Nanotechnology in Water Treatment Applications

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Nanotechnology, the engineering and art of manipulating matter at the nanoscale (1-100 nm), offers the potential of novel nanomaterials for the treatment of surface water, groundwater and wastewater contaminated by toxic metal ions, organic and inorganic solutes and microorganisms. At the present time many nanomaterials are under active research and development.

This timely volume reviews the current state-of-the-art research and development of different nanomaterials (nanostructured catalytic membranes, nanosorbents, nanocatalysts and bioactive nanoparticles) and their application in water treatment, purification and disinfection. The expert authors have contributed chapters focusing on the cutting-edge research in this emerging technology and its applications in microbiology and water treatment. Topics covered include the detection of microbial pathogens, nanofibers and nanobiocides in water purification, nanozymes for biofilm removal, water and wastewater treatment and reverse osmosis. Also included is a chapter dedicated to the health and environmental concerns for the use of nanotechnology in water treatment.

This book is aimed at everyone interested in nanobiotechnology, bioremediation, biodiagnostics, molecular diagnostics and environmental microbiology and is a recommended text for all microbiology laboratories.

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