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Biological Synthesis of Nanoparticles and Their Applications gives insight into the synthesis of nanoparticles utilizing the natural routes. It demonstrates various strategies for the synthesis of nanoparticles utilizing plants, microscopic organisms like bacteria, fungi, algae and so forth. It orchestrates interdisciplinary hypothesis, ideas, definitions, models and discoveries associated with complex cell of the prokaryotes and eukaryotes. Highlights: Discusses biological approach towards the nanoparticle synthesis Describes the role of nanotechnology in the field of medicine and its medical devices Covers application and usage of the chemicals at the molecular level to act as catalysts and binding products for both organic and inorganic Chemical Reactions Reviews application in physics such as solar cells, photovoltaics and other usage Microorganisms can aggregate and detoxify substantial metals because of different reductase enzymes, which can diminish metal salts to metal nanoparticles. The readers after going through this book will have detailed account of mechanism of bio-synthesis of nanoparticles.

The management of irrigation systems is context-dependent, socially constructed, and technically uncertain. An example of complex social-ecological systems, irrigation deals with both the ecosystem uncertainty and the implementation of new technological systems and water management options. Issues to be addressed by irrigation systems at the global scale include: water productivity and food security, field operation and maintenance, spate irrigation in climate change scenarios, and vulnerability of environmental resources. This book provides examples of some of the current challenges faced by irrigation systems from technical and social perspectives. The book offers an easy-to-follow format focused on different case studies combining evidence-based solutions for increasing resilience and reducing vulnerability of irrigation systems in semi-arid and arid regions across the world.

The diagnosis and treatment of disease is a primary concern for health professionals and all of society. With the growing use of alternative medicine, patients can receive a wider scope of potential treatment options. Complementary and Alternative Medicine: Breakthroughs in Research and Practice is a critical reference source for the latest research findings on the application of complementary and alternative medicine in the prevention and treatment of numerous diseases. Highlighting a range of pertinent topics such as herbal remedies, antioxidants, and functional foods, this book is an ideal reference source for medical practitioners, medical professionals, and researchers interested in emerging trends in alternative medicinal practices.

Zero Waste: Management Practices for Environmental Sustainability presents approaches for resource management centered on reducing waste and reusing and recycling materials. It aims to save energy by reducing energy consumption associated with extracting, processing, and transporting raw materials and waste, and also to reduce and eventually eliminate the need for landfills and incinerators. This book presents the various principles, methods, and tools that can be used to address different issues in the areas of industrial waste reduction and sustainability. It examines how to eliminate waste at the source and at all points of a supply chain, and how to shift from the current one-way linear resource model to a sustainable "closed-loop" system. Proposes strategies for businesses to reduce and reuse waste with a goal of reaching a zero waste status. Focuses on how mitigating waste and promoting recycling can save vast amounts of energy. Explains how the zero waste approach would be a key measure to ensure environmental sustainability and help to offset global climate change.

Nanomaterials have been used for years in industries such as consumer products, textile production, and biomedicine, yet the literature outlining their use in environmental causes is limited. The safety, toxicity, transportation, and removal of this technology must be addressed as nanotechnology and nanomaterial use is expected to grow. Applying Nanotechnology for Environmental Sustainability addresses the applications of nanomaterials in the field of environmental conservation and sustainability, and analyses the potential risks associated with their use. It elucidates the scientific concepts and emerging technologies in nanoscience and nanotoxicity by offering a wide range of innovative topics and reviews regarding its use. This publication is essential for environmental engineers, researchers, consultants, students, regulators, and professionals in the field of nanotechnology.

Neutrosophic Sets and Systems (NSS) is an academic journal, published quarterly online and on paper, that has been created for publications of advanced studies in neutrosophy, neutrosophic set, neutrosophic logic, neutrosophic probability, neutrosophic statistics etc. and their applications in any field.

