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WHO'S WHO IN UNIVERSITIES OF PAKISTAN

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OTHER INSTITUTIONS OF HIGHER EDUCATION AND UNIVERSITY ORGANIZATIONS / AUTRES ETABLISSEMENTS D'ENSEIGNEMENT SUPÉRIEUR ET ORGANISATIONS UNIVERSITAIRES

Walter de Gruyter GmbH & Co KG

ADVANCED BIOFUELS

APPLICATIONS, TECHNOLOGIES AND ENVIRONMENTAL SUSTAINABILITY

Woodhead Publishing Advanced Biofuels: Applications, Technologies, and Environmental Sustainability presents recent developments and applications of biofuels in the field of internal combustion engines, with a primary focus on the recent approaches of biodiesel applications, low emission alternative fuels, and environmental sustainability. Editors Dr. Azad and Dr. Rasul, along with their team of

expert contributors, combine a collection of extensive experimental investigations on engine performance and emissions and combustion phenomena using different types of oxygenated fuel with in-depth research on fuel applications, an analysis of available technologies and resources, energy efficiency improvement methods, and applications of oxygenated fuel for the sustainable environment. Academics, researchers, engineers and technologists will develop a greater understanding of the relevant concepts and solutions to the global issues related to achieving alternative energy application for future energy security, as well as environmental sustainability in medium and large-scale industries. Fills a gap in the literature on alternative fuel applications with in-depth research and experimental investigations of different approaches, technologies and applications. Considers the important issue of sustainability using case studies to deepen understanding. Includes energy security within various industries, including aviation and transport

CLAIMS MANUAL

RESEARCH HANDBOOK ON ENTREPRENEURSHIP IN EMERGING ECONOMIES

A CONTEXTUALIZED APPROACH

Edward Elgar Publishing *This Research Handbook offers contextualized perspectives on entrepreneurship in emerging economies. Emphasizing how national context profoundly shapes incentives for entrepreneurial efforts, chapters dissect the opportunities emerging from various institutions and social practices from the Middle East, North and Sub-Saharan Africa, Asia and Latin America. This Handbook is an ideal guide for researchers working on emerging economies, particularly those with an interest in global entrepreneurship.*

2018 INTERNATIONAL CONFERENCE ON ELECTRICAL ENGINEERING (ICEE)

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Springer

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Walter de Gruyter GmbH & Co KG

GREEN SUSTAINABLE PROCESS FOR CHEMICAL AND ENVIRONMENTAL ENGINEERING AND SCIENCE

MICROBIALLY-DERIVED BIOSURFACTANTS FOR IMPROVING SUSTAINABILITY IN INDUSTRY

Elsevier Green Sustainable Process for Chemical and Environmental Engineering and Science: Microbially-Derived Biosurfactants for Improving Sustainability in Industry explores the role biosurfactants may play in providing more sustainable, environmentally benign, and economically efficient solutions for mitigating challenges experienced in the industrial sector. Sections cover an introduction to their production and review their application across a broad range of industry applications, from polymer and biofuel production to lubrication and corrosion protection. Drawing on the knowledge of its expert team of global contributors, the book provides useful insights for all those currently or potentially interested in developing or applying biosurfactants in their own work. As awareness and efforts to develop greener products and processes continue to grow in the chemistry community, biosurfactants are garnering much attention for the potential roles they can play, both in reducing the use and production of more toxic products and as tools for addressing existing problems. Highlights effective bioprocessing techniques, bioprocessing, agrowaste, and factors affecting production Reflects on differing strains of fungi, bacteria, actinomycetes and yeast, and reviews genetic modification of such strains for enhanced biosurfactant production Explores the use of biosurfactants across a broad range of industrial applications

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Walter de Gruyter GmbH & Co KG

