Electronic Supplementary Material (ESI) for RSC Advances.

Supporting Information

Electrochemical Sensing of Dopamine at the Surface of Dopamine Grafted Graphene Oxide / Poly (Methylene Blue) Composite modified electrode

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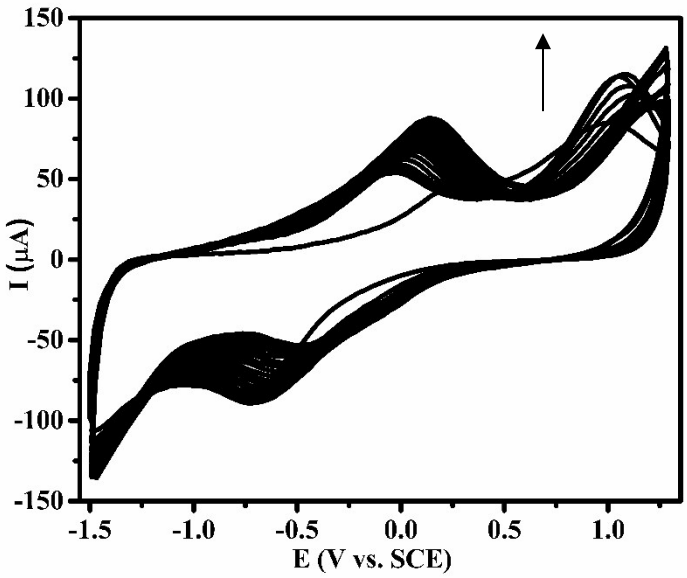


Figure S1. Electrochemical synthesis of ERG/PMB composite with 0.006 mM MB in pH 7.4 Buffer solution. Scan rate 50 mV s^{-1}.

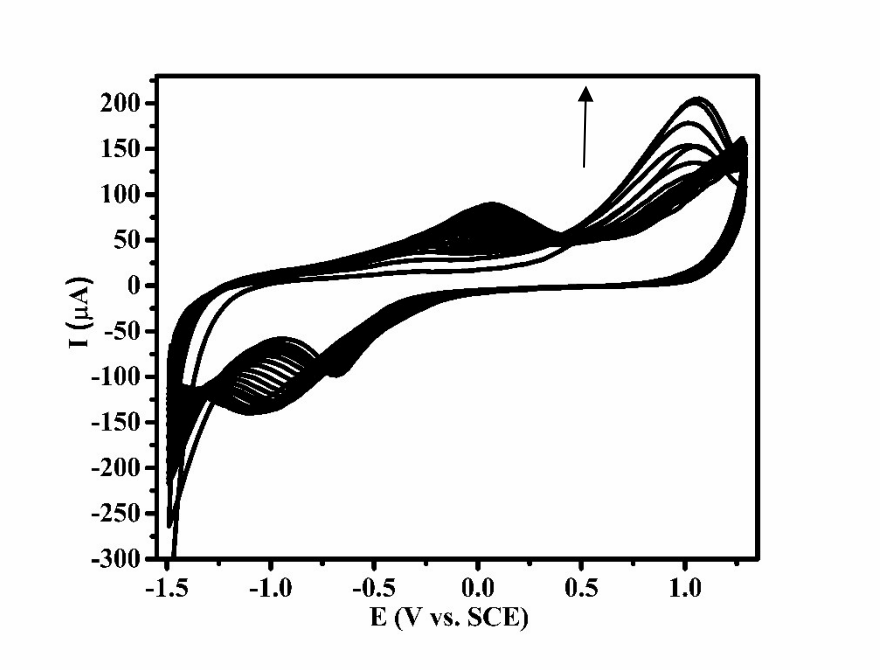


Figure S2. Electrochemical synthesis of ERG/PMB composite with 0.013 mM MB in pH 7.4 Buffer solution. Scan rate 50 mV s^{-1}.

