Electronic Supplementary Material (ESI) for New Journal of Chemistry.

Supplementary Data

Boosting photocatalytic activity of $ZnIn_2S_4$-based photocatalyst for H_2 evolution using porous $ZnWO_4$ nanoflakelets as a cocatalyst

Fengchun Dong[1], Hui Liu[1], Lixia Qin[1], Taiyang Zhang[1,2,*], Xiangqing Li[1], Shi-Zhao Kang[1,*]

[1]*School of Chemical and Environmental Engineering, Shanghai Institute of Technology, 100 Haiquan Road, Shanghai 201418, China*

[2]*Shanghai Engineering Research Center of Solid Waste Treatment and Resource Recovery, Shanghai Jiao Tong University, Shanghai, 200240, China*

* Corresponding author: Shi-Zhao Kang, and Taiyang Zhang

Tel./fax: +86 21 60873061.

E−mail address: kangsz@sit.edu.cn (S.-Z. Kang), taiyangzhang@sit.edu.cn (T. Zhang)

Supplementary Fig. S1

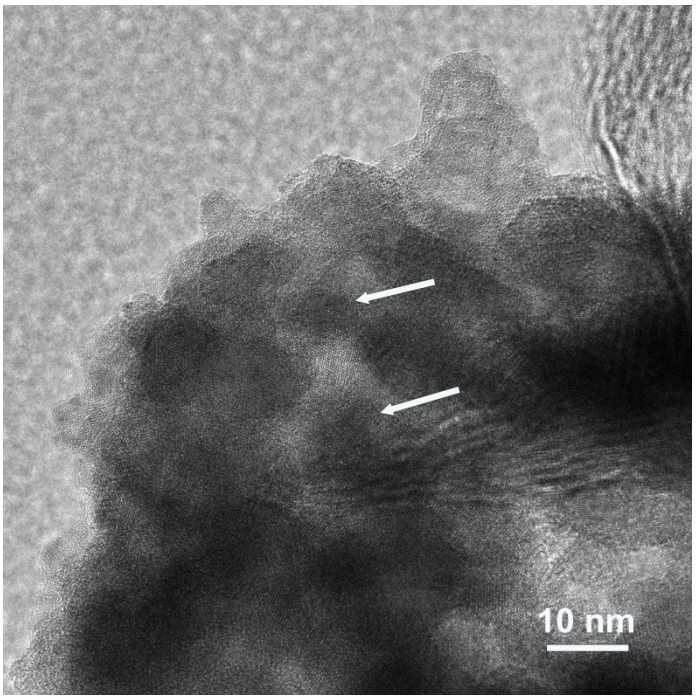

Fig. S1. HRTEM image of ZIS/PZW (5%).

