

# Model Practical Paper Governmetn Colege Univesity Faisalabad

*Bionanocomposites Algae Based Polymers, Blends, and Composites* Ultrasound and Microwave for Food Processing **Handbook of Bioremediation** Sodium Alginate-Based Nanomaterials for Wastewater Treatment **Plant Ecophysiology and Adaptation under Climate Change: Mechanisms and Perspectives II** World List of Universities /Liste Mondiale des Universites **Green Sustainable Process for Chemical and Environmental Engineering and Science A Centum of Valuable Plant Bioactives** World List of Universities / Liste Mondiale des Universites Endocrine Disrupting Chemicals-induced Metabolic Disorders and Treatment Strategies **Microbial Consortium and Biotransformation for Pollution Decontamination** *Plant Ecophysiology and Adaptation under Climate Change: Mechanisms and Perspectives I* **World List of Universities / Liste Mondiale des Universités** World List of Universities 1977-78 / Liste Mondiale des Universites Environmental Micropollutants Phytochemicals from Medicinal Plants **Plant Tolerance to Environmental Stress** **Food Safety Practices in the Restaurant Industry** **American Universities Abroad** *Public Sector Reforms in Pakistan* **Antibiotics and Antimicrobial Resistance Genes** Human Health Benefits of Plant Bioactive Compounds *Biochemistry of Drug Metabolizing Enzymes* **Green Chemistry for Sustainable Textiles** **Anti-Angiogenesis Drug Discovery and Development: Volume 5** Cold Pressed Oils Frontiers in Natural Product Chemistry: Volume 8 Plant Metabolites and Regulation under Environmental Stress **Advances in Dairy Microbial Products** **Engineering Tolerance in Crop Plants Against Abiotic Stress** **Water Pollution and Remediation: Organic Pollutants** **Phytomedicine and Alzheimer's Disease** **Antecedents and Outcomes of Employee-Based Brand Equity** **Environmental Microbiology: Advanced Research and Multidisciplinary Applications** **Drug Target Selection and Validation** **The COVID-19 Pandemic** **Methods for Bioremediation of Water and Wastewater Pollution** **Processing Technology for Bio-Based Polymers** *Nanotherapeutic Strategies and New Pharmaceuticals (Part 2)*

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**Advances in Dairy Microbial Products** Apr 27 2020 **Advances in Dairy Microbial Products** presents a thorough reference that explains the makeup of these products in a scientifically sound, yet simple manner. It offers both established and cutting-edge solutions on the numerous challenges commonly encountered in the industrial processing of milk and the production of milk products. It is an ideal resource for researchers and practitioners involved in dairy science, particularly those who wish to gain the most thorough and up-to-date information on dairy microbial products. In addition, it will appeal to beginners seeking to understand how advanced dairy technologies can be used to increase the efficiency of current techniques. Examines the advances of dairy products in healthcare, environment and industry Elaborates upon advanced perspectives, wide applications,

traditional uses and modern practices of harnessing potential of microbial products Includes helpful illustrations of recent trends in dairy product research

**World List of Universities / Liste Mondiale des Universités** Sep 13 2021

**Human Health Benefits of Plant Bioactive Compounds** Dec 04 2020 Focusing on the importance of functional foods and their secondary metabolites for human health, this volume presents new insights with scientific evidence on the use of functional foods in the treatment of certain diseases. The plants covered and their bioactive compounds are easily accessible and are believed to be effective with fewer side effects in comparison with modern drugs in the treatment of different diseases. The plants contain chemical compounds that can modify and modulate biological systems, eliciting therapeutic effects. Some plants and derived products mentioned include black carrot, olive oil, citrus peel, grapes, candy leaf, cereals and grains, and green and black tea. The volume is divided into four sections that cover these topics: Functional foods for human health: the available sources, biochemistry, structural composition, and different biological activities, especially antioxidant activity. Pharmacological aspects of fruits and vegetables: the extraction of bioactive molecules, phytochemistry, and biological activities of a selection of plants. Pharmacological aspects of natural products: bioactive compounds, structural attributes, bioactivity of anthocyanin, piceatannol, and a review of the ethnobotany and medicinal properties of green and black tea. Pharmacological aspects of cereals and grains: the health benefits of flaxseed, wheatgrass juice, and use and therapeutic potential as supplements for disease management.

