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KEY=DIGITAL - CIERRA MARKS

Digital Signal Processing - 4th Edn.

Analog and Digital Communications

Pearson Education India

Digital Signal Processing

Laxmi Publications

Textiles and Clothing Sustainability

Sustainable Textile Chemical Processes

Springer This book highlights the challenges in sustainable wet processing of textiles, natural dyes, enzymatic textiles and sustainable textile finishes. Textile industry is known for its chemical processing issues and many NGO's are behind the textile sector to streamline its chemical processing, which is the black face of clothing and fashion sector. Sustainable textile chemical processes are crucial for attaining sustainability in the clothing sector. Seven comprehensive chapters are aimed to highlight these issues in the book.

DIGITAL SIGNAL PROCESSING.

Soft Computing and Signal Processing

Proceedings of ICSCSP 2018, Volume 1

Springer The book presents selected research papers on current developments in the field of soft computing and signal processing from the International Conference on Soft Computing and Signal Processing (ICSCSP 2018). It includes papers on current topics such as soft sets, rough sets, fuzzy logic, neural networks, genetic algorithms and machine learning, discussing various aspects of these topics, like technological, product implementation, contemporary research as well as application issues.

Library Automation and OPAC 2.0: Information Access and Services in the 2.0 Landscape

Information Access and Services in the 2.0 Landscape

IGI Global The advent of computers in libraries made library automation a hot topic in the 1980s and 1990s, but this focus has dropped off over time, leaving much library automation research outdated. Library Automation and OPAC 2.0: Information Access and Services in the 2.0 Landscape brings library automation back to the forefront of cutting-edge research. In today's age of Web 2.0 and social networking, libraries are entering the new Library 2.0 era, and this reference will present current and future librarians with the necessary new library automation research they will need to keep their institutions up-to-date in today's constantly changing technological environment.

Light Weight Materials

Processing and Characterization

John Wiley & Sons In the automotive and aerospace industries, the need for strong yet light materials has given rise to extensive research into aluminum and magnesium alloys and formable titanium alloys. All of these are categorized as light weight materials. The distinguishing feature of light weight materials is that they are low density, but they have a wide range of properties and, as a result, a wide range of applications. This book provides researchers and students with an overview of the recent advancements in light weight material processing, manufacturing and characterization. It contains chapters by eminent researchers on topics associated with light weight materials, including on the current buzzword "composite materials". First, this book describes the current status of light weight materials. Then, it studies applications of these materials, given that, as the densities vary, so do the applications, ranging from automobiles and aviation to bio-mechatronics. This book will therefore serve as an excellent guide to this field.

Shellfish Processing and Preservation

[Springer Nature](#) Shellfish is a broad term that covers various aquatic mollusks, crustaceans and echinoderms that are used as food. They have economic and ecological importance and have been consumed as food for centuries. Shellfish provide high quality protein with all the dietary amino acids essential for maintenance and growth of the human body. Shellfish are a major component of global seafood production, with shellfish aquaculture rapidly growing in recent years. There are many different processing methods used across the world. Shellfish are very perishable foods and must be preserved just after catching or harvesting. This makes the preservation of seafood a critical issue in terms of quality and human health. To date there have been a number of books on seafood processing and preservation, but all of them have been mostly focused on fish. Shellfish Processing and Preservation is the first reference work to focus specifically on shellfish, providing comprehensive coverage of the production methods, biological makeups and preservation methods of all major shellfish species. Individual sections focus on crustaceans such as shrimps and prawns, crabs and lobsters plus molluscans including mussels, scallops and oysters. Cephalopods such as squid and octopus are also covered in depth. For each species processing and preservation methods such as chilling, freezing, canning and curing are examined, plus the important safety aspects specific to each shellfish type. Shellfish Processing and Preservation is an essential publication for any researchers or industry professionals in search of a singular and up-to-date source for the processing and preservation of shellfish.

SIGNALS AND SYSTEMS.

