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Supplementary Information

Self-Templating Synthesis of Heteroatom-Doped Large-Scalable Carbon Anodes for High-Performance Lithium-Ion Batteries

Ghulam Yasin [a, b, c, *], Muhammad Arif [d], Jiameng Ma [a], Shumaila Ibraheem [c], Donglin Yu [a], Lipeng Zhang [a], Dong Liu [a, *], Liming Dai [e, *]

[a] State Key Laboratory of Organic-Inorganic Composites, Center for Soft Matter Science and Engineering, Beijing University of Chemical Technology, Beijing 100029, China.

[b] College of Materials Science and Engineering, Beijing University of Chemical Technology, Beijing 100029, China.

[c] Institute for Advanced Study, Shenzhen University, Shenzhen 518060, Guangdong, China.

[d] State Key Laboratory of Chemical Resource Engineering, College of Chemical Engineering, Beijing University of Chemical Technology, Beijing 100029, China.

[e] School of Chemical Engineering, University of New South Wales, Sydney, NSW2052, Australia.

Corresponding Authors:

yasin@mail.buct.edu.cn (G. Yasin)

liudong@mail.buct.edu.cn (D. Liu)

l.dai@unsw.edu.au (L. Dai)

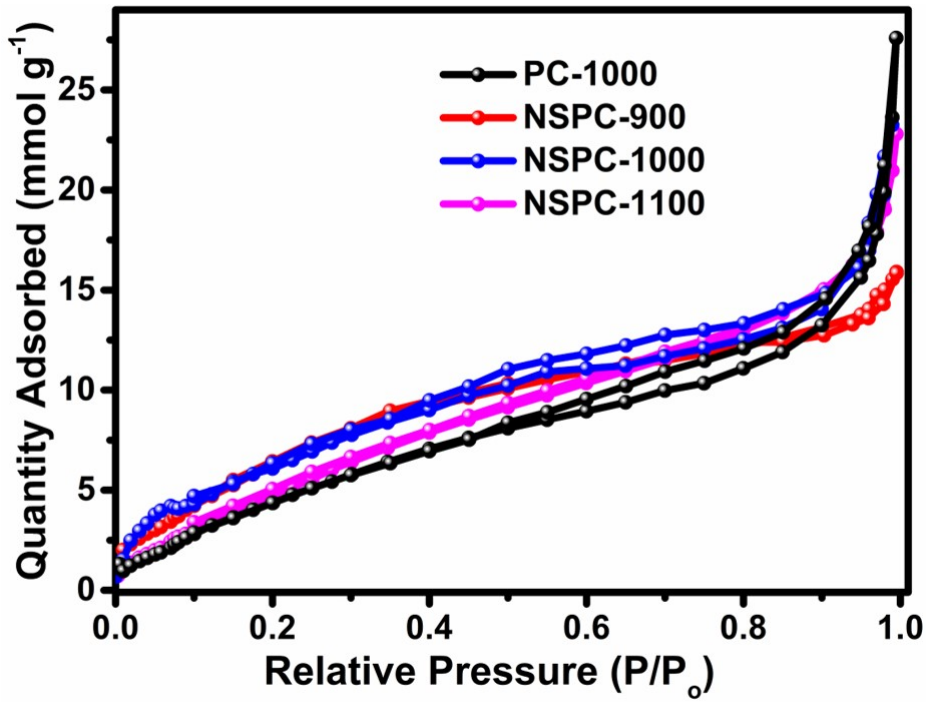

Figure S1. Nitrogen adsorption and desorption isotherms for PC-1000, NSPC-900, NSPC-1000 and NSPC-1100.

Table S1: Summary of the d-spacing of prepared samples.

Samples	**NSPC-900**	**NSPC-1000**	**NSPC-1100**	**PC-1000**
2Θ (degree)	24.91	24.27	24.19	25.38
d_{002} (nm)	0.357	0.367	0.369	0.351

