

Electronic Supporting Information

Super Electron Transfer Channels Enable Prussian-Blue-Like Nanocarbon Felts for Ultrasensitive Glucose Biosensing Applications

Taotao Liang,^a Xiaogang Guo,^{*b} Ran Jin,^c Molong Chen,^a Junfeng Guo,^a Chuyue Tang,^a Hong Zhao,^b Xun Cui,^{*c} Yihuang Chen,^{*d} Lin Guo^{*a}

^aSports Medicine Center, The First Affiliated Hospital of Army Medical University, Chongqing 400038, China. E-mail: guolin6212@163.com

^b College of Chemistry and Chemical Engineering, Yangtze Normal University, Chongqing 408100, China. E-mail: guoxiaogang0528@126.com

^c State Key Laboratory of New Textile Materials and Advanced Processing, Wuhan Textile University, Wuhan 430200, China. E-mail: xcui@wtu.edu.cn

^d College of Chemistry and Materials Engineering, Wenzhou University, Wenzhou 325035, China. E-mail: yhchen@wzu.edu.cn

Figures and Table:

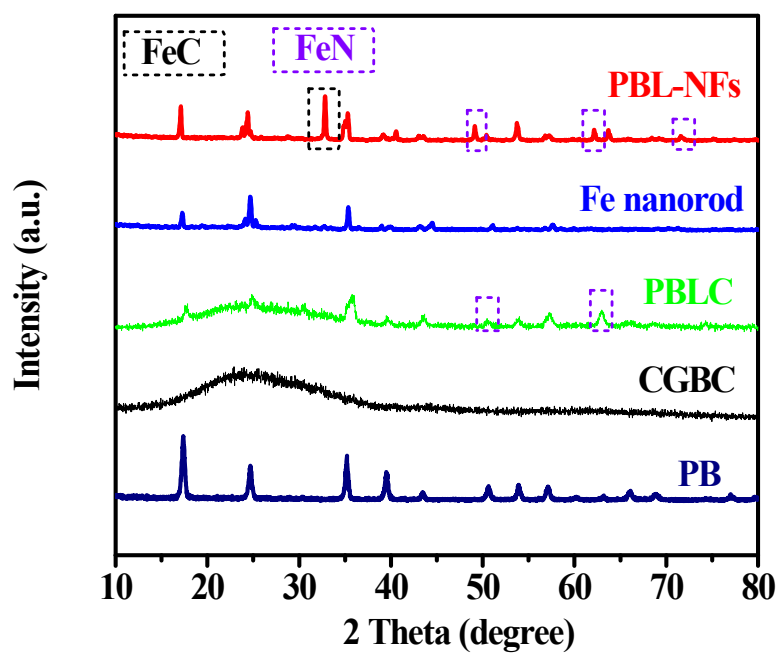


Figure S1. Typical X-ray diffraction (XRD) pattern patterns of CGBC (black line), prussian blue (PB, navy line), PBL-C (green line), Fe nanorod (blue line), PBL-NFs (magenta line).

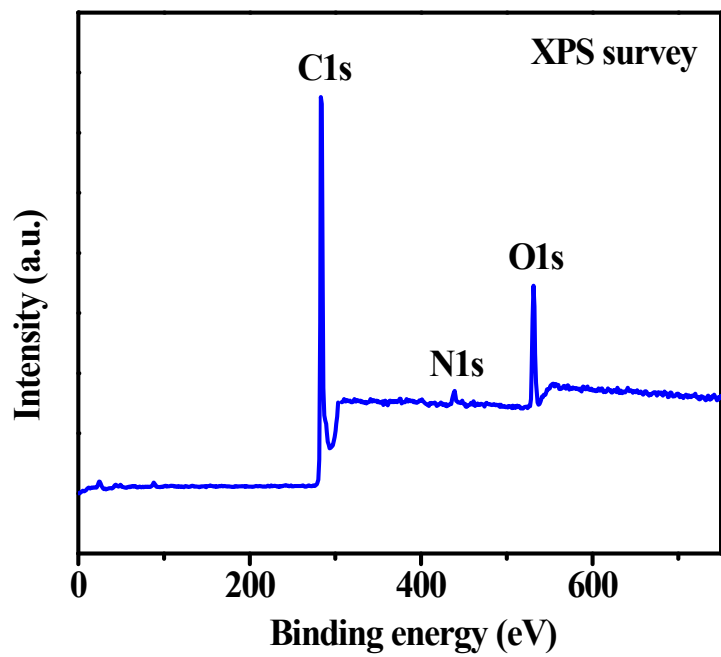


Figure S2. XPS survey spectra of as-obtained CGBC.

