Supplementary Data

A renewable photocatalytic system with dramatic photocatalytic activity for H_2 evolution and constant light energy utilization: Eosin Y sensitized $ZnWO_4$ nanoplates loaded with CuO nanoparticles

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Supplementary Fig. S1

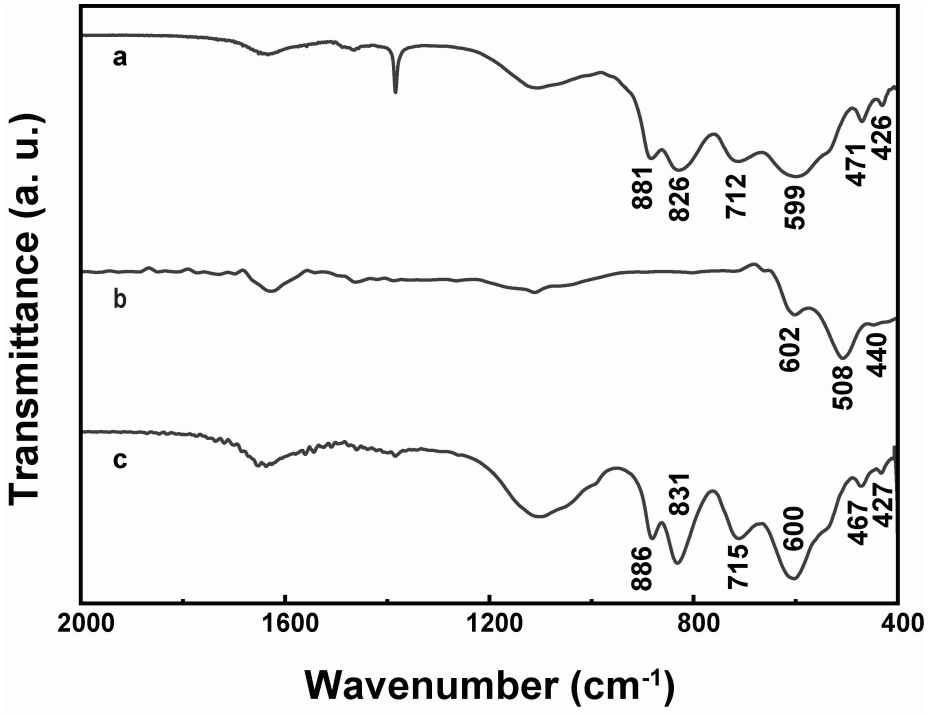

Fig. S1. FT-IR spectra of (a) the $ZnWO_4$ nanoplates, (b) the CuO nanoparticles and (c) $ZnWO_4$/CuO (6%).

