Strontium stannate nanoparticles decorated on graphitic carbon nitride sheets for electrochemical detection of 3-nitro-l-tyrosine

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Materials

The electrochemical analyses were conducted using phosphate buffer (PB, 0.1 M) prepared from disodium dibasic and sodium dihydrogen phosphate (Na_2HPO_4 and NaH_2PO_4. Screen-printed carbon electrodes (SPCE) were procured from Zensor, Taiwan. Pvt. Ltd. Millipore water purification system (Milli-Q, specific resistivity > 18 MΩ cm, S.A., Molsheim, France) was used as the source of ultrapure fresh water and was used throughout the experiments. The pH adjustments were achieved using HCl and NaOH solutions.

Instrumentation and Methods

The phase configuration of prepared materials is analysed using X-ray diffraction analysis (XRD) (Bruker (XRD, 2D Phaser. The microstructure and the elemental composition of the as-prepared materials were studied employing a high resolution (HR) transmission electron microscope (TEM) (JEOL JEM-2100F (HR)) operating at 200 kV and by energy-dispersive X-ray spectroscopy using EDAX AMETEK Inc., DigitalMicrograph® software. The electrochemical characteristics were explored using electrochemical impedance spectroscopy (EIS) Autolab. Furthermore, CHI 1211C electrochemical workstation was to carry out electrochemical measurements like cyclic voltammetry (CV) and differential pulse voltammetry (DPV) in a conventional three-electrode cell. Here, the modified SPCE (surface area = 0.071 cm^2), saturated Ag|AgCl, and Pt wire are active as working, reference, and counter electrodes, respectively.

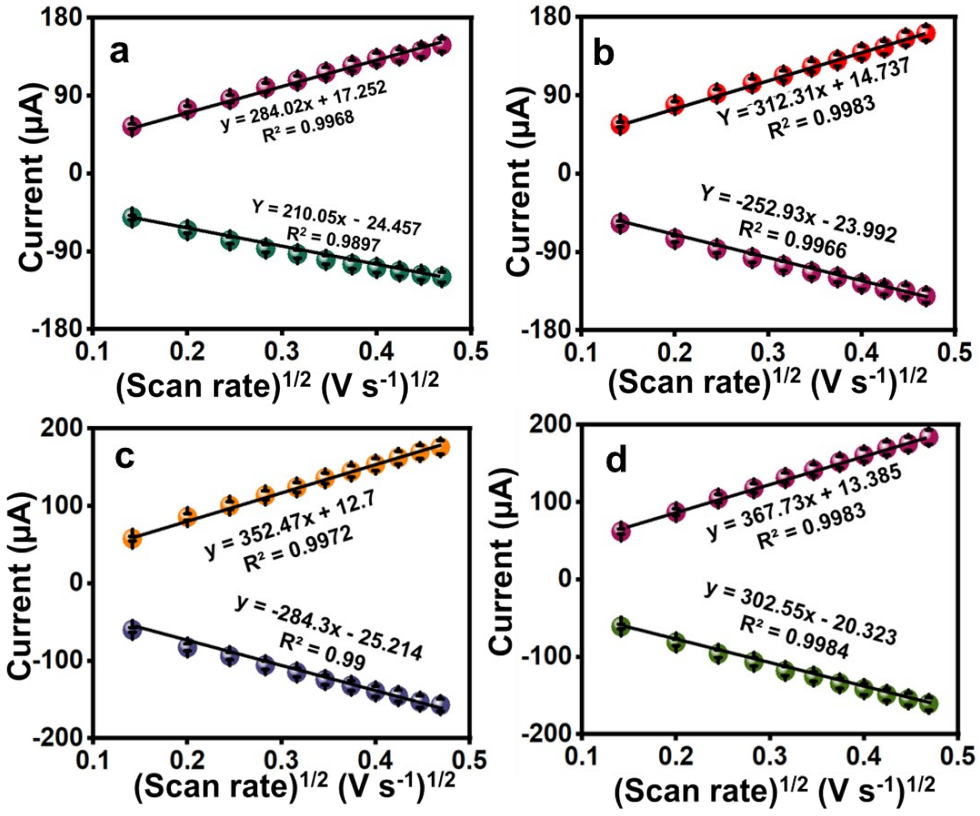

Figure S1. Linear plots of (a) bare-, (b) $SrSnO_3$-, (c) g-C_3N_4-, and (d) $SrSnO_3$@g-C_3N_4 modified in mM $[Fe(CN)_6]^{3-/4-}$ and 0.1 M KCl solution.

