

عنوان مقاله:

ENHANCMENT PHOTOCATALYTIC ACTIVITY OF ZnO WITH COUPLING SnO₂ IN THE REMOVAL OF A MODEL CONTAMINANT FROM TEXTILE INDUSTRY

محل انتشار:

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خلاصه مقاله:

Acid Yellow 23 (AY23), commonly used as a textile dye, could be photocatalytically degraded using ZnO and SnO₂ suspensions irradiated by a UV-C lamp (30 W). This article describes a method for treating aqueous AY23 by mixing with ZnO – SnO₂ coupled particles. Aqueous AY23 was treated by single photocatalysis or coupled semiconductor particle in a batch photoreactor for mixing. The experiments showed that concentration of ZnO and ratios photocatalysts were the factors that most influenced the degradation characteristics, and that the efficiency of removal of dye pollutants by the interparticle electron transfer (IPET) effect. The results revealed that coupled system was more effective than single one and the best removal was achieved in the ratio of 7:2 (ZnO: SnO₂). The decolorization of 98% occurred with coupled system where as 94% decolorization was achieved with single photocatalysis with a .reaction time of 30 min

کلمات کلیدی:

Advanced oxidation processes, Azo dyes, Acid Yellow 23, Interparticle electron transfer (IPET), Coupled system, ZnO, SnO₂

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