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Nota di contenuto	-- Chapter 1: Biorefineries and waste valorization in integrated biorefinery concepts and applications -- Chapter 2: Bio-electrochemical systems for sustainable treatment of industrial wastewater: Current status and future prospects -- Chapter 3: Pharmaceutical waste valorization and bioremediation: Challenges and innovations -- Chapter 4: Biotechnological strategies for transforming pulp and paper industry waste into high-value products: A pathway to sustainable environmental management -- Chapter 5: Biotechnological advances in bioconversion of CO2 as an industrial waste to value-added products -- Chapter 6: Biotechnological interventions for textile waste management -- Chapter 7: Biotechnological approaches for

agricultural waste management -- Chapter 8: Biolubricant production from waste: A new paradigm for environmental sustainability -- Chapter 9: Biotechnological techniques for recovery of renewable resources from municipal wastewater and value-added products development -- Chapter 10:Metabolic engineering for industrial waste valorization -- Chapter 11:Novel applications of microbial electrolysis cells in anaerobic digestion systems: Trends and Perspectives -- Chapter 12:Enzymatic approaches for tannery waste valorization -- Chapter 13:Microbial bioremediation for industrial waste valorization -- Chapter 14:Challenges and opportunities in biotechnological waste valorization.

Sommario/riassunto

This book overviews the cutting-edge applications of biotechnological tools and techniques in valorizing industrial waste to achieve the United Nations Sustainable Development Goals. It provides comprehensive insights into the latest research, technologies, processes, and case studies, making it an invaluable resource for researchers, professionals, policymakers, and students interested in waste management, bioenergy recovery, and sustainable development. By transforming industrial waste into high-value products, this book fosters a circular economy and lessens environmental strain, bridging the gap between academia and industry with practical solutions and innovative strategies. It seeks to fill the gap between academics and industry by outlining workable solutions and discussing cutting-edge tactics that can be used in realistic situations. While providing an in-depth exploration of advanced biotechnological techniques being widely used to valorize industrial waste, the book covers a wide range of issues that help academics and professionals efficiently deal with various waste streams, such as microbial bioremediation, renewable energy, resource recovery, enzymatic degradation, metabolic engineering, bioprocess development, and others. The book intends to motivate and guide students, researchers, practitioners, and policymakers in pursuing sustainable waste management strategies by exhibiting the revolutionary power of microbial technology. The concise and impartial content structure will also benefit corporate researchers. It is an essential resource for anyone interested in the intersection of biotechnology and environmental sustainability, offering insights that are both academically rigorous and practically applicable.