Electronic Supplementary Material (ESI) for Polymer Chemistry.

Electronic Supplementary Information (ESI) for

Highly ordered supramolecular structure building from poly(4-(4-vinylphenylpyridine)) and 1,1´-ferrocenedicarboxylic acid via hydrogen bonding

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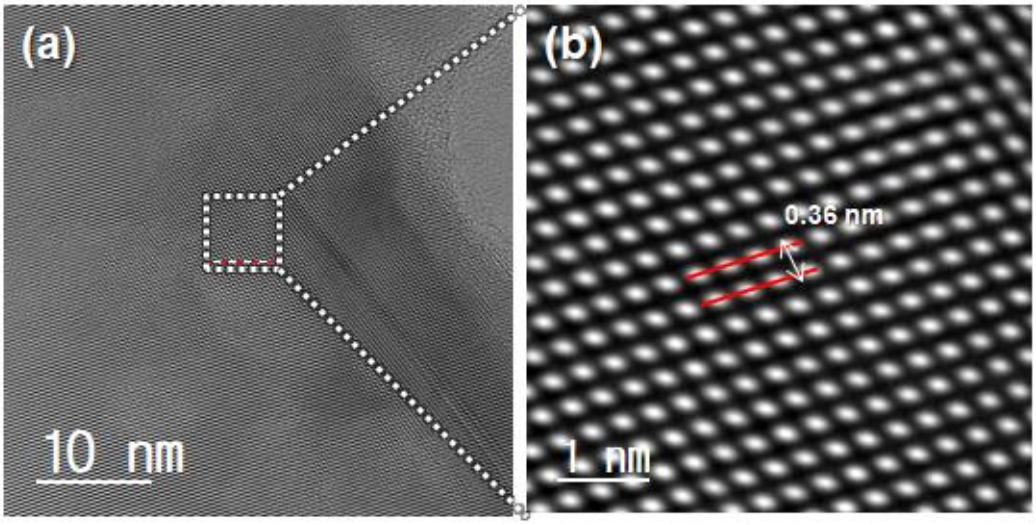

Fig. S1 Molecular-level ordering of self-assembled P4VPPy-FDA: (a) HRTEM image measured along [011] zone axis; (b) Intensity profile of the lines for the white line covered area in figure (a).

Table S1 The 2θ degree and d spacing value of P4VPPy-FDA in XRD

2θ (degree)	*d* spacing (nm)
6.15	1.44
9.56	0.93
12.52	0.71
18.74	0.48
25.14	0.36
29.14	0.32
31.64	0.29

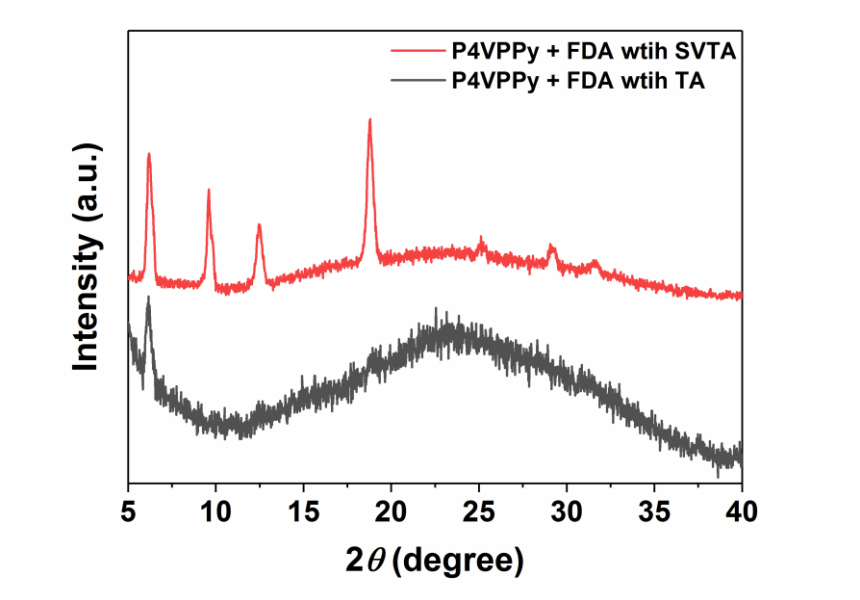

Fig. S2 The XRD spectrums of P4VPPy-FDA thin films treated with solvent vapor thermal annealing (SVTA) and thermal annealing(TA). SVTA providing the P4VPPy-FDA with much better crystallinity due to the slow solvent evaporating giving the molecules more time to reorganized into well-ordered state.

