

Electronic Supplementary Information

Controlled Solvothermal Synthesis of CuS Hierarchical Structures and Their Natural-Light-Induced Photocatalytic Properties

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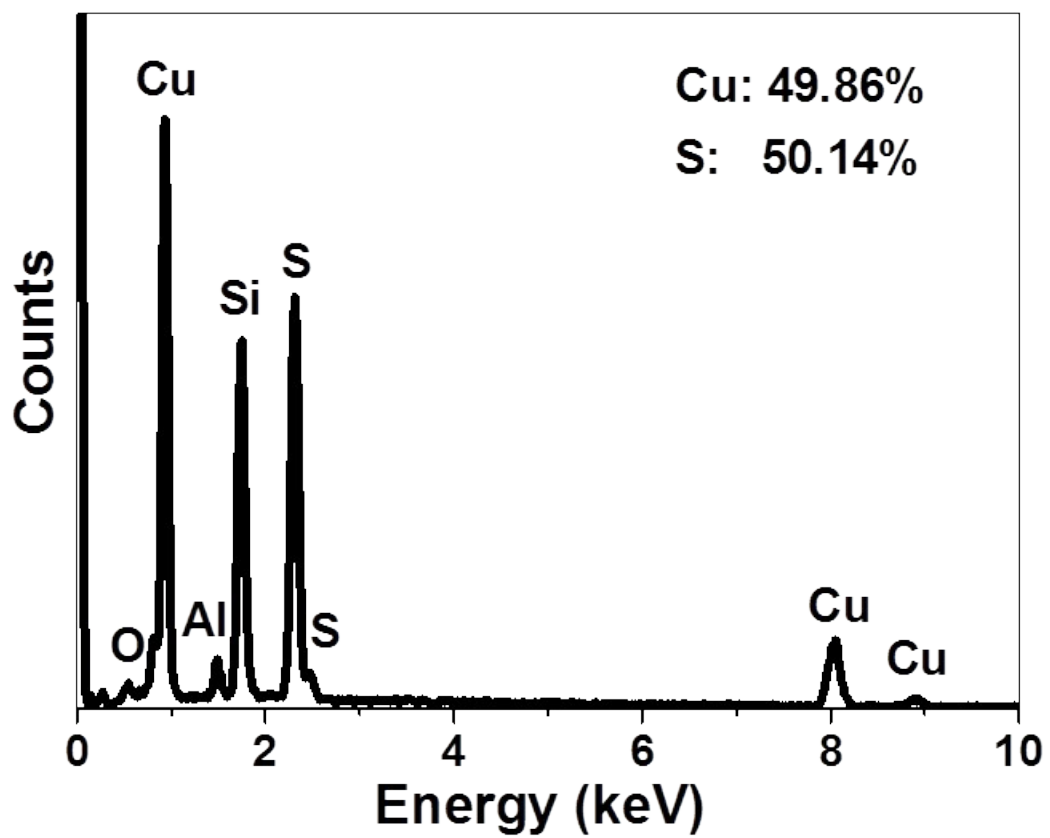


Figure S1. FESEM/EDS spectrum of the CuS microflowers obtained with 1:1 EG:ET solvent volume ratio.