ENVIRONMENTAL MICROPOLLUTANTS

Elsevier Environmental Micropollutants, the latest volume in the Advances in Environmental Pollution Research series, presents the latest research on various environmental micropollutants, as well as their impacts on health and the economy, also addressing the best possible solutions to address the risks presented by these pollutants. The book covers solutions for dusts, infectious particles, heavy metals, organophosphates, atmospheric toxic organic micropollutants, fungal spores, pollutants from E-waste, and antibiotics threats, providing researchers working in environmental science and management with key knowledge to address this increasingly important concern. These types of micropollutants can be present in water, air and soil and can harm health even in low quantities, hence this book covers the challenges these pollutants pose to the environment and human health, presenting practical solutions. Identifies key micropollutants in the environment and examines their impacts on human health and the economy Presents methods and treatment technologies for addressing the problem of micropollutants Offers the latest research on a variety of micropollutants

and the best solutions for each

CONDUCTING POLYMERS-BASED ENERGY STORAGE MATERIALS

CRC Press Conducting polymers are organic polymers which contain conjugation along the polymer backbone that conduct electricity. Conducting polymers are promising materials for energy storage applications because of their fast charge-discharge kinetics, high charge density, fast redox reaction, low-cost, ease of synthesis, tunable morphology, high power capability and excellent intrinsic conductivity compared with inorganic-based materials. *Conducting Polymers-Based Energy Storage Materials* surveys recent advances in conducting polymers and their composites addressing the execution of these materials as electrodes in electrochemical power sources. Key Features: Provides an overview on the conducting polymer material properties, fundamentals and their role in energy storage applications. Deliberates cutting-edge energy storage technology based on synthetic metals (conducting polymers) Covers current applications in next-generation energy storage devices. Explores the new aspects of conducting polymers with processing, tunable properties, nanostructures and engineering strategies of conducting polymers for energy storage. Presents up-to-date coverage of a large, rapidly growing and complex conducting polymer literature on all-types electrochemical power sources. This book is an invaluable guide for students, professors, scientists, and R&D industrial specialists working in the field of advanced science, nanodevices, flexible electronics, and energy science.

DEVELOPING SUSTAINABLE AGRICULTURE IN PAKISTAN

CRC Press Agriculture plays a pivotal role in the economy and development of Pakistan providing food to consumers, raw materials to industries, and a market for industrial goods. Unfortunately, agricultural production is stagnant due to several barriers including a fixed cropping pattern, reliance on a few major crops, a narrow genetic pool, poor seed quality, and a changing climate. In addition, the high cost of production, weak phytosanitary compliance mechanisms, and a lack of cold chain facilities makes Pakistan agriculturally uncompetitive in export markets. Despite all these issues, agriculture is the primary industry in Pakistan and small farmers continue to dominate the business. Small farmers grow crops for subsistence under a fixed cropping pattern and a holistic approach is required to develop agriculture to improve the livelihoods of the rural populace. This book presents an exhaustive look at agriculture in Pakistan. Chapters provide critical analyses of present trends, inadequacies in agriculture, strategic planning, improvement programs and policies while keeping in view the natural resources, plant- and animal-related agricultural production technologies, input supplies, population planning, migration and poverty, and balanced policies on finance, credit, marketing, and trade.

WORLD LIST OF UNIVERSITIES

[Springer](#)

DIRECTORY OF INSTITUTIONS AND INDIVIDUALS ACTIVE IN ENVIRONMENTALLY-SOUND AND APPROPRIATE TECHNOLOGIES

UNEP REFERENCE SERIES

Elsevier UNEP Reference Series, Volume 1: Directory of Institutions and Individuals Active in Environmentally-Sound and Appropriate Technologies presents the dynamic interrelationship of the social system with the natural environment. This book discusses the technological pattern that implies specific approaches to management of resources and is associated with a given lifestyle and value system. This text then explores the remarkable development in human history wherein society, cultural values, patterns of development, and lifestyles reflects the characteristics of technological development. This book discusses as well the crucial role that information plays in the society, whereby sectoral activities such as agriculture, transportation, industry, and rural development require accurate and timely information for the attainment of their goals This book is a valuable resource for social scientists.

METAL NANOPARTICLES FOR DRUG DELIVERY AND DIAGNOSTIC APPLICATIONS

Micro & Nano Technologies Metal Nanoparticles for Drug Delivery and Diagnostic Applications addresses the lifecycle of metal nanoparticles, from synthesis and characterization, to applications in drug delivery and targeting. It is an important resource for those in biomaterials, nanomedicine and pharmaceutical sciences, exploring gold, silver and iron-based drug delivery systems for controlled and targeted delivery of potential drugs and genes for enhanced clinical efficacy. Nanotechnology is widely used in drug delivery due to its ability to reduce plasma fluctuation of drugs, high solubility, and efficiency, the relatively low cost of nanoscale products, and enhancement of patient comfort, hence this resource is a welcome edition to the science. Illustrates the progression of nanoparticle therapeutics from basic research to applications Explores new opportunities and ideas for developing and improving technologies in nanomedicine and nanobiology Discusses the toxicity of different types of metal nanoparticles and how to ensure their safe use

