Supplementary Information

Basic Red 9 dye encapsulated graphene oxide-montmorillonite composite: Fluorescent and electrochemical sensor for dopamine in presence of ascorbic acid and uric acid

Sarojmoni Kalita & Diganta Kumar Das*
Department of Chemistry, Gauhati University, Guwahati 781 014, Assam, India
E-mail: diganta_chem@gauhati.ac.in

Received 3 June 2022; accepted (revised) 13 July 2023

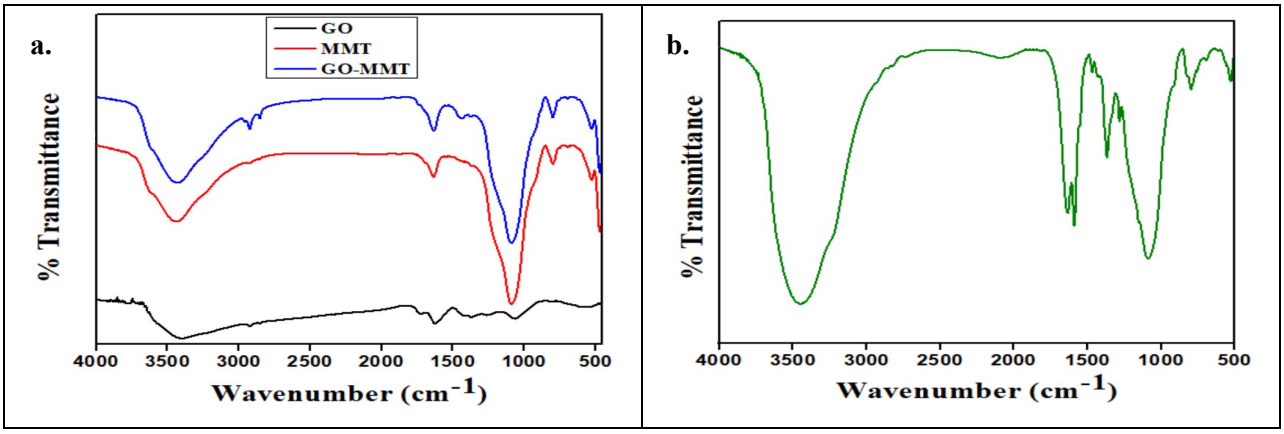


Fig. S1 FTIR spectra of **a)** GO, MMT, GO-MMT and **b)** BR9@GO-MMT

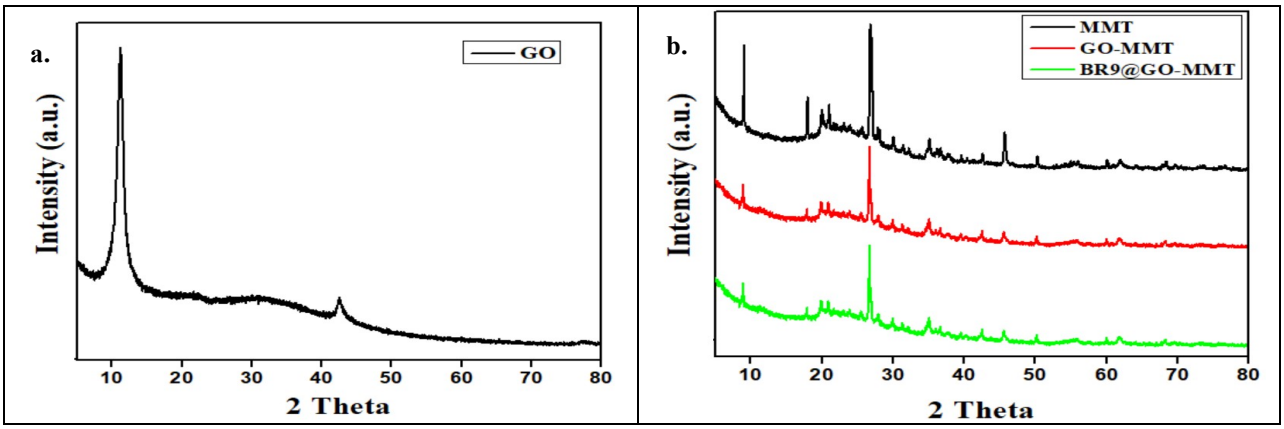


Fig. S2 PXRD pattern of **a)** GO **b)** MMT, GO-MMT and BR9@GO-MMT

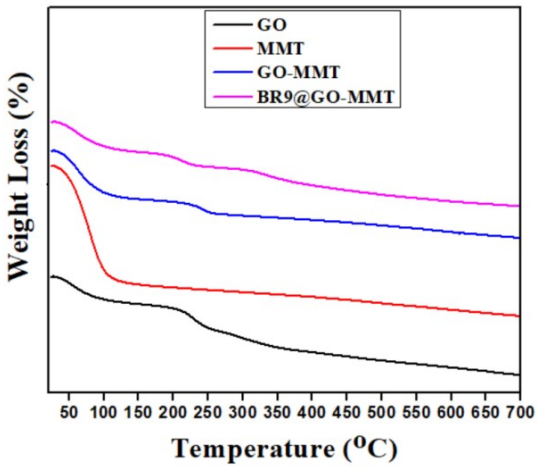


Fig. S3 TGA curve of GO, MMT, GO-MMT and BR9@GO-MMT

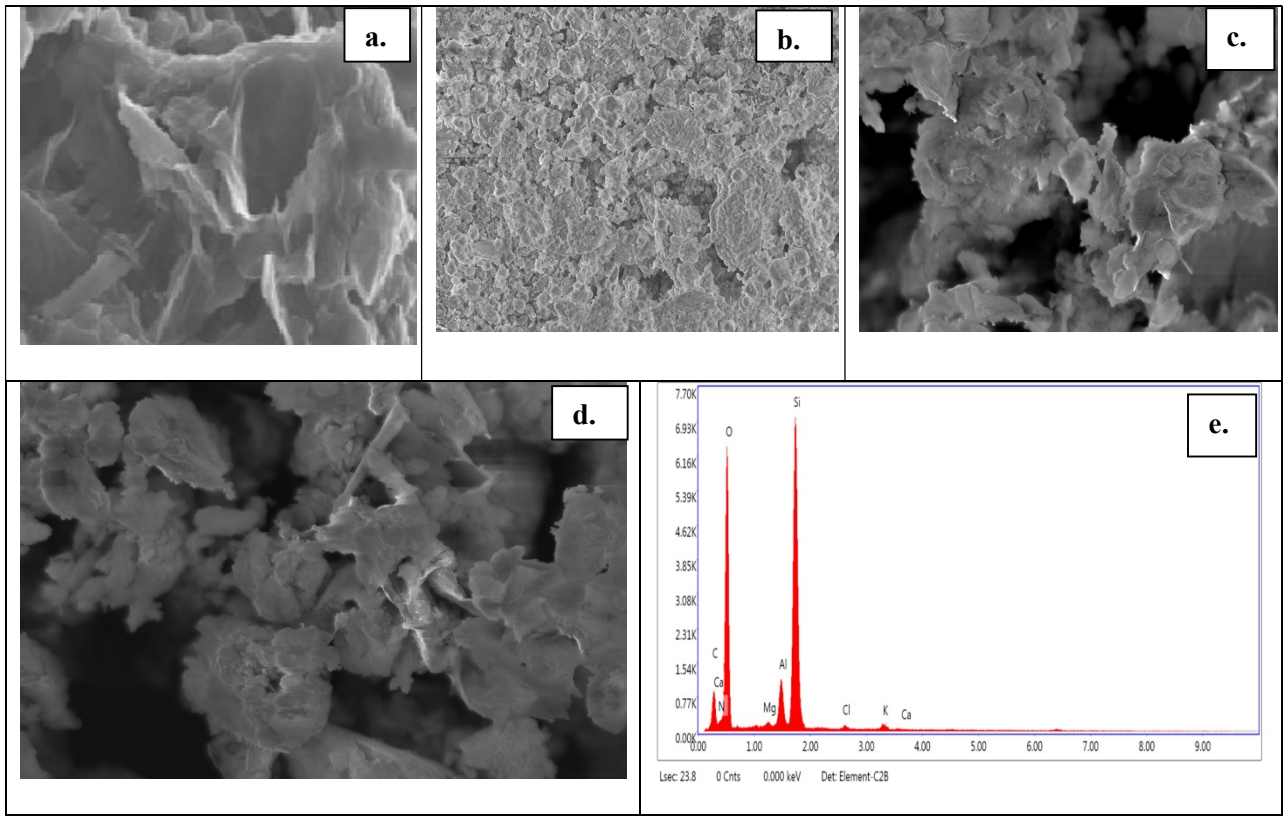
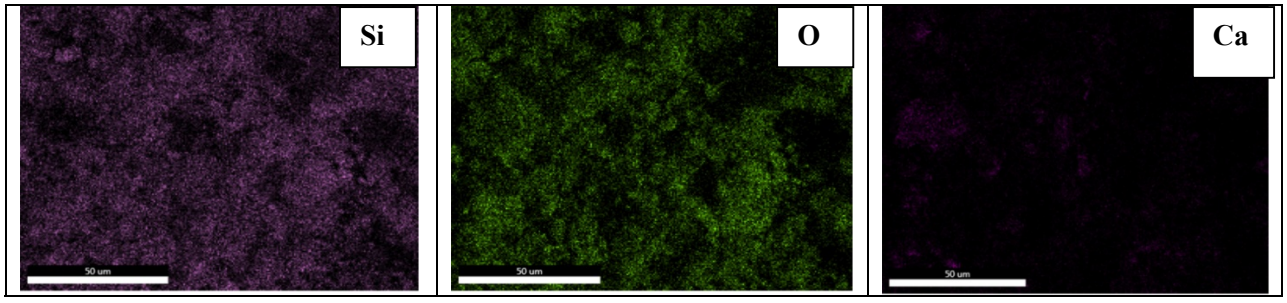


