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Supporting information

An effective photocatalytic hydrogen evolution strategy based on tunable band gap $(CuIn)_xZn_{2(1-x)}S_2$ combined with amorphous molybdenum sulfide

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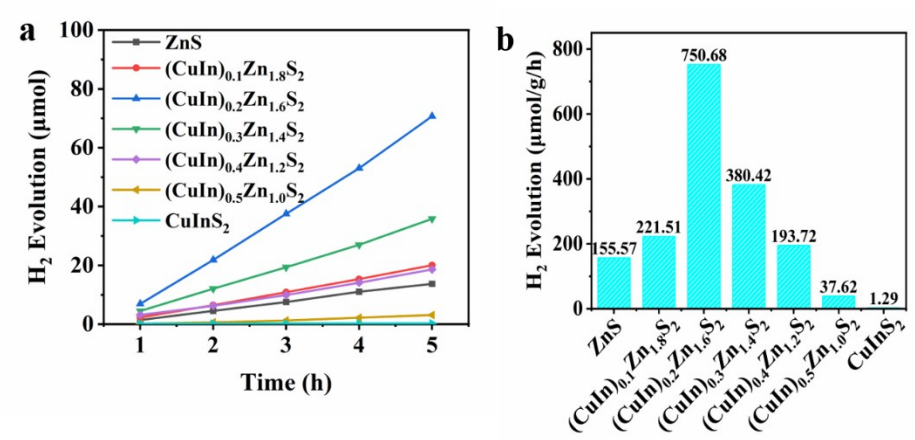

Fig. S1 (a) Time-dependent photocatalytic H_2 evolution on $(CuIn)_xZn_{2(1-x)}S_2$; (b) Comparison of the H_2 evolution rate under visible light irritation on $(CuIn)_xZn_{2(1-x)}S_2$.

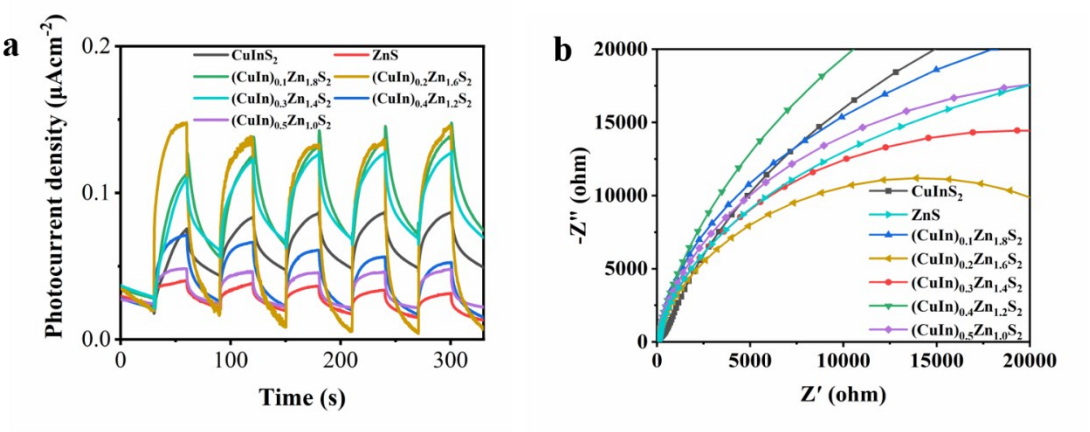

Fig. S2 The photocurrent response and EIS of the $(CuIn)_xZn_{2(1-x)}S_2$ solid solution.

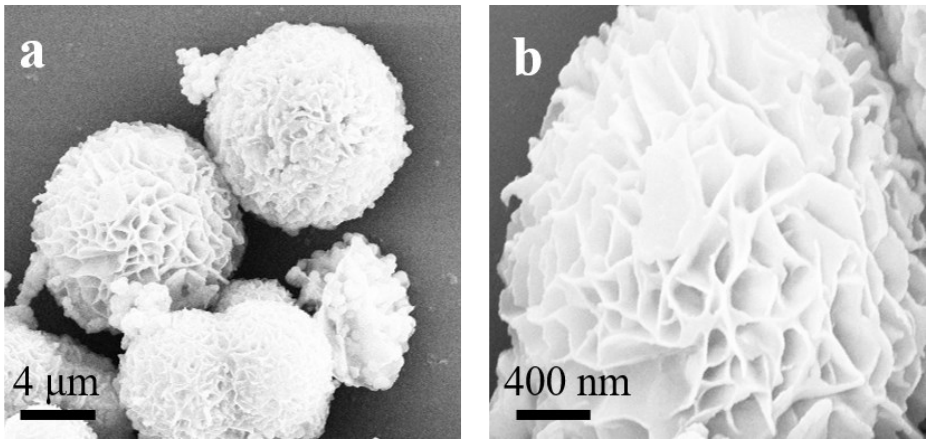

Fig. S3 SEM images of CIZS.