Green Fashion

Volume 1

[Springer](#) This book deals with the important aspects of green fashion including Animal Welfare in Ethical Fashion, Sustainable Processing of Textiles, Sustainable design case studies, Wool Composting, Consumer behaviour in sustainable clothing market, industrial case studies related to green fashion, etc.

Microbial Enzyme Technology in Food Applications

[CRC Press](#) The aim of food processing is to produce food that is palatable and tastes good, extend its shelf-life, increase the variety, and maintain the nutritional and healthcare quality of food. To achieve favorable processing conditions and for the safety of the food to be consumed, use of food grade microbial enzymes or microbes (being the natural biocatalysts) is imperative. This book discusses the uses of enzymes in conventional and non-conventional food and beverage processing as well as in dairy processing, brewing, bakery and wine making. Apart from conventional uses, the development of bioprocessing tools and techniques have significantly expanded the potential for extensive application of enzymes such as in production of bioactive peptides, oligosaccharides and lipids, flavor and colorants. Some of these developments include extended use of the biocatalysts (as immobilized/encapsulated enzymes), microbes (both natural and genetically modified) as sources for bulk enzymes, solid state fermentation technology for enzyme production. Extremophiles and marine microorganisms are another source of food grade enzymes. The book throws light on potential applications of microbial enzymes to expand the base of food processing industries.

Food By-Product Based Functional Food Powders

[CRC Press](#) The by-products of food processing operations may still contain many valuable substances. Nowadays, the potential utilization of these major components has been the focus of increasing attention. Food by-products or food industry shelf-stable coproducts in liquid, pomace, or powder forms can be obtained by processing fruits, vegetables, meat, seafood, milk and dairy, cereal, nuts, fats, and oils; drying by-products and converting them into powder offers a way to preserve them as useful and valuable products. Food By-product Based Functional Food Powders discusses food powders derived from food by-products and waste as well as their chemical characterization, functional properties, unique bioactive features, enhancing technologies, processing of food by-product powders, and utilization. The book discusses how these by-products may be evaluated as a source of dietary phytochemicals including phenolic antioxidants, carotenoids, other bioactive polyphenols, and dietary fiber; as a source of proteins, peptides, and amino acids; as extruded products; as a source of collagen and gelatin; and as a source of various food additive materials.

Sustainability in Denim

[Woodhead Publishing](#) Sustainability in Denim provides the latest information on sustainable fabrics and practices. From cotton farming, to manufacture and end of life disposal, denim has extensive effects on the environment, inclusive of water consumption and contamination, destruction of large-scale ecosystems and transportation pollution. Additionally, recent developments in the manufacture of denim, such as the use of textiles, including elastane and polyester, have led to limitations in the high end recycling of denim. This book includes an introduction covering the history, manufacture and lifecycle of denim. It deals with the sustainability aspects of denim by addressing three important pillars of sustainability, the environmental, social and economic aspects, that when combined, present a unique approach in comparison to other books on the topic. The book primarily uses case studies to examine sustainability challenges throughout the denim lifecycle, and to evaluate new green initiatives and recycling processes. It will be of great use to industry professionals, sustainability managers, textile industry researchers and denim manufacturers. Reviews and studies denim from a sustainability perspective, addressing its major environmental, social and economic impacts Provides the reader with a fundamental knowledge of the history, manufacture and lifecycle of denim, thus enabling a holistic view of denim sustainability Presents new green initiatives for the processing and recycling of denim products for promotion and use amongst sustainability groups

The Wreck

Advances in Manufacturing Engineering and Materials II

Proceedings of the International Conference on Manufacturing Engineering and Materials (ICMEM 2020), 21–25 June, 2021, Nový Smokovec, Slovakia

