Electronic Supplementary Information

Au-Pt alloy nanoparticles site-selectively deposited on $CaIn_2S_4$ nanosteps as efficient photocatalysts for hydrogen production

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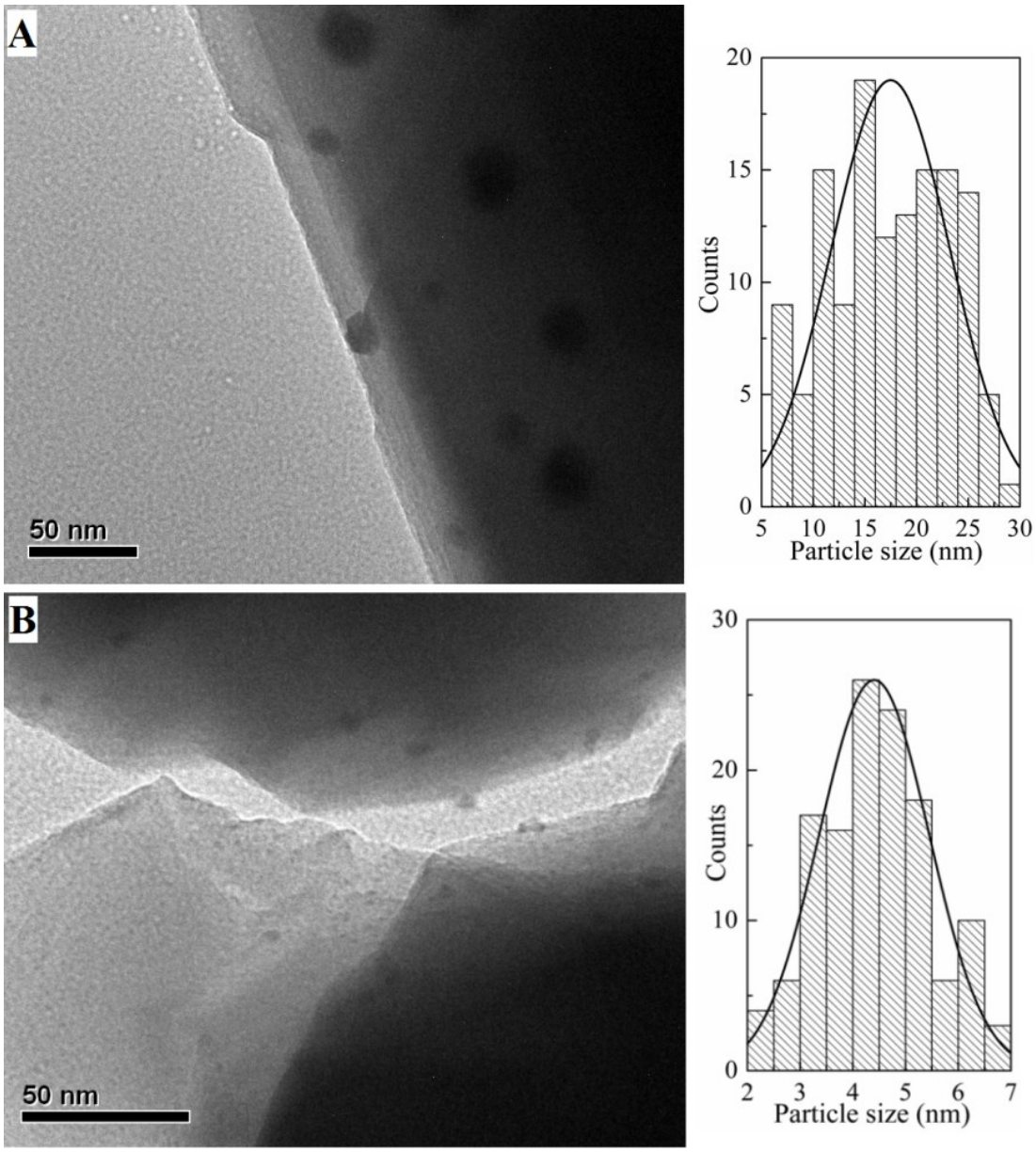

Figure S1. TEM image and size distribution of $Au_{0.5}$/CIS (A) and $Pt_{0.5}$/CIS (B) composite.

