Electronic Supplementary Material (ESI) for Analyst.

Supporting information

Non-invasive Detection of Glucose Based on Solution-Gated Graphene Transistor

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Figures

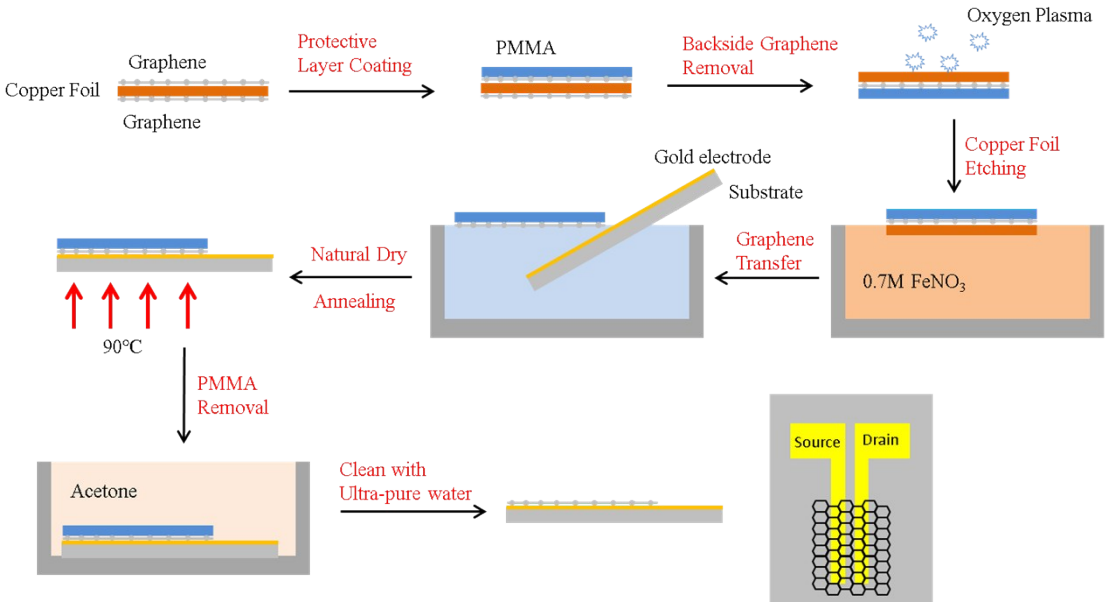

Fig. S1. Process flow for making graphene channels

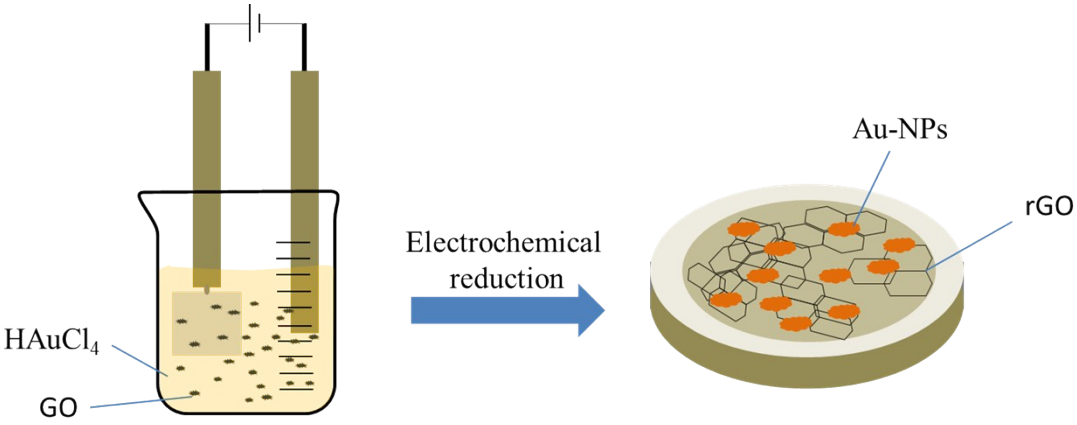

Fig. S2. The production process of working electrode

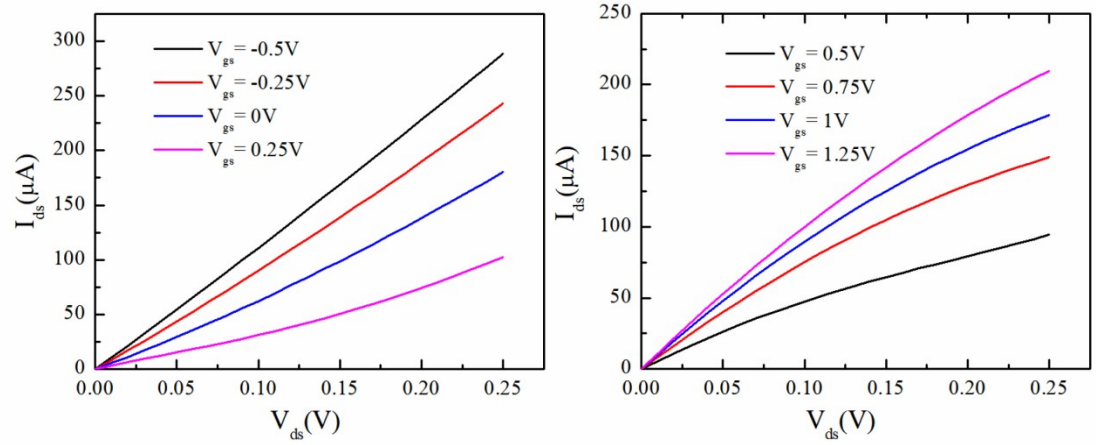

Fig. S3. Relationship between channel current and channel voltage under different gate voltages

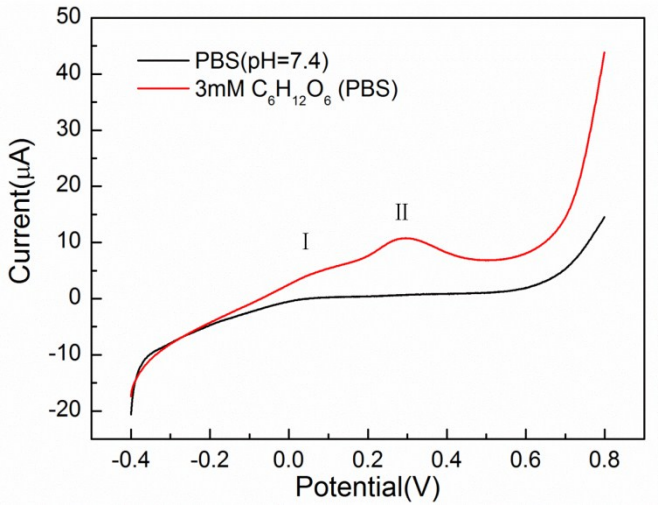

