



# Advanced Treatment Technologies for Urban Wastewater Reuse [

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Environment Water quality Water pollution Analytical chemistry  
Geochemistry Environment Waste Water Technology / Water Pollution  
Control / Water Management / Aquatic Pollution Water Quality/Water Pollution  
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Monografía

This volume offers a detailed overview of currently applied and tested wastewater treatment technologies and the integration of advanced processes to remove trace organic contaminants and microorganisms. It discusses the potential of enhanced biological treatment to produce effluent suitable for reuse, new processes for urban wastewater disinfection and the reduction of antibiotic resistant bacteria, as well as the effect of advanced oxidation processes on wastewater microbiome and chemical contaminants. It also presents membrane bioreactors, moving bed bioreactors, light and solar driven technologies, ozonation and immobilised heterogeneous photocatalysis and provides an evaluation of the potential of constructed wetlands integrated with advanced oxidation technologies to produce wastewater safe for reuse. Furthermore, the volume discusses water reuse issues and standards, the status of membrane bioreactors applications, and the treatment of reverse osmosis concentrate for enhanced water recovery during wastewater treatment. Finally, it presents recent developments in potable water reuse and addresses various important issues in this framework, like the proper protection of public health, reliability and monitoring. This volume is of interest to experts, scientists and practitioners from various fields of research, including analytical and environmental chemistry, toxicology and environmental and sanitary engineering, as well as treatment plant operators and policymakers

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**Contenido:** Scope of the Book Advanced Treatment Technologies for Urban Wastewater Reuse -- Treatment technologies for wastewater reuse: fate of contaminants of emerging concern -- Trace organic contaminants removal by combined processes for wastewater reuse -- Enhanced biological wastewater treatment to produce effluents suitable for reuse -- Conventional and new processes for urban wastewater disinfection: effect on emerging and resistant microorganisms -- Impacts of advanced oxidation processes on microbiomes during

wastewater treatment -- Advanced technologies for emerging contaminants removal in urban wastewater -- Immobilized heterogeneous photocatalysis for reuse of water contaminated by recalcitrant organic compounds: the case of antibiotics -- Constructed wetlands integrated with advanced oxidation processes in wastewater treatment for reuse -- Membrane bioreactors (MBRs) for water reuse in the United States -- Treatment of reverse osmosis concentrate for enhanced water recovery from wastewater treatment plant effluent -- Recent developments in potable water reuse -- Long-term strategies for tackling micropollutants

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