Supplementary Fig. S2

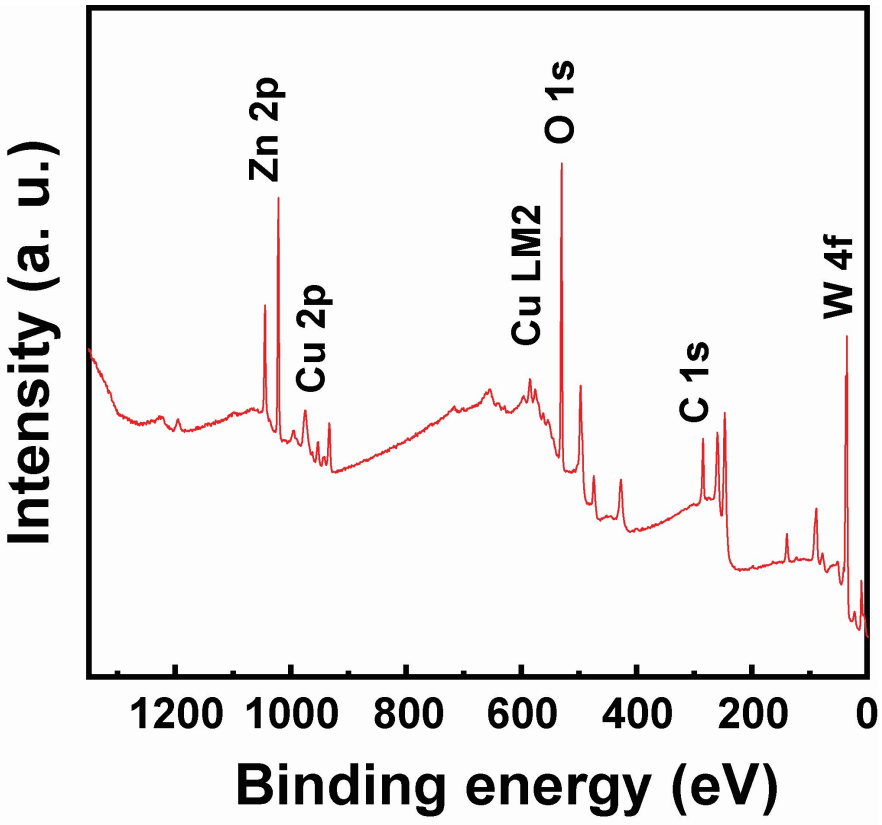

Fig. S2. XPS survey spectrum of $ZnWO_4$/CuO (6%).

Supplementary Fig. S3

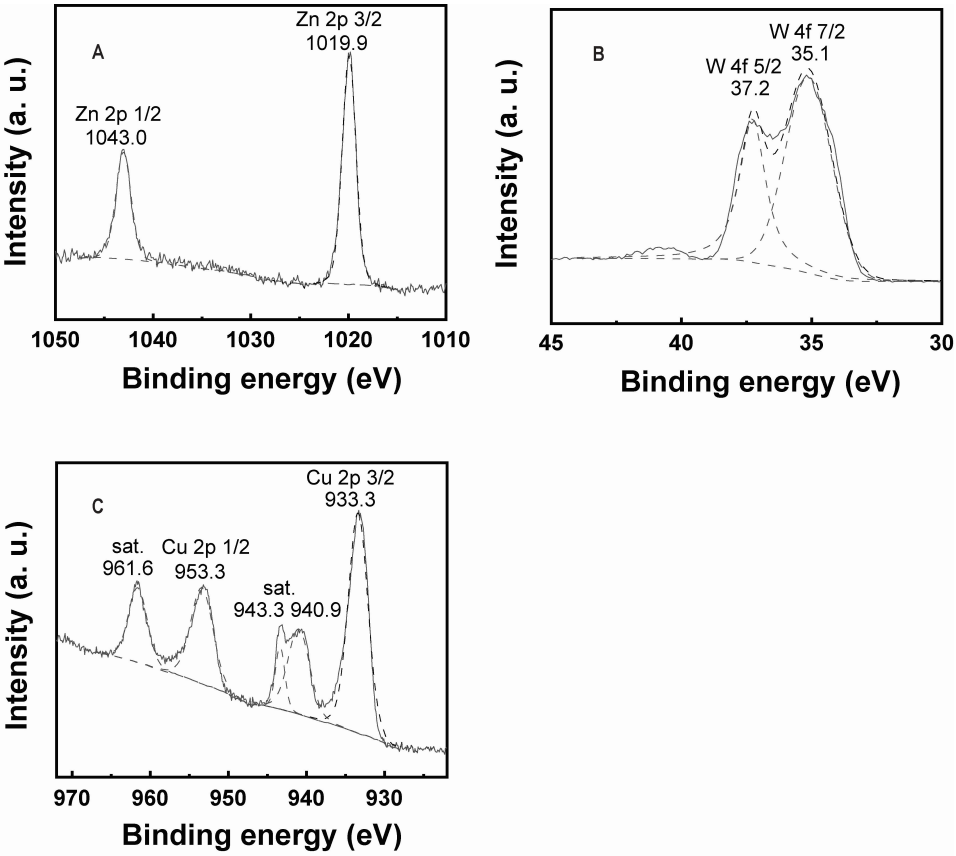

Fig. S3. (A) Zn 2p and (B) W 4f high-resolution XPS spectra (solid) of the $ZnWO_4$ nanoplates, and curve-fitting analysis (dot line) of states of Zn and W; (C) Cu 2p high-resolution XPS spectrum of the CuO nanoparticles (solid), and curve-fitting analysis (dot line) of states of Cu.