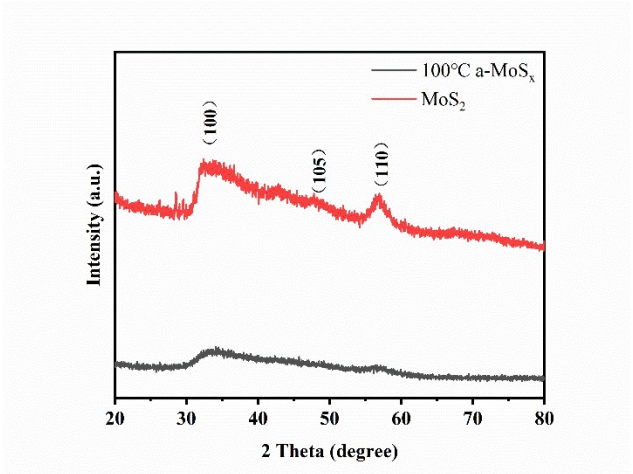

Fig. S4 The XRD patterns of the individual MoS_2 and a-MoS_x.

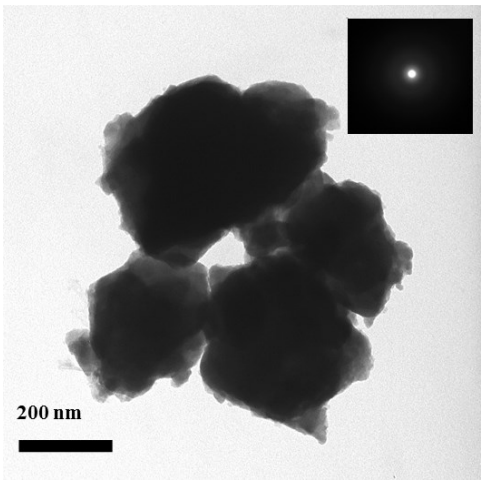

Fig. S5 TEM image of a-MoS_x and the electron diffraction spectrum of the selected region.

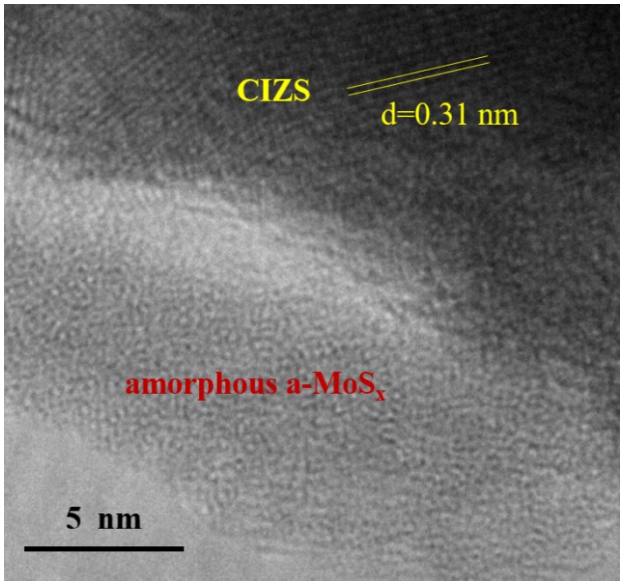

Fig. S6 The high-resolution TEM image of a-MoS_x/CIZS.

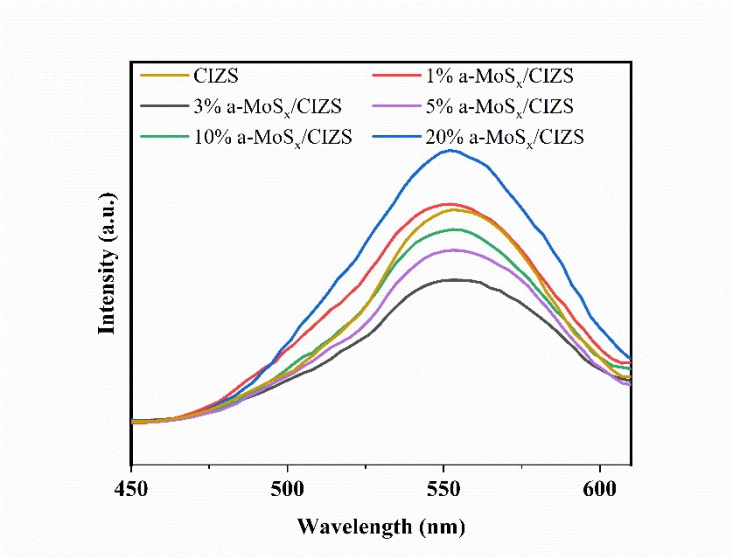

Fig. S7 PL spectra of a-MoS_x/CIZS (excitation wavelength 380 nm).

