Advanced Dairy Science And Technology

A productive dairy industry is vital to providing safe, high-quality milk that fulfills the nutritional needs of people of all ages around the world. In order to achieve that goal, Campbell and Marshall present a timely, lucid, and comprehensive look at today's dairy industry. Dairy Production and Processing offers not only a fundamental understanding of dairy animals, dairy products, and the production aspects of each, but also a wealth of applied information on the scope of the current milk and milk products industry. The application of basic sciences and technologies throughout the text will serve students well not only as they learn the first principles of dairy science, but also as a professional reference in their careers. Study questions can be found at the conclusion of each chapter, along with relevant and informative websites. An extensive glossary is provided to enable readers to expand their knowledge of selected terms. Topics found in this instructive and insightful text include: • an overview of the dairy industry, • dairy herd breeding and records, • the feeding and care of dairy cattle, sheep, goats, and water buffalo, • important principles of milking and milking facilities, • dairy farm management, • milk quality and safety, and • the production of milk and milk products.

This book serves as a general introduction to food science and technology, based on the academic courses presented by the authors as well as their personal research experiences. The authors' main focus is on the biological and physical-chemical stabilization of food, and the quality assessment control methods and normative aspects of the subsequent processes. Presented across three parts, the authors offer a detailed account of the

scientific basis and technological knowledge needed to understand agro-food transformation. From biological analyses and process engineering, through to the development of food products and biochemical and microbiological changes, the different parts cover all aspects of the control of food quality.
This book extensively reviews the dairy, beverage and distilled spirits applications of membrane processing techniques. The four main techniques of membrane filtration are covered: microfiltration, ultrafiltration, nanofiltration and reverse osmosis. The book is divided into four informal sections. The first part provides an overview of membrane technology, including the main scientific principles; the major membrane types and their construction; cleaning and disinfection; and historical development. The second part focuses on dairy applications including liquid and fermented milks; cheese; whey; and milk concentrates. The third part of the book addresses beverage applications including mineral waters, fruit juices and sports drinks, and the final part looks at membrane filtration in the production of beers, wines and spirits.
The Advanced Dairy Chemistry series was first published in four volumes in the 1980s (under the title Developments in Dairy Chemistry) and revised in three volumes in the 1990s and 2000s. The series is the leading reference on dairy chemistry, providing in-depth coverage of milk proteins, lipids, lactose, water and minor constituents. Advanced Dairy Chemistry Volume 2: Lipids, Fourth Edition, is unique in the literature on milk lipids, a broad field that encompasses a diverse range of topics, including synthesis of fatty acids and acylglycerols, compounds associated with the milk fat fraction, analytical aspects, behavior of lipids during processing and their effect on product characteristics, product defects arising from lipolysis and oxidation of lipids, as

well as nutritional significance of milk lipids. In the years since the publication of the third edition there have been significant developments in milk lipids and these are reflected in changes to this volume. Most topics included in the third edition are retained in the current edition, which has been updated; in some cases, new authors have given their perspective on certain topics. Chapters on nutritional significance of dairy lipids have been considerably revised. This authoritative work summarizes current knowledge on milk lipids and suggests areas for further work. It will be very valuable to dairy scientists, chemists and others working in dairy research or in the dairy industry.

Dairy Science and Technology, Second Edition

Food Alteration and Food Quality

Dairy Ingredients for Food Processing

Advanced Technologies and Their Applications

Processing Technologies for Milk and Milk Products

Lipids

Addressing both theoretical and practical issues in dairy technology, this work offers coverage of the basic knowledge and scientific advances in the production of milk and milk-based products. It examines energy supply and electricity refrigeration, water and waste-water treatment, cleaning and disinfection, hygiene, and occupational safety in dairies.

Written for and by dairy and food engineers with experience in the field, this new volume provides a wealth of valuable information on dairy technology

and its applications. The book covers devices, standardization, packaging, ingredients, laws and regulatory guidelines, food processing methods, and more. The coverage of each topic is comprehensive enough to serve as an overview of the most recent and relevant research and technology.

"Unique in its perspective and scope, Dairy Ingredients for Food Processing gives a complete description of various dairy ingredients commonly used in food processing operations. Information is conveniently grouped under two sections. Section 1. Dairy Ingredients: Basic Technology includes chapters covering an overview of the milk composition, physical, chemical and functional properties, and basic dairy processing principles to describe how various ingredients are engineered for functional quality related to food processing. Additional chapters highlight production and specifications of various condensed milk products, dry milk products, and whey products. Other chapters address milk fat concentrates (cream, butter, and anhydrous butterfat), processing and specifications of cheese and cheese products, enzyme modified cheese, cheese sauce and dry cheese products, and fermented dairy

