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Electronic Supporting Information

Molten salt synthesis of nitrogen doped porous carbon: A new preparation methodology for high-volumetric capacitance electrodes materials

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Table S1: Chemical composition of Fresh tofu

Composition	**Contents (in every 100g)**
Moisture	80 g
Protein	12.2 g
Fat	4.8 g
Carbohydrate	2 g
Dietary fiber	0.5 g
Ca	138 mg
Mg	63 mg

Table S2: The carbon yield of different samples

Sample	**Yield**
PC	12.0%
APC	4.8%
NPC-750-0	11.8%
NPC-750-0.15	8.0%
NPC-750-0.25	5.2%
NPC-750-0.35	3.4%
NPC-650-0.25	12.0%
NPC-850-0.25	4.6%

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Table S3: Physical and electrochemical properties of the as-prepared carbon materials

	SSA	**V_{total}[a]**	**I_D/I_G**	**Elemental analysis**				**XPS[b]**			**% of total N1s**			**C_m[c]**	**C_V[d]**
	[m^2 g^{-1}]	**[cm^3 g^{-1}]**		**C%**	**N%**	**O%**	**H%**	**C%**	**N%**	**O%**	**N-5**	**N-6**	**N-Q**	**[F g^{-1}]**	**[F cm^{-3}]**
NPC-650-0.25	794	0.48	0.910	74.21	5.79	18.21	1.79	83.63	5.24	10.63	43	21	36	245	250
NPC-850-0.25	1193	0.69	0.944	83.02	3.68	12.14	1.16	89.70	3.52	6.78	44	22	34	323	223
NPC-750-0.15	1143	0.67	0.936	78.55	5.93	14.41	1.11	87.33	5.36	7.31	55	18	27	244	209
NPC-750-0.35	1097	0.70	0.941	80.81	4.39	13.35	1.45	87.96	3.91	8.13	47	20	33	207	173

[a] Total pore volume. [b] Weight percent of elements obtained from XPS analysis. [c] Gravimetric capacitance obtained at a current density of 1 A g^{-1} in 6 mol L^{-1} KOH based on three-electrode system.. [d] Volumetric capacitance obtained at a current density of 1 A g^{-1} in 6 mol L^{-1} KOH based on three-electrode system.

Table S4: Comparison of the properties of carbon materials synthesized from other biomass and their application in supercapacitors

Materials	Activating agent	SSA (m^2 g^{-1})	Maximum Capacitance (F g^{-1})	Measurements done at	Electrolyte	Ref.
Corncob residue	oxidizing gas	1210	314	5 mV s^{-1}	6 M KOH	1
egg yolk	KOH	2277	287	0.5 A g^{-1}	6 M KOH	2
bagasse waste	KOH	2296	320	0.5 A g^{-1}	6 M KOH	3
Lignin	KOH/NaOH	1400	344	10 mV s^{-1}	6 M KOH	4
Seaweed biopolymer	No activation	270	198	2 mV s^{-1}	1 M H_2SO_4	5
microalgae	KOH	2130	200	0.1 A g^{-1}	6 M LiCl	6
acacia gum	KOH	1832	272	1 A g^{-1}	6 M KOH	7
Paulownia Sawdust	NaOH	1900	227	2 mV s^{-1}	6 M KOH	8
rice husk	H_3PO_4	1493	112	1 A g^{-1}	1 M Na_2SO_4	9
Pulp sludge	KOH	2980	190	2 mV s^{-1}	EMIM TFSI	10
Banana bers	$ZnCl_2$	1097	74	0.5 A g^{-1}	1 M Na_2SO_4	11
Tofu	**$LiNO_3$**	**1202**	**429**	**1 A g^{-1}**	**6 M KOH**	**This work**

Table S5: Comparison of energy density and power density of various carbon materials

