

Supplementary information

Ag functionalized SnS₂ with enhanced photothermal activity for safe and efficient wound disinfection

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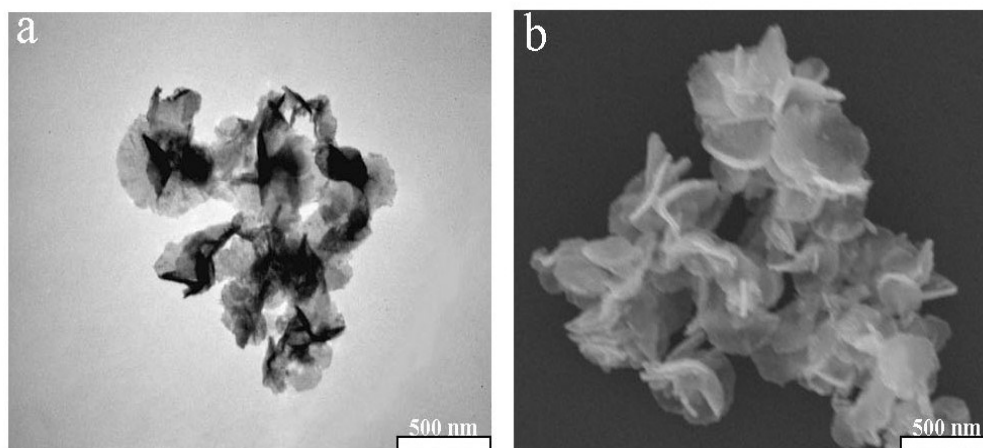


Fig. S1 (a) TEM image and (b) SEM image of pure SnS₂.

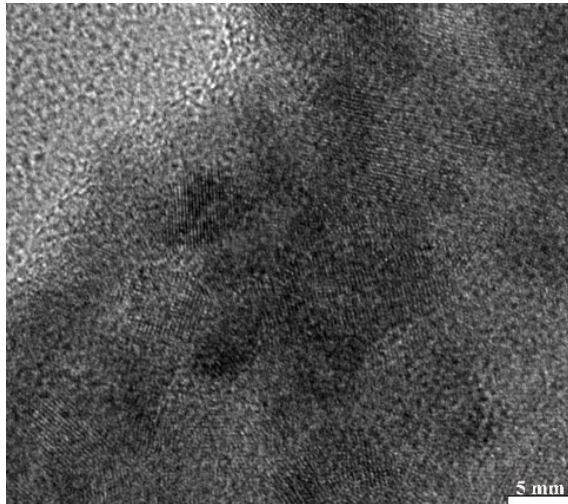


Fig. S2 HRTEM image of Ag@SnS₂.