ingredients. Information is provided on microbiological considerations relative to dairy processing, nutrition and health, frozen dairy ingredients, and dairy desserts as well as labeling and regulatory compliance.Coverage in Section 2. Dairy Ingredients: Applications describes the applied aspects of using dairy ingredients in food products such as bakery products, chocolatesand confectionery, snack foods, meats, sauces, dressings, desserts, infant formulas, puddings, and functional foods. Shelf life and safety issues are also addressed. All technology and applications chapters are supported by sound scientific and engineering principles. The book presents a contemporary update and a unique approach to the topics, and is designed to augment related books in the existing market. The editorial team is comprised of individuals with significant experience in the science and applications of dairy products manufacture as well their industrial use in various food products. Intended for professionals in the dairy and food industry, Dairy Ingredients for Food Processing also appeals to professors and students in food science for its contemporary information and experience-based applications"--

Previous editions of Yoghurt: Science and Technology established the text as an essential reference underpinning the production of yoghurt of consistently high quality. The book has been completely revised and updated to produce this third edition, which combines coverage of recent developments in scientific understanding with information about established methods of best practice to achieve a comprehensive treatment of the subject. General acceptance of a more liberal definition by the dairy industry of the term yoghurt has also warranted coverage in the new edition of a larger variety of gelled or viscous fermented milk products, containing a wider range of cultures. Developments in the scientific aspects of yoghurt covered in this new edition include polysaccharide production by starter culture bacteria and its effects on gel structure, acid gel formation and advances in the analysis of yoghurt in terms of its chemistry, rheology and microbiology. Significant advances in technology are also outlined, for example automation and mechanisation. There has also been progress in understanding the nutritional profile of yoghurt and details of clinical trials involving yoghurts are described. This book is a unique and

essential reference to students, researchers and manufacturers in the dairy industry. Includes developments in the understanding of the biochemical changes involved in yoghurt production Outlines significant technological advances in mechanisation and automation Discusses the nutritional value of yoghurt

Dairy Processing: Advanced Research to Applications

Emerging Dairy Processing Technologies

Structure of Dairy Products

Dairy Chemistry and Biochemistry

Dairy Production and Processing

Advanced Dairy Chemistry

This third volume in the Handbook of Food Science and Technology Set explains the processing of raw materials into traditional food (bread, wine, cheese, etc.). The agri-food industry has evolved in order to meet new market expectations of its products; with the use of separation and assembly technologies, food technologists and engineers now increasingly understand and control the preparation of a large diversity of ingredients using additional properties to move from the raw materials into new food products. Taking into account the fundamental basis and technological specificities of the main food sectors, throughout the three parts of this book, the authors investigate the biological and biochemical conversions and physicochemical treatment of food from animal sources, plant sources and food ingredients.

Building upon the scope of its predecessor, Dairy Science and Technology, Second Edition offers the latest information on the efficient transformation of milk into high-quality products. It focuses on the principles of physical, chemical, enzymatic, and microbial transformations. The authors, highly regarded educators and researchers, divide the content of this book into four parts. Part I, Milk, discusses the chemistry, physics, and microbiology of milk. In addition to providing knowledge of milk properties, this section forms the basis for understanding what happens during processing, handling, and storage. Part II, Processes, illustrates the main unit operations used to manufacture milk products and highlights the influence certain product and process variables have on resulting products. In Part III, Products, the book integrates information on raw materials and processing as they relate to the manufacture of products. This section also explains the procedures necessary to ensure consumer safety, product quality, and process efficiency. Part IV, Cheese, describes the processes and transformations (physical, biochemical, and microbial) relating to the manufacture and ripening of cheese, starting with generic aspects and later discussing specific groups of cheeses. An important resource, Dairy Science and Technology, Second Edition provides a thorough understanding of milk's composition and properties and the changes that occur in milk and its products during processing and storage.

Milk is nature's most complete food, and dairy productsare considered to be the most nutritious foods of all. Thetraditional view of the role of milk has been greatly expanded inrecent years beyond the

horizon of nutritional subsistence ofinfants: it is now recognized to be more than a source of nutrientsfor the healthy growth of children and nourishment of adulthumans. Alongside its major proteins (casein and whey), milk containsbiologically active compounds, which have important physiologicaland biochemical functions and significant impacts upon humanmetabolism, nutrition and health. Many of these compounds have beenproven to have beneficial effects on human nutrition andhealth. This comprehensive reference is the first to address such a widerange of topics related to milk production and human health,including: mammary secretion, production, sanitation, qualitystandards and chemistry, as well as nutrition, milk allergies,lactose intolerance, and the bioactive and therapeutic compoundsfound in milk. In addition to cow's milk, the book alsocovers the milk of non-bovine dairy species which is of economicimportance around the world. The Editors have assembled a team of internationally renownedexperts to contribute to this exhaustive volume which will beessential reading for dairy scientists, nutritionists, foodscientists, allergy specialists and health professionals.

