Electronic Supplementary Information

Synergistic Effect of Noble Metal free $Ni(OH)_2$ co-catalyst and Ternary $ZnIn_2S_4/g\text{-}C_3N_4$ Heterojunction for Enhanced Visible Light Photocatalytic Hydrogen Evolution

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Table S1: Nomenclature of the photocatalysts used in the present study.

Photocatalyst	Nomenclature
$g\text{-}C_3N_4$	CN
$ZnIn_2S_4$	ZIS
2.5 % $g\text{-}C_3N_4\text{-}ZnIn_2S_4$	2.5CNZ
5 % $g\text{-}C_3N_4\text{-}ZnIn_2S_4$	5 CNZ
10 % $g\text{-}C_3N_4\text{-}ZnIn_2S_4$	10 CNZ
20 % $g\text{-}C_3N_4\text{-}ZnIn_2S_4$	20 CNZ
5 % $g\text{-}C_3N_4\text{-}ZnIn_2S_4\text{-}Ni_x$ X= 0.5, 1.0, 2.0)	5CNZ-$Ni_{0.5}$ 5CNZ-$Ni_{1.0}$ 5CNZ-$Ni_{2.0}$
$g\text{-}C_3N_4\text{-}Ni_{1.0}$	CN-$Ni_{1.0}$
$ZnIn_2S_4\text{-}Ni_{1.0}$	ZIS-$Ni_{1.0}$

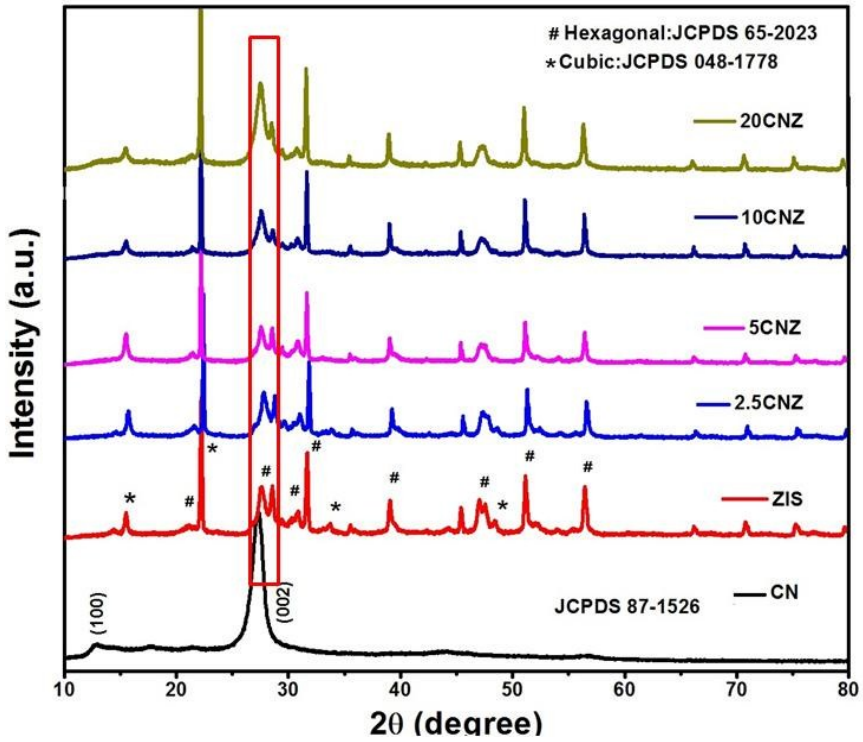

Figure S1. XRD pattern of CN, ZIS and its composites with different wt% of Ni deposition.

