SUPPORTING INFORMATION

FOR

Biomass based nitrogen-doped structure-tunable versatile porous carbon material

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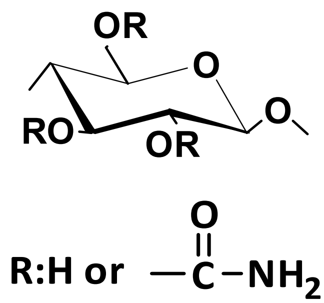

Fig. S1 Chemical structure of cellulose carbamate (CC) as precursor for the preparation of HNPCs.

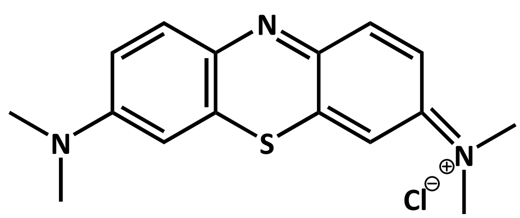

Fig. S2 Chemical structure of methylene blue (MB) as model organic dye compound.

Fig. S3 Bulk Nitrogen-doped porous carbons (HNPCs) in different shapes.

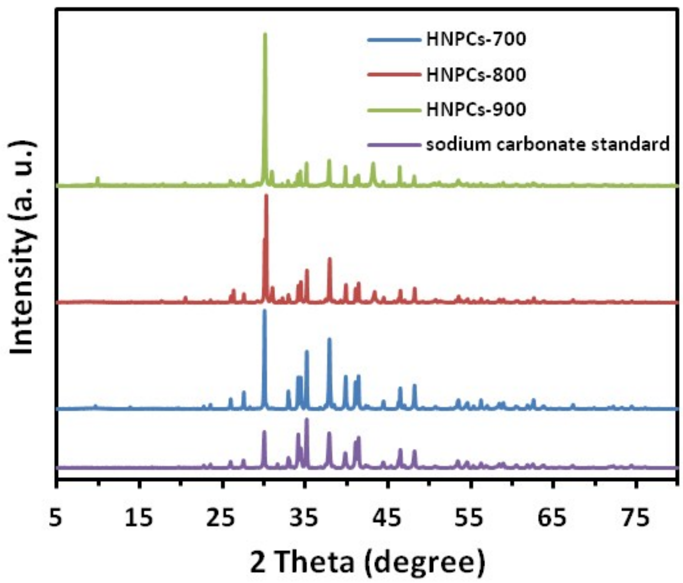

Fig. S4 X-ray diffraction patterns of Na_2CO_3 standard and Na_2CO_3 obtained from washing procedure in preparing Nitrogen-doped porous carbons (HNPCs) at different temperature.

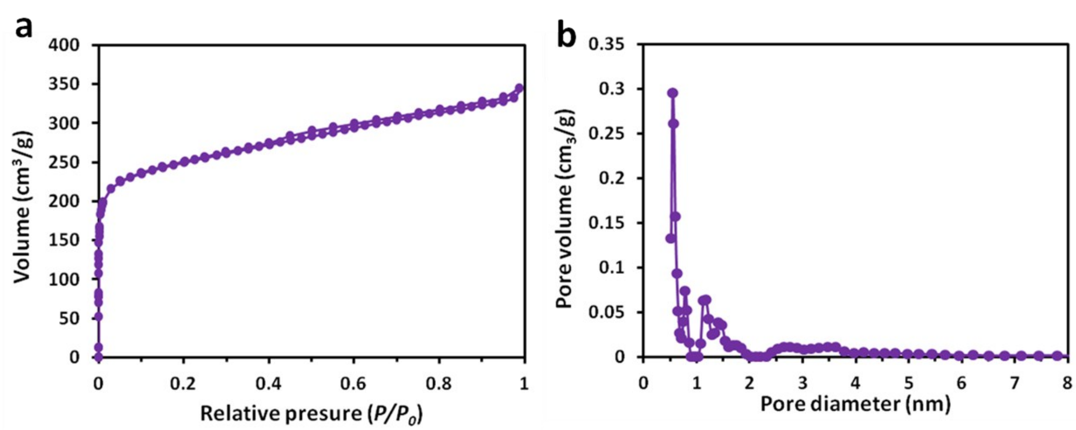

Fig. S5 (a) Nitrogen adsorption/desorption isotherm and (b) corresponding pore size distribution of CC-900.