Power and Energy Engineering are important and pressing topics globally, covering issues such as shifting paradigms of energy generation and consumption, intelligent grids, green energy and environmental protection. The 11th Asia-Pacific Power and Energy Engineering Conference (APPEEC 2019) was held in Xiamen, China from April 19 to 21, 2019. APPEEC has been an annual conference since 2009 and has been successfully held in Wuhan (2009 & 2011), Chengdu (2010 & 2017), Shanghai (2012 & 2014), Beijing (2013 & 2015), Suzhou (2016) and Guilin (2018), China. The objective of APPEEC 2019 was to provide scientific and professional interactions for the advancement of the fields of power and energy engineering. APPEEC 2019 facilitated the exchange of insights and innovations between industry and academia. A group of excellent speakers have delivered keynote speeches on emerging technologies in the field of power and energy engineering. Attendees were given the opportunity to give oral and poster presentations and to interface with invited experts.

Bioactive compounds are abundant in nature, particularly in plants, which have the capacity to synthesize phenolics, flavonoids, caffeine, carotenoids, and much more. Different bioactive compounds can change or alter the life process due to their different biological activities. This book examines bioactive compounds and their sources, structures, and potential uses in various industries, including pharmaceuticals, medicine, cosmetics, and food processing.

Computer vision and object recognition are two technological methods that are frequently used in various professional disciplines. In order to maintain high levels of quality and accuracy of services in these sectors, continuous enhancements and improvements are needed. The implementation of artificial intelligence and machine learning has assisted in the development of digital imaging, yet proper research on the applications of these advancing technologies is lacking. Applications of Advanced Machine Intelligence in Computer Vision and Object Recognition: Emerging Research and Opportunities explores the theoretical and practical aspects of modern advancements in digital image analysis and object detection as well as its applications within healthcare, security, and engineering fields. Featuring coverage on a broad range of topics such as disease detection, adaptive learning, and automated image segmentation, this book is ideally designed for engineers, physicians, researchers, academicians, practitioners, scientists, industry professionals, scholars, and students seeking research on the current developments in object recognition using artificial intelligence. This volume gathers selected, peer-reviewed original contributions presented at the International Conference on Computational Vision and Bio-inspired Computing (ICCVBIC) conference which was held in Coimbatore, India, on November 29-30, 2018. The works included here offer a rich and diverse sampling of recent developments in the fields of Computational Vision, Fuzzy, Image Processing and Bio-inspired Computing. The topics covered include computer vision; cryptography and digital privacy; machine learning and artificial neural networks; genetic algorithms and computational intelligence; the Internet of Things; and biometric systems, to name but a few. The applications discussed

range from security, healthcare and epidemic control to urban computing, agriculture and robotics. In this book, researchers, graduate students and professionals will find innovative solutions to real-world problems in industry and society as a whole, together with inspirations for further research.

International Journal of Advanced Remote Sensing and GIS (IJARSG, ISSN 2320 – 0243) is an open-access peer-reviewed scholarly journal publishes original research papers, reviews, case study, case reports, and methodology articles in all aspects of Remote Sensing and GIS including associated fields. This Journal commits to working for quality and transparency in its publishing by following standard Publication Ethics and Policies.

This book reports on the latest advances in and applications of memristors, memristive devices and systems. It gathers 20 contributed chapters by subject experts, including pioneers in the field such as Leon Chua (UC Berkeley, USA) and R.S. Williams (HP Labs, USA), who are specialized in the various topics addressed in this book, and covers broad areas of memristors and memristive devices such as: memristor emulators, oscillators, chaotic and hyperchaotic memristive systems, control of memristive systems, memristor-based min-max circuits, canonic memristors, memristive-based neuromorphic applications, implementation of memristor-based chaotic oscillators, inverse memristors, linear memristor devices, delayed memristive systems, flux-controlled memristive emulators, etc. Throughout the book, special emphasis is given to papers offering practical solutions and design, modeling, and implementation insights to address current research problems in memristors, memristive devices and systems. As such, it offers a valuable reference book on memristors and memristive devices for graduate students and researchers with a basic knowledge of electrical and control systems engineering.

Fiber-reinforced composites are exceptionally versatile materials whose properties can be tuned to exhibit a variety of favorable properties such as high tensile strength and resistance against wear or chemical and thermal influences. Consequently, these materials are widely used in various industrial fields such as the aircraft, marine, and automobile industry. After an overview of the general structures and properties of hybrid fiber composites, the book focuses on the manufacturing and processing of these materials and their mechanical performance, including the elucidation of failure mechanisms. A comprehensive chapter on the modeling of hybrid fiber composites from micromechanical properties to macro-scale material behavior is followed by a review of applications of these materials in structural engineering, packaging, and the automotive and aerospace industries.