Fig. S4. Linear voltammetry scan (vs. Ag/AgCl) of the gate electrode from -0.4 V to 0.8 V measured in PBS solution (pH=7.4) before and after addition of glucose at a concentration of 3 mM;

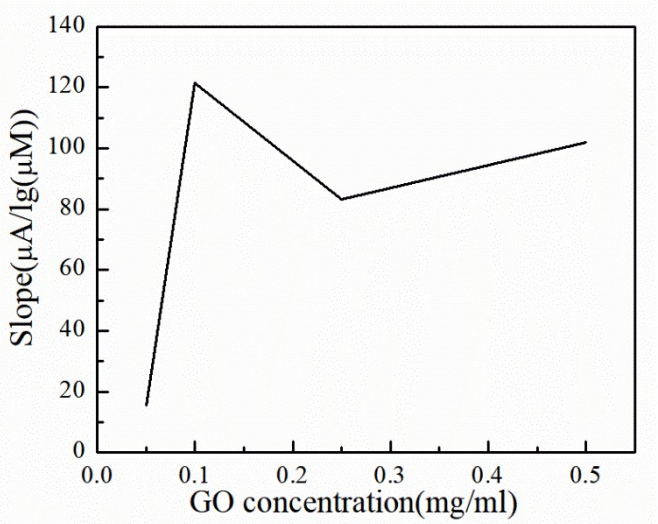

Fig. S5. The sensitivity of different gate electrodes electro-deposited with precursor solution of GO with the concentration of 0.05mg/ml, 0.1mg/ml, 0.25mg/ml and 0.5mg/ml and chloroauric acid with the concentration of 10mM

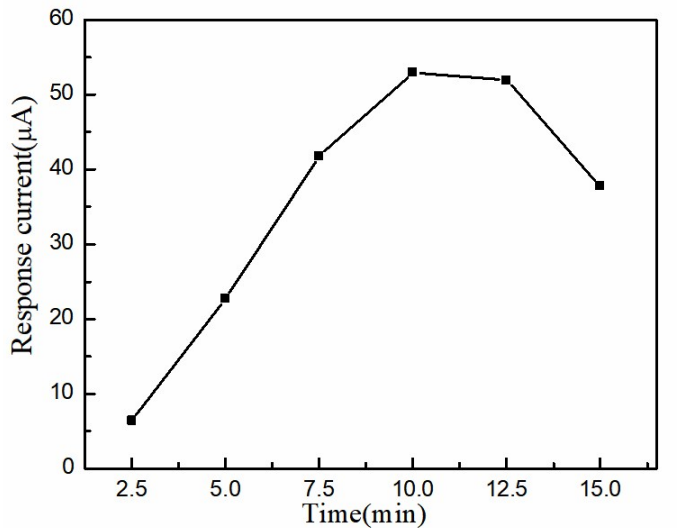

Fig. S6. Response current of different gate electrode electro-deposited for different times

