Electronic Supplementary Information

Visible light-induced enhanced photoelectrochemical and photocatalytic studies of gold decorated SnO_2 nanostructure

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UV-vis diffuse reflectance spectra of Au-SnO_2 nanocomposites and P-SnO_2

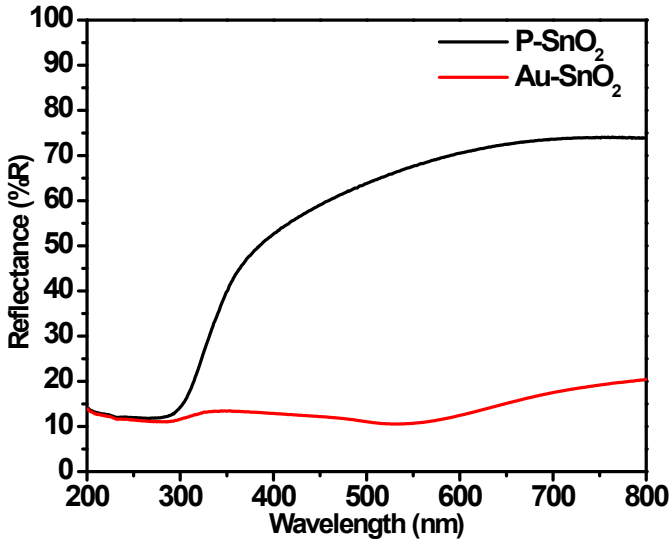

Fig. S1. UV-vis diffuse reflectance spectra of P-SnO_2 and Au-SnO_2 nanocomposite.

XRD patterns of the Au-SnO_2 nanocomposite and P-SnO_2

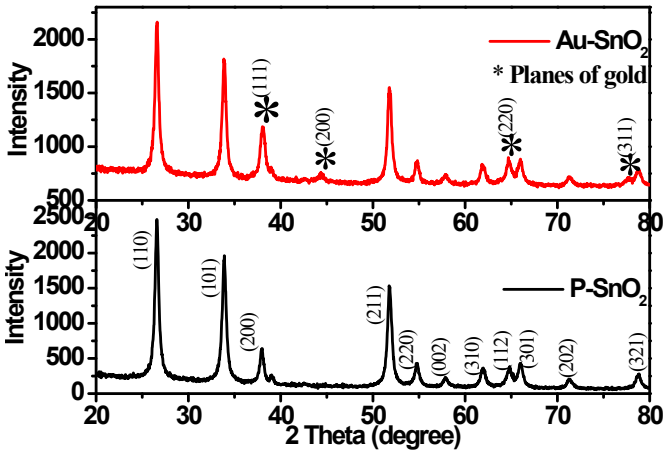

Fig. S2. XRD patterns of the Au-SnO_2 nanocomposite and P-SnO_2. The peaks marked with (*) represents the Au signals.

Final output of Rietveld refinement indices for Au-SnO_2 nanocomposite and P-SnO_2

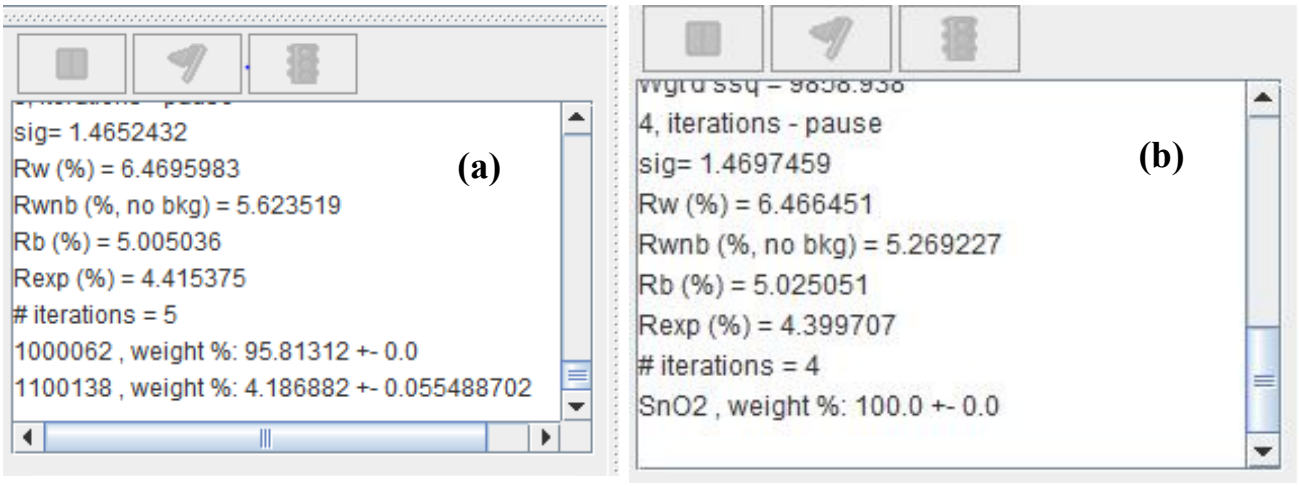

Fig. S3. Rietveld refinement indices for (**a**) Au-SnO_2 nanocomposite and (**b**) P-SnO_2.