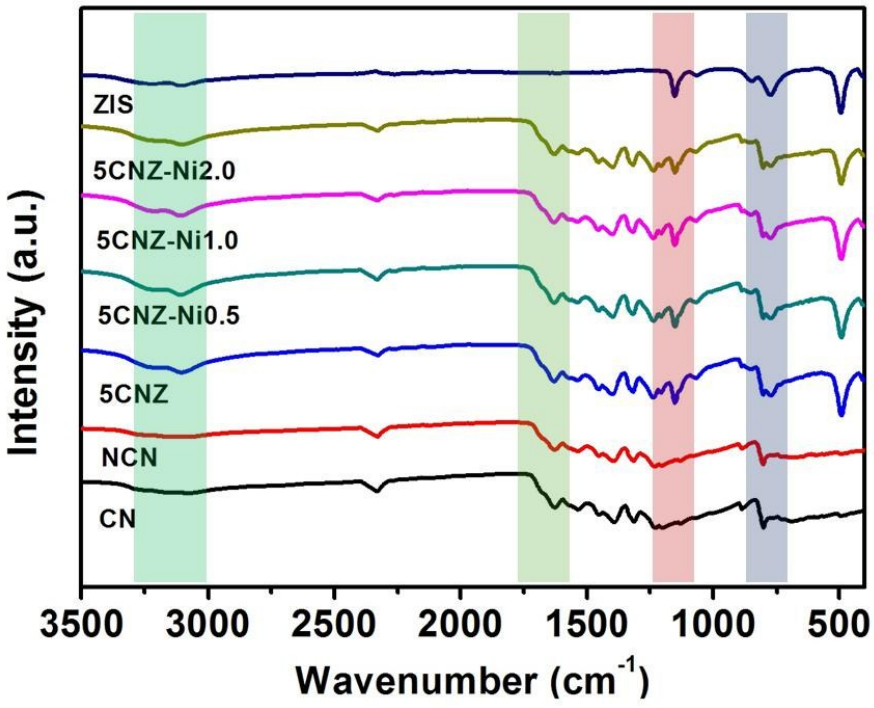

Figure S2. FTIR spectra of CN, ZIS and its composites with different wt% of Ni deposition.

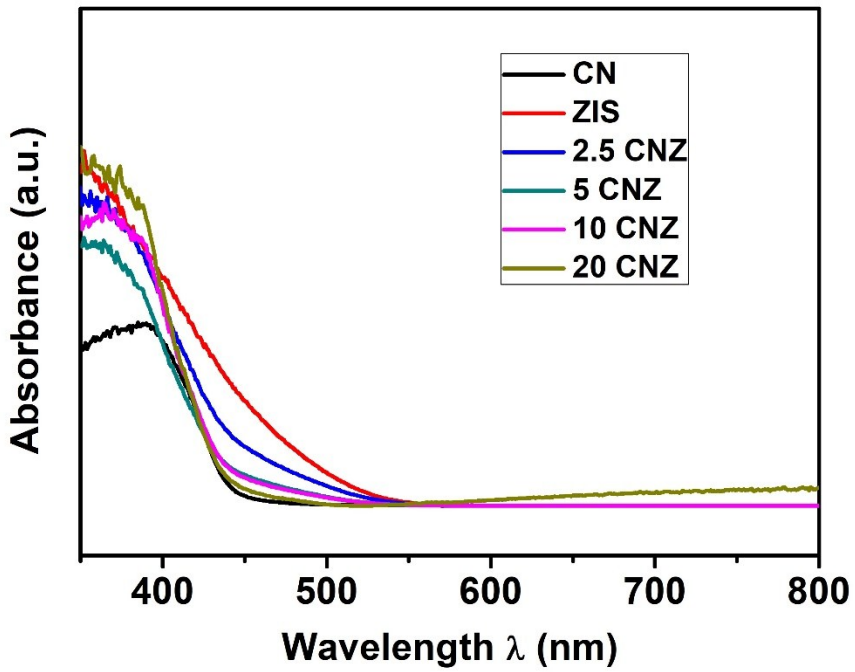

Figure S3. DR UV-Vis spectra of CN, ZIS and its composites.

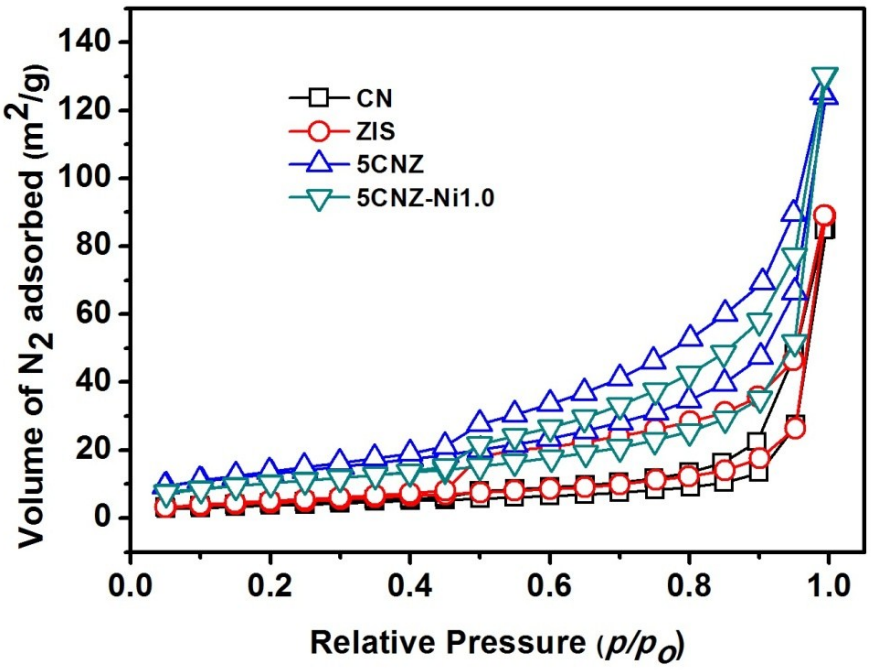

Figure S4. N_2 sorption isotherms of CN, ZIS, 5CNZ and 5CNZ-$Ni_{1.0}$.

