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AUDRINA ALBERT

Microbes and Microbial Biotechnology for Green Remediation Springer
Methods in Cell Physiology
Microbes in Microbial Communities Elsevier
Methods in Cell Biology
Orchid Biology: Recent Trends & Challenges Pharmamed Press
As stated many times before the purpose of Orchid Biology, Reviews and Perspectives (OB) is to present reviews on all aspects of orchids. The aim is not to balance every volume, but to make a balanced and wide ranging presentation of orchids in the series as a whole. The chapters in this, the last volume of the series, range over a number of topics which were not covered before. Singapore is justly famed for its orchids. They can be seen on arrival (or dep- ture) in its modern, highly efficient and comfortable Changi Airport and on the way from it to town. Vanda Miss Joaquim, the first hybrid to come from Singapore became its National Flower. This natural hybrid can be seen on its currency, stamps, and public and private decorations. Many excellent breeders, starting with Prof. Eric Holttum who bred the first man made hybrid (Spathoglottis Primrose), produced numerous magnificent hybrids and won countless awards in Singapore and elsewhere. These hybrids served to enrich the country's orchid mystique. In the opening chapter of this volume Dr. Teoh Eng Soon (Western style: Eng Soon Teoh), himself a prize winning orchid breeder, grower and author writes about some of the breeders who contributed to the Singapore orchid fame. Prof. Hans Fitting was one of the best known plant physiologists of his time. As a young man he studied the effects of pollen on orchid flowers.
Orchid Biology: Reviews and Perspectives X APH Publishing
This book illustrates the importance of microbiome interactions in sustainable agriculture and the environment. The chapters of the book provide information pertaining to the vast diversity of microbiomes in many ecosystems and their functional dynamics. The book also discusses bioremediation, space microbiomes, geo microbiomes, coral microbiomes, antibiotic resistomes, and rhizomicrobiome. It also sheds light on the complex syntrophic and other symbiotic interactions between bacteria, protists, plants, and certain animals in agricultural and environmental systems. The book, in turn, provides an understanding of the adaptation, resilience, and evolution of microbial ecosystems. Further, the chapters cover metagenomics analysis of microbiomes of a novel or extreme environments, microbial resilience or temporal fluctuations, symbiosis and co-evolution of the microbiome, and novel microbial interactions in agriculture and environment. Finally, the book elucidates a comprehensive yet representative description of complex structural and functional diversity within the plant and environmental microbiomes to reveal their immense potential. This book covers United Nations Sustainable Developmental Goal 2 towards Zero Hunger.
Biotechnology - Ii : Including Cell Biology, Genetics, Microbiology Springer Nature
The book Applied Microbiology is written focusing on core syllabus of states of India. The content of the subject is simple and lucid with suitable example, and neat diagrams. The book is also useful to students of biotechnology and pharmacy. The book has a part of agriculture microbiology, which deals with soil structure, function in plant growth and development, and plant diseases and management. The part on Environmental microbiology covers the role of microorganisms, their importance in food safety and food production. The final part of the book deals in importance of microorganisms in production of chemicals and medicines needed for man. The contents are updated to make the students aware of the recent developments and acquire knowledge of allied subjects in capsule form. The review questions and further readings are also provided for self assessment and knowledge.
Methods in Cell Biology New Age International
Circular Economy in the Construction Industry is an invaluable resource for researchers, policymakers, implementers and PhD and Masters-level students in universities analyzing the present status of Construction and Demolition Wastes (C&DW) management, materials development utilizing slag, fly ash, HDPE fibre, geo-wastes, and other wastes, green concrete, soil stabilization, resource circulation in construction sectors, success in experimentation & commercial production, future needs, and future research areas. While huge C&DW is wasted by dumping, there is potential of recycling preventing greenhouse gas (GHG) emissions and environmental pollution as well as creating business opportunities. Circularity of resources in the construction industry can contribute to a more secure, sustainable, and economically sound future through proper policy instruments, management systems, and recycling by selecting the following: Supply chain sustainability and collection of C&D Wastes, Appropriate separation and recycling technology, Enforcement of policy instruments, Productivity, quality control of recycled products and intended end use, Economic feasibility as business case, commercialization, generating employment. This book addresses most of the above issues in a lucid manner by experts in the field from different countries, which are helpful for the related stakeholders, edited by experts in the field.
Methods in Cell Physiology Academic Press
The Book Comprehensively Covers The Syllabus Of B.Sc. Biotechnology-2 And Clearly Explains The Basic Concepts In Cell Biology, Genetics And Microbiology. A Molecular Approach To The Study Of Cells Is Followed Throughout The Book. The Text Is Illustrated By A Large Number Of Clearly Drawn Diagrams For An Easier Understanding Of The Subject. Each Chapter Closes With A Summary And A Set Of Review Questions.
Implication of Quorum Sensing and Biofilm Formation in Medicine, Agriculture and Food Industry Springer Nature