[Springer Nature](#) This book reports on cutting-edge research and technologies in the field of advanced manufacturing and materials, with a special emphasis on unconventional machining process, rapid prototyping and biomaterials. It gathers contributions to the International Conference on Manufacturing Engineering and Materials (ICMEM 2020), which was originally planned in June 2020, but will actually take place in 2021, in Nový Smokovec, Slovakia, because of the Covid-19 pandemic. Despite the challenging times, submitted contributions were peer-reviewed, and upon a careful revision, included in this book, which covers advances that are expected to increase the industry's competitiveness with regard to sustainable development and preservation of the environment and

natural resources. Condition monitoring, industrial automation, and diverse fabrication processes such as welding, casting and molding, as well as tribology and bioengineering, are just a few of the topics discussed in the book's wealth of authoritative contributions. A special emphasis is given to problems connected to climate change and solution manufacturer and engineers may adopt and develop to prevent and cope with them.

Advances of Science and Technology

8th EAI International Conference, ICAST 2020, Bahir Dar, Ethiopia, October 2-4, 2020, Proceedings, Part II

[Springer Nature](#) This two-volume set constitutes the refereed post-conference proceedings of the 8th International Conference on Advancement of Science and Technology, ICAST 2020, which took place in Bahir Dar, Ethiopia, in October 2020. The 74 revised full papers were carefully reviewed and selected from more than 200 submissions of which 157 were sent out for peer review. The papers present economic and technologic developments in modern societies in 6 tracks: Chemical, food and bio-process engineering; Electrical and computer engineering; IT, computer science and software engineering; Civil, water resources, and environmental engineering; Mechanical and industrial engineering; Material science and engineering.

The Biometric Computing

Recognition and Registration

[CRC Press](#) "The Biometric Computing: Recognition & Registration" presents introduction of biometrics along with detailed analysis for identification and recognition methods. This book forms the required platform for understanding biometric computing and its implementation for securing target system. It also provides the comprehensive analysis on algorithms, architectures and interdisciplinary connection of biometric computing along with detailed case-studies for newborns and resolution spaces. The strength of this book is its unique approach starting with how biometric computing works to research paradigms and gradually moves towards its advancement. This book is divided into three parts that comprises basic fundamentals and definitions, algorithms and methodologies, and futuristic research and case studies. Features: A clear view to the fundamentals of Biometric Computing Identification and recognition approach for different human characteristics Different methodologies and algorithms for human identification using biometrics traits such as face, Iris, fingerprint, palm print, voiceprint etc. Interdisciplinary connection of biometric computing with the fields like deep neural network, artificial intelligence, Internet of Biometric Things, low resolution face recognition etc. This book is an edited volume by prominent invited researchers and practitioners around the globe in the field of biometrics, describes the fundamental and recent advancement in biometric recognition and registration. This book is a perfect research handbook for young practitioners who are intending to carry out their research in the field of Biometric Computing and will be used by industry professionals, graduate and researcher students in the field of computer science and engineering.

Nanomaterials and Nanocomposites

Characterization, Processing, and Applications

[CRC Press](#) **Nanomaterials and Nanocomposites: Characterization, Processing, and Applications** discusses the most recent research in nanomaterials and nanocomposites for a range of applications as well as modern characterization tools and techniques. It deals with nanocomposites that are dispersed with nanosized particulates and carbon nanotubes in their matrices (polymer, metal, and ceramic). In addition, the work: Describes different nanomaterials, such as metal and metal oxides, clay and POSS, carbon nanotubes, cellulose, and biobased polymers in a structured manner Examines the processing of carbon nanotube-based nanocomposites, layered double hydroxides, and cellulose nanoparticles as functional fillers and reinforcement materials Covers size effect on thermal, mechanical, optical, magnetic, and electrical properties Details machining and joining aspects of nanocomposites Discusses the development of smart nanotextiles (intelligent textiles), self-cleaning glass, sensors, actuators, ferrofluids, and wear-resistant nanocoatings. This book enables an efficient comparison of properties and capabilities of these advanced materials, making it relevant for materials scientists and chemical engineers conducting academic research and industrial R&D into nanomaterial processing and applications.