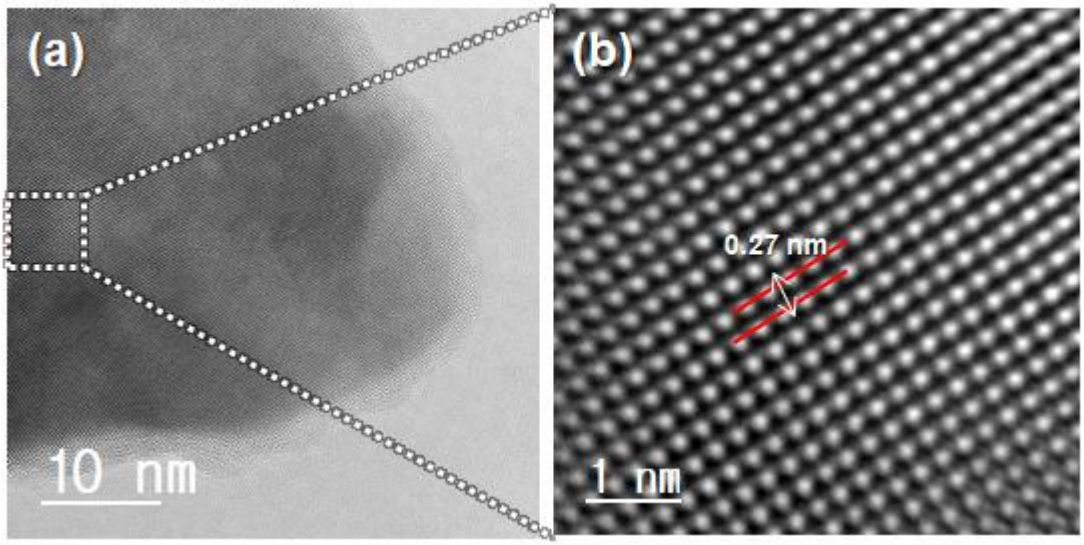

Fig. S3 The HRTEM image of P4VPPy-FDA measured along [001] shows the line patterns with a periodicity of 0.27 nm, which is corresponding to the distance between consecutive carbon atoms bearing pyridine (Py) units [-CH(Py)-CH_2-CH(Py)-] of the P4VPPy polymer backbone.