Better Understand the Connection between Microbiology and the Inorganic WorldMicrobiology for Minerals, Metals, Materials and the Environment links chemical, metallurgical, and other metal inherent systems with microbes, and analyzes the interdependence between them. Specifically intended to underscore the importance of microbes in environmental re
Plant Biology and Biotechnology Springer Nature
The book overviews the complex interactions amongst the microbes and their possible applications. Emphasis has been made to include a wide spectrum of experimental and theoretical contributions from eminent researchers in the field. Microbial communities are the assemblages of microorganisms of various species which live together in the same environment and continuously interact with each other. The microbial cells in communities display unique phenotypes that affect the survival and reproduction of other cells present around them. These phenotypes constitute the social adaptations that drive the interactions between microbial cells. The interactions, further determine the productivity, stability and the ability of community to resist the environmental perturbations. These microbial communities live with extremely competitive niche and fight for their survival and genetic persistence. But they frequently appear in niche with multifaceted and interactive webs rather than the planktonic nature. This can be within the same species or with different species, or even with diverse genera and families. It either a competitive winner community whereas the "weaker" strain goes extinct or a competitor that coexist with their metabolic secretory potentials or a separator that assigned their own community territorial niches. Sometimes, it can be neutral or tritagonist. These microbial associations within the microbiome provides the foundation for diverse forms of microbial ecology and determined the applied perspectives for agriculture, clinical and industrial sectors. This book will be useful to postgraduate students, researchers from academic as well as industry working in the field of microbial exploration with keen interest in survival factors and mechanism of their survival by various ecological and functional strategies.
Model Organisms for Microbial Pathogenesis, Biofilm Formation and Antimicrobial Drug Discovery Springer Nature
Biotechnology, Besides A Traditional Discipline, Is Advancing Fast Due To Its Application In Agriculture, Pharmaceutical Organizations, Public Health, Environmental Management, Bioenergetics, Geological Explorations And In Various Other Industries, Including As A Mean To Exploit Alternative Sources Of Energy. Developing Nations Are Striving Hard To Merge The Biotechnological Operation Into National Development, Improving Hard Core Economics And Also Seeking Strategies For International Tie Up And Cooperation.The Present Text Has Been Designed To Outline The Basic Concepts In Cell Biology, Genetics, Microbiology And Immunology, Thus Enabling Undergraduate And Postgraduate Students To Understand Fundamental Aspects Of Microbial Biotechnology And Biotechnology.
Applied Microbiology (Agriculture, Environmental, Food and Industrial Microbiology) Springer Nature
Microbial Biodegradation and Bioremediation brings together experts in relevant fields to describe the successful application of microbes and their derivatives for bioremediation of potentially toxic and relatively novel compounds. This single-source reference encompasses all categories of pollutants and their applications in a convenient, comprehensive package. Our natural biodiversity and environment is in danger due to the release of continuously emerging potential pollutants by anthropogenic activities. Though many attempts have been made to eradicate and remediate these noxious elements, every day thousands of xenobiotics of relatively new entities emerge, thus worsening the situation. Primitive microorganisms are highly adaptable to toxic environments, and can reduce the load of toxic elements by their successful transformation and remediation. Describes many novel approaches of microbial bioremediation including genetic engineering, metagenomics, microbial fuel cell technology, biosurfactants and biofilm-based bioremediation Introduces relatively new hazardous elements and their bioremediation practices including oil spills, military waste water, greenhouse gases, polythene wastes, and more Provides the most advanced techniques in the field of bioremediation, including insilico approach, microbes as pollution indicators, use of bioreactors, techniques of pollution monitoring, and more
The Remington Registry of Outstanding Professionals CRC Press
This volume offers a much-needed compilation of essential reviews on diverse aspects of plant biology, written by eminent botanists. These reviews effectively cover a wide range of aspects of plant biology that have contemporary relevance. At the same time they integrate classical morphology with molecular biology, physiology with pattern formation, growth with genomics, development with morphogenesis, and classical crop-improvement techniques with modern breeding methodologies. Classical botany has been transformed into cutting-edge plant biology, thus providing the theoretical basis for plant biotechnology. It goes without saying that biotechnology has emerged as a powerful discipline of Biology in the last three decades. Biotechnological tools, techniques and information, used in combination with appropriate planning and execution, have already contributed significantly to economic growth and development. It is estimated that in the next decade or two, products and processes made possible by biotechnology will account for over 60% of worldwide commerce and output. There is, therefore, a need to arrive at a general understanding and

