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Altri autori (Persone)	Ray Chaudhuri
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Nota di contenuto	Chapter 1. From Ignorance to Concern: Highlighting New Pollutants in Sewage Sludge -- Chapter 2. Advanced Treatment Techniques for Deodorization of Industrial off Gases and Wastewater Pollutant (BTEX) Removal -- Chapter 3. Unveiling the Sulfur Surge: Assessing Global Freshwater Contamination and Innovating Sustainable Bioremediation Strategies -- Chapter 4. Sulphate Reducing Bacteria in wastewater treatment processes -- Chapter 5. Different approaches for treating aquaculture wastewater and its reuse -- Chapter 6. Valorization of waste water by the application of probiotic, nitrifying and denitrifying bacterial consortium -- Chapter 7. Hexamine, a major wastewater pollutant: the complete story -- Chapter 8. Application of microbial technology in wastewater treatment -- Chapter 9. Role of the Microbial Community in Energy Recovery via Wastewater Treatment -- Chapter 10. Microbial Cultures and Pre-treatment Strategies for Hydrogen Production from Agricultural Crop Residues -- Chapter 11. Microalgae: nature's green gold and their potential to meet sustainable development goals -- Chapter 12. Potential and feasibility of metal

cyanoremediation in the environment -- Chapter 13. Algae-mediated Wastewater Valorization and Bioenergy Recovery -- Chapter 14. Microalgae-Based Biofuel for Sustainable Bioenergy Production -- Chapter 15. Green Fuel Revolution: Microalgae in Wastewater for Sustainable Biodiesel Production -- Chapter 16. Microbial biofilms in wastewater treatment: A sustainable approach -- Chapter 17. Membrane Technology for Wastewater Treatment and Biogas Upgrading -- Chapter 18. Simultaneous Treatment of Wastewater with Energy Recovery: A Microbial Fuel Cell Approach -- Chapter 19. Microbial Fuel Cells: Bifunctionalized Approach for Wastewater Treatment and Energy Recovery Innovation -- Chapter 20. Nanoparticles: A New Paradigm for Wastewater Treatment -- Chapter 21. Nanomaterial Innovations for Environmental Health: Advancing Wastewater Treatment Technologies -- Chapter 22. Carbon-based layered double hydroxides for solar photo-mineralisation of textile dye waste -- Chapter 23. Nanobiotechnology in Wastewater Treatment and Circular Economy: Frontiers in Wastewater Management -- Chapter 24. Visible Light Driven Photocatalysis Using Semiconductor and Plasmonic Nanoparticles for Industrial Waste Water Treatment.

Sommario/riassunto

This book explores microbial intervention in wastewater treatment for resource recovery, bioenergy production, and environmental sustainability. It discusses the fate of pollutants, challenges in existing treatment strategies, and the need for innovation. Case studies illustrate wastewater-specific treatment strategies for bioenergy and resource recovery at different scales. The book emphasizes the use of wastewater for resource recovery through sequestration or biotransformation and highlights tailor-made consortium development for sludge-free treatment. It also covers sustainable approaches like microbial biofilm reactors, microbial fuel cells and membrane technology for wastewater treatment. It also deals with nanotechnology in combination with microbial technology for handling refractory components in wastewater that could not be handled by microbes alone. This book provides insights into microbial technology for a clean environment and bioenergy production through a reduce, recover, and reuse approach. This valuable resource offers practical information that can be applied by engineers, researchers, and undergraduate and graduate students, as well as business professionals in the bioenergy field, aiding them in the implementation of renewable energy projects.
