

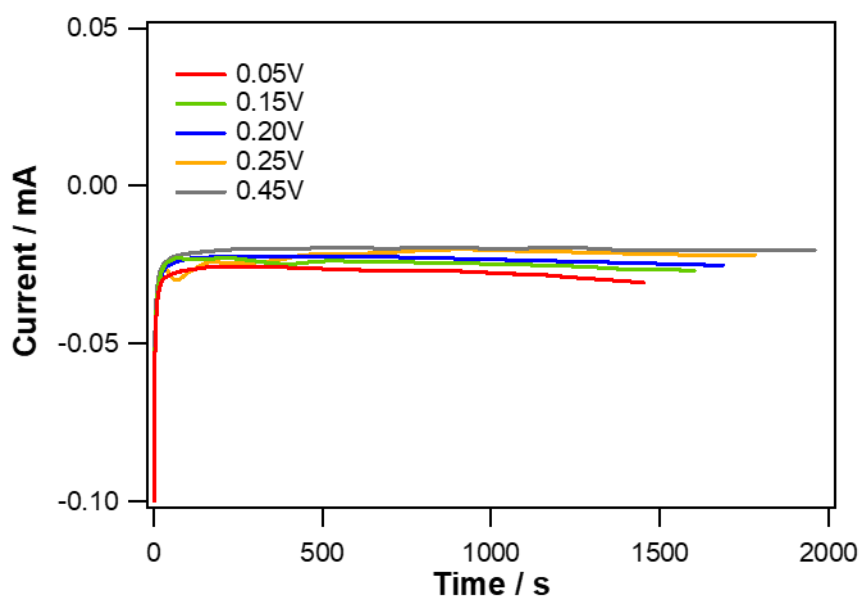
# Amperometric Sensing of Carbon Monoxide: Improved Sensitivity and Selectivity via Nanostructure-Controlled Electrodeposition of Gold