Fig. 4 SEM image of **a)** GO **b)** MMT **c)** GO-MMT **d)** BR9@GO-MMT **e)** EDX analysis of BR9@GO-MMT



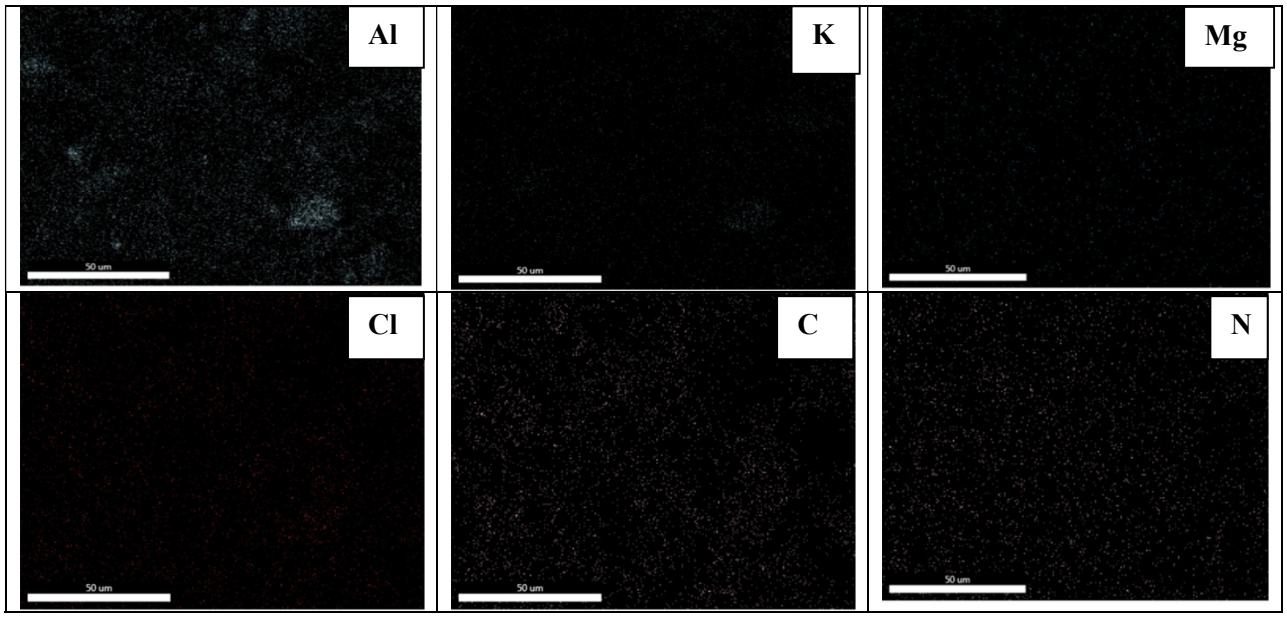


Fig. S5 Elemental Mapping of BR9@GO-MMT

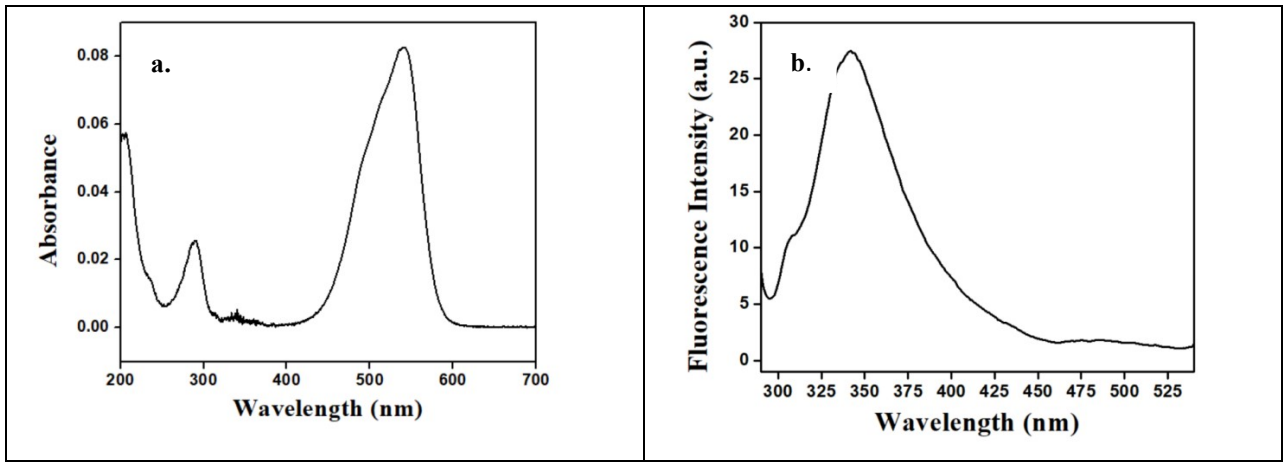


Fig. S6 a) UV-Visible spectrum of BR9@GO-MMT in acetonitrile, **b)** Fluorescence spectrum of BR9@GO-MMT in acetonitrile.