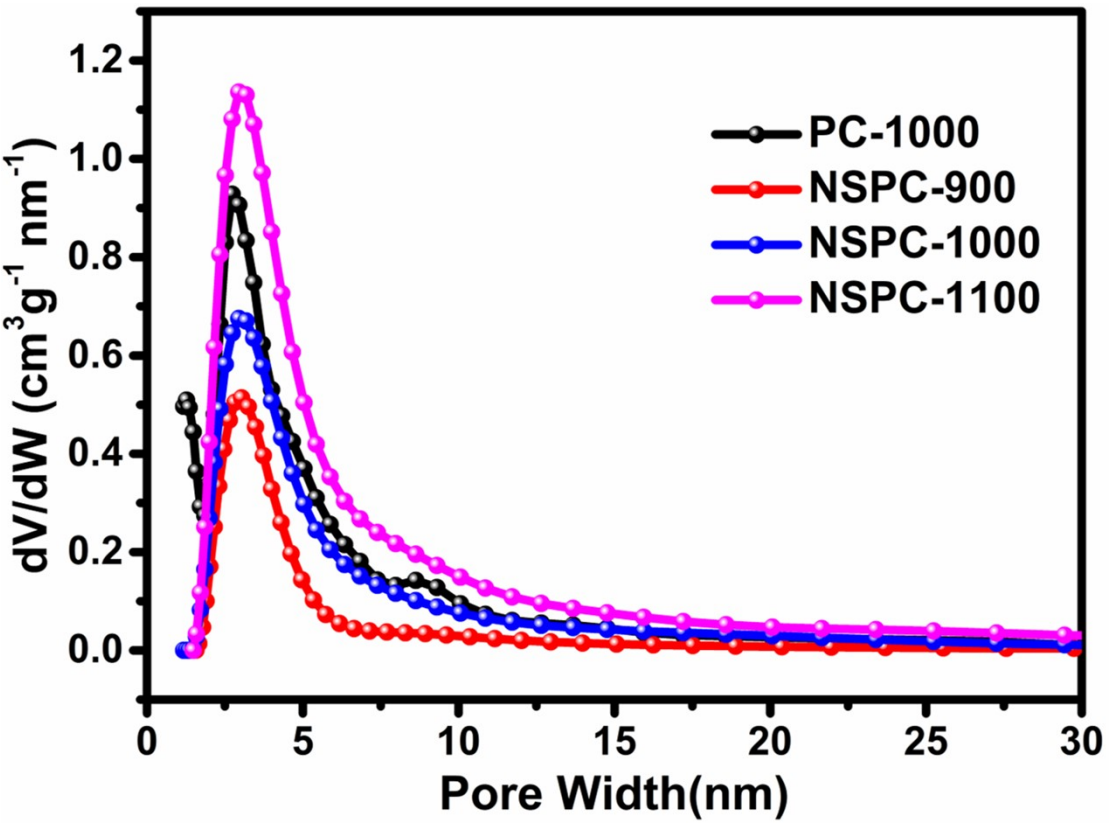

Figure S2. Pore size distributions for PC-1000, NSPC-900, NSPC-1000 and NSPC-1100 determined by NLDFT method.