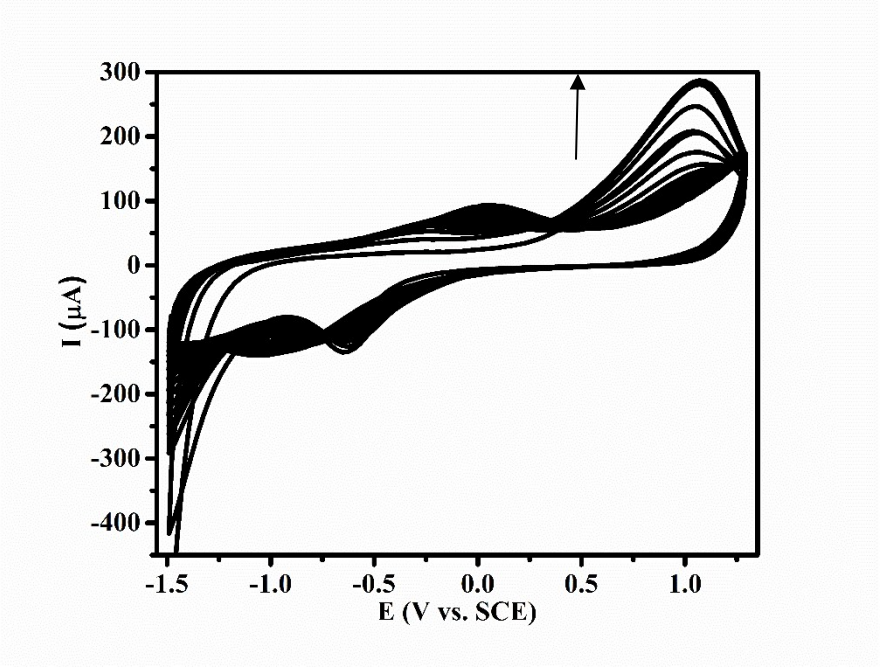


Figure S3. Electrochemical synthesis of ERG/PMB composite with 0.02 mM MB in pH 7.4 Buffer solution. Scan rate 50 mV s^{-1}.

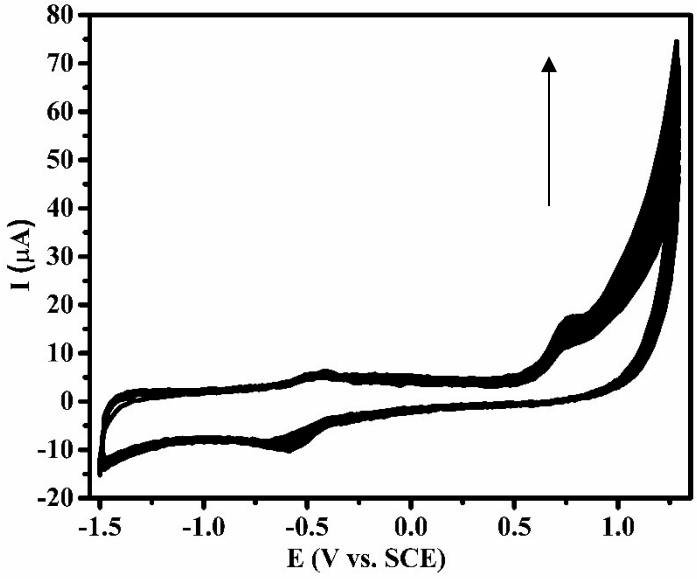


Figure S4. Electrochemical polymerization of Methylene Blue (MB) in pH 7.4 Buffer solution for 20 cycles. Scan rate 50 mV s^{-1}.