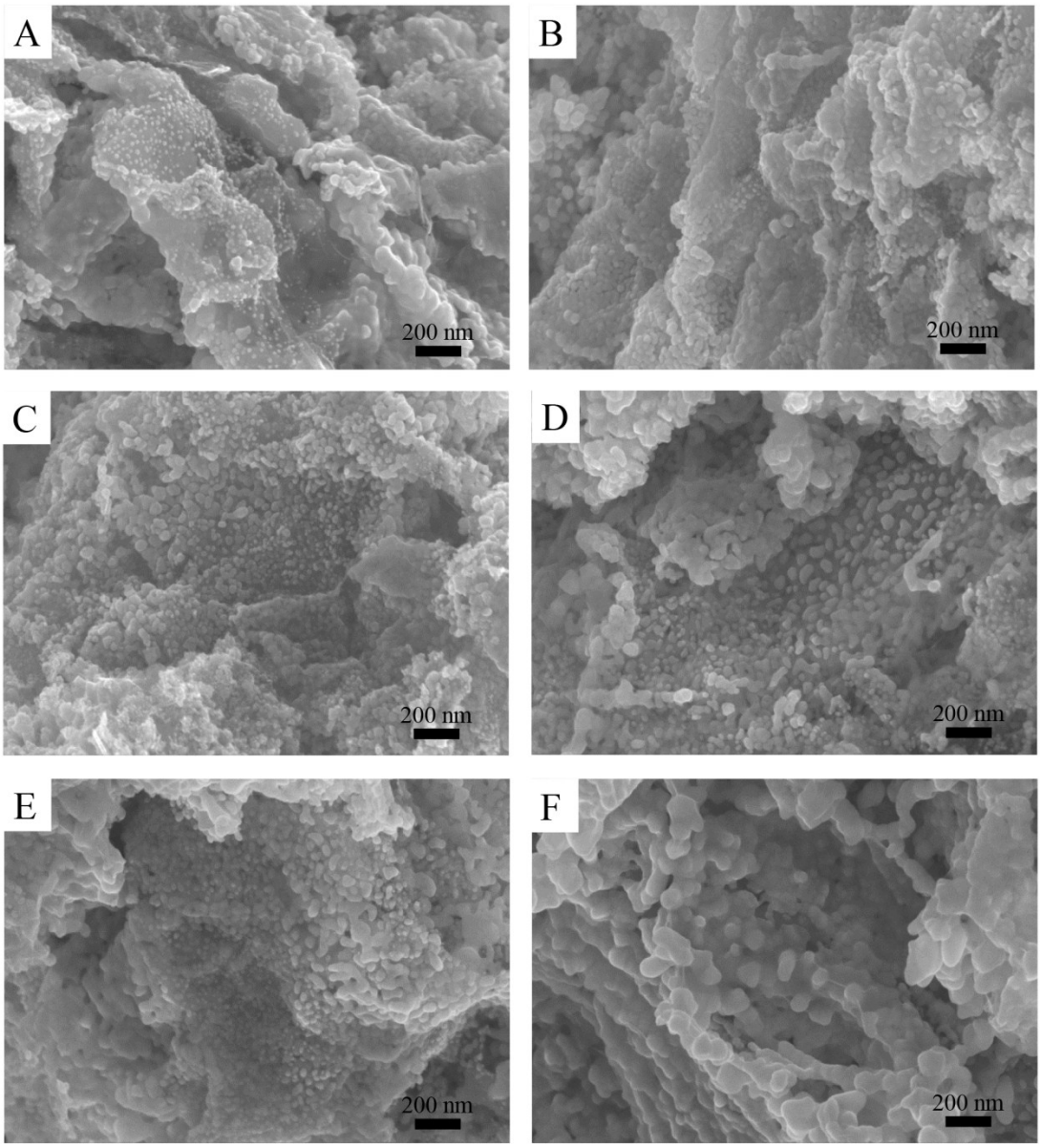

Fig. S7. The SEM images corresponding to Figure 4

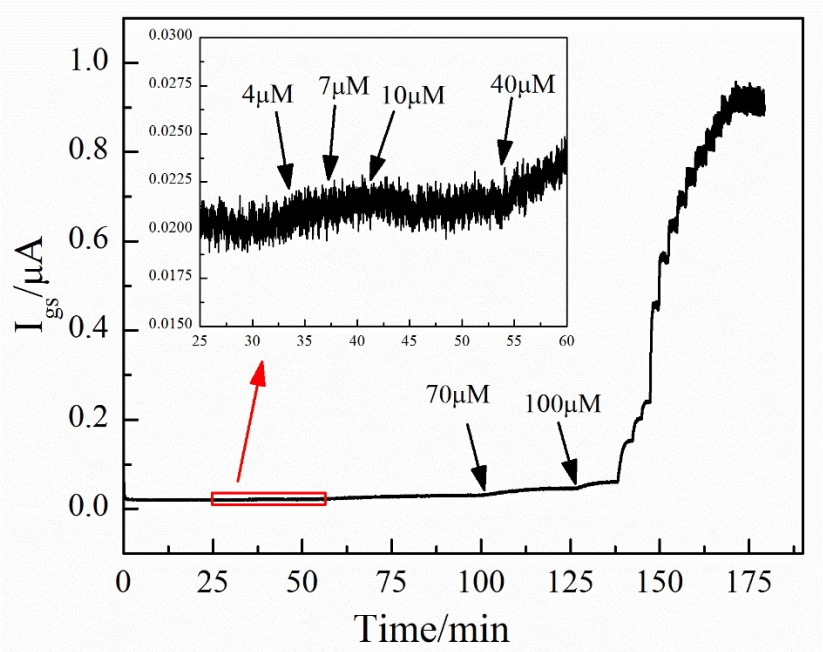

Figure S8. Gate current (I_{gs}) response of a SGGT with gate electrode decorated by AuNPs/RGO to additions of glucose with different concentrations measured at V_{gs} = 0.5 V and V_{ds} = 0.05 V; inset: Partial enlargements of the current response of the