Electronic Supplementary Information

Bis-porphyrin copolymers covalently linked by pyridinium spacers obtained by electropolymerization from β-octaethylporphyrins and pyridyl-substituted porphyrins

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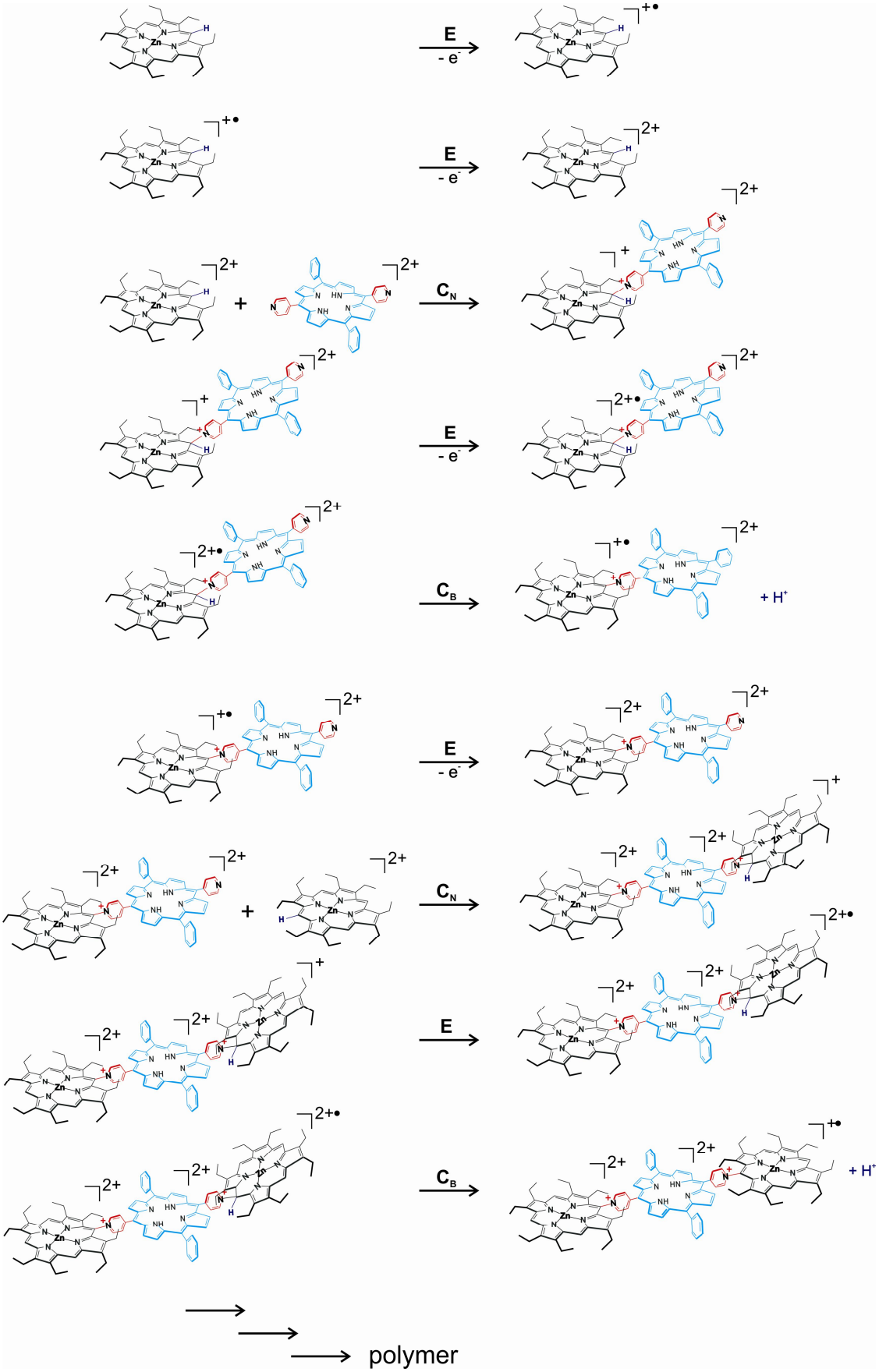


Scheme S1. $E(EC_NEC_B)_nE$ mechanism proposed for the electropolymerization of ZnOEP with trans-$H_2Py_2Ph_2P$.

