

Organic Pollutants in Wastewater I

Methods of Analysis, Removal and Treatment

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Wastewater represents an alternative to freshwater if it can be treated successfully for re-use applications. Promising techniques involve photocatalysis, adsorption, nanocomposites, and membranes. The book focusses on several topics related to the removal of organic pollutants from wastewater.

Keyword: Wastewater Treatment, Organic Pollutants, Organic Dyes, Photocatalysis, Nanocomposite Photocatalysts, Photocatalytic Degradation, Adsorption, Membrane Filtration, Fenton Processes, Biosorbents, Phenolic Compounds, Carbon Quantum Dots, Methylene Blue Degradation, ZnO Composites, TiO₂ Based Nanocomposites

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Summary:

Wastewater represents an alternative to freshwater if it can be treated successfully for re-use applications. Promising techniques involve photocatalysis, adsorption, nanocomposites, and membranes. The book focusses on the following topics:

Effluent detoxification and degradation kinetics of organic dyes using Fenton and photo-Fenton processes. Degradation of methylene blue using nanocomposites as a potential photocatalyst. Agricultural and agro-industries based wastes as low-cost biosorbents. Use of carbon quantum dots (CQDs) for photocatalytic degradation of organic pollutants. Detection, determination and removal of phenolic compounds from wastewater. Decomposition of organic dyes via photocatalysis. Oxide-semiconductor nanomaterials for photocatalytic wastewater purification. Photocatalytic efficiency of various ZnO composites for degradation of organic pollutants. TiO₂ based nanocomposites. Membrane filtration processes for the removal of organics from industrial wastewater.