Supplementary Fig. S2

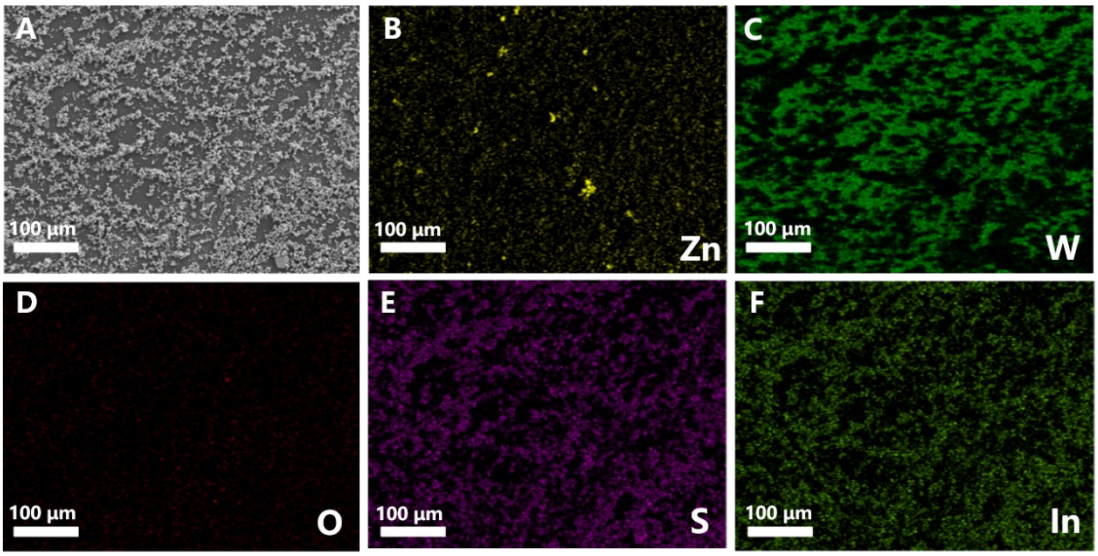

Fig. S2. (A) SEM image of ZIS/PZW (5%) and (B, C, D, E and F) corresponding element mappings (Zn, W, O, S and In).

Supplementary Fig. S3

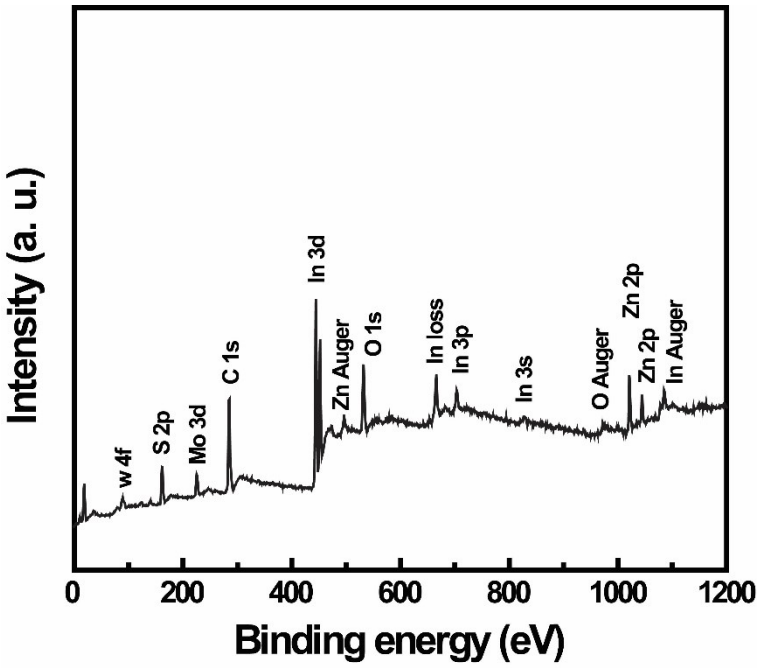

Fig. S3. XPS survey spectrum of ZIS/PZW (5%).

Supplementary Table S1

Table S1. Photocatalytic activity of the $ZnIn_2S_4$-based photocatalysts reported recently

Photocatalysts	H_2 generation rate (mmol g^{-1} h^{-1})	Ref.
ZIS/PZW (5%)	8.86	this work
$ZnIn_2S_4$ nanosheets on $FeWO_4$ flowers	3.53	1
$NiWO_4/ZnIn_2S_4$ heterojunction	30.51	2
$NiS/ZnIn_2S_4/AgIn(WO_4)_2$ nanocomposite	4.82	3
Ag_2S modified $ZnIn_2S_4$ nanosheets	1.00	4
$ZnIn_2S_4$/black TiO_2 hollow spheres	5.56	5

