

## Supporting material

### Direct electrochemistry and electrocatalysis of glucose oxidase based on poly (L-arginine)-multi-walled carbon nanotubes

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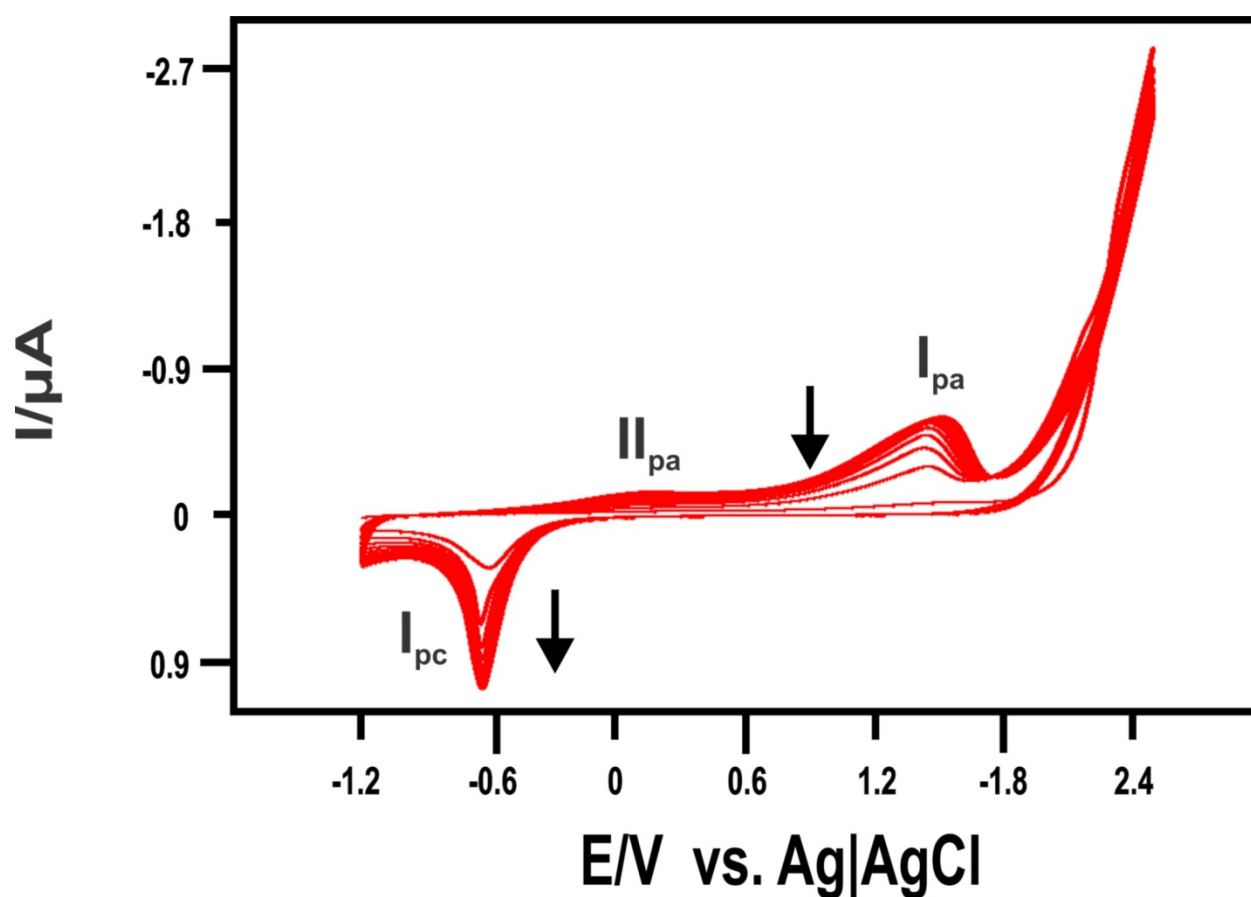


Fig. S1. Repetitive cyclic voltammograms of 10mM of L-Arg in pH 6 PBS at the *f*-MWNTs/GCE surface. Scan rate: 100mVs<sup>-1</sup>.