Advanced Dairy Science and TechnologyJohn Wiley & Sons

Methods, Applications, and Energy Usage

Membrane Processing

Handbook of Food Science and Technology 3

Processed Cheese and Analogues

Advanced Dairy Chemistry: Volume 1: Proteins, Parts A&B

Handbook of Milk of Non-Bovine Mammals

Dairy Processing and Quality Assurance, Second Edition describes the processing and manufacturing stages of market milk and major dairy products, from the receipt of raw materials to the packaging of the products, including the quality assurance aspects. The book begins with an overview of the dairy industry, dairy production and consumption trends. Next are discussions related to chemical, physical and functional properties of milk; microbiological considerations involved in milk processing; regulatory compliance; transportation to processing plants; and the ingredients used in manufacture of dairy products. The main section of the book is dedicated to processing and production of fluid milk products; cultured milk including yogurt; butter and spreads; cheese; evaporated and condensed milk; dry milks; whey and whey products; ice cream and frozen desserts; chilled dairy desserts; nutrition and health; sensory evaluation; new product development strategies; packaging systems; non-thermal preservation technologies; safety and quality management systems; and dairy laboratory analytical techniques. This fully revised and updated edition highlights the developments which have taken place in the dairy industry since 2008. The book notably includes: New regulatory

developments The latest market trends New processing developments, particularly with regard to yogurt and cheese products Functional aspects of probiotics, prebiotics and synbiotics A new chapter on the sensory evaluation of dairy products Intended for professionals in the dairy industry, Dairy Processing and Quality Assurance, Second Edition, will also appeal to researchers, educators and students of dairy science for its contemporary information and experience-based applications.

The Society of Dairy Technology (SDT) has joined with Wiley-Blackwell to produce a series of technical dairy-related handbooks providing an invaluable resource for all those involved in the dairy industry; from practitioners to technologists working in both traditional and modern large-scale dairy operations. The fifth volume in the series, Milk Processing and Quality Management, provides timely and comprehensive guidance on the processing of liquid milks by bringing together contributions from leading experts around the globe. This important book covers all major aspects of hygienic milk production, storage and processing and other key topics such as: Microbiology of raw and market milks Quality control International legislation Safety HACCP in milk processing

All those involved in the dairy industry including food scientists, food technologists, food microbiologists, food safety enforcement personnel, quality control personnel, dairy industry equipment suppliers and food ingredient companies should find much of interest in this commercially important book which will also provide libraries in dairy and food research establishments with a valuable reference for this important area.

Advanced Dairy Chemistry-l: Proteins is the first volume of the third edition of the series on advanced topics in Dairy Chemistry, which started in 1982 with the publication of Developments in Dairy Chemistry. This series of volume~ is intended to be a coordinated and authoritative treatise on Dairy Chemistry. In the decade since the second edition of this volume was published (1992), there have been considerable advances in the study of milk proteins, which are reflected in changes to this book. All topics included in the second edition are retained in the current edition, which has been updated and considerably expanded from 18 to 29 chapters. Owing to its size, the book is divided into two parts; Part A (Chapters 1-11) describes the more basic aspects of milk proteins while Part B (Chapters 12-29) reviews the more applied

aspects. Chapter 1, a new chapter, presents an overview of the milk protein system, especially from an historical viewpoint. Chapters 2-5, 7-9, 15, and 16 are revisions of chapters in the second edition and cover analytical aspects, chemical and physiochemical properties, biosynthesis and genetic polymorphism of the principal milk proteins. Non-bovine caseins are reviewed in Chapter 6.

This foods Special Issue contains seven papers on a range of technical dairy topics. Three involve beneficial uses of proteolytic enzymes, two involve the use of membrane technology in cheese making, while two deal with the role of ingredients, raw milk in the UHT paper and apricot fibre in the yogurt paper, in product quality. In all, the papers demonstrate the breadth of on-going research for an industry based on just one raw material, milk.

Handbook of Farm, Dairy and Food Machinery Engineering

Volume 3. Lactose, water, salts and vitamins

Advanced Dairy Chemistry Volume 3

The Science of Milk and Milk Products

Milk and Dairy Product Technology

Dairy Fats and Related Products

Global Cheesemaking Technology: Cheese Quality and Characteristics reviews cheesemaking practices, and describes cheeses and the processes from

which they are manufactured. In addition, the book examines new areas to stimulate further research in addition to the already established knowledge on the scientific principles on cheesemaking. Part I provides an account on the history of cheese, factors influencing the physicochemical properties, flavour development and sensory characteristics, microbial ecology and cheese safety, traceability and authentication of cheeses with protected labels, and traditional wooden equipment used for cheesemaking, while an overview of the cheesemaking process is also presented. Part II describes 100 global cheeses from 17 countries, divided into 13 categories. The cheeses described are well-known types produced in large quantities worldwide, together with some important locally produced, in order to stimulate scientific interest in these cheese varieties. Each category is presented in a separate chapter with relevant research on each cheese and extensive referencing to facilitate further reading.

