Electronic Supplementary Information (ESI†)

High nitrogen-doped carbon/Mn$_3$O$_4$ hybrids synthesized from nitrogen-rich coordination polymer particles as supercapacitor electrode

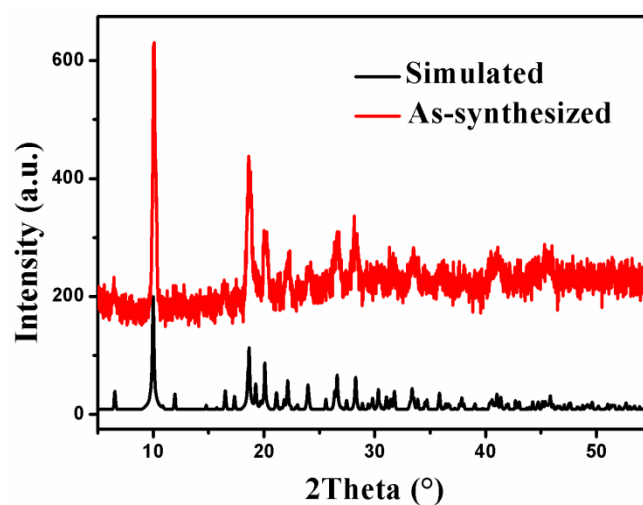Kuaibing Wang,[a,*] Xiaobo Shi,[c] Aiming Lu,[a] Xiaoyan Ma,[b] Zhiyang Zhang,[b] Yanan Lu,[a] Hongju Wang[a]

Fig. S1 XRD patterns of the as-synthesized CPP-3 and simulated bulk-crystals of {Mn$_2$(BDC)$_2$(DMF)$_2$}$_n$.

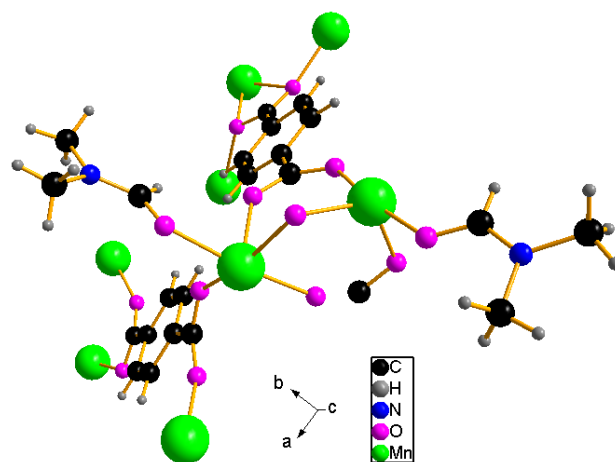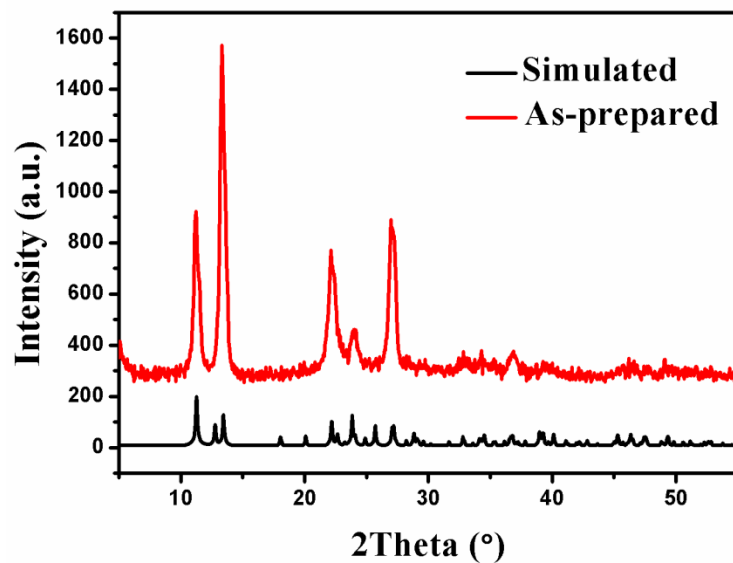**Fig. S2** The crystal structure unit of {Mn$_2$(BDC)$_2$(DMF)$_2$}$_n$.

Fig. S3 XRD patterns of the as-synthesized CPP-2 and simulated bulk-crystals of $\{Mn_2(PDC)_2(H_2O)_3\}_n$.

