



promoting microorganisms Discusses plant growth promoting microorganisms in bioactive compounds production, and as a source of nano-particles

**Microbial Endophytes: Prospects for Sustainable Agriculture** discusses the practical and theoretical aspects regarding the use of endophytic microorganisms in agriculture, providing insights on the biotechnological applications associated with long-term crop production. Chapters deal with the various aspects of endophytic microorganisms, including isolation, enumeration, characterization procedures, diversity analysis, and their role as biofertilizer, biocontrol agent and microbial inoculants. Framed to discuss the present and future potential of microbial endophytes in biotic and abiotic stress management, bioremediation, bioactive compounds production, and in nanotechnology, this book provides a single-volume resource that will be valuable to academics and researchers interested in microbiology, agricultural sciences and biotechnology. Explores aspects of sustainable agriculture by using endophytic microorganism such as bacteria, fungi and actinobacteria Presents insights into the use of endophytes as biofertilizer and biocontrol agents in sustainable agriculture Relates endophyte organisms and nano-technology

The development of computational methods that support human health and environmental risk assessment of engineered nanomaterials (ENMs) has attracted great interest because the application of these methods enables us to fill existing experimental data gaps. However, considering the high degree of complexity and multifunctionality of ENMs, computational methods originally developed for regular chemicals cannot always be applied explicitly in nanotoxicology. This book discusses the current state of the art and future needs in the development of computational modeling techniques for nanotoxicology. It focuses on (i) computational chemistry (quantum mechanics, semi-empirical methods, density functional theory, molecular mechanics, molecular dynamics), (ii) nanochemoinformatic methods (quantitative structure-activity relationship modeling, grouping, read-across), and (iii) nanobioinformatic methods (genomics, transcriptomics, proteomics, metabolomics). It reviews methods of calculating molecular descriptors sufficient to characterize the structure of nanoparticles, specifies recent trends in the validation of computational methods, and discusses ways to cope with the uncertainty of predictions. In addition, it highlights the status quo and further challenges in the application of computational methods in regulation (e.g., REACH, OECD) and in industry for product development and optimization and the future directions for increasing acceptance of computational modeling for nanotoxicology.

The application of Biotechnology dates back to the early era of civilization, when people first started to cultivate food crops. While the early applications are certainly still relevant, modern biotechnology is primarily associated with molecular biology, cloning and genetic engineering not only to increase the yield and to improve the quality of the crop but also its potential impact has touched upon virtually all domains of human interactions. Within the last 50 years, several key scientific discoveries revolutionized the biological sciences that facilitated the rapid growth of the biotechnology industry. 'Biotechnology and Biological Sciences III' contains the contributions presented at the 3rd International Conference on Biotechnology and Biological Sciences (BIOSPECTRUM 2019, Kolkata, India, 8-10 August 2019). The papers discuss various aspects of Biotechnology such as: microbial biotechnology, bioinformatics and drug designing, innovations in pharmaceutical industries and food processing industries, bioremediation, nano-biotechnology, and molecular-genetics, and will be of interest to academics and professionals involved or interested in these subject areas.

The book compiles the research works related to smart solutions concept in context to smart energy systems, maintaining electrical grid discipline and resiliency, computational collective intelligence consisted of interaction between smart devices, smart environments and smart interactions, as well as information technology support for such areas. It includes high-quality papers presented in the International Conference on Intelligent Computing Techniques for Smart Energy Systems organized by Manipal University Jaipur. This book will motivate scholars to work in these areas. The book also prophesies their approach to be used for the business and the humanitarian technology development as research proposal to various government organizations for funding approval.

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