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Effect of Emerging Processing Methods on the Food Quality Aug 02 2022 This text comprehensively covers novel, innovative technologies used in the food and beverage industries in order to provide safe and healthy foods for consumers. The research provided in these chapters aims to show that the traditional pasteurization and commercial sterilization of foods result in unacceptable quality and nutrient retention, creating an important need for alternative methods used to minimize undesirable reactions such as thermal decomposition or degradation. Emerging processing methods to minimize heat induced alterations in foods and their applications are covered in-depth, demonstrating that these methods are useful not only for the inactivation of microorganisms and enzymes but also for improving the yield and development of ingredients and marketable foods with higher quality and better nutritional characteristics. Effect of Emerging Processing Methods on the Food Quality: Advantages and Challenges not only covers the advantages of using innovative processing methods, but also the disadvantages and challenges of using these techniques on food quality. Each chapter focuses on a different emerging processing technique, breaking down the sensory, textural and nutritional aspects for different food products in addition to the advantages and challenges for each method. New technologies and advanced theories are a major focus, pointing to innovative new paths for the quality and safety assurance in food products. From pulsed electric fields to ultrasounds, this work covers all aspects of emerging processing techniques for fruits and vegetables, foods and dairy products.

Mechanics of Materials in Modern Manufacturing Methods and Processing Techniques May 19 2021 Mechanics of Materials in Modern Manufacturing Methods and Processing Techniques provides a detailed overview of the latest developments in the mechanics of modern metal forming manufacturing. Focused on mechanics as opposed to process, it looks at the mechanical behavior of materials exposed to loading and environmental conditions related to modern manufacturing processes, covering deformation as well as damage and fracture processes. The book progresses from forming to machining and surface-treatment processes, and concludes with a series of chapters looking at recent and emerging technologies. Other topics covered include simulations in autofrettage processes, modeling strategies related to cutting simulations, residual stress caused by high thermomechanical gradients and pultrusion, as well as the mechanics of the curing process, forging, and cold spraying, among others. Some non-metallic materials, such as ceramics and composites, are covered as well. Synthesizes the latest research in the mechanics of modern metal forming processes Suggests theoretical models and numerical codes to predict mechanical responses Covers mechanics of shot peening, pultrusion, hydroforming, magnetic pulse forming Considers applicability of different materials and processes for optimum performance

Materials Surface Processing by Directed Energy Techniques Feb 13 2021 The current status of the science and technology related to coatings, thin films and surface modifications produced by directed energy techniques is assessed in Materials Surface Processing by Directed Energy Techniques. The subject matter is divided into 20 chapters - each presented at a tutorial level - rich with fundamental science and experimental results. New trends and new results are also evoked to give an overview of future developments and applications. Provides a broad overview on modern coating and thin film deposition techniques, and their applications Presents and discusses various problems of physics and chemistry involved in the production, characterization and applications of coatings and thin films Each chapter includes experimental results illustrating various models, mechanisms or theories

Food Processing Technology Nov 24 2021 The first edition of Food Processing Technology was quickly adopted as the standard text by many food science and technology courses. While keeping with the practice of covering the wide range of food processing techniques, this new edition has been substantially expanded to take account of the advances in technology that have taken place since the publication of the first edition. The Second Edition includes new chapters on computer control of processing, novel 'minimal' technologies, and Ohmic heating, and an extended chapter on modified atmosphere packaging. It is a comprehensive - yet basic - text that offers an overview of most unit operations, while at the same time providing details of the processing equipment, operating conditions and the effects of processing on the biochemistry of foods. The book is divided into five parts, in which unit operations are grouped according to the nature of the heat transfer that takes place. Each chapter describes the formulae required for calculation of processing parameters, sample problems, and the effects on sensory characteristics and nutritional properties of selected foods. By combining food processing theory and calculations with descriptions of commercial practice and results of scientific studies, Food Processing Technology: Principles and Practice, Second Edition helps readers make attractive saleable products and extend the shelf-life of foods.

