Supporting Information

CuS Nanoparticles Anchored to g-C_3N_4 nanosheets for Photothermal Ablation of Bacteria

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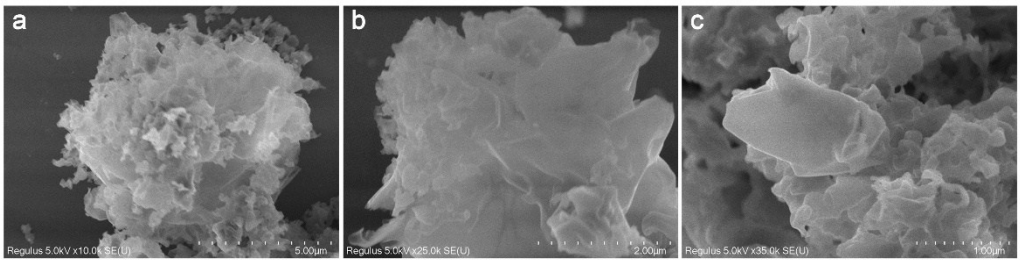

Fig. S1 SEM imagines of the nanosheets of g-C_3N_4

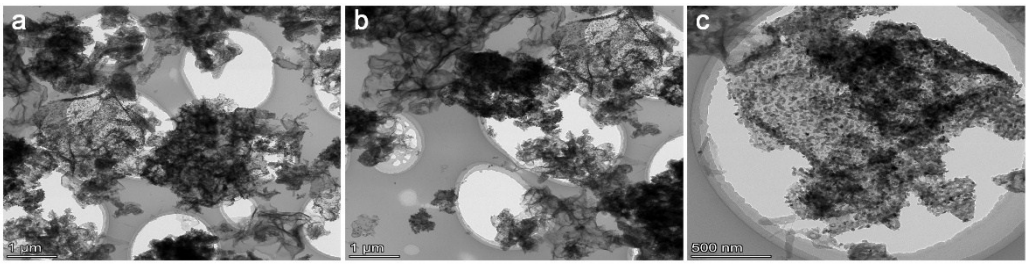

Fig. S2 TEM imagines of the CuS@g-C_3N_4 nanocomposite

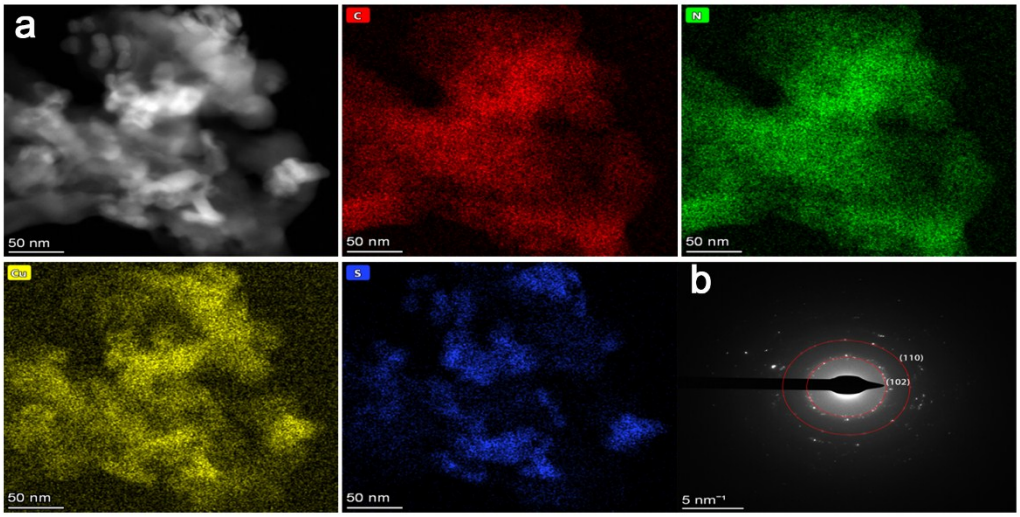

Fig.S3 (a) Mapping of the CuS@g-C_3N_4 nanocomposite and (b) Selective electron diffraction (SAED) of the CuS@g-C_3N_4 nanocomposite