ICCCE 2021

Proceedings of the 4th International Conference on Communications and Cyber Physical Engineering

[Springer Nature](#) This book is a collection of research articles presented at the 4th International Conference on Communications and Cyber-Physical Engineering (ICCCE 2021), held on April 9 and 10, 2021, at CMR Engineering College, Hyderabad, India. ICCCE is one of the most prestigious conferences conceptualized in the field of networking and communication technology offering in-depth information on the latest developments in voice, data, image, and multimedia. Discussing the latest developments in voice and data communication engineering, cyber-physical systems, network science, communication software, image, and multimedia processing research and applications, as well as communication technologies and other related technologies, it includes contributions from both academia and industry. This book is a valuable resource for scientists, research scholars, and PG students working to formulate their research ideas and find the future directions in these areas. Further, it may serve as a reference work to understand the latest engineering and technologies used by practicing engineers in the field of communication engineering.

Recent Trends in Materials Science and Applications

Nanomaterials, Crystal Growth, Thin films, Quantum Dots, & Spectroscopy (Proceedings ICRTMSA 2016)

[Springer](#) This book gathers the proceedings of the plenary sessions, invited lectures, and papers presented at the International Conference on Recent Trends in Materials Science and Applications (ICRTMSA-2016). It also features revealing presentations on various aspects of Materials Science, such as nanomaterials, photonic crystal fibers, quantum dots, thin film techniques, crystal growth, spectroscopic procedures, fabrication and characterisation of new materials / compounds with enhanced features, and potential applications in nonlinear optical and electro-optic devices, solar cell device, chemical sensing, biomedical imaging, diagnosis and treatment of cancer, energy storage device etc. This book will be of great interest to beginning and seasoned researchers alike.

Thin Film Structures in Energy Applications

[Springer](#) This book provides a comprehensive overview of thin film structures in energy applications. Each chapter contains both fundamentals principles for each thin film structure as well as the relevant energy application technologies. The authors cover thin films for a variety of energy sectors including inorganic and organic solar cells, DSSCs, solid oxide fuel cells, thermoelectrics, phosphors and cutting tools.

Digital Photoelasticity

Advanced Techniques and Applications

[Springer Science & Business Media](#) A straightforward introduction to basic concepts and methodologies for digital photoelasticity, providing a foundation on which future researchers and students can develop their own ideas. The book thus promotes research into the formulation of problems in digital photoelasticity and the application of these techniques to industries. In one volume it provides data acquisition by DIP techniques, its analysis by statistical techniques, and its presentation by computer graphics plus the use of rapid prototyping technologies to speed up the entire process. The book not only presents the various techniques but also provides the relevant time-tested software codes. Exercises designed to support and extend the treatment are found at the end of each chapter.

Water Pollution and Remediation: Organic Pollutants

[Springer Nature](#) Wastewater pollution is a major issue in the context of the future circular economy because all matter should be ultimately reused, calling for efficient depollution techniques. This book presents timely reviews on the treatment of wastewater contaminated by organic pollutants, with focus on aerobic granulation and degradation. Organic pollutants include microplastics, phthalates, humic acids, polycyclic aromatic hydrocarbons, pharmaceutical drugs and metabolites, plastics, oil spills, petroleum hydrocarbons, personal care products, tannery waste, dyes and pigments.

