

Supporting Information

Synthesis of $\text{ZnIn}_2\text{S}_4@\text{Co}_3\text{S}_4$ particles derived from ZIF-67 for photocatalytic hydrogen production

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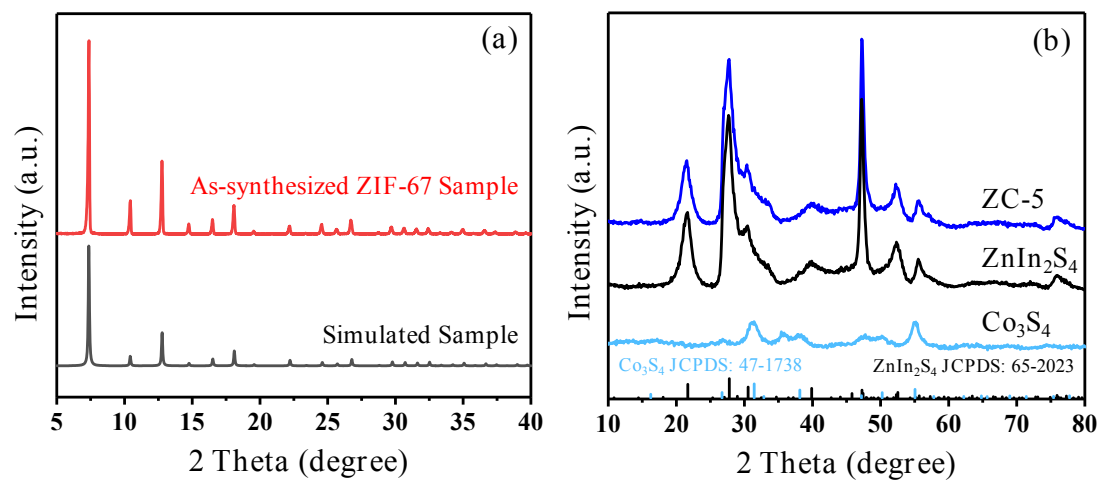


Fig. S1 XRD patterns of samples ZIF-67 (a), ZC-5, ZnIn₂S₄ and Co₃S₄ (b).

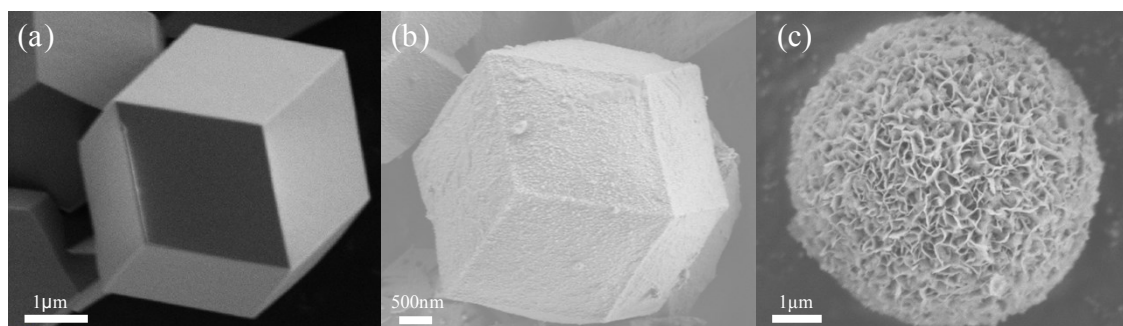


Fig. S2 SEM images of prepared ZIF-67 (a), Co₃S₄ (b) and pure ZnIn₂S₄ (c).