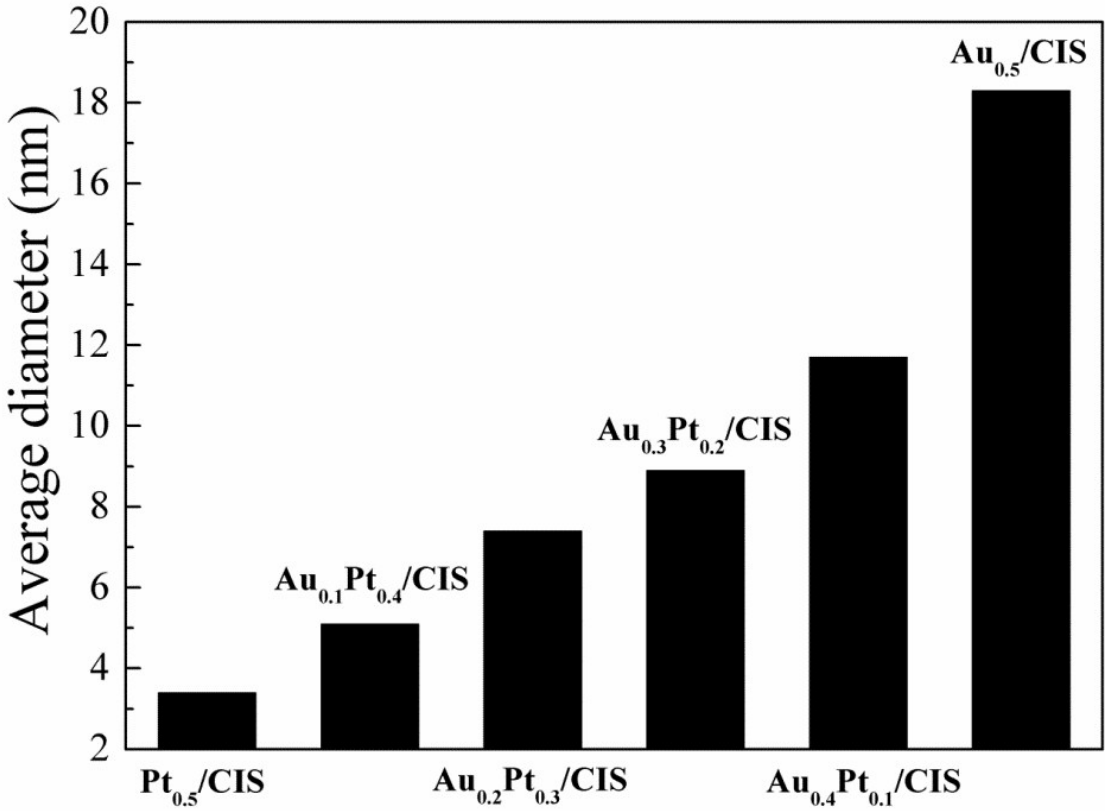

Figure S2. Size distribution of $Au_{0.5-x}Pt_x$/CIS composite with different content of Pt.

