Electronic Supplementary Material (ESI) for New Journal of Chemistry.

Selective Nanomolar Electrochemical Detection of Serotonin, Dopamine and Tryptophan Using TiO_2/RGO/CPE - Influence of Reducing Agents

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Supplementary information

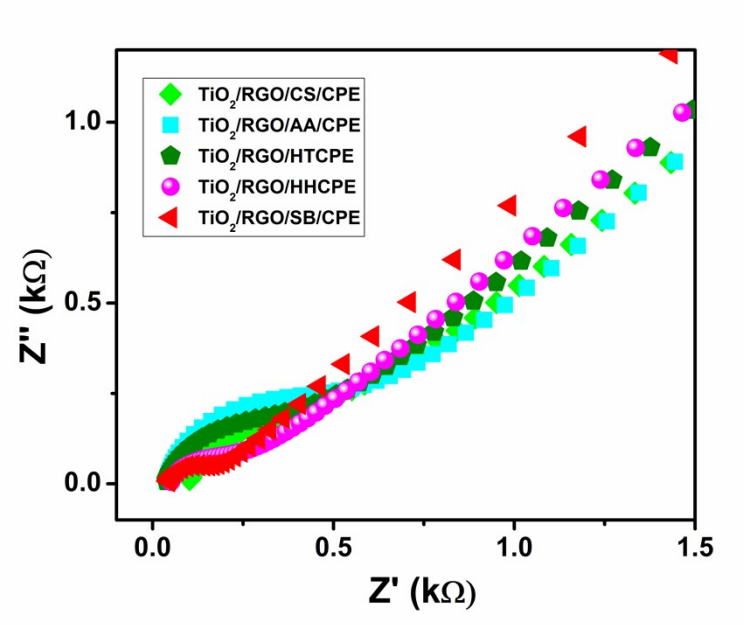


Figure S1: Nyquist plot of bare CPE and different TiO_2/RGO/CPEs (a); EIS parameters: OCP potential = 0.33 V, Perturbation Amplitude = 0.01 V, Linear frequency = 3×10^5 - 1×10^{-2} Hz. CVs of 1×10^{-4} M SER at bare CPE and different TiO_2/RGO/CPEs in 0.1 M PBS of pH 7.0 (b); Scan rate: 50 mV/s