ARTIFICIAL INTELLIGENCE-BASED BRAIN-COMPUTER INTERFACE

Academic Press Artificial Intelligence-Based Brain Computer Interface provides concepts of AI for modelling of non-invasive modalities of medical signals such as EEG, MRI, and fMRI. These modalities and their AI-based analysis are employed in BCI and related

applications. This can help to improve the healthcare system through detection, identification, predication, analysis and classification of disease, management of chronic conditions, and delivery of health services. Artificial Intelligence-Based Brain Computer Interface emphasizes the real challenges in non-invasive input due to the complex nature of the human brain and for a variety of applications for analysis, classification and identification of different mental states. Each chapter starts with a description of a non-invasive input example and the need and motivation of the associated AI methods, along with discussions to connect the technology through BCI. Major topics include different AI methods/techniques such as Deep Neural Networks and Machine Learning algorithms for different non-invasive modalities such as EEG, MRI, FMRI for improving the diagnosis and prognosis of numerous disorders of the nervous system, cardiovascular system, musculoskeletal system, respiratory system and various organs of the body. The book also covers applications of AI in management of chronic condition, databases and delivery of health services. Various brain image modalities are analyzed and capabilities of the human brain will be exploited in BCI applications and case studies. The book presents AI methods for solving real-world problems and challenges in BCI and healthcare systems with the help of appropriate case studies and research results. Provides readers with an understanding of the key applications of Artificial Intelligence to Brain-Computer Interface for acquisition and modelling of non-invasive biomedical signal and image modalities for various conditions and disorders Integrates recent advancements of Artificial Intelligence to the evaluation of large amounts of clinical data for early detection of disorders such as Epilepsy, Alcoholism, Sleep Apnea, motor-imagery tasks classification, and others Provides readers with illustrative examples of how Artificial Intelligence can be applied to Brain-Computer Interface, including a wide range of case studies in predicting and classification of neurological disorders

RECENT ADVANCES IN RENEWABLE ENERGY TECHNOLOGIES

VOLUME 1

Academic Press Recent Advances in Renewable Energy Technologies is a comprehensive reference covering critical research, laboratory and industry developments on renewable energy technological, production, conversion, storage, and management, including solar energy systems (thermal and photovoltaic), wind energy, hydropower, geothermal energy, bioenergy and hydrogen production, and large-scale development of renewable energy technologies and their impact on the global economy and power capacity. Technological advancements include resources assessment and deployment, materials performance improvement, system optimization and sizing, instrumentation and control, modeling and simulation, regulations, and policies. Each modular chapter examines recent advances in specific renewable energy systems, providing theoretical and applied aspects of system optimization, control and management and supports them with global case studies demonstrating practical applications and economical and

environmental aspects through life cycle analysis. The book is of interest to engineering graduates, researchers, professors and industry professionals involved in the renewable energy sector and advanced engineering courses dealing with renewable energy, sources, thermal and electrical energy production and sustainability. Focuses on the progress and research trends in solar, wind, biomass, and hydropower and geothermal energy production and conversion. • Includes advanced techniques for the distribution, management, optimization, and storage of heat and energy using case studies.

GREEN ADSORBENTS TO REMOVE METALS, DYES AND BORON FROM POLLUTED WATER

Springer Nature This book reviews adsorption techniques to clean wastewater, with focus on pollution by dyes and heavy metals. Advanced adsorbents include carbon nanomaterials, biomass, cellulose, polymers, clay, composites and chelating materials.

