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# Noble-metal-free Ternary CN-ZCS-NiS Nanocomposites for Enhanced Solar Photocatalytic $H_2$-Production Activity

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**Table S1.** other ratio of samples for the Synthesis of CN-ZCS

| | $C_3N_4$(g) | $Zn(Ac)_2{\cdot}2H_2O$(g) | $Cd(Ac)_2{\cdot}2H_2O$(g) | Thioacetamide(g) |
|---|---|---|---|---|
| CN-ZCS-1 | 0.2 | 0.438 | 0.532 | 1.88g |
| CN-ZCS-2 | 0.2 | 0.876 | 1.064 | 1.88g |
| CN-ZCS-3 | 0.2 | 1.314 | 1.596 | 1.88g |
| CN-ZCS-4 | 0.2 | 1.752 | 2.128 | 1.88g |
| CN-ZCS-5 | 0.2 | 2.19 | 2.66 | 1.88g |

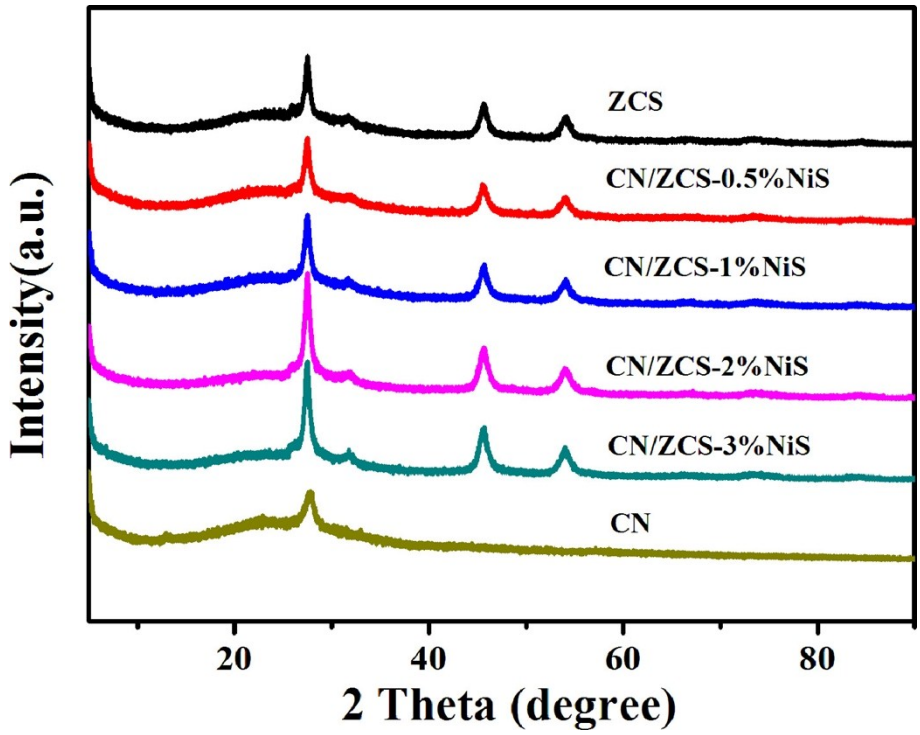


**Fig. S1** XRD patterns of the as prepared composites.

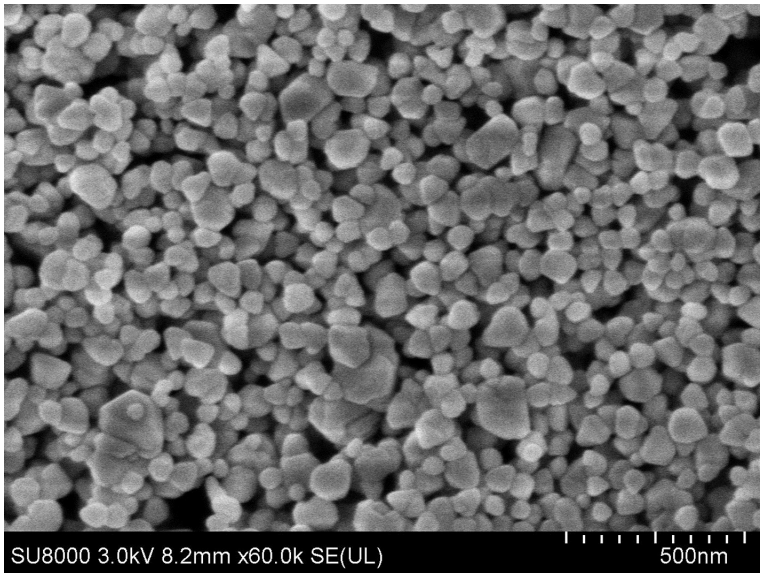


**Fig. S2** SEM images of the as prepared composites.

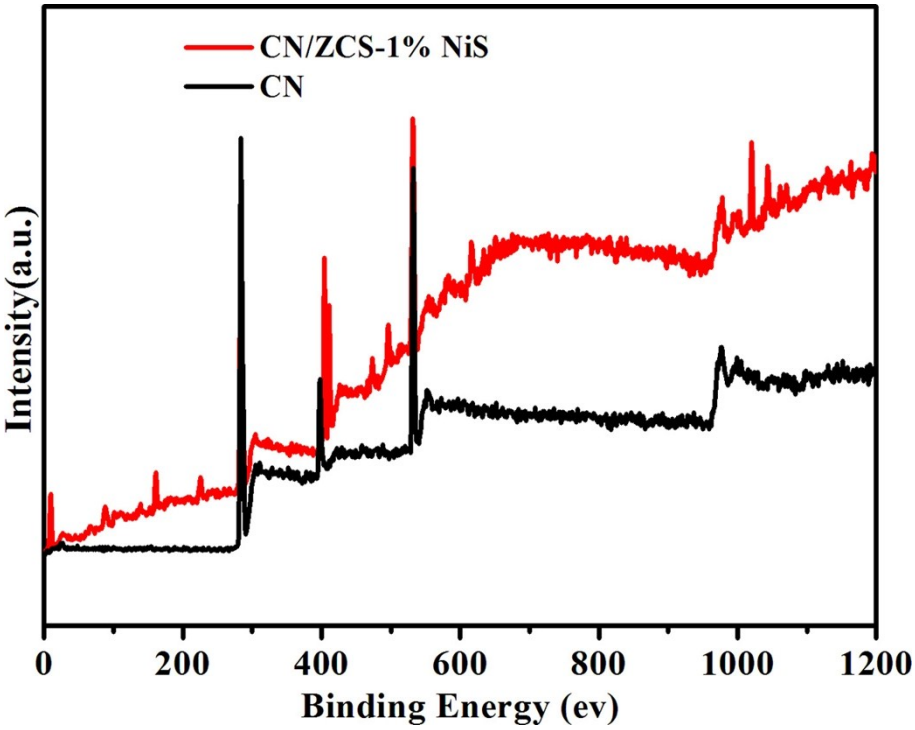


**Fig. S3** XPS spectra of CN and CN–ZCS–1% NiS sample.

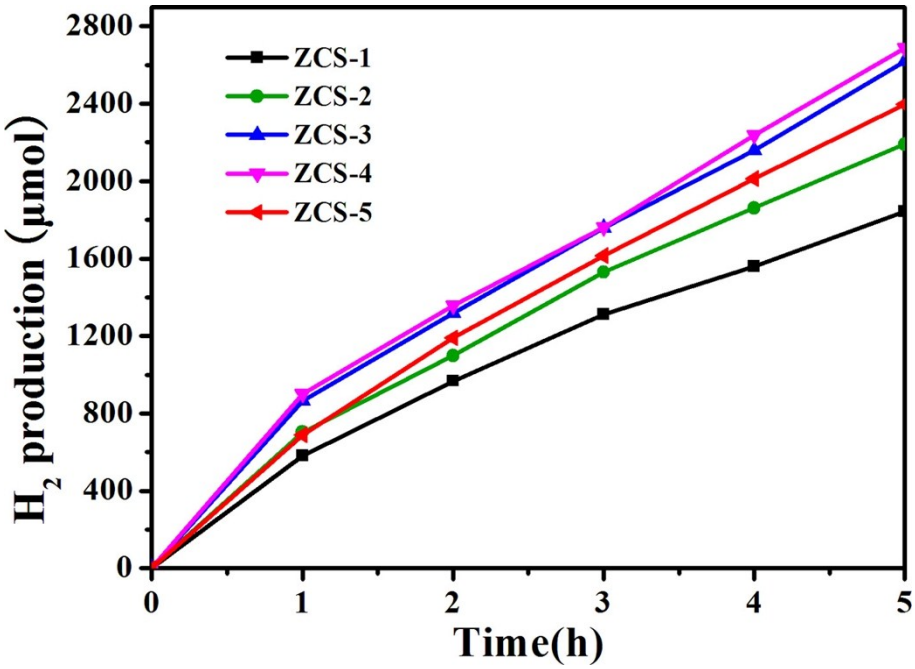


**Fig. S4** Photocatalytic hydrogen evolution over ZCS-1, ZCS-2, ZCS-3, ZCS-4, and ZCS-5.

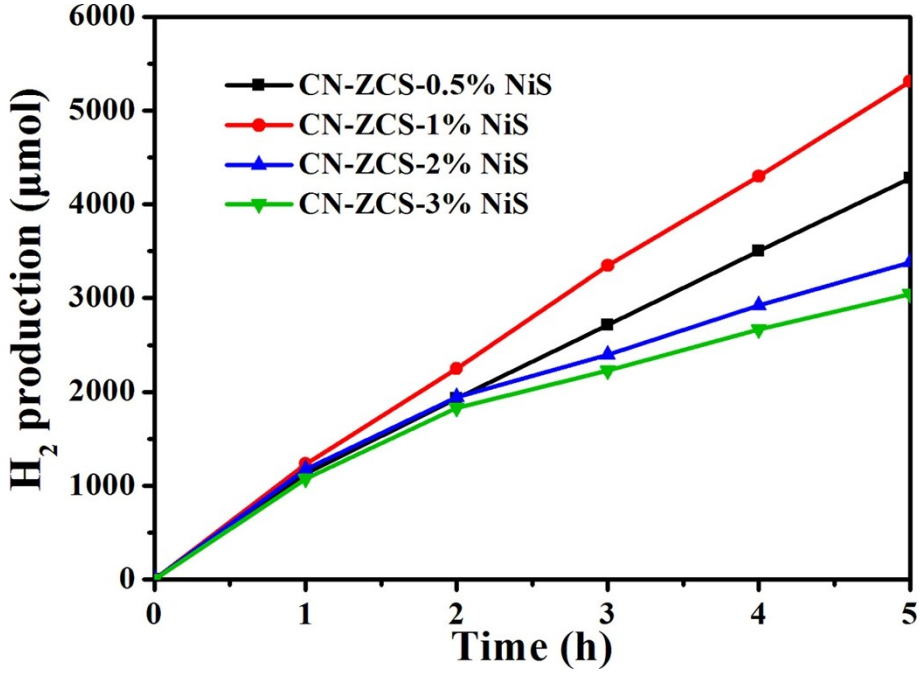


**Fig. S5** Photocatalytic hydrogen evolution over CN-ZCS-0.5% NiS, CN-ZCS-1% NiS, CN-ZCS-2% NiS, and CN-ZCS-3% NiS.