

Supplementary Information(SI)

Comparison of the catalytic performance of Au/TiO₂ prepared by *in situ* photo-deposition and deposition precipitation methods for CO oxidation at room temperature under visible light irradiation

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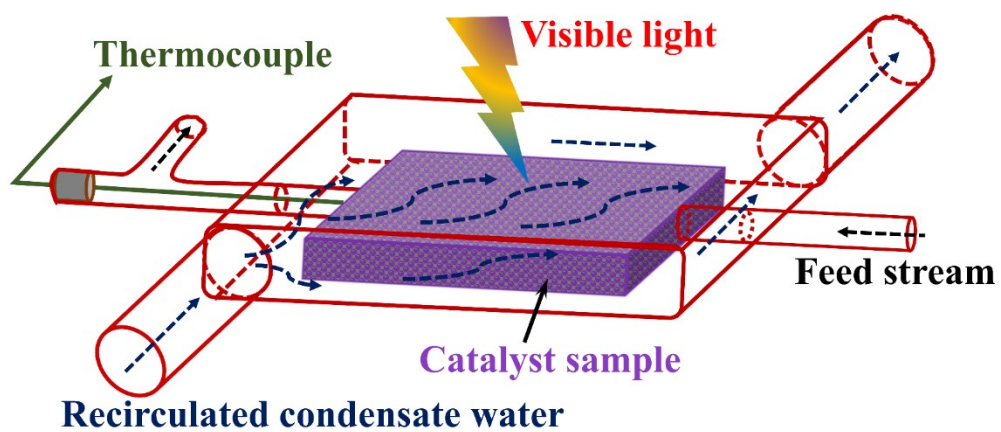
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Scheme S1 The diagram of the catalytic reactor under visible light irradiation or not.

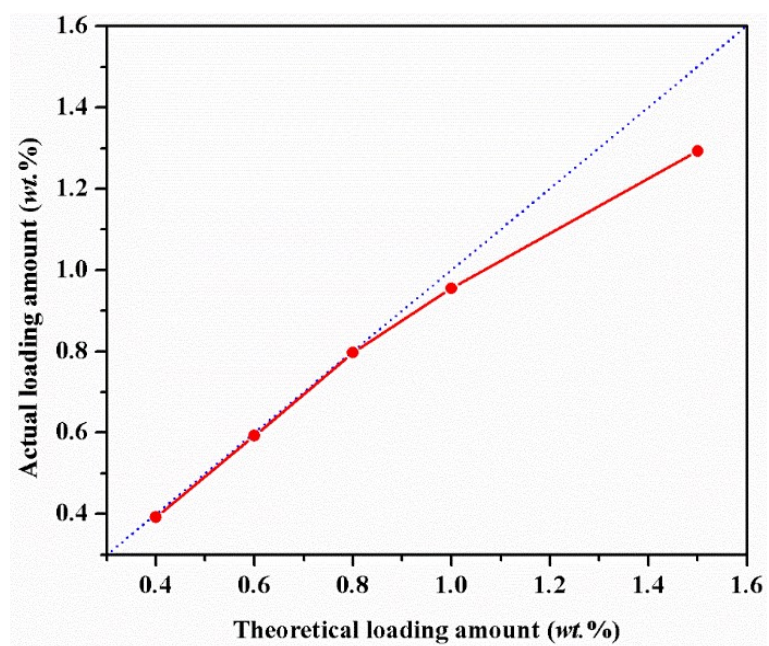


Fig. S1 The curve of actual and theoretical load amount of Au for Au/TiO₂-PD sample.