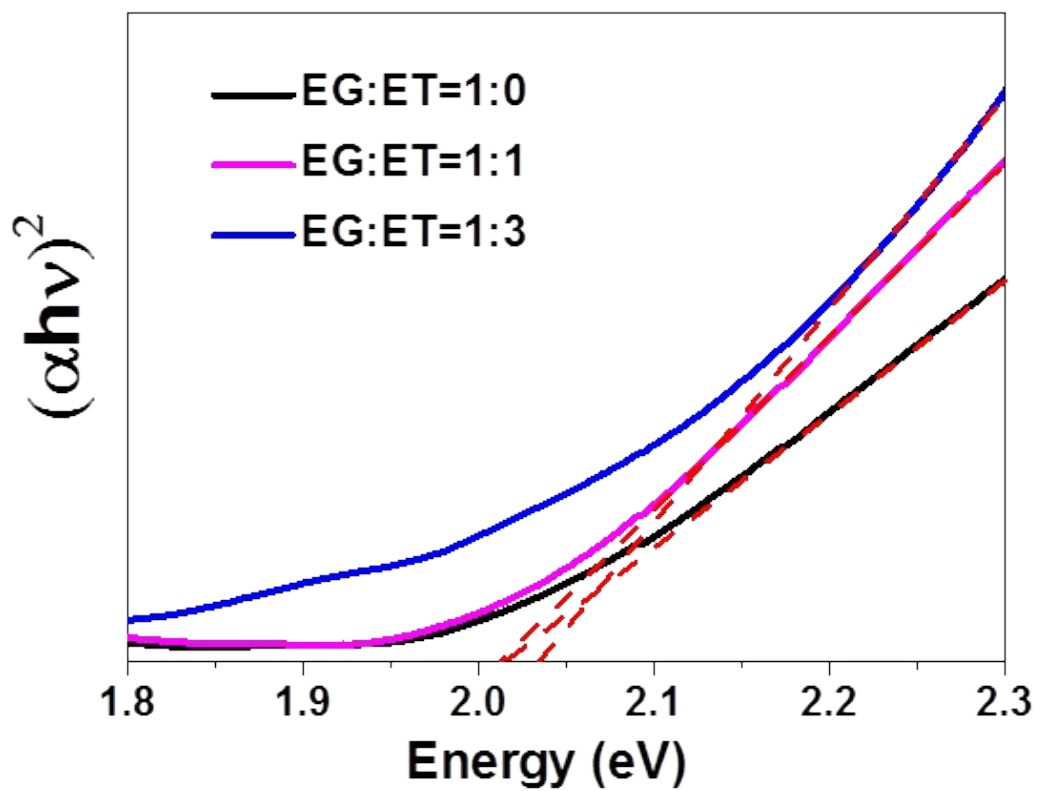


Figure S2. Plots of $(\alpha h\nu)^2$ versus energy with an extrapolation of the optical spectra (dashed red lines) to determine the optical band gap values.

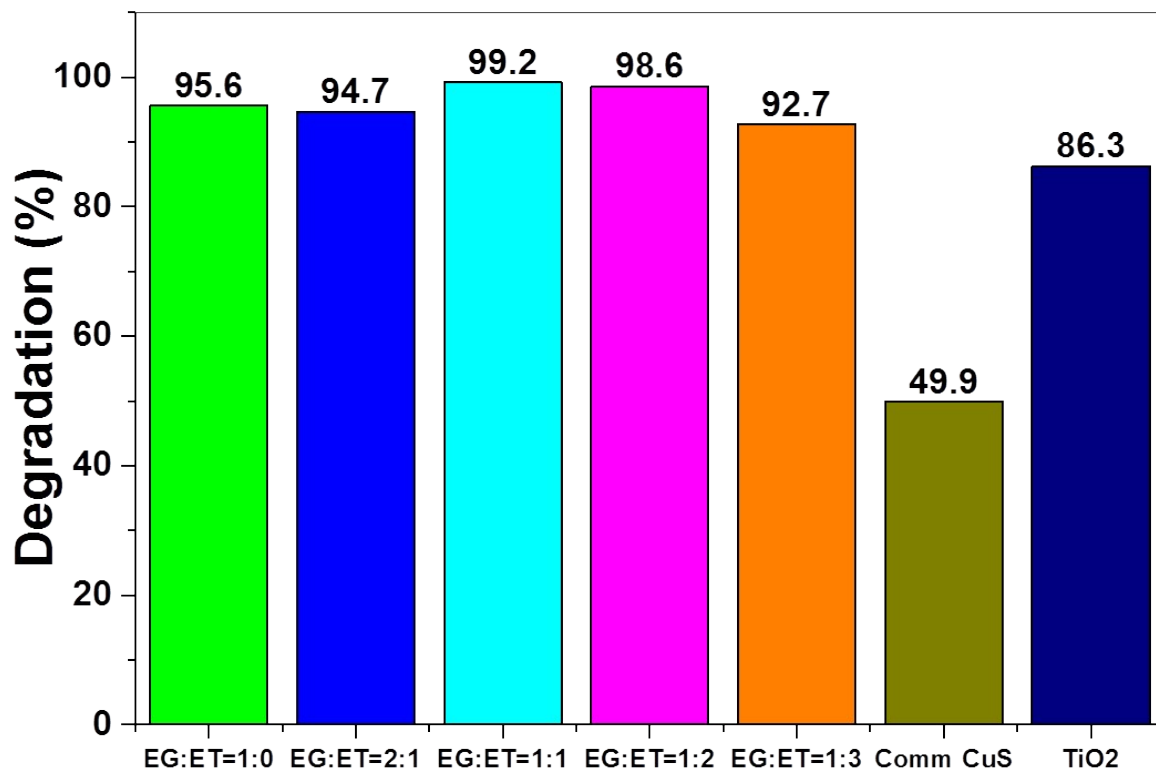


Figure S3. The MB degradation percentage on the various CuS photocatalysts achieved with different EG:ET ratios, the commercial CuS (comm CuS) and TiO₂ powders.

