Supporting Information

Strategic Modulation of Energy Transfer in Au-TiO_2-Pt Nanodumbbell: Plasmon-Enhanced Hydrogen Evolution Reaction

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# Menglei Zhu and Yuanyuan Wang contributed equally to this research.

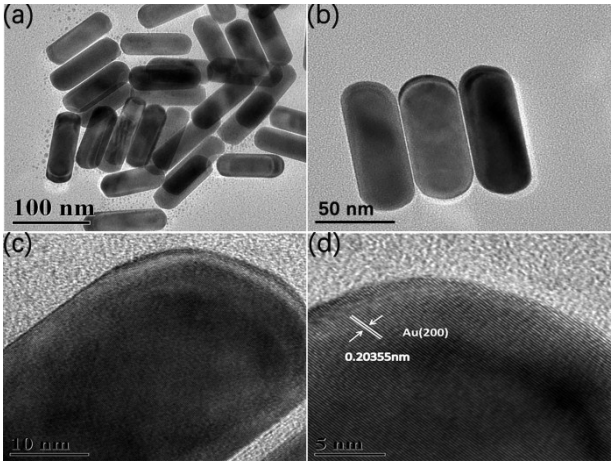


Figure S1 (a), (b) TEM images and (c), (d) HRTEM images of Au NRs.

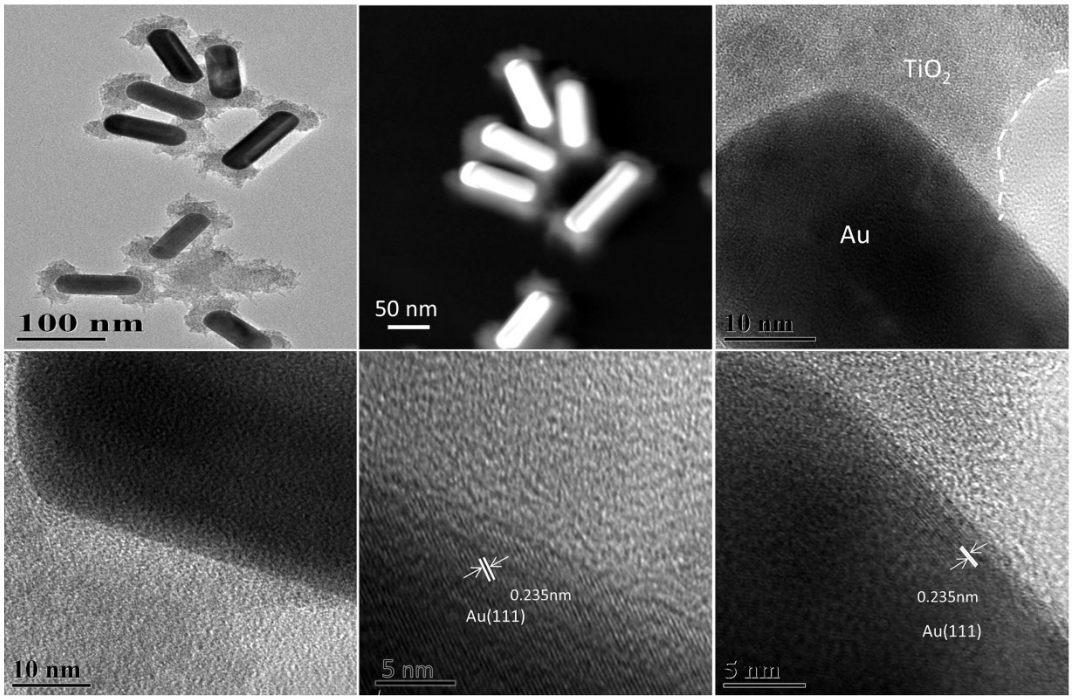


Figure S2 (a) TEM (b) STEM and (c-f) HRTEM images of Au-TiO_2 nanodumbbell. (c-f) corresponding HRTEM images from parts indicated in Figure 2b.