Metal-Organic Frameworks for Chemical Reactions

From Organic Transformations to Energy Applications

[Elsevier](#) Metal-Organic Frameworks for Chemical Reactions: From Organic Transformations to Energy Applications brings together the latest information on MOFs materials, covering recent technology in the field of manufacturing and design. The book covers different aspects of reactions from energy storage and catalysts, including preparation, design and characterization techniques of MOFs material and applications. This comprehensive resource is ideal for researchers and advanced students studying metal-organic frameworks in academia and industry. Metal-organic frameworks (MOFs) are nanoporous polymers made up of inorganic metal focuses connected by natural ligands. These entities have become a hot area of research because of their exceptional physical and chemical properties that make them useful in different fields, including medicine, energy and the environment. Since combination conditions strongly affect the properties of these compounds, it is especially important to choose an appropriate synthetic technique that produces a product with homogenous morphology, small size dispersion, and high thermal stability. Covers the synthetic advantages and versatile applications of metal-organic frameworks (MOFs) due to their organic-inorganic hybrid nature and unique porous structure. Includes energy applications such as batteries, fuel storage, fuel cells, hydrogen evaluation reactions and super capacitors. Features information on using MOFs as a replacement to conventional engineering materials because they are lightweight, less costly, environmentally-friendly and sustainable.

Accelerated Plant Breeding, Volume 4

Oil Crops

[Springer Nature](#) Plant improvement has shifted its focus from yield, quality and disease resistance to factors that will enhance commercial export, such as early maturity, shelf life and better processing quality. Conventional plant breeding methods aiming at the improvement of a self-pollinating crop usually take 10-12 years to develop and release of the new variety. During the past 10 years, significant advances have been made and accelerated methods have been developed for precision breeding and early release of crop varieties. This book focuses on the accelerated breeding technologies that have been adopted for major oil crops. It summarizes concepts dealing with germplasm enhancement and development of improved varieties based on innovative methodologies that include doubled haploidy, marker assisted selection, marker assisted background selection, genetic mapping, genomic selection, high-throughput genotyping, high-throughput phenotyping, mutation breeding, reverse breeding, transgenic breeding, shuttle breeding, speed breeding, low cost high-throughput field phenotyping, etc. This edited volume is therefore an excellent reference on accelerated development of improved crop varieties.

First International Conference on Artificial Intelligence and Cognitive Computing

AICC 2018

[Springer](#) This book presents original research works by researchers, engineers and practitioners in the field of artificial intelligence and cognitive computing. The book is divided into two parts, the first of which focuses on artificial intelligence (AI), knowledge representation, planning, learning, scheduling, perception-reactive AI systems, evolutionary computing and other topics related to intelligent systems and computational intelligence. In turn, the second part focuses on cognitive computing, cognitive science and cognitive informatics. It also discusses applications of cognitive computing in medical informatics, structural health monitoring, computational intelligence, intelligent control systems, bio-informatics, smart manufacturing, smart grids, image/video processing, video analytics, medical image and signal processing, and knowledge engineering, as well as related applications.

Energy from Toxic Organic Waste for Heat and Power Generation

[Woodhead Publishing](#) Energy from Toxic Organic Waste for Heat and Power Generation presents a detailed analysis on using scientific methods to recover and reuse energy from Toxic waste. Dr. Barik and his team of expert authors recognize that there has been a growing rise in the quantum and diversity of toxic waste materials produced by human activity, and as such there is an increasing need to adopt new methods for the safe regeneration and minimization of waste produce around the world. It is predominately broken down into 5 sections: The first section provides an overview on the Toxic waste generation addressing the main components for the imbalance in ecosystem derived from human activity. The second section sets out ways in which toxic waste can be managed through various methods such as chemical treatment, cracking and Electro-beam treatment. The final 3 sections deliver an insight into how energy can be extracted and recycled into power from waste energy and the challenges that these may offer. This book is essential reference for engineering industry workers and students seeking to adopt new techniques for reducing toxic waste and in turn extracting energy from it whilst complying with pollution control standards from across the world. Presents techniques which can be adopted to reduce toxic organic waste while complying with regulations and extract useable energy. It includes case studies of various global industries such as nuclear, medical and research laboratories to further enhance the readers understanding of efficient planning, toxic organic waste reduction methods and energy conversion techniques. Analyses methods of extracting and recycling energy from toxic organic waste products.

