Electronic Supplementary Material (ESI) for Analytical Methods.


# Supporting Information

## Facile and controllable synthesis of Prussian blue nanocubes on $TiO_2$-graphene composite nanosheets for nonenzymatic detection of hydrogen peroxide

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**Legends of supplemental figures:**

**Table S1** EIS parameters of different modified electrodes in 5 mM $[Fe(CN)_6]^{3-/4-}$ and 0.1 M KCl at a scan rate of 100 mV $s^{-1}$

**Fig. S1** CVs for the electrodepostion of PB film on $TiO_2$-GR/GCE by continuous potential cycling for 20 cycles between –0.15 V and 0.4 V at a scan rate of 0.05 V $s^{-1}$ in a solution including 25 mM $FeCl_3$, 25 mM $K_4Fe(CN)_6$, 0.1 M KCl and 0.1 M HCl.

**Fig. S2** FT-IR spectra of (a) GO and (b) GR.

**Fig. S3** Nyquist plots of (a) GCE, (b) GR/GCE, (c) $TiO_2$/GCE, (d) $TiO_2$-GR/GCE, (e) PB/$TiO_2$-GR/GCE and (f) Nafion/PB/$TiO_2$-GR/GCE in 5 mM $[Fe(CN)_6]^{3-/4-}$ containing 0.1 M KCl.

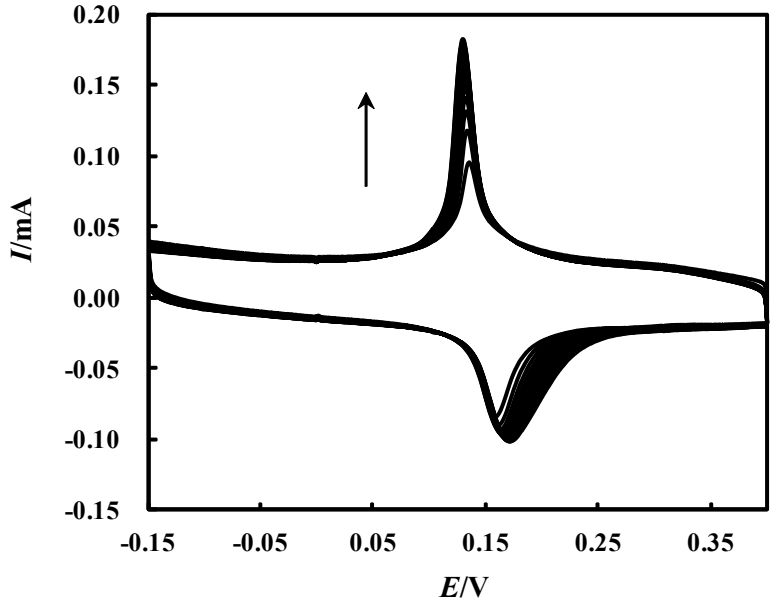
**Fig. S4** Cyclic voltammograms of (A) PB/$TiO_2$-GR/GCE and (B) Nafion/PB/$TiO_2$-GR/GCE in 0.1 M PBS + 0.1 M KCl (pH 6.0) at a scan rate of 50 mV $s^{-1}$ with 50 cycles.

**Fig. S5** Effects of applied potential on the peak currents of Nafion/PB/GR-$TiO_2$/GCE in 0.1 M PBS and 0.1 M KCl (pH 6.0).

**Table S1**

EIS parameters of different modified electrodes in 5 mM $[Fe(CN)_6]^{3-/4-}$ and 0.1 M KCl at a scan rate of 100 mV $s^{-1}$

| Electrode | $R_s$ (Ω) | $C_{dl}$ (F) | $n$ | $R_{ct}$ (Ω) | $W$ (Ω) |
|---|---|---|---|---|---|
| Bare GCE | 145.1 | 3.57E−6 | 0.8233 | 100.8 | 0.4341 |
| GR/GCE | 115.4 | 1.17E−3 | 0.2853 | 44.2 | 0.5445 |
| $TiO_2$/GCE | 152.6 | 1.64E−6 | 0.9010 | 366.9 | 0.4676 |
| $TiO_2$-GR/GCE | 115.1 | 1.18E−3 | 0.2935 | 53.25 | 0.6314 |
| PB/$TiO_2$-GR/GCE | 103.2 | 1.83E−4 | 0.4610 | 26.41 | 0.002438 |
| Nafion/PB/$TiO_2$-GR/GCE | 90.53 | 5.82E−4 | 0.4060 | 46.89 | 0.7943 |