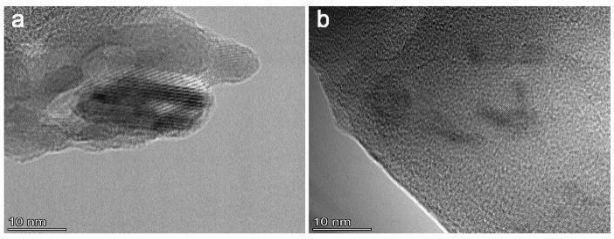

Fig.S4 HRTEM imagines of the PEG-CuS@g-C_3N_4 nanocomposite

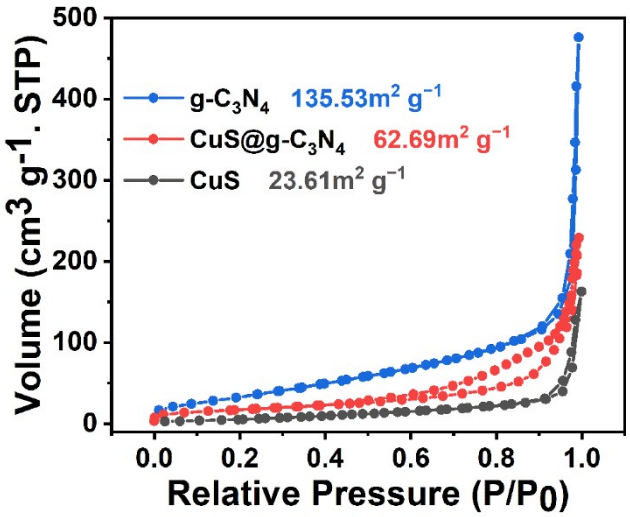

Fig.S5 Nitrogen adsorption–desorption of the CuS, g-C_3N_4 and CuS@g-C_3N_4 nanocomposite

In order to investigate the porosity of the prepared materials, nitrogen adsorption–desorp-tion (Fig. S5) was carried out. We found that the g-C_3N_4 had a large specific surface area about 135.53 m^2 g^{-1} , CuS possessed a lowest specific surface area of 11.96 m^2 g^{-1}, and the target sample CuS@g-C_3N_4 nanocomposite had a moderate specific surface area of 34.76 m^2 g^{-1}. g-C_3N_4 with large surface was conducive to the suspension stability of the CuS@g-C_3N_4 nanocomposites and severed as a platform for CuS nanoparticle.

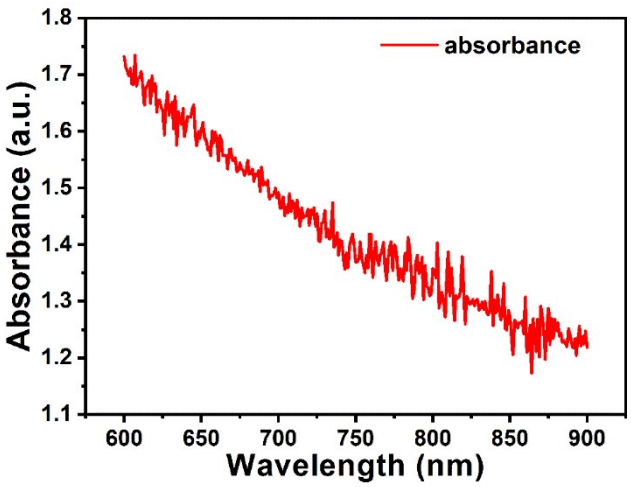

Figure S6 UV-vis-NIR absorbance spectra for the pure water dispersion of CuS@g-C_3N_4 nanocomposites (200 μg/mL).

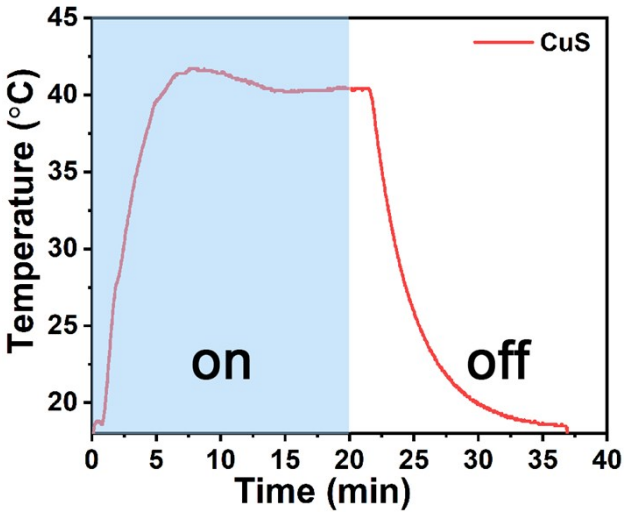

Fig. S7 photothermal effect of CuS nanoparticles (200 μg/ml) aqueous dispersion illuminated with an 808 nm laser for 20 min.The laser was turned off and sustained for 15 min.

As illustrated in Fig. S7, the temperature of CuS suspension (200 μg/ml) increased with the irradiation time. It can be seen that the temperature variation was about 20 ˚C. However, because CuS NPs aggregate easily in the suspension, their photothermal stability is reduced. We observed that the temperature can be kept for shorter time.