**Supporting information**

**Enzyme free Impedimetric Sensor for L-Glutamic Acid Using Flower-Like NiO/Carbon Microspheres**

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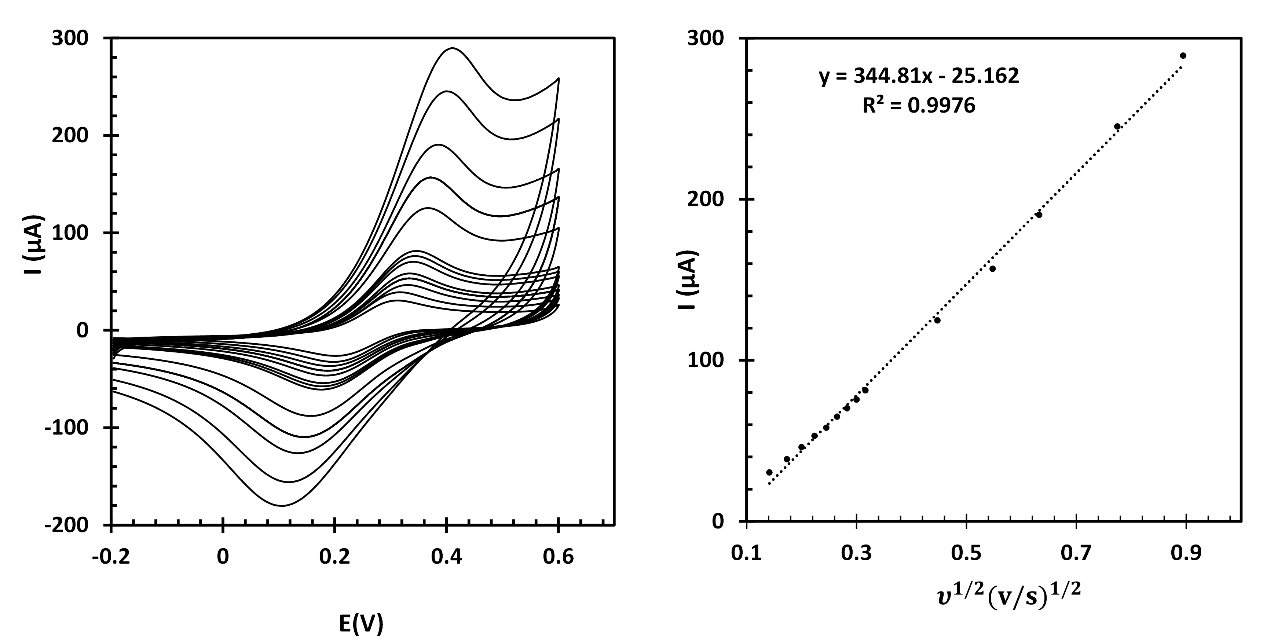
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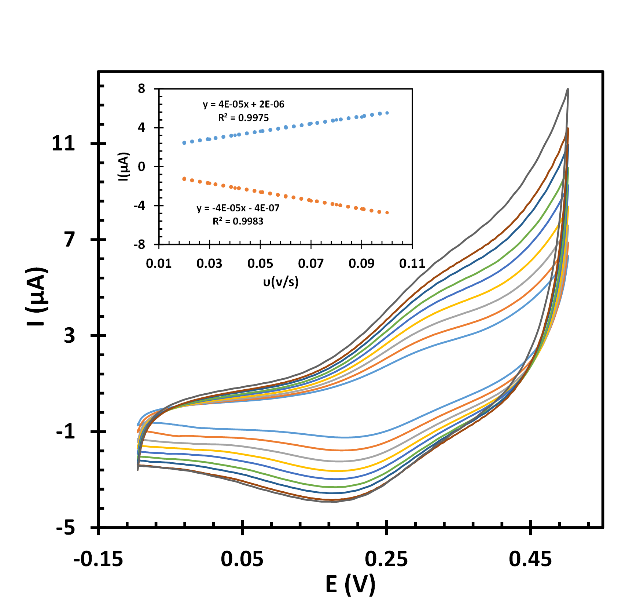
**Figure S1.** CVs of fl-NiO/C/GCE in 5.0 mM [Fe (CN)6]3-/4- in 0.1 M KCl at a scan rate of 20-800 mv/s (A), the plot of I versus υ1/2 (B).



