

Supplementary Information

Electrodeposition of Prussian Blue/Carbon Nanotube Composites at a Liquid-Liquid Interface

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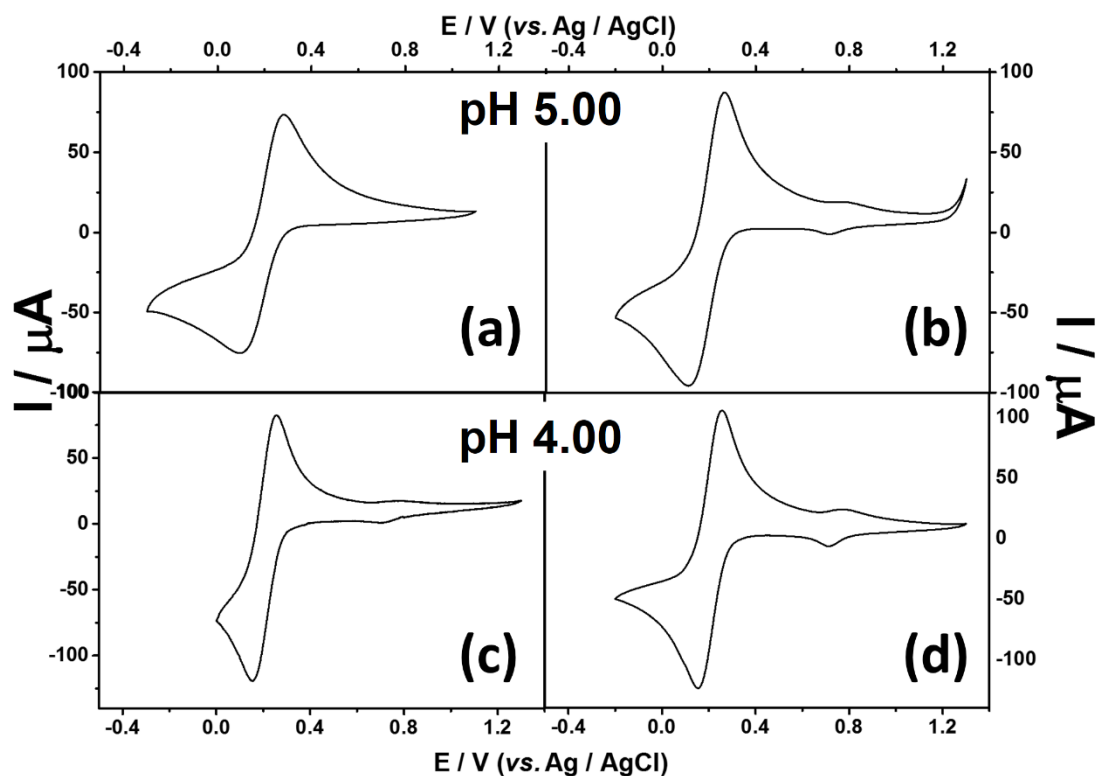


Figure S1. Cyclic voltammetry of CNTs films in KCl (0.1 mol L^{-1}) and $\text{K}_3[\text{Fe}(\text{CN})_6]$ (1.0 mmol L^{-1}) at pH 5 (a and b) and pH 4 (c and d). Scan rate 50 mV s^{-1} . Potential windows (a) -0.3 to 1.1 V ; (b) -0.3 to 1.3 V ; (c) 0.0 to 1.3 V and (d) -0.2 to 1.3 V .

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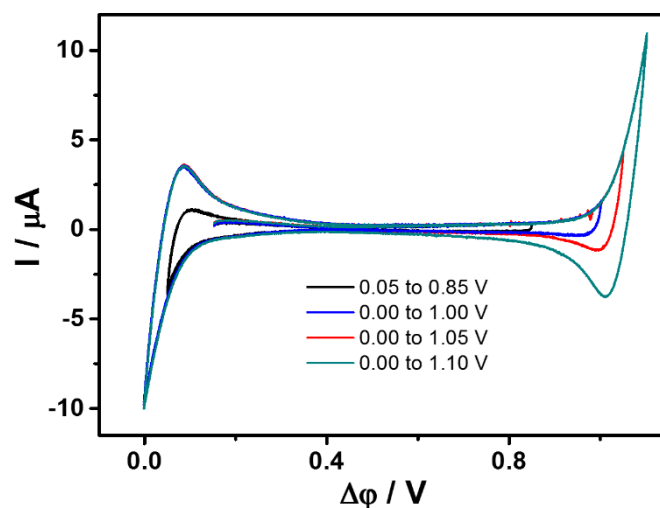


Figure S2. Cyclic voltammetry of the bare water/DCB interface in different potential ranges. Aqueous phase: 0.1 mol L^{-1} LiCl. Scan rate 15 mV s^{-1} .