Materials	Medium	Max energy density	Max power density	Ref.
Nanoporous carbon	1 M H_2SO_4	20 Wh kg^{-1}	—	12
Seaweeds-derived carbon	1 M H_2SO_4	19.5 Wh kg^{-1}	—	13
sugarcane bagasse	1 M H_2SO_4	10 Wh kg^{-1}	—	14
ALG-C	1 M H_2SO_4	10 Wh kg^{-1}	10 kW kg^{-1}	5
rice husk	1 M Na_2SO_4	10 Wh kg^{-1}	1421W kg^{-1}	9
Hierarchical porous carbon	1 M Na_2SO_4	15.9 Wh kg^{-1}	18.8 kW kg^{-1}	15
Graphene/carbon black	6 M KOH	—	5.1 kW kg^{-1}	16
tofu	**1 M Na_2SO_4**	**32.95 Wh kg^{-1}**	**12.5 kW kg^{-1}**	**This work**

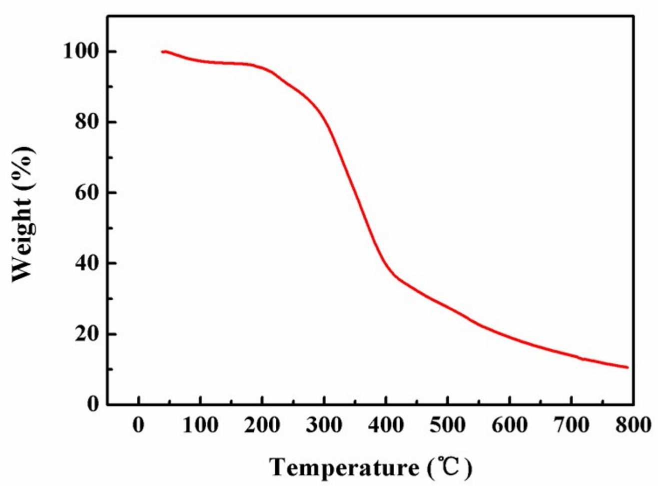

Figure S1 TG curves of Tofu powder

Figure S2 Comparison of the photograph of boat after carbonization

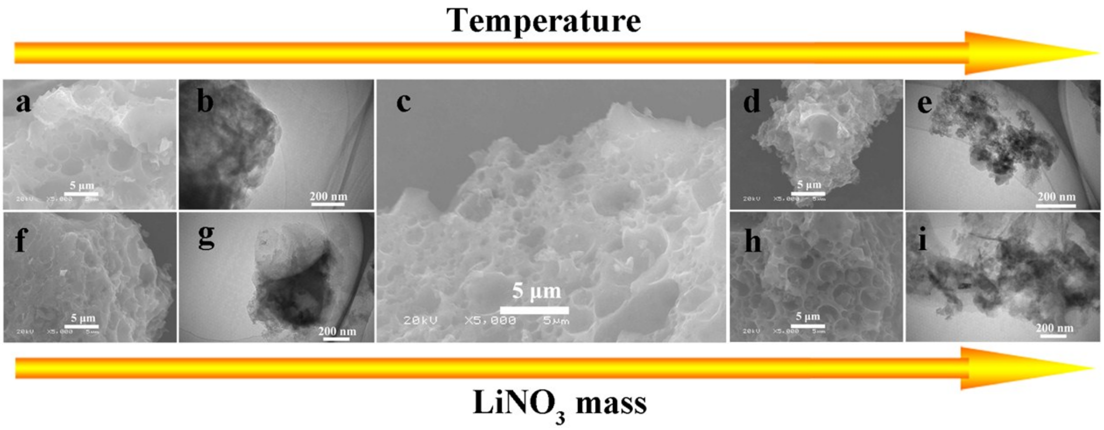

Figure S3 The SEM and TEM images of NPC-650-0.25 (a and b), NPC-750-0.25 (c), NPC-850-0.25 (d and e), NPC-750-0.15 (f and g) and NPC-750-0.35 (h and i), respectively.