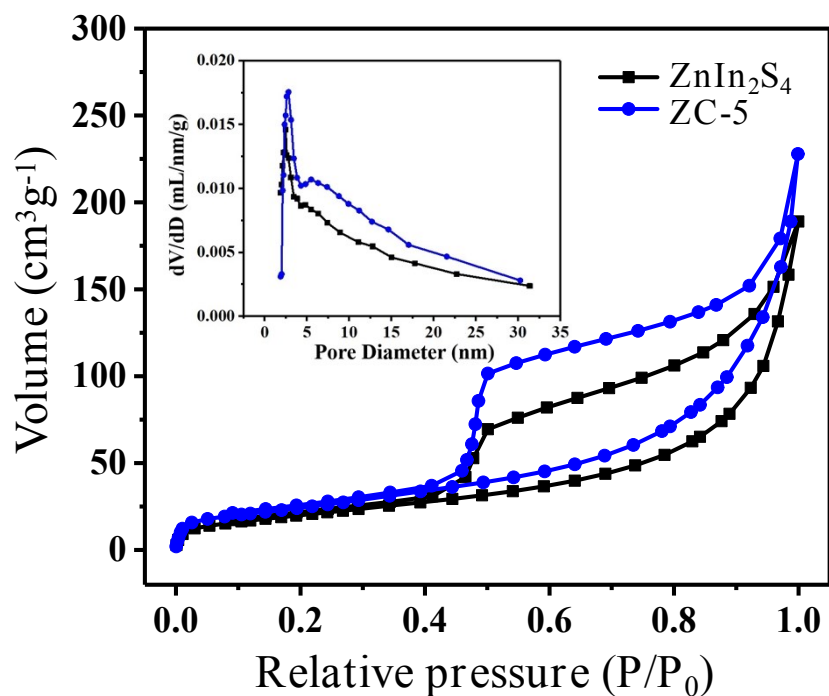


Fig. S3 N_2 adsorption-desorption isotherms of pure $ZnIn_2S_4$ and ZC-5 composite. Inset: the corresponding BJH pore-size distribution plots calculated from the desorption branch.

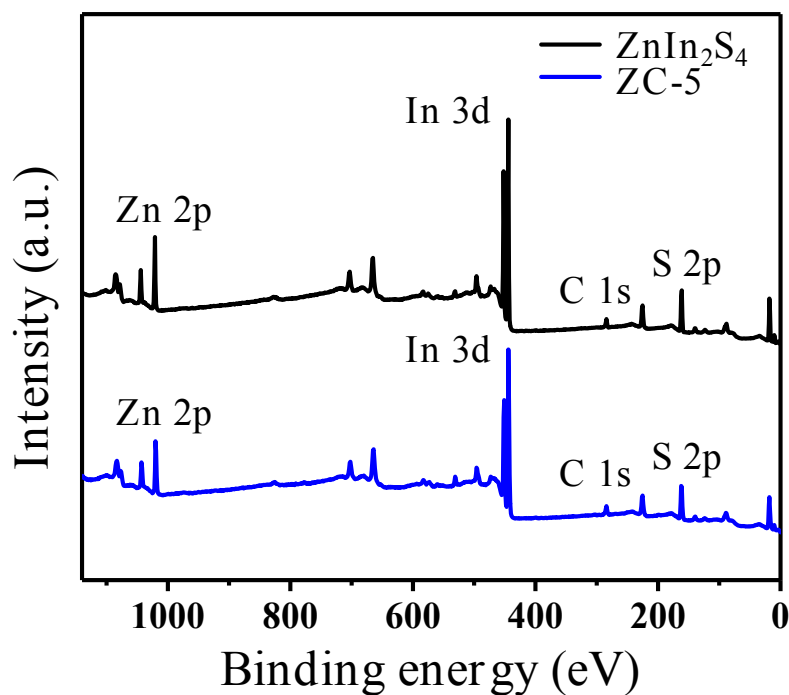


Fig. S4 Wide-scan XPS spectra of pure $ZnIn_2S_4$ and ZC-5.

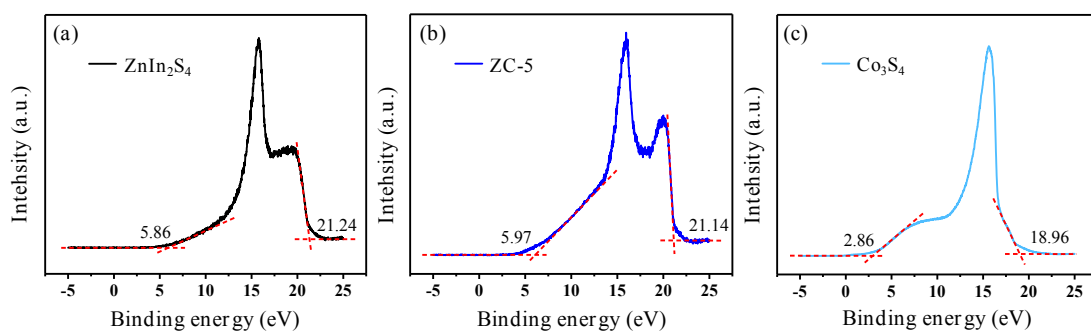


Fig. S5 UPS spectra of pure ZnIn₂S₄ (a), ZC-5 (b) and Co₃S₄ (c).