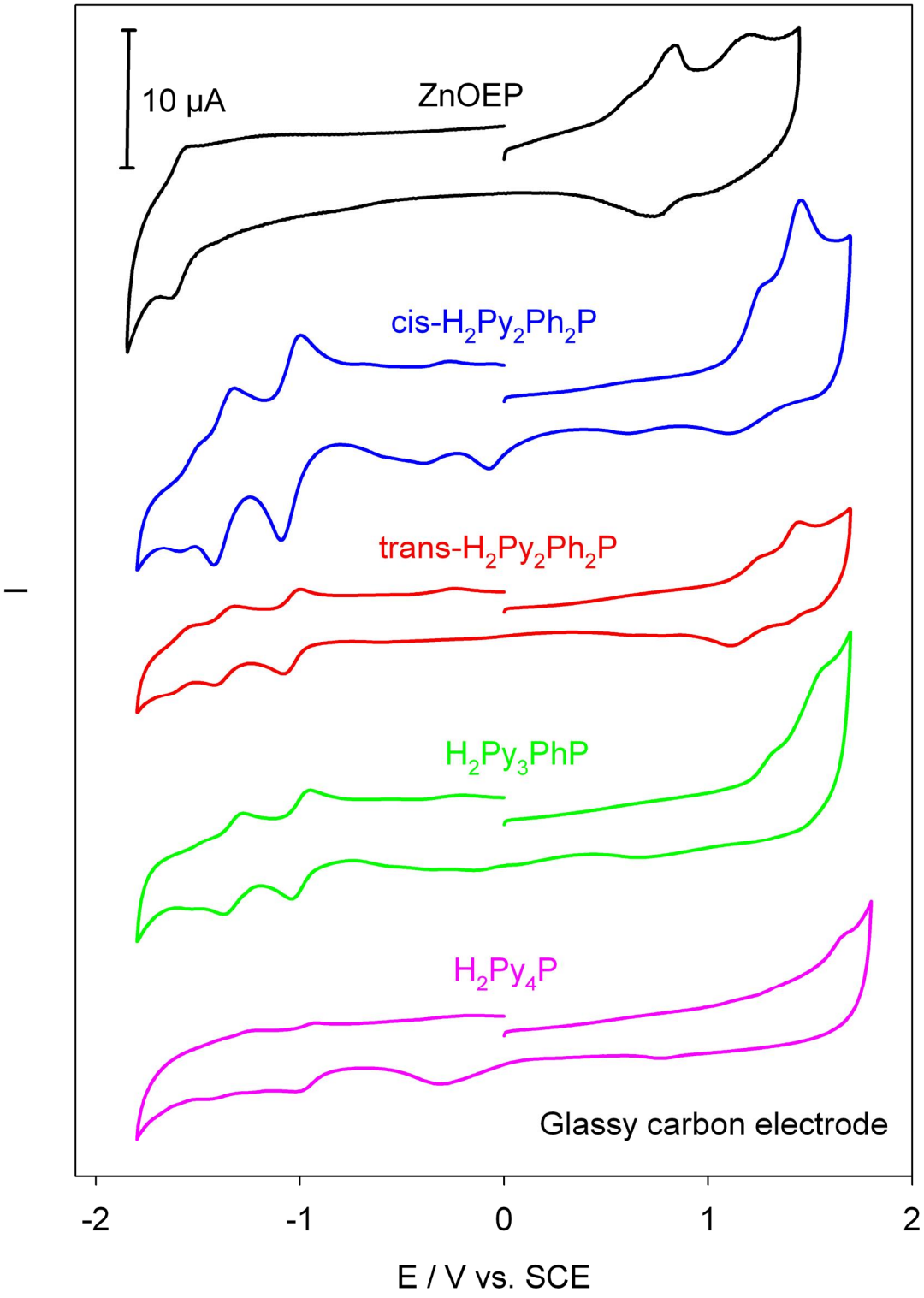


Figure S1. Cyclic voltammograms of ZnOEP, cis-$H_2Py_2Ph_2P$, trans-$H_2Py_2Ph_2P$, H_2Py_3PhP and H_2Py_4P in CH_3CN/1,2-$C_2H_4Cl_2$ (1:4) with 0.1 M NEt_4PF_6. c = 0.25 mM. Working electrode: glassy carbon; scan rate: 0.1 V s^{-1}.