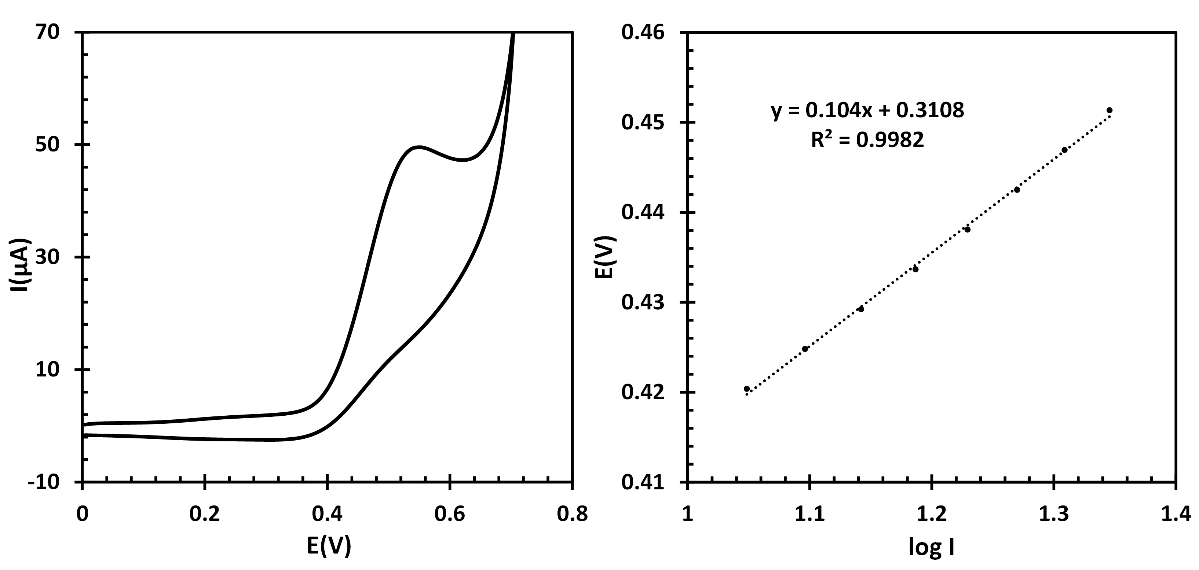
**(B)**

**(A)**

**Figure S2.** Cyclic voltammogram of fl-NiO/C/GCE in 1M NaOH solution at various scan rate 10-100mV/s. (Inset: Plot of I versus υ)



