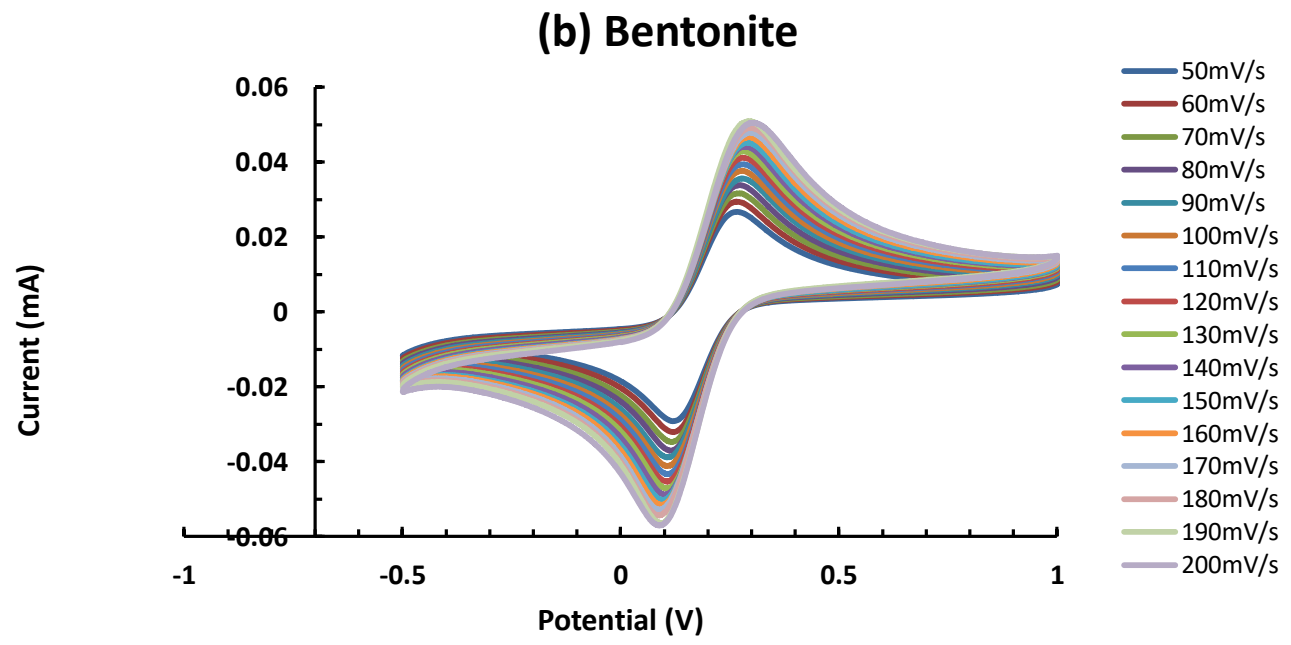
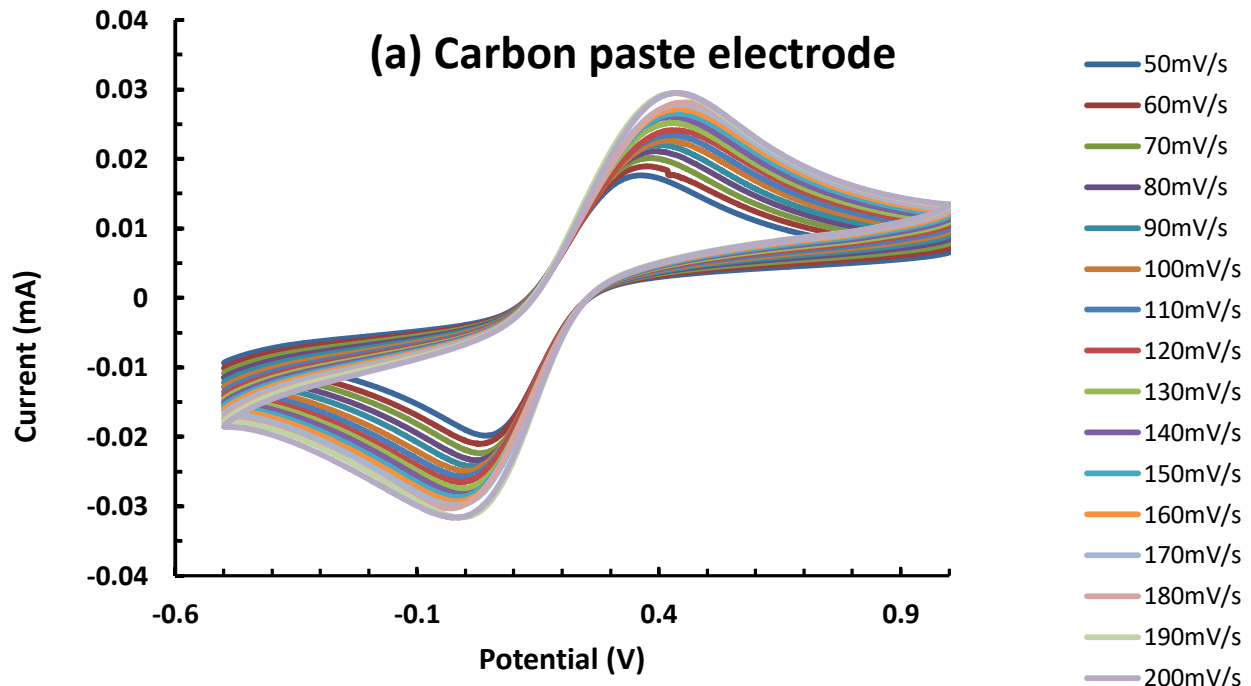