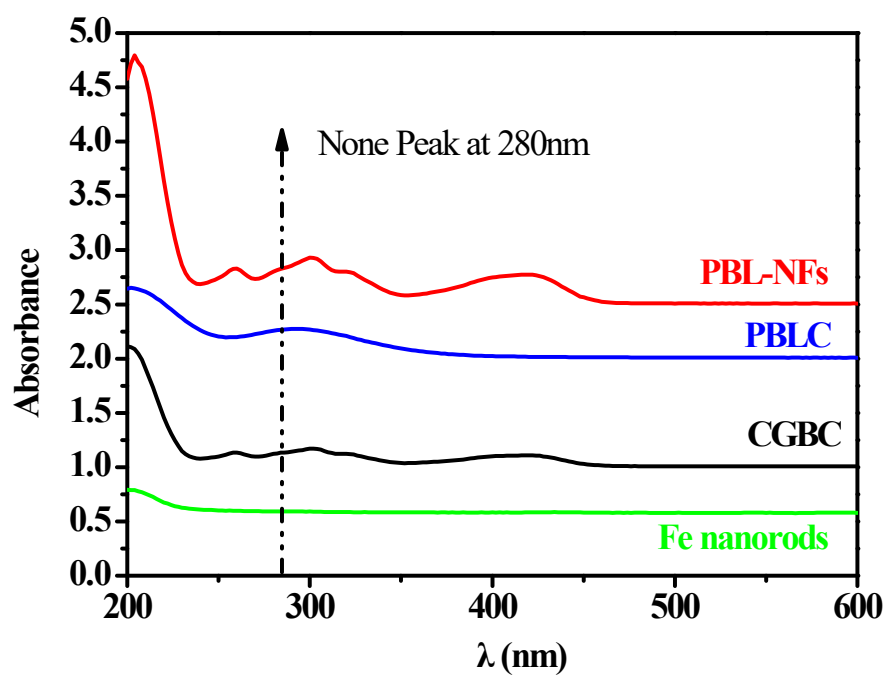


Figure S3. The UV-Vis spectrum of materials including Fe nanorods, CGBC, PBL, and PBL-NFs.

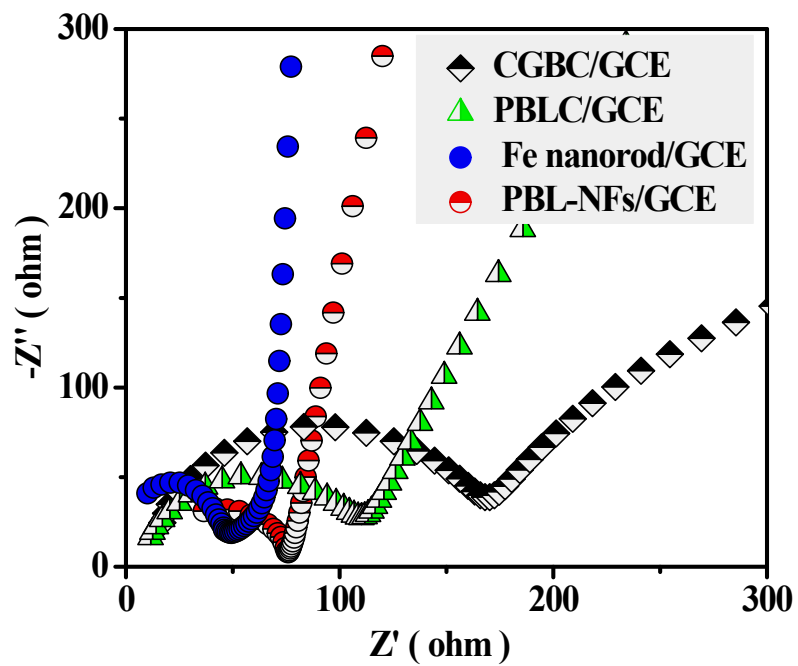


Figure S4. EIS measurements of CGBC, Fe nanorods, PBLc and PBL-NFs in 0.01 M PBS at a scan rate of 50 mV s^{-1} .