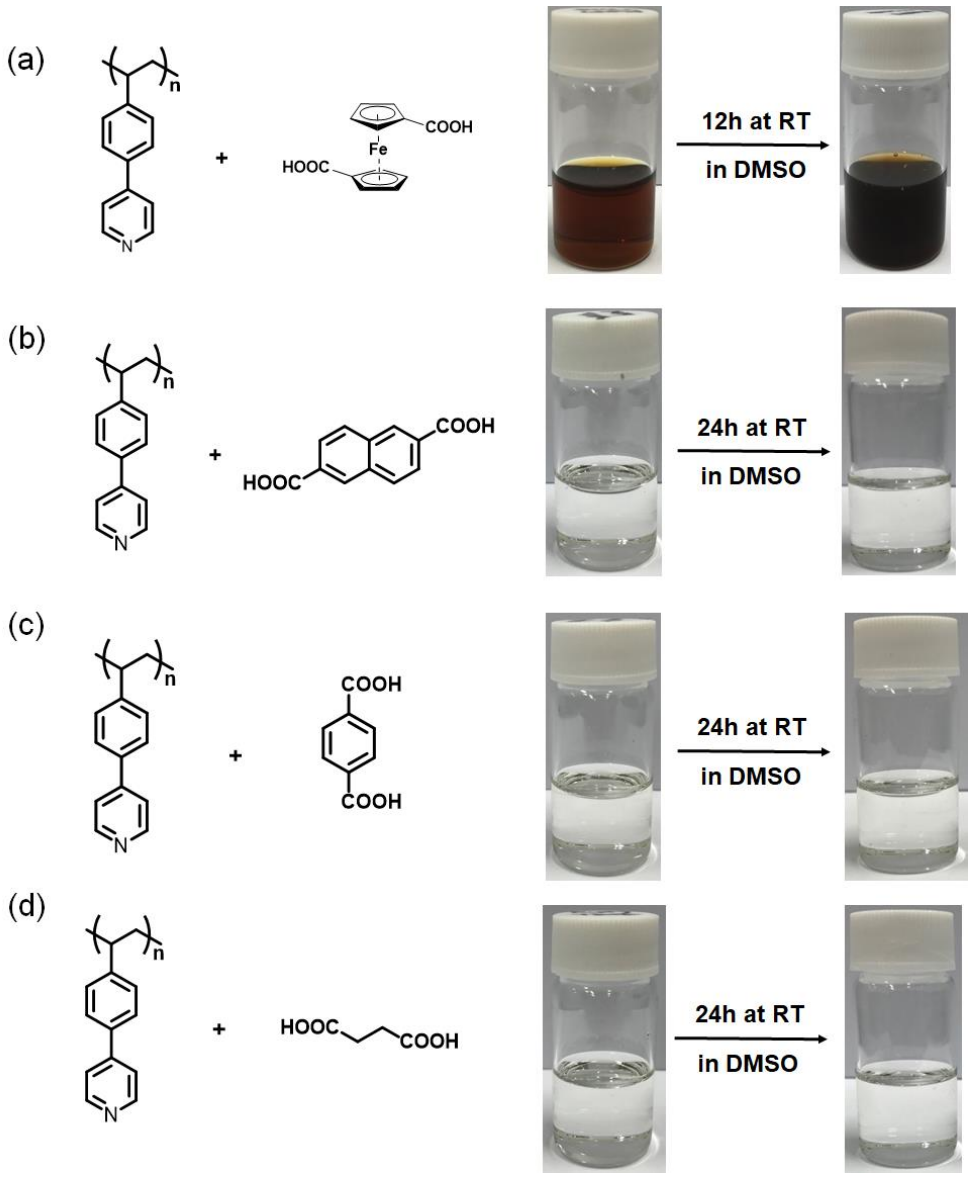

Fig. S4 The chemical structures and color of the mixture before and after interaction. (a) P4VPPy + FDA, (b) P4VPPy + NTDA, (c) P4VPPy + BZDA, (d) P4VPPy + EDA.

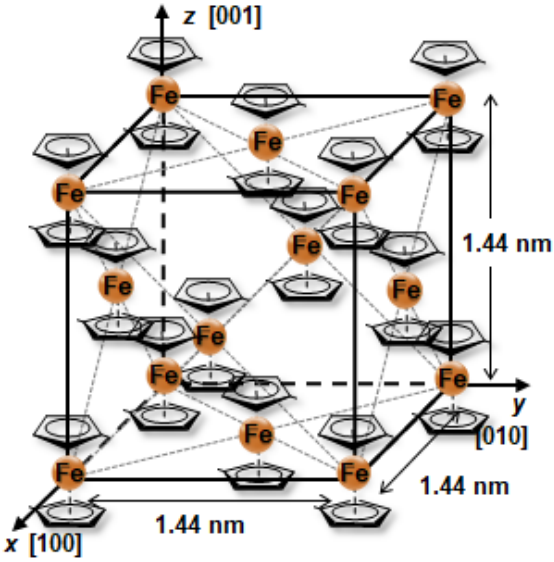

Fig. S5 The unit cell of P4VPPy-FDA, corresponding to FCC crystal structure with lattice parameters of 1.44 nm.