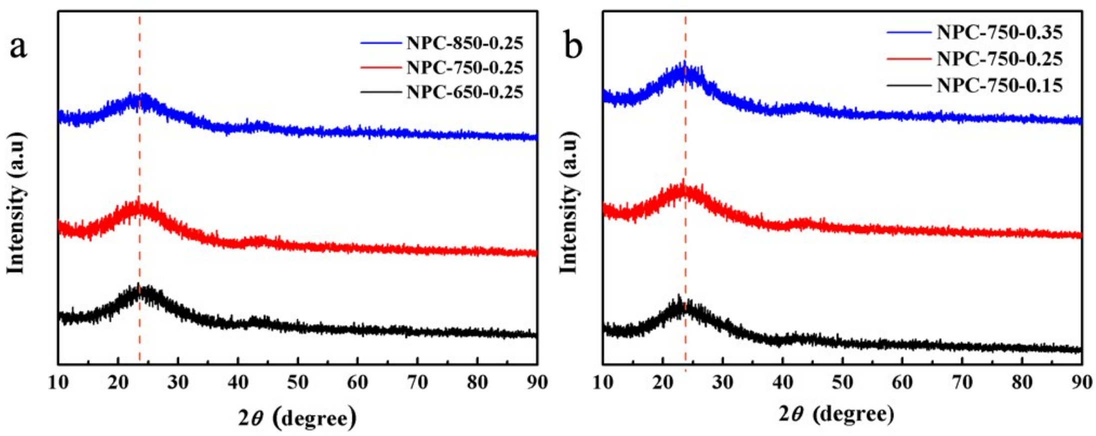

Figure S4 The XRD of carbon prepared at different temperature (a) and $LiNO_3$ mass loading (b).

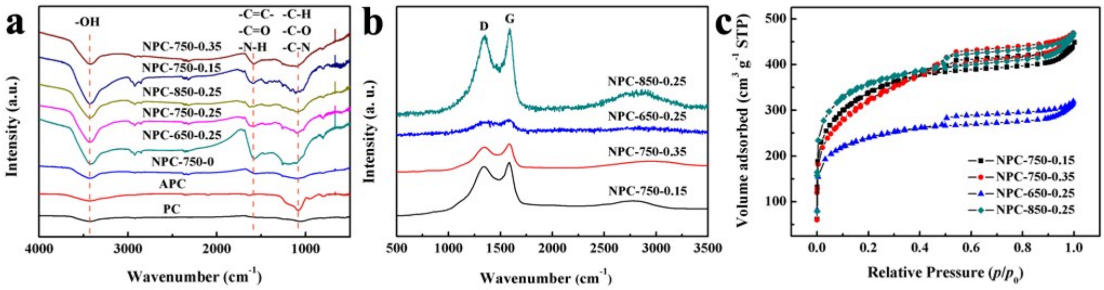

Figure S5 (a) FT-IR, (b) Raman and (c) BET of as-prepared samples, respectively.