Advances in Dairy Microbial Products presents a thorough reference that explains the makeup of these products in a scientifically sound, yet simple manner. It offers both established and cutting-edge solutions on the numerous challenges commonly encountered in the industrial processing of milk and the production of milk products. It is an ideal resource for researchers and practitioners involved in dairy

science, particularly those who wish to gain the most thorough and up-to-date information on dairy microbial products. In addition, it will appeal to beginners seeking to understand how advanced dairy technologies can be used to increase the efficiency of current techniques. Examines the advances of dairy products in healthcare, environment and industry Elaborates upon advanced perspectives, wide applications, traditional uses and modern practices of harnessing potential of microbial products Includes helpful illustrations of recent trends in dairy product research

Now in a fully-revised new edition, this book covers the science and technology underlying cheesemaking, as practised today in the manufacture of hard, semi-soft and soft cheeses. Emphasis is placed on the technology, and the science and technology are integrated throughout. Authors also cover research developments likely to have a commercial impact on cheesemaking in the foreseeable future within the areas of molecular genetics, advanced sensor / measurement science, chemometrics, enzymology and flavour chemistry. In order to reflect new issues and challenges that have emerged since publication of the first book, the new chapters are included on milk handling prior to cheesemaking; packaging; and major advances in the control of the end user properties of cheese using key manufacturing parameters and variables. The

volume has been structured to flow through the discrete stages of cheese manufacture in the order in which they are executed in cheese plants - from milk process science, through curd process science, to cheese ripening science and quality assessment. Overall, the volume provides process technologists, product development specialists, ingredients suppliers, research and development scientists and quality assurance personnel with a complete reference to cheese technology, set against the background of its physical, chemical and biological scientific base.

The Advanced Dairy Chemistry series was first published in four volumes in the 1980s (under the title Developments in Dairy Chemistry) and revised in three volumes in the 1990s. The series is the leading reference source on dairy chemistry, providing in-depth coverage of milk proteins, lipids, lactose, water and minor constituents. Advanced Dairy Chemistry Volume 3: Lactose, Water, Salts, and Minor Constituents, Third Edition, reviews the extensive literature on lactose and its significance in milk products. This volume also reviews the literature on milk salts, vitamins, milk flavors and off-flavors and the behaviour of water in dairy products. Most topics covered in the second edition are retained in the current edition, which has been updated and expanded considerably. New chapters cover chemically and enzymatically prepared derivatives of

lactose and oligosaccharides indigenous to milk. P.L.H. McSweeney Ph.D. is Associate Professor of Food Chemistry and P.F. Fox Ph.D., D.Sc. is Professor Emeritus of Food Chemistry at University College, Cork, Ireland.

Advances in Dairy Microbial Products

Dairy Processing and Quality Assurance

Dairy and Beverage Applications

Manufacturing Yogurt and Fermented Milks

Drying in the Dairy Industry

Milk Processing and Quality Management

Handbook of Agricultural and Farm Machinery, Third Edition, is the essential reference for understanding the food industry, from farm machinery, to dairy processing, food storage facilities and the machinery that processes and packages foods. Effective and efficient food delivery systems are built around processes that maximize efforts while minimizing cost and time. This comprehensive reference is for engineers who design and build machinery and processing equipment, shipping containers, and packaging and storage equipment. It includes coverage of microwave vacuum applications in grain processing, cacao processing, fruit and vegetable processing, ohmic heating of

meat, facility design, closures for glass containers, double seaming, and more. The book's chapters include an excellent overview of food engineering, but also regulation and safety information, machinery design for the various stages of food production, from tillage, to processing and packaging. Each chapter includes the state-of-the art in technology for each subject and numerous illustrations, tables and references to guide the reader through key concepts. Describes the latest breakthroughs in food production machinery Features new chapters on engineering properties of food materials, UAS applications, and microwave processing of foods Provides efficient access to fundamental information and presents real-world applications Includes design of machinery and facilities as well as theoretical bases for determining and predicting behavior of foods as they are handled and processed

Technological innovations, customer expectations, and economical situations have been forcing the dairy industry to adapt to changes in technologies and products. The goal of this book is to

present some new approaches on dairy processing. It will provide several applications on the use of some novel technologies in various dairy products, the improvement of functionalities and quality systems of dairy products, and the advances in dairy wastewater treatment. The book will be useful for both practicing professionals and researchers in the dairy field. I would like to send my sincere thanks to all the authors for their hard work and contributions.