The continued growth of any nation depends largely on the development of their built infrastructures and communities. By creating stable infrastructures, countries can more easily thrive in competitive international markets. Sustainable Infrastructure: Breakthroughs in Research and Practice examines sustainable development through the lens of transportation, waste management, land use planning, and governance. Highlighting a range of topics such as sustainable development, transportation planning, and regional and urban infrastructure planning, this publication is an ideal reference source for engineers, planners, government officials, developers, policymakers, legislators, researchers, academicians, and graduate-level students seeking current research on the latest trends in sustainable infrastructure.

Aquaculture and By-products: Challenges and Opportunities, Volume 92 in the Advances in Food and Nutrition Research series, explores the potential use of aquaculture and by-products as sources of proteins and bioactive compounds. Alternative extraction techniques to obtain, isolate and purify proteins and bioactive from aquaculture and by-products are thoroughly discussed. Chapters in this new volume include Alternative extraction techniques to obtain, isolate and purify proteins and bioactive from aquaculture and by-products, Development of new food and pharmaceutical products: Nutraceuticals and food additives, Evaluation of the protein and bioactive compound bioaccessibility/bioavailability and cytotoxicity of the extracts obtained from aquaculture and by-products, and more.

The book presents high-quality research papers from the Seventh International Conference on Solid Waste Management (IconSWM 2017), held at Professor Jayashankar Telangana State Agricultural University, Hyderabad on December 15–17, 2017. The conference, an official side event of the high-level Intergovernmental Eighth Regional 3R Forum in Asia and the Pacific, aimed to generate scientific inputs into the policy consultation of the Forum co-organized by the UNCRD/UNDESA, MoEFCC India, MOUD India and MOEJ, Japan. Presenting research on solid waste management from more than 30 countries, the book is divided into three volumes and addresses various issues related to innovation and implementation in sustainable waste management, segregation, collection, transportation of waste, treatment technology, policy and strategies, energy recovery, life cycle analysis, climate change, research and business opportunities.

Green pesticides, also called ecological pesticides, are pesticides derived from organic sources which are considered environmentally friendly and are causing less harm to human and animal health and to habitats and the ecosystem. Essential oils based insecticides started have amazing features. This book gives a full spectrum of the whole range of essential oil based pesticides that may be used in pest control. It discusses the uses and limitations, including the recent advances in this area. It describes the metabolism and mode of action, and provides the present status of essential oil based pesticide residues in foodstuffs, soil and water.

This book is a collection of accepted papers that were presented at the International Conference on Communication and Computing Systems (ICCCS-2016), Dronacharya College of Engineering, Gurgaon, September 9–11, 2016. The purpose of the conference was to provide a platform for interaction between scientists from industry, academia and other areas of society to discuss the current advancements in the field of communication and computing systems. The papers submitted to the proceedings were peer-reviewed by 2-3 expert referees. This volume contains 5 main subject areas: 1. Signal and Image Processing, 2. Communication & Computer Networks, 3. Soft Computing, Intelligent System, Machine Vision and Artificial Neural Network, 4. VLSI & Embedded System, 5. Software Engineering and Emerging Technologies.

Key Heterocycle Cores for Designing Multitargeting Molecules provides a helpful overview of current developments in the

field. Following a detailed introduction to the manipulation of heterocycle cores for the development of dual or multitargeting molecules, the book goes on to describe specific examples of such developments, focusing on compounds such as Benzimidazole, Acridine, Flavones, Thiazolidinedione and Oxazoline. Drawing on the latest developments in the field, this volume provides a valuable guide to current approaches in the design and development of molecules capable of acting on multiple targets. Adapting the heterocyclic core of a single-target molecule can facilitate its development into an agent capable of acting on multiple targets. Such multi-targeting drugs have the potential to become essential components in the design of novel, holistic treatment plans for complex diseases, making the design of such active agents an increasingly important area of research. Emphasizes the chemical development of heterocyclic nuclei, from single to multitargeting molecules Provides chapter-by-chapter coverage of the key heterocyclic compounds used in synthesizing multitargeting agents Outlines current trends and future developments in multitarget molecule design for the treatment of various diseases