Low cost, highly sensitive and selective electrochemical detection of arsenic (III) using silane grafted based nanocomposite

Table S1. EIS Parameters Estimated for the Carbon Paste and Nanocomposite Electrodes

EIS Parameters	Working Electrodes	
	Carbon Paste	Nanocomposite
R_s (Ohm)	102.5	108.9
C_d (μF)	1.380	3.657
n	0.72	0.95
R_{ct} (Ohm)	6342	3002
W ($\text{Ohm}\cdot\text{s}^{-1/2}$)	3710	3239



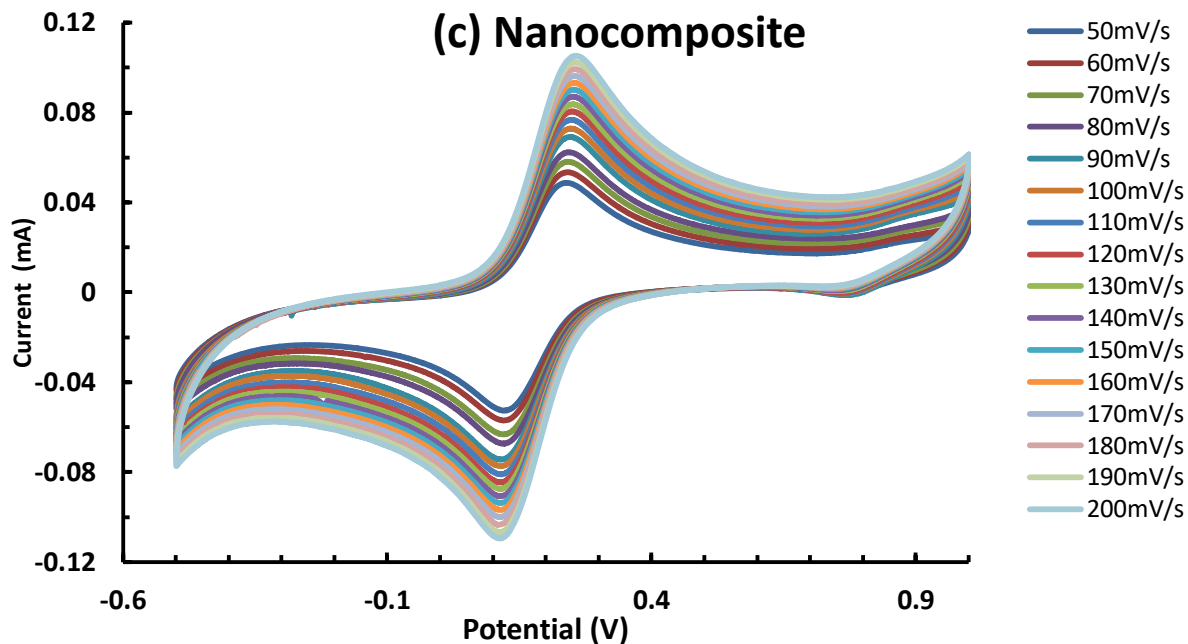


Fig. S2. Electrochemical behavior of (a) Carbon paste, (b) Pristine bentonite and (c) Nanocomposite electrodes using the $\text{Fe}(\text{CN})_6^{3-}/\text{Fe}(\text{CN})_6^{4-}$ in 0.1 mol/L KCL.

