

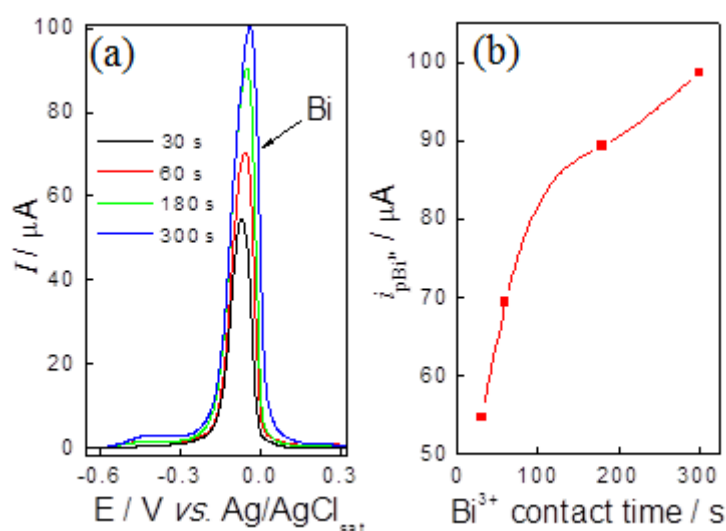
## Supplementary Information

### Voltammetric Determination of $\text{Zn}^{2+}$ in Antiseptic Dusting Powder and Multivitamins Using a Carbon Paste Electrode Modified with Bi Anchored on Amberlite<sup>®</sup> IR120

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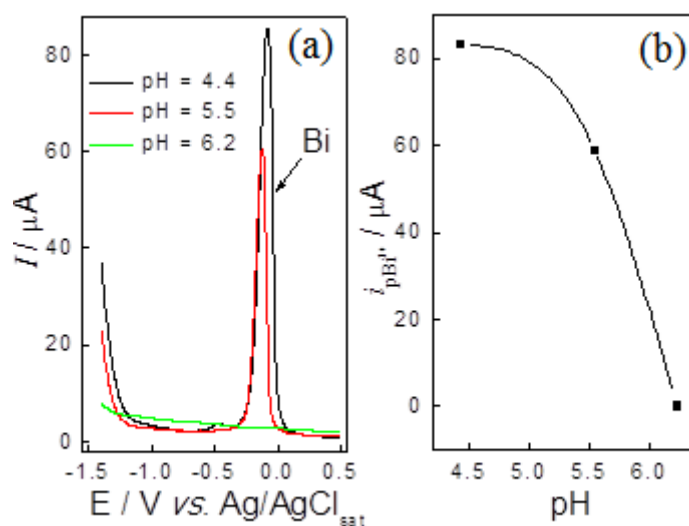
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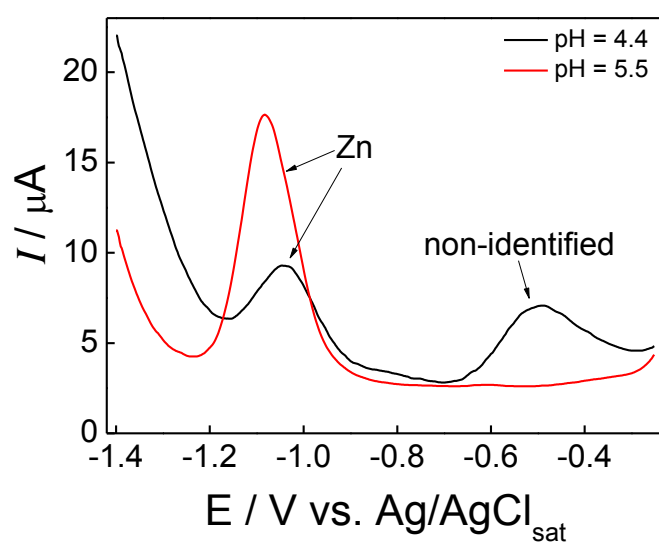
**Figure S1.** (a) SW-ASVs recorded in acetate buffer 0.1 mol L<sup>-1</sup> (pH = 4.5) + KNO<sub>3</sub> 0.1 mol L<sup>-1</sup> using CPEAmb with different contact times in 0.5 mmol L<sup>-1</sup> Bi<sup>3+</sup>.  $E_{\text{dep}} = -1.40$  V;  $t_{\text{dep}} = 180$  s;  $f = 100$  Hz;  $\Delta E = 25$  mV;  $\Delta E_s = 2$  mV. Figures with baseline correction; (b) Bi<sup>3+</sup> peak current as a function of the contact time in the 0.5 mmol L<sup>-1</sup> Bi<sup>3+</sup> solution.