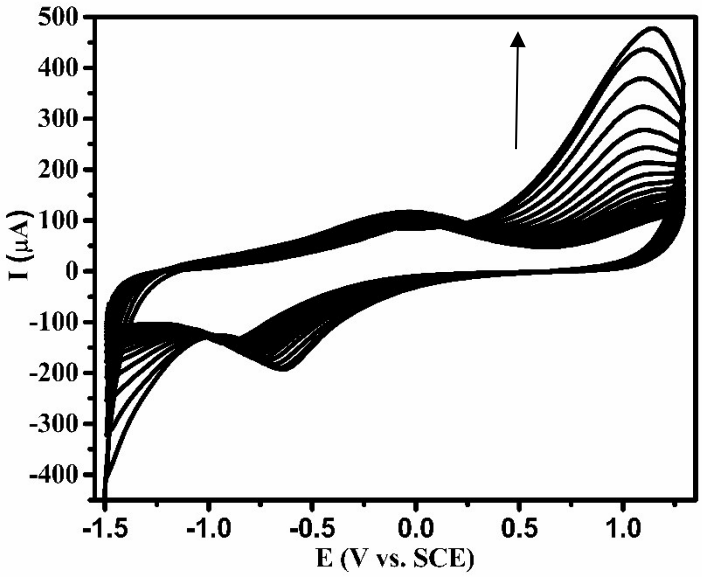


Figure S5. Electrochemical reduction of Graphene Oxide in pH 7.4 Buffer solution with continuous 20 cycles. Scan rate 50 mV s^{-1}.

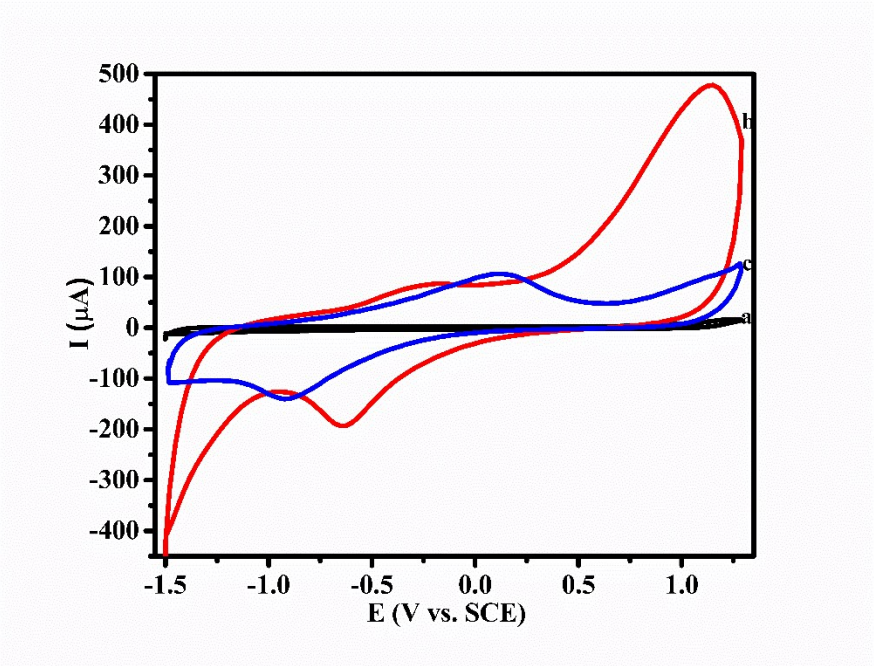


Figure S6. (a) GC, (b) GO and (c) ERG modified electrodes in pH 7.4 Buffer Solution. Scan rate 50 mV s^{-1}.

