

An Overview of Photocatalysis for Wastewater Treatment

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Abstract

The adaptation of highly advanced nanotechnology to tradition process engineering offers new opportunities in technological developments for advanced water and Wastewater technology processes. Nanotechnology-based multifunctional and highly efficient processes are providing affordable solutions to water/wastewater treatments that do not rely on large infrastructures or centralized systems. These advances range from the direct applications of synthesized nanoparticles as adsorbents for removing toxic contaminants or as catalysts for oxidative degradation of noxious contaminants in wastewater. Nanomaterials typically have high reactivity and a high degree of functionalization, large specific surface area, size-dependent properties etc., which makes them suitable for applications in wastewater treatment and for water purification. This review presents recent developments in field of nanotechnology for water and wastewater treatment emphasizing various photocatalysis.

Key words: Nanotechnology, Wastewater treatment, photocatalysis, contaminants