Modern Image Processing: Warping, Morphing, and Classical Techniques Mar 17 2021 Modern Image Processing: Warping, Morphing, and Classical Techniques

A New Automatic Processing Technique for Satellite Imagery Analysis Jan 03 2020 A new approach to the analysis of satellite imagery is presented. The central part of this approach is an algorithm which compresses information stored in the ordinary six or eight bits per picture element into only one bit. The quality of this compression is demonstrated by examples of its application to high resolution visual imagery. Both visual inspection and rms difference criterion are used for this evaluation. There are four objectives of this report which are: to review the status of processing techniques which remove redundant information, to show the need for redundance reduction in the processing of satellite images, to present the development of an algorithm for reducing it, and to show results obtained by application of the algorithm to visual imagery. Also, comments are made on needed developments of the technique and its potential application to problems of analysis of satellite imagery data. (Author).

Food Processing Operations Modeling Jun 07 2020 The food industry is on the verge of making some serious advances in the food processing sector. If successful, tomorrow's consumers will have unhindered access to safe, nutritious, and high-quality products via novel food processing technologies. Food Processing Operations Modeling: Design and Analysis, Second Edition demonstrates how to effectively use numerical modeling to predict the effects of food processing on targeted components. This non-destructive testing method virtually eliminates the health risks of under-processed food and maintains high nutritional values that are often lost in overcooked food. Using a task-oriented approach, this second edition discusses basic and advanced modeling tools that allow researchers to predict and prevent worse-case scenarios, perform comprehensive analyses, and optimize system design and efficiency. Contains Selected Applications of Thermal and Non-Thermal Processing Operations NEW TO THIS EDITION: Six new chapters on radio frequency heating, high-pressure processing, pulsed electric field treatment, fouling model on heat exchangers, ozone treatment, and UV radiation Expanded scope to address innovative and up-to-date food processing technologies Numerous real-world case studies Updated information on infrared heating of biological materials and modeling electrical resistance heating of foods Electromagnetic treatments (RF, Infrared, and UV) and fundamentals relative to heat and mass transfer, fluid flow, and stochastic processes Synergistic effect of combined food processing techniques and its numerical simulation Food processing methods are constantly improving in an effort to maintain safe, high-quality, and fresh-tasting products. Providing the theoretical basis for these cutting-edge techniques, this tried-and-tested reference provides indispensable insight into food systems modeling, while exploring applications for further research.

Advances in Cereals Processing Technologies Apr 29 2022 The present book presents its reader with comprehensive knowledge related to cereals processing. It is imperative to have sound knowledge of food laws and regulations with an Indian perspective as these play a pivotal role in commercializing food products as well as fresh produce, which are aptly covered in this book. It includes recent trends in technology of cereals based products, technological updates in legumes and pulses based convenience/processed foods, various aspects of evolution of bakery and confectionery technology and technological evaluation of milling. Since age's process of fermentation was employed for preserving the cereals based food by using general and specified micro flora and micro fauna, the science and technology involved is well explained in the chapter titled 'Fermented Food Based on Cereal and Pulses.' The most important quality attributes related to cereals processing are rheological and thermal changes which occur when extrinsic factors such as moisture and temperature are ebbed and flowed. This subject was sensibly covered under 'Rheological and Thermal Changes Occurring During Processing.' Sugarcane and the sugar industry have the largest contribution to the industrial development. Various unit operations and technology involved are explained as recent updates in sugar, honey, jaggery and salt processing. Shelf life stability of the products with respect to various chemical parameters attributed to the oxidative changes in processed foods is also aptly covered. Note: T&F does not sell or distribute the hardback in India, Pakistan, Nepal, Bhutan, Bangladesh and Sri Lanka. This title is co-published with NIPA.

Image-Processing Techniques for Tumor Detection Oct 24 2021 "Provides a current review of computer processing algorithms for the identification of lesions, abnormal masses, cancer, and disease in medical images. Presents useful examples from numerous imaging modalities for increased recognition of anomolies in MRI, CT, SPECT and digital/film X-Ray."