The Society of Dairy Technology (SDT) has joined with Blackwell Publishing to produce a series of technical dairy-related handbooks providing an invaluable resource for all those involved in the dairy industry; from practitioners to technologists working in both traditional and modern larged-scale dairy operations. Brined cheeses such as feta and halloumi have seen a large increase in popularity and as a result, increasing economic value. Over the past two decades the dairy industry has carried out much research into starter cultures alongside technological developments, widening the range of brined cheese

products available to consumers worldwide. The third title in the SDT series, Brined Cheeses gathers research on this important range of cheese varieties from around the world into a single volume, offering the reader: A practically-oriented and user-friendly guide Key commercially important information Coverage of all the major stages of manufacture Background to each variety Review of how different varieties are utilised in different countries Edited by Adnan Tamime, with contributions from international authors and full of core commercially useful information for the dairy industry, this book is an essential title for dairy scientists, dairy technologists and nutritionists worldwide.

The Advanced Dairy Chemistry series was first published in four volumes in the 1980s (under the title Developments in Dairy Chemistry) and revised in three volumes in the 1990s. The series is the leading reference on dairy chemistry, providing in-depth coverage of milk proteins, lipids, lactose, water and minor constituents. Advanced Dairy Chemistry Volume 2: Lipids, Third Edition, is

unique in the literature on milk lipids, a broad field that encompasses a diverse range of topics, including synthesis of fatty acids and acylglycerols, compounds associated with the milk fat fraction, analytical aspects, behavior of lipids during processing and their effect on product characteristics, product defects arising from lipolysis and oxidation of lipids, as well as nutritional significance of milk lipids. Most topics included in the second edition are retained in the current edition, which has been updated and considerably expanded. New chapters cover the following subjects: Biosynthesis and nutritional significance of conjugated linoleic acid, which has assumed major significance during the past decade; Formation and biological significance of oxysterols; The milk fat globule membrane as a source of nutritionally and technologically significant products; Physical, chemical and enzymatic modification of milk fat; Significance of fat in dairy products: creams, cheese, ice cream, milk powders and infant formulae; Analytical methods: chromatographic, spectroscopic, ultrasound and physical methods. This

authoritative work summarizes current knowledge on milk lipids and suggests areas for further work. It will be very valuable to dairy scientists, chemists and others working in dairy research or in the dairy industry.

Brined Cheeses

Advances in Dairy Products

Handbook of Food Science and Technology 1

Milk and Dairy Products in Human Nutrition

Food Biochemistry and Technology

This important and comprehensive book covers, in depth, the most important recent advances in dairy technology. Providing core commercially important information for the dairy industry, the editors, both internationally known for their work in this area, have drawn together an impressive and authoritative list of contributing authors. Topics covered include: heat treatment, membrane processing, hygiene by design, application of HACCP, automation, safety and quality, modern laboratory practices and analysis, and environmental aspects. This book is an essential purchase for all dairy technologists worldwide, whether in

academic research and teaching, or within food companies.

The demand for quality milk products is increasing throughout the world. Food patterns are changing from eating plant protein to animal protein due to increasing incomes around the world, and the production of milk and milk products is expanding with leaps and bounds. This book presents an array of recent developments and emerging topics in the processing and manufacturing of milk and dairy products. The volume also devotes a special section on alternative energy sources for dairy production along with solutions for energy conservation. With contributions for leading scientists and researchers in the field of dairy science and technology, this valuable compendium covers innovative techniques in dairy engineering processing methods and their applications in dairy industry energy use in dairy engineering: sources, conservation, and requirements In line with the modern industrial trends, new processes and corresponding new equipment are reviewed. The volume also looks at the development of highly sensitive measuring and control devices have made it possible to incorporate automatic operation with high degree of mechanization to meet the

huge demand of quality milk and milk products. Processing Technologies for Milk and Milk Products: Methods, Applications, and Energy Usage will be a valuable resource for those in those involved in the research and production of milk and milk products.

With more than 12M tons of dairy powders produced each year at a global scale, the drying sector accounts to a large extent for the processing of milk and whey. It is generally considered that 40% of the dry matter collected overall ends up in a powder form. Moreover, nutritional dairy products presented in a dry form (eg, infant milk formulae) have grown quickly over the last decade, now accounting for a large share of the profit of the sector. Drying in the Dairy Industry: From Established Technologies to Advanced Innovations deals with the market of dairy powders issues, considering both final product and process as well as their interrelationships. It explains the different processing steps for the production of dairy powders including membrane, homogenisation, concentration and agglomeration processes. The book includes a presentation of the current technologies, the more recent development for each of them and their impact on the

quality of the final powders. Lastly, one section is dedicated to recent innovations and methods directed to more sustainable processes, as well as latter developments at lab scale to go deeper in the understanding of the phenomena occurring during spray drying. Key Features: Presents state-of-the-art information on the production of a variety of different dairy powders Discusses the impact of processing parameters and drier design on the product quality such as protein denaturation and viability of probiotics Explains the impact of drying processes on the powder properties such as solubility, dispersibility, wettability, flowability, floodability, and hygroscopicity Covers the technology, modelling and control of the processing steps This book is a synthetic and complete reference work for researchers in academia and industry in order to encourage research and development and innovations in drying in the dairy industry.

