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Nota di contenuto	Chapter 1. Microplastic and nano plastic: a threat to the environment -- Chapter 2. Impact of microplastics and nanoplastics in the aquatic environment -- Chapter 3. Microplastics an emerging environmental issue: its bioremediation, challenges, and a future perspective -- Chapter 4. Micro-nanoplastics from Stormwater Runoffs to Water Bodies: An In-Depth Investigation -- Chapter 5. Micro-Nano-plastics in the Environment: Current Research and Trends -- Chapter 6. Beneath the Surface: Unraveling the Impact of Micro and Nano Plastics on Plant Performance -- Chapter 7. INTERACTION OF MICRO-NANO-PLASTICS AND HEAVY METALS IN SOIL SYSTEMS: MECHANISM AND IMPLICATION -- Chapter 8. Effects of micro-nanoplastics exposure to earthworms in the soil system -- Chapter 9. TOXICOLOGICAL EFFECTS OF MICRO AND NANO PLASTICS ON SOIL FAUNA: CURRENT RESEARCH, ADVANCES, AND FUTURE OUTLOOK -- Chapter 10. Long-term fate of micro/nanoplastics in Soil Systems and their impacts -- Chapter 11.

Adsorption Behavior and Interaction of Micro-Nano Plastics in Soils and Aquatic Environment -- Chapter 12. Dynamics of biodegradable plastics in the process of food waste biotreatment and environmental risks of residual plastics fragments -- Chapter 13. Occurrence and Fate of Microplastics in Anaerobic Digestion of Dewatered Sludge -- Chapter 14. Micro-Nano-plastics in Sewage sludge: Sources, Occurrence, and Potential Environmental risks -- Chapter 15. Cleaning Up the Smallest Pollutants: The Potential of Microbial Degradation in Tackling Micro- and Nano-Plastic Pollution -- Chapter 16. Enzyme Assisted Biodegradation of Micro-Nanoplastics: Advances and Future Outlook on the Management of Plastic Pollution -- Chapter 17. Microbial Nanobioremediation of Micro-Nanoplastics: Current Strategies, Challenges and Future Prospects.

Sommario/riassunto

This book comprehensively assesses the management of micro and nano-plastics in contaminated soil and biosolids, highlighting recent techniques and technologies that facilitate their environmental remediation. It provides up-to-date information on the fate, occurrence, monitoring, and transport of micro and nano-plastics in the environment, aiming to determine their detrimental impact on environmental health. The book also explores how risk factors associated with these particles can be identified and mitigated through sustainable means. Micro and nano-plastic contamination is analyzed in various contexts, including agricultural soil systems, urban areas, and wastewater. Special attention is given to the mechanisms of recent decontamination strategies, such as microbial and enzyme-assisted degradation and biochar. The intended audience for this book includes students, researchers, professionals in the urban municipal wastewater treatment sector, waste management and industrial practitioners, as well as policymakers.