Green Food Processing Techniques Jul 01 2022 Green Food Processing Techniques: Preservation, Transformation and Extraction advances the ethics and practical objectives of "Green Food Processing" by offering a critical mass of research on a series of methodological and technological tools in innovative food processing techniques, along with their role in promoting the sustainable food industry. These techniques (such as microwave, ultrasound, pulse electric field, instant controlled pressure drop, supercritical fluid processing, extrusion...) lie on the frontier of food processing, food chemistry, and food microbiology, and are thus presented with tools to make preservation, transformation and extraction greener. The Food Industry constantly needs to reshape and innovate itself in order to achieve the social, financial and environmental demands of the 21st century. Green Food Processing can respond to these challenges by enhancing shelf life and the nutritional quality of food products, while at the same time reducing energy use and unit operations for processing, eliminating wastes and byproducts, reducing water use in harvesting, washing and processing, and using naturally derived ingredients. Introduces the strategic concept of Green Food Processing to meet the challenges of the future of the food industry Presents innovative techniques for green food processing that can be used in academia, and in industry in R&D and processing Brings a multidisciplinary approach, with significant contributions from eminent scientists who are actively working on Green Food Processing techniques

A Selection of Image Processing Techniques Nov 05 2022 A Selection of Image Processing Techniques: From Fundamentals to Research Front focuses on seven commonly used image-processing techniques. These are de-noising, de-blurring, repairing, de-fogging, reconstruction from projection, watermarking, and super-resolution. This book is suitable for readers who do not have a complete foundation in the principles of image technology but need to use image techniques to solve specific tasks in particular applications. Hence, elementary knowledge for further study is provided, allowing the reader to discover suitable techniques for solving practical problems and to learn the latest developments in a specific domain. This book offers readers a three-step strategy toward problem solving: first, essential principles, then, a detailed explanation, and finally, a discussion of practical and working techniques for specific tasks. Throughout, the author highlights materials pertaining to the newest developments and trends of the technologies.

Process Techniques for Engineering High-Performance Materials Oct 31 2019 Most processed materials retain a memory of their production process at the molecular level. Subtle changes in production—such as variations in temperature or the presence of impurities—can impart performance benefits or drawbacks to individual batches of products. Some product developers have taken advantage of this process dependency to tailor properties to specific customer needs. In other cases, poorly engineered processes have resulted in serious failures. Process Techniques for Engineering High-Performance Materials explores practical strategies to guide you in systematically developing, improving, and producing engineered materials. The book describes an R&D approach that is common to many material types, from polymers, biochemicals, metal alloys, and composites to coatings, ceramics, elastomers, and processed foods. Throughout, hundreds of examples illustrate successes and disasters in the history of materials development. These examples clearly show how product management and development tactics are constrained by the nature of the production process and the

strategy of the company. The author offers practical advice on how to: Foster creativity in an industrial environment and avoid factors that unintentionally suppress technical innovation Develop products when the properties of the product are highly dependent on processing variables Avoid the inevitable scale-up problems that occur on process-dependent materials Get the most out of expensive trial work in a production plant environment Combine products into a systems solution to customer problems Highlighting important rules for product development, this book helps you better understand the mechanics of engineering processed materials and how to adjust your processes to improve performance.

The HDR Book Dec 14 2020 When it comes to HDR, only three key ingredients are needed: hardware, software, and post-processing technique. Hardware is simple—there are only a few things you need to set up and shoot an HDR series. Software is vastly improved, making it easier for anyone to create an HDR image. The hard part is the post-processing technique. There are only two options: hours and hours of experimentation or The HDR Book. Featuring real-world interviews with passionate HDR photographers, The HDR Book, by Rafael “RC” Concepcion, is more than a how-to and different from any other HDR book out there. While other books on HDR tend to lean toward the esoteric or formulaic, this book takes another approach. It's a complete and total HDR workshop that teaches you the one thing that most other books miss- once you've tone mapped your image with HDR software, you're still not finished. Within the pages of this book, you'll find 10 projects shot with everything from a point-and-shoot to a 37-megapixel, medium-format camera. The projects are designed to show you how the subtle differences in each scenario (lighting, subject, environment, etc.) dictate the post-processing needed to achieve one of the many final looks covered. You'll learn not only the different tone map settings RC used, but you’ll also learn the final steps taken in Photoshop to complete each image. Then, you'll recreate these looks your self using the exact same RAW files that RC used! Plus, you get four bonus images to play with and create your own look. The end result: a more intrinsic understanding of the nuances of HDR that will help you create the images you’ve always wanted. Best of all, The HDR Book is written using the three top HDR processing programs in the industry today: Photoshop’s HDR Pro, Photomatix Pro, and HDR Efex Pro. No matter which program you use, you'll be able to follow along and create your own stunning looks in no time.

