Supporting Information

Stable Cu$_2$O nanocrystals grown on functionalized graphene sheets and room temperature H$_2$S gas sensing with ultrahigh sensitivity

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Fig.S1  (A) N$_2$ adsorption-desorption isotherms and (B) corresponding BJH pore size distribution curve determined from the N$_2$ desorption isotherm of as-prepared
Cu$_2$O/FGS nanocomposite. (C) N$_2$ adsorption-desorption isotherms of bulk Cu$_2$O with BET surface of 2.18 m$^2$/g and pore volume of 0.01 cm$^3$/g, (D) N$_2$ adsorption-desorption isotherms of pure FGS with BET surface of 477.33 m$^2$/g and pore volume of 0.63 cm$^3$/g.

**Fig.S2** Photoluminescence spectra of pure Cu$_2$O and Cu$_2$O/FGS nanocomposite.