Supporting Information

Carbonized porous aromatic framework to achieve customized nitrogen atoms for enhanced supercapacitor performance

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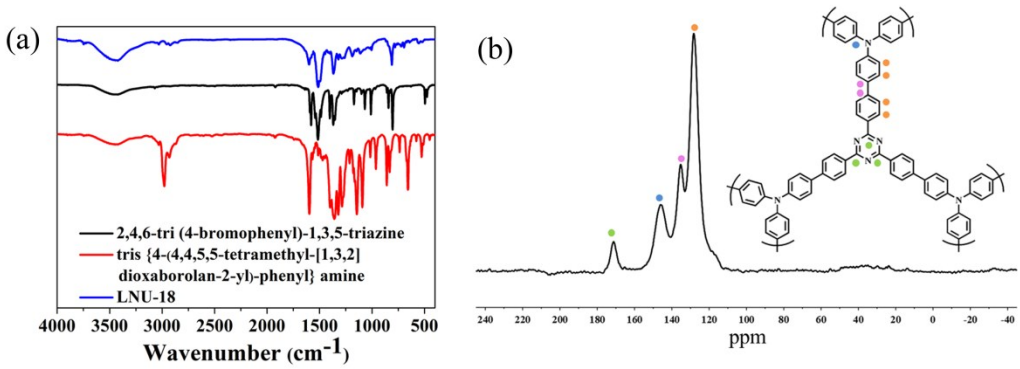

Fig. S1 (a) FTIR and (b) solid-state ^{13}C CP/MAS NMR spectra for LNU-18.

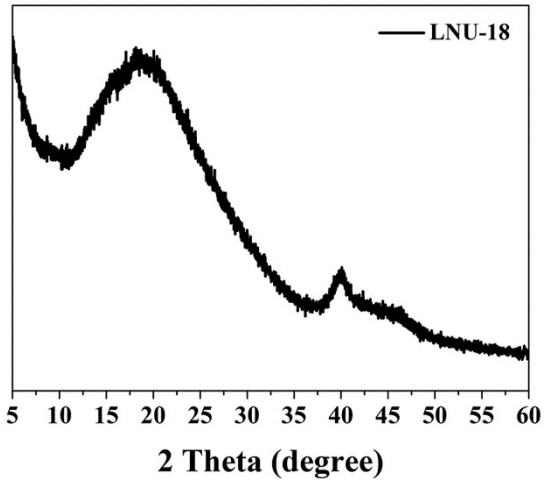

Fig. S2 PXRD pattern for LNU-18.