**Methods for Bioremediation of Water and Wastewater Pollution** Aug 20 2019 This book presents advanced techniques for wastewater treatment and the chapters review the environmental impact of water pollution, the analysis of water quality, and technologies for the preservation of water resources. Also outlined in this volume is the bioremediation of heavy metals, dyes, bisphenols, phthalates, cyanobacteria in contaminated water and wastewater. Another focus of this book is the use of natural remediation techniques such as bacterial biofilms and enzymes.

**Microbial Consortium and Biotransformation for Pollution Decontamination** Nov 15 2021 Microbial Consortium and Biotransformation for Pollution Decontamination presents techniques for the decontamination of polluted environs through potential microbes, particularly examining the benefits of its broad applicability, sustainability and eco-friendly nature. Utilizing global case studies to describe practical applications of the technology, the book offers insights into the latest research on advanced microbiological tools and techniques for the remediation of severe pollutants from the environment. Environmental researchers and environmental managers focusing on pollution and decontamination will find both key contextual information and practical details that are essential in understanding the use of microbial technology for combatting pollutants. Recent advancements in the field of NGS (next-generation sequencing) have allowed more detailed genomic, bioinformatics and metagenomic analyses of potential environmentally important microbes that have led to significant breakthroughs into key bio-degradative pathways. With the increase in human activities around the globe, toxic pollutants from multiple sources have contaminated the earth on a large number scale. Explores advanced microbiological tools and techniques for the remediation of severe pollutants from the environment Presents practical case studies and examples of the use of microbial technology for decontamination from across the globe Provides insights into key elements of microbiological consortia and their role in decontamination, particularly the impact of these techniques on sustainability, ecology and economy

**Plant Ecophysiology and Adaptation under Climate Change: Mechanisms and Perspectives I** Oct 14 2021 This book presents the state-of-the-art in plant ecophysiology. With a particular focus on adaptation to a changing environment, it discusses ecophysiology and adaptive mechanisms of plants under climate change. Over the centuries, the incidence of various abiotic stresses such as salinity, drought, extreme temperatures, atmospheric pollution, metal toxicity due to climate change have regularly affected plants and, and some estimates suggest that environmental stresses may reduce the crop yield by up to 70%. This in turn adversely affects the food security. As sessile organisms, plants are frequently exposed to various environmental adversities. As such, both plant

physiology and plant ecophysiology begin with the study of responses to the environment. Provides essential insights, this book can be used for courses such as Plant Physiology, Environmental Science, Crop Production and Agricultural Botany. Volume 1 provides up-to-date information on the impact of climate change on plants, the general consequences and plant responses to various environmental stresses.

*Public Sector Reforms in Pakistan* Feb 06 2021 This book provides a research-based analysis of public sector reforms in Pakistan. It offers a broad overview of reforms at different levels of government - including federal, provincial and local - and examines decentralization and devolution reforms in various policy sectors. It also reflects on market-oriented reforms and the steps taken to involve the private sector to build a better-governed public sector, and explores new trends in the public sector in the areas of digitalisation and disaster management. Bringing together young researchers, academics, and practitioners, the book sets a new milestone in the movement towards context-specific reform studies in both academia and the professional practice of public administration, particularly in South Asia.

**Drug Target Selection and Validation** Oct 22 2019 The first book in the newly created book series, *Computer-Aided Drug Discovery and Design*, focuses on the computational aspects of early drug discovery, drug target identification, and validation. It revises current classical paradigms in target and phenotypic-based drug design with still ingrained approximations and concepts and discusses the research in the new network approach concept that include kinetic selectivity and metabolic analysis. Many often-overlooked approximations and concepts in drug discovery are fully covered. *Drug Target Selection and Validation* includes both introductory sections and research-based sections to be of use to both students and research scientists in drug discovery, design, kinetics and metabolic analysis. Pharmaceutical scientists, pharmaceuticals, drug developers, pharmacologists, biomedical researchers in computer science, medicinal chemists, and precision medicine developers benefit from the information provided. The book concludes with a chapter on chemical and structural databases.

