

The Synthesis of AgInS₂/SnS₂ Nanocomposites with Enhanced Photocatalytic Degradation of Norfloxacin

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Abstract : AgInS₂/SnS₂ (AIS) nanocomposites were synthesized by a simple hydrothermal method. The morphology and composition of the fabricated AIS nanocomposites were investigated by field-emission scanning electron microscopy (SEM), X-ray diffraction (XRD), high resolution transmission electron microscopy (HRTEM) and X-ray photoelectron spectroscopy (XPS). Moreover, the as-prepared AIS photocatalysts exhibited excellent photocatalytic activities for the degradation of Norfloxacin (NOR), mainly due to its high optical absorption and separation efficiency of photogenerated electron-hole pairs, as evidenced by UV-vis diffusion reflection spectra (DRS) and Surface photovoltage (SPV) spectra. Furthermore, the interfacial charges transfer mechanism was also discussed by DFT calculations.

Keywords : AIS nanocomposites, electron-hole pairs, charges transfer, DFT calculations

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