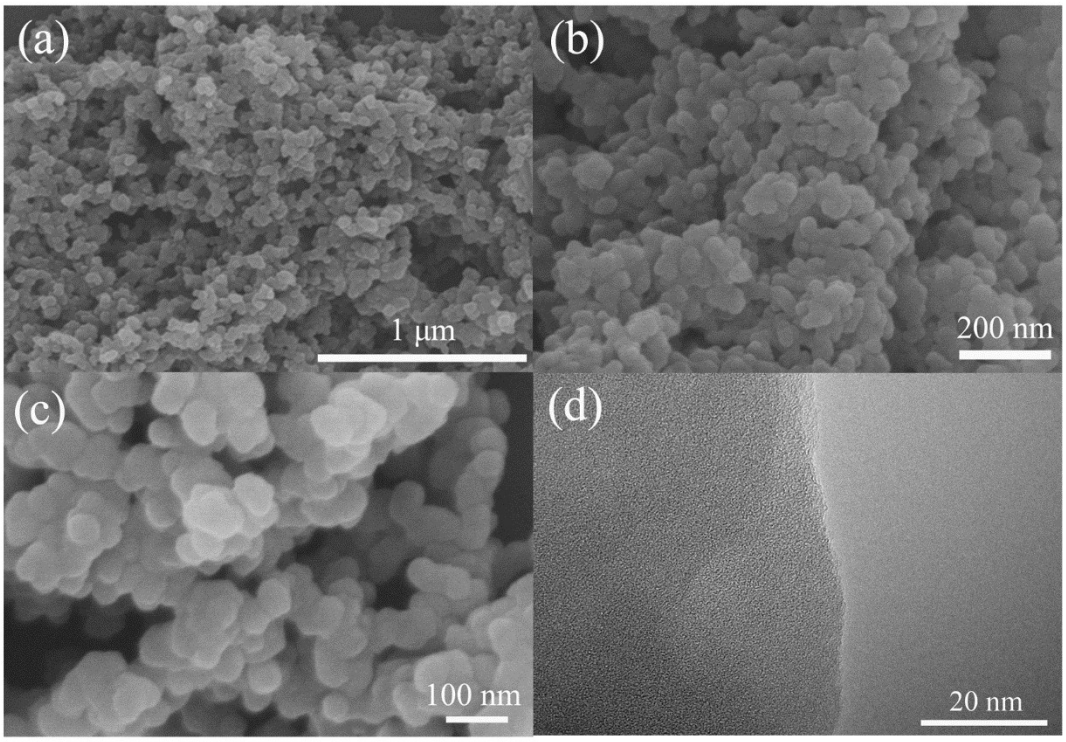

Fig. S3 (a, b, c) SEM micrographs for LNU-18; (d) TEM micrograph for LNU-18.

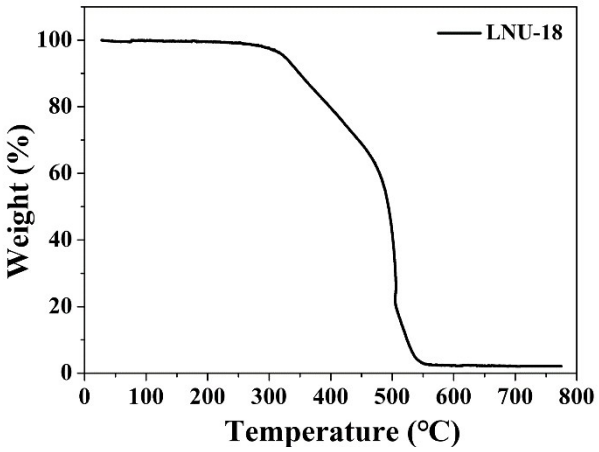

Fig. S4 TGA curve for LNU-18 in air condition.

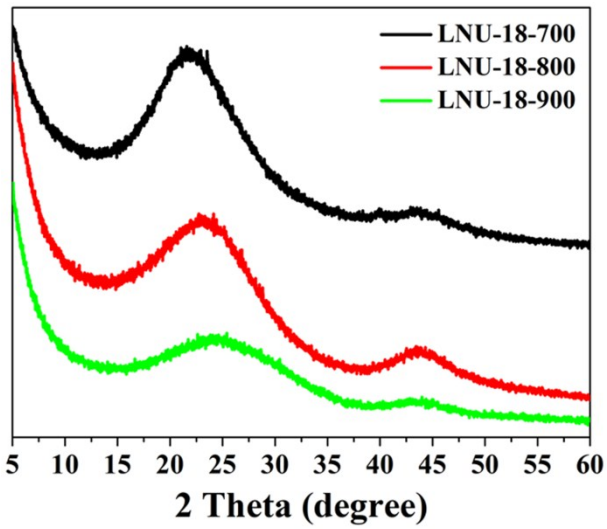

Fig. S5 PXRD patterns for LNU-18-700, LNU-18-800, and LNU-18-900.

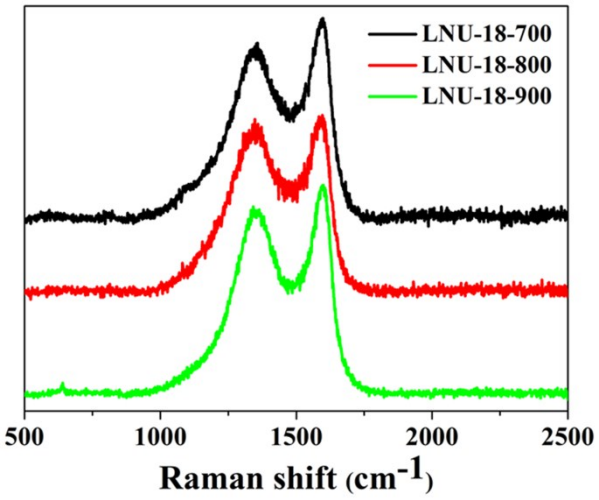

Fig. S6 Raman spectra for LNU-18-700, LNU-18-800, and LNU-18-900.