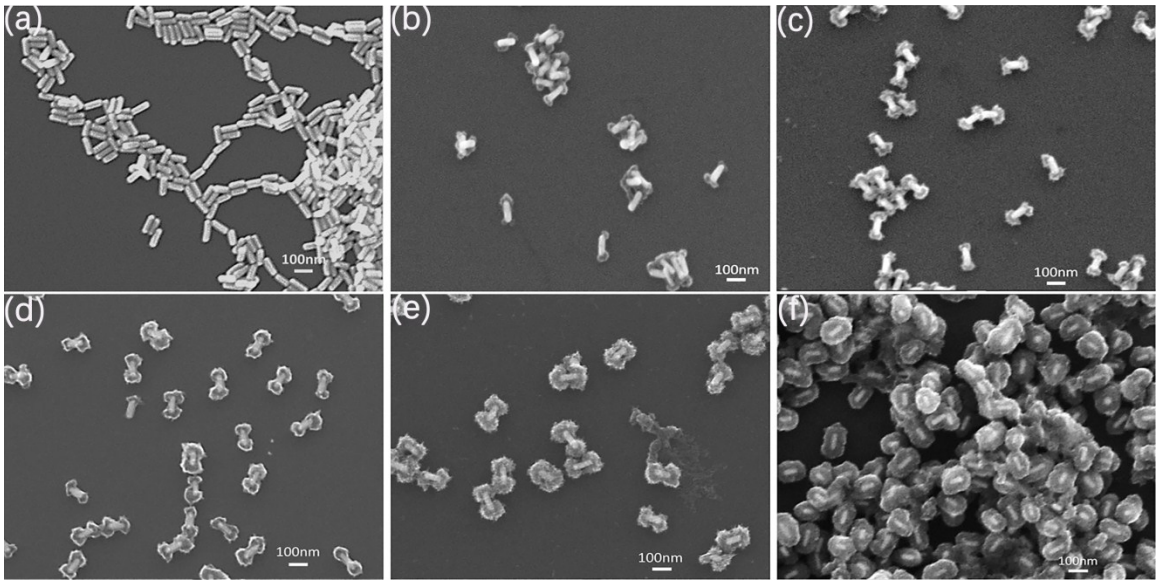


Figure S3 (a) SEM image of bare Au NRs and (b-f) SEM images of Au-TiO_2 with different reaction time for $TiCl_3$ (b:10min,c:30min,d:60min,e:120min,f:300min).

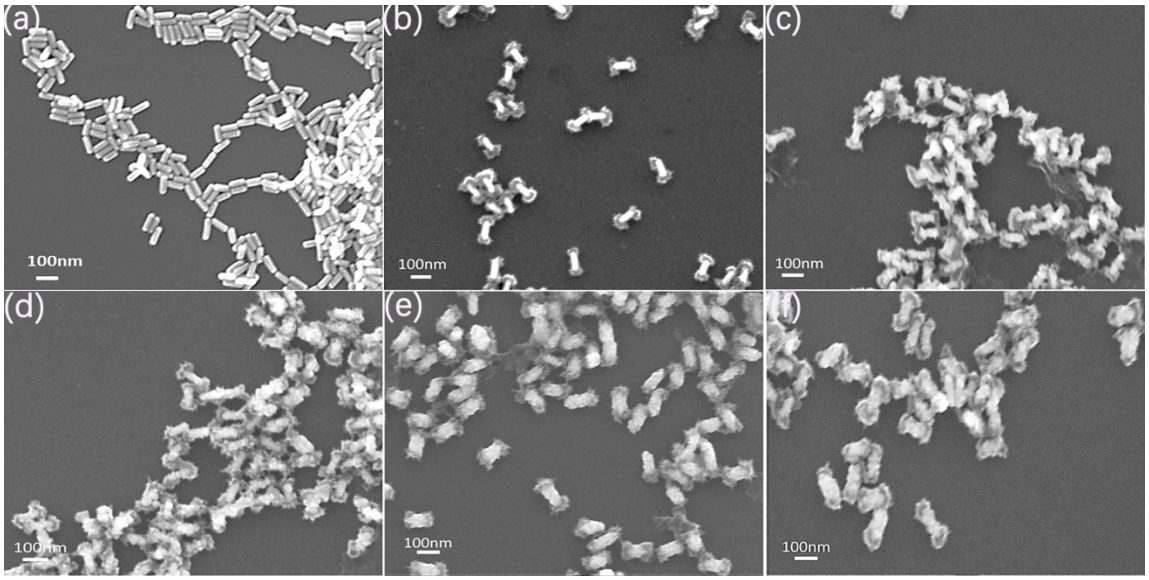
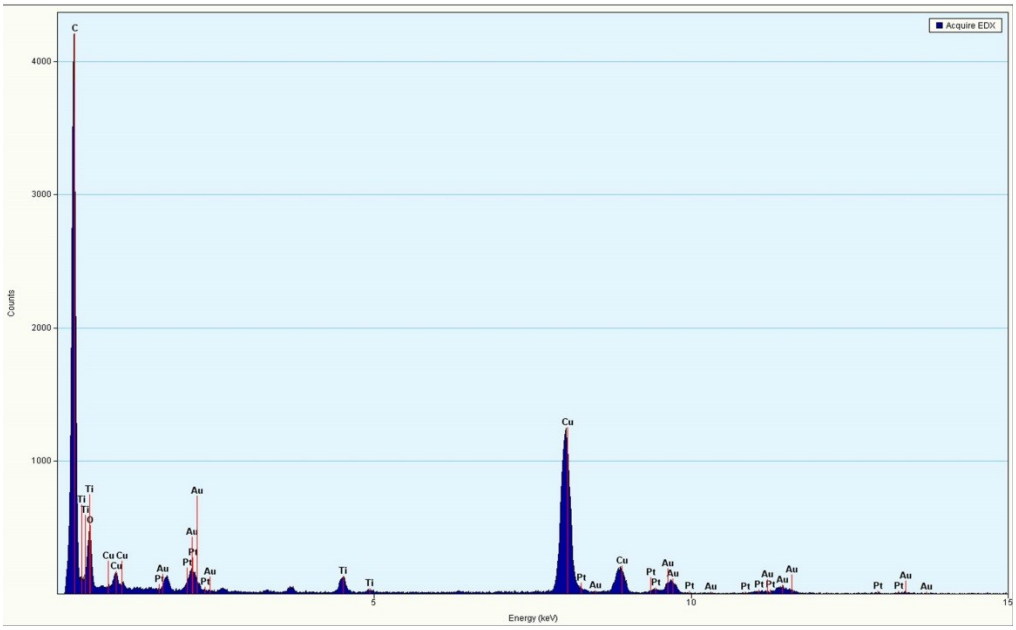


