

Electronic Supplementary Information

Surprisingly strong effect of stabilizer on the properties of Au nanoparticles and Pt^{Au} nanostructures in electrocatalysis

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Table S1: Preparation conditions of Au-*d*-PVP colloids

Sample	$d_{\text{seeds}}/\text{nm}^b$	$V_{\text{seeds}}/\text{mL}^c$	$V_{\text{HAuCl}_4}/\text{mL}^d$	$V_{\text{AA}}/\text{mL}^e$	Molar ratio of HAuCl ₄ /reductant	d/nm^f
Au-1.9 ^a	-	-	1.00	-	1:10	1.9±0.4
Au-3-PVP	1.9	10.0	0.25	3.8	1:1.5	3.2±0.5
Au-5-PVP	1.9	10.0	1.00	15.0	1:1.5	4.7±0.7
Au-10-PVP	4.7	5.8	1.00	15.0	1:1.5	10.3±1.8

^a Au-1.9 is obtained by using sodium borohydrate as the reductant; ^b d_{seeds} is mean particle size of Au seeds; ^c the concentration of seeds by moles of Au is 1.0 mmol•L⁻¹; ^d the concentration of HAuCl₄ is 50 mmol•L⁻¹; ^e the concentration of ascorbic acid (AA) is 5.0 mmol•L⁻¹; ^f d is the average size of Au nanoparticles.

Fig. S1. Representative TEM images of (a) Au-5-PVP, (b) Au-5-PVA, (c) Pt_{0.10}^Au-3-PVP, (d) Pt_{0.10}^Au-5-PVP, (e) Pt_{0.10}^Au-10-PVP, (f) Pt_{0.10}^Au-3-PVP /C.

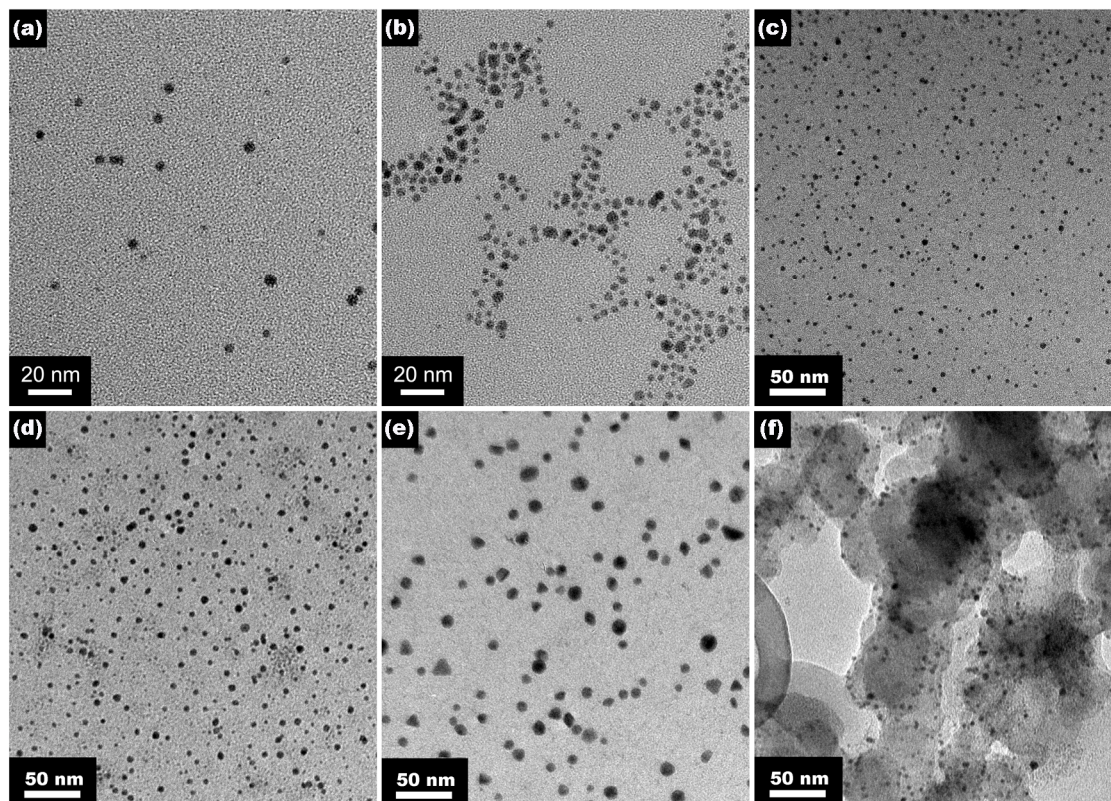


Fig. S2. Cyclic voltammogram of formic acid electrooxidation on (a) Pt[^]Au-3-PVP/C, (b) Pt[^]Au-3-PVA/C, (c) Pt[^]Au-5-PVP/C, (d) Pt[^]Au-5-PVA/C, (e) Pt[^]Au-10-PVP/C, (f) Pt[^]Au-10-Citr/C. The black solid lines are for anodic and red dotted lines for cathodic scans.