TEM image of P-SnO_2 nanoparticles

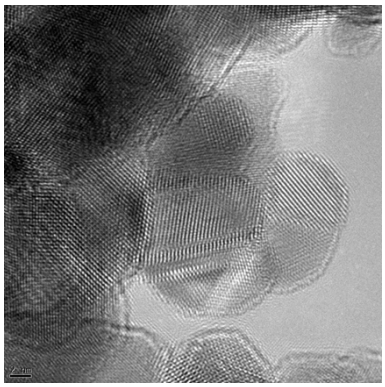

Fig. S4. TEM image of P-SnO_2 nanoparticles.

Acquired HAADF of Au-SnO_2 nanocomposite

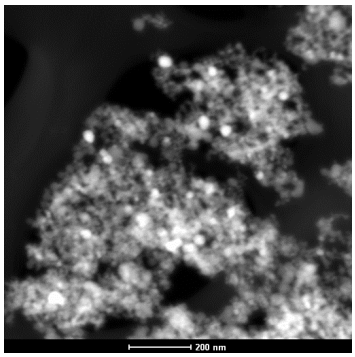

Fig. S5. Representative HAADF FE-TEM image of Au-SnO_2 nanocomposite.

EDX of Au-SnO_2 nanocomposite

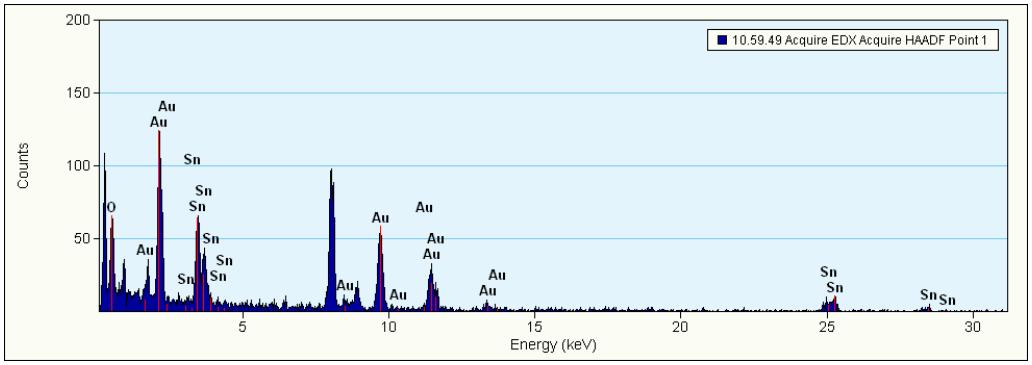

Fig. S6. EDX of Au-SnO_2 nanocomposite.

XPS spectra of P-SnO_2 and Au-SnO_2 nanocomposite

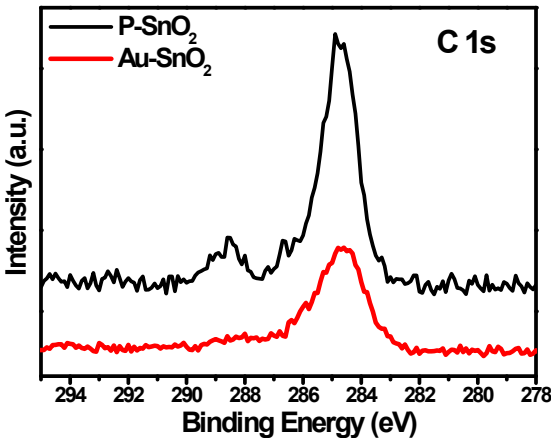

Fig. S7. XPS spectra of P-SnO_2 and Au-SnO_2 nanocomposite for C 1s peak.

Stability of the Au-SnO_2 nanocomposite

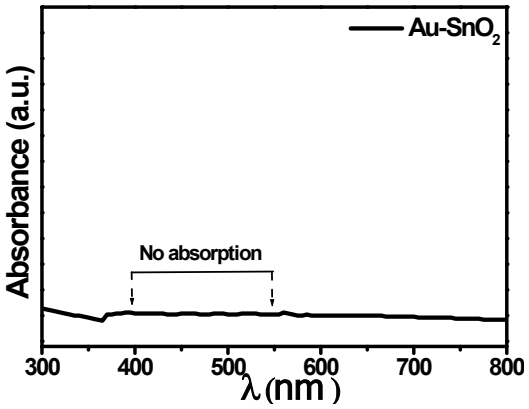

Fig. S8. Stability test of the Au-SnO_2 nanocomposite.