Electronic Supplementary Material (ESI) for RSC Advances.

Electrospinning preparation of large surface area, hierarchically porous, and interconnected carbon nanofibrous network using polysulfone as a sacrificial polymer for high performance supercapacitor

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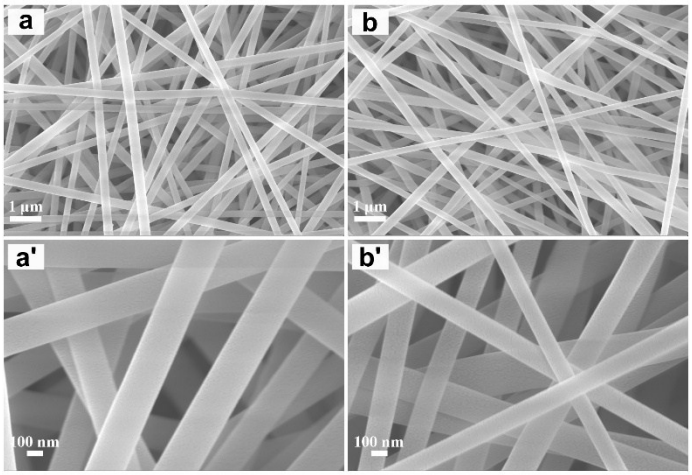

Figure S1. SEM images of electrospun PAN nanofibrous mat (a, a') and electrospun PSF/PAN nanofibrous mat (b, b')

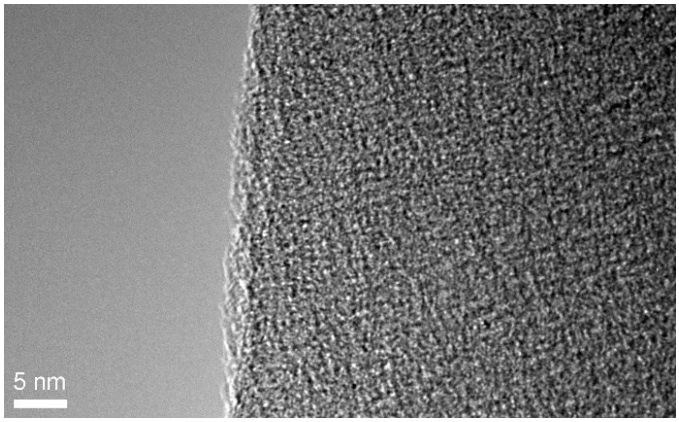

Figure S2. HRTEM image of CNFM-20.

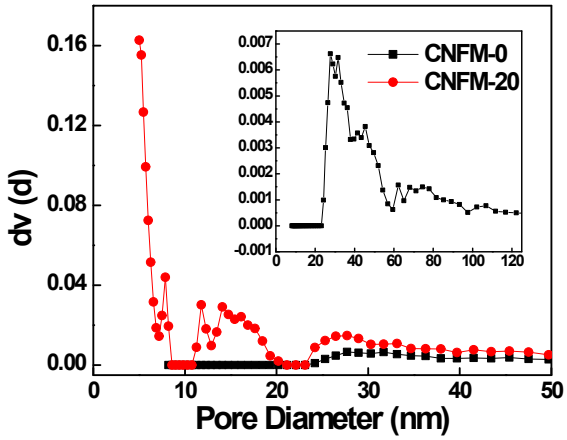

Figure S3. Pore size distribution of CNFM-0 and CNFM-20.

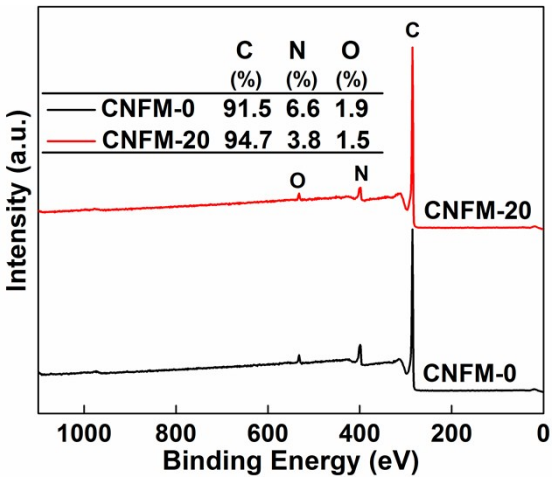

Figure S4. XPS spectra of CNFM-0 and CNFM-20.

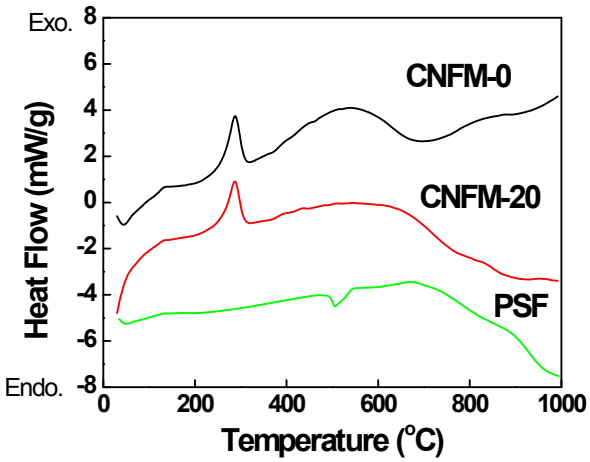

Figure S5. DSC curves of PSF, CNFM-0 and CNFM-20.