Part of the Society of Dairy Technology Series, this book deals with a commercially significant sector of dairy science. The book includes chapters on legislation, functionality of ingredients, processing plants and equipment, manufacturing best practice, packaging,

and quality control. The chapters are authored by an international team of experts. This book is an essential resource for manufacturers and users of processed and analogue cheese products internationally; dairy scientists in industry and research; and advanced food science students with an interest in dairy science.

Cheese Quality and Characteristics

Production, Composition and Health

Science and Technology

From Established Technologies to Advanced Innovations

Technological Approaches for Novel Applications in Dairy Processing

Technology of Cheesemaking

THE ONLY SINGLE-SOURCE GUIDE TO THE LATEST SCIENCE, NUTRITION, AND APPLICATIONS OF ALL THE NON-BOVINE MILKS CONSUMED AROUND THE WORLD Featuring contributions by an international team of dairy and nutrition experts, this second edition of the popular Handbook of Milk of Non-Bovine Mammals provides comprehensive coverage of milk and dairy products derived from all non-bovine dairy species. Milks derived from domesticated dairy species other than the cow are an essential dietary component for many countries around the world. Especially in developing and under-developed countries, milks from secondary dairy species are essential sources of nutrition for the humanity. Due to the unavailability of cow milk and the low consumption of meat,

the milks of non-bovine species such as goat, buffalo, sheep, horse, camel, Zebu, Yak, mare and reindeer are critical daily food sources of protein, phosphate and calcium. Furthermore, because of hypoallergenic properties of certain species milk including goats, mare and camel are increasingly recommended as substitutes in diets for those who suffer from cow milk allergies. This book: Discusses key aspects of non-bovine milk production, including raw milk production in various regions worldwide Describes the compositional, nutritional, therapeutic, physio-chemical, and microbiological characteristics of all non-bovine milks Addresses processing technologies as well as various approaches to the distribution and consumption of manufactured milk products Expounds characteristics of non-bovine species milks relative to those of human milk, including nutritional, allergenic, immunological, health and cultural factors. Features six new chapters, including one focusing on the use of non-bovine species milk components in the manufacture of infant formula products Thoroughly updated and revised to reflect the many advances that have occurred in the dairy industry since the publication of the acclaimed first edition, Handbook of Milk of Non-Bovine Mammals, 2nd Edition is an essential reference for dairy scientists, nutritionists, food chemists, animal scientists, allergy specialists, health professionals, and allied professionals.

Structure of Dairy Products SOCIETY OF DAIRY TECHNOLOGY SERIES Edited by A. Y. Tamime The Society of Dairy Technology (SDT) has joined with Blackwell Publishing to produce a series of technical dairy-related handbooks providing an invaluable resource for all

those involved in the dairy industry; from practitioners to technologists working in both traditional and modern large-scale dairy operations. The previous 30 years have witnessed great interest in the microstructure of dairy products, which has a vital bearing on, e.g. texture, sensory qualities, shelf life and packaging requirements of dairy foods. During the same period, new techniques have been developed to visualise clearly the properties of these products. Hence, scanning electron microscopy (SEM) and transmission electron microscopy (TEM) have been used as complimentary methods in quality appraisal of dairy products, and are used for product development and in trouble shooting wherever faults arise during manufacturing. Structure of Dairy Products, an excellent new addition to the increasingly well-known and respected SDT series, offers the reader: • information of importance in product development and quality control • internationally known contributing authors and book editor • thorough coverage of all major aspects of the subject • core, commercially useful knowledge for the dairy industry Edited by Adnan Tamime, with contributions from international authors, this book is an essential purchase for dairy scientists and technologists, food scientists and technologists, food chemists, physicists, rheologists and microscopists. Libraries in all universities and research establishments teaching and researching in these areas should have copies of this important work on their shelves.

The economic importance of dairy powders and concentrated products to dairy-producing countries is very significant, and there is a large demand for them in countries where milk production is low or non-existent. In these markets, dairy

