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Special Issue Reprint

Advanced Biotechnologies for Water and Wastewater Treatment

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This reprint deals with the latest developments regarding water and wastewater treatment using recent biotechnological processes. This reprint includes 11 papers and an editorial. Two papers focus on biomass management through thermal degradation and sludge separation, including pyrolysis and gasification technologies and microbial strategies for sludge granulation. Five papers tackle heavy metals removal, investigating lead's effects on algal-bacterial sludge, optimizing Cr removal using ANFIS and AEO, and using bacterial cellulose biomass, E. crassipes biomass, and genetically engineered *E. coli* for Cd removal. Four papers addressed organic contaminant degradation, studying ZnO nanoparticles' photo-catalytic activity, immobilized enzymes for pollutant treatment, fungal mycelium and enzymes for dye removal, and phenol degradation using immobilized Alcaligenes faecalis in Fe_3O_4-modified biochar. This reprint highlights innovations in biotechnology for sustainable water and wastewater treatment, emphasizing biomass management, heavy metals removal, and organic contaminant degradation.

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