Phytomedicine: A Treasure of Pharmacologically Active Products from Plants aims to present updated knowledge of plant-based medicines in terms of their research and development, production, and utilization, from the viewpoint of sustainability and by using the latest technologies. The book explores different phytometabolites on a mass scale, coupled with the efficacy, performance and applicability on target organisms to treat curable and fatal diseases. Readers will find a coherent package of phytotherapeutic information regarding inclusive assortment of research based, scientific amplitude of metabolites from the plant world encompassing various action plans. Information is presented sequentially regarding phytochemistry, biological activity and the serviceable aspects of bioactive compounds. The book also addresses various advancements and achievements of novel drugs from plants using molecular and enzymatic activities, and various technological tools in an ecofriendly fashion. Discusses phytotherapeutic properties for a wide range of medical conditions, including anti-pyretic, anti-infective, anti-malarial, Anti-AIDS, anti-diabetic, anti-cancerous, immune-modulatory applications Includes a discussion of synergistic effects of formulations and antagonistic drug interactions Addresses advancements and achievements of novel plant-based drugs using molecular, enzymatic activities and various technological tools in an eco-friendly fashion

Environmental sustainability is one of the biggest issues faced by the mankind. Rapid & rampant industrialization has put great pressure on the natural resources. To make our planet a sustainable ecosystem, habitable for future generations & provide equal opportunity for all the living creatures we not only need to make corrections but also remediate the polluted natural resources. The low-input biotechnological techniques involving microbes and plants can provide the solution for resurrecting the ecosystems. Bioremediation and biodegradation can be used to improve the conditions of polluted soil and water bodies. Green energy involving biofuels have to replace the fossil fuels to combat pollution & global warming. Biological alternatives (bioinoculants) have to replace harmful chemicals for maintaining sustainability of agro-ecosystems. The book will cover the latest developments in environmental biotech so as to use in clearing and maintaining the ecosystems for sustainable future.

Environmental nanotechnology is considered to play a key role in shaping of current environmental engineering and science practices. This book titled "Environmental Nanotechnology" covers the advanced materials, devices, and system development for use in the environmental protection. The development of nano-based materials, understanding their chemistry and characterization using techniques like X-Ray diffraction, FT-IR, EDX, scanning electron microscope (SEM), transmission electron microscope (TEM), high resolution-TEM, etc is included. It also highlights the scope for their applications in environmental protection, environmental remediation and environmental biosensors for detection, monitoring and assessment. Key Features: Covers basic to advanced Nano-based materials, their synthesis, development, characterization and applications and all the updated information related to environmental nanotechnology. Discusses implications of nanomaterials on the environment and applications of nanotechnology to protect the environment. Illustrates specific topics such as ethics of nanotechnology development, Nano-biotechnology, and application in wastewater technology. Includes applications of nanomaterials for combating global climate change and carbon sequestration. Gives examples of field applications of environmental nanotechnology. This book covers advanced materials, devices, and system developments for use in environmental protection. The development of nano-based materials, understanding its chemistry and characterization by the use of X-Ray diffraction, FT-IR, EDX, scanning electron microscope (SEM), transmission electron microscope (TEM), and high resolution-TEM give the scope for their application in environmental protection, environmental remediation, and environmental biosensors for detection, monitoring, and assessment. The green chemistry based on nano-based materials prevents pollution and controls environmental contaminants.

"Neutrosophic Sets and Systems" has been created for publications on advanced studies in neutrosophy, neutrosophic set, neutrosophic logic, neutrosophic probability, neutrosophic statistics that started in 1995 and their applications in any field, such as the neutrosophic structures developed in algebra, geometry, topology, etc.

Sustainability Concept in Developing Countries is a collection of seven studies addressing the issue of sustainability from the perspective of developing countries. Although it is not a comprehensive review of all developing countries, these contributions do portray some of the major issues in achieving sustainability in many developing countries. The book is divided into two parts: Part 1 includes chapters related to concepts and methodology relevant to sustainability in the context of developing countries. Part 2 presents some actual case studies including descriptions of the situations and advice on how to address sustainability in such economies. This book is a useful reference for professionals in developing countries as well as other jurisdictions.