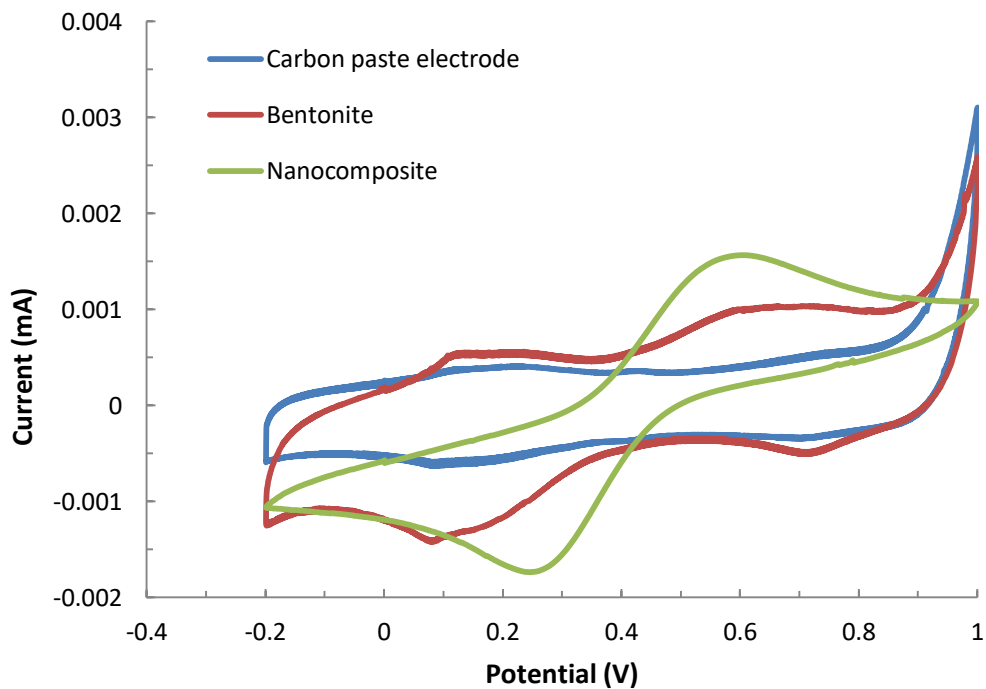


Fig. S3. The comparison of cyclic voltammograms of using different carbon paste electrodes.

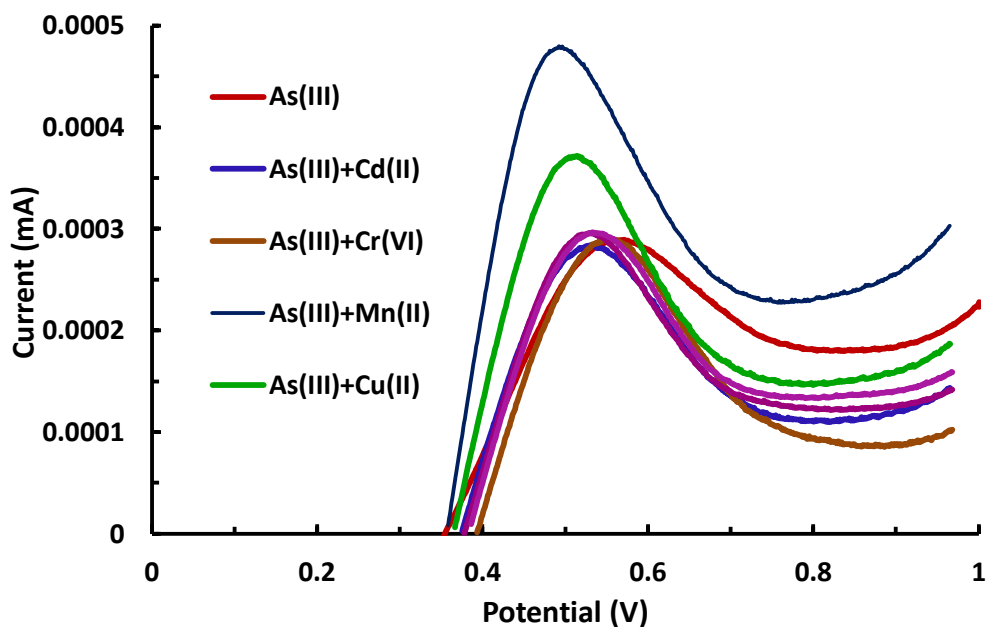


Fig. S4. Anodic stripping voltammetric curves for As(III) in presence of several cations/anions. Potential vs. Ag/AgCl (0.1 mol/L KCl and pH 2.0).

Table S5. Electrochemical Detection of As(III) in Presence of Several Co-existing Ions

Co-existing ion present	Arsenic (III) concentration measured ($\mu\text{g/L}$) $\pm 3\sigma$
Nil	2.826 ± 0.0004
Cadmium(II)	2.714 ± 0.0005
Chromium (VI)	2.919 ± 0.0003
Copper (II)	4.665 ± 0.0005
Manganese (II)	6.394 ± 0.0040
Phosphate	3.126 ± 0.0006
EDTA	2.968 ± 0.0003

Table S6. Various Physico-chemical Parametric Analysis of Tlawng River Water

Parameters Studied	Analytical Results
pH	7.95
Conductivity	118 mS/cm
Resistivity	0.0085Mohm.cm
Salinity	0.06 PSU
Ox. Red. Potential	221.8 mV
Elements studied (AAS)	(mg/L)
Ni	0.0
Zn	0.429
Pb	0.0
Mn	0.0
Fe	0.486
Ca	6.682
Cu	0.0
TOC Analysis	(mg/L)
Inorganic Carbon	8.345
NPOC	0.008