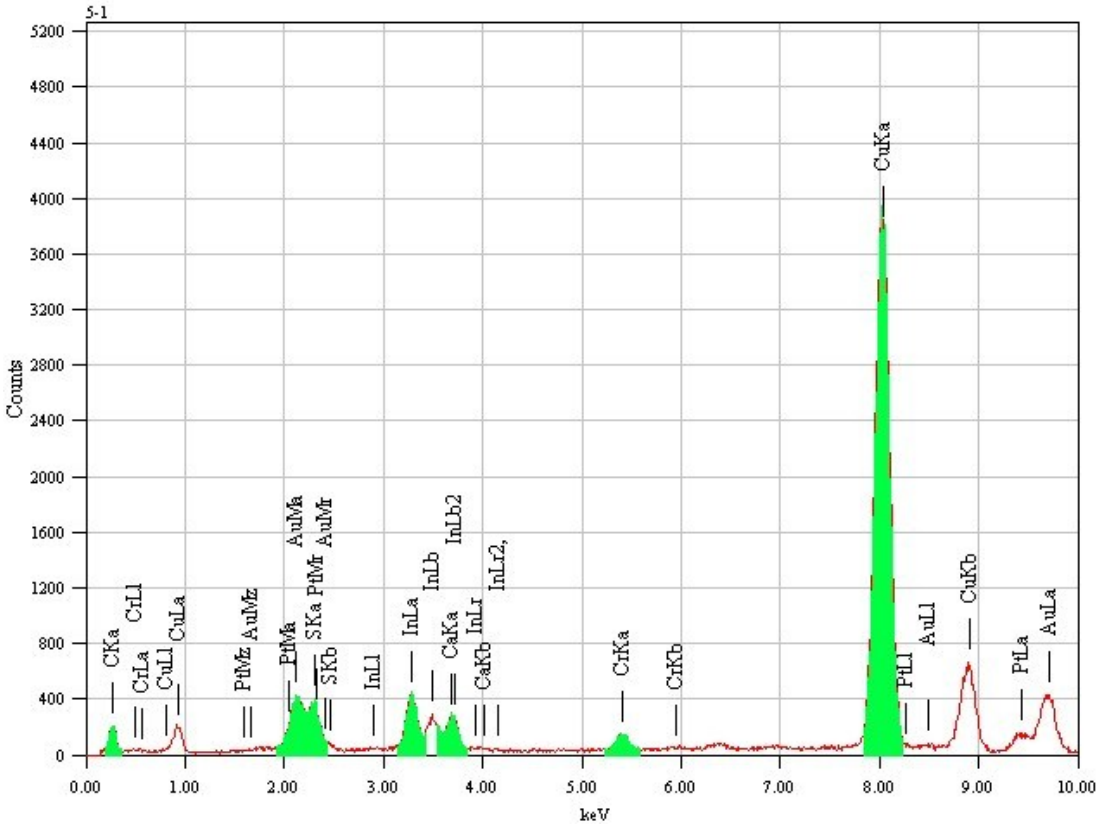

Figure S3. EDS spectra of $Au_{0.3}Pt_{0.2}$/CIS composite.

