

عنوان مقاله:

Controlling photocatalytic degradation of Titania through microstructure to treat waste waters

محل انتشار:

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خلاصه مقاله:

Solar energy utilization through semiconductor photocatalysis has been insensitively investigated for both air pollution and waste water treatment applications. Heterogeneous photocatalytic reactions are mostly surface chemical reactions and the morphology properties of the semiconductor play a critical role in determining the reaction efficiencies and mechanisms. The microstructure properties of TiO₂, the most popular semiconductor photocatalyst, are related with various parameters that include pH, surface charge, particle size distribution, Specific surface ratios, crystalline phase, surface defects and sites. TiO₂ surface can be actively modified by manipulating the above parameters in order to optimize or control the photocatalytic reactions. This paper introduces various examples that show how structure modification influences the photocatalytic activities in relation with dyes degradation. The methods of structure modification of TiO₂ include precursors and preparation methods and parameters. Understanding the relation between the microstructure property and the photocatalytic activity is essentially required to control the surface sites and semiconductor phases

کلمات کلیدی:

Hydrothermal, Microstructure, Photocatalyst, TiO₂

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