Coatings Technology May 07 2020 Drawn from the third edition of The Coatings Technology Handbook, this book focuses entirely on testing, experimental design, and strategies for selecting processing techniques in the coatings, adhesives, paints, and inks industries. Coatings Technology: Fundamentals, Testing, and Processing Techniques contains the latest coating and processing met

Process Mining Techniques in Business Environments Dec 02 2019 After a brief presentation of the state of the art of process-mining techniques, Andrea Burratin proposes different scenarios for the deployment of process-mining projects, and in particular a characterization of companies in terms of their process awareness. The approaches proposed in this book belong to two different computational paradigms: first to classic "batch process mining," and second to more recent "online process mining." The book encompasses a revised version of the author's PhD thesis, which won the "Best Process Mining Dissertation Award" in 2014, awarded by the IEEE Task Force on Process Mining.

Materials for Solar Energy Conversion Sep 30 2019 MATERIALS FOR SOLAR ENERGY CONVERSION This book provides professionals and students with a resource on the basic principles and applications of solar energy materials and processes, as well as practicing engineers who want to understand how functional materials operate in solar energy conversion systems. The demand for energy is increasing daily, and the development of sustainable power generation is a critical issue. In order to overcome the energy demand, power generation through solar energy is booming. Many research works have attempted to enhance the efficiency of collection and storage of solar energy and, as a result, numerous advanced functional materials have been developed for enhancing the performance of solar cells. This book has compiled and broadly explores the latest developments of materials, methods, and applications of solar energy. The book is divided into 2 parts, in which the first part deals with solar cell fundamentals and emerging categories, and the latter part deals with materials, methods, and applications in order to fill the gap between existing technologies and practical requirements. The book presents detailed chapters including organic, inorganic, coating materials, and collectors. The use of modern computer simulation techniques, conversion and storage processes are effectively covered. Topics such as nanostructured solar cells, battery materials, etc. are included in this book as well. Audience The book is aimed at researchers in materials science, chemistry, physics, electrical and mechanical engineering working in the fields of nanotechnology, photovoltaic device technology, and solar energy.

Data Processing Techniques and Applications for Cyber-Physical Systems (DPTA 2019) Feb 25 2022 This book covers cutting-edge and advanced research on data processing techniques and applications for Cyber-Physical Systems. Gathering the proceedings of the International Conference on Data Processing Techniques and Applications for Cyber-Physical Systems (DPTA 2019), held in Shanghai, China on November 15-16, 2019, it examines a wide range of topics, including: distributed processing for sensor data in CPS networks; approximate reasoning and pattern recognition for CPS networks; data platforms for efficient integration with CPS networks; and data security and privacy in CPS networks. Outlining promising future research directions, the book offers a valuable resource for students, researchers and professionals alike, while also providing a useful reference guide for newcomers to the field.

Learning from Data Streams Mar 05 2020 Processing data streams has raised new research challenges over the last few years. This book provides the reader with a comprehensive overview of stream data processing, including famous prototype implementations like the Nile system and the TinyOS operating system. Applications in security, the natural sciences, and education are presented. The huge bibliography offers an excellent starting point for further reading and future research.