**Antibiotics and Antimicrobial Resistance Genes** Jan 05 2021 This volume summarizes and updates information about antibiotics and antimicrobial resistance (AMR)/antibiotic resistant genes (ARG) production, including their entry routes in soil, air, water and sediment, their use in hospital and associated waste, global and temporal trends in use and spread of antibiotics, AMR and ARG. Antimicrobial/antibiotic resistance genes due to manure and agricultural waste applications, bioavailability, biomonitoring, and their Epidemiological, ecological and public health effects. The book addresses the antibiotic and AMR/ARG risk assessment and treatment technologies, for managing antibiotics and AMR/ARG impacted environments The book's expert contributions span 20 chapters, and offer a comprehensive framework for better understanding and analyzing the environmental and social impacts of antibiotics and AMR/ARGs. Readers will have access to recent and updated models regarding the interpretation of antibiotics and AMR/ARGs in environment and biomonitoring studies, and will learn about the management options require to appropriately mitigate environmental contaminants and pollution. The book will be of interest to students, teachers, researchers, policy makers and environmental organizations.

*Biochemistry of Drug Metabolizing Enzymes* Nov 03 2020 *Biochemistry of Drug Metabolizing Enzymes: Trends and Challenges* is a complete and well-integrated reference on their mechanisms of action, their role in diseases, agents responsible for their deactivation, and their malfunction. Chapters explain the biochemistry of DMEs, including biochemical activation, functions, computational approaches, different contaminants on the action and function of DMEs, and describe the importance of DMEs in the drug development process. Conditions covered include metabolic diseases, cardiovascular diseases, neurological diseases, physiological diseases, xenobiotics and inflammatory responses, and their contribution in the malfunctioning of drug metabolizing enzymes. This book is the perfect resource for pharmacology and biochemistry researchers to understand the principles of DMEs. Researchers in the corporate environment will also benefit from the comprehensive list of diseases associated with malfunction of DMEs. Includes extensive

classification of DMEs, their mechanism of action and computational analysis Covers the biotransformation of drug by DMEs and the possible impact of environmental contaminants Discusses the activity of DMEs in different clinical conditions such as cardiovascular disease, metabolic disorders, inflammation and neurotoxicity Includes modern and novel bioanalytical techniques to predict the effect of DMEs

**Antecedents and Outcomes of Employee-Based Brand Equity** Dec 24 2019 Branding and human capital are considered a firm's most important assets, and the development of these intangible assets is a particularly challenging and important management task for human resource managers and marketers. Employee-based brand equity is a key advantage for the organization and an important part of the brand-based evaluation. To develop an effective and strong employee-based brand equity, firms need to focus on the perceptions of employees and promote positive attitudes about affiliation with the firm. *Antecedents and Outcomes of Employee-Based Brand Equity* explores the antecedents and consequences of employee-based brand equity from different perspectives and different artifacts of employee-based brand equity. This book highlights the importance of brand equity from a human resource management perspective. It further highlights the ways in which brand equity can be fruitful in understanding and learning different theories and concepts with the interaction of different industries and culture. Covering topics such as employee retention, psychological capital, and brand experience, this premier reference source is an indispensable resource for corporate offices, human resource managers, business leaders and managers, governmental organizations, marketing professionals, customer service professionals, libraries, students and educators of higher education, researchers, and academicians.

*Phytochemicals from Medicinal Plants* Jun 10 2021 *Phytochemicals from Medicinal Plants: Scope, Applications and Potential Health Claims* explores the importance of medicinal plants and their potential benefits for human health. This book looks at bioactive compounds from medicinal plants, the health benefits of bioactive compounds, the applications of plant-based products in the food and pharmaceutical industries. The first section discusses available sources of bioactive compounds from medicinal plants, biochemistry, structural composition, potential biological activities, and how bioactive molecules are isolated from medicinal plants. The authors examine the applications of bioactive molecules from a health perspective, looking at the pharmacological aspects of medicinal plants, the phytochemical and biological activities of different natural products, and ethnobotany/and medicinal properties, and also present a novel dietary approach for disease management. The book goes on to examine the plant-based products are used and can be used in various sectors of the food and pharmaceutical industries.

*Environmental Micropollutants* Jul 11 2021 *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

**Green Sustainable Process for Chemical and Environmental Engineering and Science** Mar 19 2022 *Green Sustainable Process for Chemical and Environmental Engineering and Science: Plant-Derived Green Solvents: Properties and Applications* provide a comprehensive review on the green solvents such as bio solvents, terpenes, neem, alkyl phenols, cyrene, limenone, and ethyl lactate, etc. which are derived from plant sources. Chapters discuss introduction, properties, and

advantages to the practical use of plant-derived solvents. Plants-derived solvents are an excellent choice for real-world applications to reduce the environmental and health safety considerations. This book is the result of commitments by top researchers in the field of biosolvents from various backgrounds and fields of expertise. This book is a one-stop reference for plant solvents and overviews up-to-date accounts in the field of modern applications and the first book in this research community. Introduces properties and application of green solvents from plants Gives an in-depth accounts on plant-derived solvents for various applications Outlines the benefits and possibilities of plant-derived solvents vs conventional solvents Outlines eco-friendly green solvents synthesis, properties and applications Key references to obtain great results in plant-derived green solvents