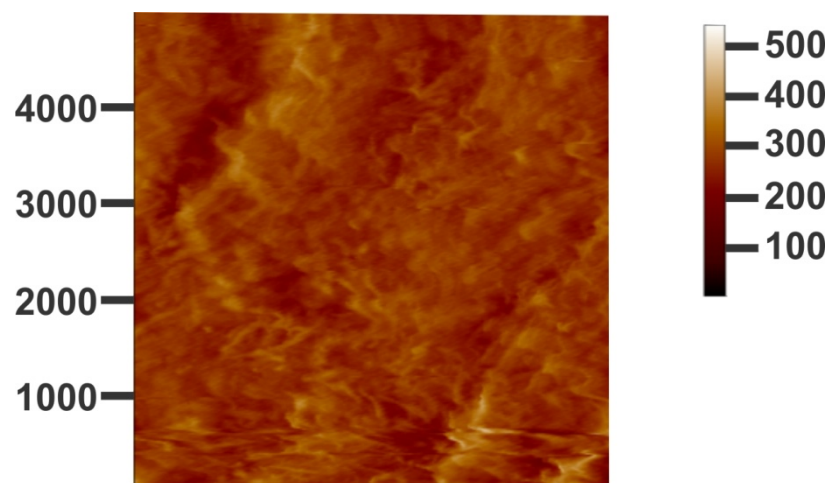


Fig. S2. AFM images of *f*-MWCNTs films.

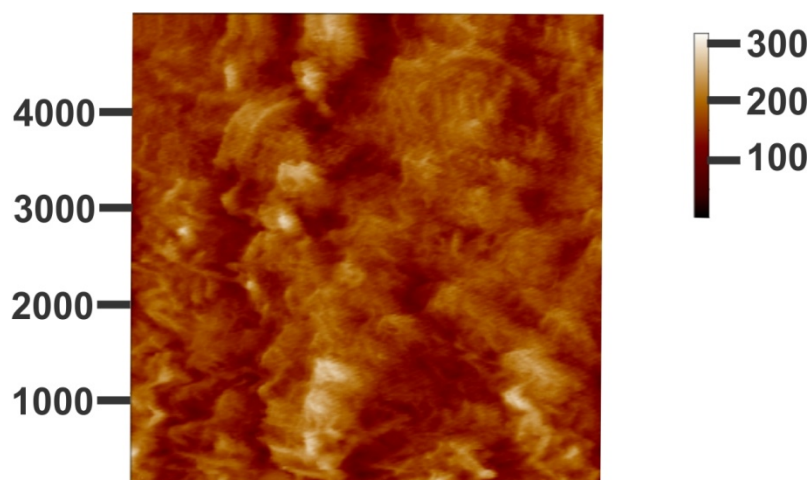


Fig. S3. AFM images of P-L-Arg/*f*-MWCNTs films.

