Supporting information

An Electrochemical Platform for the Selective Detection of Azathioprine Utilizing Screen Printed Carbon Electrode Modified with Manganese oxide/reduced Graphene Oxide

Subash Vetri Selvi[a], *Nandini Nataraj[a], Shen−Ming Chen [a*], Adhimoorthy Prasannan[b*]*

[a, a]Electroanalysis and Bioelectrochemistry Lab, Department of Chemical Engineering and Biotechnology, National Taipei University of Technology, No. 1, Section 3, Chung−Hsiao East Road, Taipei 106, Taiwan, ROC.*

S1. Synthesis of graphene oxide via hummers method:

To begin with the synthesis of Mn_2O_3-rGO, graphene oxide (GO) has to be synthesized in order to attain Mn_2O_3-rGO. Initially, GO was prepared via hummers method whereas its procedure is being explained. First, 0.5g of graphite was taken along with 0.500g of sodium nitrate ($NaNO_3$) in a beaker (500mL). Then, gently 23 mL of sulphuric acid (H_2SO_4) was added to the above mixture which was continuously stirred for 4 hours. To be noted the solution was stirred in the presence of ice bath. And then without the ice bath the solution was exposed to $KMnO_4$ addition which was left stirred for 2 hours at 25°C. Next stage, 46 mL of distilled water was added with the temperature maintained at 98°C left aside for 2 hours under stirring. The obtained mixture was again exposed to 100 mL of distilled water under room temperature. Followed with the addition of hydrogen peroxide (H_2O_2) with no increase in temperature after one hour of above solution being stirred. Finally, a greenish black precipitate was obtained which indicates the formation of graphene oxide (GO). Thus, the obtained product was dried and utilized for further process.

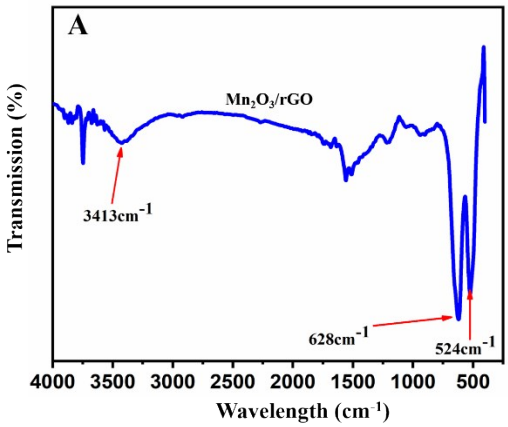

Fig.S1. (A) FTIR spectra of enlarged view of Mn_2O_3-rGO

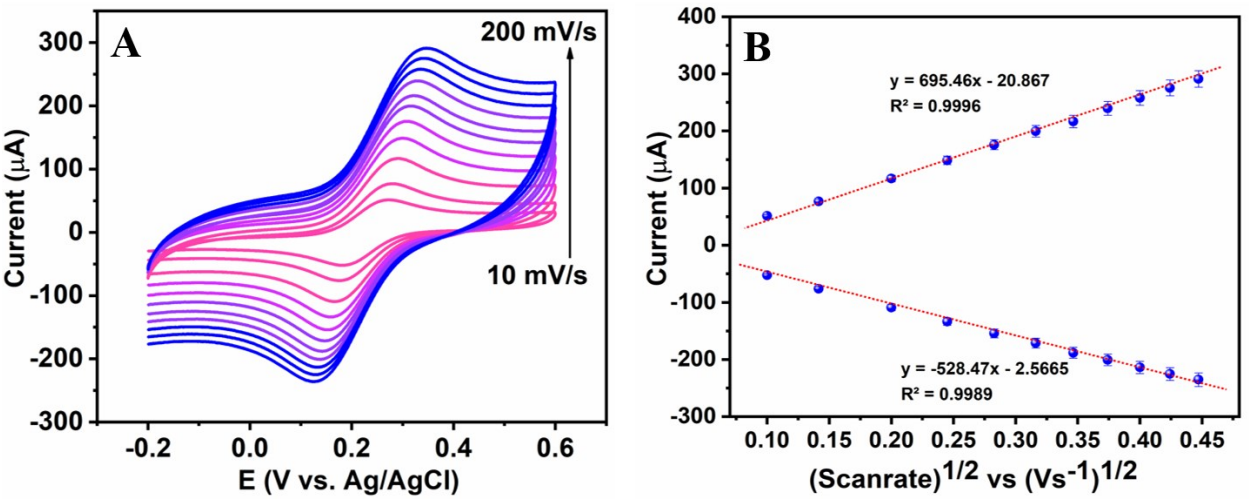

Fig. S2. CV curves of **(A)** Mn_2O_3-rGO/SPCE in the presence of 0.5 mM of $K_3(Fe\ [CN]_6)$ and $K_4(Fe[CN]_6)$ solution with 0.1 M of KCl at a scan rate ranging from 10 mV/s to 200 mV/s (B) respective calibration plot for the scan rate performed.

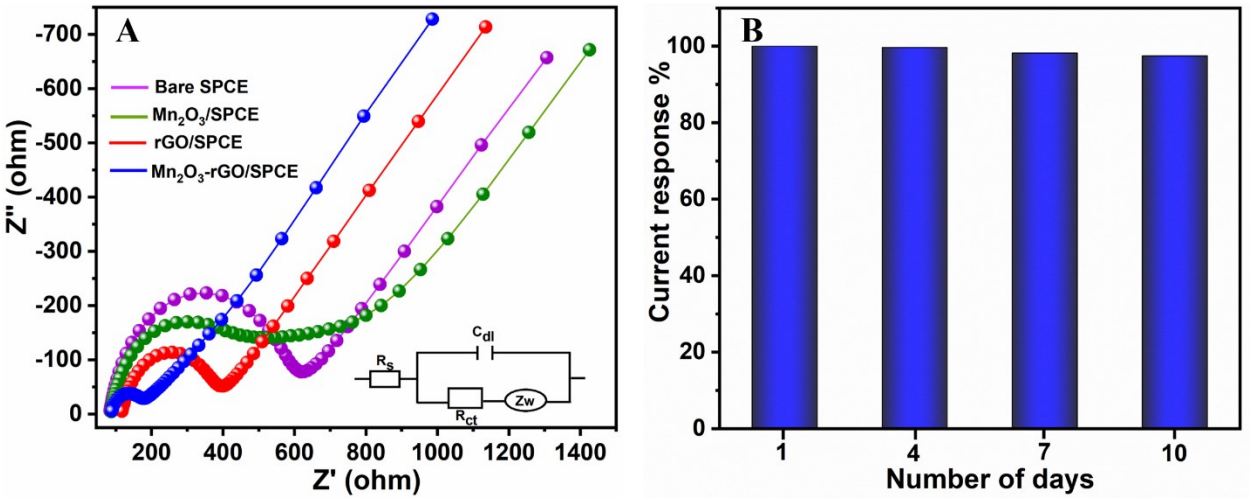

Fig. S3. (A) shows the EIS spectra of bare SPCE, Mn_2O_3/SPCE, rGO/ SPCE, Mn_2O_3-rGO/ SPCE in the presence of 0.1M KCl, $K_3[(CN)_6]$, $K_4[(CN)_6]$, at 10-100 Hz frequency (B) Histogram plots of stability performance at Mn_2O_3-rGO/SPCE