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Nota di contenuto	Chapter 1. An Overview and Impact of Emerging Pollutants on Human Health and Environment -- Chapter 2. Evaluating Regulatory Approaches to Emerging Pollutants -- Chapter 3. Toxicity and health impact of emergent pollutants and sustainable management as 1 bioremediation -- Chapter 4. Toxicity and health impacts of emerging pollutants -- Chapter 5. Sustainable and Resilient Urban Development using Environmental Planning Tools -- Chapter 6. MICROALGAE-BASED BIOREMEDIATION: A SUSTAINABLE APPROACH FOR REMOVAL OF EMERGENT POLLUTANTS -- Chapter 7. Agro-(Bio)Microplastics: Ex- traction, Identification and Quantification Methodolo- gies -- Chapter 8. Coupling bioremediation strategies for eradication of soil organic pollutants -- Chapter 9. Microbial degradation of Polyaromatic

hydrocarbons in marine and coastal ecosystems -- Chapter 10. Contribution of Cyanobacteria and Microalgae for the Removal of Emergent Pollutants from Wastewater: A Review -- Chapter 11. Revitalizing Ecosystems: A Sustainable Approach to Mitigating Arsenic Toxicity -- Chapter 12. Microplastic Pollution: Unveiling the sources, pathogenesis, and effective remediations -- Chapter 13. Heavy metals (As, Cd, Hg, Pb) contamination and bioaccumulation in estuarine and marine ecosystems with special reference to Asia -- Chapter 14. Possible strategies for Oil spill removal from mangrove water emphasizing Bio adsorption strategies and its limitations -- Chapter 15. Removal of Emerging Inorganic Wastewater Pollutants Using Fluidized Bed Bioreactor: A Review -- Chapter 16. Advanced strategies in microbial bioremediation of dyes from industrial wastewater -- Chapter 17. Mycoremediation A Sustainable approach to curb emerging pollutants -- Chapter 18. Earthworms: The Environmentally preferred Bioengineers for managing Heavy metals -- Chapter 19. Cellulase Enzymes: Transforming Lignocellulosic Waste into Sustainable Solutions -- Chapter 20. Fungal oxidoreductases: efficient tool for eco-friendly and sustainable pesticide bioremediation -- Chapter 21. Microbial Fuel Cell as Biotechnological Interventions in Removal of Emergent Pollutants: A Comprehensive Review -- Chapter 22. Removal of emerging contaminants microplastics by using biochar technology, a review -- Chapter 23. Diatoms: an important biomonitoring and bioindicator tool of aquatic ecosystems with potential in novel nanomaterial synthesis and downstream applications in pollutant removal -- Chapter 24. Engineered nanomaterials and associated threats in the environment risk -- Chapter 25. Eco-toxicological footprint of agricultural nanoparticles: Balancing productivity with environmental safety -- Chapter 26. Ecotoxicity potential of carbon and metal nanoparticles: Delving into the darker realm.

Sommario/riassunto

This book focuses on the most recent developments in bioremediation techniques, exploring how microorganisms can break down different pollutants and the future potential of bioremediation to reduce global pollution levels. It examines the impact of various emerging pollutants on the environment and the health of living organisms while highlighting recent advancements in bioremediation methods needed to degrade these pollutants. Addressing both inorganic and organic compounds from industrial and anthropogenic activities, including personal care products, endocrine disruptors, and pharmaceutical products, this book tackles pollutants that escape conventional water treatment processes, contaminating groundwater, soil, sediments, and oceans. The chapters also cover topics such as the toxicity and health impacts of emerging pollutants, ecotoxicological effects of nanoparticles, policies related to emerging pollutants, technologies for their detection, and technological aspects of their fate during wastewater treatment. Readers will find a comprehensive examination of the roles of microbes in bioremediation, including the elimination, degradation, detoxification, and immobilization of pollutants. The book also introduces enzyme biotechnology as a cost-effective, low-energy, eco-friendly technology for treating various pollutants. Furthermore, it discusses the combination of physical treatment and nanotechnology for sustainable pollutant removal. This book serves as a valuable resource for policymakers aiming to develop effective environmental regulations, educators seeking comprehensive educational material, researchers looking to expand their knowledge on advanced bioremediation techniques, climate change scientists dedicated to mitigating pollution, and undergraduate and graduate students studying agriculture, forestry, ecology, soil science, or environmental

sciences.