**Figure S3.** CVs of fl-NiO/C/GCE in 1mM LGA in 1 M NaOH at a scan rate of 10 mV/s (A). Tafel plot E vs log I (B).

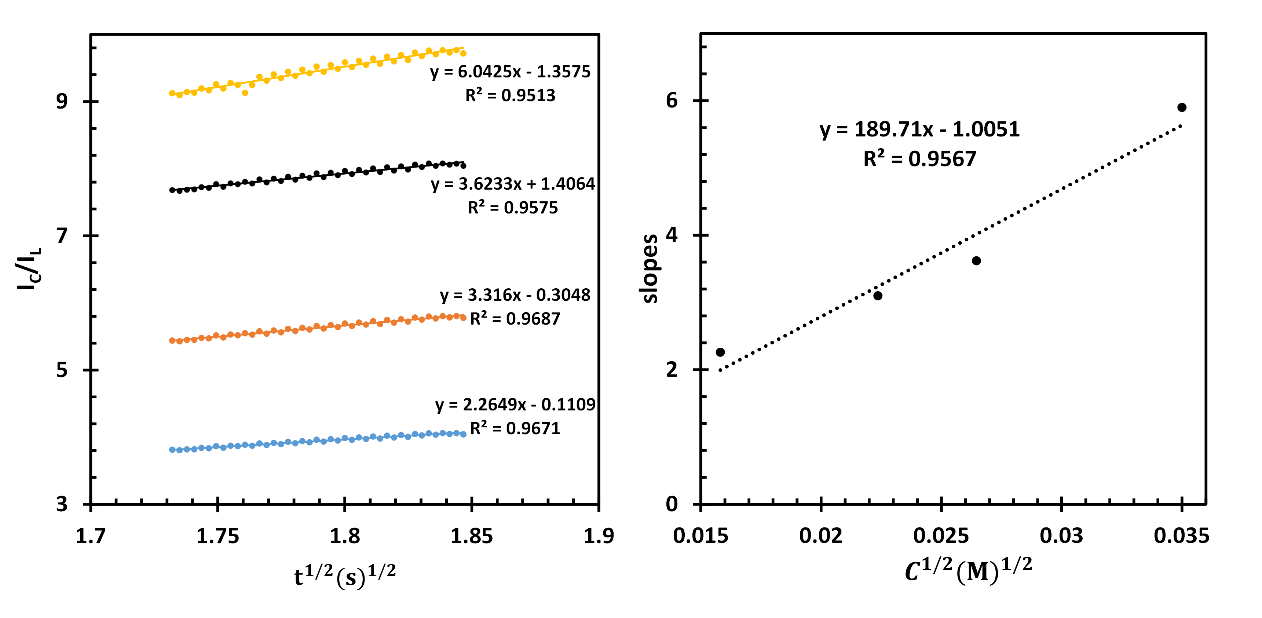


**(A)**

**(B)**

Laviron’s equation: E = E0′ + [2.303 R T/ (1- α) nα F] log ν + constant where E0′, ν, α, F, T, and R are the formal potential, scan rate (mV/s ); the electron transfer coefficient; Faraday’s constant, the temperature, and the universal gas constant, respectively. nα is the electron number involved in the rate determining step; as the reaction is irreversible, assume that the value of α is 0.5.

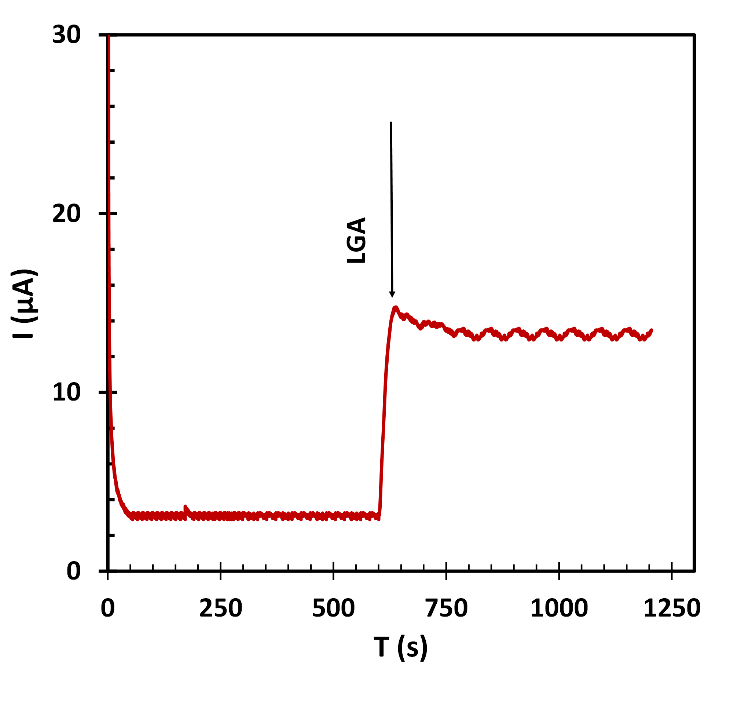
**Figure S4**. The IC/IL vs. t1/2 plot at different concentrations of LGA (250, 500, 700, 1000 μM) (A). The plot of the slope of the (IC/IL vs.t1/2) vs. C1/2 (B).



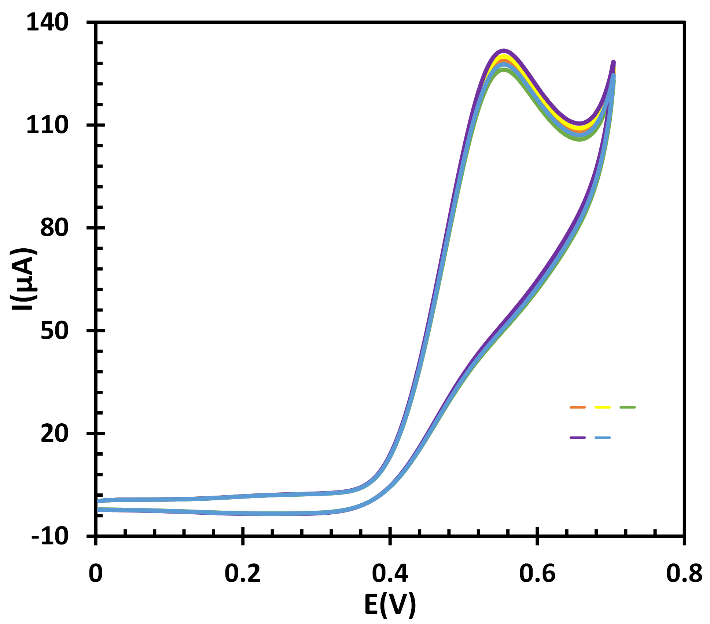
**(A)**

**(B)**

**Figure S5.** Amprometric response of fl-NiO/C/GCE 600 second before and after injection of 200µL GLA.



**Figure S6.** CVs of 5 prepared fl-NiO/C/GCE in 1mM LGA in 1 M NaOH at a scan rate of 50 mV/s.



**Figure S7.** EIS responses of sample (I-III) were recorded at the fl-NiO/C/GCE using standard addition method.

