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| Descrizione fisica | 1 online resource (446 pages) |
| Disciplina | 660.6 |
| Soggetti | Nanotechnology Microbiology Environmental protection Civil engineering Food science Ecology Agricultural biotechnology Soil and Water Protection Food Nanotechnology Environmental Sciences Agricultural Biotechnology |
| Lingua di pubblicazione | Inglese |
| Formato | Materiale a stampa |
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| Nota di bibliografia | Includes bibliographical references and index. |
| Nota di contenuto | Chapter 1. Biosynthesis of Metal Nanoparticles using bacterial Metabolites and Their applications -- Chapter 2. Insights on Microbes Mediated Greener Synthesis of Nanoparticles: Advantages and Challenges -- Chapter 3. Use of Nanomaterials as an Antimicrobial and Antiviral Regimen -- Chapter 4. Vaccine Nanotechnology for the Prevention of Infectious Diseases -- Chapter 5. Exploring the Application, Safety, and Challenges of Free versus Immobilized Antimicrobial Nanomaterials -- Chapter 6. Application of Nanotechnology in Food Microbiology: Implication on Public Health -- Chapter 7. Application of CRISPR Technology and Nanomaterials to Advance Food Supply -- Chapter 8. Nano-material Based Sensing |

Platforms for Food Borne Pathogen Detection -- Chapter 9. Dental Microbial Biofilms: Control and Treatment through Nanotechnology Approaches -- Chapter 10. Recent advances in antifungal nanomaterials for combating biofilm infection caused by *Candida albicans* -- Chapter 11. The Effect of NanoSilver Diamine Fluoride in Arresting Dental Caries -- Chapter 12. Emerging Microfluidics Devices for Microbial Studies -- Chapter 13. Nanotechnology Approaches for Microbe-based Formulations and Drug Delivery -- Chapter 14. Nanotechnology-Based Electrochemical Diagnostic Tools for the Detection of Viral Diseases: Advantages and Disadvantages -- Chapter 15. Next Generation Sequencing and Solid State Nanopores -- Chapter 16. An overview of Anode in Microbial Fuel cell; Current Challenges and Opportunities -- Chapter 17. Insights of Nano-biotechnology as Bio-adsorbents for Wastewater Remediation.

Sommario/riassunto

This book discusses the applications of nanotechnology in clinical microbiology, food microbiology, and green solutions of nanoparticles using microorganisms for a range of benefits. It describes nanotechnology's rapid progress in the development of materials used in industry, medicine, drug delivery, and dentistry. The authors further explore how microbiology and nanotechnology separately have proven to be effective for human health solutions keeping an ecological and environmental balance. Domains covered include environmental microbiology, medical microbiology, food microbiology (to control food spoilage), biosynthesis of nanomaterials using microorganisms, water microbiology, nanofluidic devices for isolation and analysis of individual biomolecules such as DNA that can lead to a new detection scheme for cancer, and various fields such as pharmacy, clinical research, agriculture etc. This book will be essential reading to a wide range of scholars and researchers interested in microbiology along with nanotechnology applications for efficient solutions to cancer detection, biosensors, vaccines research, agriculture, wastewater management etc. Presents microbial nanobiotechnology for improved vaccines and better disease-diagnostic tools Describes improved microbial agents for biological control of plant and animal pests Discusses biosynthesis of nanomaterials using microorganisms, environmental sustainability, and water microbiology.