Digital Signal Processing

Tata McGraw-Hill Education

Intertwined Lives

P.N. Haksar & Indira Gandhi

Simon and Schuster This is the first definitive biography of arguably India's most influential and powerful civil servant: P.N. Haksar, Indira Gandhi's alter ego during her period of glory. Educated in the sciences and trained in law, Haksar was a diplomat by profession and a communist-turned-democratic socialist by conviction. He had known Indira Gandhi from their student days in London in the late-1930s, even though family links predated this friendship. They kept in touch, and in May 1967, she plucked him out of his diplomatic career and appointed him secretary in the prime minister's Secretariat. This is when he emerged as her ideological beacon and moral compass, playing a pivotal role in her much-heralded achievements including the nationalization of banks, abolition of privy purses and princely privileges, the Indo-Soviet Treaty, the creation of Bangladesh, rapprochement with Sheikh Abdullah, the Simla and New Delhi Agreements with Pakistan, the emergence of the country as an agricultural, space and nuclear power and, later, the integration of Sikkim with India. This power and influence notwithstanding, Haksar chose to walk away from Indira Gandhi in January 1973. She, however, persuaded him to soon return, first as her special envoy and later as deputy chairman of the Planning Commission where he left his distinctive imprint. Exiting government once and for all in May 1977, he then continued to be associated with a number of academic institutions and became the patron for various national causes like protecting India's secular traditions, propagating of a scientific temper, strengthening the public sector and deepening technological self-reliance. Successive prime ministers sought his counsel and in May 1987, he initiated the reconstruction of India's relations with China. He remained an unrepentant Marxist and one of India's most respected elder statesman and leading public figures till his death in November 1998. Drawing on Haksar's extensive archives of official papers, memos, notes and letters, Jairam Ramesh presents a compelling chronicle of the life and times of a truly remarkable personality who decisively shaped the nation's political and economic history in the 1960s and 1970s that continues to have relevance for today's India as well. Written in Ramesh's inimitable style, this work of formidable scholarship brings to life a man who is fast becoming a victim of collective amnesia.

Chemistry of Spices

CABI This book (24 chapters) covers the chemistry (chemical composition and structure) of the following spice plants and their products, and provides brief information on the morphology, and postharvest management (storage, packaging and grading) of these crops: black pepper (*Piper nigrum*), small cardamom (*Elettaria cardamomum*), large cardamom (*Amomum subulatum*), ginger, turmeric, cinnamon and cassia (*Cinnamomum* spp.), clove, nutmeg and mace, coriander (*Coriandrum sativum*), cumin (*Cuminum cyminum*), fennel, fenugreek, paprika and chilli (*Capsicum* spp.), vanilla (*Vanilla* spp.), ajowan (*Trachyspermum ammi*), star anise (*Illicium verum*), aniseed (*Pimpinella anisum*), garcinia (*Garcinia* spp.), tamarind, parsley, celery, curry leaf (*Murraya koenigii*) and bay leaf (*Laurus nobilis*). This book will be useful to researchers, industrialists and postgraduate students of agriculture, horticulture and phytochemistry, and to spice traders and processors.

Alternative Fuels and Advanced Vehicle Technologies for Improved Environmental Performance

Towards Zero Carbon Transportation

Elsevier Most vehicles run on fossil fuels, and this presents a major emissions problem as demand for fuel continues to increase. *Alternative Fuels and Advanced Vehicle Technologies* gives an overview of key developments in advanced fuels and vehicle technologies to improve the energy efficiency and environmental impact of the automotive sector. Part I considers the role of alternative fuels such as electricity, alcohol, and hydrogen fuel cells, as well as advanced additives and oils, in environmentally sustainable transport. Part II explores methods of revising engine and vehicle design to improve environmental performance and fuel economy. It contains chapters on improvements in design, aerodynamics, combustion, and transmission. Finally, Part III outlines developments in electric and hybrid vehicle technologies, and provides an overview of the benefits and limitations of these vehicles in terms of their environmental impact, safety, cost, and design practicalities. *Alternative Fuels and Advanced Vehicle Technologies* is a standard reference for professionals, engineers, and researchers in the automotive sector, as well as vehicle manufacturers, fuel system developers, and academics with an interest in this field. Provides a broad-ranging review of recent research into advanced fuels and vehicle technologies that will be instrumental in improving the energy efficiency and environmental impact of the automotive sector Reviews the development of alternative fuels, more efficient engines, and powertrain technologies, as well as hybrid and electric vehicle technologies