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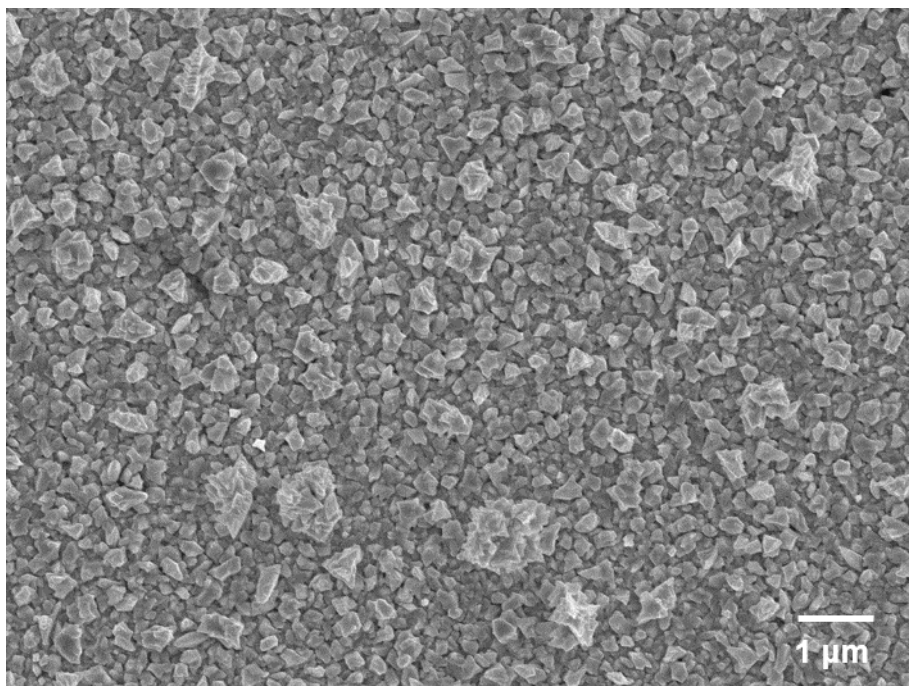
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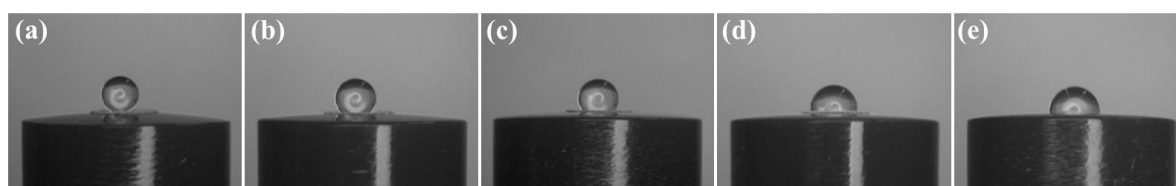
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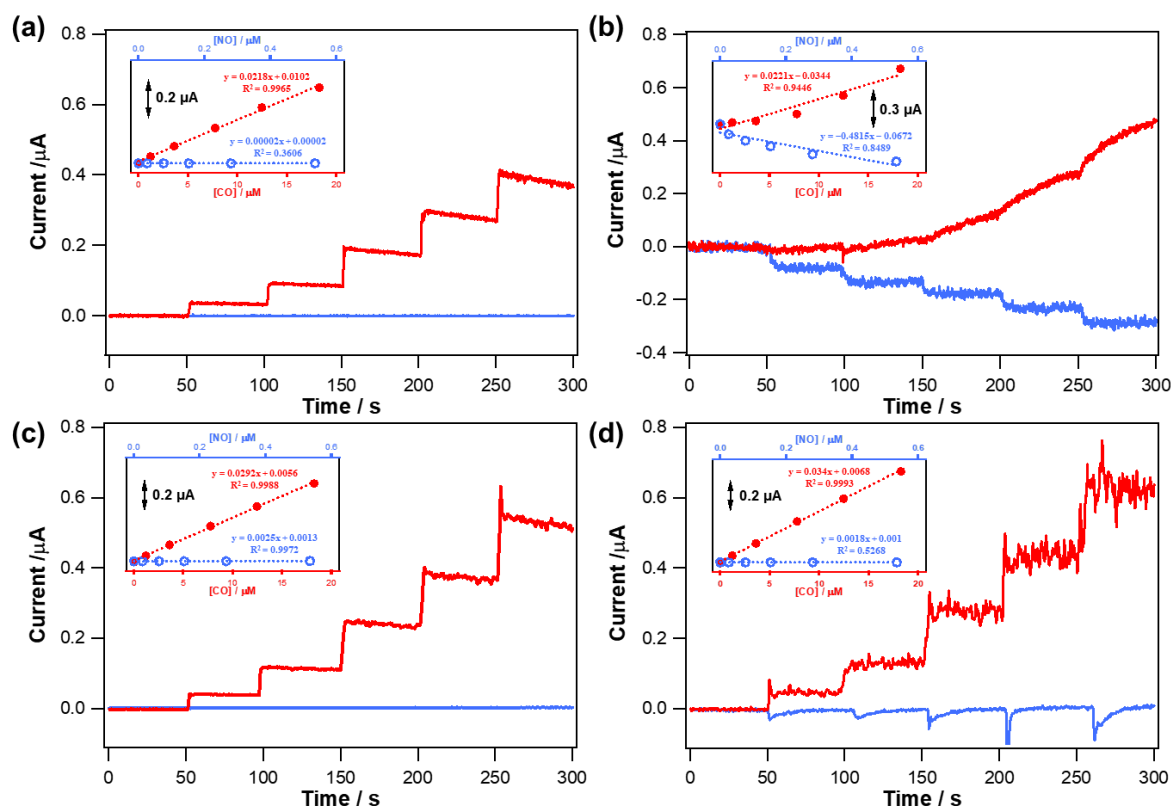
**Figure S1.** Potentiostatic electrodeposition curves of the Au electrodes at various deposition potentials (0.05 V to 0.45 V).



**Figure S2.** SEM image of the Au nanostructure electrodeposited at 0.05 V using a precursor solution containing 7 mM  $\text{HAuCl}_4$  aqueous solution without  $\text{Pb}(\text{CH}_3\text{COO})_2$ .



**Figure S3.** Water droplets (1  $\mu\text{L}$ ) on the Au surfaces deposited with deposition potentials of (a) 0.05 V, (b) 0.15 V, (c) 0.20 V, (d) 0.25 V, and (e) 0.45 V.



**Figure S4.** Dynamic current response curves of (a,c) Au and (b,d) Pt deposited electrodes to the concentration changes of CO (red line) and NO (blue line) in deaerated PBS solution (pH 7.4).  $E_{app}$  = (a,b)  $-0.05$  V and (c,d)  $+0.4$  V vs Ag/AgCl. Insets show the corresponding calibration curves (red filled circle, CO; blue open circle, NO). The concentration was increased upto  $18.2 \mu\text{M}$  and  $0.53 \mu\text{M}$  for CO and NO, respectively.

**Table S1.** Selectivity coefficients ( $\log K_{CO,x}^{amp}$ ) of the Au and Pt electrodes for CO over typical biological interferences (x).

x	Electrode	
	Au deposit	Pt deposit
AA	-0.714	-0.405
AP	-3.944	-0.106
GABA	-3.768	-0.122
$\text{NO}_2^-$	-3.665	0.336