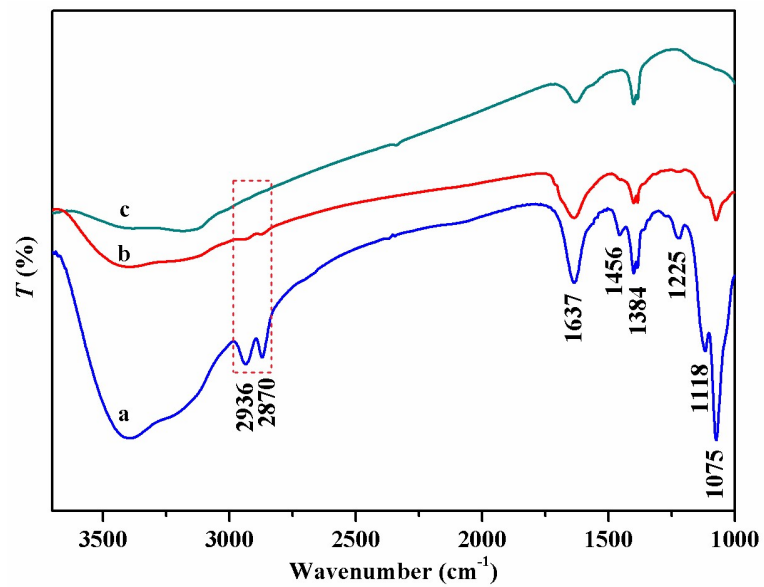


Fig. S2 FT-IR spectroscopy of (a) $\text{TiO}_2(\text{EG})$, (b) $\text{Au}/\text{TiO}_2(\text{EG})$ and (c) $\text{Au}/\text{TiO}_2\text{-PD}$ samples.

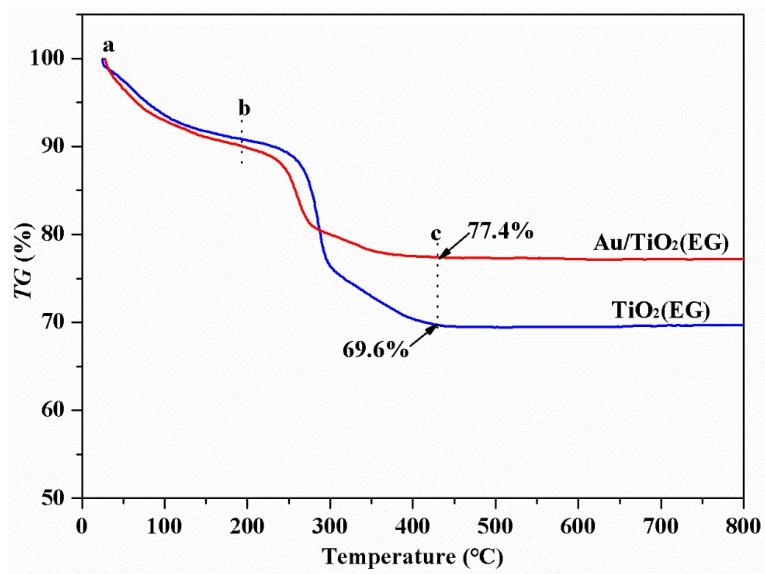


Fig. S3 TG curves of TiO₂(EG) and Au/TiO₂(EG) samples.

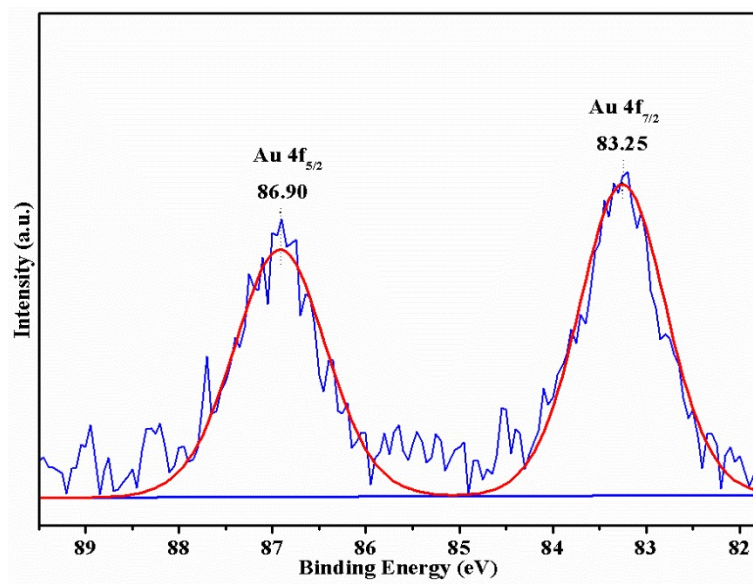


Fig. S4 The XPS spectra of Au 4f for Au/TiO₂(EG) samples.