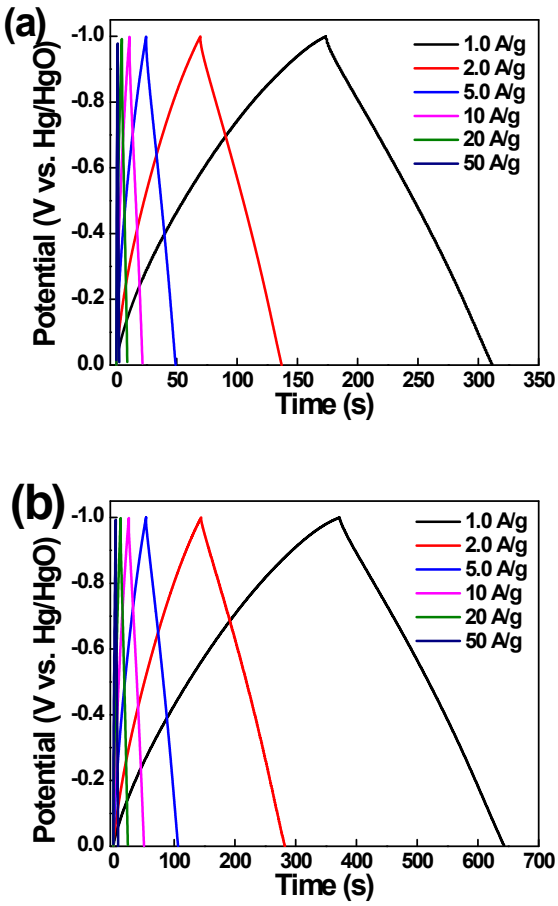

Figure S6. GCD curves of CNFM-0 (a) and CNFM-20 (b) at current densities from 1.0 A/g to 50 A/g in a three-electrode configuration and 2.0 M KOH electrolyte.

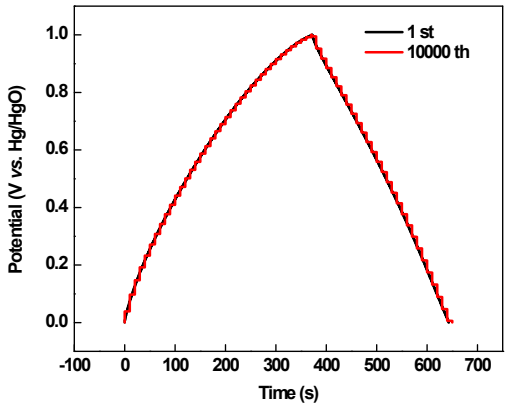

Figure S7. GCD curves of the CNFM-20 based electrode under the current density of 1.0 A/g at the 1st and the 10000th cycle.

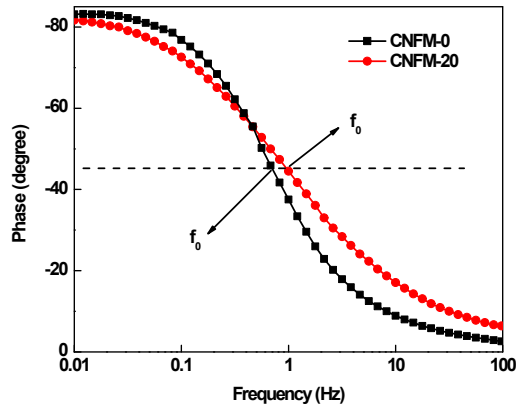

Figure S8. The Bode plots for the CNFM-0 and CNFM-20 electrodes.

Table S1: Performance of supercapacitors based on electrospun carbon nanofibrous materials

Carbon source	Pore-forming agent	Carbonization temperature (℃)	Connected carbon fiber network	S_{BET} (m^2/g)	V_{tot} (cm^3/g)	Capacitance (F/g)	Cycling numbers	Retention rate	Ref.
PAN	PSF	800	Yes	763	0.51	272 (1.0 A/g)	5000	100	Our work
PAN	PVP/CO_2	970	Yes	531	-	221	-	-	1
PAN	PMMA	800	No	224	0.25	210 (2 mV/s)	2000	100	2
PAN	Steam	700	No	1230	0.55	173 (10 mA/g)	-	-	3
PAN	Zinc acetate	800	No	1404	0.327	178.2 (1 mA/cm^2)	1000	75	4
PAN	$ZnCl_2$	800	No	550	0.34	130 (2 mV/s)	-	-	5
PAN	$CaCO_3$	800	No	679	0.41	251 (0.5 A/g)	5000	88	6
PAN	CA	800	No	1160	0.807	245 (1 mA/cm^2)	1000	96	7
PAN	Phenylsilane	800	No	800	-	180 (20 mA/cm^2)	-	-	8
PAN	H_3PO_4	800	No	709	0.356	156 (0.5 A/g)	1000	96.5	9
Resole phenolic	KOH	800	No	597	0.27	256 (0.2 A/g)	1000	92	10
Novolac phenolic	KOH	750	No	1520	0.71	202 (1 mA/cm^2)	10000	92	11
cellulose	CO_2	1000	Yes	520	0.3	241.4 (1.0 A/g)	10000	99.9	12
PBI	Steam	800	No	1220	0.2	178 (5 mA/g)	-	-	13
PAA	Steam	750	No	1453	0.563	175 (1000 mA/g)	-	-	14

Reference

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