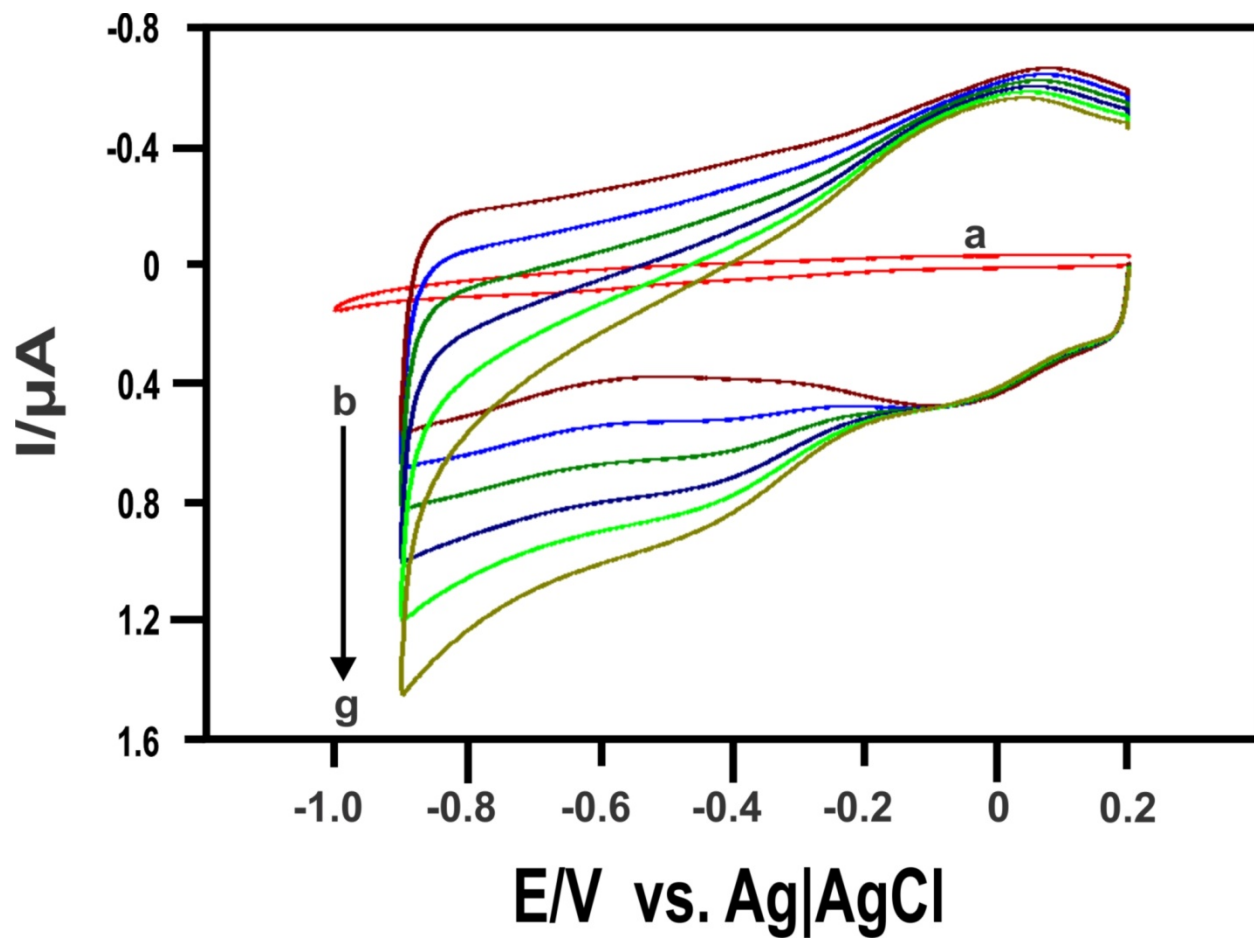
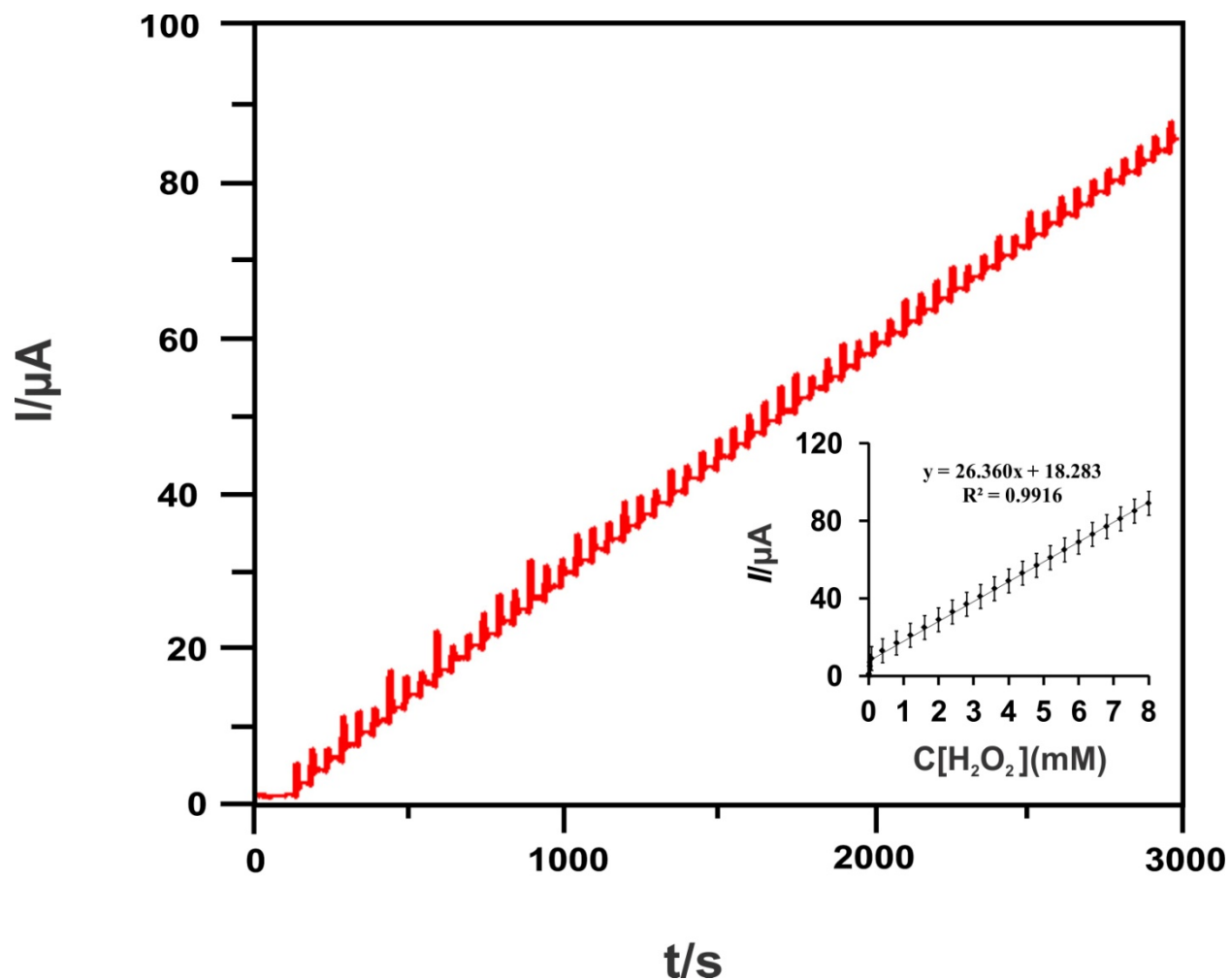