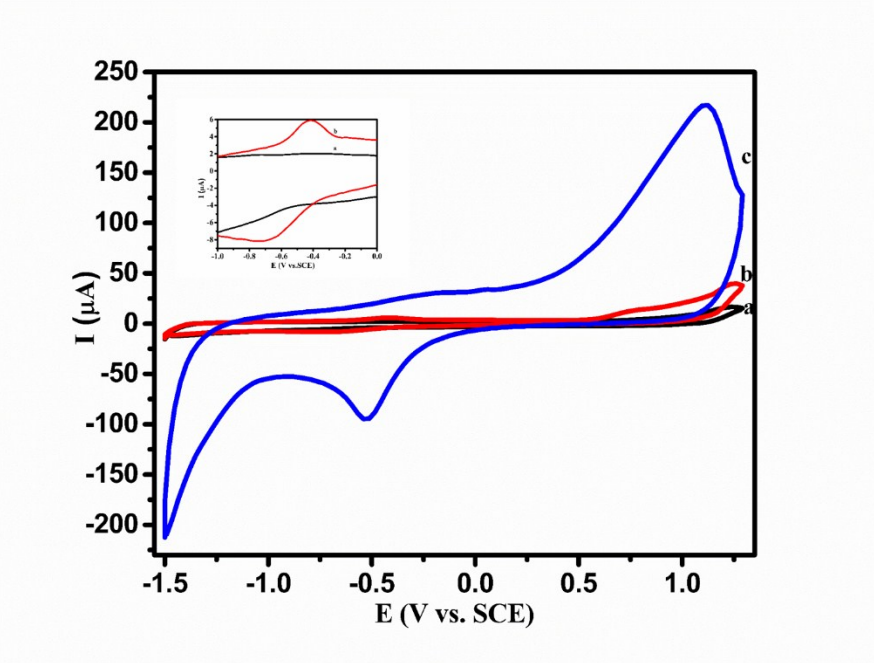


Figure S7. (a) GC without MB, (b) GC with MB and (c) GO/GC with MB. (Inset) GC (a) without MB, (b) with MB. Scan rate 50 mV s^{-1}.

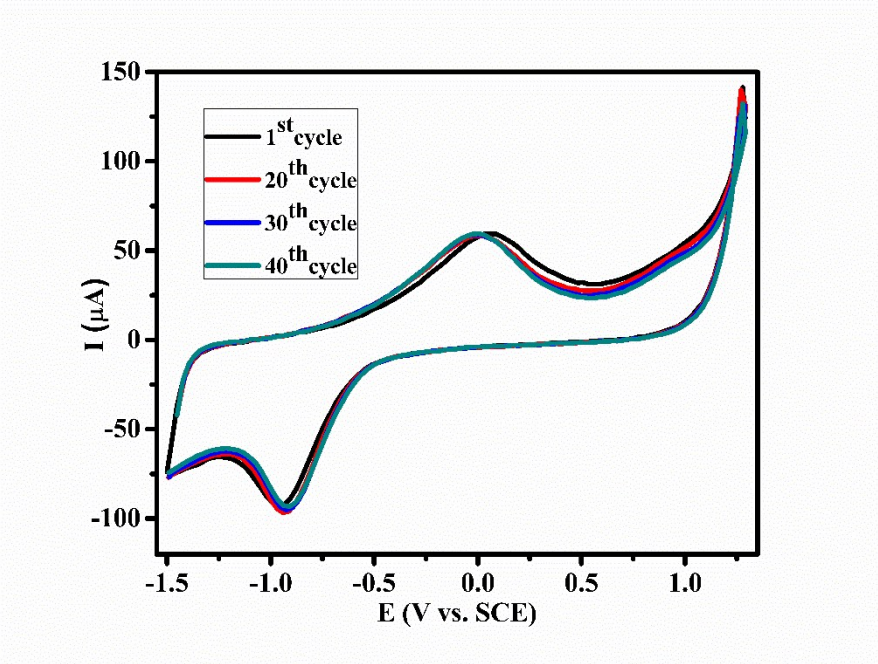


Figure S8. 1st, 20th, 30th and 40th cycles of ERG/PMB modified electrode in pH 7.4 buffer solution. Scan rate 50 mV s^{-1}.