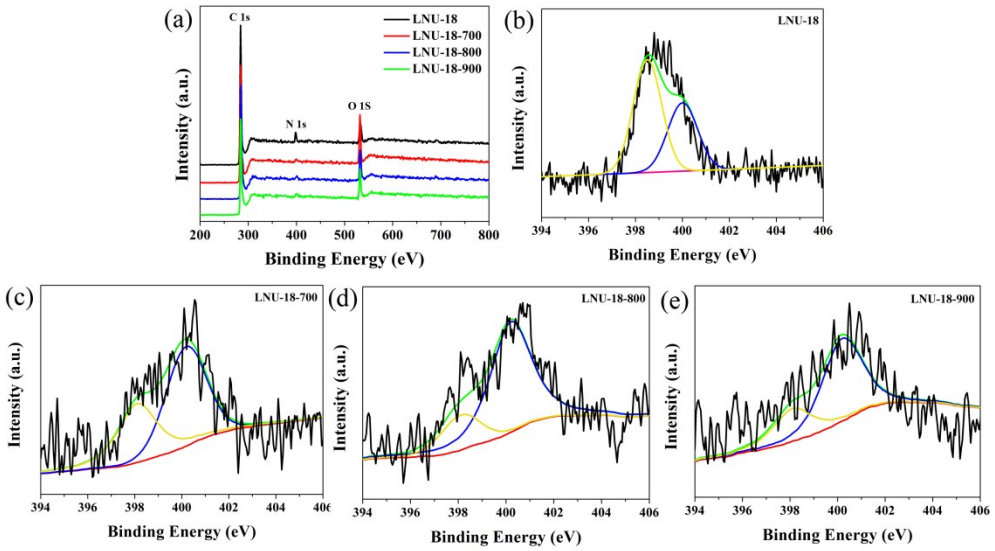

Fig. S7 (a) XPS spectra for LNU materials; N 1s XPS for (b) LNU-18, (c) LNU-18-700, (d) LNU-18-800, and (e) LNU-18-900.

Table S1 Elemental compositions of C, N and O, and relation contents of nitrogen species to N 1s

Samples	C (at.%)	N (at.%)	O (at.%)	$N_{pyrrolic}$ (%)	$N_{triazine}$ (%)
LNU-18-700	84.53	1.73	13.74	67.95	32.05
LNU-18-800	85.65	3.06	11.29	81.88	18.12
LNU-18-900	86.46	2.04	11.51	74.20	25.80

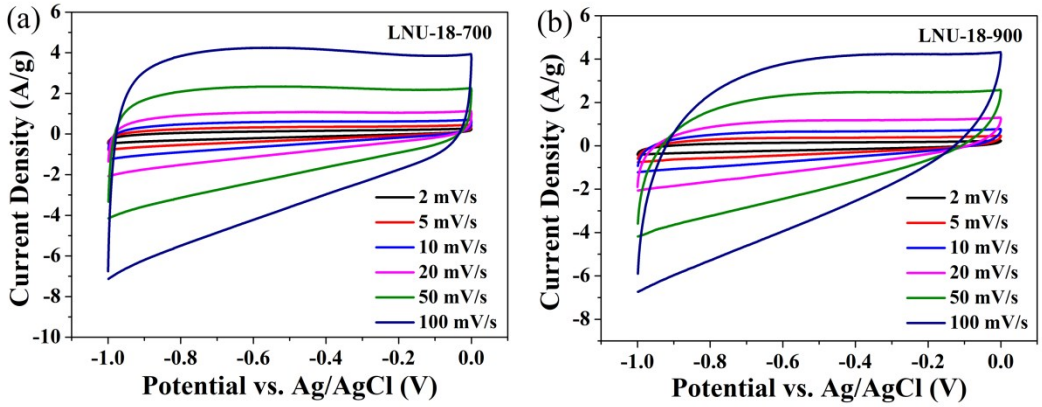

Fig. S8 CV curves for (a) LNU-18-700 and (b) LNU-18-900 at different scan rates.

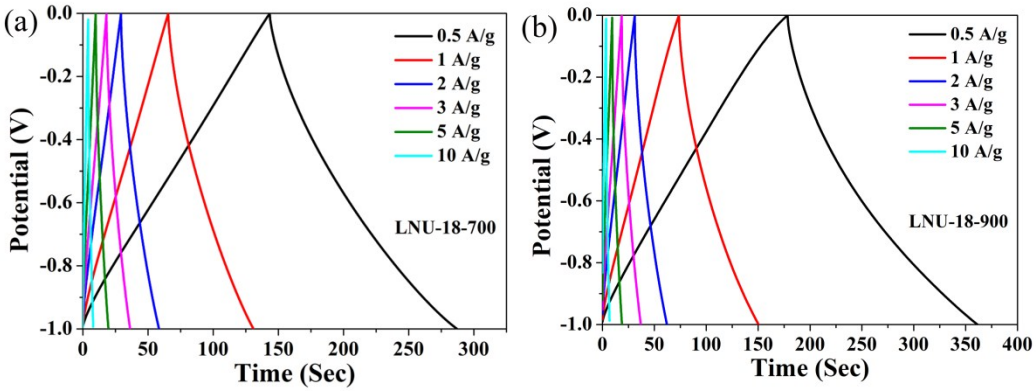

Fig. S9 GCD curves for (a) LNU-18-700 and (b) LNU-18-900 at different current densities.