Food Formulation Sep 03 2022 Reviews innovative processing techniques and recent developments in food formulation, identification, and utilization of functional ingredients Food Formulation: Novel Ingredients and Processing Techniques is a comprehensive and up-to-date account of novel food ingredients and new processing techniques used in advanced commercial food formulations. This unique volume will help students and industry professionals alike in understanding the current trends, emerging technologies, and their impact on the food formulation techniques. Contributions from leading academic and industrial experts provide readers with informed and relevant insights on using the latest technologies and production processes for new product development and reformulations. The text first describes the basis of a food formulation, including smart protein and starch ingredients, healthy ingredients such as salt and sugar replacers, and interactions within the food components. Emphasizing operational principles, the book reviews state-of-the-art 3D printing technology, encapsulation and a range of emerging technologies including high pressure, pulsed electric field, ultrasound and supercritical fluid extraction. The final chapters discuss recent developments and trends in food formulation, from foods that target allergies and intolerance, to prebiotic and probiotic food formulation designed to improve gut health. A much-needed reference on novel sourcing of food ingredients, processing technologies, and application, this book: Explores new food ingredients as well as impact of processing on ingredient interactions Describes new techniques that improve the flavor and acceptability of functional food ingredients Reviews mathematical tools used for recipe formulation, process control and consumer studies Includes regulations and legislations around tailor-made food products Food Formulation: Novel Ingredients and Processing Techniques is an invaluable resource for students, educators, researchers, food technologists, and professionals, engineers and scientists across the food industry.

Digital Signal Processing Techniques and Applications in Radar Image Processing Dec 26 2021 A self-contained approach to DSP techniques and applications in radar imaging The processing of radar images, in general, consists of three major fields: Digital Signal Processing (DSP); antenna and radar operation; and algorithms used to process the radar images. This book brings together material from these different areas to allow readers to gain a thorough understanding of how radar images are processed. The book is divided into three main parts and covers: * DSP principles and signal characteristics in both analog and digital domains, advanced signal sampling, and interpolation techniques * Antenna theory (Maxwell equation, radiation field from dipole, and linear phased array), radar fundamentals, radar modulation, and target-detection techniques (continuous wave, pulsed Linear Frequency Modulation, and stepped Frequency Modulation) * Properties of radar images, algorithms used for radar image processing, simulation examples, and results of satellite image files processed by Range-Doppler and Stolt interpolation algorithms The book fully utilizes the computing and graphical capability of MATLAB? to display the signals at various processing stages in 3D and/or cross-sectional views. Additionally, the text is complemented with flowcharts and system block diagrams to aid in readers' comprehension. Digital Signal Processing Techniques and Applications in Radar Image Processing serves as an ideal textbook for graduate students and practicing engineers who wish to gain firsthand experience in applying DSP principles and technologies to radar imaging.

Efficient Numerical Methods and Information Processing Techniques in Environment Water Aug 22 2021

Advances in Food Processing Technology Jun 27 2019 This book introduces readers to essential advances in the application of physical processing technology in food processing that have been made in recent years. It analyzes and describes the application of Power Ultrasound, Pulsed Electric Field, Supercritical-CO2, and Infrared Heating in the contexts of food sterilization, extraction, modification, drying and safety control. Covering all aspects of food physical processing, from basic principles to the latest technological developments, it offers a valuable application guide for food engineers and food researchers alike.

Statistical Image Processing Techniques for Noisy Images Apr 05 2020 Statistical Processing Techniques for Noisy Images presents a statistical framework to design algorithms for target detection, tracking, segmentation and classification (identification). Its main goal is to provide the reader with efficient tools for developing algorithms that solve his/her own image processing applications. In particular, such topics as hypothesis test-based detection, fast active contour segmentation and algorithm design for non-conventional imaging systems are comprehensively treated, from theoretical foundations to practical implementations. With a large number of illustrations and practical examples, this book serves as an excellent textbook or reference book for senior or graduate level courses on statistical signal/image processing, as well as a reference for researchers in related fields.