SGGT sensor to low glucose concentrations. The gate current (I_{gs}) response corresponded to Figure 5C.

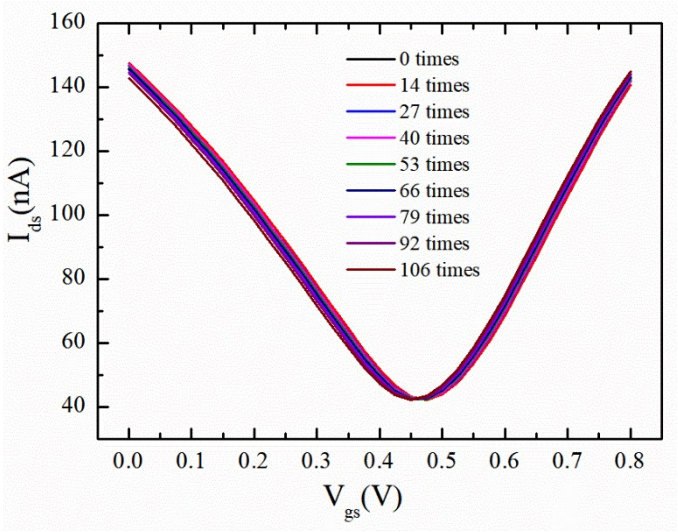

Fig. S9. The transfer characteristics of an OECT measured in PBS solution more than 100 times

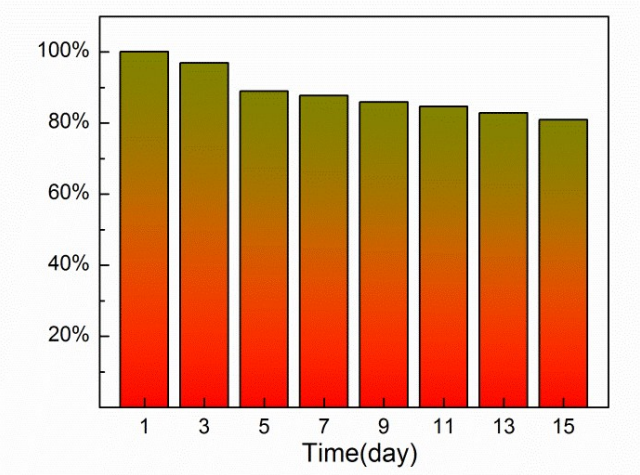

Fig. S10. Stability of the SGGT stored in refrigerator over half month with the addition of 0.3 mM glucose.