METAL OXIDE-CARBON HYBRID MATERIALS

SYNTHESIS, PROPERTIES AND APPLICATIONS

Elsevier Metal Oxide–Carbon Hybrid Materials: Synthesis, Properties and Applications reviews the advances in the fabrication and application of metal oxide–carbon-based nanocomposite materials. Their unique properties make them ideal materials for gas-sensing, photonics, catalysis, opto-electronic, and energy-storage applications. In the first section, the historical background to the hybrid materials based on metal oxide–carbon and the hybridized metal oxide composites is provided. It also highlights several popular methods for the preparation of metal oxide–carbon composites through solid-state or solution-phase reactions, and extensively discusses the materials' properties. Fossil fuels and renewable energy sources cannot meet the ever-increasing energy demands of an industrialized and technology-driven global society. Therefore, the role of metal oxide–carbon composites in energy generation, hydrogen production, and storage devices, such as rechargeable batteries and supercapacitors, is of extreme importance. These problems are discussed in the second section of the book. Rapid industrialization has resulted in serious environmental issues which in turn have caused serious health problems that require the immediate attention of researchers. In the third section, the use of metal oxide–carbon composites in water purification, photodegradation of industrial contaminants, and biomedical applications that can help to clean the environment and provide better healthcare solutions is described. The final section is devoted to the consideration of problems associated with the development of sensors for various applications. Numerous studies performed in this area have shown that the use of composites can significantly improve the operating parameters of such devices. Metal Oxide–Carbon Hybrid Materials: Synthesis, Properties and Applications presents a comprehensive review of the science related to metal oxide–carbon composites and how researchers are utilizing these materials to provide solutions to a large array of problems. Reviews the fundamental properties

and fabrication methods of metal-oxide-carbon composites Discusses applications in energy, including energy generation, hydrogen production and storage, rechargeable batteries, and supercapacitors Includes current and emerging applications in environmental remediation and sensing

ADVANCES IN FOOD RHEOLOGY AND ITS APPLICATIONS

DEVELOPMENT IN FOOD RHEOLOGY

Woodhead Publishing Advances in Food Rheology and Its Applications: Development in Food Rheology, Second Edition presents the latest advances in the measurement and application of food rheology, one of the most important tools for food companies when characterizing ingredients and final products, and a predictor of product performance and consumer acceptance. This second edition provides coverage of new rheological measurement techniques, including ultrasonic measurements of rheological properties of food and NMR approach, and precision in data handling, including coverage of mathematical modeling of rheological properties. As the range of food products has also broadened as a result of consumer demands and preference, this second edition includes a series of new chapters on dairy and plant-based foods. The amalgamation between food texture and sensory attributes will also be addressed. In addition, coverage of the correlation between rheological behavior and modeling of the fluid in a human stomach and food digestion will be assessed. A special focus has given on rheology of gel systems, including, food hydrogels, bigel and organogels. Written for food scientists, food technologists, sensory scientists, and others working in academia and industry, Advances in Food Rheology and Its Applications: Development in Food Rheology, Second Edition will be a welcomed and updated reference. Considers the impact of artificial intelligence and machine vision on rheological characterization and process control Presents ultrasonic measurements of rheological properties of food and NMR approach, and precision in data handling Covers thermodynamic approach of rheology and interfacial rheology Explains various gel systems rheology, including bogels and organogo gels

EMERGING NANOTECHNOLOGIES FOR RENEWABLE ENERGY

Elsevier Emerging Nanotechnologies for Renewable Energy offers a detailed overview of the benefits and applications of nanotechnology in the renewable energy sector. The book highlights recent work carried out on the emerging role of nanotechnology in renewable energy applications, ranging from photovoltaics, to battery technology and energy from waste. Written by international authors from both industry and academia, the book covers topics including scaling up from laboratory to industrial scale. It is a valuable resource for students at postgraduate and advanced undergraduate levels, researchers in industry and academia, technology leaders, and policy and decision-makers in the energy and engineering sectors. Offers insights into a wide range of nanoscale

technologies for the generation, storage and transfer of energy Shows how nanotechnology is being used to create new, more environmentally friendly energy solutions Assesses the challenges involved in scaling up nanotechnology-based energy solutions to an industrial scale

A CENTUM OF VALUABLE PLANT BIOACTIVES

Academic Press During last couple of decades, a great deal of research has explored what exactly plants contain (bioactives) and how these molecules may interact with human physiology at the molecular level. It is extremely important to know what happens to plant bioactives or their biological activities when processed or isolated under various reaction conditions. Huge numbers of extraction or food manufacturing methodologies are adversely affecting the quality of these phytonutrients so there is a prompt need to highlight these processes/methods and replace them with more novel, efficient, green, or eco-friendly ones. A Centum of Valuable Plant Bioactives is a comprehensive resource on the top 100 plant bioactives available. Chapters are grouped together by bioactives, with sections on carotenes, xanthophylls, terpenoids, steroids, polyphenols and more. This is an essential guide for botanists, food technologists and chemists, nutritionists and pharmacists. Highlights the top 100 plant bioactives, their biogenesis, distribution, extraction/purification, and metabolism Contains the latest advances in botanic biology, analytical chemistry and food technology Explores potential applications including food additives, digestion and health, chemoprevention and biotherapy

