Electronic Supplementary Material (ESI) for RSC Advances


*Supporting Information*

# Hybrid Functional Nanoscaffold Based on Reduced Graphene Oxide-ZnO for the Development of Amperometric Biosensing Platform

**Ramendra Sundar Dey and C. Retna Raj***

Department of Chemistry, Indian Institute of Technology, Kharagpur 721302, India

**Figure S1**

Normalized TGA plots of GO (a) and rGO/ZnO (b).

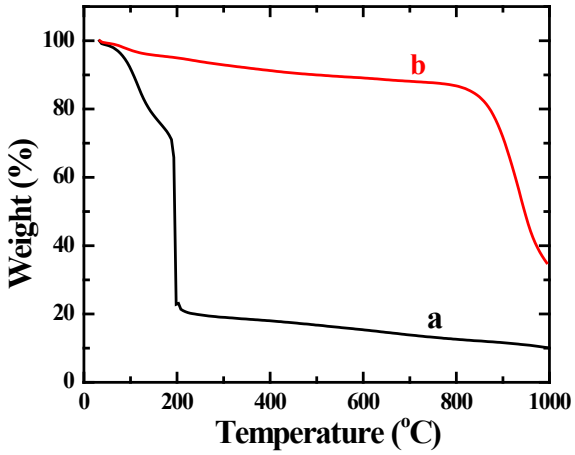

**Figure S2**

(A) Cyclic voltammetric and (B) impedance profile of GO (a), rGO (b) and rGO/ZnO (c) modified electrodes. The equivalent circuit is shown in the inset. Scan rate: 100 mV/s.

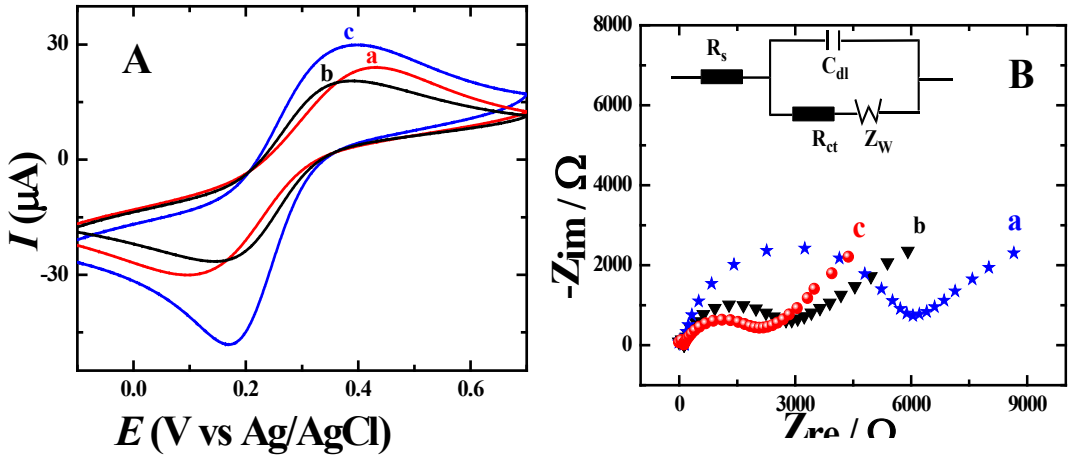

**Figure S3**

(A) Cyclic voltammograms obtained for e rGO/ZnO/GOx electrode at different pHs: 4.4, 5.6, 7.02, 7.89, 8.9 and 9.7. Scan rate: 10 mV/s. (B) The plot of anodic peak potential ($E_p^a$) vs. solution pH.

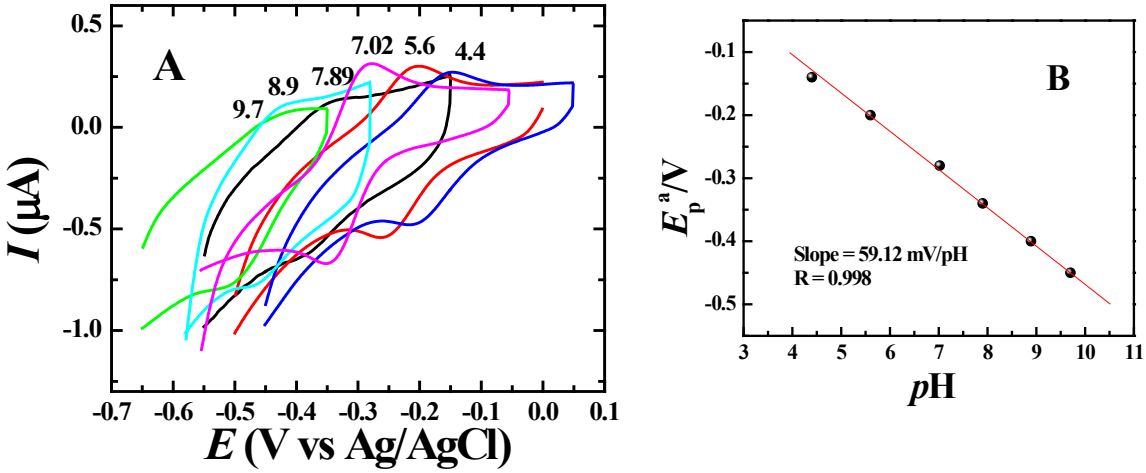

**Figure S4**

Amperometric response of the SPE-based biosensing platform towards glucose. Other experimental conditions are same as in Figure 5B.

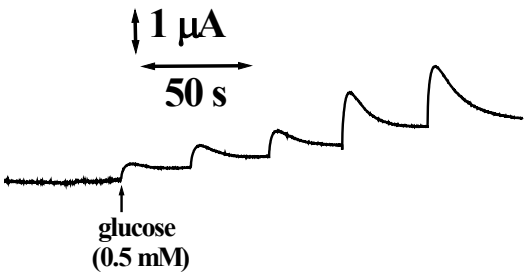

**Figure S5**

Amperometric response illustrating the interference-free sensing of glucose. 0.5 mM of each analytes were injected at regular interval. Other experimental conditions are same as in Figure 5B.

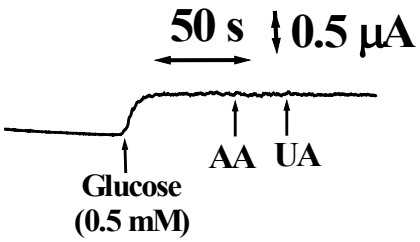

**Figure S6**

Amperometric response illustrating the operational stability of glucose biosensor. An aliquot of glucose (0.5 mM ) was injected. All other experimental conditions are same as in Figure 5B.

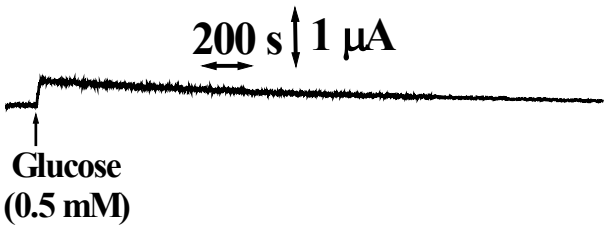

**Figure S7**

(A) Plot illustrating the long term stability of the glucose biosensor. The amperometric measurements of the biosensor were performed for a period of 10 days (one experiment each day) and the sensor was stored at 4 $^{o}$C after the measurement. [glucose]: 0.5 mM. (B) Plot illustrating the reproducibility of the biosensor. Five individual biosensors were made under identical condition on five different days and the amperometric response was examined with glucose (0.5 mM). In both cases all other experimental conditions are same as in Figure 5B.