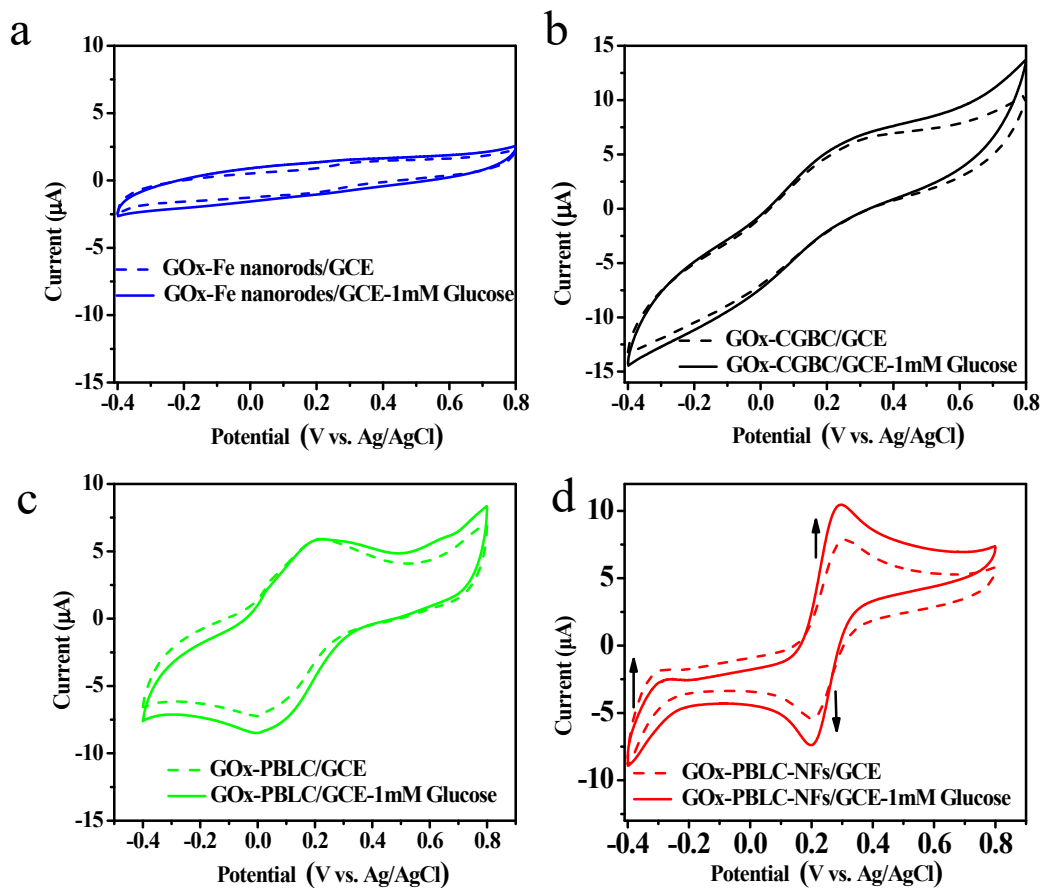


Figure S5. CV curves of different enzyme-modified electrodes (dotted line) and their electrochemical response to 1 mM glucose (solid line): (a) GOx-Fe nanorod/GCE, (b) GOx-CGBC/GCE, (c) GOx-PBLC/GC, (d) GOx-PBL-NFs/GCE in 0.01M PBS at a scan rate of 50 mV s^{-1} .

Table S1. Comparison of the analytical results of glucose sensing in human serum based on the present method and glucometer.

Sample Category	Sample ID	Determined by glucometer (mM)	Determined by this biosensor (Mean \pm SD, mM) ¹	Recovery ² (%)	RSD (%) ¹
Hypoglycemic	1	1.0	0.92 \pm 0.05	92.0	5.5
	2	2.5	2.45 \pm 0.14	98.0	5.8
Normoglycemic	3	4.5	4.35 \pm 0.20	96.7	4.6
	4	6.5	6.26 \pm 0.33	96.3	5.2
Hyperglycemic	5	7.5	7.60 \pm 0.41	101.3	5.4
	6	9.5	9.32 \pm 0.57	98.1	6.1

¹ The mean value, standard deviation (SD), and relative standard deviation (RSD) were calculated from three parallel measurements of the same serum sample using the fabricated biosensor.

² Recovery (%) = (Mean value obtained by biosensor/Value obtained by glucometer) *100%.