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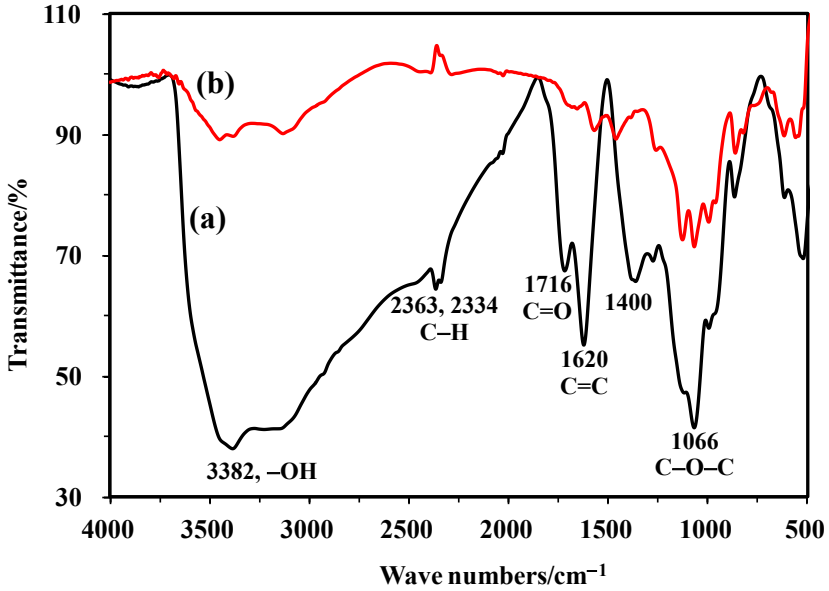
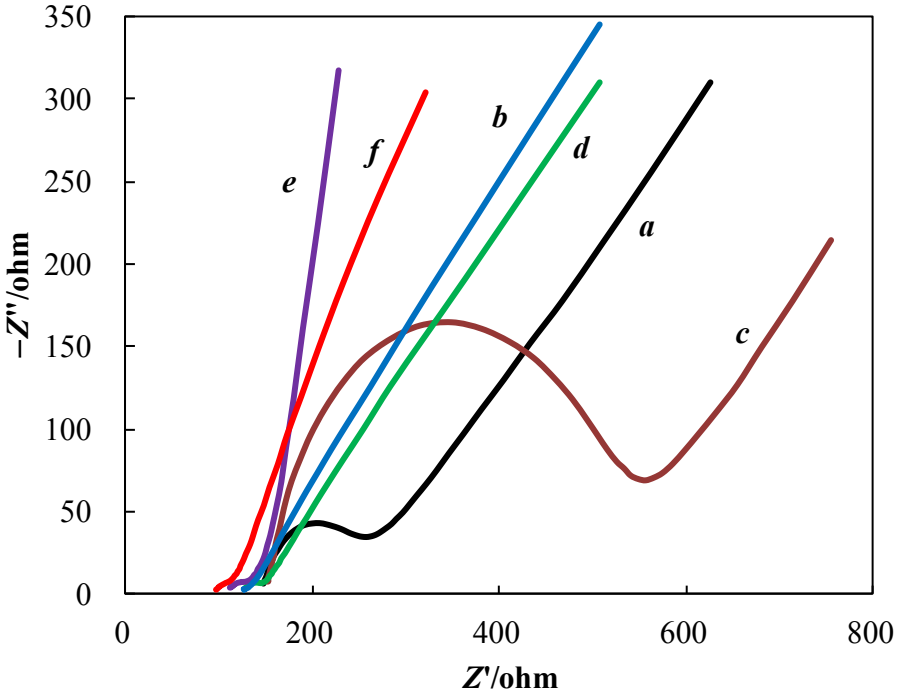