Design and Optimization of Innovative Food Processing Techniques Assisted by Ultrasound Feb 02 2020 Design and Optimization of Innovative Food Processing Techniques Assisted by Ultrasound: Developing Healthier and Sustainable Food Products is a useful tool in understanding the innovative applications derived from the use of ultrasound technology. The book is a starting point for product development, covering technological, physicochemical and nutritional perspectives, as well as the reduction of food toxics and contaminants. Divided into three parts, sections cover ultrasound usage in obtaining functional foods, extracting bioactive compounds, the improvement of food quality, ultrasound use for the development of novel applications, and more. As the definitive resource in new innovative ultrasound-based emerging processes, this book is a necessity for food scientists and technologists, nutrition researchers, and those working in the food manufacturing industry. Explores how ultrasound treatment affects nutrients and bioactive compound retention Provides a useful tool in understanding the innovative applications derived from the use of ultrasound technology Shows how ultrasound serves as a tool of new ingredients production for the food concept of tomorrowa

Image Processing and GIS for Remote Sensing Mar 29 2022 Following the successful publication of the 1st edition in 2009, the 2nd edition maintains its aim to provide an application-driven package of essential techniques in image processing and GIS, together with case studies for demonstration and guidance in remote sensing applications. The book therefore has a “3 in 1” structure which pinpoints the intersection between these three individual disciplines and successfully draws them together in a balanced and comprehensive manner. The book conveys in-depth knowledge of image processing and GIS techniques in an accessible and comprehensive manner, with clear explanations and conceptual illustrations used throughout to enhance student learning. The understanding of key concepts is always emphasised with minimal assumption of prior mathematical experience. The book is heavily based on the authors’ own research. Many of the author-designed image processing techniques are popular around the world. For instance, the SFIM technique has long been adopted by ASTRIUM for mass-production of their standard “Pan-sharpen” imagery data. The new edition also includes a completely new chapter on subpixel technology and new case studies, based on their recent research.

Efficient Numerical Methods and Information-Processing Techniques for Modeling Hydro- and Environmental Systems Jun 19 2021 Numerical simulation models have become indispensable in hydro- and environmental sciences and engineering. This monograph presents a general introduction to numerical simulation in environment water, based on the solution of the equations for groundwater flow and transport processes, for multiphase and multicomponent flow and transport processes in the subsurface as well as for flow and transport processes in surface waters. It displays in detail the state of the art of discretization and stabilization methods (e.g. finite-difference, finite-element, and finite-volume methods), parallel methods, and adaptive methods as well as fast solvers, with particular focus on explaining the interactions of the different methods. The book gives a brief overview of various information-processing techniques and demonstrates the interactions of the numerical methods with the information-processing techniques, in order to achieve efficient numerical simulations for a wide range of applications in environment water.

Handbook of Advanced Plasma Processing Techniques Sep 10 2020 Pattern transfer by dry etching and plasma-enhanced chemical vapor de position are two of the cornerstone techniques for modern integrated cir cuit fabrication. The success of these methods has also sparked interest in their application to other techniques, such as surface-micromachined sen sors, read/write heads for data storage and magnetic random access memory (MRAM). The extremely complex chemistry and physics of plasmas and their interactions with the exposed surfaces of semiconductors and other materi als is often overlooked at the manufacturing stage. In this case, the process is optimized by an informed "trial-and-error" approach which relies heavily on design-of-experiment techniques and the intuition of the process engineer. The need for regular cleaning of plasma reactors to remove built-up reaction or precursor gas products adds an extra degree of complexity because the interaction of the reactive species in the plasma with the reactor walls can also have a strong effect on the number of these species available for etching or deposition. Since the microelectronics industry depends on having high process yields at each step of the fabrication process, it is imperative that a full understanding of plasma etching and deposition techniques be

achieved.

Post-Processing Techniques in Antenna Measurement Jan 15 2021 This book summarises recent developments and enhancements in post-processing techniques that increase the quality and effectiveness of modern antenna measurements. Recent advances in near to far field transformation algorithms for enhancing measurement accuracy in the presence of different common error sources are explained in detail. Developments in techniques for reducing the effect of echoes, noise, and leakage, and to reduce acquisition time, are also explored. The book is written by a range of experts from academia and industry. It explains and illustrates by practical examples several very efficient source reconstruction techniques, and the use of modal and spatial filtering techniques to understand intimate features of measured antennas. It explains phase recovery techniques and demonstrates how combining simulations and measurements can allow for more accurate and faster antenna designs. The book is a useful resource for academics and industry professionals interested in both antenna measurement and design. ested in both antenna measurement and design.