Fig.S4. Bioelectrocatalysis of the P-L-Arg /f-MWCNTs/GCE towards  $\text{H}_2\text{O}_2$  in PBS (pH 6.5) with the scan rate of  $0.5 \text{ V s}^{-1}$  and  $\text{H}_2\text{O}_2$  concentrations of (a) Bare GCE (b) 0, to (g) 5, mM.



**Fig.S5.** Amperometric response of P-L-Arg /f-MWCNTs/GCE modified electrode during various successive addition  $\text{H}_2\text{O}_2$ : conditions -0.4 V constant potential in pH 6.5 and rotation speed 2000 rpm. Inset plots of chrono amperometric current vs.  $\text{H}_2\text{O}_2$  concentration.

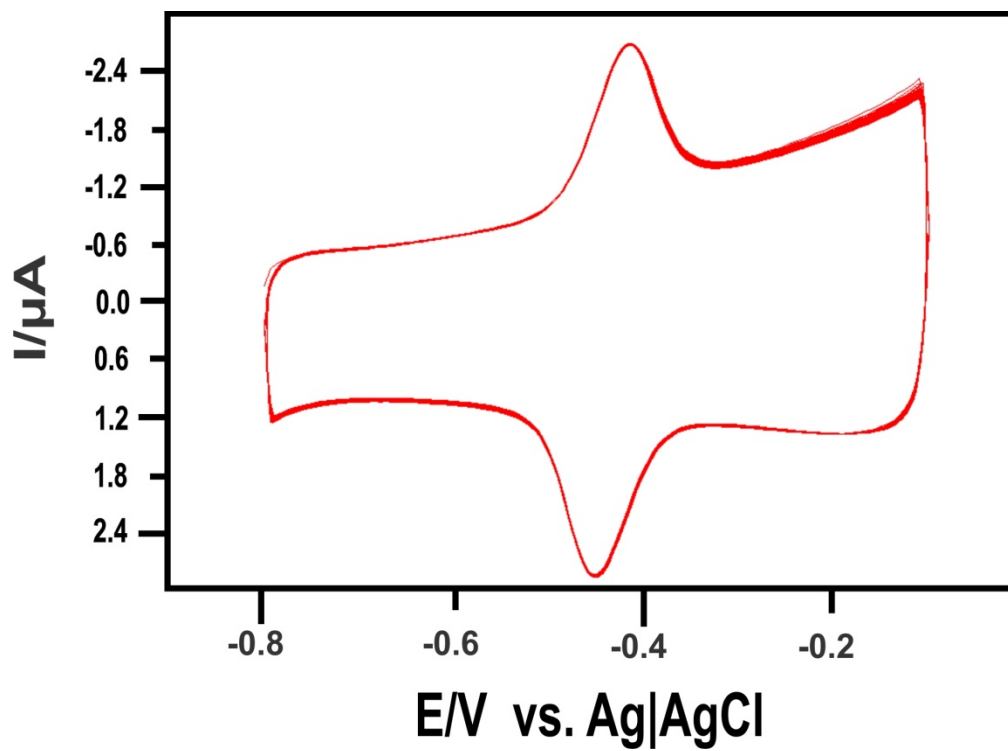


Fig. S6. Cyclic voltammograms for 100 multiple cycles in presences of 10 mM glucose in 0.05M pH 6.5 at a scan rate of 100 mV s<sup>-1</sup>.