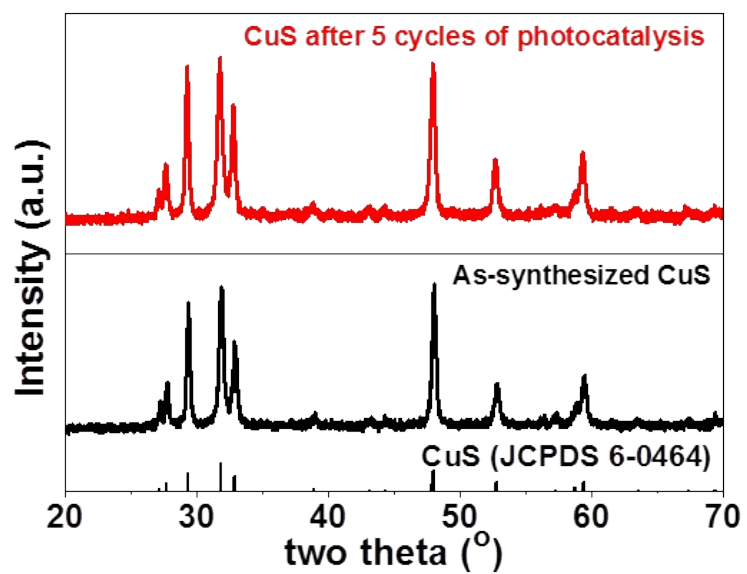


Figure 4. XRD patterns of the as-synthesized CuS hierarchical structures with 1:1 EG:ET and the same sample recovered after 5 cycles of photocatalysis.

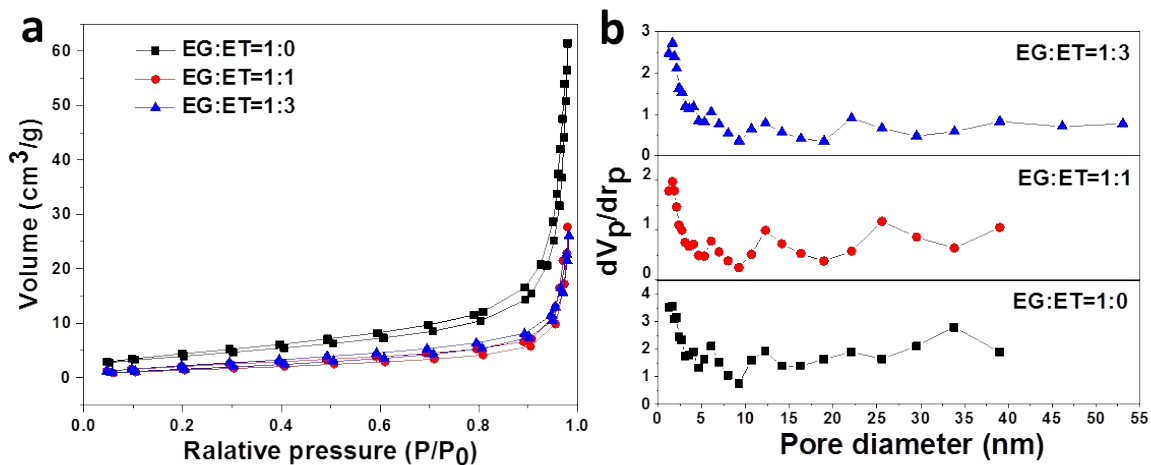


Figure S5. (a) Typical N₂ adsorption-desorption isotherms, and (b) BJH pore size distribution plots of CuS hierarchical structures collected with different EG:ET solvent volume ratios.

Table S1. Summary of the S_{BET} , the pore volumes (V_p) and the pore sizes (D_p) of the representative CuShierarchical structures obtained with different solvent ratios.

Photocatalyst	$S_{\text{BET}}(\text{m}^2\text{g}^{-1})$	$V_p (\text{cm}^3\text{g}^{-1})$	$D_p (\text{nm})$	Crystallite size (nm)
EG:ET= 1:0	14.77	0.095	25.70	21.7
EG:ET= 1:1	5.72	0.042	29.92	30.5
EG:ET= 1:3	6.79	0.040	23.74	31.4