

## Supporting Information

# Anodic Stripping Voltammetric Analysis of Trace Arsenic(III) on a Au-Stained Au Nanoparticles/Pyridine/Carboxylated Multiwalled Carbon Nanotubes/Glassy Carbon Electrode

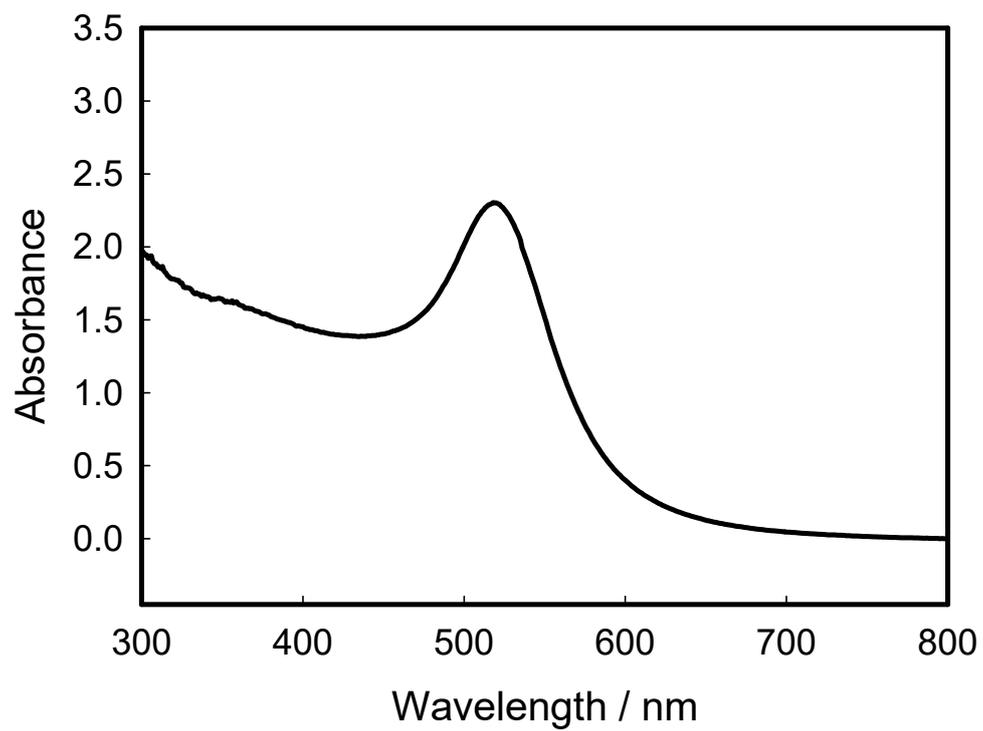
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