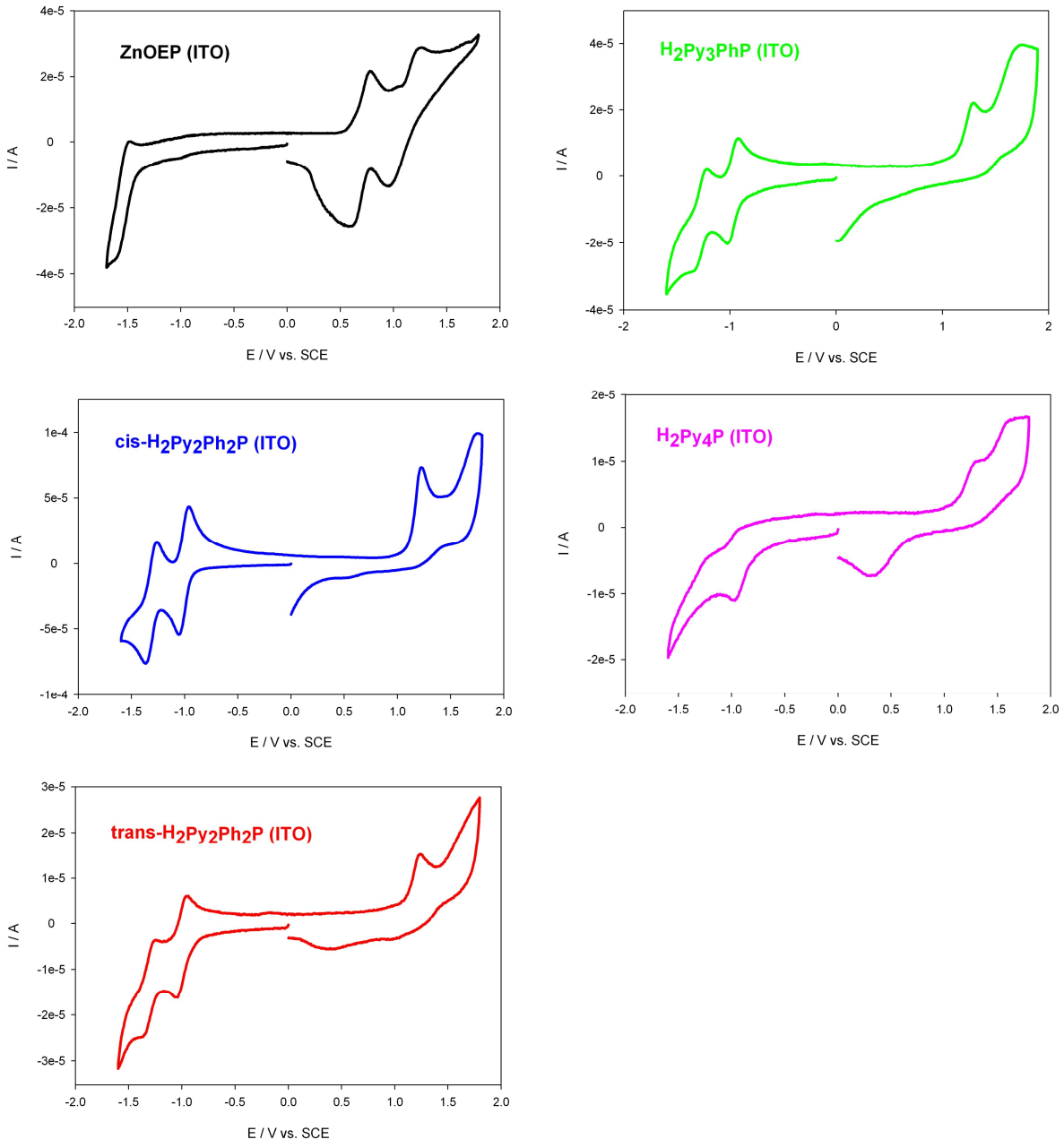


Figure S2. Cyclic voltammograms of ZnOEP, cis-$H_2Py_2Ph_2P$, trans-$H_2Py_2Ph_2P$, H_2Py_3PhP and H_2Py_4P in CH_3CN/1,2-$C_2H_4Cl_2$ (1:4) with 0.1 M NEt_4PF_6. c = 0.25 mM. Working electrode: ITO; S = 1 cm^2; scan rate: 0.1 V s^{-1}.

