Electronic Supplementary Information

A general synthetic strategy of multi-metallic nanoparticles within mesoporous titania *via in situ* photo-deposition

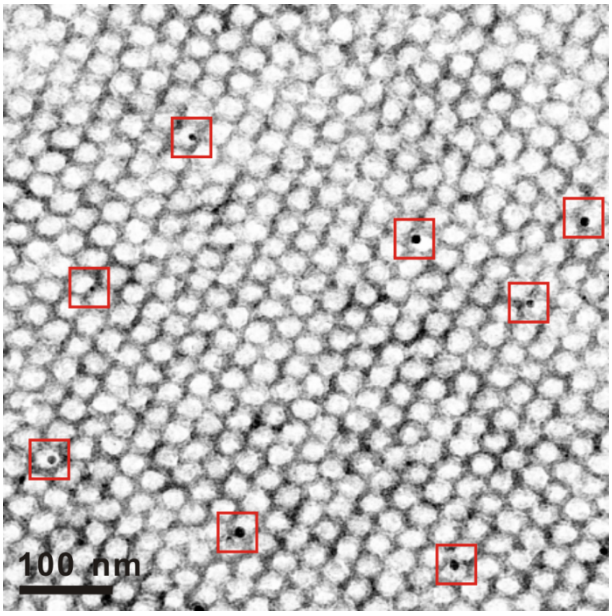

Fig. S1 TEM image of $Au_{50}Pt_{50}$/EP-TiO_2 after the photo-deposition. In the image, $Au_{50}Pt_{50}$ NPs are located within the mesocages of EP-TiO_2 (in red squares).

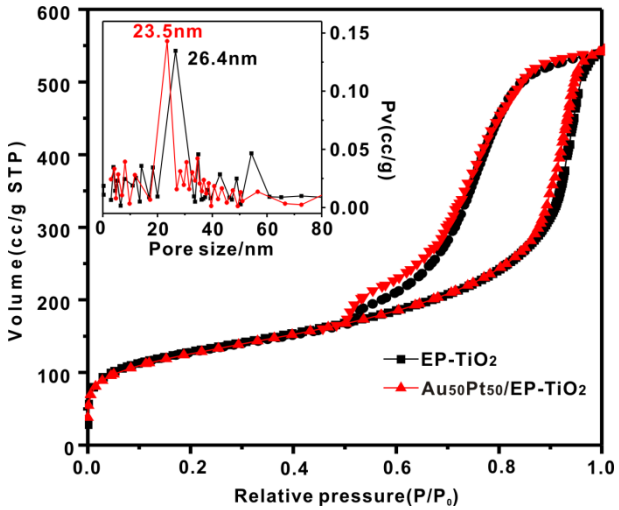

Fig. S2 N_2 adsorption-desorption isotherms of EP-TiO_2 and $Au_{50}Pt_{50}$/EP-TiO_2.

Table S1 Physico-chemical properties of EP-TiO_2 and $Au_{50}Pt_{50}$/EP-TiO_2[a].

samples	Pore size (nm)	Pore volume ($cm^3\ g^{-1}$)	Surface area ($m^2\ g^{-1}$)
EP-TiO_2	26.4	0.70	445
$Au_{50}Pt_{50}$/EP-TiO_2	23.5	0.68	437

[a] Pore size and pore volumes are determined from the N_2 adsorption isotherms.

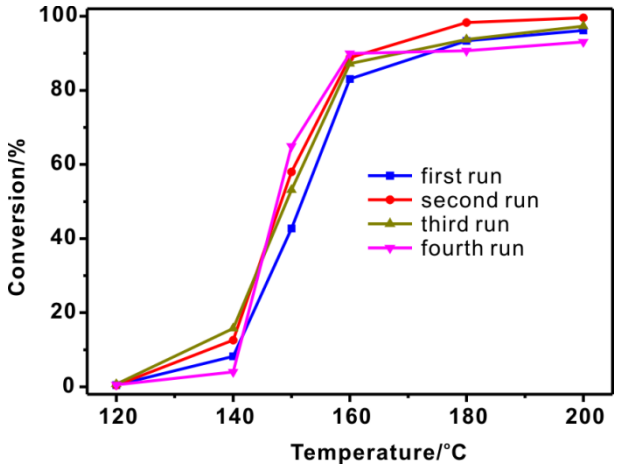

Fig. S3 Clycling experiments of 4% $Au_{50}Pt_{50}$/EP-TiO_2 after annealing at 350 °C for the *n*-hexane combustion.

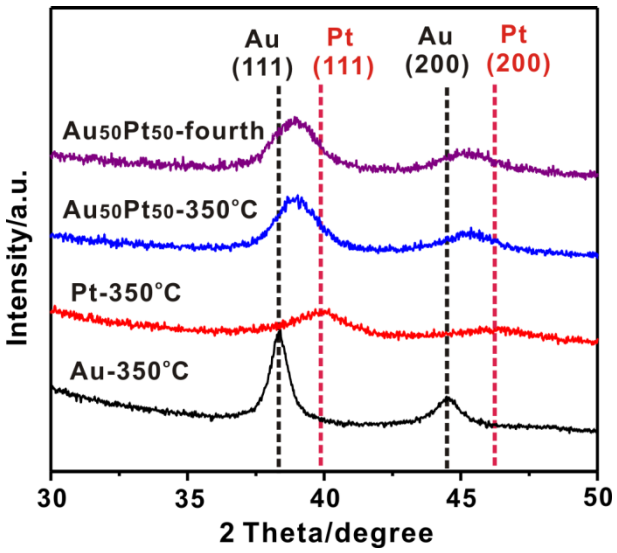

Fig. S4 XRD patterns of $Au_{50}Pt_{50}$/EP-TiO_2 after annealing at 350 °C and after four runs of catalysis.