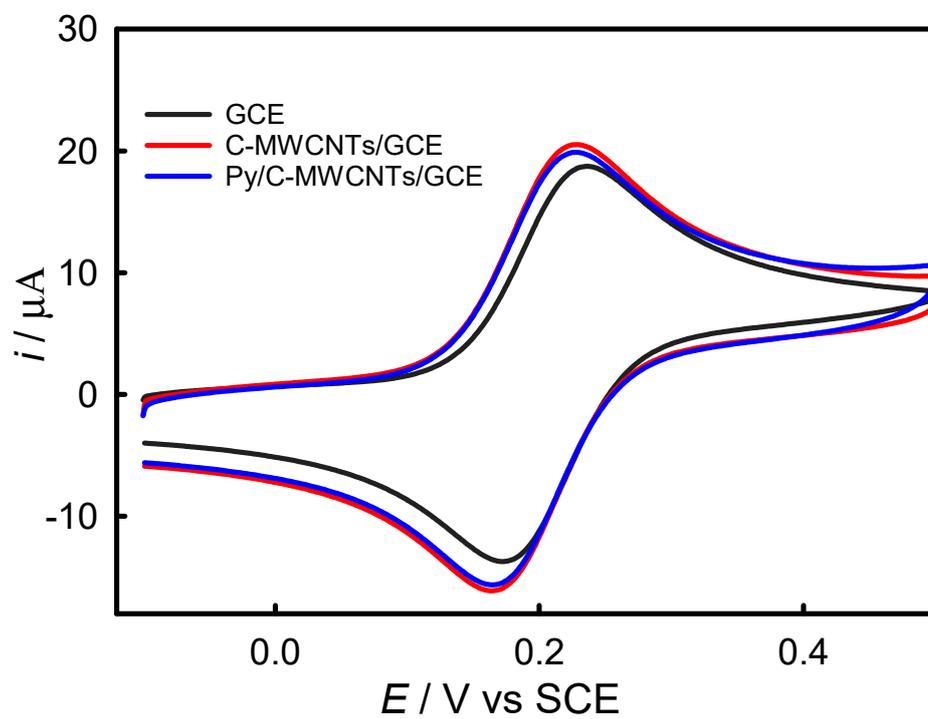
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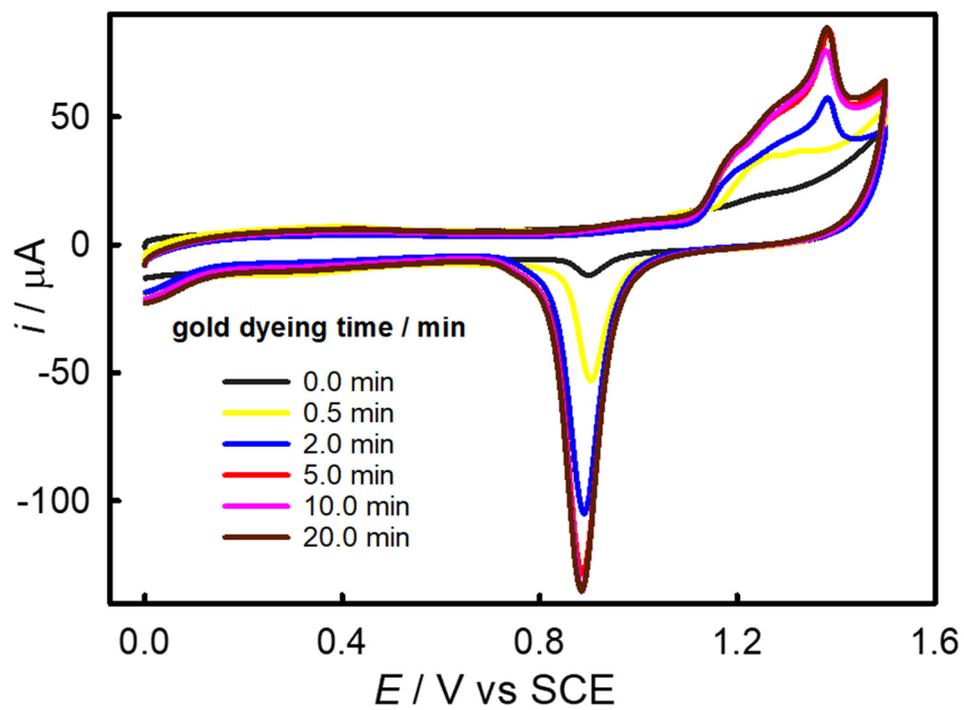
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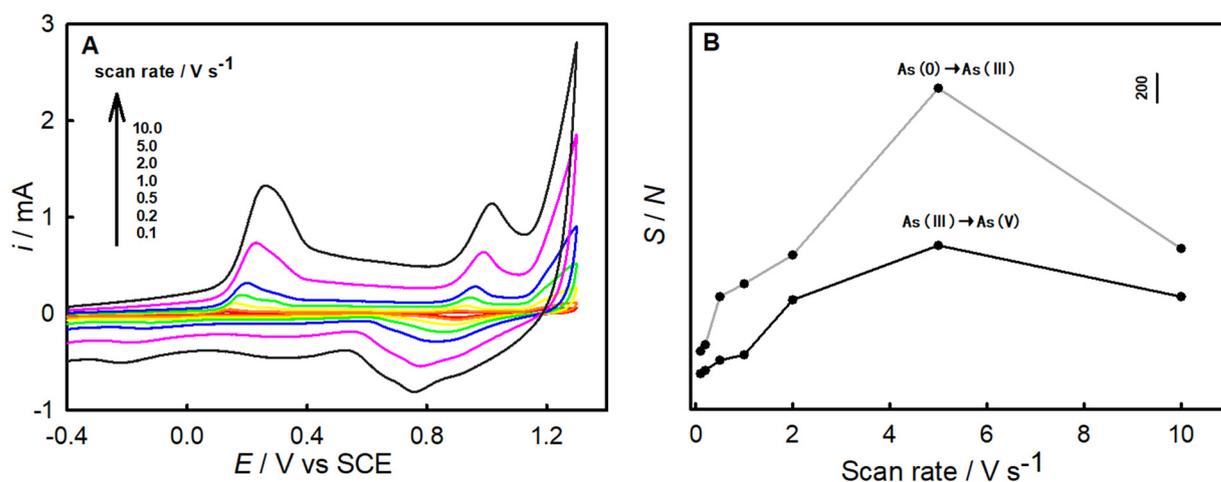
**Figure S1.** UV-Vis spectrum of the AuNPs.



