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Supporting Information

High-light-harvesting-efficiency $CuInS_2$ quantum dots/TiO_2/MoS_2 photocatalysts for enhanced visible light photocatalytic H_2 production

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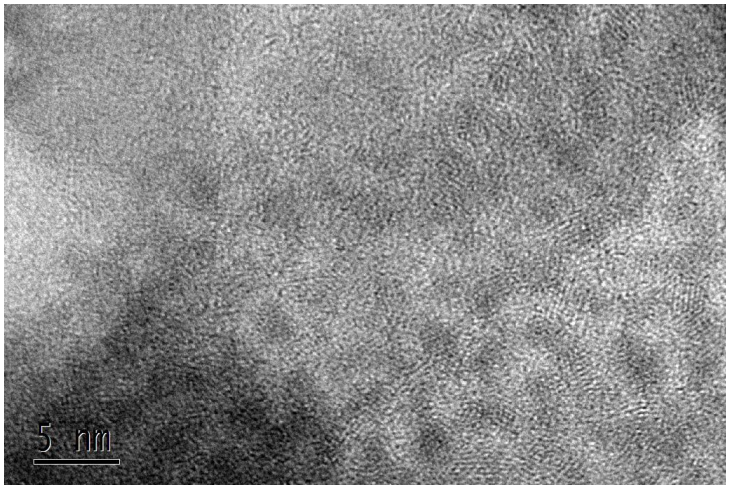

Figure S1. TEM image of $CuInS_2$ QDs.

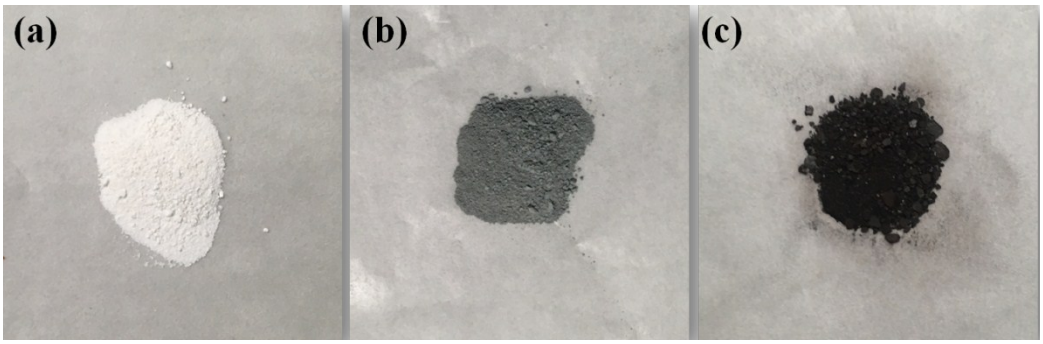

Figure S2. Photographs of TiO_2, 0.5 wt% MoS_2/TiO_2 and 1.0 mmol·g^{-1} $CuInS_2/TiO_2/MoS_2$ composite.

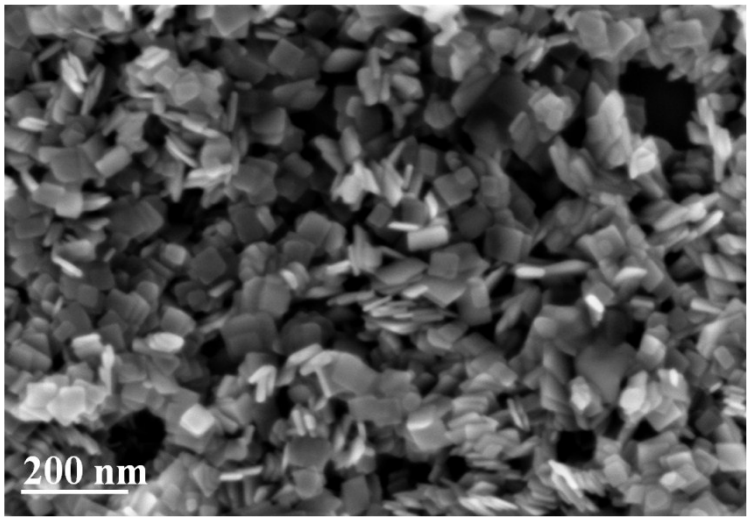

Figure S3. SEM image of TiO_2 sample.