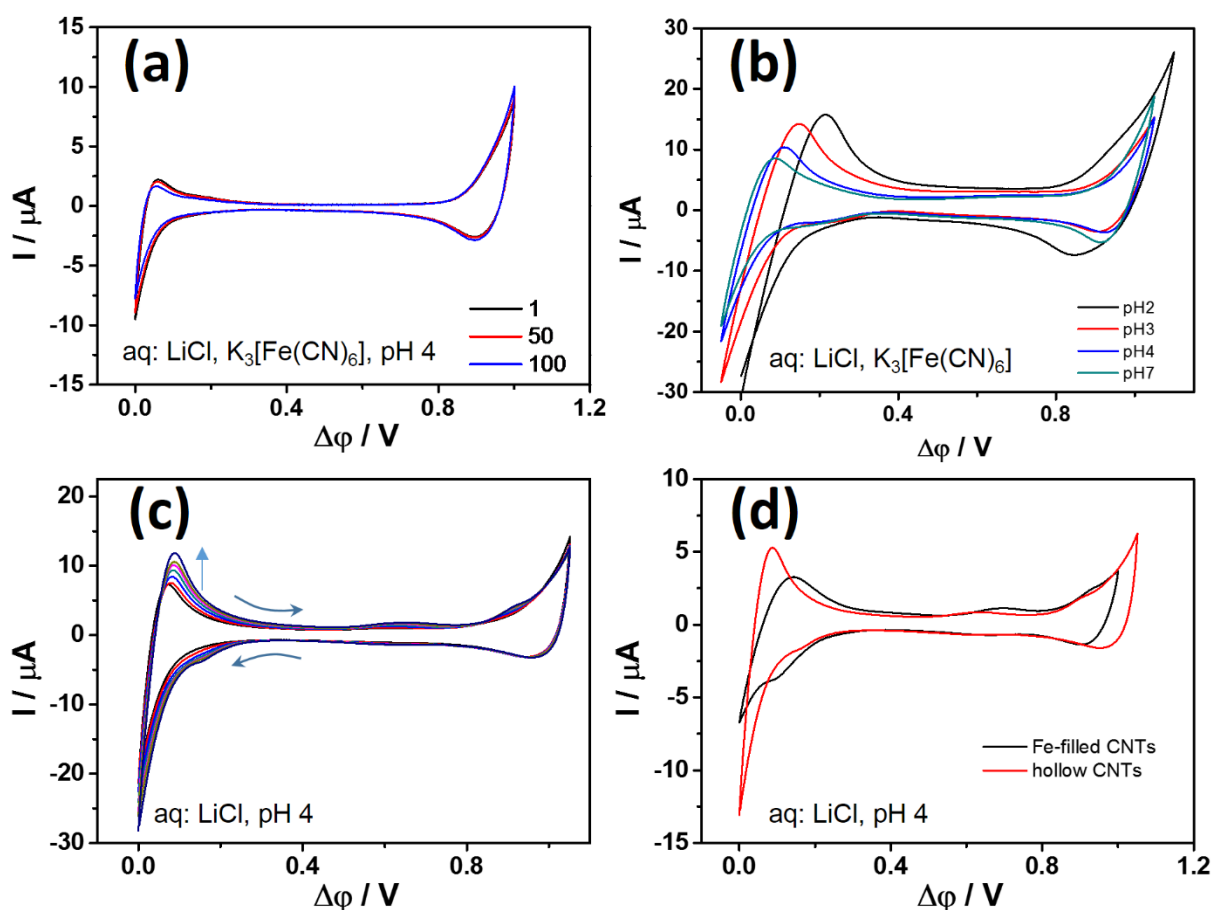


Figure S3. Cyclic voltammetry of the water/DCB interface. Bare interface (a and b) with aqueous phase containing LiCl (0.1 mol L^{-1}) and $\text{K}_3[\text{Fe}(\text{CN})_6]$ (1.0 mmol L^{-1}) at pH 4 (a) and the 50th cycle at different pHs (b). (c) Interface with hollow CNTs (arc discharge) and (d) comparison of the 100th cycle obtained in aqueous solution of LiCl (0.1 mol L^{-1} , pH 4) with hollow and iron-filled CNTs assembled at the L/L interface. Scan rate 15 mV s^{-1} .