Supplementary Fig. S4

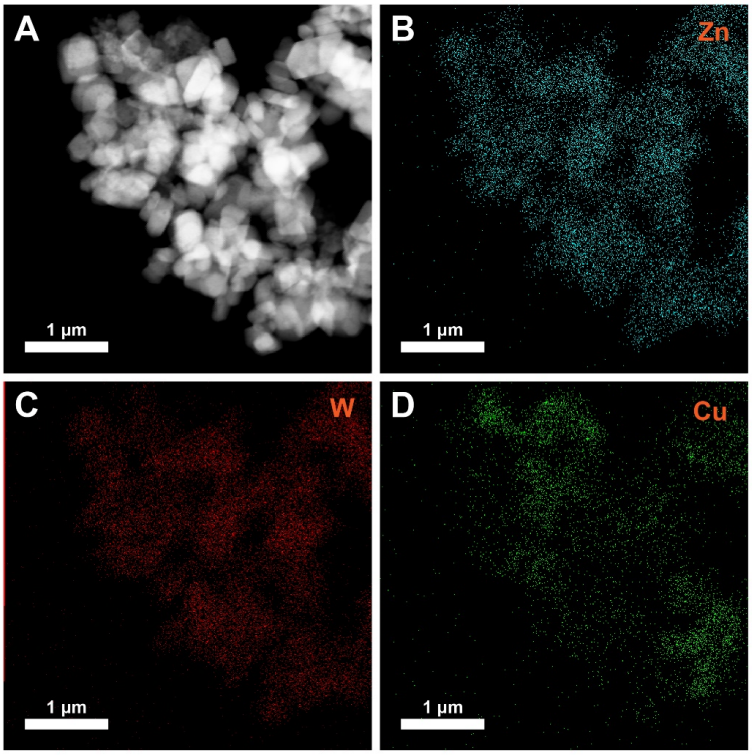

Fig. S4. Element mappings of $ZnWO_4$/CuO (6%) (Zn, W and Cu).