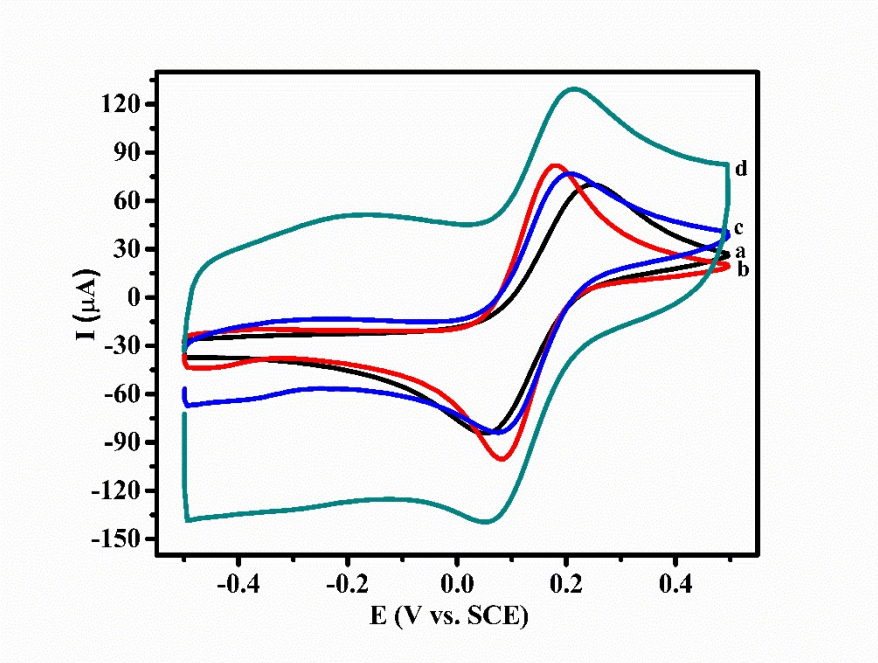


Figure S9. Cyclic Voltammograms of (a) GC, (b) PMB, (c) ERG and (d) ERG/PMB modified electrodes with 1 mM $[Fe(CN_6)]^{-3/-4}$ in 0.1 M KCl. Scan rate 50 mV s^{-1}.

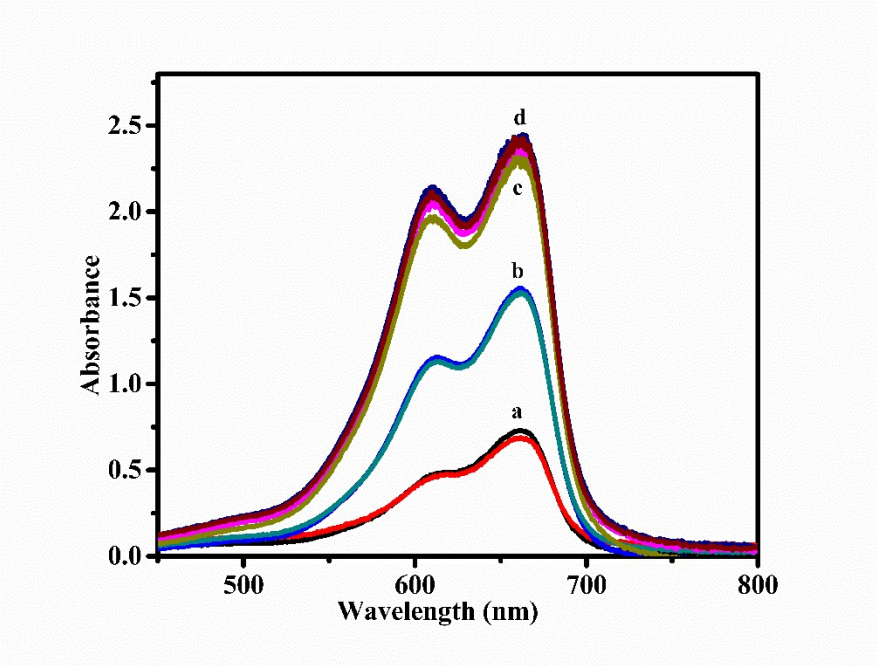


Figure S10. UV-Visible absorption spectrum of (a) 0.006 mM, (b) 0.013 mM, (c) 0.02 mM and (d) 0.026 mM MB before and after Cyclic Voltammetry.