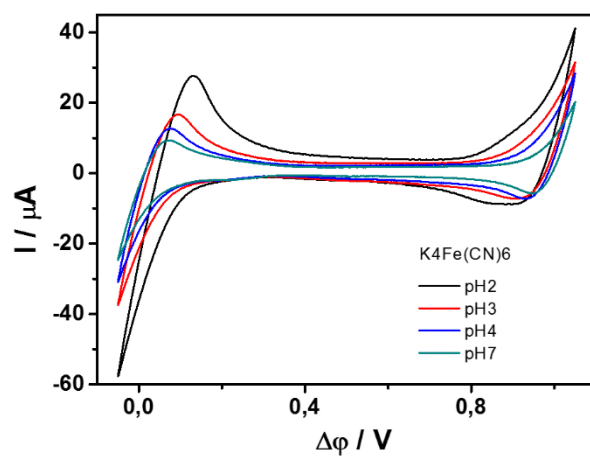


Figure S4. Cyclic voltammetry of the water/DCB interface. Aqueous phase contains LiCl (0.1 mol L^{-1}) and $\text{K}_4[\text{Fe}(\text{CN})_6]$ (1.0 mmol L^{-1}) in solutions of varying pH. Scan rate 15 mV s^{-1} .

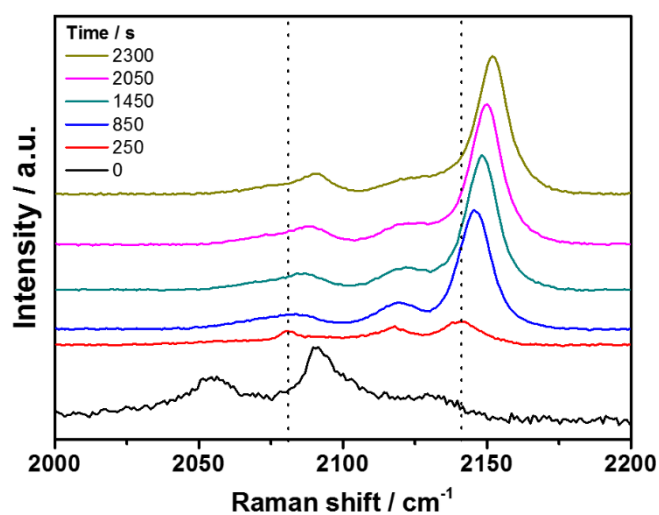


Figure S5. Raman spectra at the L/L interface containing assembled CNTs acquired at different times during chronoamperometry at 1.1 V.

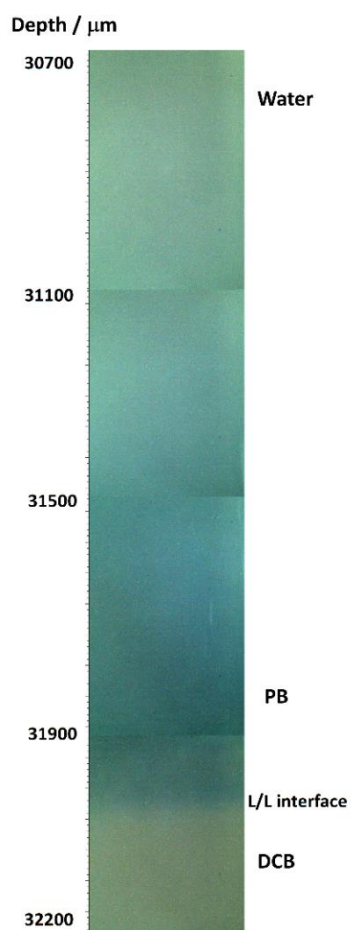


Figure S6. Optical images obtained at different heights of the 4-electrode cell after PB deposition on the water/DCB system containing CNTs assembled at the interface. Electrodeposition under polarization of L/L interface at 1.1 V for 30 min with aqueous solution of $1 \text{ mmol L}^{-1} \text{ K}_3[\text{Fe}(\text{CN})_6]$ and $0.1 \text{ mol L}^{-1} \text{ LiCl}$, pH 3.

