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Fig. A. UV-Vis absorption spectrum of PB nanoparticles in solution.



**Fig. B.** TEM images for PB nanoparticles using  $\beta$ -CD/Fe<sup>2+</sup> ratio of 20 (left) and 1.5 (right).

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Fig. C. FTIR spectrum of PB-CD using  $\beta$ -CD/Fe<sup>2+</sup> stoichiometry ratio of 10.

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**Fig. D.** SEM images for: a) PAH, b) PB and c) PB-CD monolayers and d) {PAH/PB-CD}<sub>1</sub> deposited onto ITO substrates.

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**Fig. E.** SEM images for {PAH/PB-CD}<sub>2</sub> (left) and {PAH/PB-CD}<sub>4</sub> (right) deposited onto ITO substrates.

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**Fig. F.** Cyclic voltammograms for: **a**) ITO covered with 3-bilayers of {PAH/PB-CD} in 0.2 mol L<sup>-1</sup> KCl solution at scan rate of 10, 30, 50, 70, 100, 120, 150, 200, 250, 350, 400 and 500; **b**) Influence of scan rate (10 to 500 mV s<sup>-1</sup>) on oxidation and reduction peak currents for ITO-{PAH/PB-CD}<sub>3</sub>

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electrode; c) Plot of the anodic and cathodic peak currents from  $E_{p1}$  as function of the square root of scan rate.



**Fig. G.** Continuous cyclic voltammograms (9 cycles) for ITO-{PAH/PB-CD}<sub>3</sub> modified electrode in 0.2 mol L<sup>-1</sup> KCl solution. Scan rate = 50 mV s<sup>-1</sup>, T = 25 °C.



**Fig. H.** Cyclic voltammograms of 3-bilayers for PAH/PB-CD and PAH/PB systems in 0.2 mol  $L^{-1}$  KCl solution. Scan rate = 50 mV s<sup>-1</sup>, T = 25 °C.