ARTIFICIAL INTELLIGENCE APPLICATIONS IN ELECTRICAL TRANSMISSION AND DISTRIBUTION SYSTEMS PROTECTION

CRC Press Artificial intelligence (AI) can successfully help in solving real-world problems in power transmission and distribution systems because AI-based schemes are fast, adaptive, and robust and are applicable without any knowledge of the system parameters. This book considers the application of AI methods for the protection of different types and topologies of transmission and distribution lines. It explains the latest pattern-recognition-based methods as applicable to detection, classification, and location of a fault in the transmission and distribution lines, and to manage smart power systems including all the pertinent aspects. FEATURES Provides essential insight on uses of different AI techniques for pattern recognition, classification, prediction, and estimation, exclusive to power system protection issues Presents an introduction to enhanced electricity system analysis using decision-making tools Covers AI applications in different protective relaying functions Discusses issues and challenges in the protection of transmission and distribution systems Includes a dedicated chapter on case studies and applications This book is aimed at graduate students, researchers, and professionals in electrical power system protection, stability, and smart grids.

BIOENERGY RESOURCES AND TECHNOLOGIES

Academic Press Bioenergy Resources and Technologies presents advanced approaches and applications of bioenergy resources, with a strong focus on environmental sustainability. Chapters on the applications of bioenergy, the implementation of bioenergy as an alternative fuel, and future energy security make this an invaluable and unique resource to further advance the field. This book provides new information and novel techniques across a variety of bioenergy applications, with the book's authors addressing key uses for bioenergy resources as an alternative fuel. Various case studies and examples help demonstrate meaning and provide additional clarity. Social and economic aspects are included for each technology discussed, along with a number of research works and their findings in a diverse mix of areas including energy, environmental science, biotechnology, chemical engineering and mechanical engineering. Researchers and professionals in these disciplines will gain knowledge on the underlying concepts, technologies, fuel applications and solutions to global environmental issues using bioenergy resources. Presents technical and social issues surrounding the latest bioenergy technologies Explores solutions to global sustainability goals through bioenergy applications and the future of energy security Includes experimental investigations of engine performance, emissions and combustion phenomena using different types of oxygenated fuel

MATHEMATICAL MODELING AND SOFT COMPUTING IN EPIDEMIOLOGY

CRC Press This book describes the uses of different mathematical modeling and soft computing techniques used in epidemiology for experiential research in projects such as how infectious diseases progress to show the likely outcome of an epidemic, and to contribute to public health interventions. This book covers mathematical modeling and soft computing techniques used to study the spread of diseases, predict the future course of an outbreak, and evaluate epidemic control strategies. This book explores the applications covering numerical and analytical solutions, presents basic and advanced concepts for beginners and industry professionals, and incorporates the latest methodologies and challenges using mathematical modeling and soft computing techniques in epidemiology. Primary users of this book include researchers, academicians, postgraduate students, and specialists.

POLYMER NANOCOMPOSITES CONTAINING GRAPHENE

PREPARATION, PROPERTIES, AND APPLICATIONS

Woodhead Publishing Polymer Nanocomposites Containing Graphene: Preparation, Properties and Applications provides detailed up-to-date information on the characterization, synthesis, processing, properties and application of these materials. Key topics that are