Signals & Systems 4edn

Advances in Chemical Mechanical Planarization (CMP)

Woodhead Publishing *Advances in Chemical Mechanical Planarization (CMP), Second Edition* provides the latest information on a mainstream process that is critical for high-volume, high-yield semiconductor manufacturing, and even more so as device dimensions continue to shrink. The second edition includes the recent advances of CMP and its emerging materials, methods, and applications, including coverage of post-CMP cleaning challenges and tribology of CMP. This important book offers a systematic review of fundamentals and advances in the area. Part one covers CMP of dielectric and metal films, with chapters focusing on the use of current and emerging techniques and processes and on CMP of various materials, including ultra low-k materials and high-mobility channel materials, and ending with a chapter reviewing the environmental impacts of CMP processes. New content addressed includes CMP challenges with tungsten, cobalt, and ruthenium as interconnect and barrier films, consumables for ultralow topography and CMP for memory devices. Part two addresses consumables and process control for improved CMP and includes chapters on CMP pads, diamond disc pad conditioning, the use of FTIR spectroscopy for characterization of surface processes and approaches for deflection characterization, mitigation, and reduction. *Advances in Chemical Mechanical Planarization (CMP), Second Edition* is an invaluable resource and key reference for materials scientists and engineers in academia and R&D. Reviews the most relevant techniques and processes for CMP of dielectric and metal films Includes chapters devoted to CMP for current and emerging materials Addresses consumables and process control for improved CMP, including post-CMP

AI and IoT for Sustainable Development in Emerging Countries

Challenges and Opportunities

Springer This book comprises a number of state-of-the-art contributions from both scientists and practitioners working in a large pool of fields where AI and IoT can open up new horizons. Artificial intelligence and Internet of Things have introduced themselves today as must-have technologies in almost every sector. Ranging from agriculture to industry and health care, the scope of applications of AI and IoT is as wide as the horizon. Nowadays, these technologies are extensively used in developed countries, but they are still at an

early stage in emerging countries. **AI and IoT for Sustainable Development in Emerging Countries—Challenges and Opportunities** is an invaluable source to dive into the latest applications of AI and IoT and how they have been used by researchers from emerging countries to solve sustainable development-related issues by taking into consideration the specificities of their countries. This book starts by presenting how AI and IoT can tackle the challenges of sustainable development in general and then focuses on the following axes: · AI and IoT for smart environment and energy · Industry 4.0 and intelligent transportation · A vision towards an artificial intelligence of medical things · AI, social media, and big data analytics. It aspires to provide a relevant reference for students, researchers, engineers, and professionals working in these particular areas or those interested in grasping its diverse facets and exploring the latest advances on their respective fields and the role of AI and IoT in them.

Chemical Solution Synthesis for Materials Design and Thin Film Device Applications

Elsevier Chemical Solution Synthesis for Materials Design and Thin Film Device Applications presents current research on wet chemical techniques for thin-film based devices. Sections cover the quality of thin films, types of common films used in devices, various thermodynamic properties, thin film patterning, device configuration and applications. As a whole, these topics create a roadmap for developing new materials and incorporating the results in device fabrication. This book is suitable for graduate, undergraduate, doctoral students, and researchers looking for quick guidance on material synthesis and device fabrication through wet chemical routes. Provides the different wet chemical routes for materials synthesis, along with the most relevant thin film structured materials for device applications Discusses patterning and solution processing of inorganic thin films, along with solvent-based processing techniques Includes an overview of key processes and methods in thin film synthesis, processing and device fabrication, such as nucleation, lithography and solution processing

Internationalization of Library and Information Science Education in the Asia-Pacific Region

IGI Global Comprehensive internationalization is a strategic process that seeks to align initiatives for globally-oriented and internationally-connected programs that is essential for the attainment of global competitiveness and qualification recognition.