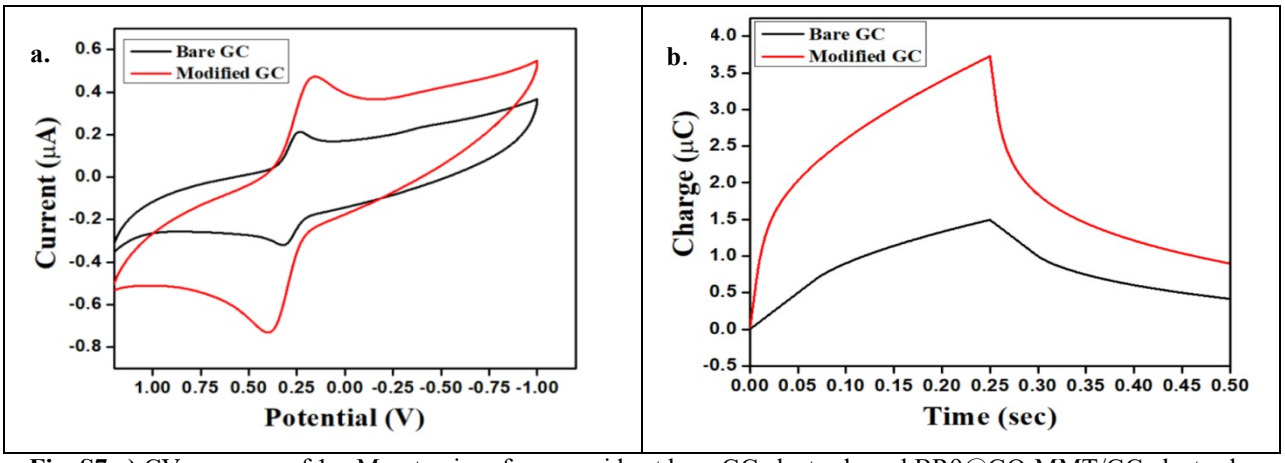


Fig. S7 a) CV response of 1 mM potassium ferrocyanide at bare GC electrode and BR9@GO-MMT/GC electrode. (RE: Ag-AgCl, SE: 1M KCl, scan rate: 50 mV/s) **b)** Chronocoulometry response of bare GC electrode and BR9@GO-MMT/GC electrode.

