

عنوان مقاله:

Sulfur modified ZnO nanorod as a high performance photocatalyst for degradation of Congoredazo dye

محل انتشار:

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خلاصه مقاله:

Sol-gel derived sulfur modified and pure ZnO nanorod were prepared using zinc chloride and thiocarbamide as raw materials. Prepared nanorods were characterized by means of X-ray diffraction (XRD), thermogravimetry- differential scanning calorimetry (TG-DSC), UV- Vis absorption spectroscopy, Brunauer Emmett Teller (BET) specific surface area and Barrett Joyner Halenda (BJH) pore size distribution analyses, scanning electron microscopy (SEM) and Energy-dispersive X-ray spectroscopy (EDX) analyses. The band gaps of sulfur modified and pure ZnO were estimated from UV-Vis spectroscopy data to be ۲.۷۵ and ۳.۱۸ eV, respectively. The specific surface area of sulfur modified ZnO nanorod calculated to be ۲.۶۳ m²/g using BET method. Pore size distribution curve of the mater obtained via BJH method revealed that the diameter of the pores is from several to more than ۲۰nm. Photocatalytic activity of synthesized sulfur modified and pure ZnO nanorod were tested for degradation of Congoredazo dye under ultraviolet and visible light. The results revealed that the sulfur modified ZnO nanorod has excellent photocatalytic activity towards Congored under visible light illumination.

کلمات کلیدی:

photocatalyst, Sulfur modified ZnO, Nanorod, Band gap, Congored

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