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DISPOSAL CHARACTERISTICS OF SLUDGE RESULTED FROM THE TREATMENT OF MUNICIPAL WASTEWATER BY HETEROGENEOUS PHOTOCATALYTIC TECHNOLOGY

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Abstract

Among many photocatalytic materials, TiO₂ is considered to be the most promising photocatalytic material due to its chemical stability, non-toxic, low cost and anti-corrosion. The kinetics of photocatalytic degradation of organic pollutants in water by TiO₂ can be described by Langmuir-Hinshelwood kinetics. The kinetic model is suitable for the physical and chemical reactions occurring at the solid-liquid interface. TiO₂ is prepared through the preparation of precursor fluid, spray drying process and calcination. To study the secondary sewage treatment wastewater in a city, the removal efficiency of dissolved organic matter in secondary effluent water by photocatalytic oxidation was discussed. The observation results show that the titanium dioxide glass fiber net prepared by this research method had a good stability, and the acid removal efficiency of corrosive liquid is increased by 14%, which indicates that the titanium oxide photocatalytic device designed in this paper can effectively remove conventional pollutants.

Key words: heterogeneous photocatalysis, sludge disposal, urban sewage, TiO₂, water treatment

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