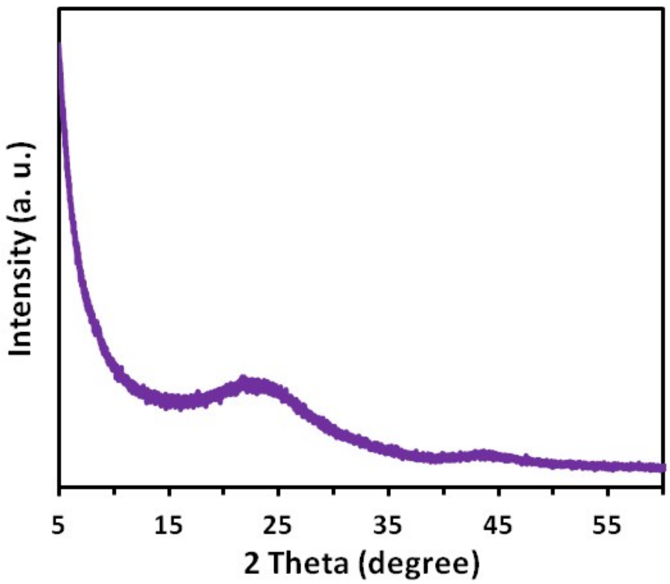

Fig. S6 XRD pattern of CC-900.

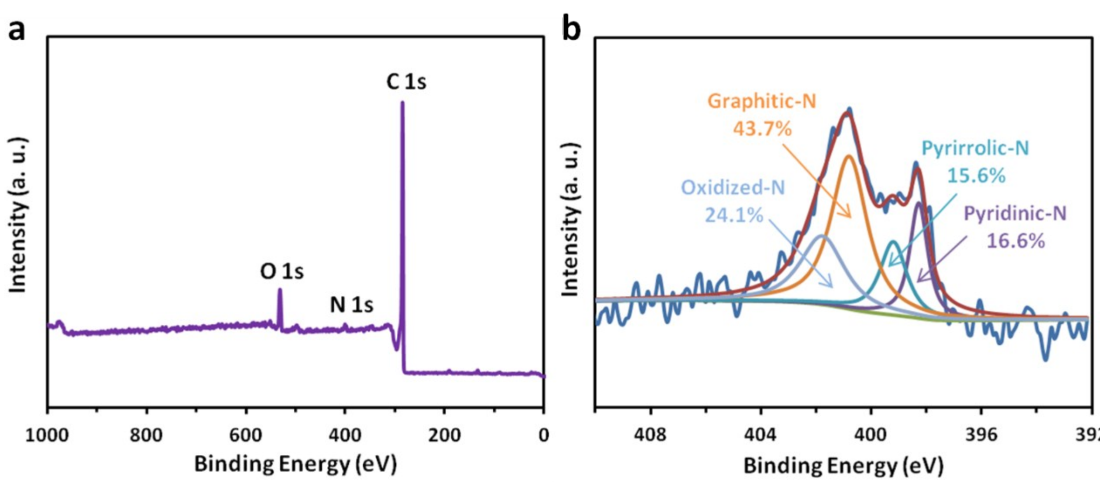

Fig. S7 (a) XPS Survey spectra and (b) the High-resolution N 1s spectra of CC-900.

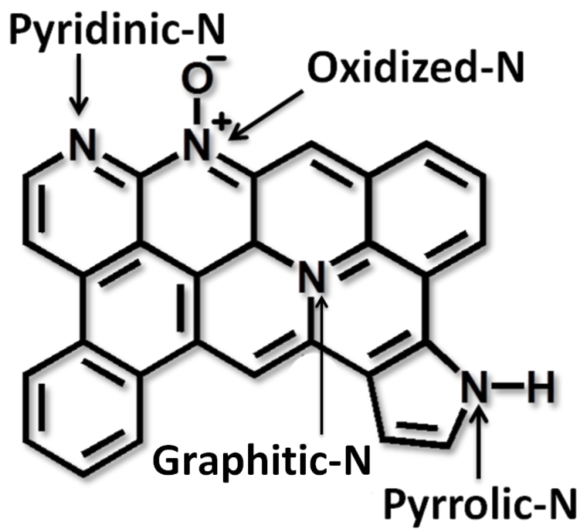

Fig. S8 Illustration of nitrogen element with different chemical states on the surface of nitrogen-doped porous carbons.