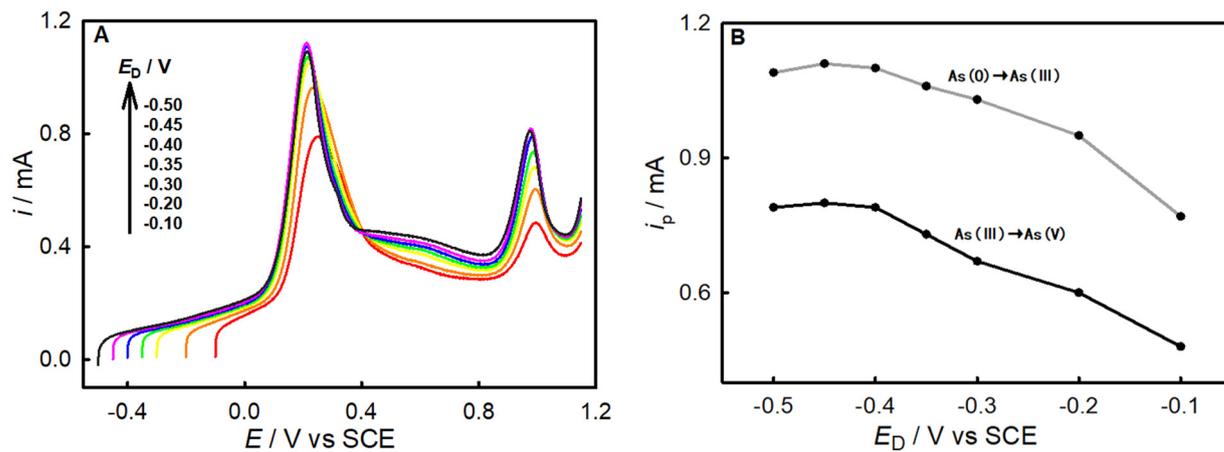
**Figure S2.** CV curves on GCE, C-MWCNTs/GCE and Py/C-MWCNTs/GCE in 0.1 M PBS containing 1.0 mM  $\text{K}_4\text{Fe}(\text{CN})_6$  at pH 7.0.