covered in the book include: the methods of synthesis and preparation of graphene as well as different processes and methods of functionalization and modification of graphene for improving composite properties. The preparation techniques focus on which method is advantageous for getting improvements in properties along with their drawbacks. The structure and property relationships are also discussed in detail. The issues related to graphene dispersion in polymer matrices is also addressed as well as the use of graphene as reinforcement in thermoset resins. The different properties of the composites like mechanical, electrical, dielectric, thermal, rheological, morphology, spectroscopy, electronic, optical, and toxicity are reviewed from the geometrical and functional point of view. Applications cover electrical and electronic fields, flame and fire retardancy, structural, sensing and catalysis, membrane, in fuel cell and solar energy, hydrogen production, aerospace engineering, packaging, and biomedical/bioengineering fields. Up-to-date patents on graphene-polymer nanocomposites are also covered. Those working in graphene-based materials will benefit from the detailed knowledge presented in this book on graphene synthesis, composite preparation methods, and the related problems associated with them. The book will enable researchers to select the appropriate composite as per their respective field of application. Presents novel approaches for the preparation of graphene, its modification and nanocomposites with enhanced properties for state-of-the-art applications. Special attention is given to how graphene is synthesized through different routes, their functionality, dispersion related matters and structural aspects controlling the composite properties for various applications. All synthesis methodology and functionalization procedure for graphene is discussed

BIO MONOMERS FOR GREEN POLYMERIC COMPOSITE MATERIALS

John Wiley & Sons Presents new and innovative bio-based monomers to replace traditional petrochemical-based building blocks. Featuring contributions from top experts in the field, this book discusses new developments in the area of bio monomers and green polymeric composite materials. It covers bio monomers, green polymeric composites, composites from renewable resources, bio-sourced polymers, green composites, biodegradation, processing methods, green polymeric gels, and green polymeric membranes. Each chapter in Bio Monomers for Green Polymeric Composites Materials presents the most recent research and technological ideas in a comprehensive style. It examines bio monomers for green polymer and the processing methods for the bio nanocomposites. It covers the preparation, characterization, and applications of bio-polymeric materials based blends, as well as the applications of biopolymeric gels in medical biotechnology. The book also explores the properties and applications of gelatins, pectins, and carrageenans gels. Additionally, it offers a plethora of information on green polymeric membranes; the bio-degradation of green polymeric composites materials; applications of green polymeric composites materials; hydrogels used for biomedical applications; and the use of natural aerogels as thermal insulations. Introduces readers to the innovative, new bio-based monomers that are taking the place of traditional petrochemical-based building blocks. Covers green polymers, green composites, bio-sourced polymers, bio

nanocomposites, biodegradable polymers, green polymer gels, and membranes Features input from leading researchers immersed in the area of study *Bio Monomers for Green Polymeric Composites Materials* is suitable for academics, researchers, scientists, engineers and advanced students in the field of bio monomers and green polymeric composites materials.

INFORMATION SECURITY HANDBOOK

CRC Press This handbook provides a comprehensive collection of knowledge for emerging multidisciplinary research areas such as cybersecurity, IoT, Blockchain, Machine Learning, Data Science, and AI. This book brings together, in one resource, information security across multiple domains. Information Security Handbook addresses the knowledge for emerging multidisciplinary research. It explores basic and high-level concepts and serves as a manual for industry while also helping beginners to understand both basic and advanced aspects in security-related issues. The handbook explores security and privacy issues through the IoT ecosystem and implications to the real world and, at the same time, explains the concepts of IoT-related technologies, trends, and future directions. University graduates and postgraduates, as well as research scholars, developers, and end-users, will find this handbook very useful.

ICT SOLUTIONS FOR IMPROVING SMART COMMUNITIES IN ASIA

IGI Global It is also essential to study the success of technology use in some of the advanced nations in the Asian region that promote a smarter and well-advanced community. A smarter community in these regions can only be materialized by adopting the latest trends in technology to improve quality of life. Some of these regions need a great emphasis on technology adoption for women empowerment and safety, promoting better health with telemedicine facilities, environment, and disaster prevention with IoT technologies, water treatment and sanitation, and addressing food scarcity issues with smarter precision agriculture. Ultimately, there needs to be more research focused on a smarter and secured community in the Asian region in terms of cultural and socioeconomic factors and technology advancements. *ICT Solutions for Improving Smart Communities in Asia* explores new possibilities using digital solutions and technologies to create collaborative and smarter communities for advancement in agriculture, the health sector, education centers, human resources, and administrative domains, as well as other areas to improve the overall living standards of people at the community level. This book will cover two main areas: the need for technology development in developing nations, mainly focusing on Asia, and the adoption of some of the advanced regions in Asia as role models for the less developed SAARC regions explicitly. This book is ideally intended for researchers, academicians, IT specialists, regional developers, government officials, practitioners, academicians, and students.