common approach to issues related to the nature, possession, conservation and use of biodiversity, as it provides the raw material for biotechnology. More than 90% of the total requirements for the biotechnology industry are contributed by plants and microbes, in terms of goods and services. There are however substantial plant and microbial resources that are waiting for biotechnological exploitation in the near future through effective bioprospection. In order to exploit plants and microbes for their useful products and processes, we need to first understand their basic structure, organization, growth and development, cellular process and overall biology. We also need to identify and develop strategies to improve the productivity of plants. In view of the above, in this two-volume book on plant biology and biotechnology, the first volume is devoted to various aspects of plant biology and crop improvement. It includes 33 chapters contributed by 50 researchers, each of which is an expert in his/her own field of research. The book begins with an introductory chapter that gives a lucid account on the past, present and future of plant biology, thereby providing a perfect historical foundation for the chapters that follow. Four chapters are devoted to details on the structural and developmental aspects of the structures of plants and their principal organs. These chapters provide the molecular biological basis for the regulation of morphogenesis of the form of plants and their organs, involving control at the cellular and tissue levels. Details on biodiversity, the basic raw material for biotechnology, are discussed in a separate chapter, in which emphasis is placed on the genetic, species and ecosystem diversities and their conservation. Since fungi and other microbes form an important component of the overall biodiversity, special attention is paid to the treatment of fungi and other microbes in this volume. Four chapters respectively deal with an overview of fungi, arbuscularmycorrhizae and their relation to the sustenance of plant wealth, diversity and practical applications of mushrooms, and lichens (associated with a photobiont). Microbial endosymbionts associated with plants and phosphate solubilizing microbes in the rhizosphere of plants are exhaustively treated in two separate chapters. The reproductive strategies of bryophytes and an overview on Cycads form the subject matter of another two chapters, thus fulfilling the need to deal with the non-flowering Embryophyte group of plants. Angiosperms, the most important group of plants from a biotechnological perspective, are examined exhaustively in this volume. The chapters on angiosperms provide an overview and cover the genetic basis of flowers development, pre-and post-fertilization reproductive growth and development, seed biology and technology, plant secondary metabolism, photosynthesis, and plant volatile chemicals. A special effort has been made to include important topics on crop improvement in this volume. The importance of pollination services, apomixes, male sterility, induced mutations, polyploidy and climate changes is discussed, each in a separate chapter. Microalgalnutra-pharmaceuticals, vegetable-oil-based nutraceuticals and the importance of alien crop resources and underutilized crops for food and nutritional security form the topics of three other chapters in this volume. There is also a special chapter on the applications of remote sensing in the plant sciences, which also provides information on biodiversity distribution. The editors of this volume believe the wide range of basic topics on plant biology that have great relevance in biotechnology covered will be of great interest to students, researchers and teachers of botany and plant biotechnology alike.