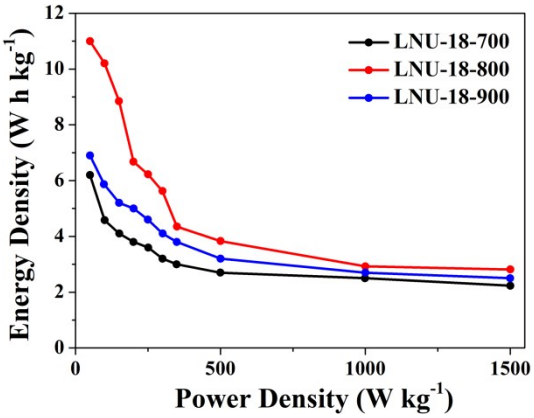

Fig. S10 Ragone plots for LNU-18-700, LNU-18-800, and LNU-18-900.

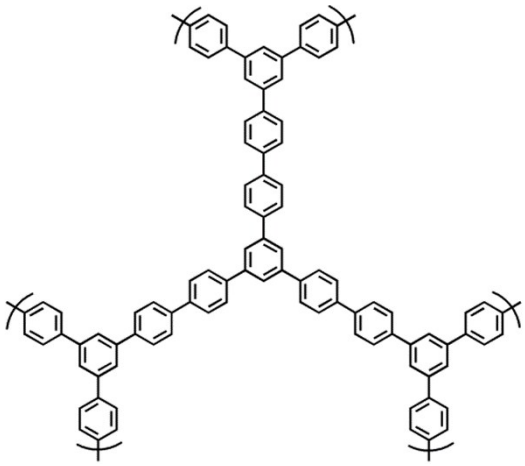

Fig. S11 The structure for PAF-48.

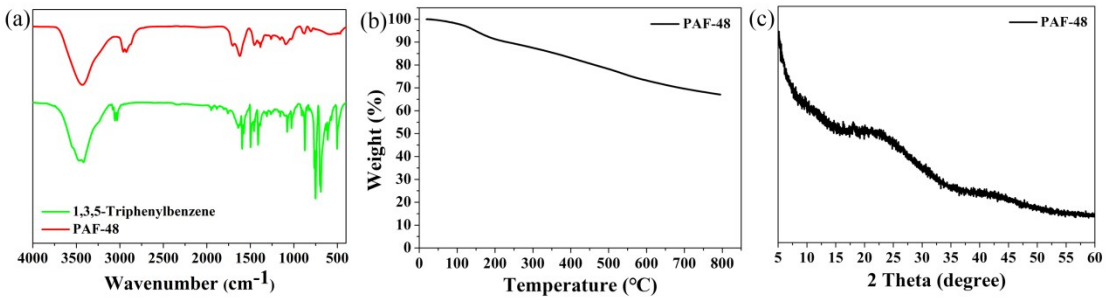

Fig. S12 (a) FTIR spectra for PAF-48; (b) TGA curve for PAF-48 in N_2 condition; (c) PXRD pattern for LNU-18.

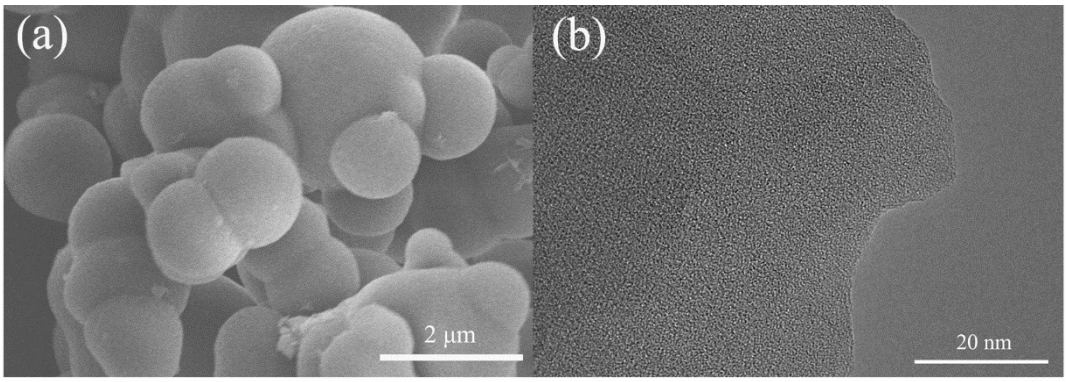

Fig. S13 (a) SEM and (b) TEM micrograph for PAF-48.

