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Nota di contenuto	Microbial biotechnology for circular economy in wastewater treatment: potentials, technologies, and challenges -- Activated sludge process for Wastewater Treatment -- Advanced oxidation processes for industrial wastewater treatment -- Microbial Biofilms in the Treatment of Textile Effluents -- The Challenges of Wastewater and Wastewater Management -- Application of Nanomaterials for the Removal of Heavy Metal from Wastewater -- Nanofiltration Applications for Potable Water, Treatment, and Reuse -- Sustainable green approaches for wastewater Purification -- Contaminants of Emerging Concern and Hybrid Continuous Flow Treatment: A Promising Combination -- An innovative and effective industrial wastewater treatments to reduce water pollution: A brief history and present scenario -- Role of lignocellulosic waste in biochar production for adsorptive removal of pollutants from wastewater -- Emerging methods used in Bioremediation and Nano techniques for the removal of heavy metals in contaminated soil and industrial effluents -- Therapeutic and diagnostic potential of nanomaterials for enhanced biomedical applications -- Nanomaterials

and their properties: Thermal analysis, physical, mechanical and chemical properties -- Bioremediation of industrial wastewater using microorganisms: an overview with recent developments -- Phytochelatins: Heavy metal detoxifiers in Plants -- Applications of bioremediation in treatment of environmental pollution -- Combined Applications of Physico-Chemical Treatments In Treatment of Industrial Wastewater -- Traditional Treatment Methods for Industrial Waste -- Anthracene removal from wastewater using biotechnological interventions. .

Sommario/riassunto

This book discusses new and innovative trends and techniques in the removal of toxic and refractory pollutants by means of various microbial biotechnology processes from wastewater, both on the laboratory and industrial scales. The book also highlights the main factors contributing to the removal of toxic pollutants as well as recycling, environmental impact, and wastewater policies after heavy metal removal. In addition, it assesses the potential application of several existing bioremediation techniques and introduces new cutting-edge emerging technologies. This book significantly contributes to the wastewater treatment plant industry so that the treatment systems can serve better and more resiliently for the purpose. This book is designed for engineers, scientists, and other professionals who are seeking introductory knowledge of the principles of environmental bioremediation technology and for students who are interested in the environmental microbiology and bioremediation fields.