products are made locally to meet the demand of consumers from recombined powders, anhydrous milk fat and concentrated dairy ingredients (evaporated and sweetened condensed milk). This volume is the latest book in the Technical Series of The Society of Dairy Technology (SDT). Numerous scientific data have been available in journals and books in recent years, and the primary aim of this text is to detail in one publication the manufacturing methods, scientific aspects, and properties of milk powders (full-fat, skimmed and high protein powders made from milk retentates), whey powders (WP) including WP concentrates, lactose, caseinates, sweetened condensed milk, evaporated milk and infant baby feed. The book also covers the international standards relating to these products for trading purposes, as well as the hazards, such as explosion and fire, that may occur during the manufacture of dairy powders. The authors, who are all specialists in these products, have been chosen from around the world. The book will be of interest to dairy scientists, students, researchers and dairy operatives around the world. For information regarding the SDT, please contact Maurice Walton, Executive Director, Society of Dairy Technology, P.O. Box 12, Appleby in Westmorland, CA16 6YJ, UK. email: execdirector@sdt.org Also available from Wiley-Blackwell Milk Processing and Quality Management Edited by A.Y. Tamime ISBN 978 1 4051 4530 5 Cleaning-in-Place Edited by A.Y. Tamime ISBN 978 1 4051 5503 8 Advanced Dairy Science and Technology Edited by T. Britz and R. Robinson ISBN 978 1 4051 3618 1 International Journal of Dairy Technology Published quarterly Print ISSN: 1364 727X Online ISSN: 1471 0307 Advances in Dairy Product Science & Technology offers a

comprehensive review of the most innovative scientific knowledge in the dairy food sector. Edited and authored by noted experts from academic and industry backgrounds, this book shows how the knowledge from strategic and applied research can be utilized by the commercial innovation of dairy product manufacture and distribution. Topics explored include recent advances in the dairy sector, such as raw materials and milk processing, environmental impact, economic concerns and consumer acceptance. The book includes various emerging technologies applied to milk and starter cultures sources, strategic options for their use, their characterization, requirements, starter growth and delivery and other ingredients used in the dairy industry. The text also outlines a framework on consumer behavior that can help to determine quality perception of food products and decision-making. Consumer insight techniques can help support the identification of market opportunities and represent a useful mean to test product prototypes before final launch. This comprehensive resource: Assesses the most innovative scientific knowledge in the dairy food sector Reviews the latest technological developments relevant for dairy companies Covers new advances across a range of topics including raw material processing, starter cultures for fermented products, processing and packaging Examines consumer research innovations in the dairy industry Written for dairy scientists, other dairy industry professionals, government agencies, educators and students, Advances in Dairy Product Science & Technology includes vital information on the most up-to-date and scientifically sound research in the field.

Protein

Volume 1B: Proteins: Applied Aspects
Dairy Powders and Concentrated Products
Fermented Milks
Opportunities for the Dairy Industry
Global Cheesemaking Technology

Highly profitable and an important range of products within the dairy industry worldwide, the economic importance of fermented milks continues to grow. Technological developments have led to a wider range of products and increased popularity with consumers. In the second book to feature in the SDT series Fermented Milks reviews the properties and manufacturing methods associated with products such as yoghurt, buttermilk, kefir, koumiss milk-based fermented beverages and many other examples from around the globe, offering the reader: A practically-oriented and user-friendly guide Key commercially important information Coverage of all the major stages of manufacture Background to each product Edited by Adnan Tamime, with contributions from international authors and full of core commercially useful information for the dairy industry, this book is an essential title for dairy scientists, dairy technologists and nutritionists worldwide.

Whilst milk fat has always been appreciated for its flavour, the market had suffered from concerns over cardiovascular diseases associated with the consumption of animal fats. However, recent clinical studies have indicated benefits,

particularly in relation to conjugated linoleic acids (CLA), in the prevention of certain diseases. The range of spreads has also increased, including the addition of probiotic organisms and/or plant extracts to reduce serum cholesterol levels. The primary aim of this publication is to detail the state-of-the-art manufacturing methods for: Cream Butter Yellow fat spreads, both pure milk fat based and mixtures with other fats Anhydrous milk fat and its derivatives Coverage of the manufacturing technologies is complemented by examinations of the relevant nutrition issues and analytical methods. The authors, who are all specialists in their fields in respect to these products, have been chosen from around the world. It is hoped that the book will provide a valuable reference work for dairy scientists and technologists within the dairy industry and those with similar processing requirements, as well as researchers and students, thus becoming an important component of the SDT's Technical Series. The Editor Dr Adnan Y. Tamime is a Consultant in Dairy Science and Technology, Ayr, UK. He is the Series Editor of the SDT's Technical Book Series. For information regarding the SDT, please contact Maurice Walton, Executive Director, Society of Dairy Technology, P.O. Box 12, Appleby in Westmorland CA16 6YJ, UK. email: execdirector@sdt.org Also available from Wiley-Blackwell Milk Processing and Quality Management Edited by A.Y. Tamime ISBN 978 1

