

عنوان مقاله:

Photodeposition of cobalt atoms on TiO₂ nanosheets for photocatalytic degradation of tetracycline in aqueous solution

محل انتشار:

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خلاصه مقاله:

Here, we report a procedure for the synthesis of Co/TiO₂ nanosheets (Co/TNs) composite with higher photocatalytic activity compared to pure TNs under visible light. First two dimensional TNs were synthesized via hydrothermal method, then cobalt atoms were dispersed on TNs by photodeposition method. The characterizations were done by X-ray diffraction (XRD), field emission scanning electron microscopy (FESEM), elemental mapping and nitrogen physisorption analyses. Photocatalytic performance was studied using tetracycline (TC) antibiotic degradation (Conc: 30 mg/L) under visible light and UV irradiation. We achieved 44% and 60% visible light degradation and 88% and 84% UV irradiation degradation of TC in the presence of pure TNs and Co/TNs after 180 min irradiation, respectively. The results showed the photodeposition of cobalt atoms on TNs increased the surface area of Co/TNs and improved the photocatalytic activity under visible light.

کلمات کلیدی:

TiO₂ Nanosheets (TNs), Cobalt, Tetracycline, Photodeposition, Degradation

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