BIOFIBERS AND BIOPOLYMERS FOR BIOCOMPOSITES

SYNTHESIS, CHARACTERIZATION AND PROPERTIES

Springer Nature This book summarizes recent developments in epoxy blends. It emphasizes new challenges for the synthesis, characterization, and properties of biofibers and biopolymers. It provides updates on all the important areas of biofibers and biopolymers in a comprehensive fashion, including synthesis, processing, characterisation and application. It provides a a one-stop reference for researchers and those working in industry and government. The book correlates macro, micro and nanostructure properties. Moreover, it provides cutting edge research from experts around the globe. The current status, trends, future directions and opportunities are discussed in detail, making the book also accessible for beginners to the subject and young researchers.

WAPDA ANNUAL REPORT

EMERGING COMMUNICATION TECHNOLOGIES BASED ON WIRELESS SENSOR NETWORKS

CURRENT RESEARCH AND FUTURE APPLICATIONS

CRC Press *Emerging Communication Technologies Based on Wireless Sensor Networks: Current Research and Future Applications* fills a gap in the existing literature by combining a plethora of WSN-based emerging technologies into a single source so that researchers can form opinions regarding these technologies. It presents different types of emerging communication technologies based on WSNs and describes how wireless sensor networks can be integrated with other communication technologies. It covers many of the new techniques and demonstrates the application of WSNs. The book's 14 chapters are divided into four parts. The first part covers the basics of wireless sensor networks and their principal working methods. The authors then move on to discuss different types of WSNs, characteristics of different types of emerging technologies based on WSNs, renewable energy sources, battery replenishment strategies, and application-specific energy challenges of WSNs. The second part is dedicated to issues related to wireless body area networks (WBANs). It discusses wearable WSNs and their applications, standards, and research trends. The authors also discuss routing schemes devised for WBANs and thermal-aware routing protocols for WBANs. The third part focuses on different emerging communication technologies based on WSNs, including electromagnetic wireless nanosensor networks, WSNs in the IoT, management of WSNs through satellite networks, WSNs in smart homes, and cognitive radio technology in conjunction with WSNs. The last part of the book covers topics generally related to typical WSNs, including energy-efficient data collection in WSNs, key distribution

mechanisms in WSNs, distributed data gathering algorithms for mobile WSNs, and finally, a novel mobility scheme for WSNs that supports IPv6.

DIVERSE APPLICATIONS OF NANOTECHNOLOGY IN THE BIOLOGICAL SCIENCES

AN ESSENTIAL TOOL IN AGRI-BUSINESS AND HEALTH CARE SYSTEMS

CRC Press *Diverse Applications of Nanotechnology in the Biological Sciences: An Essential Tool in Agri-Business and Health Care Systems* explores the diverse roles that nanobiotechnology plays in the medical sciences, pharmacy, healthcare, and in plants and agriculture. Looking at the diverse applications of nanotechnology in the healthcare field, the chapter authors discuss its importance in drug delivery, biomedical imaging and medical diagnostics, and healthcare management. The volume emphasizes how nanomedicine can treat different types of cancers and can improve medical imaging for the diagnosis of different kinds of diseases, resulting in quicker and more accurate diagnosis and better treatment options. The volume delves into nanobiotechnology in plants and its application in nanofertilizers and nano-pesticides in agriculture. It also documents how agri-nanobiotechnology can be a tool for innovative green technology that can be applied for global food security, biodiversity, and climate change solutions. The themes of nanobiotechnology in medicine and in plants are merged in the chapter on the types and therapeutic effects of plant product-based nanomedicine for malignancies. The potential toxicity of nanoparticles in plants is also elucidated. This volume provides an insightful overview of nanobiotechnology in medicine and in plants and agriculture that will be valuable for researchers and scientists and faculty and students in the areas of nanobiotechnology, agriculture, plant molecular biology, and medicine and healthcare.

