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 $V_{gs} = 0.5 \, \text{V}$ and $V_{ds} = 0.05 \, \text{V}$; 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.