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Electronic Supplementary Information

Microwave-Assisted Thermolysis Route to Single-Step-Preparation of MoS₂/CdS

Composite Photocatalysts for Active Hydrogen Generation

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Fig. S1 XRD pattern of Mo/Cd-thiourea complex for CdS/MoS₂(3wt%).



Fig. S2 FT-IR spectrum of Mo/Cd-thiourea complex for CdS/MoS₂(3wt%). The FT-IR spectrum of thiourea is also included for comparison.



Fig. S3 SEM image of Mo/Cd-thiourea complex for CdS/MoS₂(3wt%).



Fig. S4 TEM image of Mo/Cd-thiourea complex for CdS/MoS₂(3wt%).



Fig. S5 Close-up XRD patterns for CdS after various microwave heating time.



Fig. S6 Close-up XRD patterns for pristine CdS and CdS/MoS $_2$ (3 wt%).



Fig. S7 XPS of S 2p in CdS and CdS/MoS₂(3wt%).



Fig. S8 N_2 absorption-desorption isotherms for CdS/MoS₂ (x wt%) (x=0, 1, 3, 5, and 8).



Fig. S9 Photocatalytic H₂ generation from CdS/MoS₂(xwt%) (x=0, 1, 3, 5, and 8), mixture of CdS and MoS₂ (3wt%), and MoS₂ alone.



Fig. S10 XRD patter of CdS/MoS $_2$ (3wt%) after long term (22 h) H $_2$ generation.



Fig. S11 SEM image of CdS/MoS $_2$ (3wt%) after long term (4 h) H $_2$ generation.



Fig. S12 XPS spectra for (a) Cd, (b) S, and (c) Mo before and after 4 h H_2 generation. A and B in the figure refers to the CdS/MoS₂ (3wt%) before and after H_2 generation reactions.