Figure S4 (a) SEM of bare Au NRs (b-f) SEM images of Au-TiO_2-Pt with different amounts of 2 mM Pt (b: 0 ul, c: 25 ul, d: 50 ul, e: 100 ul, f: 200 ul).



Element	Weight (%)	Atomic (%)
Au	47.30	9.22
Ti	10.98	8.80
Pt	8.23	1.62

Figure S5 The proportion of elements Au, Ti and Pt in Au-TiO_2-Pt nanodumbbell.

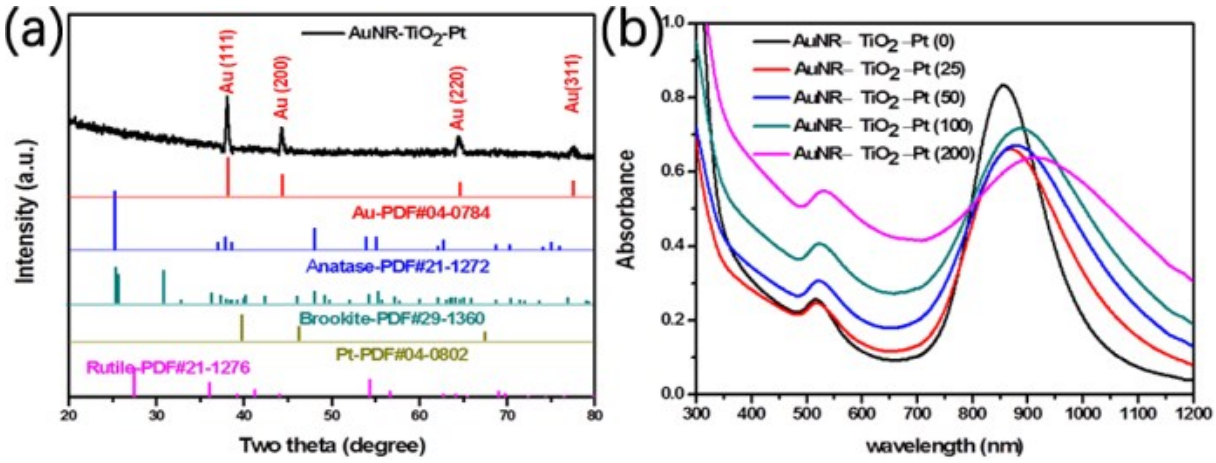


Figure S6 (a) XRD patterns of AuNR-TiO_2-Pt (50ul), (b) UV-vis absorption spectra of Au -TiO_2-Pt with different amounts of Pt.