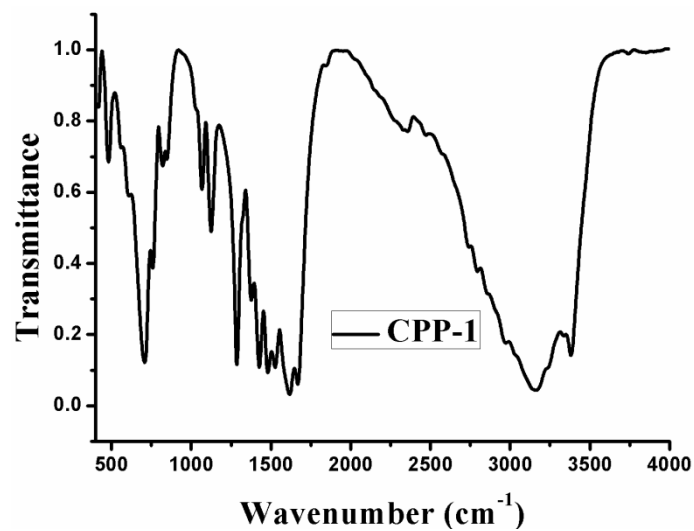**Fig. S4** IR spectra for coordination polymer precursor of CPP-1.

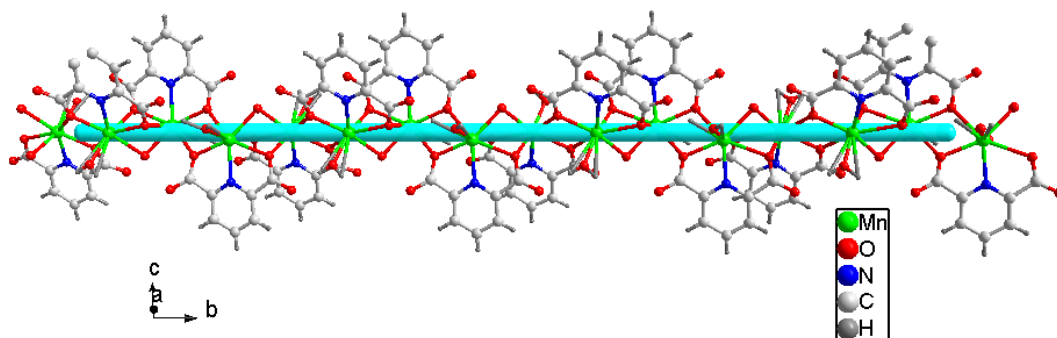**Fig. S5** The one-dimensional crystal structure of $\{Mn_2(PDC)_2(H_2O)_3\}_n$.
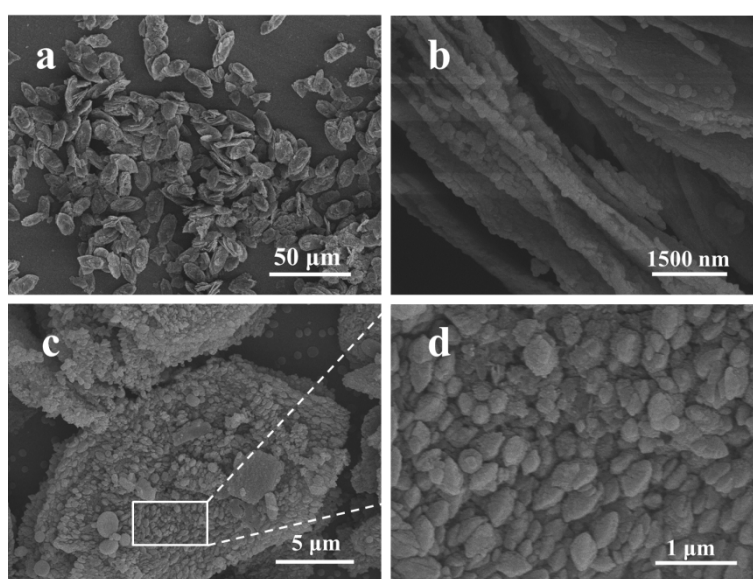

Fig. S6 (a-d) SEM images of carbon/Mn_3O_4 spindles obtained from precursor CPP-3.

Table S1 Summary of N-doped inorganic materials reported in recent papers.

Sample	N (Wt%)	N (At%)	Reference	Method
NC/Mn₃O₄-1	29.87	38.35		
NC/Mn₃O₄-2	1.96	2.33	in this work	precursors
C/Mn₃O₄	0.08	0.17		
N-GO	/	5.0	24	NH₃ treatment
N-Graphene	/	8.9	25	CVD [a]
N-Graphene	/	0.11-1.35	26	N plasma treatment
N-ZnO	/	5.0	27	solvothermal
N-Carbon film	/	12.0	28	sputtering

[a] CVD: Chemical Vapor Deposition.