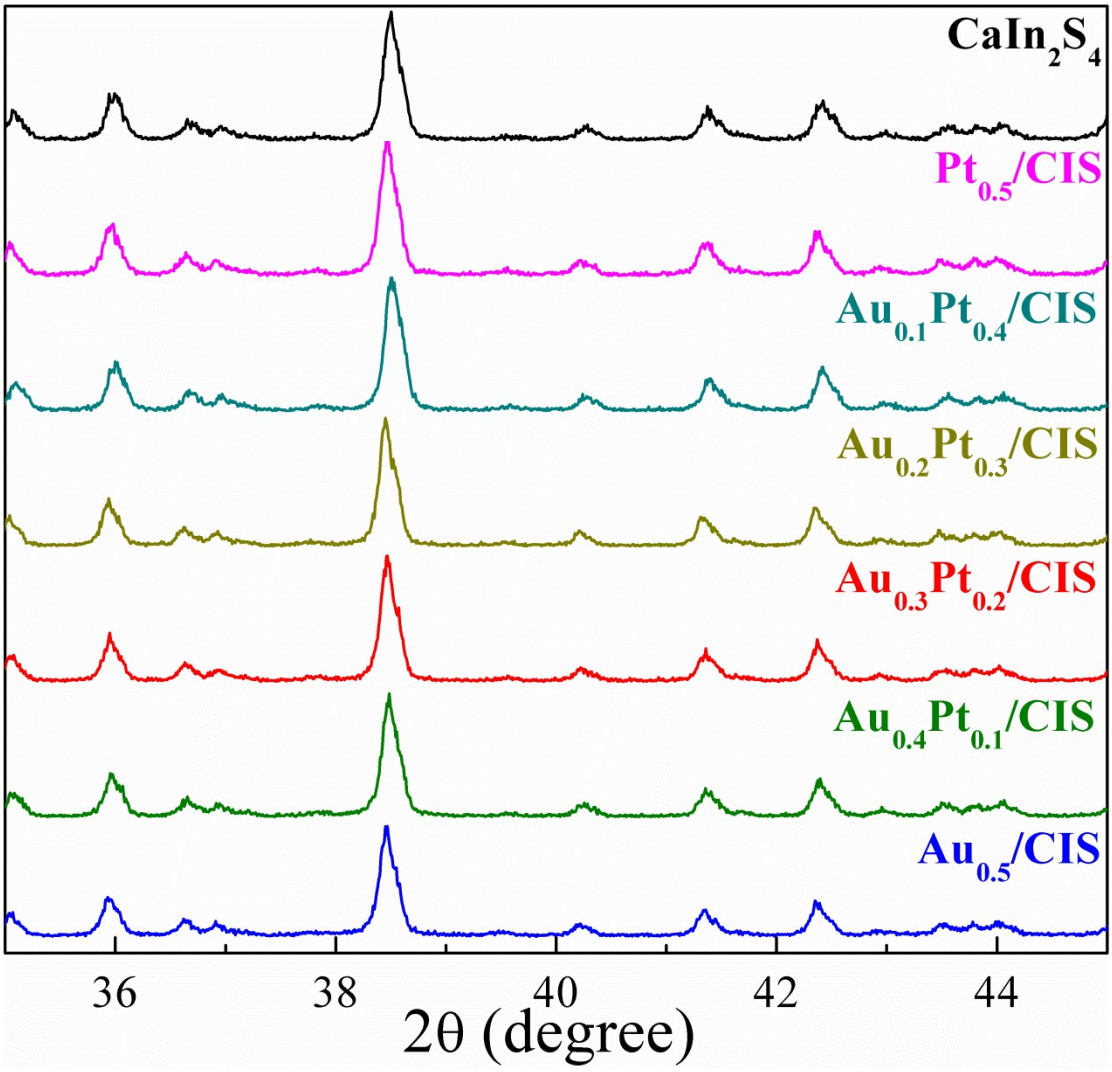

Figure S4. XRD patterns of $Au_{0.5-x}Pt_x$/CIS composite and $CaIn_2S_4$ with enlarged magnification.