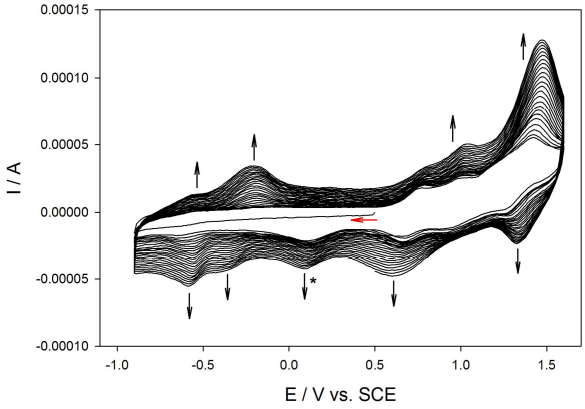
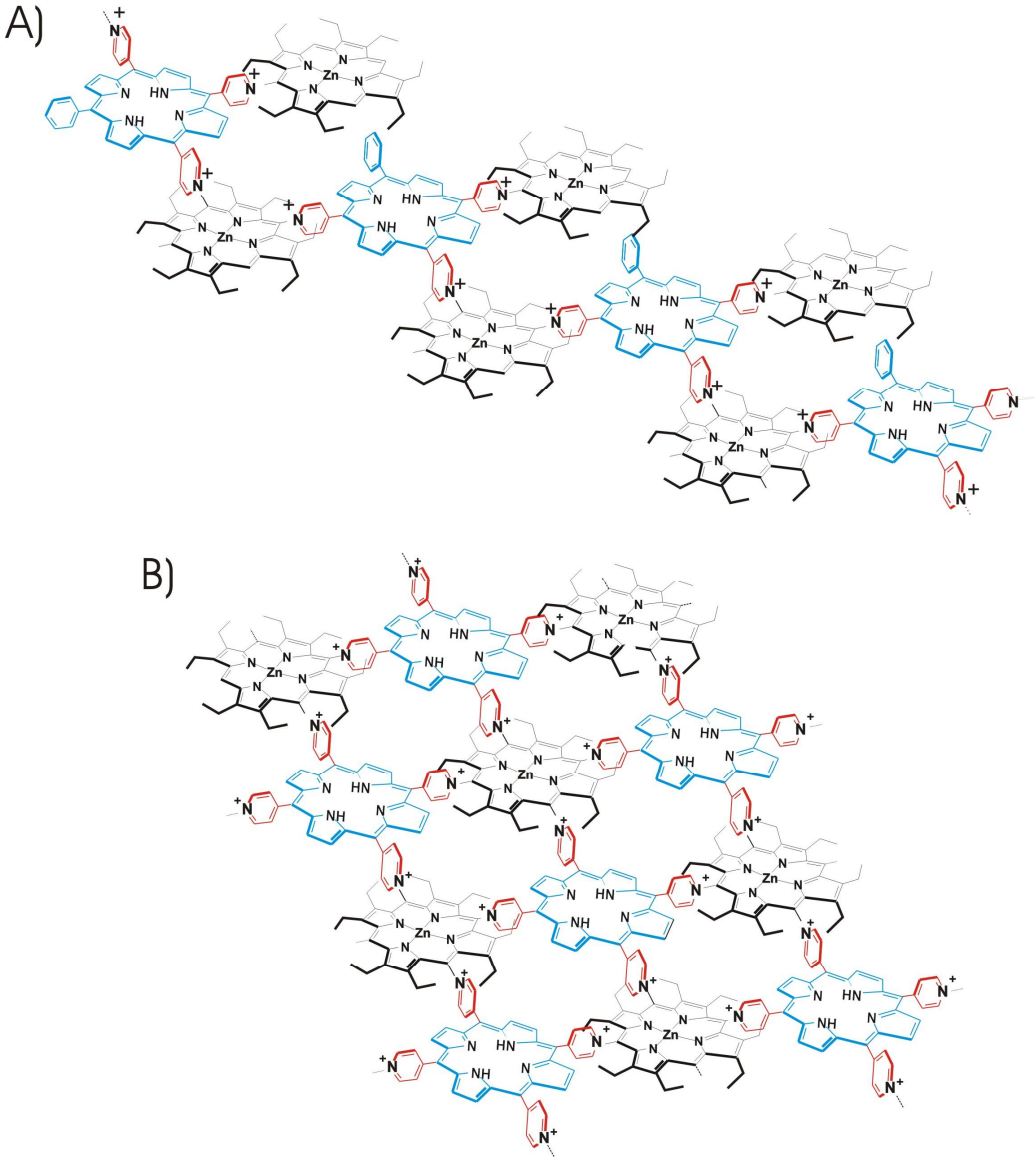


Figure S3. Cyclic voltammograms recorded during the electropolymerization of trans-$H_2Py_2Ph_2P$ in the presence of $ZnOEP(Cl)_2$ in CH_3CN/1,2-$C_2H_4Cl_2$ (1:4) with 0.1 M NEt_4PF_6. working electrode: ITO; S = 1 cm^2; scan rate: 0.1 V s^{-1}.



Scheme S2. Tentative representation of copolymers: (A) poly-H_2Py_3PhP-ZnOEP and (B) poly-H_2Py_4P-ZnOEP.

