

Constructing $\text{CeO}_2/\text{Zn}_x\text{Cd}_{1-x}\text{In}_2\text{S}_4$ S-scheme Hollow Heterostructure for Efficient Photocatalytic H_2 Evolution

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S-型异质结 $\text{CeO}_2/\text{Zn}_x\text{Cd}_{1-x}\text{In}_2\text{S}_4$ 空心结构的构建及其可见光分解水制氢性能

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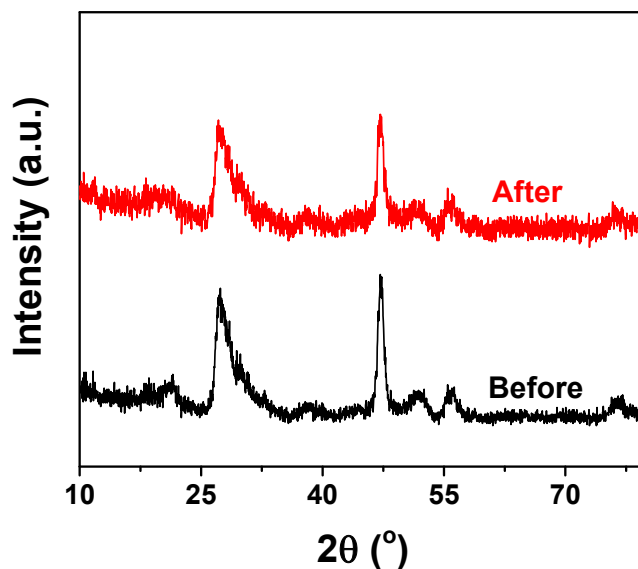
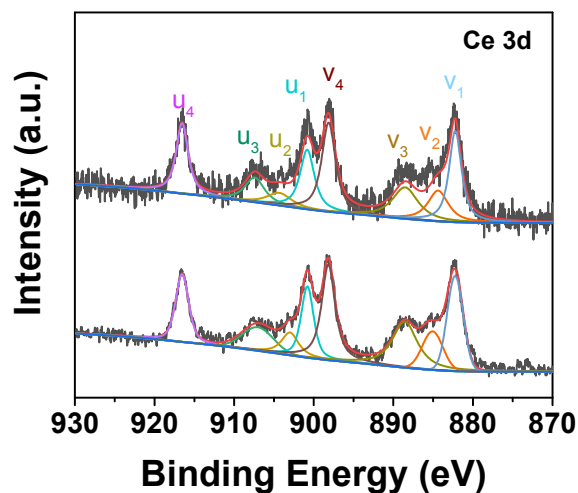
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Table S1 Comparison of representative sulfide photocatalysts and their H₂ evolution behaviors.

Photocatalyst	Condition	Rate (mmol·g ⁻¹ ·h ⁻¹)	Ref.
CeO ₂ /ZCIS	Na ₂ S and Na ₂ SO ₃ ($\lambda > 400$ nm)	4.09	this work
1D/2D CeO ₂ /ZnIn ₂ S ₄	Methanol (20 vol%) ($\lambda > 420$ nm)	3.29	1
0D/2D CeO ₂ /ZnIn ₂ S ₄	Na ₂ S/Na ₂ SO ₃ ($\lambda > 420$ nm)	0.85	2
CdS/CeO ₂	Na ₂ S/Na ₂ SO ₃ ($\lambda > 300$ nm)	0.10	3
NiCo ₂ S ₄ @ZnIn ₂ S ₄	TEOA ($\lambda > 420$ nm)	3.90	4
SnS/g-C ₃ N ₄	lactic acid (Solar simulator)	0.82	5
MoS ₂ /ZnIn ₂ S ₄	TEOA ($\lambda > 420$ nm)	0.22	6
ZnIn ₂ S ₄ /RGO/BiVO ₄	0.2 M HCHO ($\lambda > 420$ nm)	0.56	7
CdS/CdIn ₂ S ₄	Na ₂ S and Na ₂ SO ₃ ($\lambda > 420$ nm)	0.82	8
ZnIn ₂ S ₄ /LaNiO ₃	TEOA (10 vol%) ($\lambda > 420$ nm)	1.60	9
g-C ₃ N ₄ /ZnIn ₂ S ₄	TEOA (20 vol%) ($\lambda > 420$ nm)	1.65	10
WO _{3-x} /PbS	Na ₂ S and Na ₂ SO ₃ ($\lambda > 420$ nm)	0.64	11
NiS/ZnIn ₂ S ₄	Na ₂ S and Na ₂ SO ₃ ($\lambda > 420$ nm)	3.65	12
2D/2D WO ₃ /ZnIn ₂ S ₄	Na ₂ S/Na ₂ SO ₃ ($\lambda > 420$ nm)	2.20	13
TiO ₂ /CdS	Methanol (350 W Xe lamp)	2.32	14

**Fig. S1 XRD patterns of CeO₂/ZCIS before and after photocatalytic H₂ evolution reaction.****Fig. S2 High resolution XPS of Ce 3d of CeO₂/ZCIS before and after photocatalytic H₂ evolution reaction.**

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