Electronic Supplementary Material (ESI) for Analyst.

Supporting Information

3D Porous Graphene Aerogel@GOx Based Microfluidic Biosensor for Electrochemical Glucose Detection

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Contents

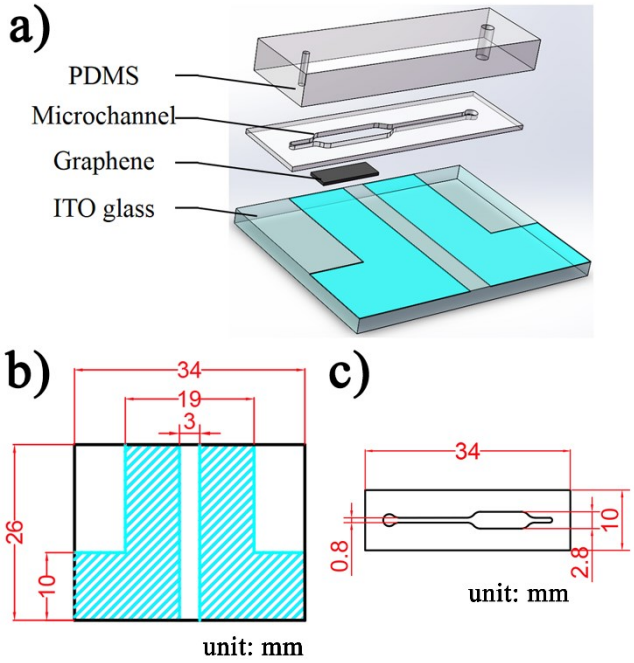

Fig. S1 (a) The structure of the microfluidic biosensor and the dimensions of (b) ITO glass and (c) microchannel.

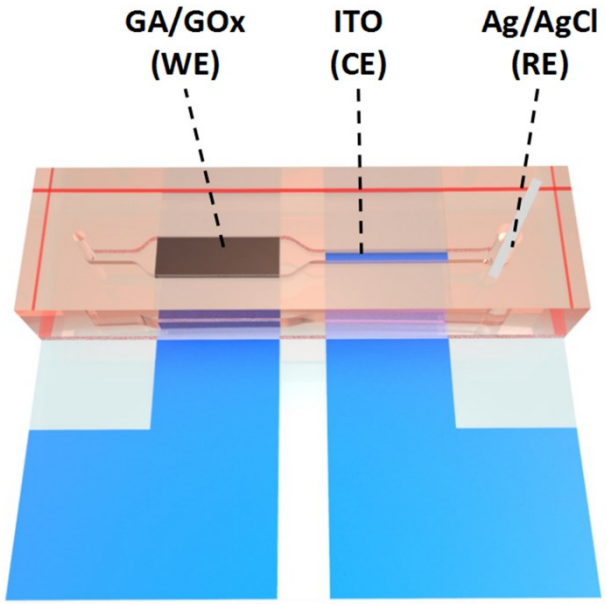

Fig. S2 The position of each electrode of the sensor.

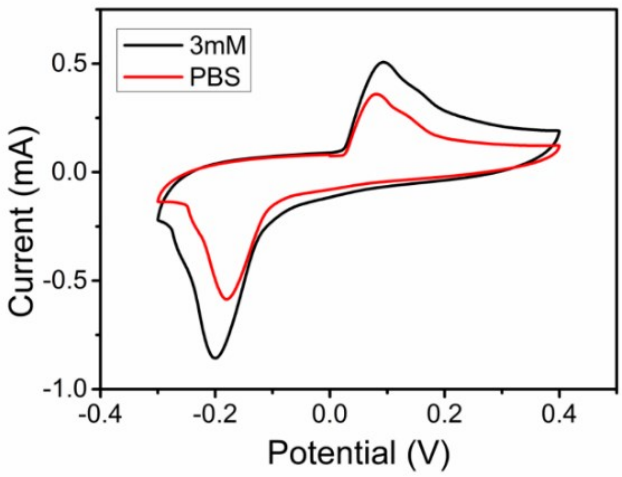

Fig. S3 Cyclic voltammetry (CV) curves of the 3D graphene electrode immersed in PBS in presence and absence of 3mM H_2O_2.

Table S1 Comparison of the proposed biosensor with other glucose sensors.

Modified electrode	Potential (V)	Liner range (mM)	LOD (mM)	Sample consumption (μL)	Refs.
FCA/GOx/PAD	0.4	1-12	0.05	10	[1]
CS-GA-NiNPs/SPE	0.6	0.2-9	0.0041	8	[2]
PtNPs/GA/Au/GOx	0.4	0-10	0.05	—	[3]
4-APBA/GOx/SPCE	0.2	0-100	0.86	25	[4]
AuNPs/GOx/WCE	0.4	1-20	1	—	[5]
CI/GOx/ChrPr/CMOS	0.6	1-10	1	—	[6]
GA//PANI/AuNPs/GOx/SPE	-0.42	0.2-11.2	0.1	17	[7]
PERs/BIA/SPE	-0.25	1-10	0.11	10	[8]
GA/GOx	-0.3	1-18	0.87	3	This work

FCA: ferrocenecarboxylic acid; GOx: glucose oxidase; PAD: paper-based analytical devices; CS: chitosan; GA: graphende; SPE: screen-printed electrodes; 4-APBA: 4-aminophenylboronic acid; SPCE: screen-printed carbon electrodes; WCE: writing carbon electrode; CI: carbon ink; ChrPr: chromatography paper; CMOS: complementary metal-oxide-semiconductor; PANI: polyaniline; PERs: paper-based enzymatic reactors; BIA: batch injection.

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