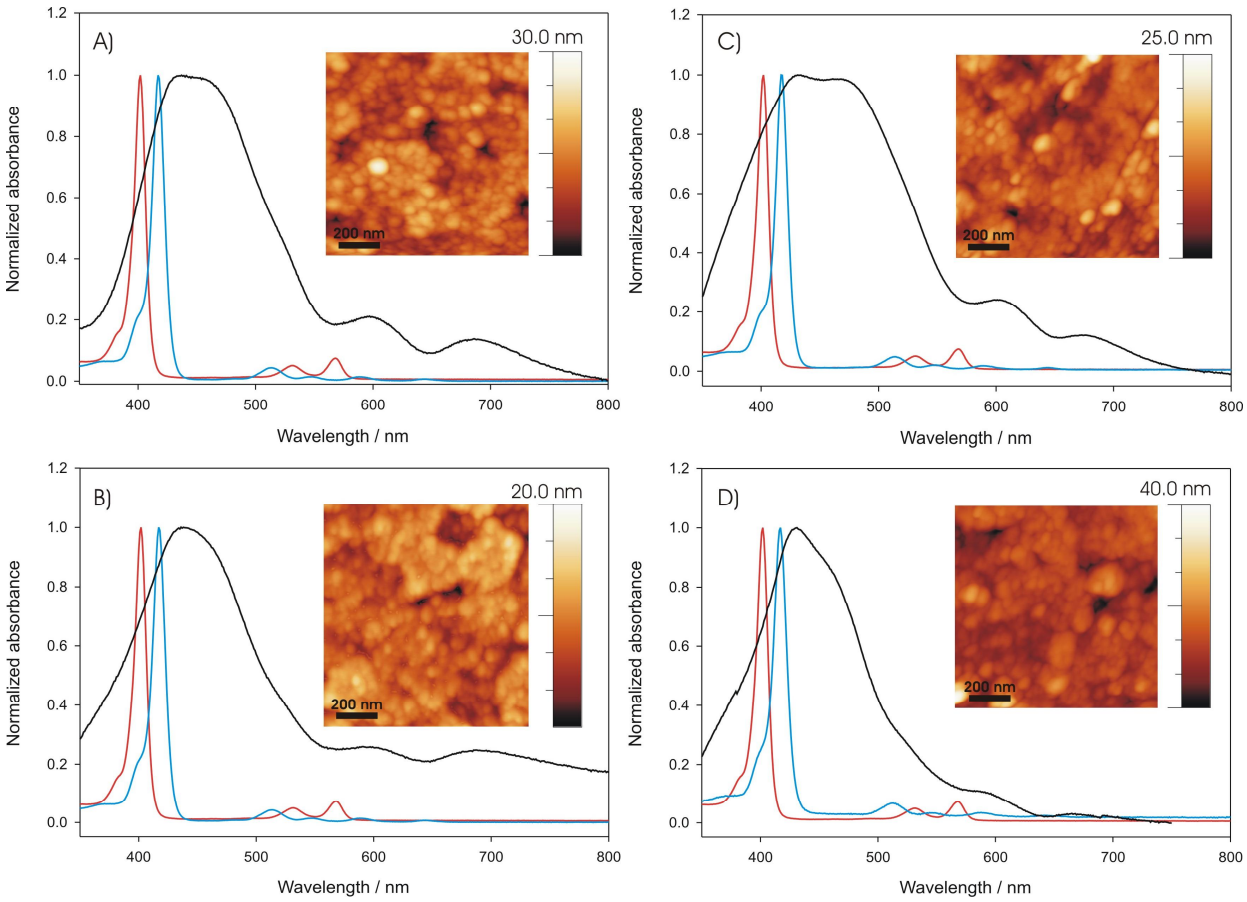


Figure S4. Atomic force micrographs and normalized UV-visible absorption spectra of ITO electrodes (black lines) modified with (A) poly-trans-$H_2Py_2Ph_2P$-ZnOEP, (B) poly-trans-$H_2Py_2Ph_2P$-ZnOEP$(Cl)_2$, (C) poly-H_2Py_3PhP-ZnOEP and (D) poly-H_2Py_4P-ZnOEP (red lines: absorption spectra of the monomers ZnOEP or ZnOEP$(Cl)_2$ according to the copolymer (in 1,2-$C_2H_4Cl_2$) and blue lines: absorption spectra of the pendant pyridyl porphyrin monomers used for each copolymer (in 1,2-$C_2H_4Cl_2$)).