Supplementary Fig. S4

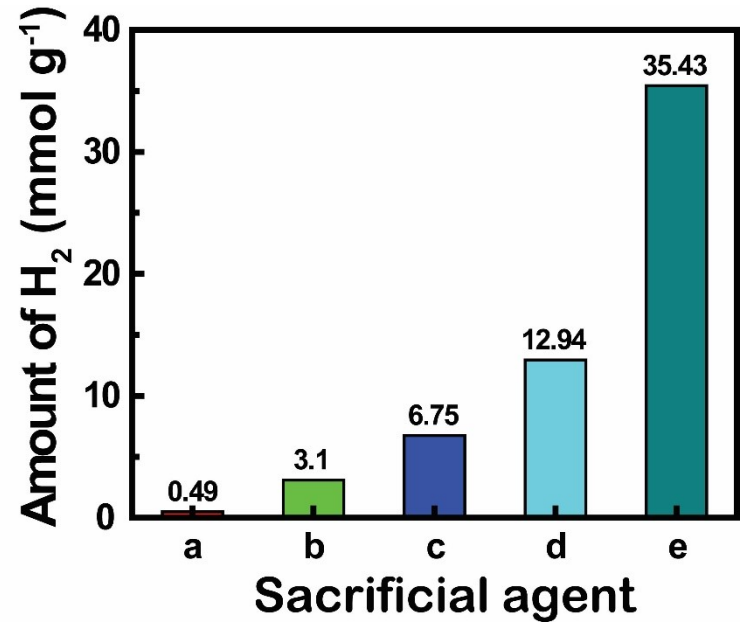

Fig. S4. Photocatalytic activity of ZIS/PZW (5%) for H_2 evolution when the sacrificial agent is (a) methyl alcohol, (b) glycol, (c) triethanolamine, (d) Na_2S/Na_2SO_3 or (e) lactic acid (photocatalyst 15 mg; temperature 10 ℃; irradiation time 4 h).

Supplementary Fig. S5

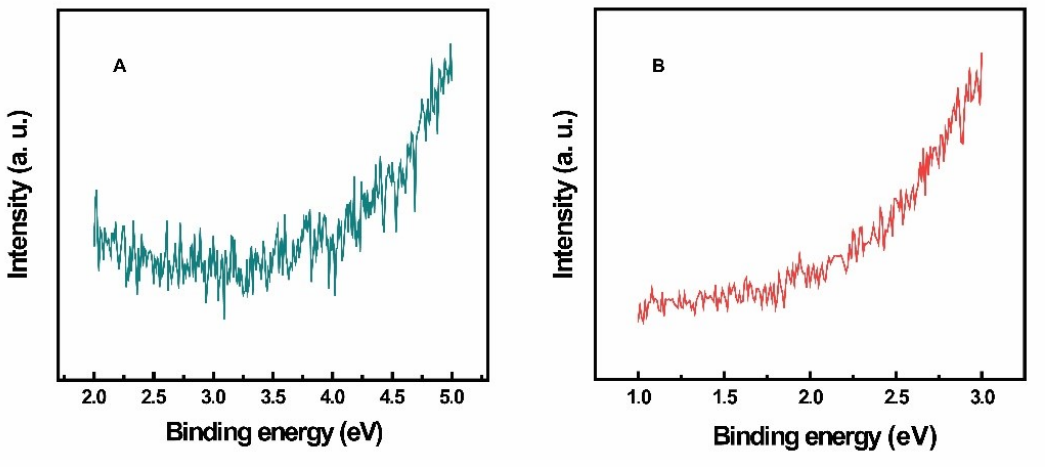

Fig. S5. UPS spectra of (A) the porous $ZnWO_4$ nanoflakelets and (B) the flower-like $ZnIn_2S_4$ microspheres.