**Green Chemistry for Sustainable Textiles** Oct 02 2020 Green Chemistry for Sustainable Textiles: Modern Design and Approaches provides a comprehensive survey of the latest methods in green chemistry for the reduction of the textile industry's environmental impact. In recent years industrial R&D has been exploring more sustainable chemicals as well as eco-friendly technologies in the textile wet processing chain, leading to a range of new techniques for sustainable textile manufacture. This book discusses and explores basic principles of green chemistry and their implementation along with other aspects of cleaner production strategies, as well as new and emerging textile technologies, providing a comprehensive reference for readers at all levels. Potential benefits to industry from the techniques covered in this book include: Savings in water, energy and chemical consumption, waste minimization as well as disposal cost reduction, and production of high added value sustainable textile products to satisfy consumer demands for comfort, safety, aesthetic, and multi-functional performance properties. Innovative emerging methods are covered as well as popular current technologies, creating a comprehensive reference that facilitates comparisons between methods Evaluates the fundamental green chemistry principles as drivers for textile sustainability Explains how and why to use renewable green chemicals in the textile wet processing chain

**The COVID-19 Pandemic** Sep 20 2019 This timely volume is a comprehensive review of the evolution, diagnosis, prevention, control, and treatment strategies (both modern as well as complementary and alternative) being used against COVID-19. With chapters written by experts in diverse medical fields from around the world, the volume presents authentic and easily understood information on this novel and often deadly virus. The book is organized in sections that cover pathology, epidemiology, and diagnosis; prevention strategies; and treatment. The book first covers the morphology, pathogenesis, genome organization and replication of coronavirus (COVID-19) and then goes on to address epidemiology and pathogenesis, the psychological effects, and detection assays and techniques. Chapters on prevention strategies discuss social distancing and quarantine, face masks and hand sanitizers, lockdown strategies, and vaccines. The authors also cover diverse treatment strategies, including using medicinal plants, natural products, and traditional Chinese medicines as well as nanomedicines.

**Cold Pressed Oils** Jul 31 2020 Cold Pressed Oils: Green Technology, Bioactive Compounds, Functionality, and Applications creates a multidisciplinary forum of discussion on recent advances in chemistry and the functionality of bioactive phytochemicals in lipids found in cold pressed oils. Chapters explore different cold pressed oil, focusing on cold press extraction and processing, composition, physicochemical characteristics, organoleptic attributes, nutritional quality, oxidative stability, food applications, and functional and health-promoting traits. Edited by a team of experts, the book brings a diversity of developments in food science to scientists, chemists, nutritionists, and students in nutrition, lipids chemistry and technology, agricultural science, pharmaceuticals, cosmetics, nutraceuticals and many other fields. Thoroughly explores novel and functional applications of cold pressed oils Shows the difference between bioactive compounds in cold pressed oils and oils extracted with other traditional methods Elucidates the stability of cold pressed oils in comparison with oils extracted using other traditional methods

**Handbook of Bioremediation** Jul 23 2022 Handbook of Bioremediation: Physiological, Molecular and Biotechnological Interventions discusses the mechanisms of responding to inorganic and

organic pollutants in the environment using different approaches of phytoremediation and bioremediation. Part One focuses specifically on inorganic pollutants and the use of techniques such as metallothionein-assisted remediation, phytoextraction and genetic manipulation. Part Two covers organic pollutants and consider topics such as plant enzymes, antioxidant defense systems and the remediation mechanisms of different plant species. This comprehensive volume is a must-read for researchers interested in plant science, agriculture, soil science and environmental science. The techniques covered in this book will ensure scientists have the knowledge to practice effective bioremediation techniques themselves. Provides a comprehensive review of the latest advances in bioremediation of organic and inorganic pollutants Discusses a range of different phytoremediation techniques Evaluates the role of genomics and bioinformatics within bioremediation