Pharmacognosy is a term derived from the Greek words for drug (pharmakon) and knowledge (gnosis). It is a field of study within Chemistry focused on natural products isolated from different sources and their biological activities. Research on natural products began more than a

hundred years ago and has continued up to now with a plethora of research groups discovering new ideas and novel active constituents. This book compiles the latest research in the field and will be of interest to scientists, researchers, and students.

This book covers the essentials of drug delivery research and provides a unique forum for scientific experimental methods that are exclusively focused by the in-vitro, ex-vivo, and in-vivo methodologies of drug delivery research and facilitates translational research. The book includes recent and novel approaches in evaluation methods of transdermal, nasal, ocular, oral and intraoral, gastro-retentive, colon-targeted, and brain-targeted drug delivery systems. Providing up to date and comprehensive information, this text is invaluable to students, teachers, scientists, and others employed in the field of drug delivery.

This book presents studies on colloidal particle/nanoparticle systems and their applications. Some of the topics covered are include nanoparticle-based drug design, theranostic nanoparticles for cancer therapy, market perspectives of colloidal particles, and stability of nanoparticles. The authors focus on recent findings, applications, and new technological developments of the fundamental properties of colloidal particle systems.

This book is a guide for researchers who are involved in statistical, mathematical, information technology and decision science analyses. The purpose of the book is to allow readers to get research ideas on a wide range of topics, such as sampling plans, capital budgeting, completion time in production line, searching pattern for mobile cache replacement policy, home security system with biometric finger print and web service technology. The analyses in each chapter are explained in detail with samples of real applications in daily life to assist readers to appreciate theoretical, algorithm and mathematical formulations. Prior to reading this book, readers are advised to have some basic foundation in statistical sampling, tabu search approach, neural network, algorithms, and mathematical formulation. This book will be beneficial to students and researchers who are looking for research topic of the research and how problems can be solved using an applied method.

Liquid crystals have attracted scientific attention for potential applications in advanced devices. Display technology is continuously growing and expanding and, as such, this book provides an overview of the most recent advances in liquid crystals and displays. Chapters cover such topics as nematic liquid crystals, active matrix organic light-emitting diodes, and tetradentate platinum(II) emitters, among others.

The book reports on the latest advances in and applications of fractional order control and synchronization of chaotic systems, explaining the concepts involved in a clear, matter-of-fact style. It consists of 30 original contributions written by eminent scientists and active researchers in the field that address theories, methods and applications in a number of research areas related to fractional order control and synchronization of chaotic systems, such as: fractional chaotic systems, hyperchaotic systems, complex systems, fractional order discrete chaotic systems, chaos control, chaos synchronization, jerk circuits, fractional chaotic systems with hidden attractors, neural network, fuzzy logic controllers, behavioral modeling, robust and adaptive control, sliding mode control, different types of synchronization, circuit realization of chaotic systems, etc. In addition to providing readers extensive information on chaos fundamentals, fractional calculus, fractional differential equations, fractional control and stability, the book also discusses key applications of fractional order chaotic systems, as well as multidisciplinary solutions developed via control modeling. As such, it offers the perfect reference guide for graduate students, researchers and practitioners in the areas of fractional order control systems and fractional order chaotic systems.

This book focuses on the application of workstudy in productivity of manufacturing SMEs locally and abroad and also explores various industrial problems which face manufacturing SMEs in developing and underdeveloped countries in the rest of the world. Low productivity is currently a serious challenge facing manufacturing SMEs, where these SMEs are operating below expected production output levels which makes it difficult for them to compete in the global market. SMEs are the engine drivers of economic growth, one of which is manufacturing. The challenge is that government from various countries in developing and underdeveloped countries, mandated agencies in their respective areas, to ensure that there is economic progress for these SMEs, but productivity remains low in the manufacturing SMEs. When SMEs do not perform well, productivity of manufacturing SMEs declines and unemployment increases. Thus, an increase in unemployment results in a drop of GDP in the country and can become a global and economic crisis. This book describes a process which enables the reader to use effective knowledge that addresses problems facing the productivity of manufacturing SMEs such as work study tools and case studies and provides solutions and applications to improve the running of the manufacturing SMEs in growing their productivity.

