

Supporting Information for

"Sensitive Enzymatic Glucose Detection by TiO₂ Nanowire Photoelectrochemical Biosensors"

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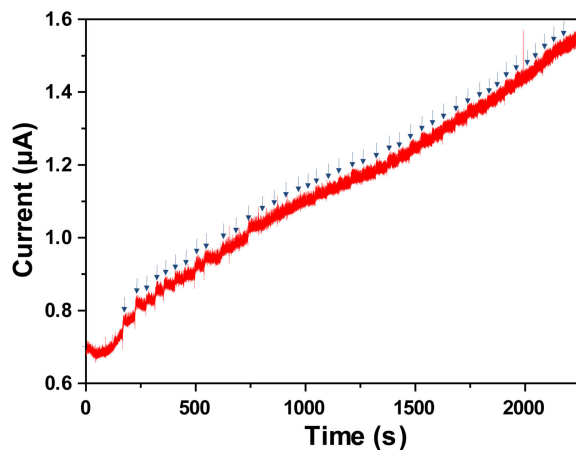


Figure S1. Photocurrent vs. time data of a GOx-functionalized TiO₂ nanoparticle (P25) PEC sensor for successive addition of glucose at 0.3 V vs. Ag/AgCl under sun light illumination. Each arrow indicates the addition of glucose into buffer, with a final glucose concentration increase of 200 µM each time.

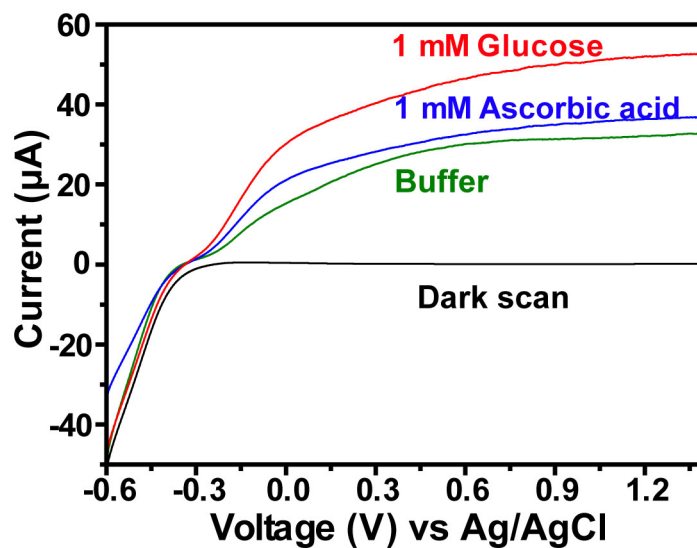


Figure S2. Line sweep voltammograms of photocurrent for a TiO₂-GOx NW biosensor under PBS buffer (green curve), 1 mM ascorbic acid (blue curve), and 1 mM glucose (red curve). The dark current of the TiO₂-GOx NWs is also plotted (black curve) for comparison.

Table S1. Comparison of photoelectrochemical glucose sensing performance of the present work with previously reported methods.

Methods	Linear Range	Detection Limit	Reference
GOx-functionalized TiO ₂ nanowires	0.15 – 1000 μM	0.9 nM	Present work
GOx/CdS nanoparticles	1 μM – 2.5 mM	1 μM	S1
Glucose oxidase (GOx)/zinc oxide	0 – 25 mM	5.6 μM	S2
TiO ₂ /CdSe@CdS QD nanocomposite with glucose oxidase	1 – 10 mM	< 0.05 mM	S3
Hemin/G-Quadruplex-stimulated chemiluminescence resonance energy transfer	5 – 40 mM	< 10 mM	S4
Anatase TiO ₂ modified electrode	0.02 – 5.0 mM	0.02 mM	S5
WO ₃ nanoparticles decorated core-shell TiC-C nanofiber arrays	1 – 10 μM	11.2 nM	S6
Nickel oxide nanoflake arrays	10 – 800 μM	1.2 μM	S7

References:

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