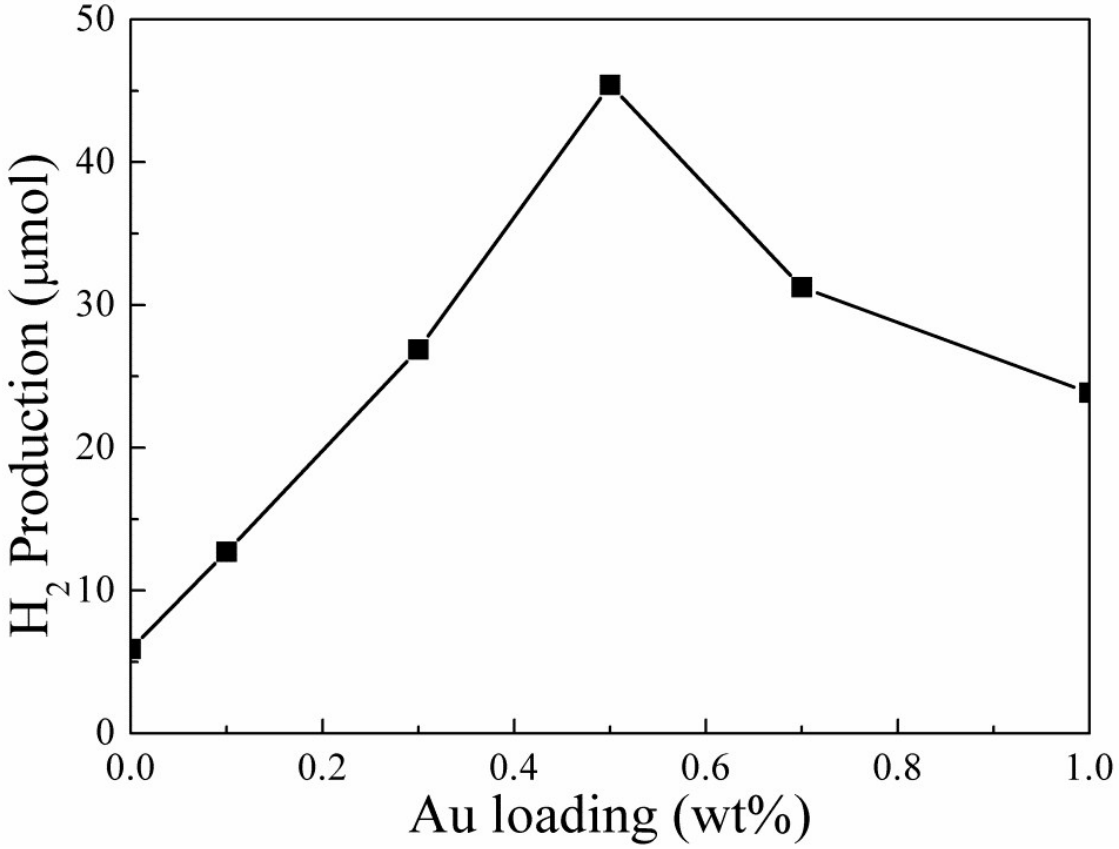

Figure S5. Photocatalytic activity of Au/CIS composites as a function of Au content.