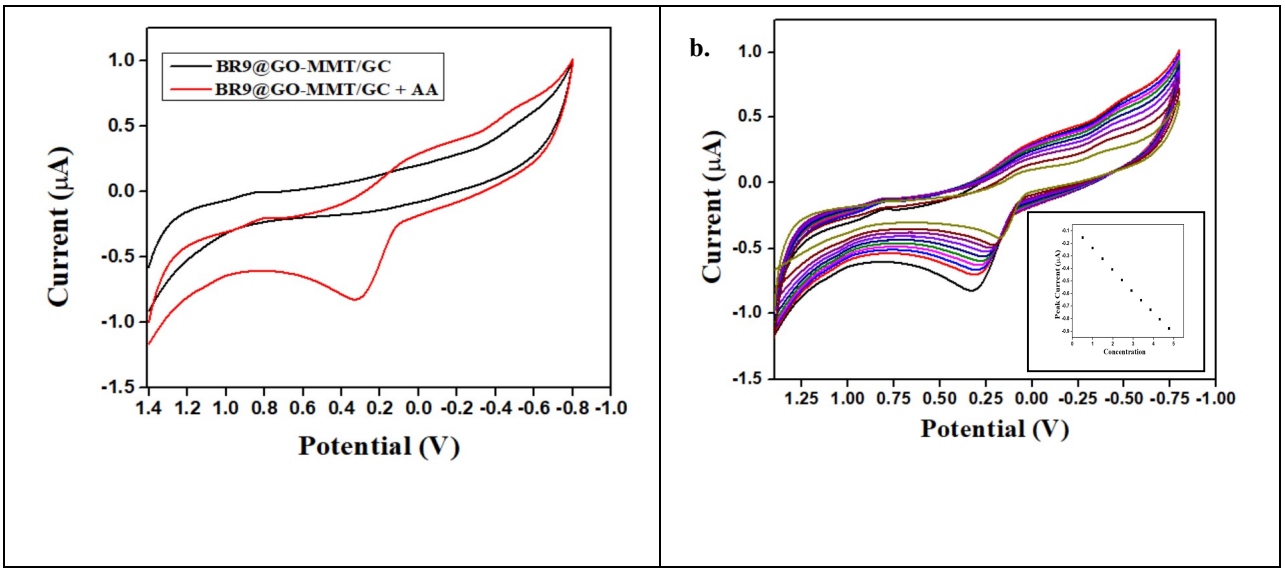


Fig. S8 a) CV response of BR9@GO-MMT/GC in PBS (pH = 7.39) in absence (black line) and presence (red line) of 1 mM AA. **b)** CV response of BR9@GO-MMT/GC in PBS (pH = 7.39) at different added concentration of AA (20-200 μL). (RE: Ag-AgCl, SE: 1M KCl, scan rate: 50 mV/s). The inset shows the plot of peak current *vs.* AA concentration.