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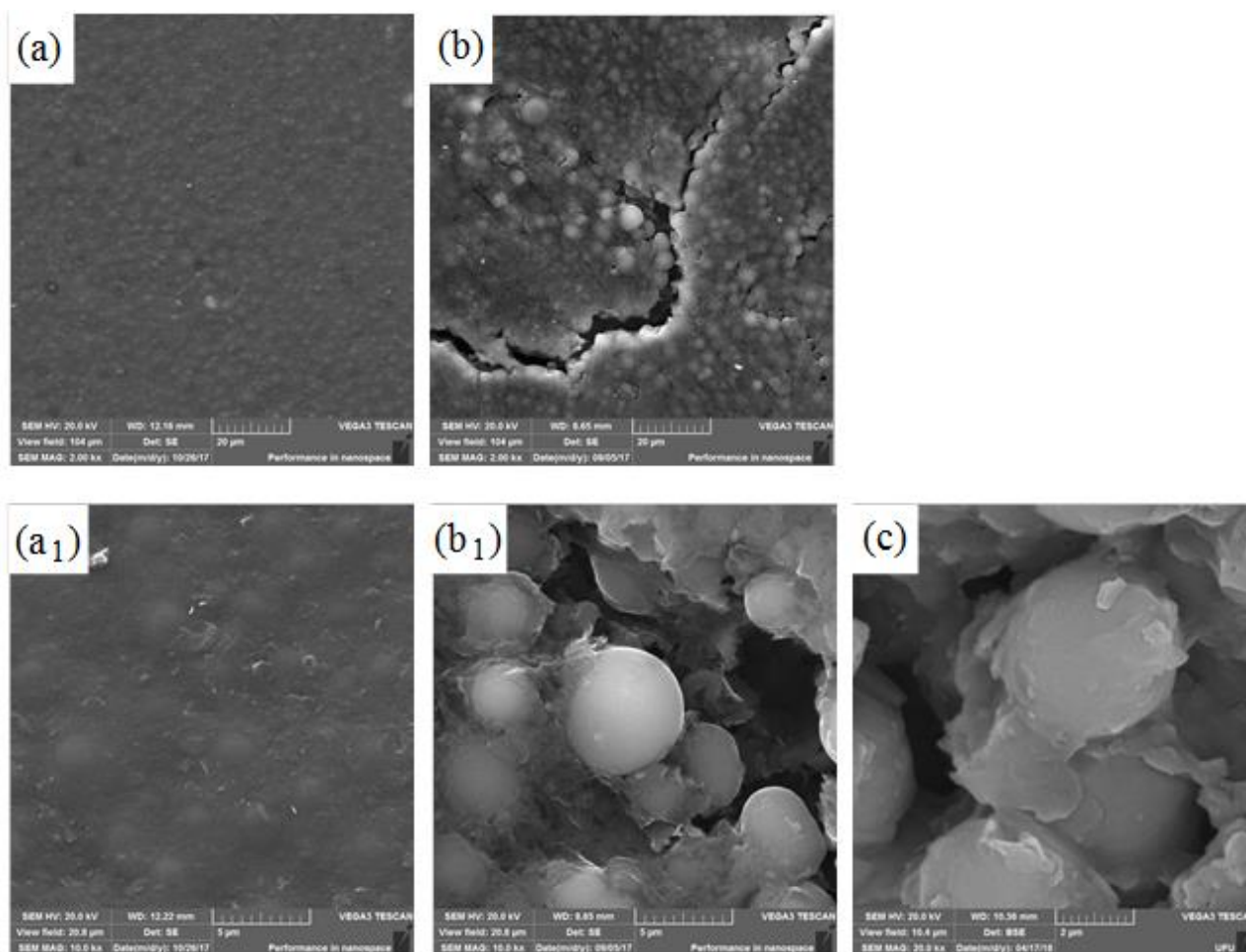
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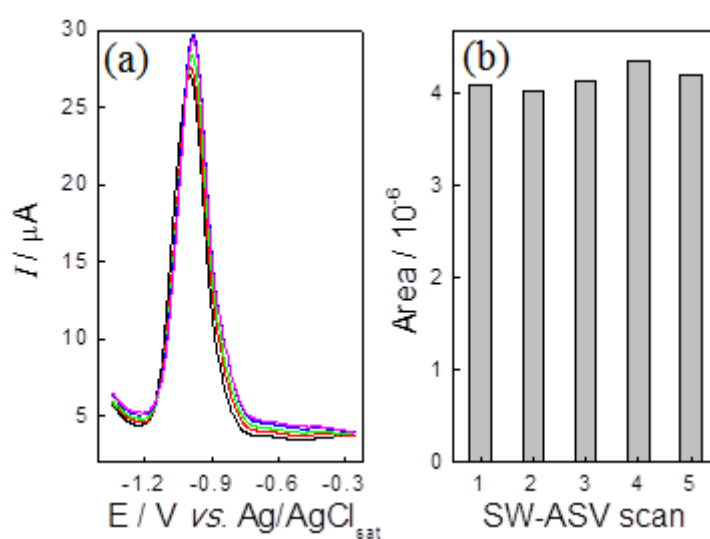
**Figure S2.** (a) SW-ASVs recorded with CPEAmb/Bi prepared with 30 s contact time in 0.5 mmol L<sup>-1</sup> Bi<sup>3+</sup> at different pH values.  $E_{\text{dep}} = -1.40$  V;  $t_{\text{dep}} = 180$  s;  $f = 100$  Hz;  $\Delta E = 25$  mV;  $\Delta E_s = 2$  mV; (b) Bi<sup>3+</sup> peak current as a function of pH.



