Supplementary Information

Non-noble metal coordinated hypercrosslinked polymers based on porphyrin for efficient electrocatalytic OER

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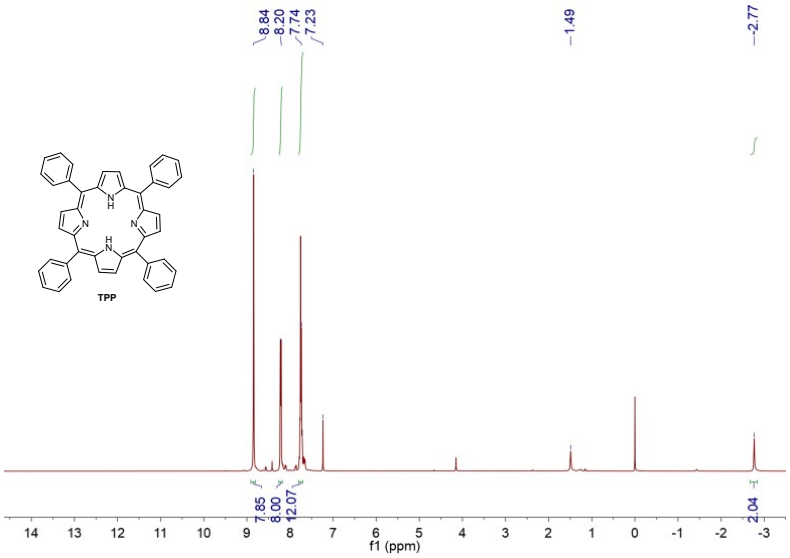

Fig. S1 ^{1}H NMR of the synthesized TPP

^{1}H NMR spectrum ($CDCl_3$, 400 MHz) δ: 8.84 (s, 8H, ArH), 8.21-8.20 (d, *J* = 4.0 Hz, 8H, Pyrrole-H), 7.77-7.72 (m, 12H, ArH), and -2.77 (s, 2H, N-H).

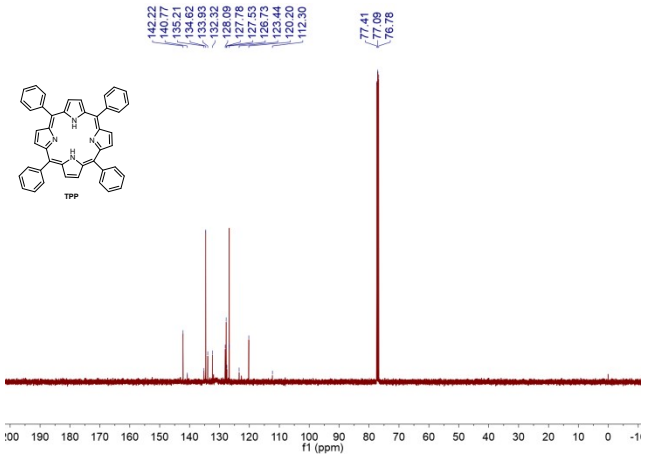

Fig. S2 ^{13}C NMR of the synthesized TPP

^{13}C NMR spectrum ($CDCl_3$, 101 MHz) δ: 142.22, 140.47, 135.21, 134.62, 133.93, 132.32, 128.09, 128.78, 127.53, 126.73, 123.44, 120.20, 112.30.

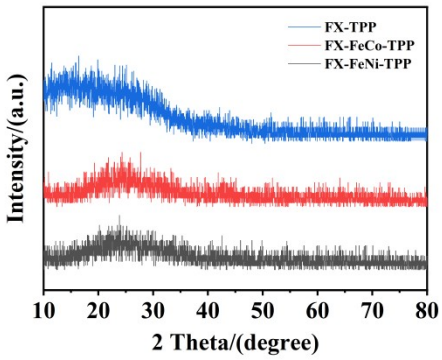

Fig. S3 XRD pattern of FX-TPP, FX-FeCo-TPP, FX-FeNi-TPP

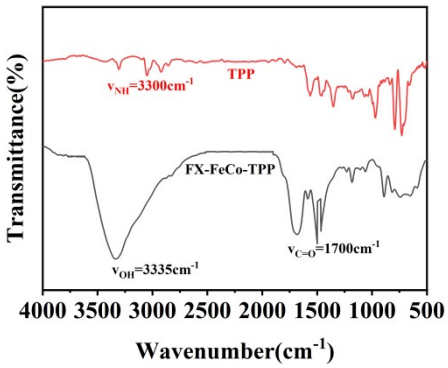

Fig. S4 FT-IR of TPP and FX-FeCo-TPP

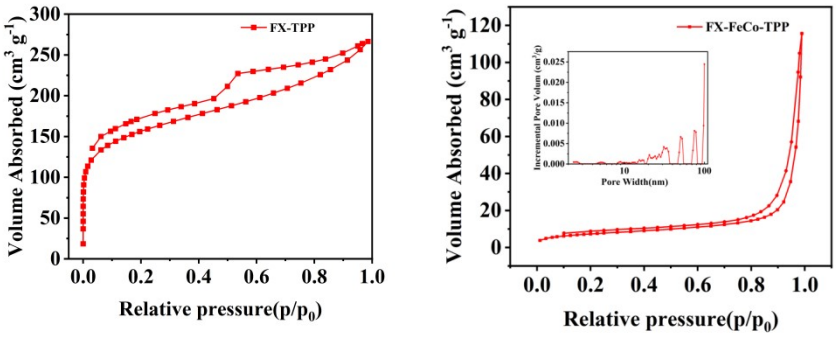

Fig. S5 Nitrogen adsorption and desorption curve and pore size distribution of FX-TPP (a) and FX-FeCo-TPP (b)