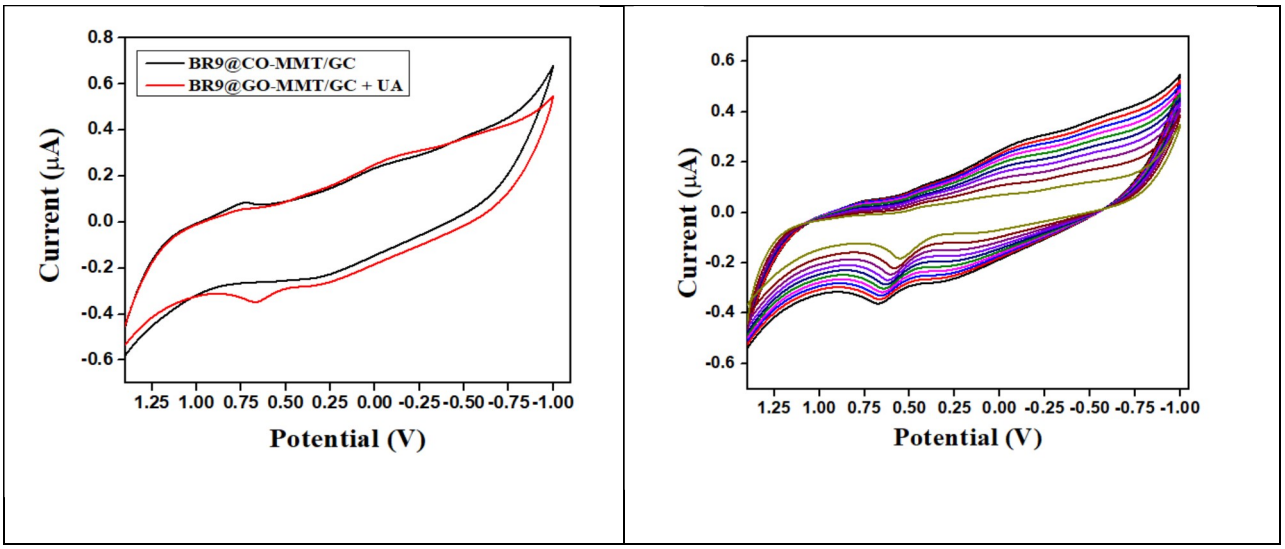


Fig. S9 a) CV response of BR9@GO-MMT/GC in PBS (pH = 7.39) in absence (black line) and presence (red line) of 0.1 mM UA. **b)** CV response of BR9@GO-MMT/GC in PBS (pH = 7.39) at different added concentration of UA (20-200 µL). (RE: Ag-AgCl, SE: 1M KCl, scan rate: 50 mV/s). The inset shows the plot of peak current *vs.* UA concentration.

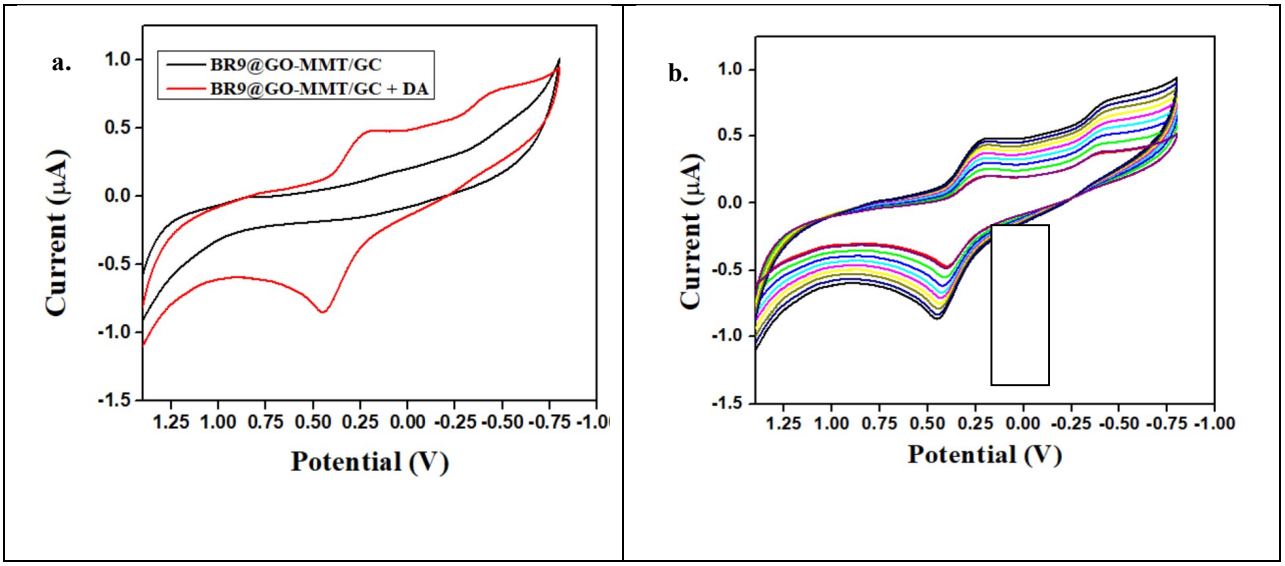


Fig. S10 a) CV response of BR9@GO-MMT/GC in PBS (pH = 7.39) in absence (black line) and presence (red line) of 0.01 mM DA. **b)** CV response of BR9@GO-MMT/GC in PBS (pH = 7.39) at different added concentration of DA (20-200 µL). (RE: Ag-AgCl, SE: 1M KCl, scan rate: 50 mV/s). The inset shows the plot of peak current *vs.* DA concentration.