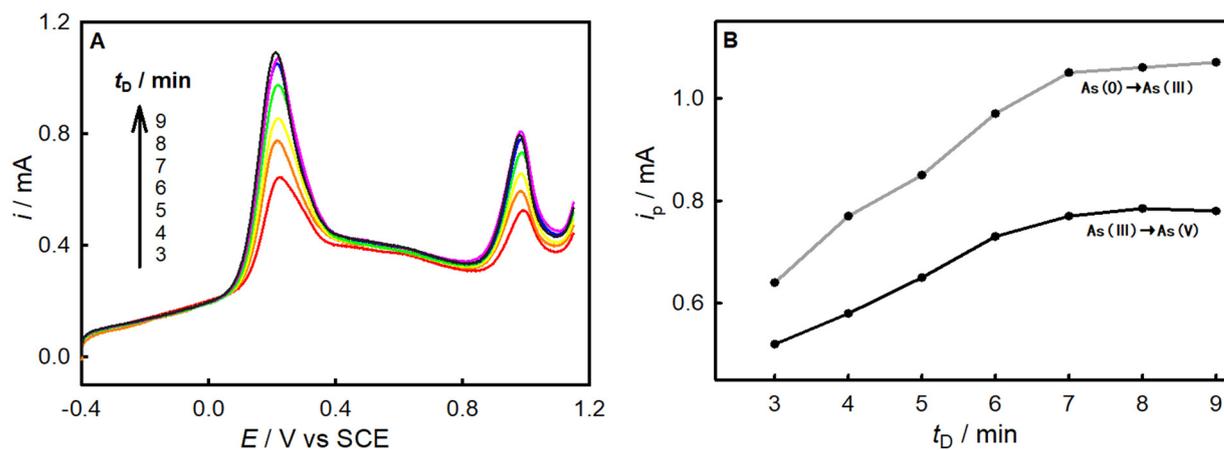
**Figure S3.** CV curves on Au/Py/C-MWCNTs/GCE prepared at different gold staining time. Scan rate: 50  $\text{mV s}^{-1}$ .



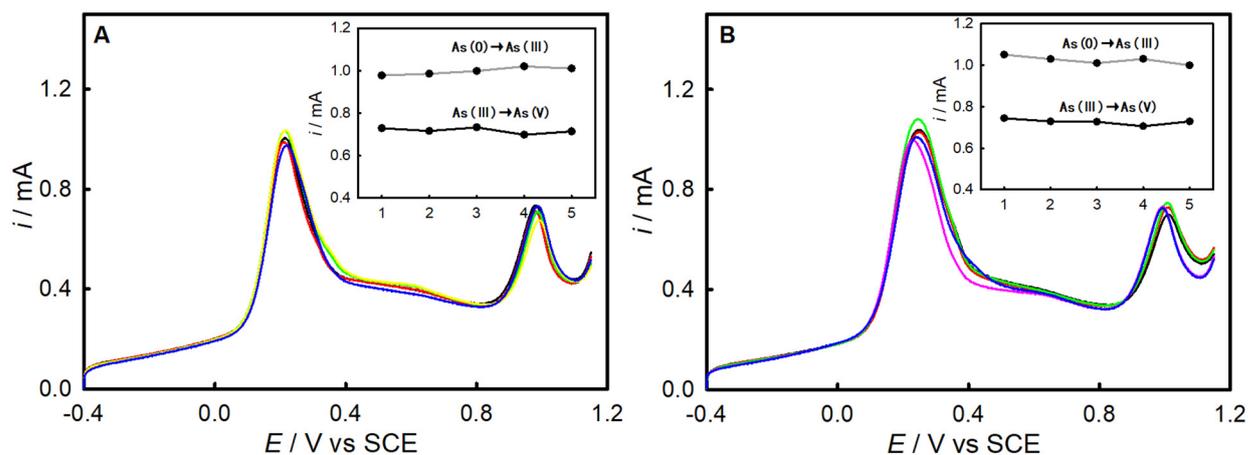
**Figure S4.** (A) CV curves on Au<sub>s</sub>/Py/C-MWCNTs/GCE in 0.1 M aqueous H<sub>2</sub>SO<sub>4</sub> containing 1.0 μM As(III) at different scan rates, (B) the associated  $S/N$  plots of As(0)→As(III) (grey) and As(III)→As(V) (black) *vs* scan rate,  $S$ : peak current,  $N$ : noise of the background current. The experiments were conducted after preconcentration at -0.40 V for 7 min.



