

Supporting Information:

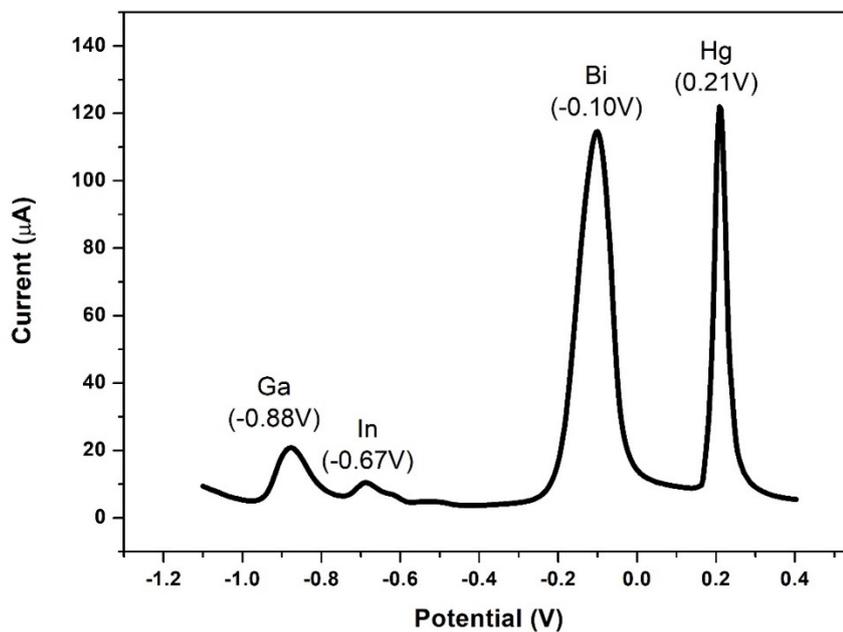


Figure S1: Stripping peaks of Ga (-0.88 V), In (-0.67 V), Bi (-0.10 V), and Hg (0.21 V) recorded at the ERGO-PGE in 0.1 M Acetate Buffer Solution (pH 4.7) vs Ag/AgCl saturated reference electrode.

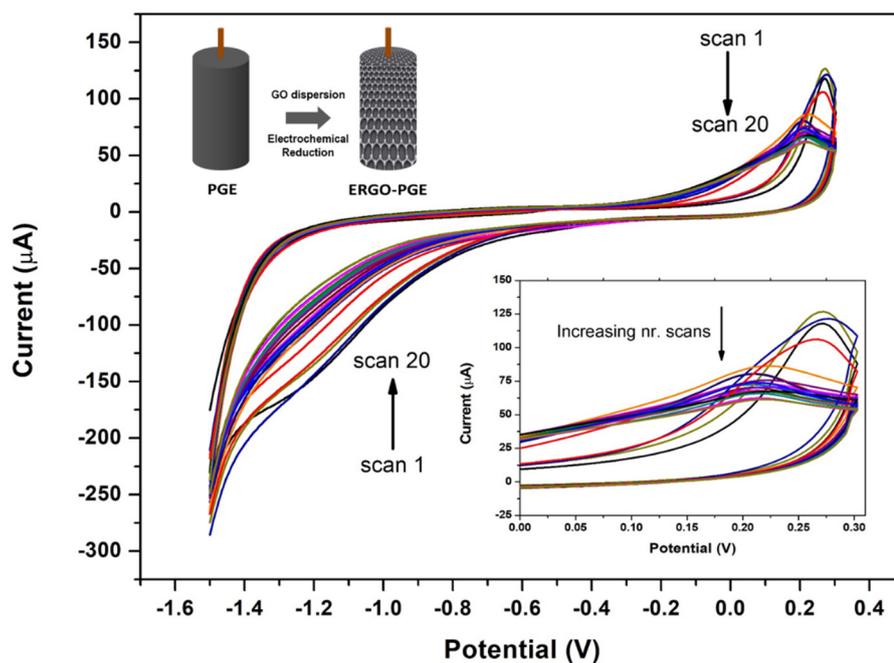


Figure S2: Cyclic electrochemical reduction and deposition of Electrochemically Reduced Graphene Oxide (ERGO) onto pencil graphite electrodes (PGE) recorded between -1.5 and 0.3 V (vs Ag/AgCl sat).

