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Nota di contenuto	Introduction to Wastewater Monitoring: Challenges and Opportunities -- Aquatic Macrophyte-based Detection and Treatment of Wastewater Pollution -- Remote sensing: Utilising Satellite Imagery to Monitor Wastewater pollution -- Biosensors: Potential of Microbes and Microbial enzymes in detecting and managing Emerging pollutants in Wastewater -- Application of GIS to analyse Wastewater pollution and its impact on surrounding environs -- Microfluidic devices: Harnessing the power of tiny devices in analysing Wastewater quality -- Potential of Artificial Intelligence and Machine learning in wastewater management -- Nanotechnology applications in wastewater treatment: A Paradigm Shift -- Microbial Fuel cells: Harnessing Bacteria's power for wastewater treatment -- Electrocoagulation: A sustainable Approach for wastewater treatment -- Introduction to Wastewater management: For wastewater reuse and resource recovery -- Advanced Biological Nutrient Removal techniques for Enhanced Water Quality -- Catalytic Ceramic Membranes for Emerging Contaminant Treatment in Wastewater -- Application of Nanostructured Materials for efficient

removal of Emerging contaminants from wastewater -- Highly active metal-oxide electrodes: Emphasizing their efficiency and cost-effectiveness in electrochemical remediation of organic contaminants from wastewater -- Membrane Filtration Techniques: Purifying Wastewater from Emerging Toxicants -- Smart Wastewater Management Techniques: The Role of Artificial Intelligence and Machine Learning.

Sommario/riassunto

This book provides an in-depth understanding of the latest technologies and approaches to monitor and manage wastewater such as the review of current state, the challenges faced by the industry, and the latest technological advancements in the field. The book is divided into two parts, each of which focuses on a specific aspect of wastewater monitoring and management. The part one includes the wastewater monitoring which highlights and provides an overview of the latest technologies, including remote sensing, GIS, biosensors, electrochemical sensors, and microfluidic devices. The part two focuses on the latest approaches to treat and manage wastewater. This part discusses advanced electrochemical methods, nanotechnology applications, membrane filtration techniques, electrocoagulation, microbial fuel cells, and the potential of artificial intelligence, machine learning, IoT and big data analytics in wastewater management. The part also covers the potential of advanced biotechnological approaches to remove toxicants and enhance water quality. The book is a valuable resource for professionals and students in the field of wastewater management.