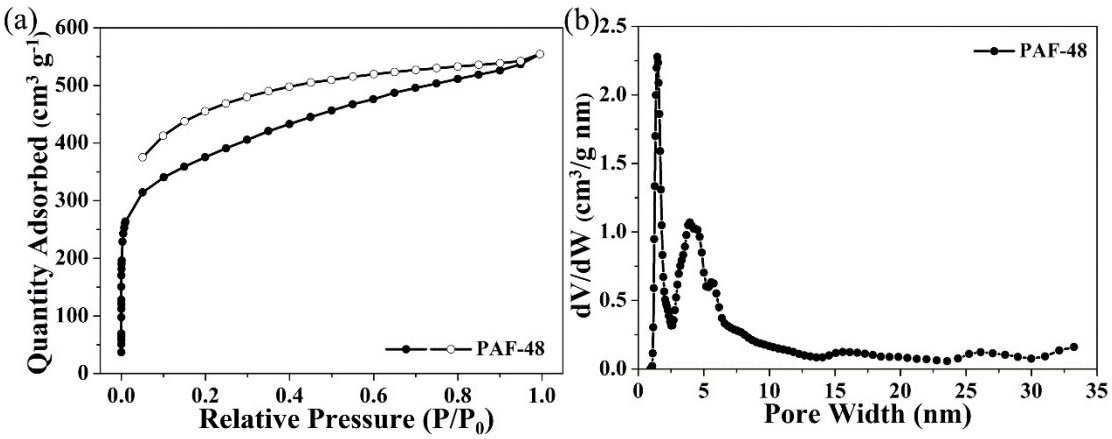

Fig. S14 (a) Nitrogen adsorption (closed)/desorption (open) isotherms for PAF-48; (b) Pore size distribution curve for PAF-48 calculated by the NLDFT method.

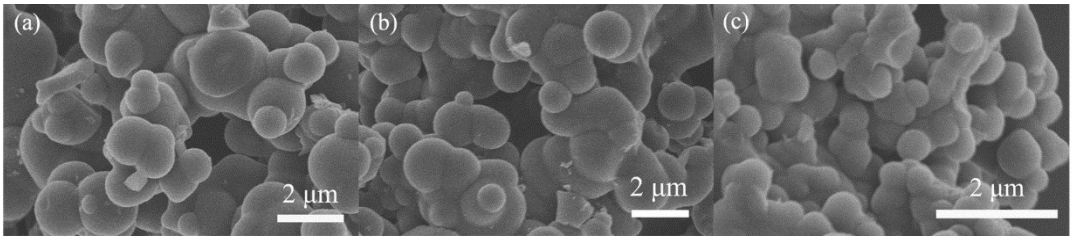

Fig. S15 SEM micrographs for PAF-48-700 (a), PAF-48-800 (b) and PAF-48-900 (c).

Table S2 Specific capacitance (F/g) of the samples at different current densities

precursor	**PAF-48**			**LNU-18**		
carbon materials	PAF-48-700	PAF-48-800	PAF-48-900	LNU-18-700	LNU-18-800	LNU-18-900
0.5 A/g	125	54	52	72	269	92
1 A/g	60	46	39	65	237	77
2 A/g	41	40	28	58	211	62
3 A/g	36	37	23	54	195	55
5 A/g	31	33	20	49	169	47
10 A/g	26	28	17	39	126	34

