

Electronic Supplementary Material (ESI) for RSC Advances

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Direct electrochemical deposition of polyaniline nanowire arrays on reduced graphene oxide modified graphite electrode for direct electron transfer biocatalysis

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Optimization of polyaniline(PANI) nanowires array electrochemical polymerization.

The Morphology of PANI nanostructures obtained under different electrochemical polymerization conditions was investigated by SEM.

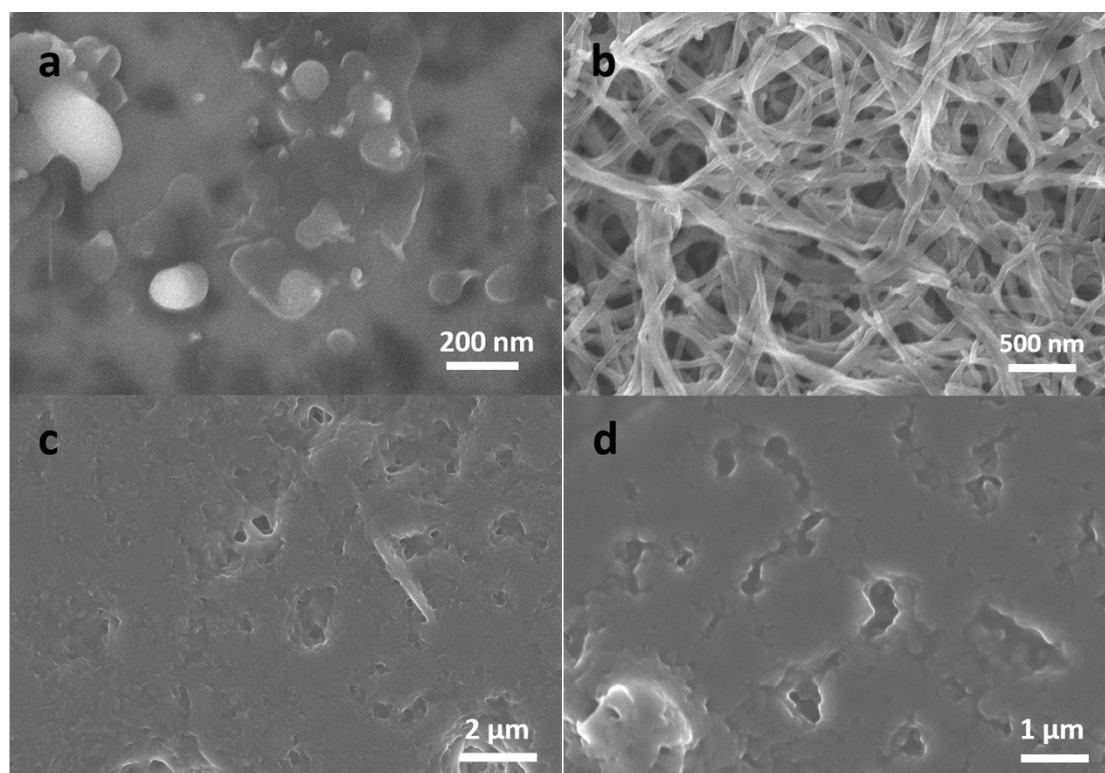


Figure S1. SEM image of PANI modified RGO/GE obtained under different electrochemical parameters (a) $0.006 \text{ mA}\cdot\text{cm}^{-2}$; (b) $0.02 \text{ mA}\cdot\text{cm}^{-2}$; (c) $0.08 \text{ mA}\cdot\text{cm}^{-2}$ by a constant current technique, and (d) by constant potential method with an applied potential of 0.8 V . Electrolyte solution was composed of 0.1 M aniline and 1 M HClO_4 . Time performed is 40mins.

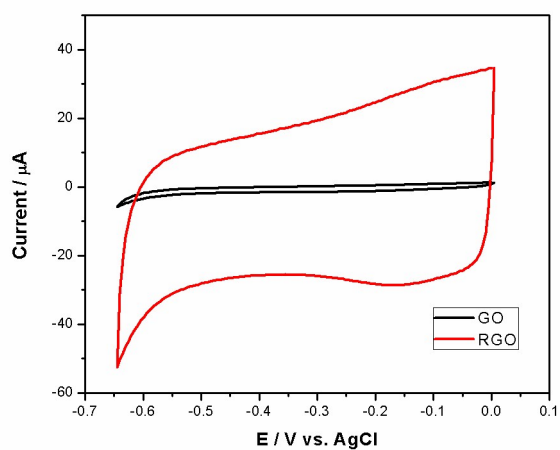


Figure S2. Cyclic voltammograms of GO/GE (black) and RGO/GE (red), the GO/GE was electrochemically reduced to RGO/GE by applying a -1.0V potential for 200 seconds.

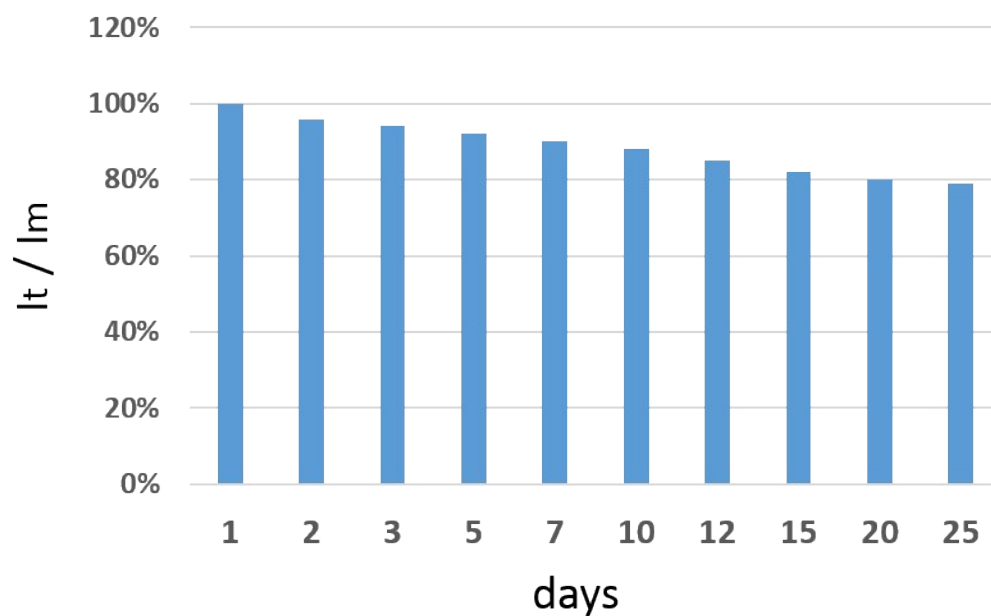


Figure S3. Stability of the PANI nanowire arrays based glucose sensor. I_t refers to the steady state current of the amperometric response of the same glucose sensor towards 5 mM glucose that tested at different time, I_m refers to the steady state current obtained at the first test. I_t/I_m indicates the response current remained.