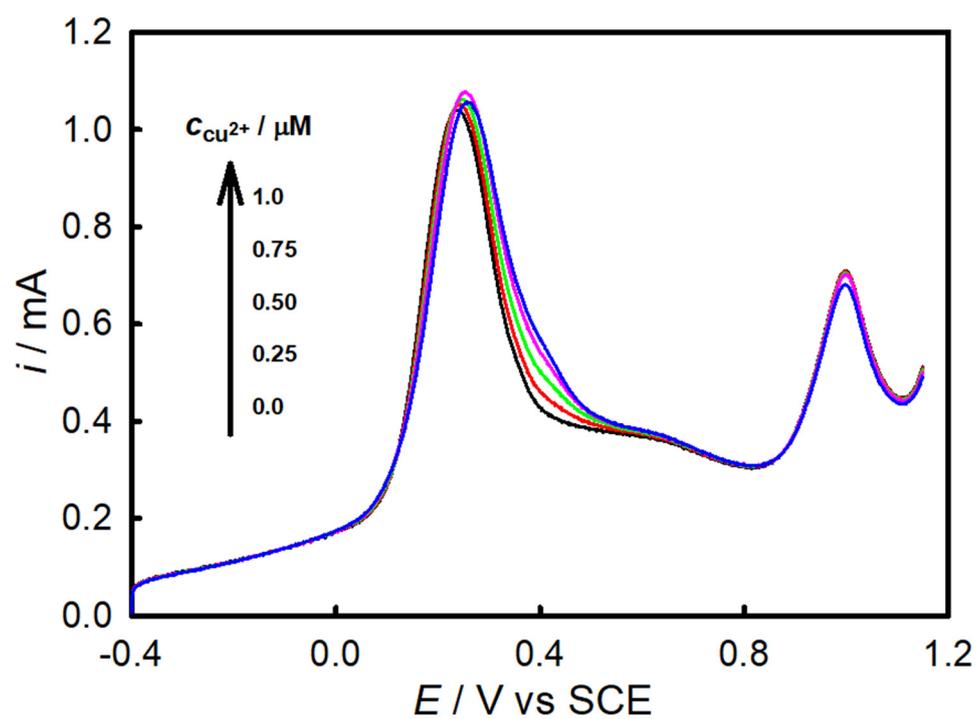
**Figure S5.** LSASV responses (A) on  $\text{Au}_s/\text{Py}/\text{C-MWCNTs}/\text{GCE}$  in 0.1 M aqueous  $\text{H}_2\text{SO}_4$  containing 1.0  $\mu\text{M}$  As(III) at various As(0)-deposition potential ( $E_D$ ) values and the corresponding peak currents versus  $E_D$  (B). As(0)-deposition time ( $t_D$ ) = 7 min.



**Figure S6.** LSASV responses (A) on  $\text{Au}_s/\text{Py}/\text{C-MWCNTs}/\text{GCE}$  in 0.1 M aqueous  $\text{H}_2\text{SO}_4$  containing 1.0  $\mu\text{M}$  As(III) for various As(0)-deposition time ( $t_D$ ) and the corresponding peak currents versus  $t_D$  (B).  $E_D = -0.40$  V.



**Figure S7.** Stability and reproducibility of LSASV response of  $1.0 \mu\text{M}$  As(III). (A) Repeated five times on one  $\text{Au}_s/\text{Py}/\text{C-MWCNTs}/\text{GCE}$  in  $0.1 \text{ M}$  aqueous  $\text{H}_2\text{SO}_4$ , (B) On a batch of five different  $\text{Au}_s/\text{Py}/\text{C-MWCNTs}/\text{GCE}$ s.  $E_D = -0.40 \text{ V}$ ,  $t_D = 7 \text{ min}$ .



**Figure S8.** LSASV response on Au<sub>s</sub>/Py/C-MWCNTs/GCE in 0.1 M aqueous H<sub>2</sub>SO<sub>4</sub> containing 1.0  $\mu M$  As(III) with an interval addition of 0.25  $\mu M$  Cu<sup>2+</sup>.  $E_D = -0.40$  V,  $t_D = 7$  min.