Medicinal Plants: Biodiversity, Sustainable Utilization and Conservation Xlibris Corporation

In the pursuit of technological advancement in the field of biotechnology and pharmaceutical industries to counteract health issues, bacterial infections remain a major cause of morbidity and mortality. The ability of bacterial pathogens to form biofilms further agglomerates the situation by showing resistance to conventional antibiotics. To overcome this serious issue, bioactive metabolites and other natural products were exploited to combat bacterial infections and biofilm-related health consequences. Natural products exhibited promising results in vitro, however; their efficacy in in vivo conditions remain obscured due to their low-solubility, bioavailability, and biocompatibility issues. In this scenario, nanotechnological interventions provide a multifaceted platform for targeted delivery of bioactive compounds by slow and sustained release of drug-like compounds. The unique physico-chemical properties, biocompatibility and eco-friendly nature of bioinspired nanostructures has revolutionized the field of biology to eradicate microbial infections and biofilm-related complications. The green-nanotechnology based metal and metal oxide nanoparticles and polymeric nanoparticles have been regularly employed for antimicrobial and antibiofilm applications without causing damage to host tissues. The implications of these nanoparticles toward achieving sustainability in agriculture by providing systemic resistance against a variety of phytopathogens therefore plays crucial role in growth and crop productivity. Also the advent of smart and hybrid nanomaterials such as metal-based polymer nanocomposites, lipid-based nanomaterials and liposomes have the inherent potential to eradicate bacterial biofilm-related infections in an efficient manner. The recent development of carbon-based nanomaterials such as carbon nanotubes (CNTs) and silica based nanomaterials such as mesoporous silica nanoparticles (MSNs) also exploit a target of dreadful healthcare conditions such as cancer, immunomodulatory diseases, and microbial infections, as well as biofilm-related issues owing to their stability profile, biocompatibility, and unique physio-chemical properties. Recently novel physical approaches such as photothermal therapy (PTT) and antimicrobial photodynamic therapy (aPDT) also revolutionized conventional strategies and are engaged in eradicating microbial biofilm-related infections and related health consequences. These promising advancements in the development of novel strategies to treat microbial infections and biofilm-related multidrug resistance (MDR) phenomenon may provide new avenues and aid to conventional antimicrobial therapeutics.

Textbook of PHARMACEUTICAL MICROBIOLOGY Springer Nature

Issues in Life Sciences—Muscle, Membrane, and General Microbiology: 2013 Edition is a ScholarlyEditions™ book that delivers timely, authoritative, and comprehensive information about Membrane Biology. The editors have built Issues in Life Sciences—Muscle, Membrane, and General Microbiology: 2013 Edition on the vast information databases of ScholarlyNews.™ You can expect the information about Membrane Biology in this book to be deeper than what you can access anywhere else, as well as consistently reliable, authoritative, informed, and relevant. The content of Issues in Life Sciences—Muscle, Membrane, and General Microbiology: 2013 Edition has been produced by the world's leading scientists, engineers, analysts, research institutions, and companies. All of the content is from peer-reviewed sources, and all of it is written, assembled, and edited by the editors at ScholarlyEditions™ and available exclusively from us. You now have a source you can cite with authority, confidence, and credibility. More information is available at http://www.ScholarlyEditions.com/.

Microbial Processes for Synthesizing Nanomaterials Elsevier

This book provides a comprehensive overview of biomotors (molecular motors) within the body with a specific concentration on revolving molecular motors. The bioengineering of these new revolving molecular motors will go a long way in creating machines that will be able to carry RNA and DNA drugs directly to diseased cells to destroy them. The book goes into specific details regarding the bioengineering, fabrication, synthesis, and future utilization of these devices for nanomedicine.

Environmental Biotechnology Springer

This book illustrates the role of the human microbiome in health and diseases. It discusses the association of an imbalanced human microbiome with different human diseases, including inflammatory, metabolic conditions, neurological, cardiovascular, and respiratory diseases. The book further reviews the association between intestinal microbiota and immune defense systems. The book provides evolving knowledge of the development, complexity, and functionality of the healthy gut microbiota and covers interventions that modulate and stabilize the gut microbiota. Further, it introduces the human microbiome as a reservoir of AMR genes, the current knowledge on the resistome, and the recent and upcoming advances in molecular diagnostic approaches to unravel this reservoir. Toward the end, the book reviews the advances in understanding the human urinary microbiome and its potential role in urinary tract infection. The chapter also presents the dynamics of the skin microbiome and the association of microbiota with skin disorders and therapeutic interventions. This book is an invaluable read for health professionals, medical students, microbiologists, and scientific research communities who are eager to update themselves with recent trends in microbiome research.