**Phytomedicine and Alzheimer's Disease** Jan 25 2020 Alzheimer's disease, one of the most rapidly growing neurodegenerative disorders, is characterized by a progressive loss of memory. Despite several advances in the field of medical therapeutics, a viable treatment for Alzheimer's disease would be of great importance. Medicinal plants represent a largely untapped reservoir of natural medicines and potential sources of anti-Alzheimer's drugs. The structural diversity of their phytoconstituents makes these plants a valuable source of novel lead compounds in the quest for drugs to treat Alzheimer's disease. Based on traditional literature and up-to-date research, various new therapeutically active compounds have been identified from phytoextracts, which could be useful in the treatment of cognitive disorders. Phytomedicine and Alzheimer's Disease presents information on Mechanistic aspects of neurodegeneration in Alzheimer's disease and the role of phytochemicals as restorative agents Understanding the complex biochemical aspects of Alzheimer's disease Pre-clinical approaches to evaluating drugs to target Alzheimer's disease Assessing alternative approaches to treating Alzheimer's disease and the role of alternative medicine to delay the symptomatic progression of this disease Epigenetic changes in Alzheimer's disease and possible therapeutic or dietary interventions This book serves as an excellent resource for scientific investigators, academics, biochemists, botanists, and alternative medicine practitioners who work to advance the role of phytomedicines in treating Alzheimer's disease.

**Engineering Tolerance in Crop Plants Against Abiotic Stress** Mar 27 2020 Despite significant progress in increasing agricultural production, meeting the changing dietary preferences and increasing food demands of future populations remains a significant challenge. Salinity, drought, water logging, high temperature and toxicity are abiotic stresses that affect the crop yield and production. Tolerance for stress is a important characteristic that plants need to have in order to survive. Identification of proper techniques at a proper time can make it easy for scientists to increase crop productivity and yield. In Engineering Tolerance in Crop Plants against Abiotic Stress we have discussed the possible stresses and their impact on crops and portrayed distinctive abiotic stress tolerance in response to different techniques that can improve the performance of crops. Features of the Book: Provide a state-of-the-art description of the physiological, biochemical, and molecular status of the understanding of abiotic stress in plants. Address factors that threaten future food production and provide potential solution to these factors. Designed to cater to the needs of the students engaged in the field of environmental sciences, soil sciences, agricultural microbiology, plant pathology, and agronomy. New strategies for better crop productivity and yield. Understanding new techniques pointed out in this book will open the possibility of genetic engineering in crop plants with the concomitant improved stress tolerance.

**A Centum of Valuable Plant Bioactives** Feb 18 2022 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

**Bionanocomposites** Oct 26 2022 *Bionanocomposites: Green Synthesis and Applications* provides an in-depth study on the synthesis of a variety of bionanocomposites from different types of raw materials. In addition, the book offers an overview on the synthesis and applications of environmentally friendly bionanocomposites, with an emphasis on bionanocomposites of natural products. Final sections focus on various characterization techniques, their production, and the future prospects of sustainable bionanocomposites. Outlines the major characterization methods and processing techniques for bionanocomposites Explores how bionanocomposites are being used to design new projects in medicine and environmental engineering Discusses how the properties of a variety of bionanocomposite classes make them suitable for particular industrial applications

**Food Safety Practices in the Restaurant Industry** Apr 08 2021 In recent years, cases of food-borne illness have been on the rise and are creating a significant public health challenge worldwide. This situation poses a health risk to consumers and can cause economic loss to the food service industry. Identifying the current issues in food safety practices among the industry players is critical to bridge the gap between knowledge, practices, and regulation compliance. *Food Safety Practices in the Restaurant Industry* presents advanced research on food safety practices investigated within food service establishments as an effort to help the industry pinpoint risks and non-compliance relating to food safety practices and improve the practices in preventing food-borne illnesses from occurring. Covering a range of topics such as food packaging, safety audits, consumer awareness, and standard safety practices, it is ideal for food safety and service professionals, food scientists and technologists, policymakers, restaurant owners, academicians, researchers, teachers, and students.