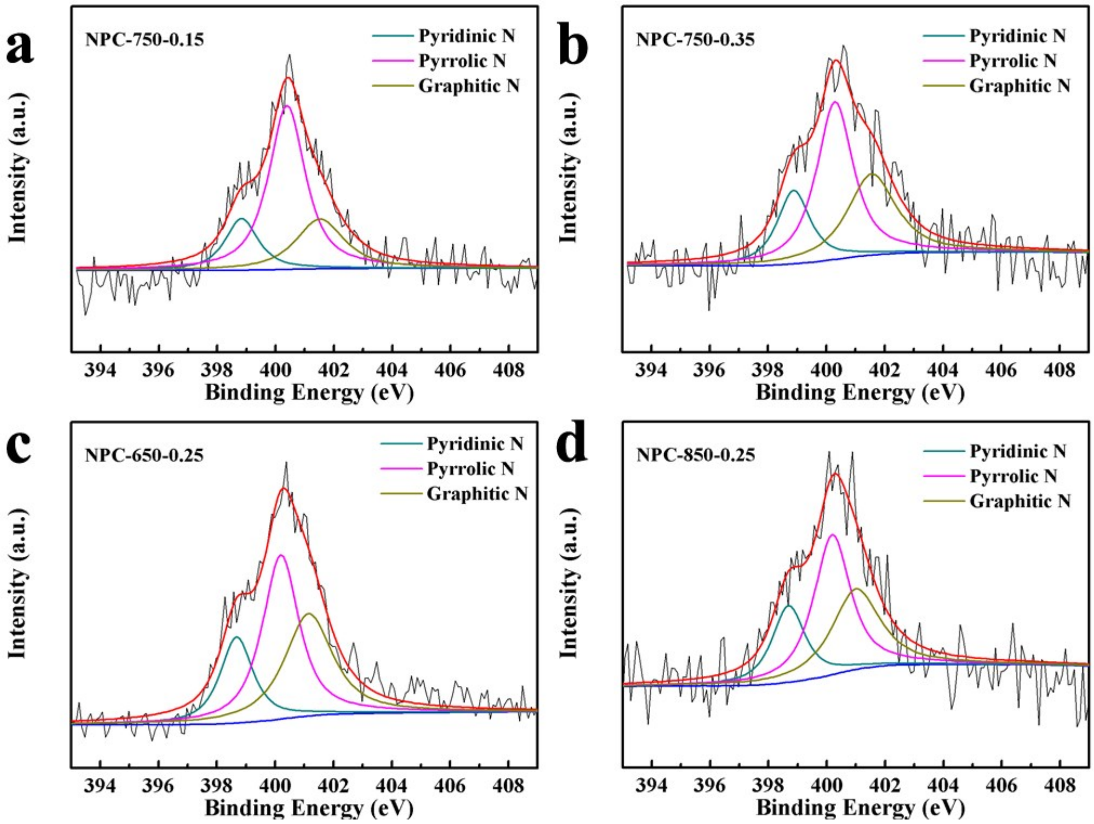

Figure S6 High-resolution XPS sepctra of N 1s of NPC-750-0.15 (a), NPC-750-0.35 (b), NPC-650-0.25 (c) and NPC-850-0.25 (d), respectively.

