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Nota di contenuto	Chapter 1. Significance influence of microbial biodiversity in biotechnological and industrial sectors -- Chapter 2. Significance and contribution of Microbial biodiversity in Various Biotechnological and Industrial Sectors -- Chapter 3. Fundamentals and industrial applications of modern genetic engineering -- Chapter 4. Omics role and its integration to modern-day technologies: Identification in production of industrially relevant bioproducts -- Chapter 5. Impact study of gene expression: Osmotic control, SOS response and heat shock response -- Chapter 6. Significance of microbial biomolecules, secondary metabolites and its impact on diverse aspects of human health -- Chapter 7. Molecular approaches to microbial identification of

industrially significant strains -- Chapter 8. Emerging trends in novel technological advancements of oligosaccharides production and their potential applications as prebiotics with beneficial effects -- Chapter 9. Processed Food Microbiology and Safety: Risks, Trends and Future Perspectives -- Chapter 10. Microalgal Based Biorefinery Approaches Towards a Sustainable Future -- Chapter 11. Enzymes for food and industrial significance -- Chapter 12. Probiotic bacterial enzymes and cardiovascular diseases -- Chapter 13. Two-component regulatory systems in microbial pathogenesis -- Chapter 14. Significance of various aspects of food microbiology, fermentation and latest technology and its impact on human health- Chapter -- 15. Biostatistical investigation using docking mechanism and its database to investigate drug design, drug discovery, drug metabolism and prediction via drug-drug interactions -- Chapter 16. Biomaterials development using microbial products and its utilization in day-to-day life -- Chapter 17. Materials technology and its advancements involving nanotechnology, hydrogels and its impact assessment on various aspects of improving the health care system -- Chapter 18. Emerging technologies in medical microbiology for early diagnosis of diseases for better disease management -- Chapter 19. Use of Nanoparticles in the Healthcare Industry for Antimicrobial Effects -- Chapter 20. Probiogenomics and Genome Annotation in Bifidobacteria and Lactobacilli -- Chapter 21. Microbe-assisted agro-industrial waste valorization for green energy generation: A sustainable biorefinery approach -- Chapter 22. Exploring the Potential of Microbial Biomolecules in advancing human health and environmental sustainability -- Chapter 23. Mutation significance and assessment: Mutation types and selection of mutants, importance in microbial technology -- Chapter 24. Pivotal role of the biobased approaches towards a sustainable future -- Chapter 25. Impact of novel remediation technology: Significant role in the removal of toxic pollutants via sustainable approaches -- Chapter 26. Mycorrhizal fungi as technological intervention for crop productivity -- Chapter 27. Impact of novel remediation technology: Significant role in the removal of toxic pollutants via sustainable approaches. .

Sommario/riassunto

This book provides an in-depth exploration of microbial biodiversity and its crucial role in diverse biotechnological and industrial sectors. It covers topics such as the integration of molecular approaches for identifying industrially significant strains, omics roles in the production of bioproducts, and modern genetic engineering techniques. It discusses biostatistical investigations and the impact of microbial biotechnology on healthcare and emerging contaminants. It highlights the significance of food microbiology, fermentation, and the latest technologies in improving human health. Additionally, the book delves into emerging trends in oligosaccharide production, biobased approaches for a sustainable future, and the importance of microbial biomolecules and secondary metabolites. It also explores the identification and production of industrially significant biocatalysts/enzymes, the valorization of agro-industrial waste using microorganisms for green energy generation, and the development of bioreactor systems for the biobased economy. The book covers advancements in solid-gaseous biofuels production, impact assessment of synthetic microfiber pollution, sustainable management strategies for waste management, and the impact of emerging technologies in medical microbiology. The book also discusses the development of healthcare products using nano-biotechnological advancements, the impact of novel remediation technology, and the utilization of microbial products in biomaterial development. It further

explores microbial regulatory systems, gene expression studies, and the significance of mutations in microbial technology. This book serves as a great reference for researchers, environmentalists, microbiologists, biotechnologists, and graduate, post-graduate students, and doctoral students working on microbial biotechnology and industrial microbiology. .