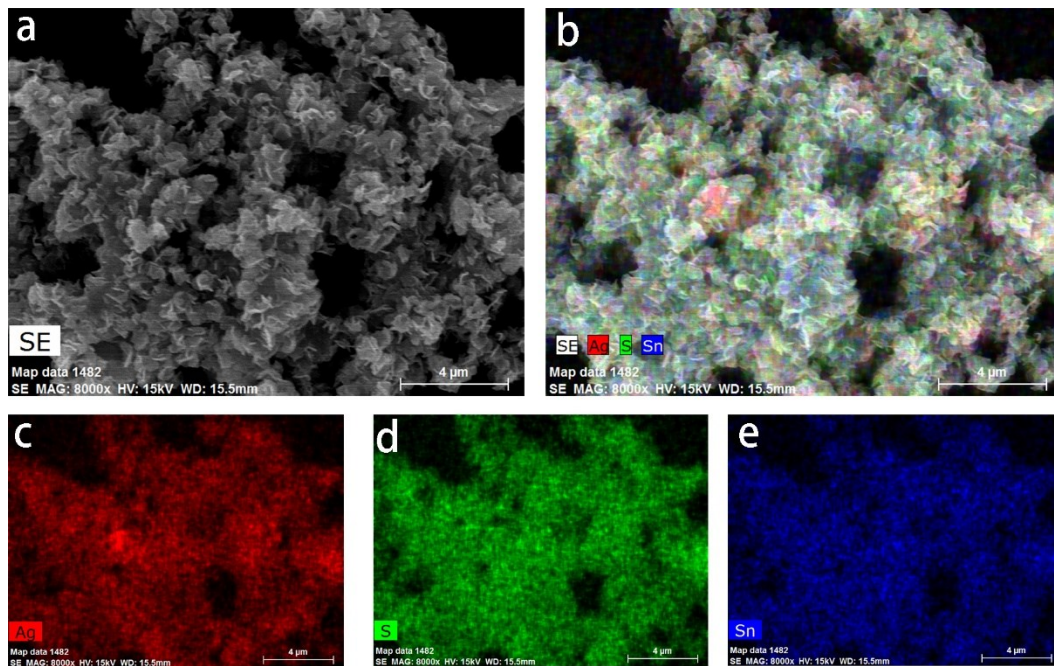


Fig. S3 (a) SEM image of Ag@SnS₂ and corresponding EDS element mapping of (b) overlapped image of (c) Ag, (d) S, (e) Sn element.

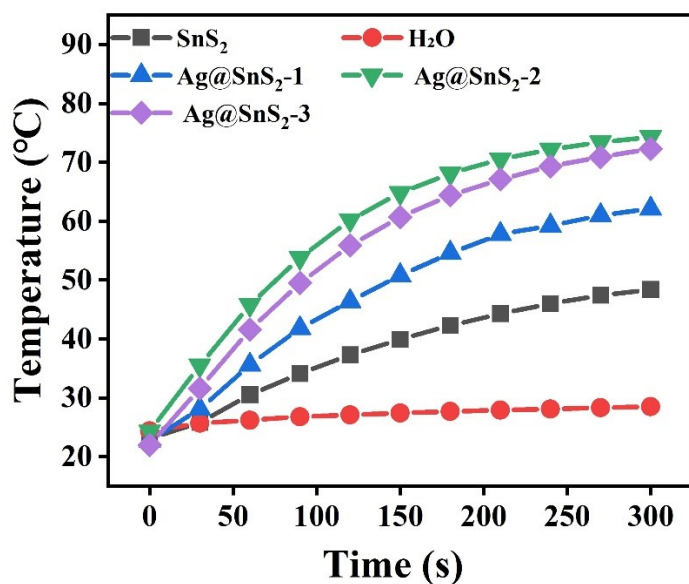


Fig. S4 Photothermal effect of H₂O and SnS₂, Ag@SnS₂-1, Ag@SnS₂-2, Ag@SnS₂-3 at 1 mg mL⁻¹ during 300 sec via 808 nm laser irradiation. 13.5, 26.9, and 33.6 mL of [Ag(NH₃)₂]⁺ solution were added to 0.183 g of SnS₂ with the feeding mass ratio of SnS₂ and Ag as 1:0.4, 1:0.8, and 1:1, respectively, which were named as Ag@SnS₂-1, Ag@SnS₂-2, and Ag@SnS₂-3.

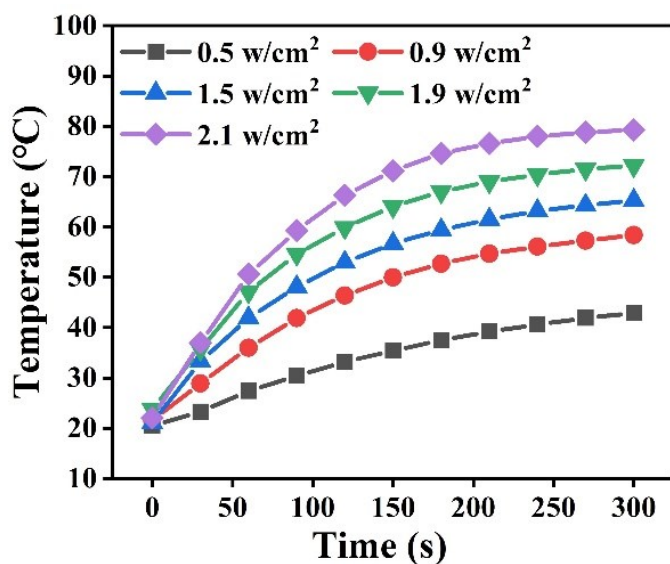


Fig. S5 Photothermal curves of Ag@SnS₂ (1 mg mL⁻¹) at different power densities (0.5, 0.9, 1.5, 1.9, and 2.1 W cm⁻²).