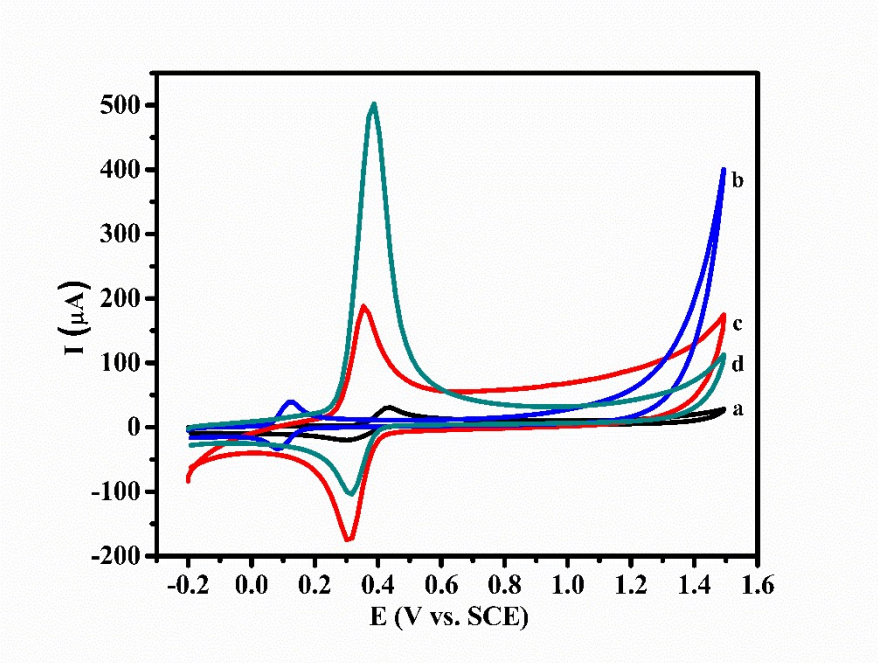


Figure S11. Cyclic Voltammograms of 1×10^{-3} mol L^{-1} dopamine with (a) GC, (b) PMB, (c) ERG and (d) ERG/PMB modified electrodes in 0.1 M H_2SO_4. Scan rate 50 mV s^{-1}.

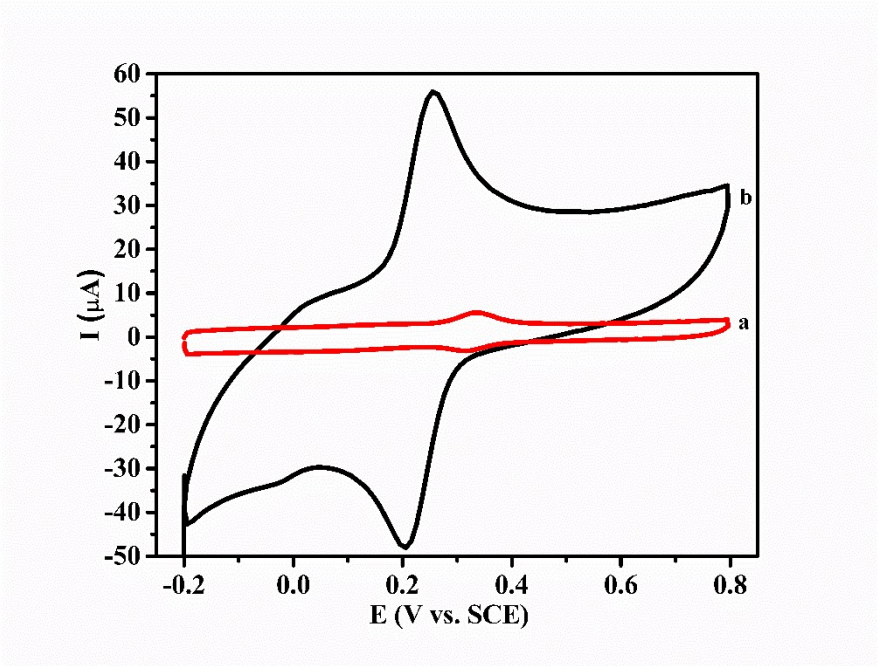


Figure S12. Cyclic Voltammograms of 1×10^{-3} mol L^{-1} dopamine grafted (a) GC, (b) ERG/PMB modified electrodes in 0.1 M H_2SO_4 after washing with water. Scan rate 50 mV s^{-1}.