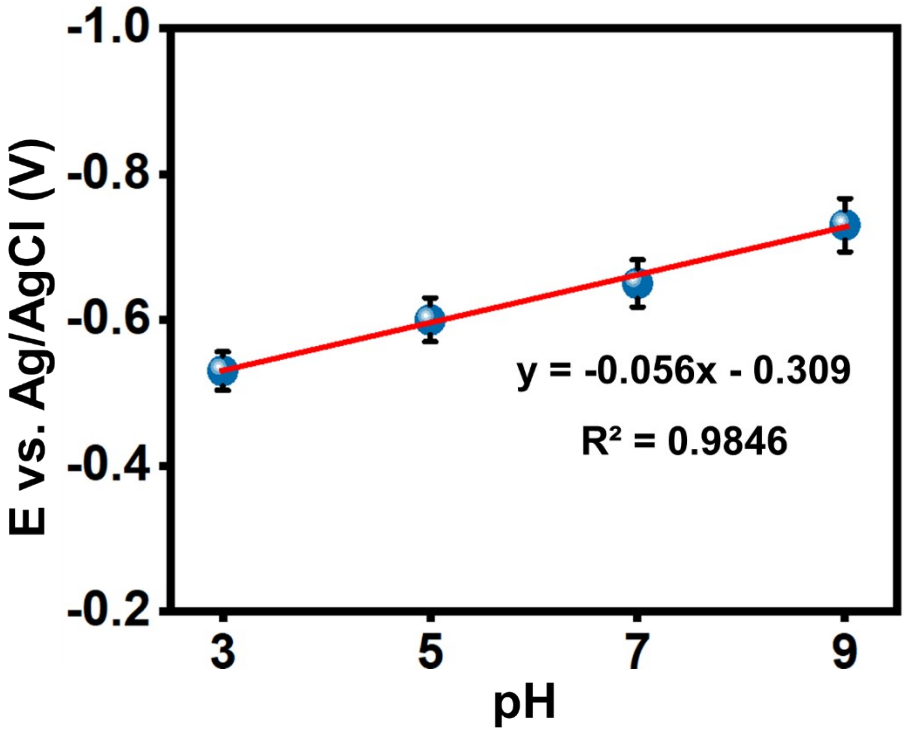

Figure S2. Plots of pH versus peak potential.

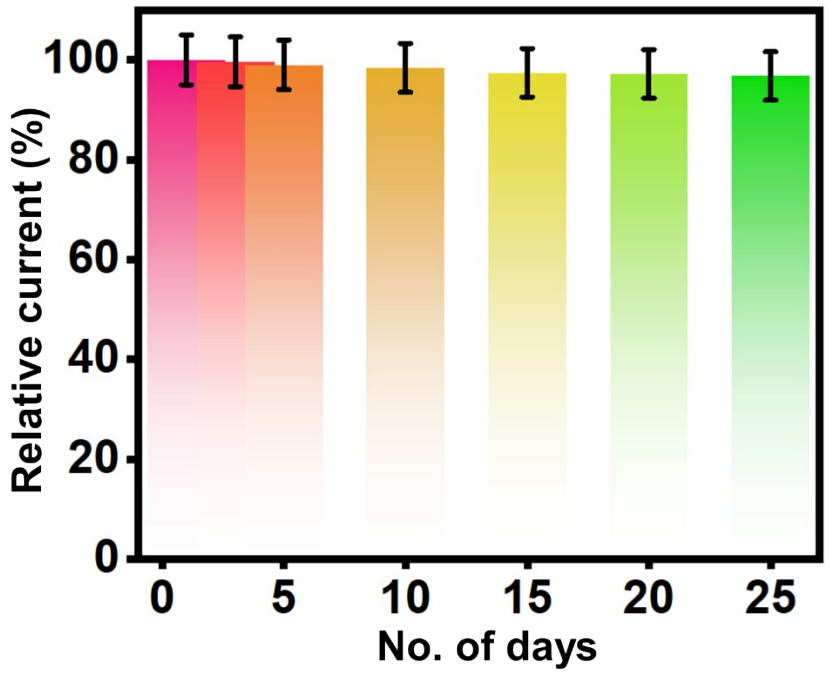

Figure S3. Long-term stability of $SrSnO_3$/g-C_3N_4 in the presence of 3-nitro-L-tyro.

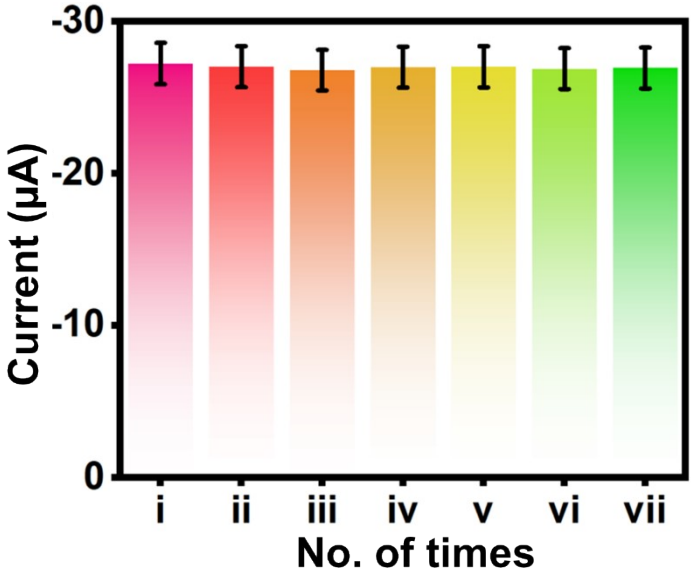

Figure S4. Repeatability of $SrSnO_3$/g-C_3N_4 modified electrode in the presence of 3-nitro-L-tyro.

Table S1. Recovery percentages of different real-world samples.

Samples	**Spiked (nM)**	**Found (nM)**	**Recovery (%) (n=3)**
River water	0	0	–
	1	0.97	97.00
	2	1.92	96.00
	5	4.98	99.60
	10	9.98	99.80
Tap water	0	0	–
	1	0.99	99.00
	2	1.95	97.50
	5	4.95	99.00

	10	9.92	99.20
Lake water	0	0	–
	1	0.99	99.00
	2	1.93	96.50
	5	4.93	98.6
	10	9.97	99.7
Fish extract	0	0	–
	1	0.98	98.00
	2	1.98	99.00
	5	4.95	99.00
	10	9.94	99.40