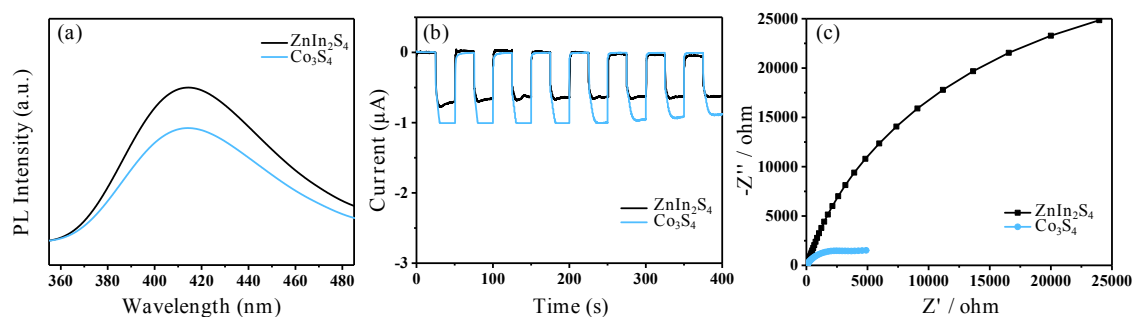


Fig. S6 Photo-luminescence (PL) spectra of ZnIn₂S₄ and Co₃S₄ (a); Photocurrent-time curves of ZnIn₂S₄ and Co₃S₄ under the irradiation of simulated sunlight (b); Nyquist impedance plots of EIS for ZnIn₂S₄ and Co₃S₄ (c).

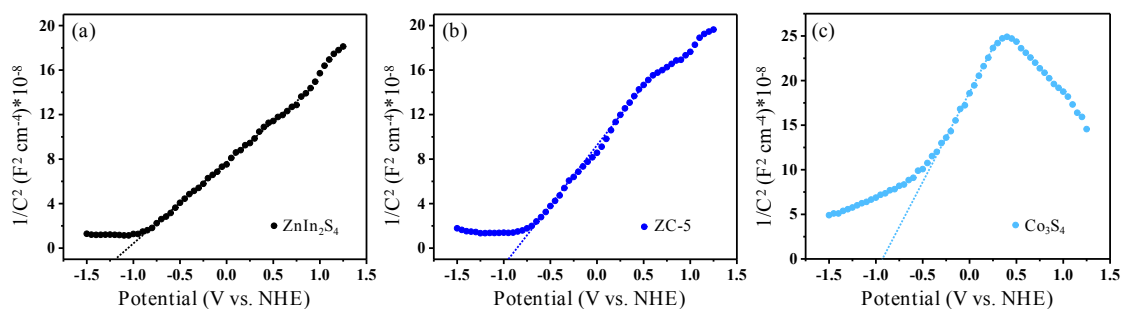


Fig. S7 Mott-Schottky plots for ZnIn₂S₄ (a), ZC-5 (b) and Co₃S₄ (c) in 0.5 M Na₂SO₄ aqueous solution.

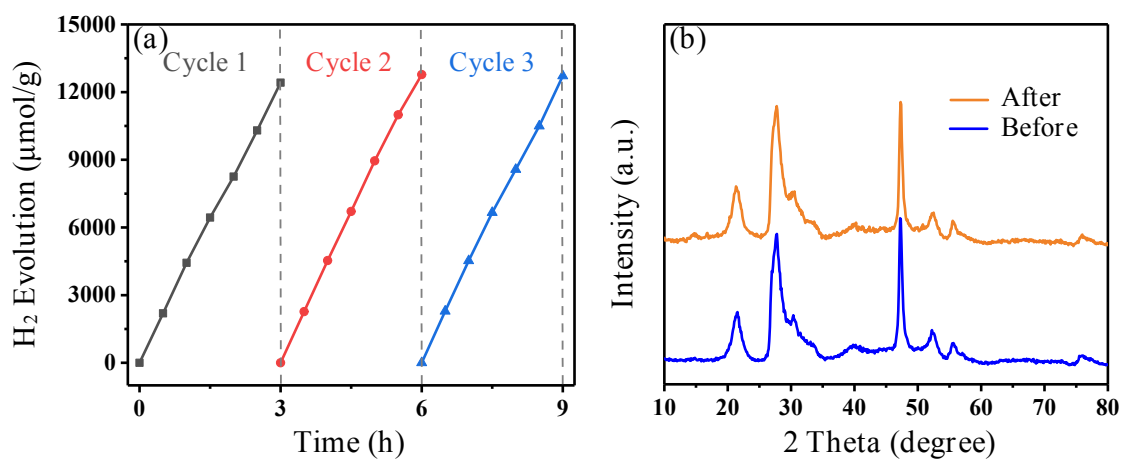


Fig. S8 Photocatalytic hydrogen evolution over the ZC-5 photocatalyst for three cycles (a); The XRD patterns of ZC-5 before and after photocatalytic reaction (b).