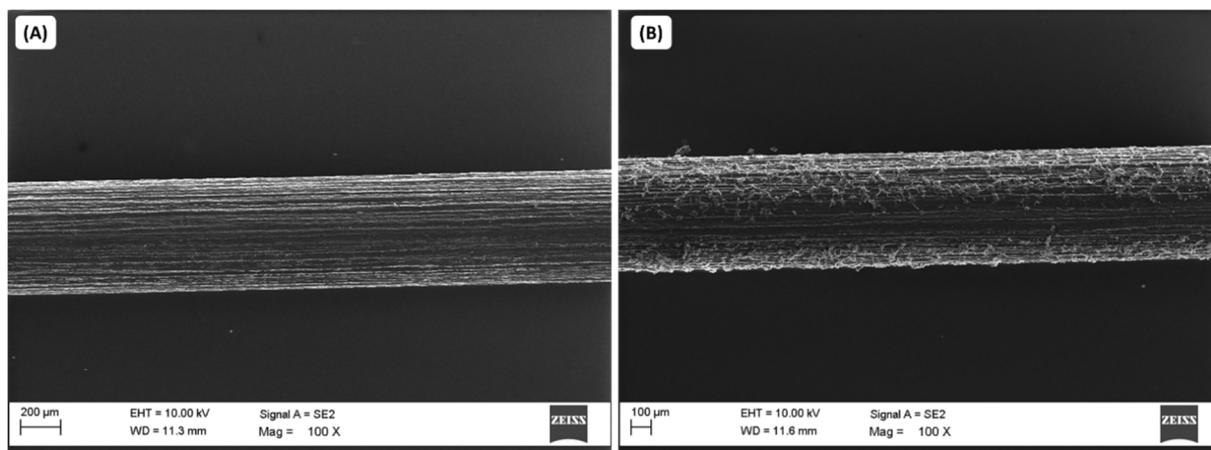


Figure S3: HRSEM images of bare PGE (a), and Electrochemically Reduced Graphene Oxide PGE (b) at 100.00 times magnification.

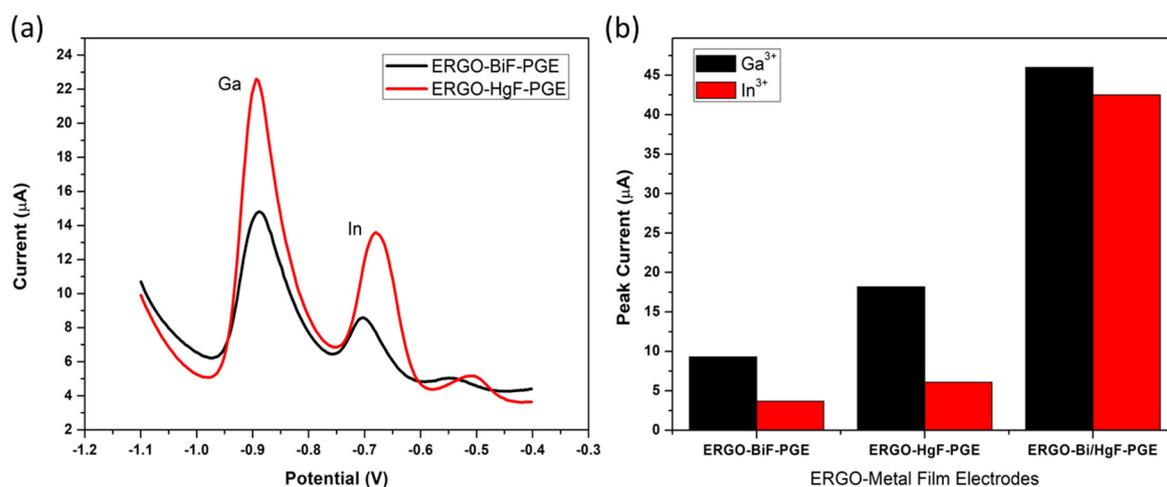


Figure S4: (a) SW voltammograms of 0.1 mol. L⁻¹ ABS at pH 4.38 containing 30 ppb Ga³⁺ and 20 ppb In³⁺ at ERGO-BiF-PGE and ERGO-HgF-PGE. (b) Comparative bar graphs of the ERGO-BiF-PGE, ERGO-HgF-PGE and ERGO-Bi/HgF-PGE.



