

### Synthesis of BiVO<sub>4</sub> with enhanced photocatalytic activity

정은수, 서정윤, 박승빈\*  
KAIST

(SeungBinPark@kaist.ac.kr\*)

Photocatalysts such as TiO<sub>2</sub>, SrTiO<sub>3</sub> and ZnO have been studied as potential materials to solve environmental problems in sustainable manner. However, these catalysts are activated only under UV light because of their large band gap energy. In this regard, BiVO<sub>4</sub> is proposed to a suitable photocatalyst because of its narrow band gap (about 2.4 eV) and chemical stability.

We prepared the ms-BiVO<sub>4</sub> (monoclinic-scheelite BiVO<sub>4</sub>) photocatalyst by using spray pyrolysis, which is a versatile lab-scale particle generator. For the purpose of enhancing the photocatalytic activity of ms-BiVO<sub>4</sub>, we modified this material by forming heterojunction composites and doping heteroatom. The synthesized ms-BiVO<sub>4</sub> was characterized by using XRD, SEM, TEM and BET. Photocatalytic activity was evaluated by measuring the degradation of Methylene Blue and Rhodamine B under visible light irradiation.