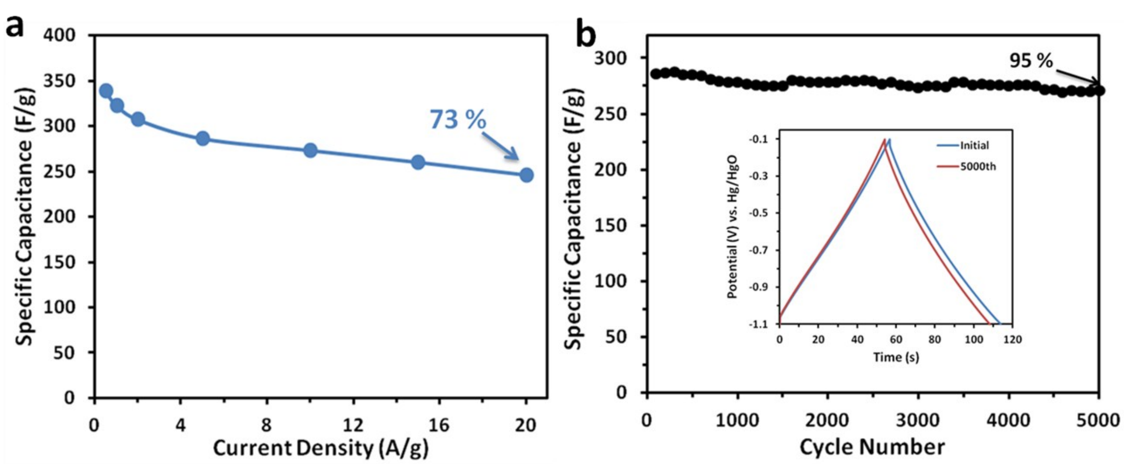

Fig. S9 (a) Variation of specific capacitance with increasing current densities for HNPCs-900. (b) Specific capacitance of HNPCs-900 for 5000 cycles charge/discharge test at current density of 5 A/g (Insert exhibits initial and 5,000th GCD curves).

Table S1. Comparison of gravimetric capacitances of nitrogen-doped porous carbon materials at various current densities in a three-electrode cell with 6 M KOH solution as electrolyte.

Entry	Materials	SBET (m2/g)	N %	C_g (F/g) at different current density (A/g)				Ref.
				0.5	1	5	10	
1	Boron and nitrogen co-doped porous carbon	376	0.53	247	155	150	135	15
2	N-doped activated carbon sheets	1998	3.06	312	300	260	250	25
3	Porous nitrogen-doped carbon nanotubes	1765	4.56	210	174	--	130	52
4	3D nitrogen-doped porous carbon	1470	8.20	296	250	190	180	53
5	Nitrogen-doped porous graphitic carbon	1027	7.72	--	293	260	235	54
6	Nitrogen-doped mesoporous carbons	653	3.9	213	195	165	--	55
7	HNPCs-900	3700	7.70	339	323	286	273	**This work**

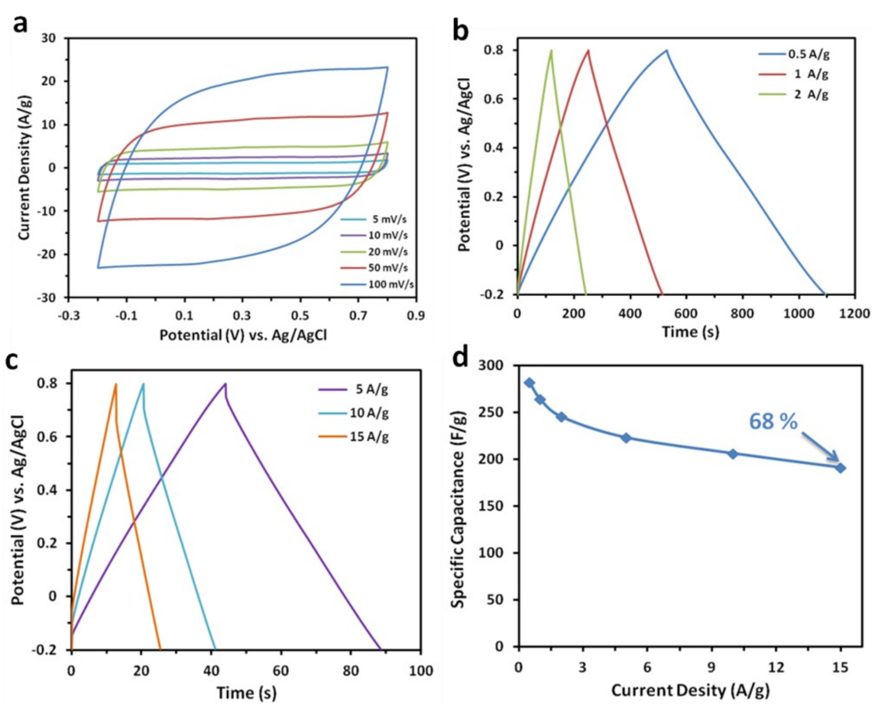

Fig. S10 Electrochemical performance of the HNPCs-900 in a three-electrode cell with 1 M H_2SO_4 as electrolyte. (a) CV curves at various scan rate. (b), (c) GCD profiles tested at 0.5-15 A/g. (d) Variation of specific capacitance with increasing current densities.