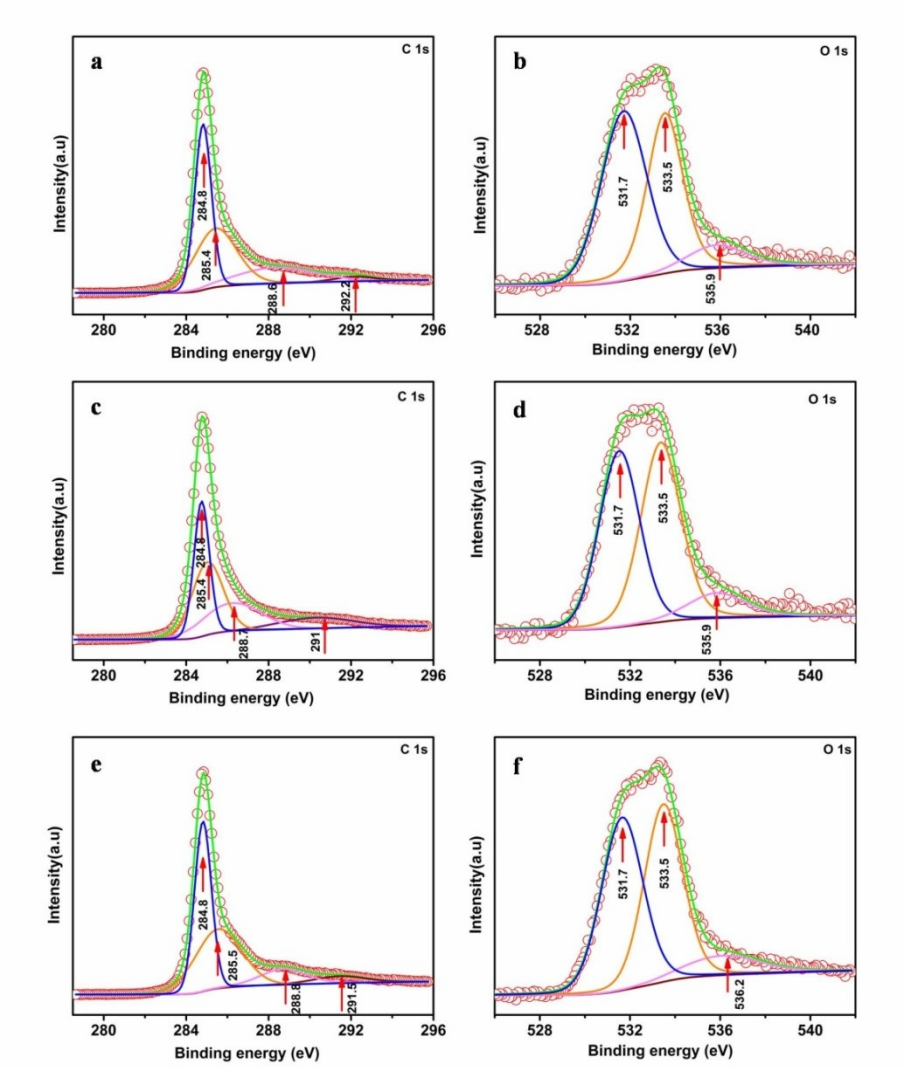
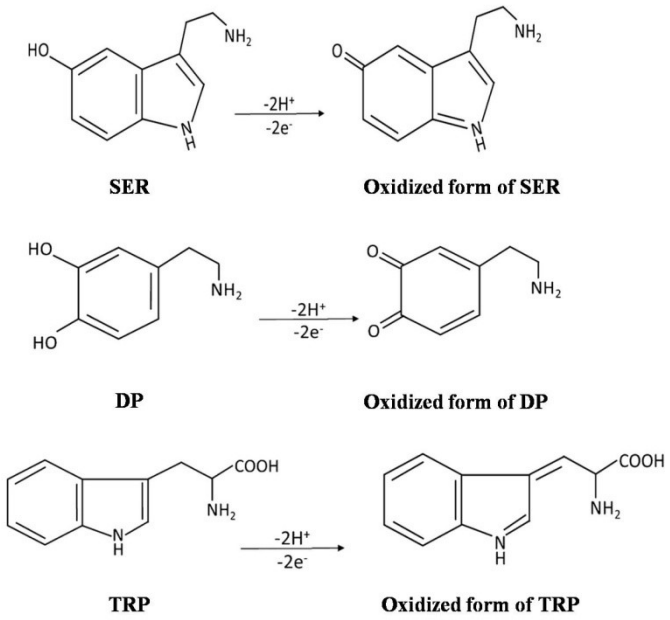


Figure S2: Deconvoluted C1s (a) and O1s (b) XPS spectra of RGSB, Deconvoluted C1s (c) and O1s (d) XPS spectra of RGHH and deconvoluted C1s (e) and O1s (f) XPS spectra of RGHT

Electrode	Anodic Peak Current (μA)	Anodic peak Potential (V)
Bare CPE	4.8	0.313
TiO_2/RGO/AA	6.8	0.301
TiO_2/RGO/CS	7.227	0.299
TiO_2/RGO/HT	8.398	0.304
TiO_2/RGO/HH	9.569	0.298
TiO_2/RGO/SB	9.904	0.296

Table-T1: The anodic peak current and anodic peak potential of SER using different electrodes



Scheme-1: Proposed electrochemical redox mechanism of SER, DP and TRP.

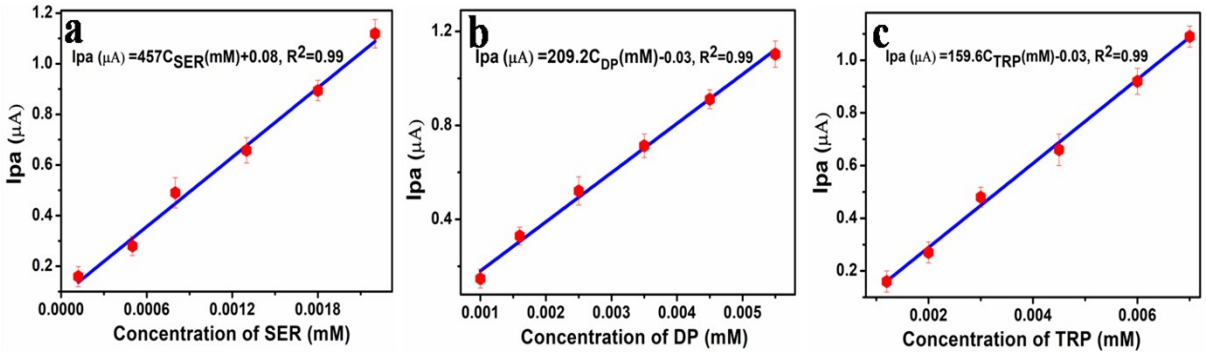


Figure S3: The plot of Ipa versus concentration of SER (a), DP (b) and TRP (c) in 0.1 M PBS of pH = 7.0 at TiO_2/RGO/SB/CPE in its mixture.

