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The Synthesis of $AgInS_2/SnS_2$/RGO Heterojunctions with Enhanced Photocatalytic Degradation of Norfloxacin

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Abstract : Novel AgInS2/SnS2/RGO (AISR) heterojunctions photocatalysts were synthesized by simple hydrothermal method. The morphology and composition of the fabricated AISR 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 AISR 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, laser flash photolysis technique was conducted to test the lifetime of charge carriers of the fabricated nanocomposites. The interfacial charges transfer mechanism was also discussed.

Keywords : AISR heterojunctions, electron-hole pairs, SPV spectra, charges transfer mechanism
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