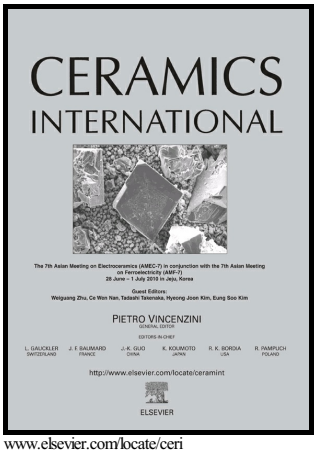

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Sonochemical preparation and photocatalytic properties of CdS QDs /Bi_2WO_6 3D heterojunction

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Abstract： Hierarchical CdS quantum dots (QDs)/ Bi_2WO_6 three-dimensional (3D) heterojunction photocatalyst was successfully synthesized by a facile green ultrasonic method for the first time. Photocatalytic activities under visible light irradiation were tested by the degradation of Rhodamine B (RhB) and tetracycline hydrochloride (TC), and the reduction of Cr(VI) in aqueous solution. As compared to pure CdS and Bi_2WO_6, CdS QDs/ Bi_2WO_6 heterojunctions manifested a significantly enhanced photocatalytic activity for these treatments. When the effect of the mass ratio of CdS QDs to Bi_2WO_6 was investigated, 3% CdS QDs/ Bi_2WO_6 heterojunction showed the highest photocatalytic efficiency: the efficiency for RhB degradation was 94.5% for