-run collectives of Eastern Europe. The application of these key technologies with biotechnology, as yet only applied to a limited degree in food manufacture, coupled with advances in biochemical and rheological understanding of dough as a biomass for breadmaking, should provide us with more expertise and a control the processes with greater efficiency. The application of fermentable substrates and industrial enzymes under strict kinetic control should contribute to improved flavour characteristics of bread. Current trends towards improving the nutritional contribution of bread to the daily diet are improving the competitive edge of bread in the market-place.

While thousands of books on baking are in print aimed at food service operators, culinary art instruction, and consumers, relatively few professional publications exist on the science and technology of baking. In Bakery Products: Science and Technology, nearly 50 professionals from industry, government, and academia contribute their perspectives on the state of baking today. The latest scientific developments, technological processes, and engineering principles are described as they relate to the art of baking. Coverage is extensive and includes: raw materials and ingredients, from wheat flours to sweeteners, yeast, and functional additives; the principles of baking, such as mixing processes, doughmaking, fermentation, and sensory evaluation; manufacturing considerations for bread and other bakery products, including quality control and special bakery products, ranging from manufacture of cakes, cookies, muffins, bagels, and pretzels to dietetic bakery products, gluten-free cereal-based products; and bakery items from around the world, including Italian bakery foods. Blending the technical aspects of baking with the freshest scientific research, Bakery Products: Science and Technology has all the finest ingredients to serve the most demanding appetites of food science professionals, researchers, and students.

The first edition of Breadmaking: Improving quality quickly established itself as an essential purchase for baking professionals and researchers in this area. With comprehensively updated and revised coverage, including six new chapters, the second edition helps readers to understand the latest developments in bread making science and practice. This book opens with two introductory chapters providing an overview of the breadmaking process. Part one focuses on the impacts of wheat and flour quality on bread, covering topics such as wheat chemistry, wheat starch structure, grain quality assessment, milling and wheat breeding. Part two covers dough development and bread ingredients, with chapters on dough aeration and rheology, the use of redox agents and enzymes in breadmaking and water control, among other topics. In part three, the focus shifts to sensory quality, shelf life and safety. Topics covered include bread aroma, staling and contamination. Finally, part four looks at particular bread products such as high fibre breads, those made from partially baked and frozen dough and those made from non-wheat flours. With its distinguished editor and international team of contributors, the second edition of Breadmaking: Improving quality is a standard reference for researchers and professionals in the bread industry and all those involved in academic research on breadmaking science and practice. With comprehensively updated and revised coverage, this second edition outlines the latest developments in breadmaking science and practice. Covers topics such as wheat chemistry, wheat starch structure, grain quality assessment, milling and wheat breeding. Discusses dough development and bread ingredients, with chapters on dough aeration and rheology.

Taking a fresh approach to information on baked products, this exciting new book from industry consultants Cauvain and Young looks beyond the received notions of how products from the bakery are categorised to explore the underlying themes which link the products in this commercially important area of the food industry. First establishing a basic understanding of the key characteristics which unite existing baked product groups, the authors move on to discuss product development and optimisation, providing

with coverage of: Key functional roles of the main bakery ingredients Ingredients and their influences Heat transfer and product interactions Opportunities for future product development Baked Products is a valuable practical resource for all food scientists and food technologists within bakery companies, ingredient suppliers and general food companies. Libraries in universities and research establishments where food science and technology is studied and taught will find the book an important addition to their shelves.

Operational Aspects

Bread Illustrated

Baking Technology and Nutrition

A Step-By-Step Guide to Achieving Bakery-Quality Results At Home

Science and Technology

Bakery Products

***The popularity of the 1973 fifth edition of The Technology of Cake Making has continued in many of the English-speaking countries throughout the world. This sixth edition has been comprehensively revised and brought up to date with new chapters on Cream, butter and milkfat products, Lactose, Yeast aeration, Emulsions and emulsifiers, Water activity and Reduced sugar Eggs and egg products, Baking fats, and lower fat goods. The chapters on Sugars, Chemical aeration, Nuts in confectionery, Chocolate, Pastries, Nutritional value and Packaging have been completely rewritten. The increased need for the continuous development of new products does not of necessity mean that new technology has to be constantly introduced. Many of the good old favourites may continue to be produced for many years and they form suitable 'bench marks' for new product development. The sixth edition introduces the use of relative density to replace specific volume as a measure of the amount of aeration in a cake batter (the use of relative density is in line with international agreement). Specific volume is kept as a measurement of baked product volume since the industry is comfortable with the concept that, subject to an upper limit, an increase in specific volume coincides with improvement in cake quality.***

***This book examines both the primary ingredients and the processing technology for making candies. In the first section, the chemistry, structure, and physical properties of the primary ingredients are described, as are the characteristics of commercial ingredients. The second section explores the processing steps for each of the major sugar confectionery groups, while the third section covers chocolate and coatings. The manner in which ingredients function together to provide the desired texture and sensory properties of the product is analyzed, and chemical reactions and physical changes that occur during processing are examined. Trouble shooting and common problems are also discussed in each section. Designed as a complete reference and guide, Confectionery Science and Technology provides personnel in industry with solutions to the problems concerning the manufacture of high-quality confectionery products.***

***Bakery products, due to great nutrient value and affordability, are an element of huge consumption. Due to the rapidly increasing population, the rising foreign influence, the emergence of a working population and the changing eating habits of people, they have gained popularity among people, causing significantly to the growth trajectory of the bakery industry. The Handbook of Bakery and Confectionery delineates a theoretical and practical knowledge on bakery and confectionery. Chapter 1-21: This part deals with basic concepts in baking and includes chapters on all bakery ingredients and their functions, bakery products in the baking industry. Chapter 22-23: This section provides an affluent information about production of various chocolates and toffees. Note: T&F does not sell or distribute the hardback in India, Pakistan, Nepal, Bhutan, Bangladesh and Sri Lanka.***

***Renowned international academicians and food industry professionals have collaborated to create Food Processing: Principles and Applications. This practical, fully illustrated resource examines the principles of food processing and demonstrates their application by describing the stages and operations for manufacturing different categories of basic food products. Ideal as an undergraduate text, Food Processing stands apart in three ways: The expertise of the contributing authors is unparalleled among food processing texts today. The text is written mostly by non-engineers for other non-engineers and is therefore user-friendly and easy to read. It is one of the rare texts to use commodity manufacturing to illustrate the principles of food processing. As a hands-on guide to the essential processing principles and their application, this book serves as a relevant primary or supplemental text for students of food science and as a valuable tool for food industry professionals.***

***Bakery Products Science and Technology***

***Baking Science & Technology: Formulation & production***

***BAKERY SCIENCE AND CEREAL TECHNOLOGY***

***Trends in Wheat and Bread Making***

***Handbook of Breadmaking Technology***  
***The Complete Technology Book on Bakery Products***