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Nota di contenuto	Surface and groundwater sources for drinking water -- Limitations of conventional drinking water technologies in pollutants removal -- Natural Organic Matter: characterization and removal by AOPs to assist drinking water facilities -- Natural organic matter removal by heterogeneous catalytic wet peroxide oxidation (CWPO) -- Separation and characterization of NOM intermediates along AOPs oxidation -- Photo (Catalytic) Oxidation Processes for the Removal of Natural Organic Matter and Contaminants of Emerging Concern from Water -- Homogeneous Fenton and photo-Fenton disinfection of surface and ground water -- AOPs methods for the removal of taste and odor compounds -- Wastewater Treatment by Heterogeneous Fenton-like Processes in Continuous Reactors -- Disinfection by chemical oxidation methods -- Inactivation of Cryptosporidium by Advanced Oxidation

Processes -- Cost-effective catalytic materials for AOP-treatment units -- Impact on Disinfection Byproducts Using Advanced Oxidation Processes for Drinking Water Treatment -- Evolution of toxicity and estrogenic activity throughout AOP’s surface and drinking water treatment -- Chemometric methods for the optimization of the advanced oxidation processes for the treatment of drinking and wastewater.

Sommario/riassunto

This volume reviews the drinking water treatments in which AOPs display a high application potential. Firstly it reveals the typical supply sources and limitations of conventional technologies and critically reviews natural organic matter characterization and removal techniques, focusing mainly on AOP treatments. It then explores using AOPs for simultaneous inactivation/disinfection of several types of microorganisms, including highly resistant Cryptosporidium protozoa. Lastly, it discusses relevant miscellaneous topics, like the most promising AOP solid catalysts, the regime change of Fenton-like processes toward continuous reactors, the application of chemometrics for process optimization, the impact on disinfection byproducts and the tracing of toxicity during AOP treatments. This work is a useful reference for researchers and students involved in water technologies, including analytical and environmental chemistry, chemical and environmental engineering, toxicology, biotechnology, and related fields. It is intended to encourage industrial and public-health scientists and decision-makers to accelerate the application of AOPs as technological alternatives for the improvement of drinking water treatment plants. .