4051 4530 5 Cleaning-in-Place Edited by A.Y. Tamime ISBN 978 1 4051 5503 8 Advanced Dairy Science and Technology Edited by T. Britz and R. Robinson ISBN 978 1 4051 3618 1 International Journal of Dairy Technology Published quarterly Print ISSN: 1364 727X Online ISSN: 1471 0307 The chemistry and physico-chemical properties of milk proteins are perhaps the largest and most rapidly evolving major areas in dairy chemistry. Advanced Dairy Chemistry-1B: Proteins: Applied Aspects covers the applied, technologically-focused chemical aspects of dairy proteins, the most commercially valuable constituents of milk. This fourth edition contains most chapters in the third edition on applied aspects of dairy proteins. The original chapter on production and utilization of functional milk proteins has been split into two new chapters focusing on casein- and whey-based ingredients separately by new authors. The chapters on denaturation, aggregation and gelation of whey proteins (Chapter 6), heat stability of milk (Chapter 7) and protein stability in sterilised milk (Chapter 10) have been revised and expanded considerably by new authors and new chapters have been included on rehydration properties of dairy protein powders (Chapter 4) and sensory properties of dairy protein ingredients (Chapter 8). This authoritative work describes current knowledge on the applied and technologically-focused chemistry and physico-chemical aspects of milk proteins and will be very

valuable to dairy scientists, chemists, technologists and others working in dairy research or in the dairy industry.
This is the third volume in the series on the chemistry and physical properties of milk constituents. Volumes 1 and 2 dealt with the commercially important constituents proteins and lipids, respectively. Although the constituents dealt with in this volume are of less commercial importance, they are, nevertheless, of major significance in the chemical, physical, technological, nutritional and physiological properties of milk and milk products. Advanced Dairy Chemistry Volume 3 is the most comprehensive book available on the subject. The constituents of milk dealt with in this volume are lactose, water, milk salts and vitamins. The chemical and enzymatic modification of lactose and the physico-chemical properties of milk are also discussed. This book is a second edition of the very successful third volume in the series Developments in Dairy Chemistry. Professor Fox, a world authority in this field, has pulled together an impressive international list of contributors, providing a title that will be great use to personnel working within the dairy industry and those in academics and research.
Tamime and Robinson's Yoghurt
Advanced Dairy Science and Technology
Modern Dairy Technology: Advances in milk products

Advanced Dairy Chemistry Volume 2: Lipids
Volume 3: Lactose, Water, Salts and Minor Constituents
Dairy Engineering

Fluid milk processing is energy intensive, with high financial and energy costs found all along the production line and supply chain. Worldwide, the dairy industry has set a goal of reducing GHG emissions and other environmental impacts associated with milk processing. Although the major GHG emissions associated with milk production occur on the farm, most energy usage associated with milk processing occurs at the milk processing plant and afterwards, during refrigerated storage (a key requirement for the transportation, retail and consumption of most milk products). Sustainable alternatives and designs for the dairy processing plants of the future are now being actively sought by the global dairy industry, as it seeks to improve efficiency, reduce costs, and comply with its corporate social responsibilities. Emerging Dairy Processing Technologies: Opportunities for the Dairy Industry presents the state of the art research and technologies that have been proposed as sustainable replacements for high temperature-short time (HTST) and ultra-high temperature (UHT) pasteurization, with potentially lower energy usage and greenhouse gas emissions. These technologies include pulsed electric fields, high hydrostatic pressure, high pressure homogenization, ohmic and microwave heating, microfiltration, pulsed light, UV light processing, and carbon dioxide processing. The use of bacteriocins, which have the potential to improve the efficiency of the processing technologies, is discussed, and information on organic

and pasture milk, which consumers perceive as sustainable alternatives to conventional milk, is also provided. This book brings together all the available information on alternative milk processing techniques and their impact on the physical and functional properties of milk, written by researchers who have developed a body of work in each of the technologies. This book is aimed at dairy scientists and technologists who may be working in dairy companies or academia. It will also be highly relevant to food processing experts working with dairy ingredients, as well as university departments, research centres and graduate students.
This book focuses on advanced research and technologies in dairy processing, one of the most important branches of the food industry. It addresses various topics, ranging from the basics of dairy technology to the opportunities and challenges in the industry. Following an introduction to dairy processing, the book takes readers through various aspects of dairy engineering, such as dairy-based peptides, novel milk products and bio-fortification. It also describes the essential role of microorganisms in the industry and ways to detect them, as well as the use of prebiotics, and food safety. Lastly, the book examines the challenges faced, especially in terms of maintaining quality across the supply chain. Covering all significant areas of dairy science and processing, this interesting and informative book is a valuable resource for post-graduate students, research scholars and industry experts.
This book is the most comprehensive introductory text on the chemistry and biochemistry of milk. It provides a comprehensive description of the principal constituents of milk (water, lipids, proteins, lactose, salts, vitamins, indigenous enzymes) and of the chemical aspects of

cheese and fermented milks and of various dairy processing operations. It also covers heat-induced changes in milk, the use of exogenous enzymes in dairy processing, principal physical properties of milk, bioactive compounds in milk and comparison of milk of different species. This book is designed to meet the needs of senior students and dairy scientists in general.

Advanced Dairy Chemistry, Volume 2

Processing and Technology of Dairy Products