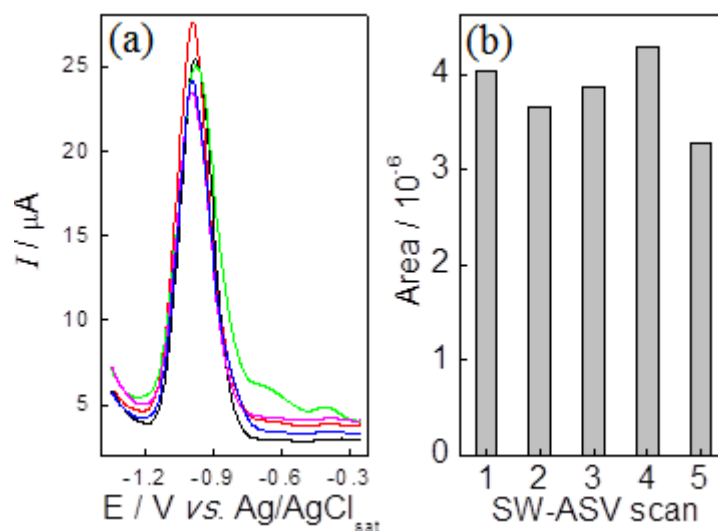
**Figure S3.** SW-ASV recorded in 0.1 mol L<sup>-1</sup> acetate buffer employing CPEAmb/Bi at pH: (—) 4.4 and (—) 5.5 in the presence of 1.0 μmol L<sup>-1</sup> of Zn<sup>2+</sup>.  $E_{\text{dep}} = -1.40$  V;  $t_{\text{dep}} = 180$  s;  $f = 100$  Hz;  $\Delta E = 25$  mV;  $\Delta E_s = 2$  mV.



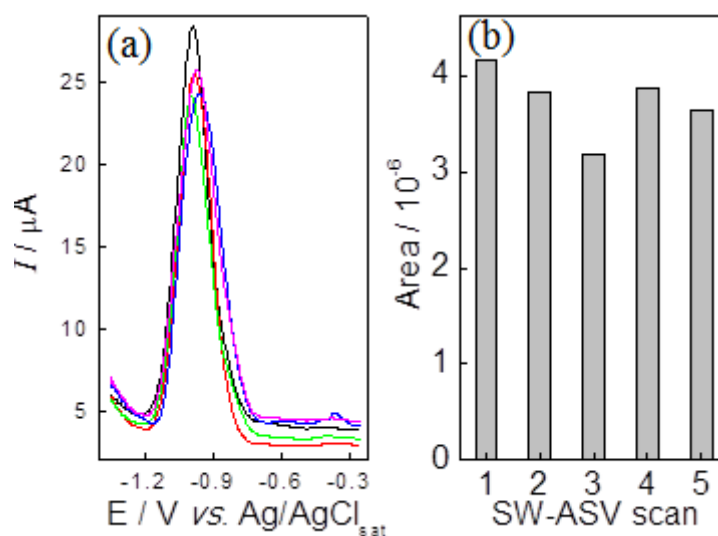
**Figure S4.** SEM images of (a, a<sub>1</sub>) unmodified CPE; (b, b<sub>1</sub>) CPEAmb/Bi. (a, b) Magnification of 2,000; (a<sub>1</sub>, b<sub>1</sub>) magnification of 10,000. (c) Backscattering image with 20,000× magnification.