World List of Universities /Liste Mondiale des Universites Apr 20 2022

**Sodium Alginate-Based Nanomaterials for Wastewater Treatment** Jun 22 2022 *Sodium Alginate-based Nanomaterials for Wastewater Treatment* offers detailed coverage of fundamentals and recent advances in sodium alginate-based nanomaterials for wastewater treatment. The book provides a detailed overview of the development and application of nanomaterials-based sodium alginate so that new methods can be put in place for efficient wastewater treatment. This includes illustrating how nanomaterials have enabled the formation of nanocomposites or blends of sodium alginate with other compounds like chitosan for the effective removal of heavy metals from wastewater. This important reference source for materials scientists and environmental engineers comprehensively covers nanotechnology applications in efficient wastewater treatment solutions. Shows how sodium alginate is being used for the removal of organic and inorganic pollutants from wastewater Explains the formation and application of sodium alginate- based beads, electro-spun fibers, nanofibers, blends and zerovalent sodium alginate Discusses the future potential of nanomaterial-based sodium alginate and its blends

**Anti-Angiogenesis Drug Discovery and Development: Volume 5** Sep 01 2020 The inhibition of angiogenesis is an effective mechanism of slowing down tumor growth and malignancies. The process of induction or pro-angiogenesis is highly desirable for the treatment of cardiovascular diseases, and wound healing disorders. Efforts to understand the molecular basis, both for inhibition and induction, have yielded fascinating results. *Anti-angiogenesis Drug Discovery and Development* provides an excellent compilation of well-written reviews on various aspects of the anti-angiogenesis process. These reviews have been contributed by leading practitioners in drug discovery science and highlight the major developments in this exciting field in the last two decades. The feast of these reader-friendly reviews on topics of great scientific importance - many of which are considered significant medical breakthroughs, makes this series excellent reading both for the novice as well as for expert medicinal chemists and clinicians. The fifth volume brings together reviews on the

following topics: - Targeted therapy for tumor vasculature - Anti-angiogenic therapy for breast and prostate cancers (including information updates on clinical trials) - Microbe-based and other novel antiangiogenesis therapies such as chromene-based agents

**Processing Technology for Bio-Based Polymers** Jul 19 2019 Processing Technology for Bio-Based Polymers: Advanced Strategies and Practical Aspects brings together the latest advances and novel technologies surrounding the synthesis and manufacture of biopolymers, ranging from bio-based polymers to synthetic polymers from bio-derived monomers. Sections examine bio-based polymer chemistry, discuss polymerization process and emerging design technologies, cover manufacturing and processing approaches, explain cutting-edge approaches and innovative applications, and focus on biomedical and other key application areas. Final chapters provide detailed discussion and an analysis of economic and environmental concerns, practical considerations, challenges, opportunities and future trends. This is a valuable resource for researchers, scientists and advanced students in polymer science, bio-based materials, nanomaterials, plastics engineering, biomaterials, chemistry, biotechnology, and materials science and engineering, as well as R&D professionals, engineers and industrialists interested in the development of biopolymers for advanced products and applications. Focuses on the processing of bio-based polymers, covering both traditional methods and innovative new approaches Offers novel opportunities and ideas for developing or improving technologies for biopolymer research, preparation and application Examines other key considerations, including reliability and end product, economic concerns, and environmental and lifecycle aspects

Endocrine Disrupting Chemicals-induced Metabolic Disorders and Treatment Strategies Dec 16 2021 This volume offers a detailed and comprehensive analysis of Endocrine Disrupting Chemicals (EDCs), covering their occurrence, exposure to humans and the mechanisms that lead to the pathogenesis of EDCs-induced metabolic disorders. The book is divided into three parts. Part I describes the physiology of the human endocrine system, with special emphasis on various types of metabolic disorders along with risk factors that are responsible for the development of these disorders. Part II addresses all aspects of EDCs, including their role in the induction of various risk factors that are responsible for the development of metabolic disorders. Part III covers up-to-date environmental regulatory considerations and treatment strategies that have been adopted to cure and prevent EDCs-induced metabolic disorders. This section will primarily appeal to clinicians investigating the causes and treatment of metabolic disorders. The text will also be of interest to students and researchers in the fields of Environmental Pharmacology and Toxicology, Environmental Pollution, Pharmaceutical Biochemistry, Biotechnology, and Drug Metabolism/Pharmacokinetics.

**Plant Ecophysiology and Adaptation under Climate Change: Mechanisms and Perspectives II** May 21 2022 This book presents the state-of-the-art in plant ecophysiology. With a particular focus on adaptation to a changing environment, it discusses ecophysiology and adaptive mechanisms of plants under climate change. Over the centuries, the incidence of various abiotic stresses such as salinity, drought, extreme temperatures, atmospheric pollution, metal toxicity due to climate change have regularly affected plants and, and some estimates suggest that environmental stresses may reduce the crop yield by up to 70%. This in turn adversely affects the food security. As sessile organisms, plants are frequently exposed to various environmental adversities. As such, both plant physiology and plant ecophysiology begin with the study of responses to the environment. Provides essential insights, this book can be used for courses such as Plant Physiology, Environmental Science, Crop Production and Agricultural Botany. Volume 2 provides up-to-date information on the impact of climate change on plants, the general consequences and plant responses to various environmental stresses.