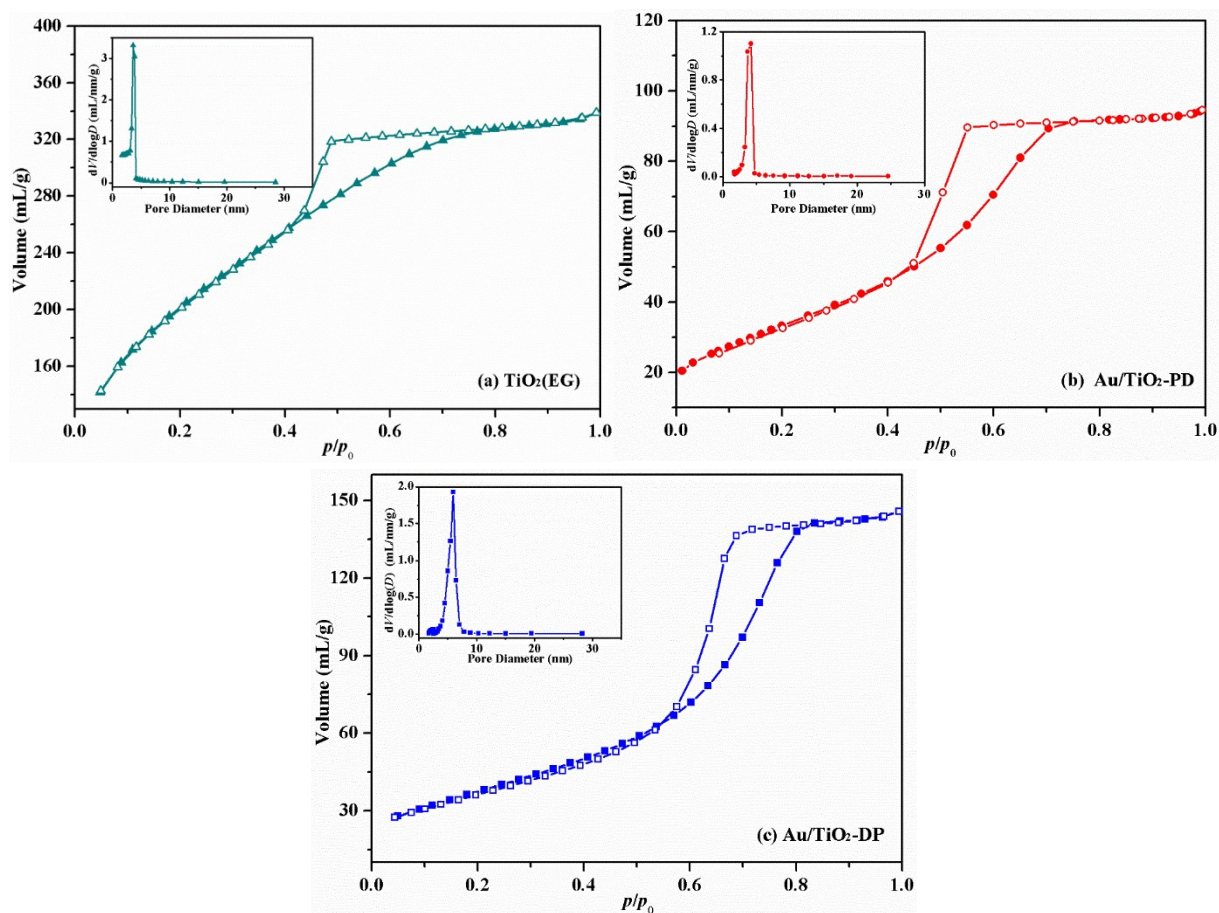


Fig. S5 The adsorption-desorption isotherms and the BJH pore size distributions (inset) plots of (a)TiO₂ (EG), (b) Au/TiO₂-PD and (c) Au/TiO₂-DP samples.

Table S1 The results of N₂ physical adsorption of TiO₂ (EG), Au/TiO₂-PD and Au/TiO₂-DP samples.

Sample	BET Surface Area (m ² g ⁻¹)	pore Volume (mL g ⁻¹)	Pore Size (nm)
TiO ₂ (EG)	658	0.46	2.8
Au/TiO ₂ -PD	123	0.15	4.7
Au/TiO ₂ -DP	127	0.19	5.4