

## Supporting Information

### **Construction of Multidimensional CdS@MoS<sub>2</sub> Heterojunction for Enhanced Solar-to-hydrogen Conversion Performance**

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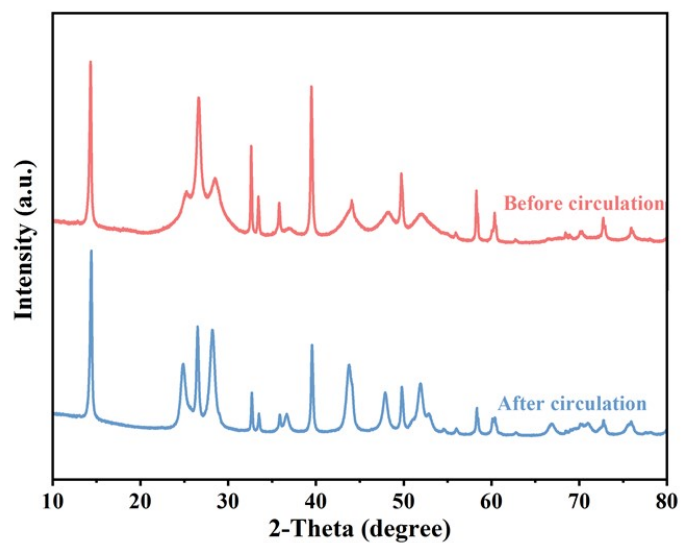


Figure S1. XRD spectra of CdS@MoS<sub>2</sub> composites before and after cycling

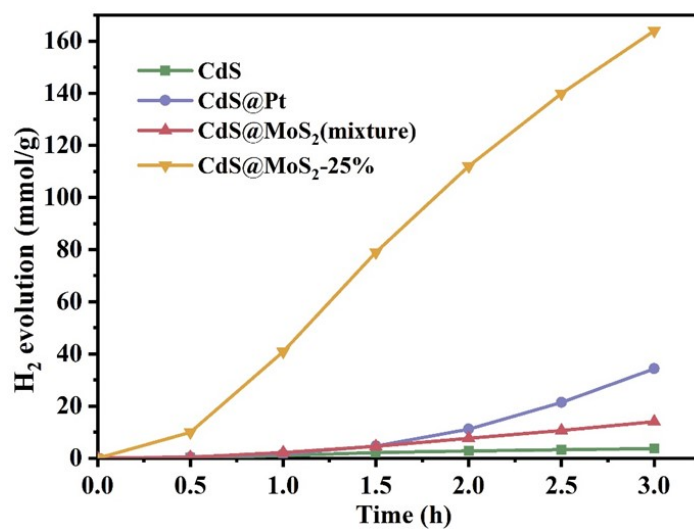
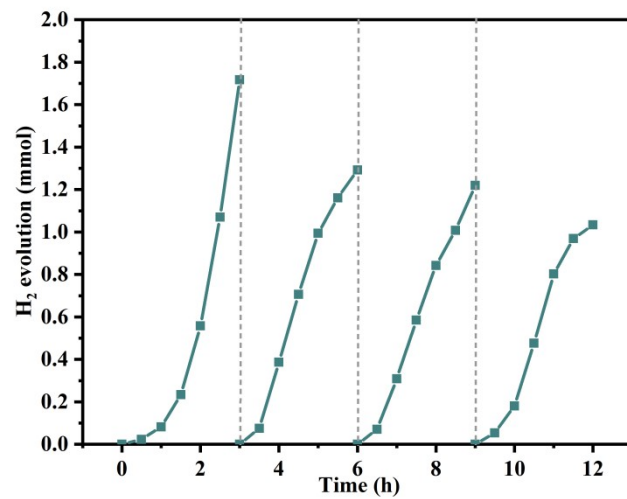


Figure S2. Photocatalytic performance test of different catalysts



**Figure S3.** Photocatalytic cycle test of CdS@Pt

**Table S1**

Comparison and summary of recent literature reports on the hydrogen evolution performance.

Samples	Light source	Catalyst Mass mg	Optical property	Solution	Materials loading	HER rate ( $\mu\text{mol h}^{-1}\text{cm}^{-2}$ )
CdS/MoS <sub>2</sub>	Xe lamp (300W)	20	200-1400 nm	20 vol% lactic acid	/	1367
MoS <sub>2</sub> /CdS/N-RGO	Xe lamp (150W)	30	400-600 nm	10 vol% lactic acid	/	5266
CdS/MoS <sub>2</sub>	Xe lamp (300W) >420 nm	200	400-700 nm	10 vol% lactic acid	/	498
CdS/MoS <sub>2</sub>	Xe lamp (300W) >400 nm	20	200-800 nm	20 vol% lactic acid	/	957
CdS/Graphene	Xe lamp (350W) >400 nm	50	200-800 nm	10 vol% lactic acid	1.0 wt% Pt	189

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