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**Algae Based Polymers, Blends, and Composites** Sep 25 2022 Algae Based Polymers, Blends, and Composites: Chemistry, Biotechnology and Material Sciences offers considerable detail on the origin of algae, extraction of useful metabolites and major compounds from algal bio-mass, and the

production and future prospects of sustainable polymers derived from algae, blends of algae, and algae based composites. Characterization methods and processing techniques for algae-based polymers and composites are discussed in detail, enabling researchers to apply the latest techniques to their own work. The conversion of bio-mass into high value chemicals, energy, and materials has ample financial and ecological importance, particularly in the era of declining petroleum reserves and global warming. Algae are an important source of biomass since they flourish rapidly and can be cultivated almost everywhere. At present the majority of naturally produced algal biomass is an unused resource and normally is left to decompose. Similarly, the use of this enormous underexploited biomass is mainly limited to food consumption and as bio-fertilizer. However, there is an opportunity here for materials scientists to explore its potential as a feedstock for the production of sustainable materials. Provides detailed information on the extraction of useful compounds from algal biomass Highlights the development of a range of polymers, blends, and composites Includes coverage of characterization and processing techniques, enabling research scientists and engineers to apply the information to their own research and development Discusses potential applications and future prospects of algae-based biopolymers, giving the latest insight into the future of these sustainable materials

**Environmental Microbiology: Advanced Research and Multidisciplinary Applications** Nov 22 2019 Environmental Microbiology: Advanced Research and Multidisciplinary Applications focus on the current research on microorganisms in the environment. Contributions in the volume cover several aspects of applied microbial research, basic research on microbial ecology and molecular genetics. The reader will find a collection of topics with theoretical and practical value, allowing them to connect environmental microbiology to a variety of subjects in life sciences, ecology, and environmental science topics. Advanced topics including biogeochemical cycling, microbial biosensors, bioremediation, application of microbial biofilms in bioremediation, application of microbial surfactants, microbes for mining and metallurgical operations, valorization of waste, and biodegradation of aromatic waste, microbial communication, nutrient cycling and biotransformation are also covered. The content is designed for advanced undergraduate students, graduate students, and environmental professionals, with a comprehensive and up-to-date discussion of environmental microbiology as a discipline that has greatly expanded in scope and interest over the past several decades.

*Nanotherapeutic Strategies and New Pharmaceuticals (Part 2)* Jun 17 2019 Advances in technology have enabled medicinal chemists to discover and formulate several highly specific, biocompatible, and non-toxic therapeutic agents for clinical applications. Nanotechnology has achieved significant progress in the last few decades and is crucial in every field of science and technology. Nanotechnology-based pharmaceuticals offer multifaceted and alternative methodologies in comparison to the limitations of many conventional clinical therapies. Expertise in designing and developing nanoformulations has helped in targeted drug delivery. Recently, the use of innovative therapeutic agents, particularly in nanomedicine, has accounted for a significant portion of the global pharmaceutical market and is predicted to continue to grow rapidly in the near future. *Nanotherapeutic Strategies and New Pharmaceuticals* is an accessible multi-part reference which informs the reader about several new techniques based on nanotechnology. The chapters explain relevant topics in detail. The book is designed to encourage and help undergraduate, graduate and post-graduate students in the field of nanotherapeutics, pharmaceuticals and bio-organic chemistry through the use of didactic language and simple illustrations. Part 2 of this book covers the potential of nanotherapeutics and natural therapies for treating neurological diseases, targeting ion channels, signal transduction therapy, gene therapy of single gene mutation diseases and for nanoformulations for special purposes such as wound healing and stimuli-responsive drug delivery. The book also features a chapter that summarizes the types of nanoparticles tailored for specific molecular targets that mediate different diseases. The book set serves as a textbook for students in pharmacology and medical biochemistry, as well as a quick reference for researchers on bio-organic chemistry, as well as general readers interested in nanomedicine.