Supplementary Fig. S5

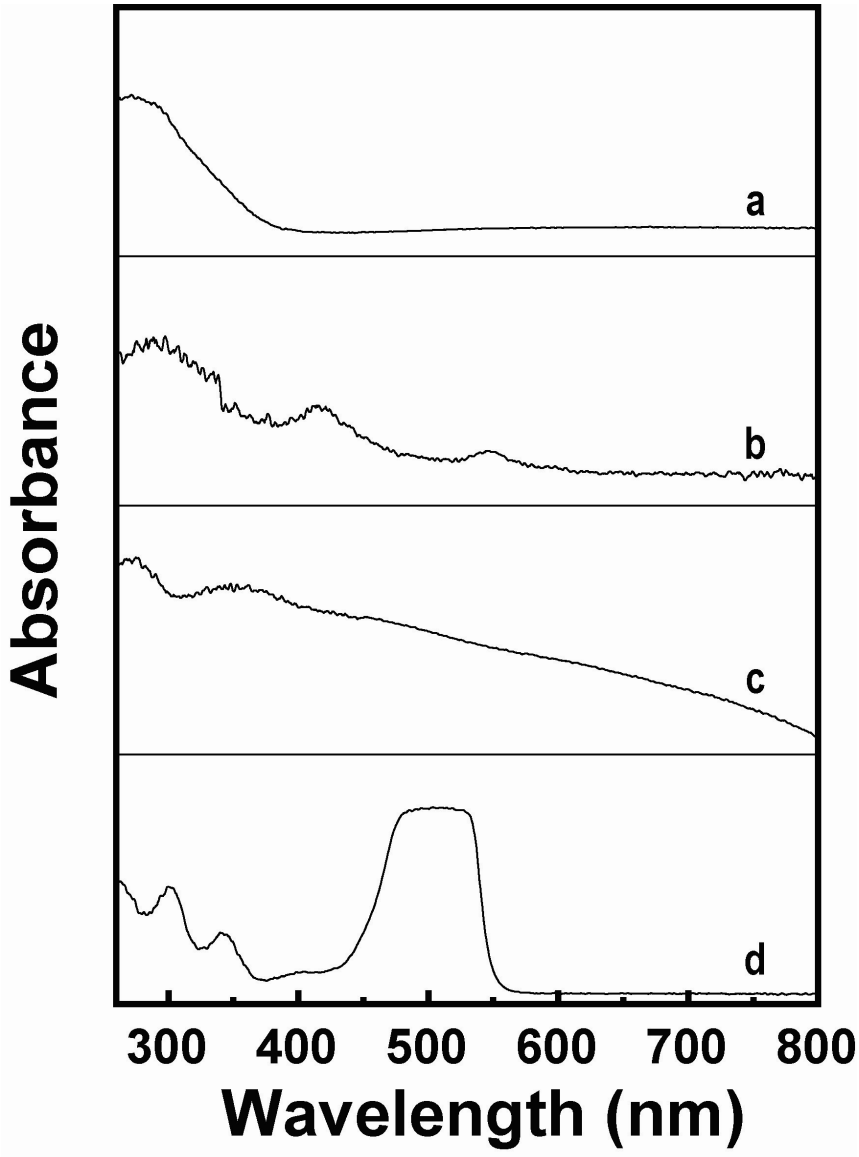

Fig. S5. UV-vis spectra of (a) the $ZnWO_4$ nanoplates, (b) the CuO nanoparticles, (c) $ZnWO_4$/CuO (6%) and (d) the EY solution.

