

## عنوان مقاله:

Synthesis of ZnO and TiO<sub>2</sub>-capped ZnO nanoparticles and characterization of their photocatalytic behavior

## محل انتشار:

دومین کنگره بین المللی علوم و فناوری نانو (سال: 1387)

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## خلاصه مقاله:

Efficient degradation of water pollutants are the current concern of many efforts worldwide. Among the various conventional and advanced methods such as Advanced Oxidation Processes (AOPs), semiconductor-assisted photocatalysis has attracted great attention for its direct conversion of pollutants into harmless eco-friendly components in waste waters [1, 2]. Here, ZnO and TiO<sub>2</sub> are the most promising candidates for usage due to their interesting properties including photo-stability, resistance to photo-corrosion, photo-sensitivity and nontoxic [3, 4]. In order to improve the properties of these semiconductors, synthesizing of coupled and capped nanostructures have been proposed. It has been reported that the efficiency of photo-induced charge separation can be improved by coupling two semiconductors with different energy levels [5]. This paper reports the synthesis of TiO<sub>2</sub>-capped ZnO nanoparticles through a two-step chemical method. The photocatalytic decolorization of Methylene blue (MB) by the core/shell nanostructure is shown and compared with hydrothermally synthesized ZnO and TiO<sub>2</sub> (P-25, Degussa) nanoparticles

## کلمات کلیدی:

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