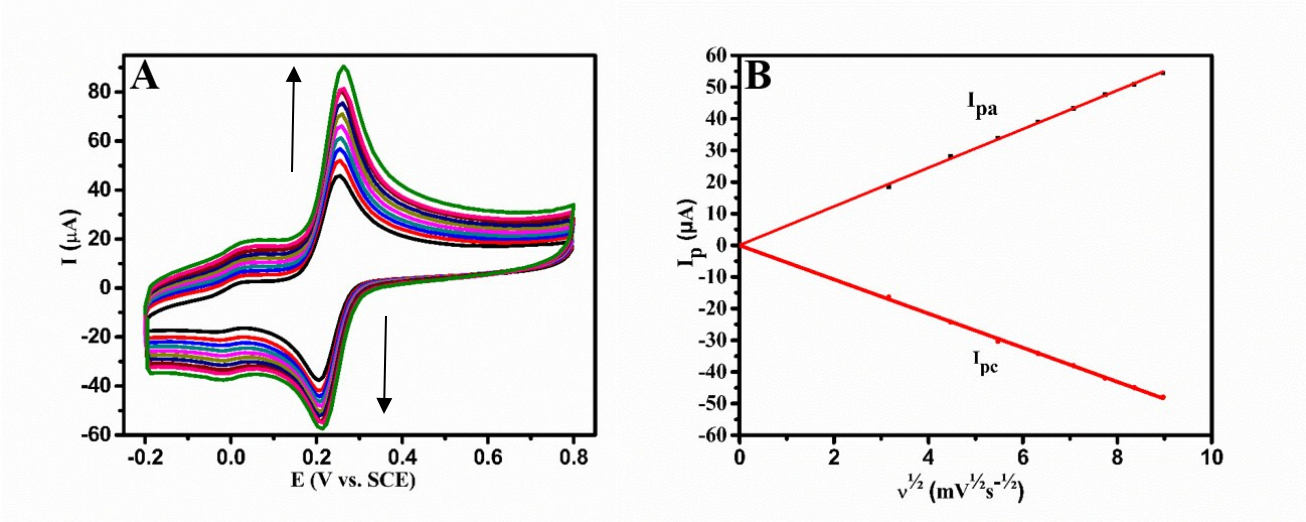


Figure S13. (A) Cyclicvoltammogram of dopamine grafted ERG/PMB modified electrode after washing with Scan rates from 50, 80, 100, 120, 140, 160, 180, 200 and 250 mV s^{-1} and (B) peak current vs square root of scan rate.