Supplementary Fig. S6

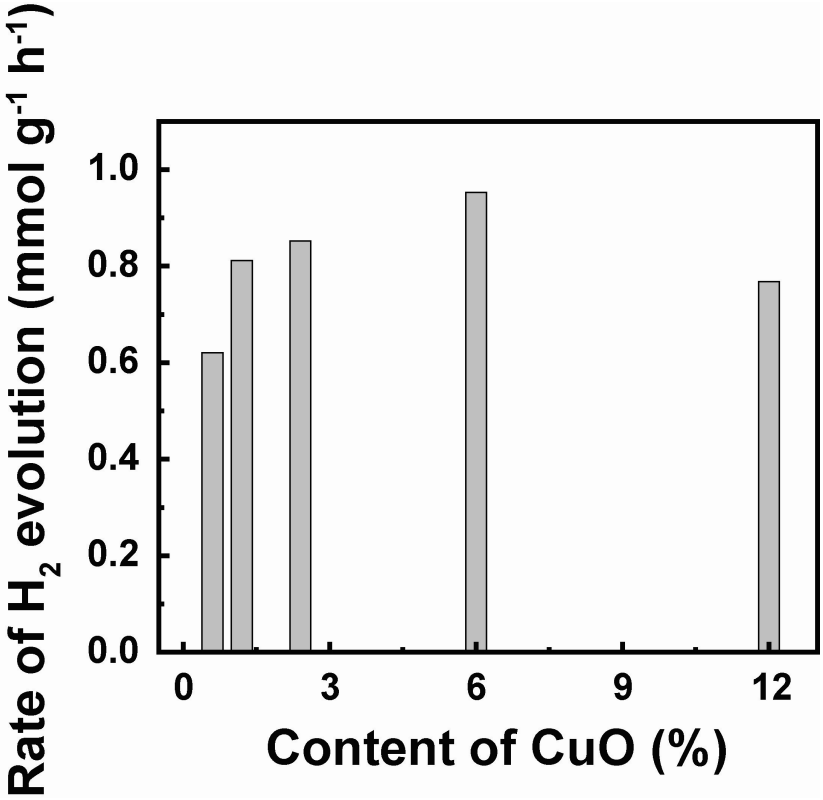

Fig. S6. Effect of the CuO content on H_2 evolution.

Supplementary Fig. S7

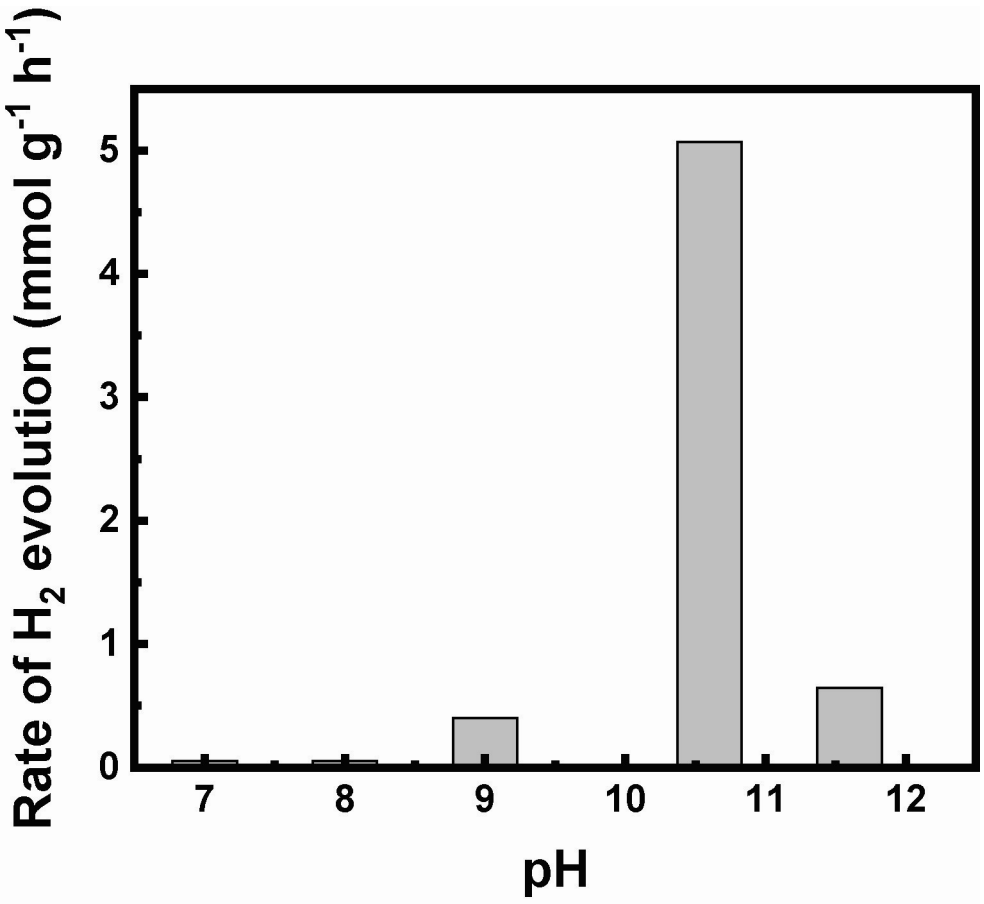

Fig. S7. Effect of pH of TEOA solution on H_2 evolution.