**Fig. S2** FT-IR spectra of (a) GO and (b) GR.

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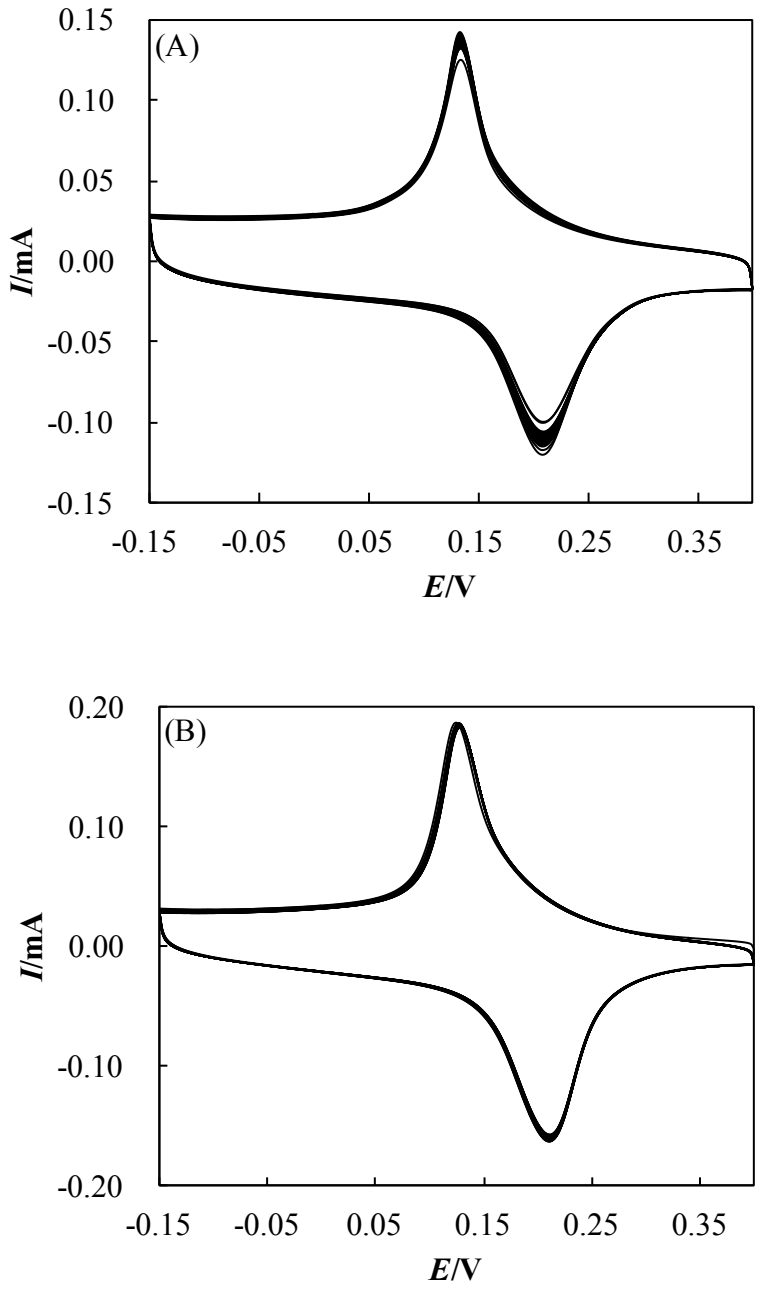


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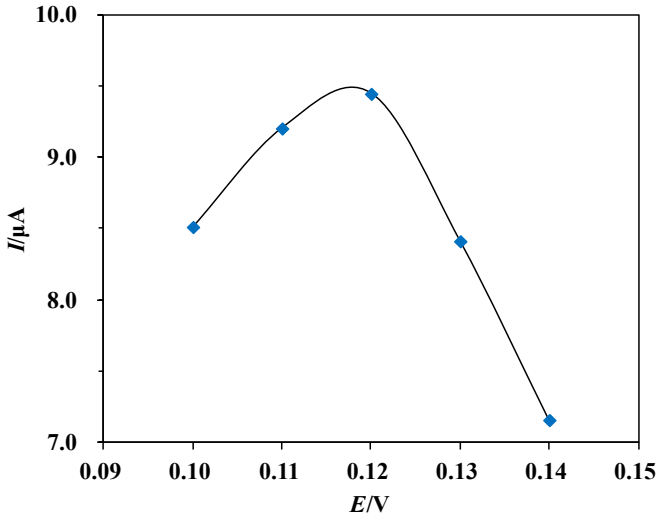


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