DYE-SENSITIZED SOLAR CELLS

EMERGING TRENDS AND ADVANCED APPLICATIONS

Academic Press *Dye-Sensitized Solar Cells: Emerging Trends and Advanced Applications* is highly focused on addressing all aspects of dye sensitized solar cell technology. In this book, the authors present systematic analysis and working principles and detailed studies of individual components, manufacturing methods, software assisted design surrounding the technology market, commercialization potential, and performance evaluations and detailed fabrication methods and parameters. As there is no specific book which could encircle all the aspects of dye sensitized solar cells from its very basic working principles to advanced approaches to improve its efficiency, this book fills that gap. Providing a comprehensive study on dye sensitized solar cells, this reference covers basic working principles to advanced approaches in improving efficiency as well as thermodynamic and kinetic studies. It will be ideal for advanced

stage researchers and engineers looking to get a grip on DSSC technology. Provides a compilation of all-important principles and advanced research in the field of dye sensitized solar cells Specifies constituents of each DSSC, from basic to advanced level Details advances in fabrication and software assisted design of DSSC

WATER POLLUTION AND REMEDIATION: HEAVY METALS

Springer Nature Pollution of waters by toxic metals is accelerating worldwide due to industrial and population growth, notably in countries having poor environmental laws, resulting in many diseases such as cancer. Classical remediation techniques are limited. This books reviews new, advanced or improved techniques for metal removal, such as hybrid treatments, nanotechnologies and unconventional adsorbents, e.g. metal-organic frameworks. Contaminants include rare earth elements, arsenic, lead, cadmium, chromium, copper and effluents from the electronic, textile, agricultural and pharmaceutical industries.

CASES ON ICT UTILIZATION, PRACTICE AND SOLUTIONS: TOOLS FOR MANAGING DAY-TO-DAY ISSUES

TOOLS FOR MANAGING DAY-TO-DAY ISSUES

IGI Global "This book presents in-depth insight through a case study approach into the current state of research in ICT as well as identified successful approaches, tools and methodologies in ICT research"--Provided by publisher.

NANOMEDICINE MANUFACTURING AND APPLICATIONS

Elsevier Nanomedicine explores the modification and enhancement of the properties and performances of typical drugs to treat various diseases. Nano-based medicines have advantages in several ways, such as in nanotherapeutics, nanotheranostics, and nanodiagnosics. Nanomedicine Manufacturing and Applications effectively explores the major manufacturing techniques and applications of nanomaterial-based medicine in the areas of chemotherapy, biochips, insulin pumps, and other treatment methods. This book explains how nanomedicines are developed from nanoparticles as well as their biomedical and other applications related to healthcare. This book is an important reference source for nanoscientists, biomaterials scientists, and biomedical engineers who want to learn more about how nano-based medicines are made and used. Outlines the process of making nanomedicine as well as nanodrug carriers, with a focus on nanomedicine for cancer treatment. Explains the formulation and manufacturing process of nanomedicines, showing how to build these materials. Demonstrates how nano-based medicines are being used to tackle a range of diseases in a way that conventional medicines cannot.

ADVANCEMENTS IN IIMI'S RESEARCH 1989-91

A SELECTION OF PAPERS PRESENTED AT INTERNAL PROGRAM REVIEWS

IWMI Financial and human resources : irrigation investment trends in Sri Lanka, implication for policy and research in irrigation management;organizational dynamics in a corporate-type irrigation organization, and analysis of the national irrigation administration in the Philippines;system turnover to farmers in the Philippines;management training through special awards;reinforcing management at system level: a comparative study of farmer-managed systems in northern Pakistan;irrigation management for crop diversification;studies on rice-based irrigation systems management in Bangladesh;emerging issues and trends:issues in conjunctive management of groundwater and surface irrigation systems in Punjab, Pakistan, an initial assessment;salinity in Punjab watercourse commands and irrigation systems operations;application of mathematical models for simulation of canal operations at Kirindi Oya, Sri Lanka, preliminary results;towards better performance:performance of new irrigation settlement schemes, a case study of kirindi Oya, Sri Lanka;performance of secondary canals in Pakistan Punjab, research on equity and variability at the distributary level.

MICROALGAE CULTIVATION FOR BIOFUELS PRODUCTION

Academic Press Microalgae Cultivation for Biofuels Production explores the technological opportunities and challenges involved in producing economically competitive algal-derived biofuel. The book discusses efficient methods for cultivation, improvement of harvesting and lipid extraction techniques, optimization of conversion/production processes of fuels and co-products, the integration of microalgae biorefineries to several industries, environmental resilience by microalgae, and a techno-economic and lifecycle analysis of the production chain to gain maximum benefits from microalgae biorefineries. Provides an overview of the whole production chain of microalgal biofuels and other bioproducts Presents an analysis of the economic and sustainability aspects of the production chain Examines the integration of microalgae biorefineries into several industries