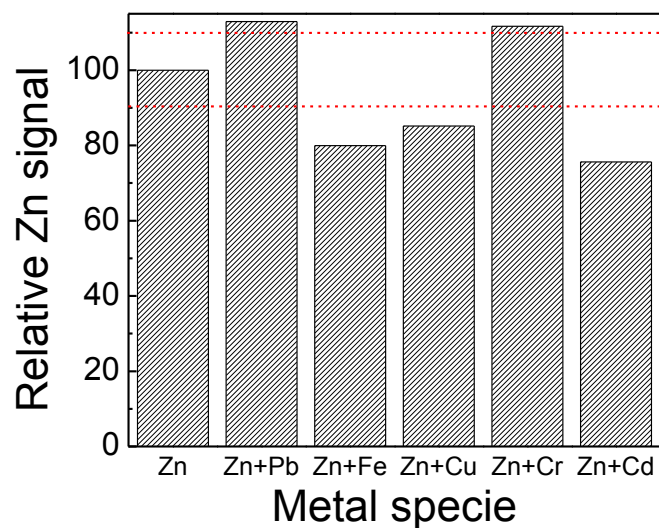
**Figure S5.** (a) SW-ASVs recorded in 0.1 mol L<sup>-1</sup> acetate buffer (pH = 5.5) using the same CPEAmb/Bi surface in the presence of 2.0 μmol L<sup>-1</sup> Zn<sup>2+</sup>.  $t_{\text{dep}} = 240$  s;  $E_{\text{dep}} = -1.35$  V;  $f = 100$  Hz;  $\Delta E = 25$  mV;  $\Delta E_s = 3$  mV; (b) Zn<sup>2+</sup> peak area for each voltammetric scan.



**Figure S6.** (a) SW-ASVs recorded in 0.1 mol L<sup>-1</sup> acetate buffer (pH = 5.5) using different CPEAmb/Bi surfaces in the presence of 2.0 μmol L<sup>-1</sup> Zn<sup>2+</sup>.  $t_{\text{dep}} = 240$  s;  $E_{\text{dep}} = -1.35$  V;  $f = 100$  Hz;  $\Delta E = 25$  mV;  $\Delta E_s = 3$  mV; (b) Zn<sup>2+</sup> peak area for each electrode surface of CPEAmb/Bi.



**Figure S7.** (a) SW-ASVs recorded in 0.1 mol L<sup>-1</sup> acetate buffer (pH = 5.5) using different CPEAmb/Bi surfaces at different workdays in the presence of 2.0 μmol L<sup>-1</sup> Zn<sup>2+</sup>.  $t_{\text{dep}} = 240$  s;  $E_{\text{dep}} = -1.35$  V;  $f = 100$  Hz;  $\Delta E = 25$  mV;  $\Delta E_s = 3$  mV; (b) Zn<sup>2+</sup> peak area for each electrode surface of CPEAmb/Bi.



**Figure S8.** Relative signal for  $2.0 \mu\text{mol L}^{-1} \text{Zn}^{2+}$  obtained in presence of  $2.0 \mu\text{mol L}^{-1}$  potential interferent metal ion. Signals obtained from SW-ASVs recorded in  $0.1 \text{ mol L}^{-1}$  acetate buffer ( $\text{pH} = 5.5$ ).  $t_{\text{dep}} = 240 \text{ s}$ ;  $E_{\text{dep}} = -1.35 \text{ V}$ ;  $f = 100 \text{ Hz}$ ;  $\Delta E = 25 \text{ mV}$ ;  $\Delta E_s = 3 \text{ mV}$ .