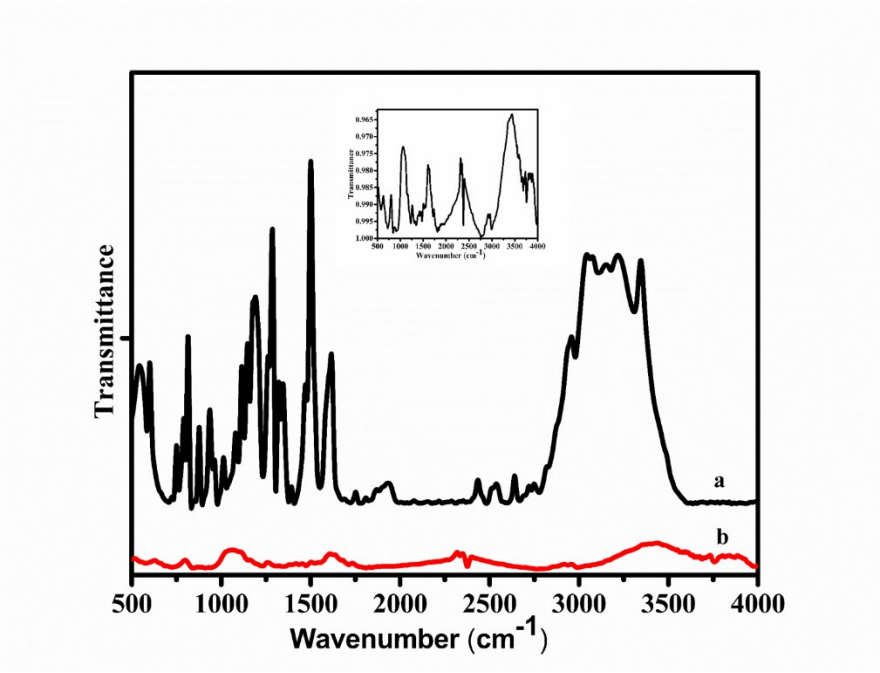
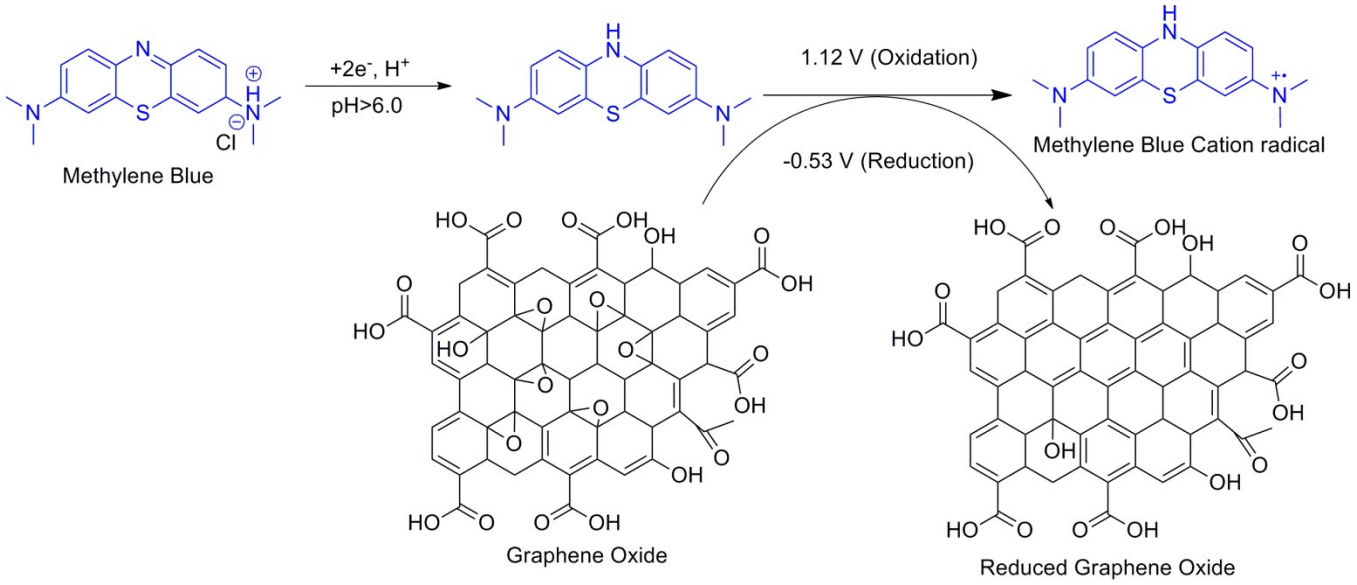


Figure S14. FT-IR Spectrum of (a) dopamine and (b) Oxidative Grafted dopamine on ERG/PMB modified electrode surface.

SCHEME



Scheme S1. Mechanism of ERG/PMB composite formation by Electrochemical Polymerization method.