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Selective deposition of cocatalyst NiS on g-C_3N_4/$ZnIn_2S_4$ heterojunction for exceptional photocatalytic H_2 evolution

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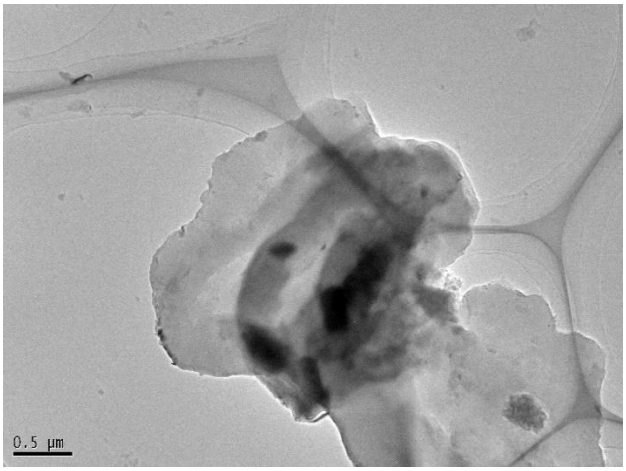

Figure. S1. TEM of g-C_3N_4.

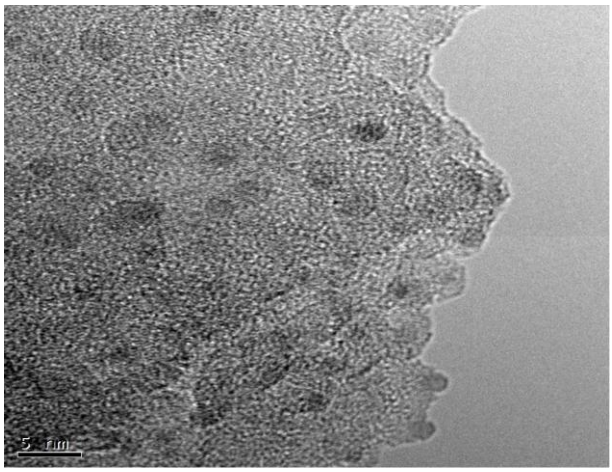

Figure S2. TEM of NiS-g-C_3N_4/$ZnIn_2S_4$.

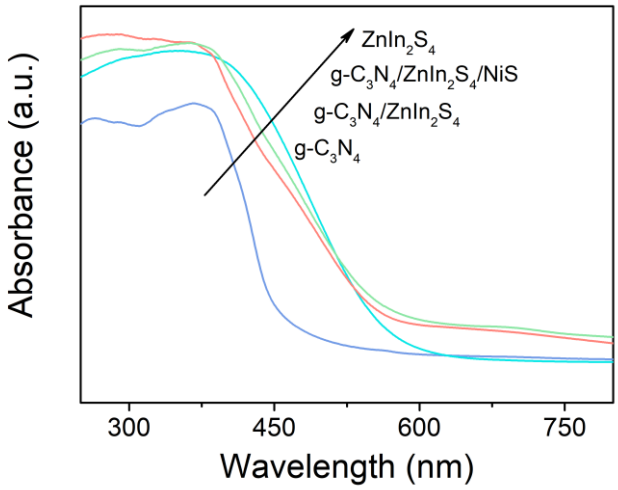

Figure S3. UV-vis DRS of as-prepared products.

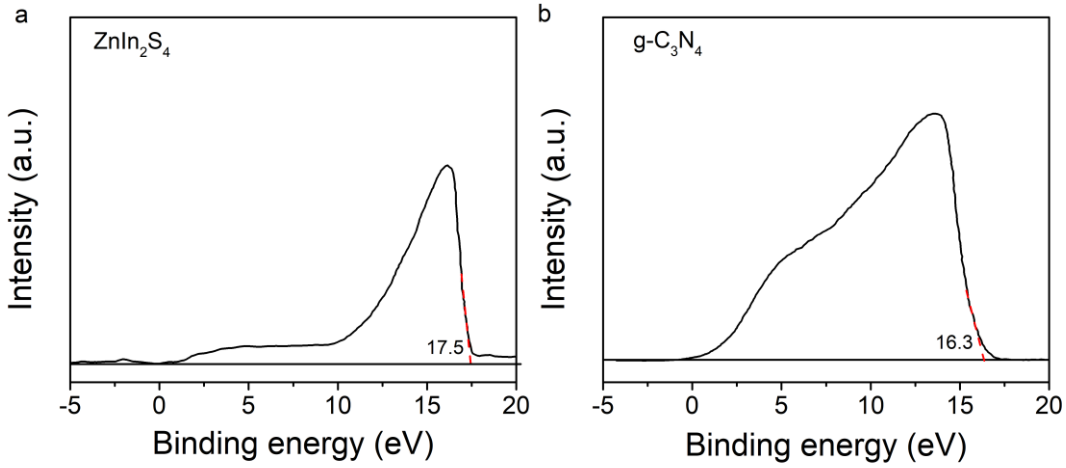

Figure S4. UPS spectra of $ZnIn_2S_4$ (a) and g-C_3N_4 (b).

Table S1. Comparison of the photocatalytic H_2 generation achieved by the g-C_3N_4-based photocatalysts.

Photocatalyst	Cocatalyst	Activity (μmol g^{-1} h^{-1})	Reference
CCN	-	758.8	[1]
Cu_3P/g-C_3N_4	-	808	[2]
WO_3/g-C_3N_4	-	982	[3]
MoS_2/g-C_3N_4	-	1155	[4]
$Ba_5Nb_4O_{15}$/g-C_3N_4	Pt	2673	[5]
GCN-Pt_3Co	-	2910	[6]
g-C_3N_4-AQ-MoO_3	-	2999	[7]
CdS/PdAg/g-C_3N_4	-	3098.3	[8]
$ZnIn_2S_4$@PCN-224	Pt	5675	[9]
g-C_3N_4/$ZnIn_2S_4$/NiS	-	**4077.5**	**This work**

Table S2. Lifetimes of time-resolved fluorescence decays on g-C_3N_4, $ZnIn_2S_4$, g-C_3N_4/$ZnIn_2S_4$ and g-C_3N_4/$ZnIn_2S_4$/NiS.

Sample	τ_1(ns)	a_1(%)	τ_2(ns)	a_2(%)	τ_3(ns)	a_3(%)	τ_{ave}(ns)
g-C_3N_4	1.00	56.00	3.42	35.52	20.00	8.49	3.47
$ZnIn_2S_4$	1.24	31.23	4.11	52.67	20.90	16.10	5.92
g-C_3N_4/$ZnIn_2S_4$	1.30	34.43	4.59	51.93	24.19	13.65	6.13
g-C_3N_4/$ZnIn_2S_4$/NiS	1.26	26.99	4.48	53.50	26.97	19.51	8.00

Reference

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