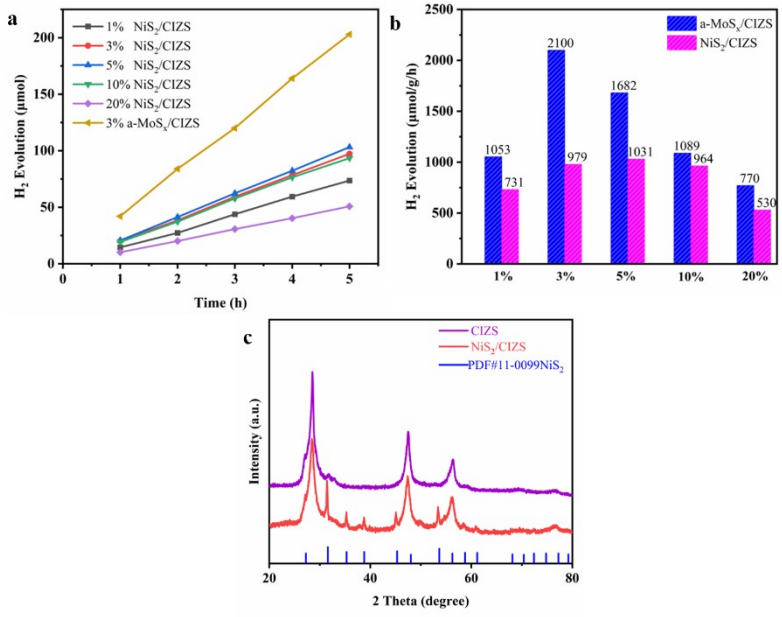

Fig. S8 (a-b)H_2 evolution rates of a-MoS_x/CIZS and NiS_2/CIZS;(c) XRD patterns of CIZS and NiS_2/CIZS.

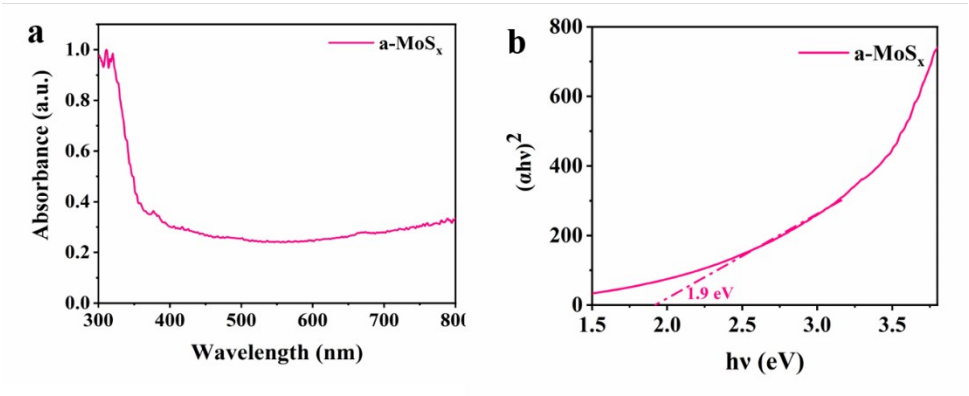

Fig. S9 UV-vis absorption spectrum and Tauc plot of a-MoS_x.

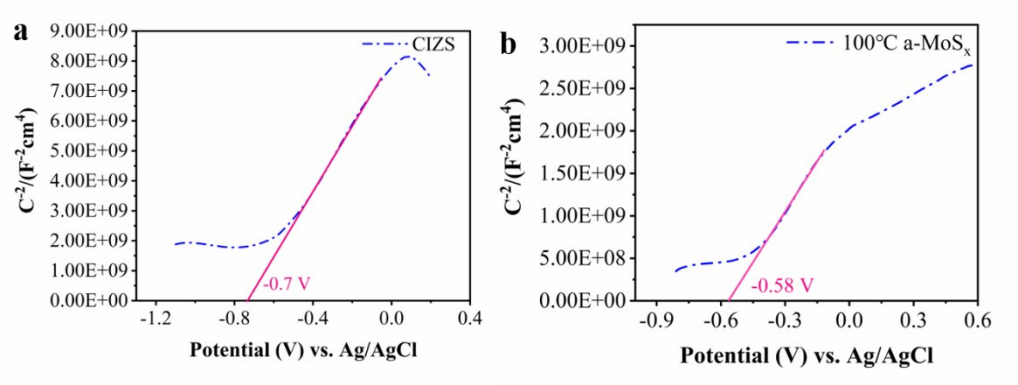

Fig. S10 Mott–Schottky plots of CIZS and a-MoS_x.