Internationalization of higher education has been in broad debate among professionals, and procedures and processes towards desired quality of library and information science (LIS) academic standards are still a continuing discussion among stakeholders.

Internationalization of Library and Information Science Education in the Asia-Pacific Region is a critical scholarly resource that examines the internationalization of LIS education to promote, develop, and facilitate engagement and mobility of library professionals around the world with a focus on the Asia-Pacific region. This book can open doors for greater global engagement and cooperation among LIS schools and professional governing bodies in countries that can mutually benefit and propel development to be on par with European and North American counterparts. While highlighting various topics such as global engagement, curriculum design, and knowledge sharing, this book is ideal for academicians, library professionals, instructional designers, researchers, curriculum designers, librarians, educators, and students.

Probiotics, Prebiotics, and Synbiotics

Bioactive Foods in Health Promotion

Academic Press Probiotics, Prebiotics, and Synbiotics: Bioactive Foods in Health Promotion reviews and presents new hypotheses and conclusions on the effects of different bioactive components of probiotics, prebiotics, and synbiotics to prevent disease and improve the health of various populations. Experts define and support the actions of bacteria; bacteria modified bioflavonoids and prebiotic fibrous materials and vegetable compounds. A major emphasis is placed on the health-promoting activities and bioactive components of probiotic bacteria. Offers a novel focus on synbiotics, carefully designed prebiotics probiotics combinations to help design functional food and nutraceutical products Discusses how prebiotics and probiotics are complementary and can be incorporated into food products and used as alternative medicines Defines the variety of applications of probiotics in health and disease resistance and provides key insights into how gut flora are modified by specific food materials Includes valuable information on how prebiotics are important sources of micro-and macronutrients that modify body functions

Sustainable Biofuels

Opportunities and Challenges

Academic Press Sustainable Biofuels: Opportunities and challenges, a volume in the “Applied Biotechnology Reviews series, explores the state-of-the-art in research and applied technology for the conversion of all types of biofuels. Its chapters span a broad spectrum of knowledge, from fundamentals and technical aspects to optimization, combinations, economics, and environmental aspects. They cover various facets of research, production, and commercialization of bioethanol, biodiesel, biomethane, biohydrogen, biobutanol, and biojet fuel. This book discusses biochemical, thermochemical, and hydrothermal conversion of unconventional feedstocks, including the role of biotechnology applications to achieve efficiency and competitiveness. Through case studies, techno-economic analysis and sustainability assessment, including life cycle assessment, it goes beyond technical aspects to provides actual resources for better decision-making during the development of commercially viable technology by researchers, PhD students, and practitioners in the field of bioenergy. It is also a useful resource for those in adjacent areas, such as biotechnology, industrial microbiology, chemical engineering, environmental engineering, and sustainability science, who are working on solutions for the bioeconomy. The ability to compare different technologies and their outcome that this book provides is also beneficial for energy analysts, consultants, planners, and policy-makers. The “Applied Biotechnology Reviews series highlights current development and research in biotechnology-related fields, combining in single-volume works the theoretical aspects and real-world applications for better decision-making. Covers current technologies and advancements in biochemical, thermochemical, and hydrothermal conversion methods for production of various types of biofuels from conventional and nonconventional feedstock Examines biotechnology processes, including genetic engineering of microorganisms and substrates, applied to biofuel production Bridges the gap between technology development and prospects of commercialization of bioprocesses, including policy and economics of biofuel production, biofuel value chains, and how to accomplish cost-competitive results and sustainable development

A Self-Study Guide for Digital Signal Processing

Pearson Education India