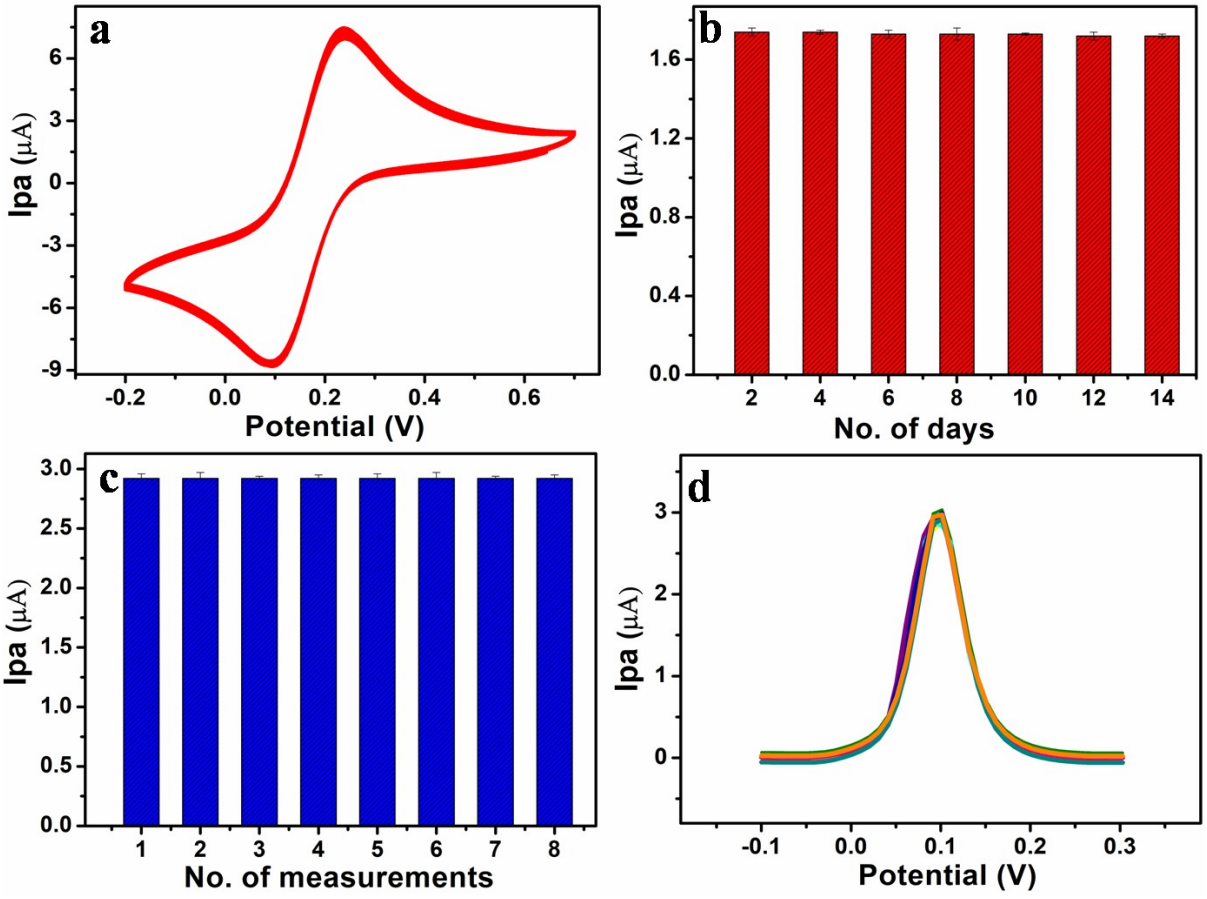


Figure S4: Stability and reproducibility results (a - d) at TiO_2/RGO/SB/CPE.