Biotechnical Processing in the Food Industry Apr 17 2021 This new book, Biotechnical Processing in the Food Industry: New Methods, Techniques, and Applications, explores several newly emerged techniques and technologies that have significantly changed the scenario of the dairy and food sector by making the processes more stable and more economically viable. Worldwide adoption of these novel technologies will also, the editors believe, provide benefit to consumers in terms of enhanced food safety labeling, nutritional security, and value-added products at reasonable cost. Divided into three main parts, the book looks at technological trends and advances in dairy research and industry, emerging technological developments, and potential advanced research in the food, health and processing industry.

Digital Image Processing Techniques Jan 27 2022 Digital Image Processing Techniques is a state-of-the-art review of digital image processing techniques, with emphasis on the processing approaches and their associated algorithms. A canonical set of image processing problems that represent the class of functions typically required in most image processing applications is presented. Each chapter broadly addresses the problem being considered; the best techniques for this particular problem and how they work; their strengths and limitations; and how the techniques are actually implemented as well as their computational aspects. Comprised of eight chapters, this volume begins with a discussion on processing techniques associated with the following tasks: image enhancement, restoration, detection and estimation, reconstruction, and analysis, along with image data compression and image spectral estimation. The second section describes hardware and software systems for digital image processing. Aspects of commercially available systems that combine both processing and display functions are considered, as are future prospects for their technological and architectural evolution. The specifics of system design trade-offs are explicitly presented in detail. This book will be of interest to students, practitioners, and researchers in various disciplines including digital signal processing, computer science, statistical communications theory, control systems, and applied physics.

Advanced Image Processing Techniques for Remotely Sensed Hyperspectral Data Jul 09 2020 The first of its kind, this book reviews image processing tools and techniques including Independent Component Analysis, Mutual Information, Markov Random Field Models and Support Vector Machines. The book also explores a number of experimental examples based on a variety of remote sensors. The book will be useful to people involved in hyperspectral imaging research, as well as by remote-sensing data like geologists, hydrologists, environmental scientists, civil engineers and computer scientists.

Advanced Image Acquisition, Processing Techniques and Applications May 31 2022 "Advanced Image Acquisition, Processing Techniques and Applications" is the first book of a series that provides image processing principles and practical software implementation on a broad range of applications. The book integrates material from leading researchers on Applied Digital Image Acquisition and Processing. An important feature of the book is its emphasis on software tools and scientific computing in order to enhance results and arrive at problem solution.

Application of Digital Image Processing Techniques to Astronomical Imagery, 1980 Nov 12 2020

Signal and Image Processing Techniques for the Development of Intelligent Healthcare Systems Jul 21 2021 This book comprehensively reviews the various automated and semi-automated signal and image processing techniques, as well as deep-learning-based image analysis techniques, used in healthcare diagnostics. It highlights a range of data pre-processing methods used in signal processing for effective data mining in remote healthcare, and discusses pre-processing using filter techniques, noise removal, and contrast-enhanced methods for improving image quality. The book discusses the status quo of artificial intelligence in medical applications, as well as its future. Further, it offers a glimpse of feature extraction methods for reducing dimensionality and extracting discriminatory information hidden in biomedical signals. Given its scope, the book is intended for academics, researchers and practitioners interested in the latest real-world technological innovations.

Advanced Image Processing Techniques and Applications Oct 12 2020 Today, the scope of image processing and recognition has broadened due to the gap in scientific visualization. Thus, new imaging techniques have developed, and it is imperative to study this progression for optimal utilization. Advanced Image Processing Techniques and Applications is an essential reference publication for the latest research on digital image processing advancements. Featuring expansive coverage on a broad range of topics and perspectives, such as image and video steganography, pattern recognition, and artificial vision, this publication is ideally designed for scientists, professionals, researchers, and academicians seeking current research on solutions for new challenges in image processing.