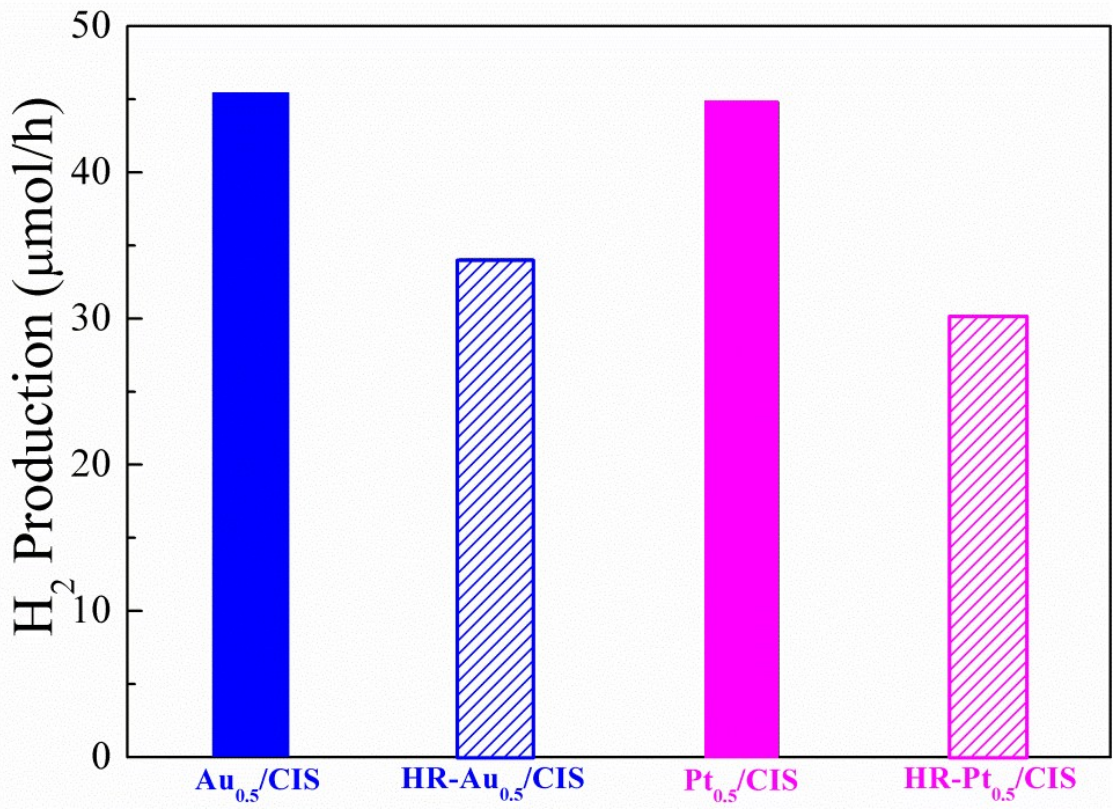

Figure S6. Hydrogen production rate of $Au_{0.5}$/CIS, HR-$Au_{0.5}$/CIS, $Pt_{0.5}$/CIS and HR-$Pt_{0.5}$/CIS under visible light irradiation.

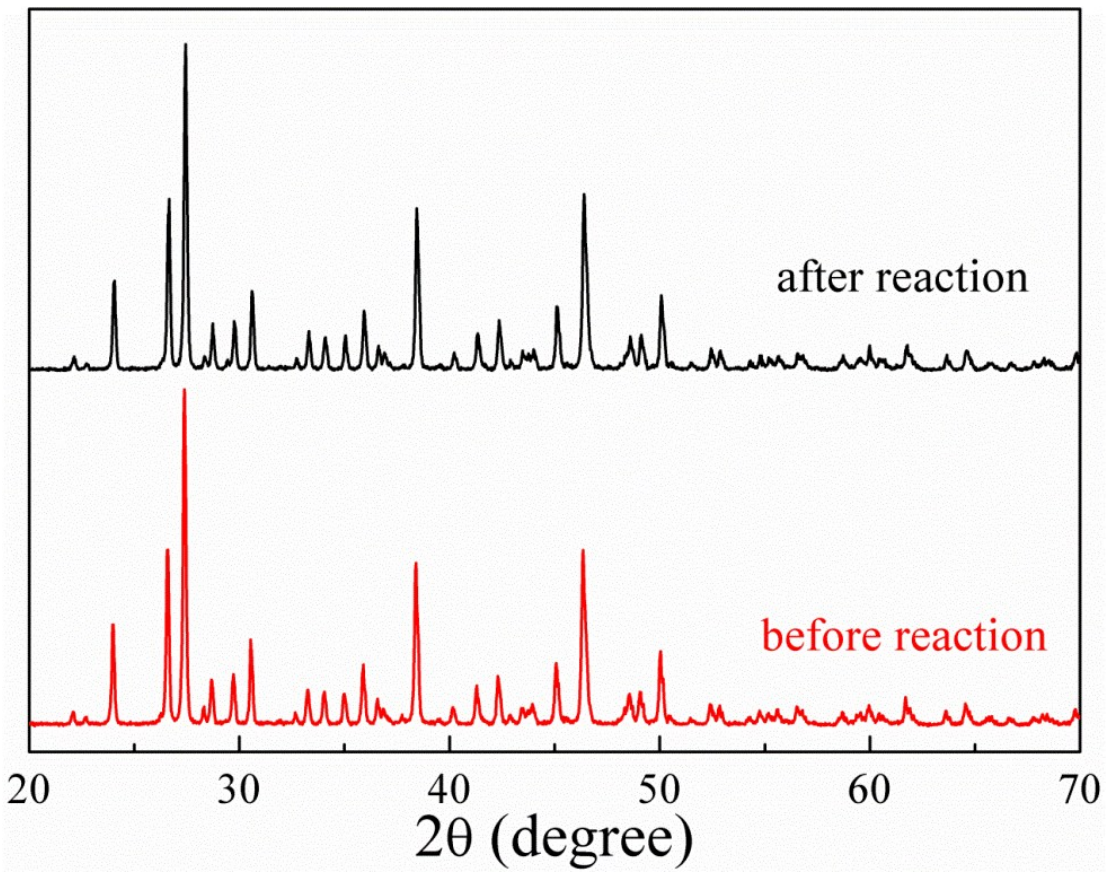

Figure S7. XRD patterns of $Au_{0.3}Pt_{0.2}$/CIS composite before and after the photocatalytic reaction.

