عنوان مقاله:
Wet-chemical synthesis routes of Bi2WO6 Nanocrystals

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خلاصه مقاله:
Recently, water pollution and environmental problems caused by various industries have become global concern and led humans to eliminate pollutants from ecosystem. During past decades, photocatalysis technology due to the rapid oxidation and degradation of pollutants in comparison with traditional methods is known as a low-cost, efficient and green method that is utilizing solar energy. There are parameters that can directly influence photocatalytic activity such as the surface properties and crystallinity, band gap of semiconductor and lifetime of electron-hole pairs. Recent studies show that Bi2WO6 with a layered structure and suitable band gap about 2.8 eV has excellent photocatalytic performance under visible light. This study compares structural, morphological and optical characteristics of Bi2WO6 fabricated by hydrothermal and co-precipitation routes as photocatalyst. The Bi2WO6 nanocrystals synthesized by hydrothermal are more porous and has high specific surface area while possessing larger band gap. However, it seems that Bi2WO6 that synthesized by hydrothermal methods is more efficient for photocatalytic applications.

کلمات کلیدی:
Photocatalyst, Bi2WO6, Hydrothermal, Co-precipitation, Surface structure, Band gap