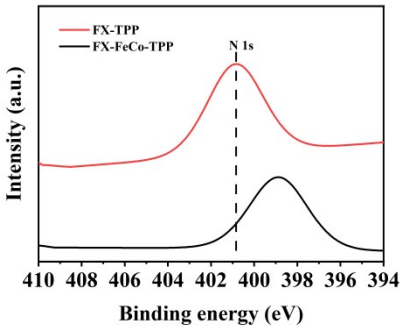

Fig. S6 Comparison of N 1s in XPS between FX-TPP and FX-FeCo-TPP

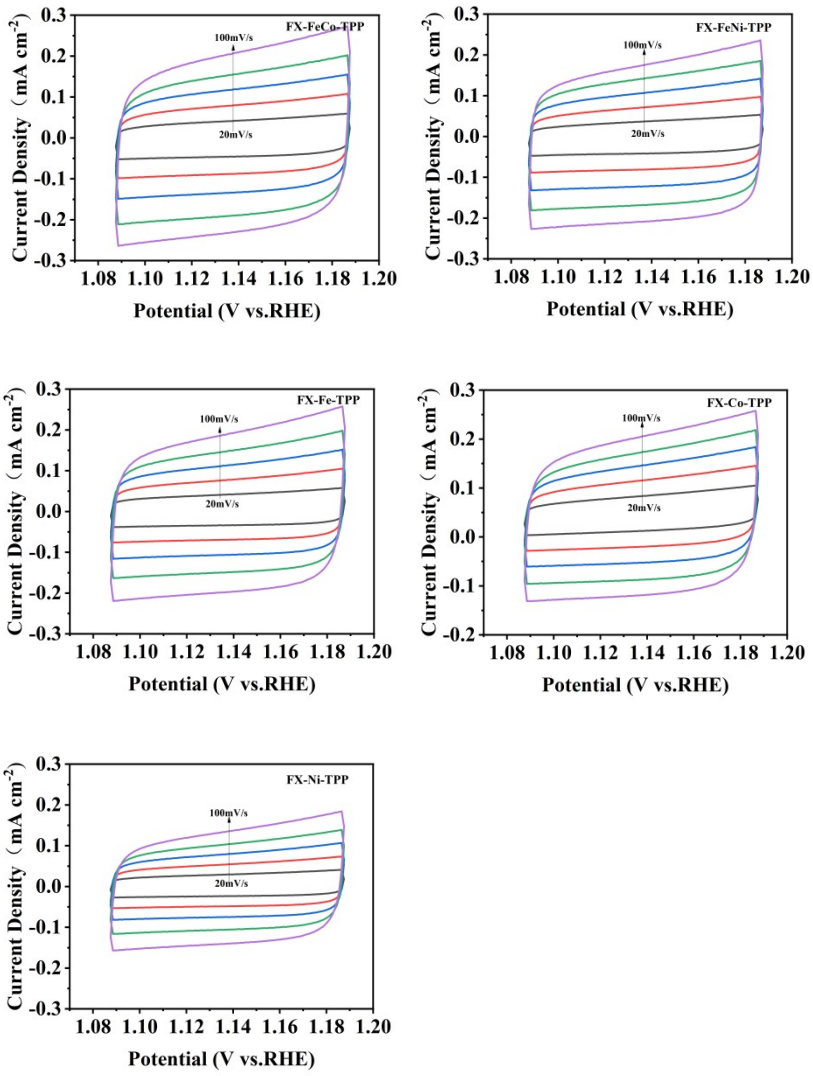

Fig. S7 Cyclic voltammetry (CV) of FX-M-TPP at different scan rates.

Table S1 The comparison of the electrocatalytic OER of different catalytic systems

Sample	Electrolyte (KOH)	Electrode	Overpotential (mV)	Tafel slope (mV dec^{-1})	Ref.
IISERP-COF-3_Ni_3N	1.0M	GCE	230	79	[1]
FeMOFs-SO_3	1.0M	NF	218	36.2	[2]
macro-TpBpy-Co	0.1M	RDE	380	54	[3]
Ni/Fe-COF@CNT_{900}	0.1M	RDE	320	61	[4]
C4-SHz COF	1.0M	GCE	320	39	[5]
Fe_2Ni MOF/NF	1.0M	NF	222	42.39	[6]

NiPc–Ni	1.0M	GCE	319	83	[7]
S/N-CMF@$Fe_xCo_yNi_{1-x-y}$-MOF	1.0M	GCE	296	53.5	[8]
Ni-Fe-MOFs NSs	1.0M	GCE	221	56	[9]
CoZn MOF/CC	1.0M	CC	287	76.3	[10]
FX-FeCo-TPP	1.0M	NF	251	35.2	This work

References

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