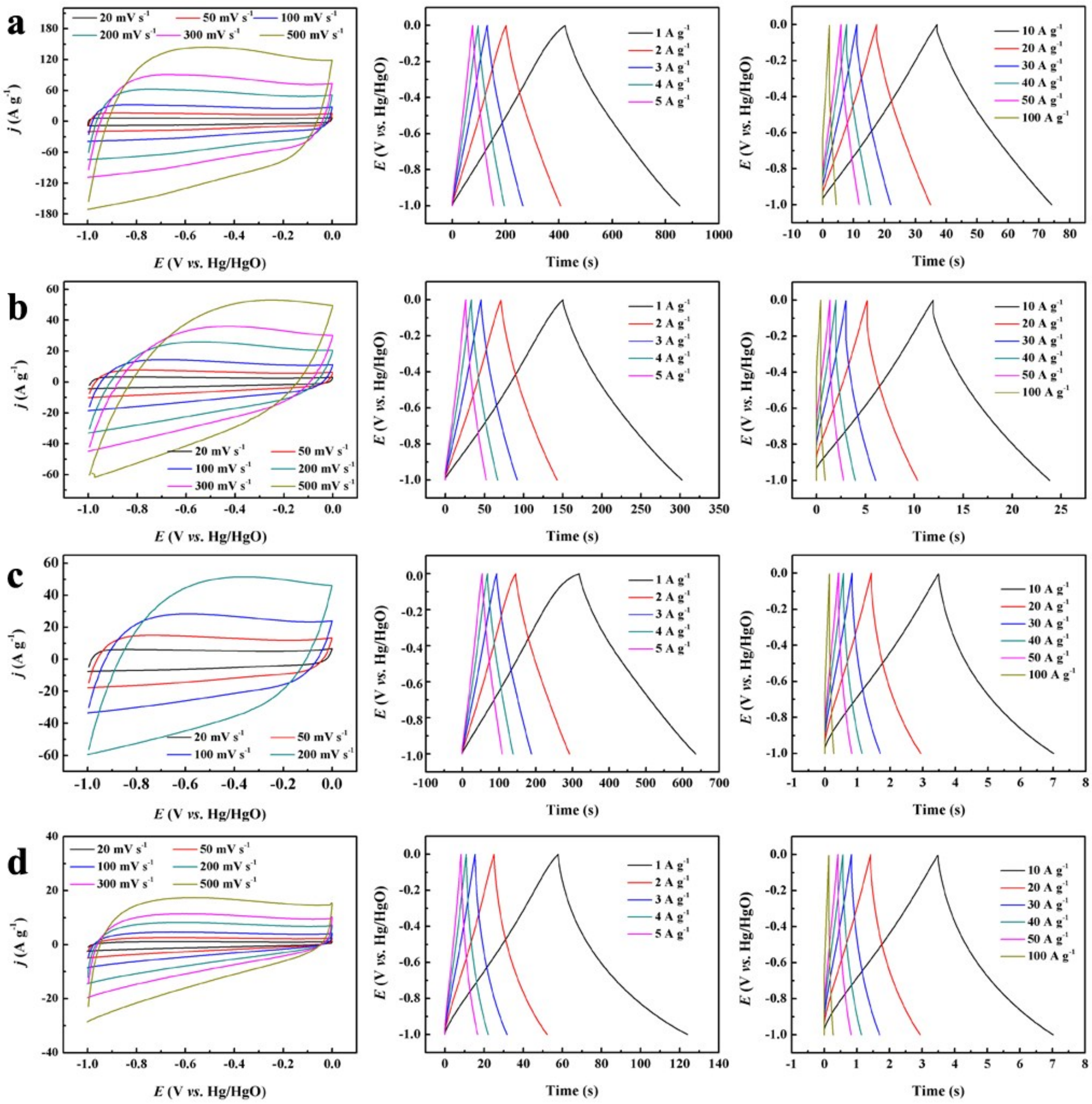

Figure S7 CV and GCD curves of NPC-750-0.25 (a), NPC-750-0 (b), APC(c), and PC (d), respectively.