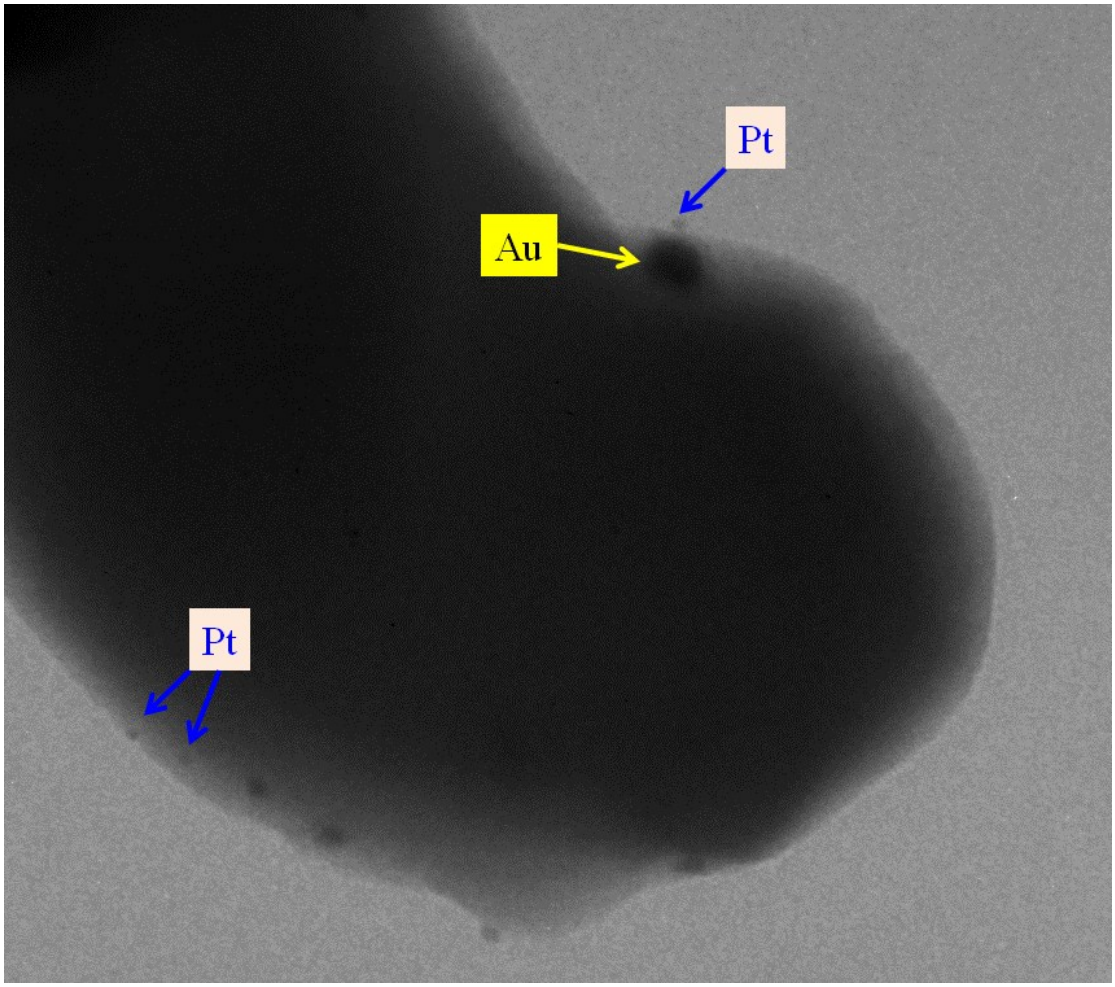

Figure S8. TEM image of photoreduced Pt on Au0.5/CIS composite