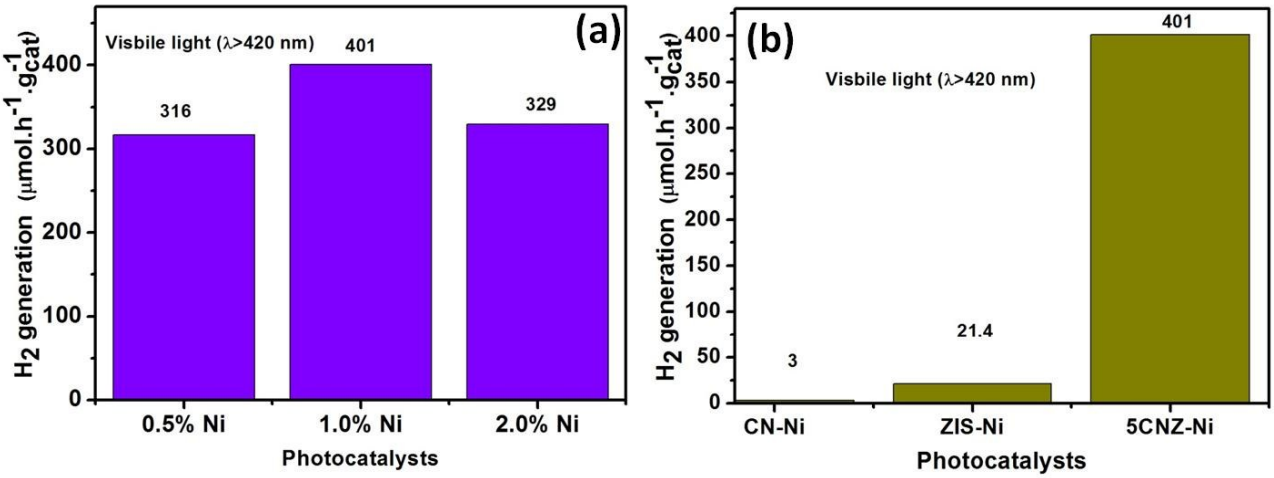

Figure S5. H_2 evolution activity: (a) optimization of wt% of Ni, (b) synergistic effect of Ni and 5CNZ in comparison with pristine catalysts CN and ZIS.

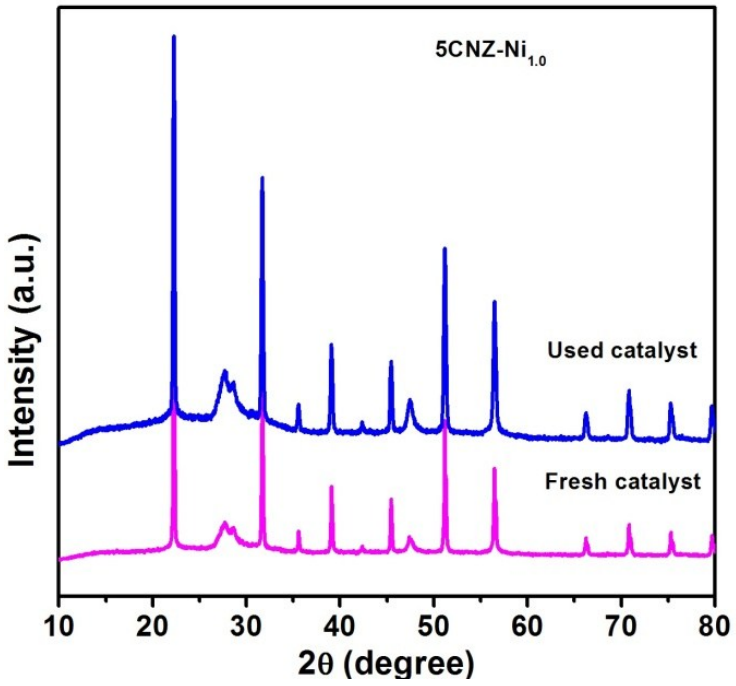

Figure S6. XRD pattern of used and fresh catalyst (5CNZ-$Ni_{1.0}$).