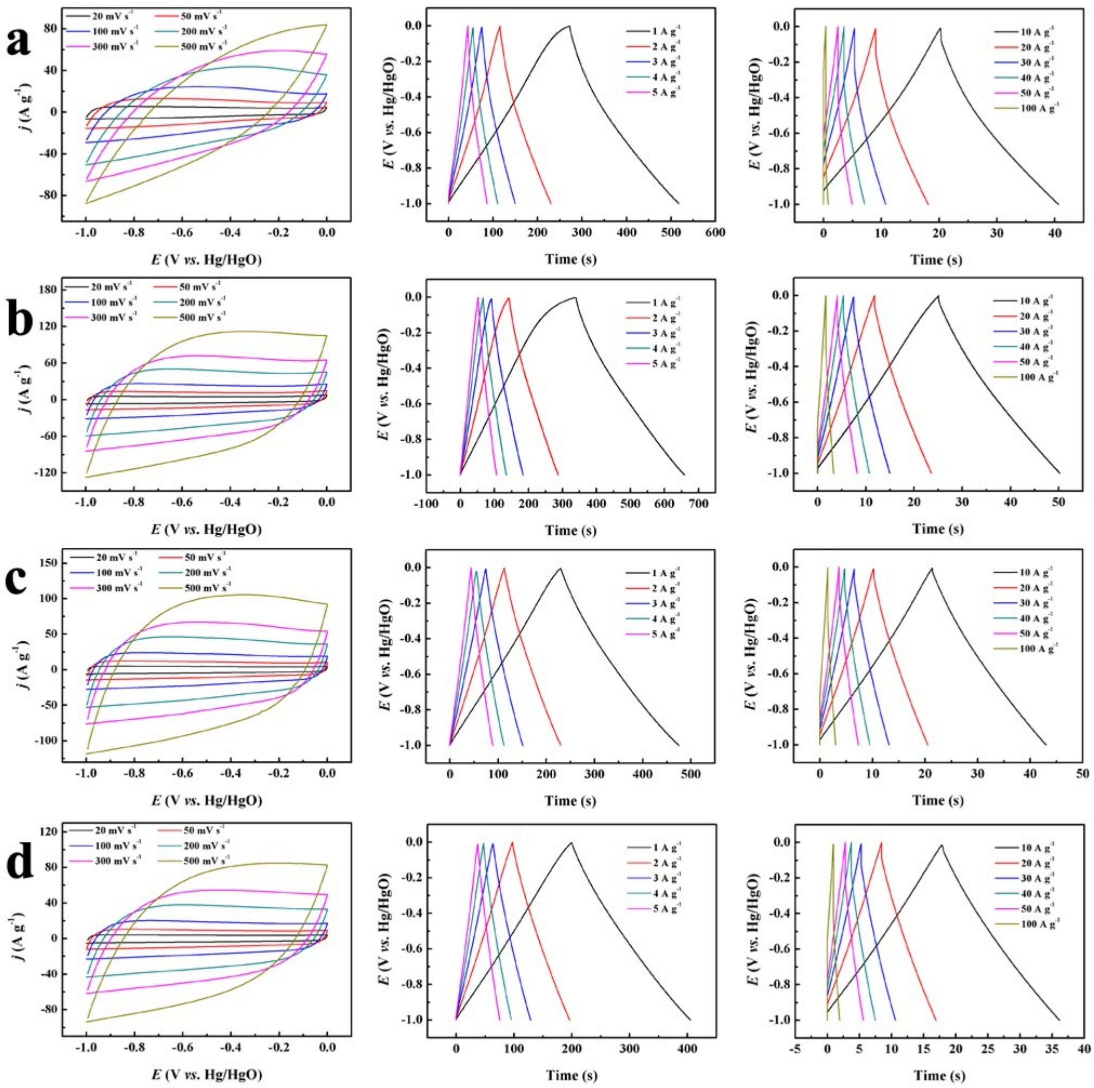

Figure S8 CV and GCD curves of NPC-60-0.25(a), NPC-80-0.2 (b), NPC-750-0.15 (c) and NPC-750-0.35 (d), respectively.

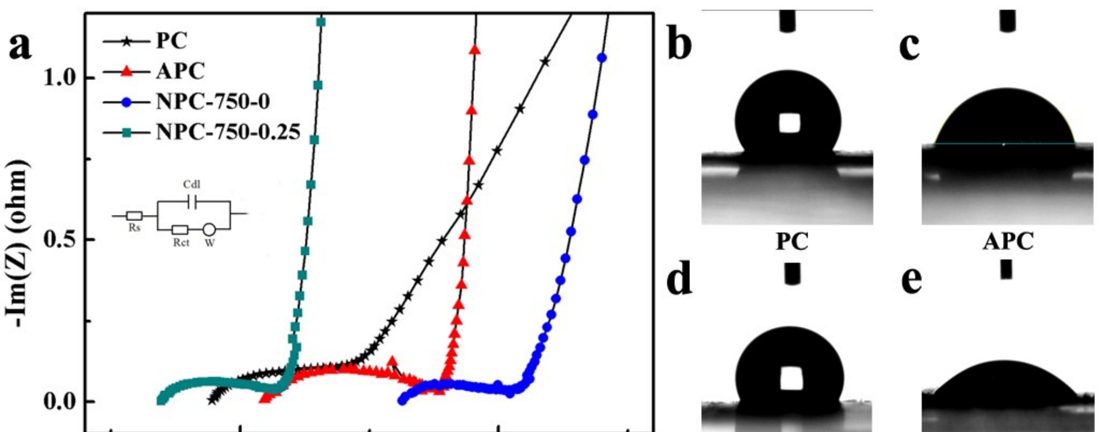

Figure S9 (a) The enlarged EIS of PC, APC, NPC-750-0 and NPC-750-0.25, the insert is the equivalent circuit diagram; Wetting angles of water droplet on PC (b) APC (c), NPC-750-0 (d) and NPC-750-0.25 (e) substrates.

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