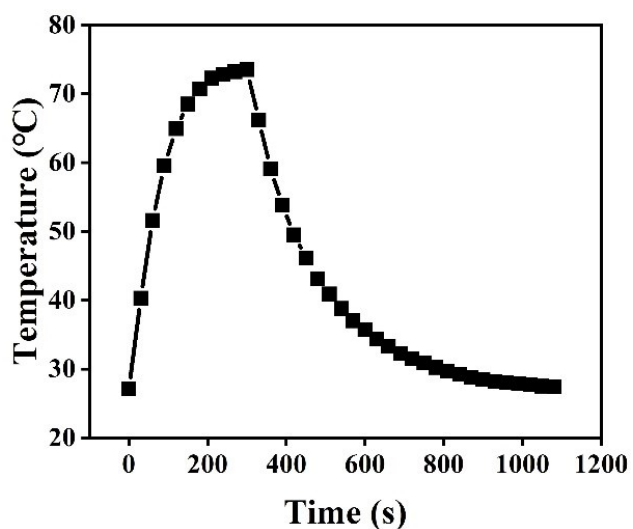


Fig. S6 Photothermal effect of Ag@SnS₂ nanocomposite (1 mg mL⁻¹) aqueous dispersion illuminated with an 808 nm laser for 5 min and in dark for 15 min.

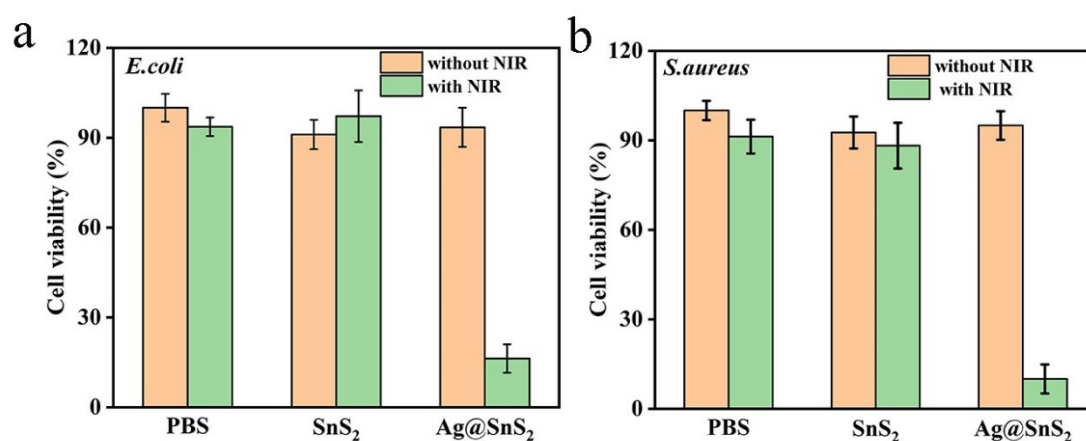


Fig. S7 The bacterial cell viability of SnS₂ and Ag@SnS₂ at 250 μg mL⁻¹ with or without NIR irradiation for 20 min.

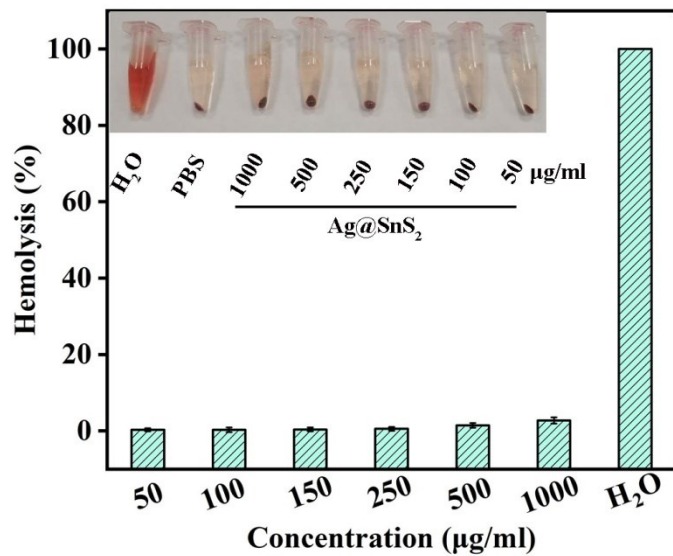


Fig. S8 Hemolysis and photos of RBCs incubated with H₂O, PBS, and Ag@SnS₂ at different concentrations of 50, 100, 150, 250, 500, 1000 µg mL⁻¹. 200 µL of serum was mixed with 800 µL of samples and then incubated for 3 h at 37 °C. After centrifugation at 12000 rpm, the absorbance of the supernatants was monitored at 570 nm. PBS as the negative control and H₂O as the positive control.