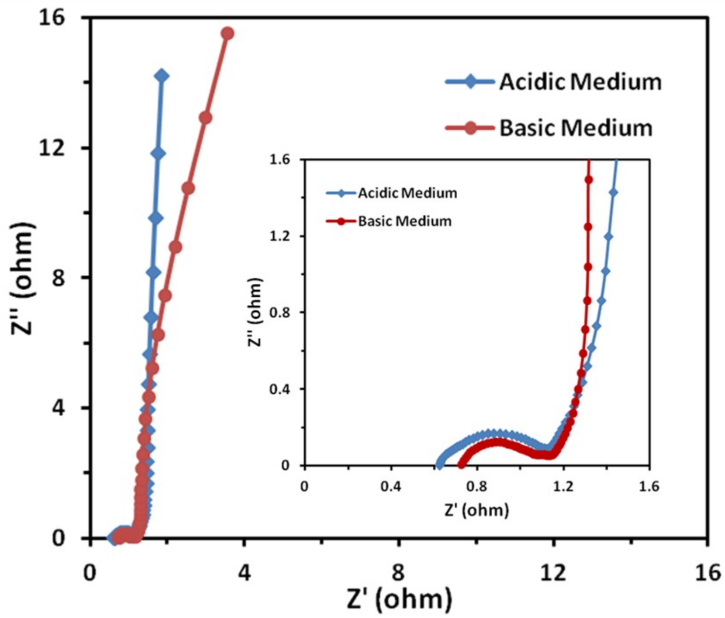

Fig. S11 Nyquist plots of HNPCs-900 in basic and acidic medium, 6 M KOH (red line) and 1 M H2SO4 (blue line) and (Inset shows locally enlarged Nyquist plots in high frequency region).

Table S2. Static contact angle with basic and acidic electrolytes on HNPCs-900 electrode.

Electrolyte	Contact angle (°)
6 M KOH	28.9 ± 3.5
1M H_2SO_4	33.0 ± 4.2

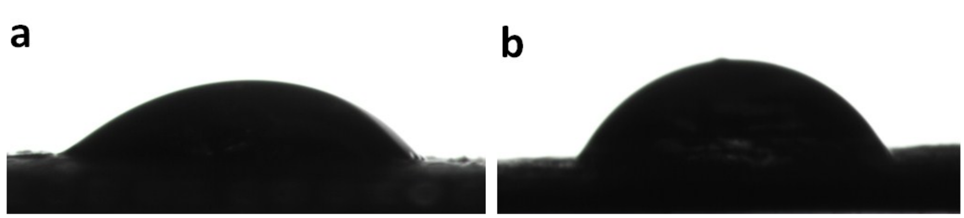

Fig. S12 Photographs of (a) basic medium and (b) acidic medium droplets on the surface of HNPCs-900 electrode.

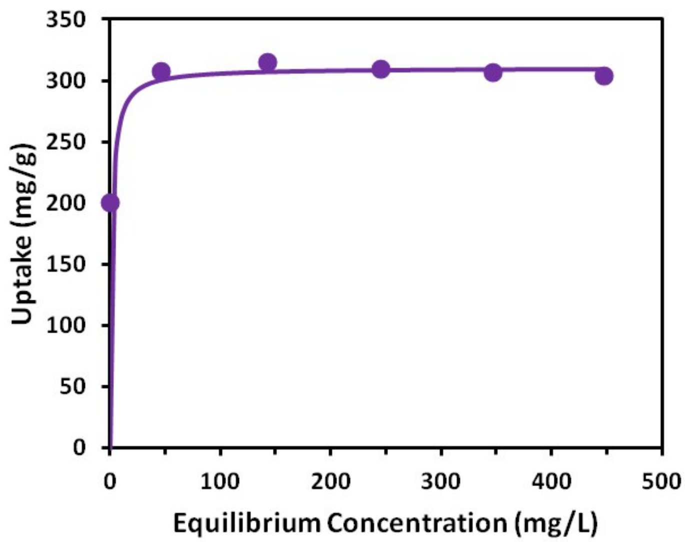

Fig. S13 Equilibrium adsorption isotherms of MB on CC-900 (experimental conditions: 5.0 mg of HNPCs was added in 10 mL MB solution at a designated concentration after stirring for 3 h. MB initial concentration (C_0) =100-600 mg/L, the CC-900 concentration = 0.5 g/L).