Implication of Quorum Sensing System in Biofilm Formation and Virulence CRC Press

The major aim to write this textbook is to provide information in articulate summarized manner to accomplish necessities of undergraduates as per PCI regulation. This volume is designed not only according to curriculum of undergraduate courses in pharmacy by PCI but also to communicate knowledge on PHARMACEUTICAL MICROBIOLOGY for post graduate learners. We assured this book will be originated very valuable by graduates, post graduates, professors and industrial learners.

Strategies for Increasing Involvement of Research Scientists in Implementation of Innovative Science Education Programs Scientific Publishers

Microbes and Microbial Biotechnology for Green Remediation provides a comprehensive account of sustainable microbial treatment technologies. The research presented highlights the significantly important microbial species involved in remediation, the mechanisms of remediation by various microbes, and suggestions for future improvement of bioremediation technology. The introduction of contaminants, due to rapid urbanization and anthropogenic activities, into the environment causes unsteadiness and distress to the physicochemical systems, including living organisms. Hence, there is an immediate global demand for the diminution of such contaminants and xenobiotics which can otherwise adversely affect the living organisms. Over time, microbial remediation processes have been accelerated to produce better, eco-friendlier, and more biodegradable products for complete dissemination of these xenobiotic compounds. The advancements in microbiology and biotechnology lead to the launch of microbial biotechnology as a separate area of research and contributed dramatically to the development of the areas such as agriculture, environment, biopharmaceutics, and fermented foods. Microbes stand as an imperative, efficient, green, and economical alternative to conventional treatment technologies. The proposed book provides cost-effective and sustainable alternatives. This book serves as a reference for graduate and postgraduate students in environmental biotechnology and microbiology as well as researchers and scientists working in the laboratories and industries involved in research related to microbiology, environmental biotechnology, and allied research. Discusses important microbial activities, such as biofertilizer, biocontrol, biosorption, biochar, biofilm, biodegradation, bioremediation, bioclogging, and quorum sensing Covers all the advanced microbial bioremediation techniques which are finding their way from the laboratory to the field for revival of the degraded agro-ecosystems Examines the role of bacteria, fungi, microalgae, Bacillus sp., Prosopis juliflora, Deinococcus radiodurans, Pseudomonas, methanotrophs, siderophores, and PGPRs as the biocontrol and green remediator agents for soil sustainability

Pharmaceutical Microbiology: A Comprehensive Approach CRC Press

The book illustrates the role of quorum sensing in the food industry, agriculture, veterinary sciences, and medicine. It highlights the importance of quorum sensing in regulating diverse cellular functions in microbes, including virulence, pathogenesis, controlled-gene expression systems, and antibiotic resistance. This book also describes the role of quorum sensing in survival behavior and antibiotic resistance in bacteria. Further, it reviews the major role played by quorum sensing in food spoilage, biofilm formation, and food-related pathogenesis. It also explores the methods for the detection and quantification of quorum sensing signals. It also presents antimicrobial and anti-quorum sensing activities of medicinal plants. Finally, the book elucidates a comprehensive yet representative description of basic and applied aspects of quorum sensing inhibitors. This book serves an ideal guide for researchers to understand the implications of quorum sensing in the food industry, medicine, and agriculture.

Integrating Biologically-Inspired Nanotechnology into Medical Practice CRC Press

The present book is designed to cater the needs of BSc Microbiology, Biotechnology and Pharmacy. The basic concept of disease, host-pathogen interaction, diagnosis of disease, and chemotherapy and antimicrobials are discussed concisely for the better understanding of the students and form a source material to the teachers. Different diseases caused by the bacteria and viruses are dealt precisely; fulfilling the requirement of the Undergraduate students of Microbiology. The basic concepts of immunology, antigen-antibody interactions, autoimmunity, hypersentivity and immunity disorders are also covered precisely. The subject matter is written in simple language keeping in view of students' standard and very well-illustrated with neat diagrams. A question bank is given at the end of each chapter.