Supplementary Fig. S6

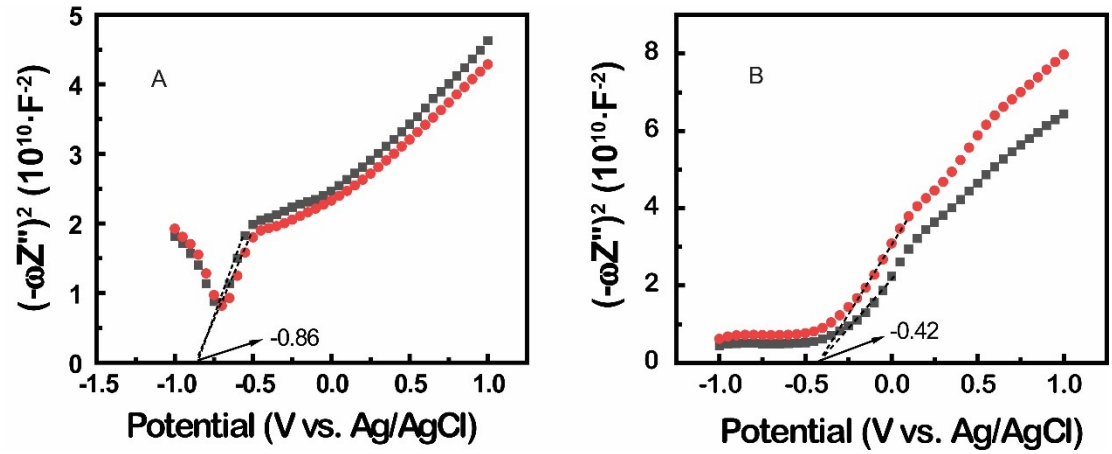

Fig. S6. Mott-Schottky curves of (A) the flower-like $ZnIn_2S_4$ microspheres and (B) the porous $ZnWO_4$ nanoflakelets.

Supplementary Fig. S7

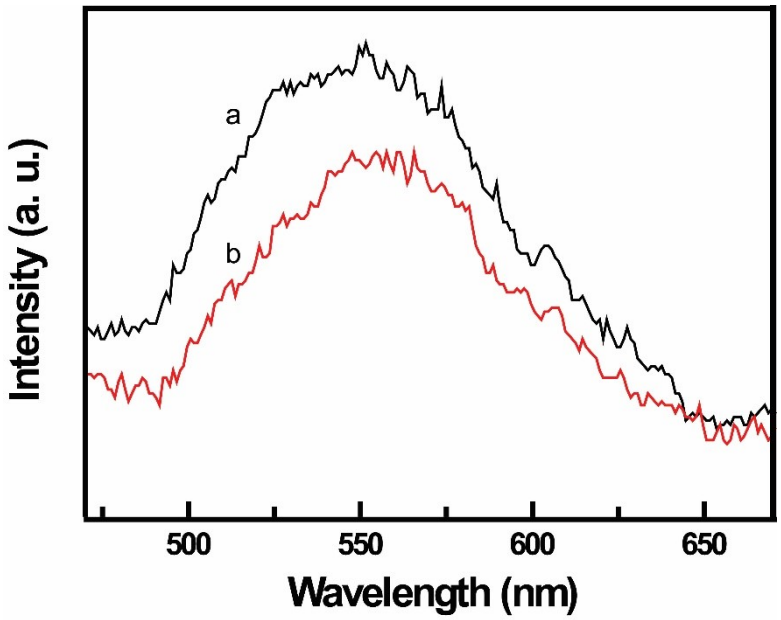

Fig. S7. Fluorescence spectra of (a) the $ZnIn_2S_4$ microspheres and (b) ZIS/PZW (5%) when the excitation wavelength is 360 nm.

Supplementary Fig. S8

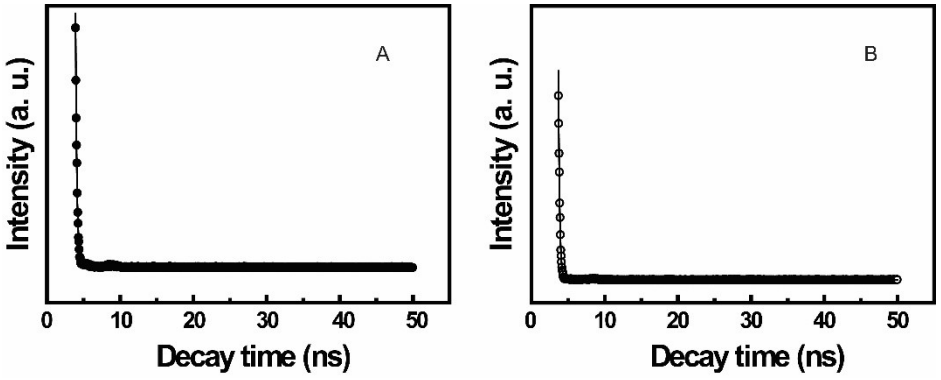

Fig. S8. Time-resolved fluorescence spectra of (A) the $ZnIn_2S_4$ microspheres and (B) ZIS/PZW (5%).

References

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