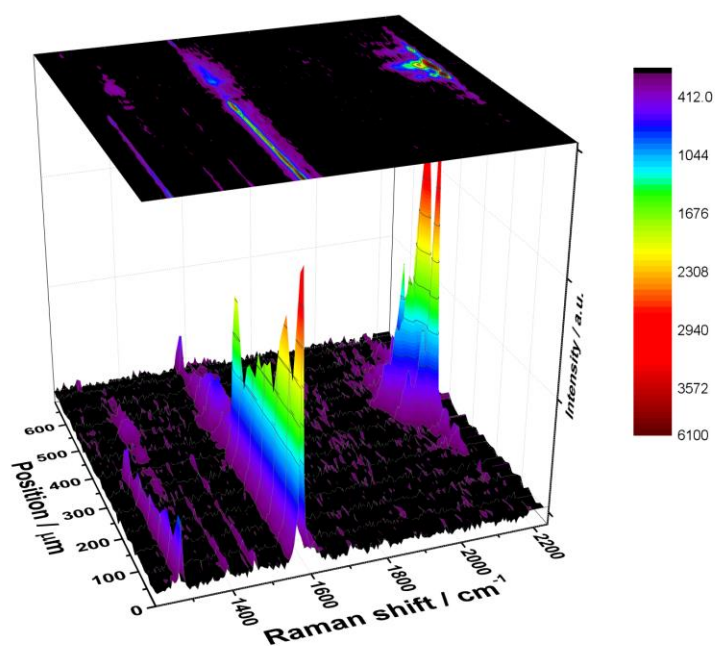


Figure S7. Raman spectra of the water/DCB system with CNT/PB assembled at the interface. Aqueous phase: $0.1 \text{ mol L}^{-1} \text{ LiCl}$, pH 7.

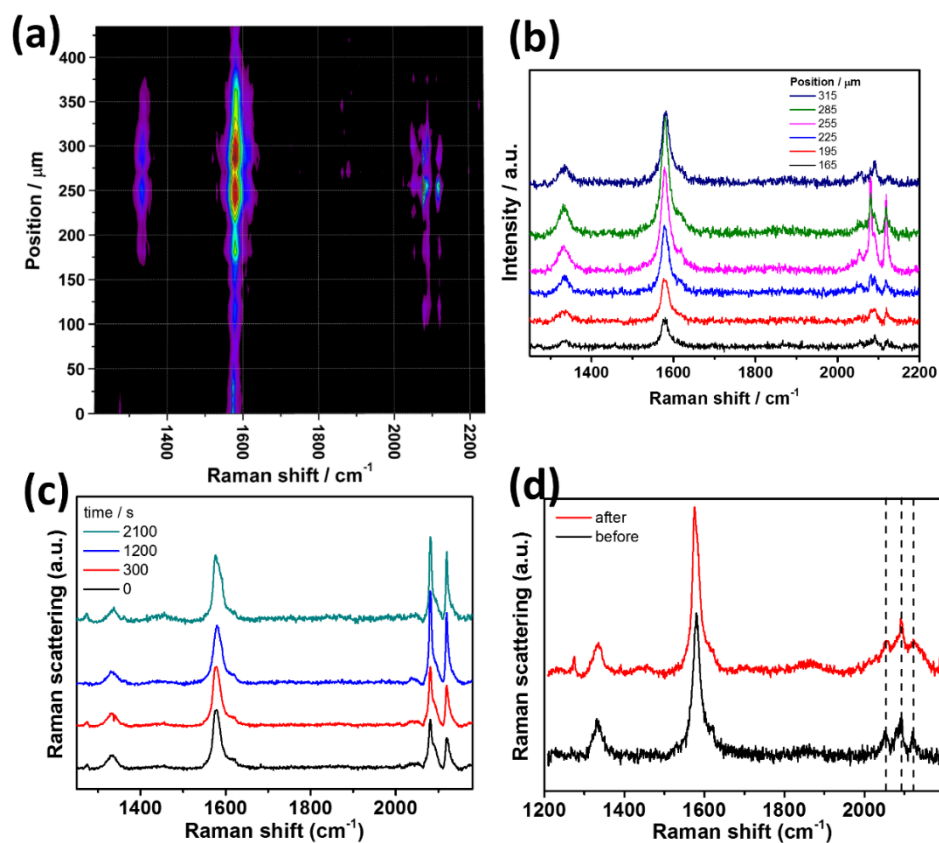


Figure S8. Raman spectra of the water/DCB system with hollow CNTs assembled at the interface. Aqueous phase: LiCl (0.1 mol L^{-1}) and $\text{K}_4[\text{Fe}(\text{CN})_6]$ (1.0 mmol L^{-1}) pH 4. Projection (a) and spectra (b) of the depth profile obtained from Raman spectra acquired at different heights within the cell; (c) spectra obtained at different times at a fixed applied potential of 1.1 V; (d) spectra of the L/L interface before and after applying 1.1 V across the interface for 2100 s.