Processing Techniques and Consumers Acceptability of Cow Milk Products Aug 10 2020 Processing techniques, quality attributes and consumers acceptability of cow milk products obtained from three region of northern Nigeria were investigated in this study. Sixty cow milk products processors (twenty/region) were selected and interviewed. Consumers acceptability pattern of cow milk products were assessed through a field survey. Results of the study showed that four cow milk products (sour 'nono', yoghurt, soft/hard cheese and butter) are produced in the three zones. Similar processing techniques were used in north east and northwest but this was different from that of north central. Hard cheese/ chuku are processed in north east and north west while soft cheese/wara is processed in the north central. Calf/rennet or abomasa is the main ingredient used in hard cheese while sodom apple is the chief ingredient in soft cheese making. Consumer data reveals a relatively higher preference for yoghurt (46.33%) and butter (27.33%)than the other products. While hard cheese and butter were highly (30% and 35% respectively) consumed in the north east and north west than their counterparts from north central who have high (28%) preference for soft cheese.

A Simplified Approach to Image Processing Jul 29 2019 This book provides a comprehensive introduction to the most popular image processing techniques used today, including whole chapters on the processing of color images, image warping and morphing techniques, and image compression. The disk provides a "hands-on" introduction to image processing techniques that c an be incorporated into the user's applications.

Signal Processing Techniques for Computational Health Informatics Oct 04 2022 This book focuses on signal processing techniques used in computational health informatics. As computational health informatics is the interdisciplinary study of the design, development, adoption and application of information and technology-based innovations, specifically, computational techniques that are relevant in health care, the book covers a comprehensive and representative range of signal processing techniques used in biomedical applications, including: bio-signal origin and dynamics, sensors used for data acquisition, artefact and noise removal techniques, feature extraction techniques in the time, frequency, time-frequency and complexity domain, and image processing techniques in different image modalities. Moreover, it includes an extensive discussion of security and privacy challenges, opportunities and future directions for computational health informatics in the big data age, and addresses the incorporation of recent techniques from the areas of artificial intelligence, deep learning and human-computer interaction. The systematic analysis of the state-of-the-art techniques covered here helps to further our understanding of the physiological processes involved and expandour capabilities in medical diagnosis and prognosis. In closing, the book, the first of its kind, blends state-of-the-art theory and practices of signal processing techniques inthe health informatics domain with real-world case studies building on those theories. As a result, it can be used as a text for health informatics courses to provide medics with cutting-edge signal processing techniques, or to introducehealth professionals who are already serving in this sector to some of the most exciting computational ideas that paved the way for the development of computational health informatics.

Currents in Biomedical Signals Processing - Methods and Applications Aug 29 2019

Food Processing Technology Sep 22 2021 Widely regarded as a standard work in its field, this book introduces the range of processing techniques that are used in food manufacturing. It explains the principles of each process, the processing equipment used, operating conditions and the effects of processing on micro-organisms that contaminate foods, the biochemical properties of foods and their sensory and nutritional qualities. The book begins with an overview of important basic concepts. It describes unit operations that take place at ambient temperature or involve minimum heating of foods. Subsequent chapters examine operations that heat foods to preserve them or alter their eating quality, and explore operations that remove heat from foods to extend their shelf life with minimal changes in nutritional quality or sensory characteristics. Finally, the book reviews post-processing operations, including packaging and distribution logistics. The third edition has been substantially rewritten, updated and extended to include the many developments in food technology that have taken place since the second edition was published in 2000. Nearly all unit operations have undergone significant developments, and these are reflected in the large amount of additional material in each chapter. In particular, advances in microprocessor control of equipment, ‘minimal’ processing technologies, genetic modification of foods, functional foods, developments in ‘active’ or ‘intelligent’ packaging, and storage and distribution logistics are described. Developments in technologies that relate to cost savings, environmental improvement or enhanced product quality are highlighted. Additionally, sections in each chapter on the impact of processing on food-borne micro-organisms are included for the first time.