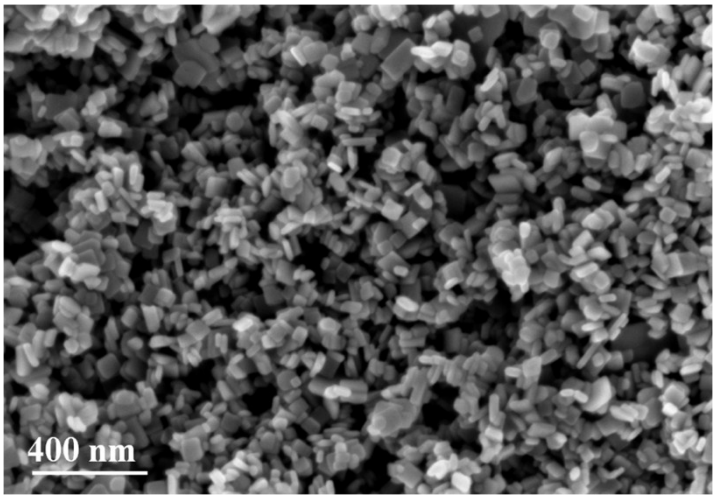

Figure S4. SEM image of 0.5 wt% MoS_2/TiO_2 sample.

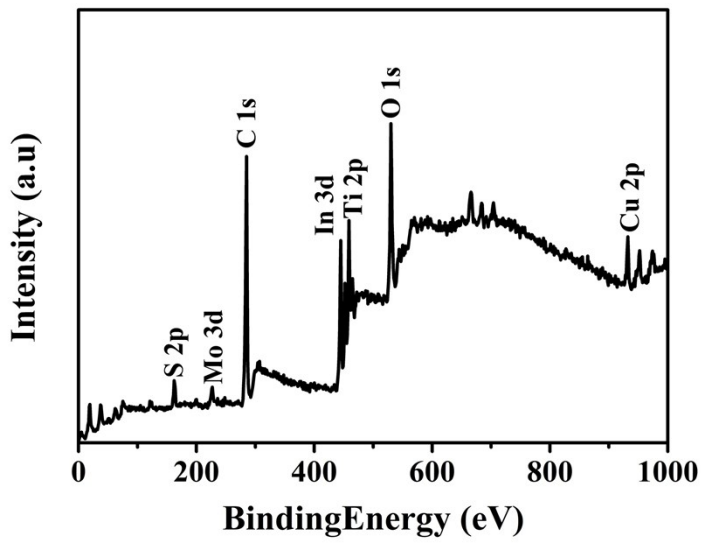

Figure S5. Wide-scan XPS spectrum of $CuInS_2/MoS_2/TiO_2$ (0.6 mmol·g^{-1} MT).

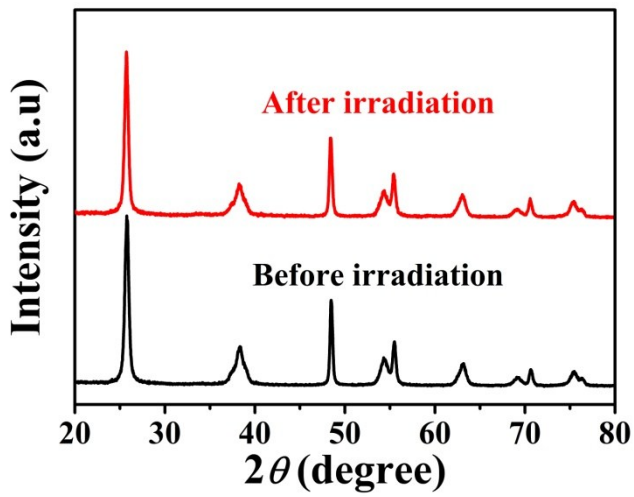

Figure S6. X-ray diffraction patters for 0.6 mmol·g^{-1} CTM sample before and after photocatalytic reaction.

Table S1. Comparison of photocatalytic performance for H_2 production between the current work and other reported studies.

Entry	Photocatalyst	Light source	Sacrificial reagent	H_2 evolution rate ($\mu mol\ h^{-1}\ g^{-1}$)	Ref
1	Zn-tri-PcNc/TiO_2/Pt[1]	300 W Xe lamp (λ>420 nm)	EDTA[3]	3782	(1)
2	Au@TiO_2-CdS	300 W Xe lamp (λ>420 nm)	Na_2S+Na_2SO_3	1970	(2)
3	C_{60}-CdS/TiO_2	UV-LEDs (3 W, 420 nm)	Na_2S+Na_2SO_3	120.6	(3)
4	ZnTCPP-MoS_2/TiO_2[2]	300 W Xe lamp (λ>420 nm)	TEOA[4]	102	(4)
5	$CuInS_2$/TiO_2/MoS_2	300 W Xe lamp (λ>420 nm)	Na_2S+Na_2SO_3	1034	This work

[1]Zn-tri-PcNc: Zinc phthalocyanine

[2]ZnTCPP: Zn(II)-5,10,15,20-tetrakis(4-carboxyphenyl)porphyrin

[3] EDTA: Ethylene diamine tetraacetic acid

[4]TEOA: Triethanolamine

References

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