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Electronic Supplementary Information for

Conducting polymer and metal-complex composites formed by complexation of the ligands from the vapour phase

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Materials

40% Iron(III) para-toluenesulphonate(Fe(III)PTS) in butanol and 3,4-ethylenedioxythiophene were purchased from Yacoo Chemicals Co.,Ltd. Pyridine was obtained from BDH Chemicals. Bipyridine (BIPY) was purchased from Sigma Aldrich. Benzotriazole (BTZ) and 8-Hydroxyquinoline (8HQ) were purchased from Sigma Aldrich. Sodium dihydrogen phosphate monohydrate was purchased from Merck. All chemicals were used as received.

Cyclic voltammetry

Cyclic voltammograms (CVs) of the composites before and after nitrite addition are shown in Fig. S1 and S2.

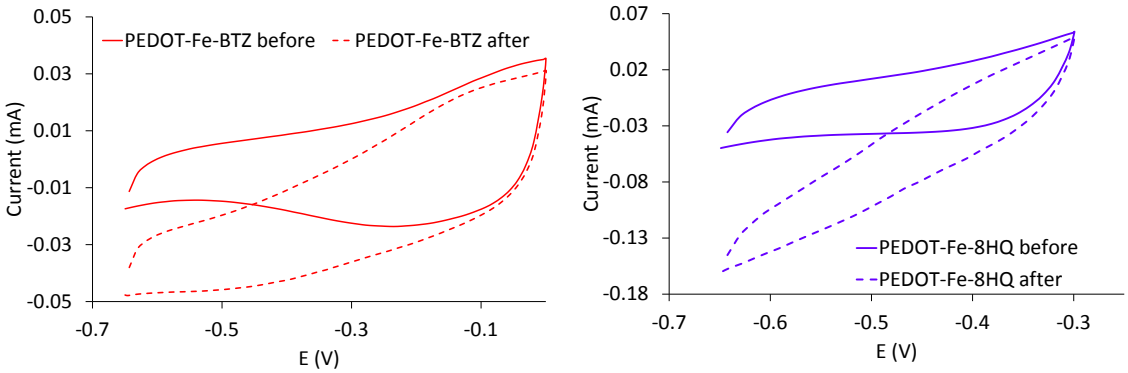

Fig. S1 CVs of PEDOT-Fe-BTZ and PEDOT-Fe-8HQ composites in 0.1 M NaH_2PO_4 pH 4.4.

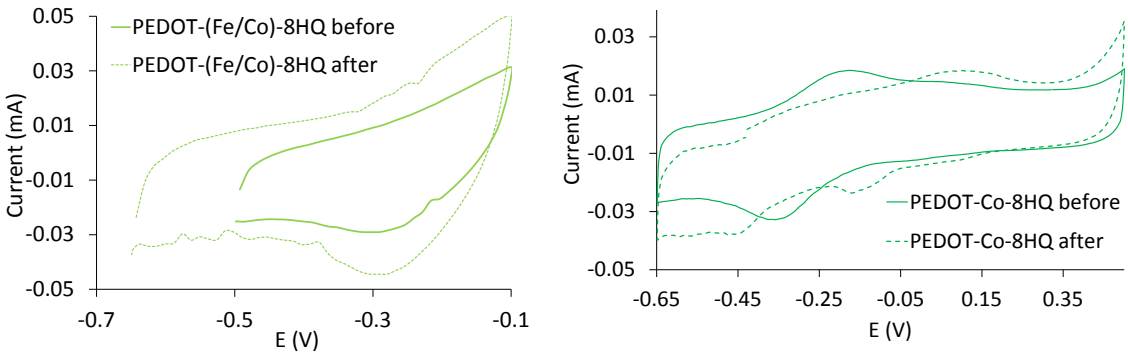

Fig. S2 CVs of PEDOT-(Fe/Co)-8HQ (left) and PEDOT-Co-8HQ (right) composites in 0.1 M NaH_2PO_4 pH 4.4.

SEM/EDX results of PEDOT-(Fe/Co)-8HQ

The samples were coated with thin layer of gold and SEM images were obtained using a FEI Nova NanoSEM 450 Field Emission Gun Scanning Electron Microscope. Energy-dispersive X-ray analysis (EDX) was performed at 15 kV for elemental analysis.

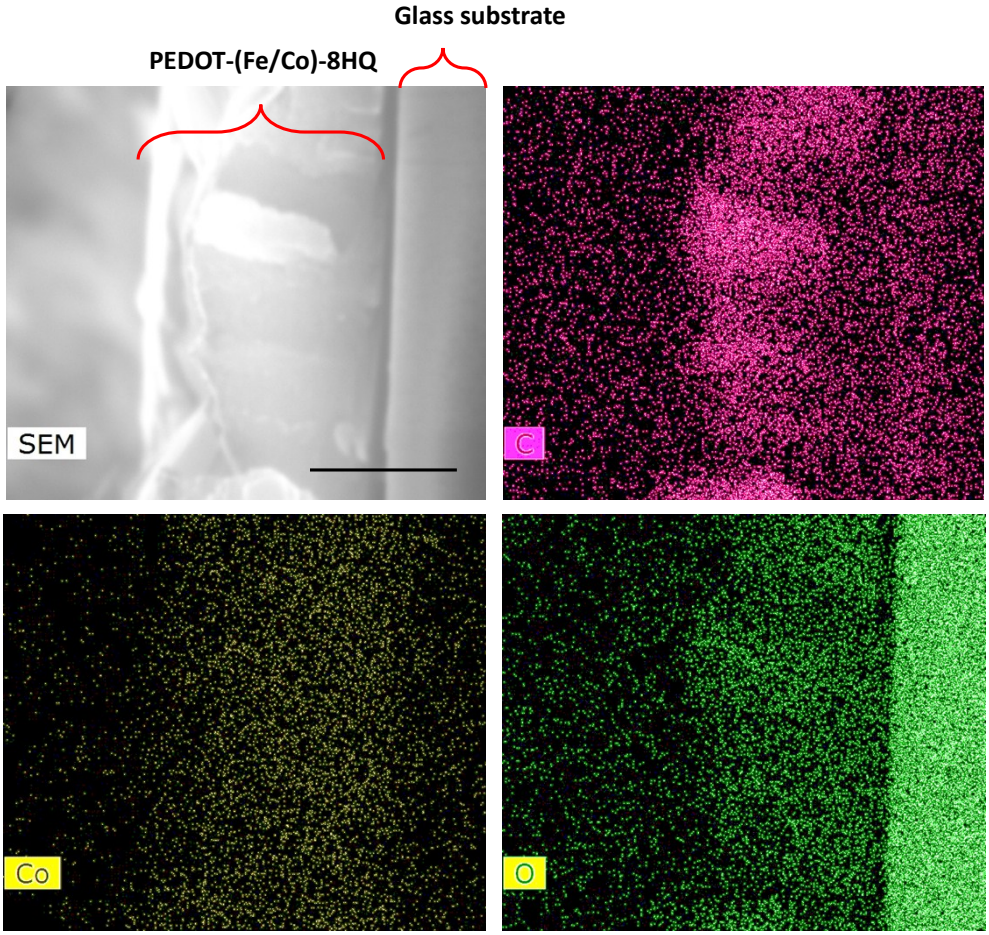

Fig. S3 A cross sectional SEM image and elemental maps showing C, O and Co distribution inside PEDOT-(Fe/Co)-8HQ film. Scale bar is 1 µm.