Frontiers in Natural Product Chemistry: Volume 8 Jun 29 2020 Frontiers in Natural Product Chemistry is a book series devoted to publishing monographs that highlight important advances in natural product chemistry. The series covers all aspects of research in the chemistry and biochemistry of naturally occurring compounds, including research on natural substances derived from plants, microbes and animals. Reviews of structure elucidation, biological activity, organic and experimental synthesis of natural products as well as developments of new methods are also included in the series. Volume eight of the series brings seven reviews covering these main themes: marine natural products, neuroprotective natural products, chromenes, coumarin derivatives, and psychedelics. The chapters featured in this volume are: - Chemistry, Antiviral Properties and Clinical Relevance of Marine Macroalgae and Seagrass - Quinolizidine Alkaloids from Marine Organisms: A Perspective On Chemical, Bioactivity and Synthesis - Towards The Use of Whole Natural Products in Psychedelic Research and Therapy: Synergy, Multi-Target Profiles, and Beyond - Neuroprotective Effects of Polyphenols - Neuroprotection with the Functional Herbs from the Lamiaceae Family - Coumarin Derivatives as Potential Anti-Inflammatory Agents for Drug Development - Recent Progress in The Synthesis and Biological Activity of Chromene and Its Derivatives

Plant Metabolites and Regulation under Environmental Stress May 29 2020 Plant Metabolites and Regulation Under Environmental Stress presents the latest research on both primary and secondary metabolites. The book sheds light on the metabolic pathways of primary and secondary metabolites, the role of these metabolites in plants, and the environmental impact on the regulation of these metabolites. Users will find a comprehensive, practical reference that aids researchers in their understanding of the role of plant metabolites in stress tolerance. Highlights new advances in the understanding of plant metabolism Features 17 protocols and methods for analysis of important plant secondary metabolites Includes sections on environmental adaptations and plant metabolites, plant metabolites and breeding, plant microbiome and metabolites, and plant metabolism under non-stress conditions

**Water Pollution and Remediation: Organic Pollutants** Feb 24 2020 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 present 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.

Ultrasound and Microwave for Food Processing Aug 24 2022 Ultrasound and Microwave for Food Processing: Synergism for Preservation and Extraction analyzes the efficiency and validity of the combined effect of sonication and microwave in food processing, preservation, and extraction. This volume features novel food processing technologies for applications in meat, dairy, juice, and other food processing industries, and presents emerging research trends for future use development in food processing. This book is a comprehensive resource for experts and newcomers in the innovative food processing field, offering insight into physical principles of the technology, detailing the latest advancements, and linking them to current and potential applications in food and bioprocessing-related industries. Contains updated research on the synergistic mechanism of action of sonication and microwave for food processing, preservation, and extraction Provides a comprehensive panorama of synergistic effect applications of sonication and microwave in meat, dairy, juice processing, and other food processing industries Brings effective and economical extraction of biologically active constituents, including bioactive compounds, proteins, pectin, oils, etc., from various sources

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**Plant Tolerance to Environmental Stress** May 09 2021 Global climate change affects crop production through altered weather patterns and increased environmental stresses. Such stresses include soil salinity, drought, flooding, metal/metalloid toxicity, pollution, and extreme temperatures. The variability of these environmental conditions pared with the sessile lifestyle of plants contribute

to high exposure to these stress factors. Increasing tolerance of crop plants to abiotic stresses is needed to fulfill increased food needs of the population. This book focuses on methods of improving plants tolerance to abiotic stresses. It provides information on how protective agents, including exogenous phytoprotectants, can mitigate abiotic stressors affecting plants. The application of various phytoprotectants has become one of the most effective approaches in enhancing the tolerance of plants to these stresses. Phytoprotectants are discussed in detail including information on osmoprotectants, antioxidants, phytohormones, nitric oxide, polyamines, amino acids, and nutrient elements of plants. Providing a valuable resource of information on phytoprotectants, this book is useful in diverse areas of life sciences including agronomy, plant physiology, cell biology, environmental sciences, and biotechnology.

**American Universities Abroad** Mar 07 2021 Across the globe, American-style and liberal arts universities are being established. From the first, the American University of Beirut, established in 1866, to the liberal arts institutions being established in Saudi Arabia, Ghana, and elsewhere in the twenty-first century, there is a clear sense of the global desire for the American approach to higher education as a way of counteracting traditional, more narrowly defined university educations. However, these universities operate in a distinctive dynamic that must learn to bridge one culture with another, and leadership of such institutions must by its nature focus on such complexities and tensions. Throughout the chapters of this book, this unique element of these universities will be better understood through the stories and experiences as presented by their presidents, provosts, and other academic leaders.