Figure S5: The change of percentages of the oxidation peak current of 20 ppb of Ga and 5 ppb of In in presence of Zn^{2+} , Cd^{2+} , Pb^{2+} , Ni^{2+} , Co^{2+} , and Cu^{2+} .

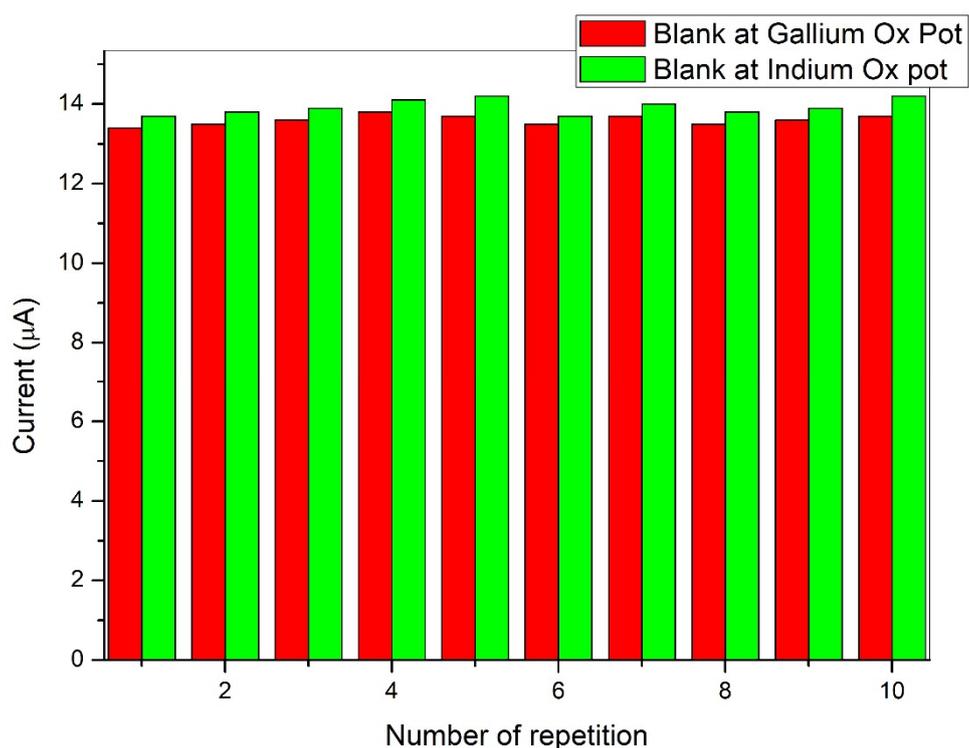


Figure S6: Ten replications of the response of the ERGO-PGE in the blank solution at gallium and indium oxidation potentials.

Table S1: Analytical data for detection limit calculations.

Individual analyses	Standard deviation (σ) of 10 replications in blank (A)	3σ (A)	Sensitivity (A/ppb)	Detection limit (mol.L ⁻¹)
Gallium	1.2×10^{-7}	3.7×10^{-7}	3.67×10^{-7}	1.02×10^{-6}
Indium	1.8×10^{-7}	1.8×10^{-7}	2.05×10^{-7}	2.7×10^{-7}
simultaneous analyses	Standard deviation (σ) of 10 replications in blank (A)	3σ (A)	Sensitivity (A/ppb)	Detection limit (mol.L ⁻¹)
Gallium	1.2×10^{-7}	3.7×10^{-7}	1.48×10^{-5}	2.53×10^{-9}
Indium	1.8×10^{-7}	1.8×10^{-7}	7.79×10^{-6}	7.27×10^{-9}