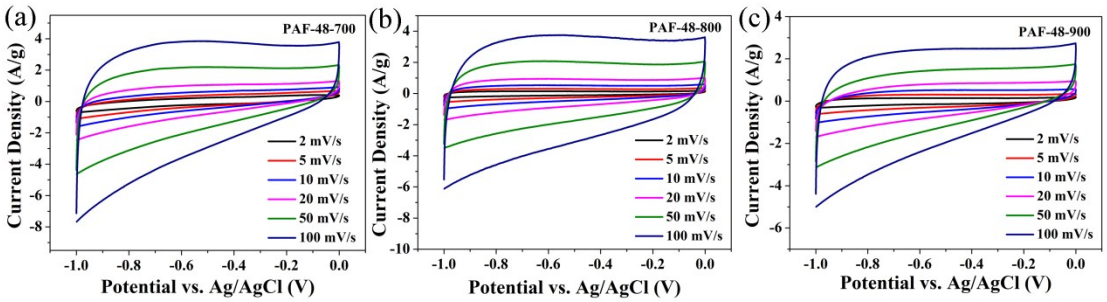

Fig. S16 CV curves for (a) PAF-48-700, (b) PAF-48-800, and (c) PAF-48-900 at different scan rates.

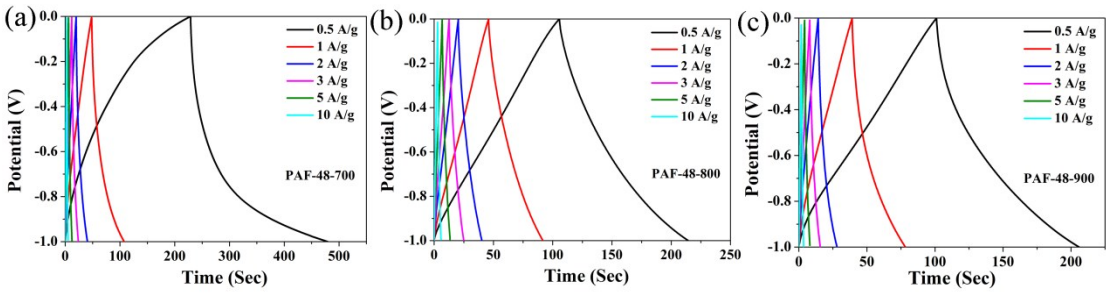

Fig. S17 GCD curves for (a) PAF-48-700, (b) PAF-48-800, and (c) PAF-48-900 at different current densities.

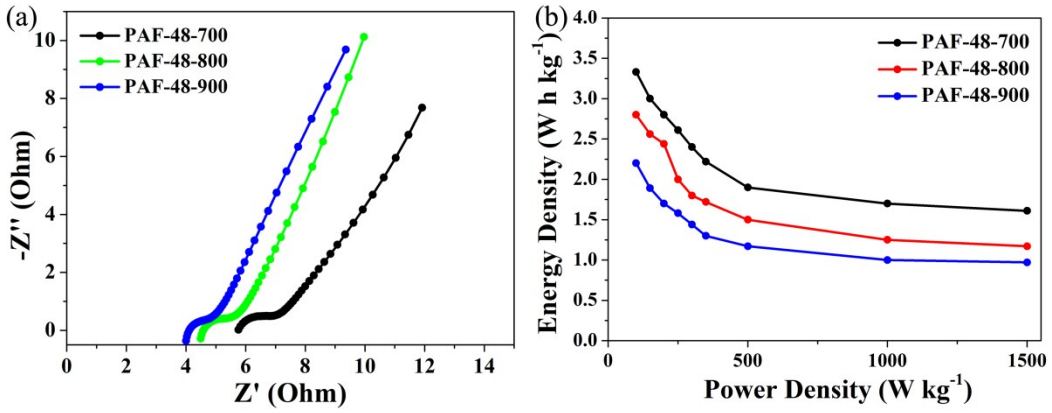

Fig. S18 (a) Nyquist plots for PAF-48s in the frequency range from 0.01 Hz to 100 kHz in the three-electrode system; (b) Ragone plots for PAF-48s in the two-electrode system.

Table S3 Comparison of specific capacitance data of previous reported carbon materials

Sample	Capacitance (F/g)	Current density (A/g)	Electrolyte	References
RGHs-1	230.4	0.3	6 M KOH	1
CS-OH	167	1	1 M H_2SO_4	2
IMPC	258	0.5	1 M H_2SO_4	3
NPHCMs-65-700	208	0.5	6 M KOH	4
NCS	203	0.5	6 M KOH	5
TpPa-COF@PANI	95	0.2	1 M H_2SO_4	6
NWNU-COF-1	155.38	0.25	6 M KOH	7
ACOF1	234	1	6 M KOH	8
C-800	228	1	6 M KOH	9
c-CBAP-N	203.2	1	6 M KOH	10
TAT-CMP-2	183	1	1 M Na_2SO_4	11
N3-CMP	260	0.1	1 M Na_2SO_4	12

References

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