Complex systems are pervasive in many areas of science. With the increasing requirement for high levels of system performance, complex systems has become an important area of research due to its role in many industries. Advances in System Dynamics and Control provides emerging research on the applications in the field of control and analysis for complex systems, with a special emphasis on how to solve various control design and observer design problems, nonlinear systems, interconnected systems, and singular systems. Featuring coverage on a broad range of topics, such as adaptive control, artificial neural network, and synchronization, this book is an important resource for engineers, professionals, and researchers interested in applying new computational and mathematical tools for solving the complicated problems of mathematical modeling, simulation, and control.

Conference Proceedings of 20th European Conference on Research Methods in Business and Management
Fractional Order Control and Synchronization of Chaotic SystemsSpringer

There are many factors to be considered when examining the current state of environmental problems in the modern world. By addressing these causes, the preservation of ecosystems and environmental resources can be maintained. Environmental Issues Surrounding Human Overpopulation is an authoritative reference source for the latest scholarly research on the depletion of natural resources due to overpopulation and presents insights on how these environmental threats can be addressed. Highlighting technological, economic, and social perspectives, this book is ideally designed for policymakers, researchers, academics, students, and practitioners interested in better understanding the current state of the global environment.

Microbial Cell Factories is a conceptual, reference-based source including chapters covering microbial cell factories for industrial developments, microbial biotechnology, sustainable environmental solutions, agriculture practices, microorganisms in food processing, metabolites as next generation food additives/food processing, and microbial cell factories in alternative energy fuel generation. The book highlights trends and developments in the field of microbial products, written by an international team of leading academic and research scholars. Key Selling Features: Highlights trends and developments in microbial biotechnology Systematically reviews microbial cell factories Explores the potential of microbial cell derived industrial production Synthesizes information on environmental and agricultural uses of microbial biotechnology Contributions from an international team of leading scholars

Medical and information communication technology professionals are working to develop robust classification techniques, especially in healthcare data/image analysis, to ensure quick diagnoses and treatments to patients. Without fast and immediate access to healthcare databases and information, medical professionals' success rates and treatment options become limited and fall to disastrous levels. Advanced Classification Techniques for Healthcare Analysis provides

emerging insight into classification techniques in delivering quality, accurate, and affordable healthcare, while also discussing the impact health data has on medical treatments. Featuring coverage on a broad range of topics such as early diagnosis, brain-computer interface, metaheuristic algorithms, clustering techniques, learning schemes, and mobile telemedicine, this book is ideal for medical professionals, healthcare administrators, engineers, researchers, academicians, and technology developers seeking current research on furthering information and communication technology that improves patient care.

Ayurveda or "the sacred knowledge of longevity" has been practiced in India and many Asian countries since time immemorial. Interest in Ayurveda started growing all over the world in the late 1970s, following the Alma Ata Declaration adopted by the W.H.O. in 1978. Ayurveda in the New Millennium: Emerging Roles and Future Challenges attempts to survey the progress made in this field and to formulate a course of action to take Ayurveda through the new millennium. It also identifies the many stumbling blocks that need to be removed if Ayurveda is to cater to the needs of a wider audience. Features: Newer insights into the history of Ayurveda Regulatory aspects of the manufacture of ayurvedic medicines Industrial production of traditional ayurvedic medicines Quality control The scientific rationale of single herb therapy Biological effects of ayurvedic formulations Optimization of ancient wisdom and newer knowledge Conservation of threatened herbs Nutraceuticals and cosmeceuticals from Ayurveda Critical view of Ayurveda in the West Direction for the Ayurveda renaissance Ayurveda in the New Millennium: Emerging Roles and Future Challenges describes the strength of Ayurveda and how to usher in the Ayurveda renaissance. This book will be of interest to proponents of Ayurveda and all branches of traditional and alternative medicine. Experts from the fields of medicine, pharmacology, new drug discovery and food technology will also find it useful.

With distributed generation interconnection power flow becoming bidirectional, culminating in network problems, smart grids aid in electricity generation, transmission, substations, distribution and consumption to achieve a system that is clean, safe (protected), secure, reliable, efficient, and sustainable. This book illustrates fault analysis, fuses, circuit breakers, instrument transformers, relay technology, transmission lines protection setting using DIGsILENT Power Factory. Intended audience is senior undergraduate and graduate students, and researchers in power systems, transmission and distribution, protection system broadly under electrical engineering.

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