Supplementary Fig. S8

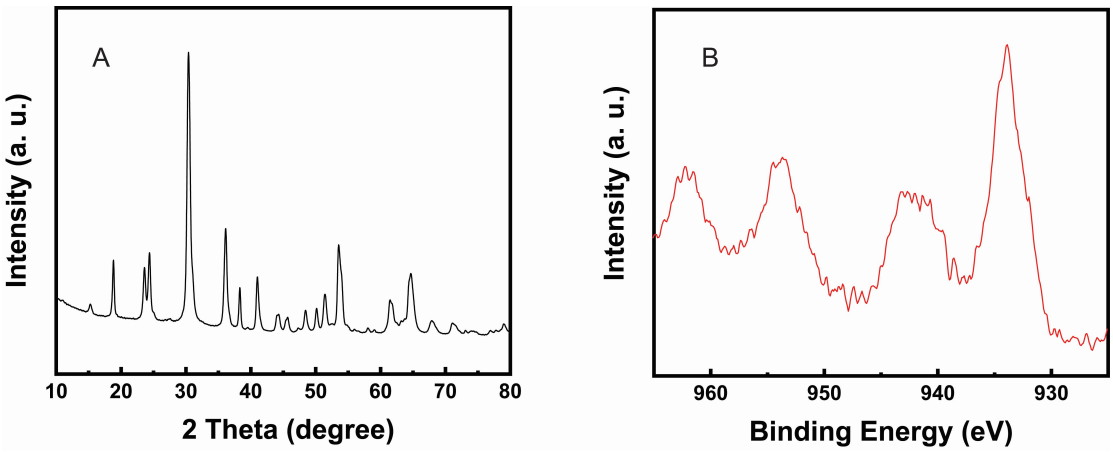

Fig. S8. (A) XRD pattern and (B) Cu 2p high-resolution XPS spectrum of the used $ZnWO_4/CuO$ (6%).

Supplementary Fig. S9

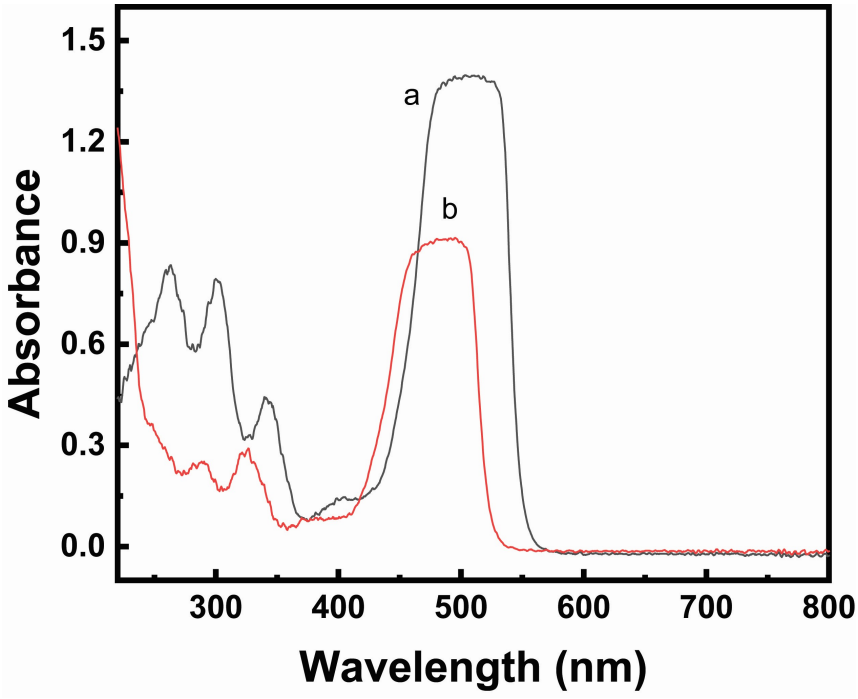

Fig. S9. UV-vis spectra of the EY solution after irradiated for (a) 0 min and (b) 4 h in the presence of $ZnWO_4$/CuO (6%) and TEOA.