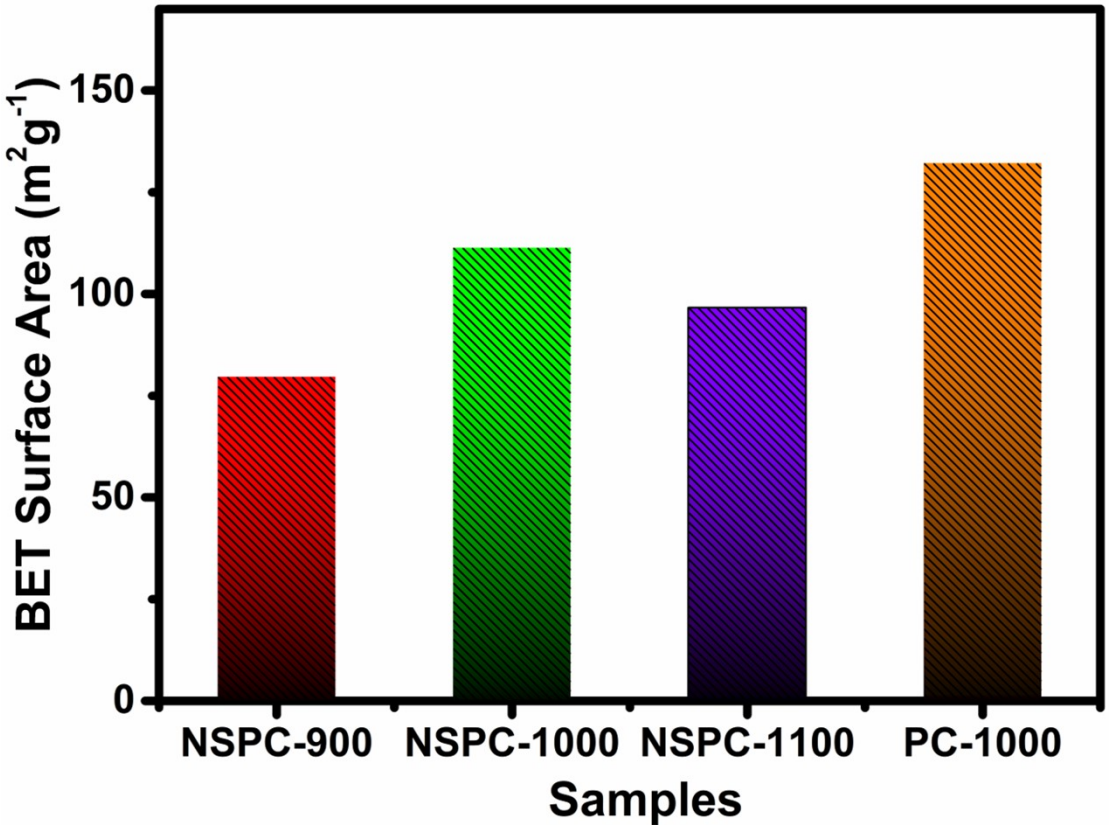

Figure S3. BET surface areas of NSPC-900, NSPC-1000, NSPC-1100 and PC-1000 samples.

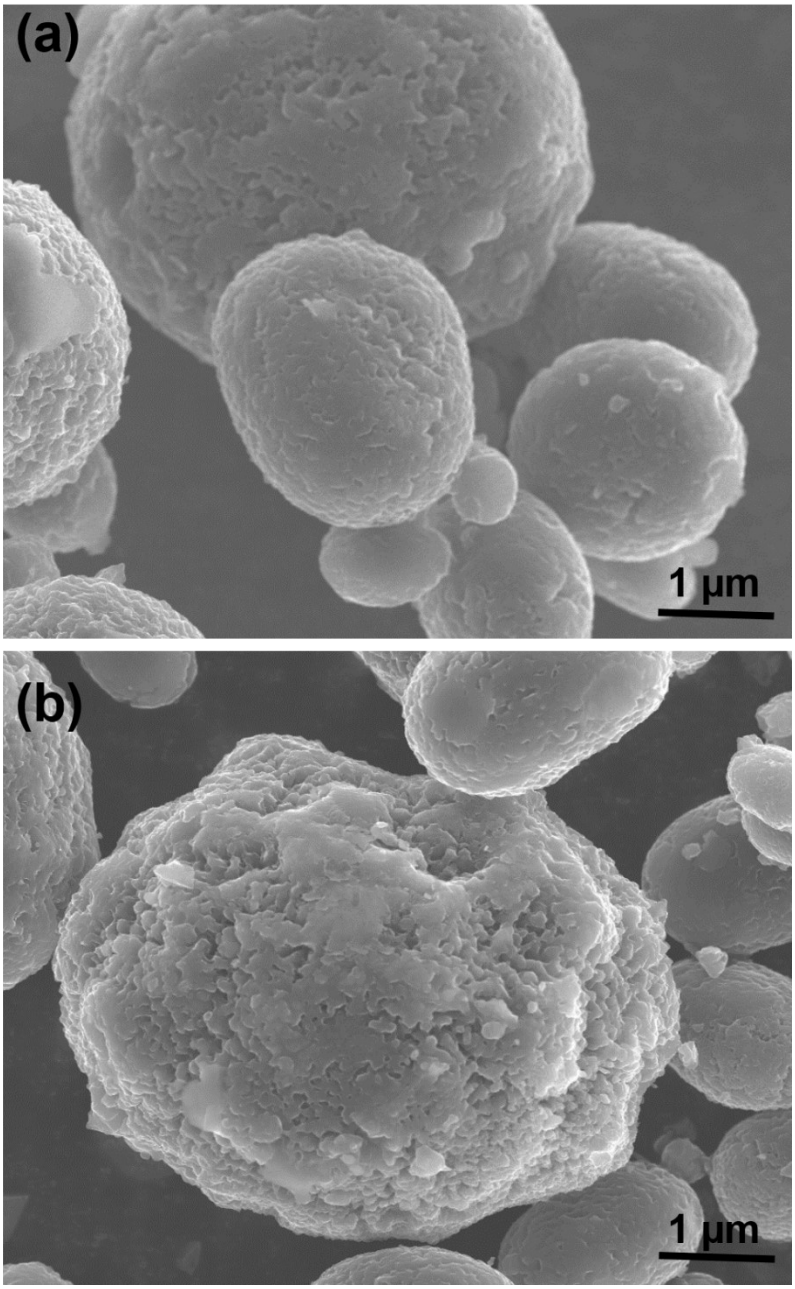

Figure S4. SEM images of (a) NSPC-900 and (b) NSPC-1100.

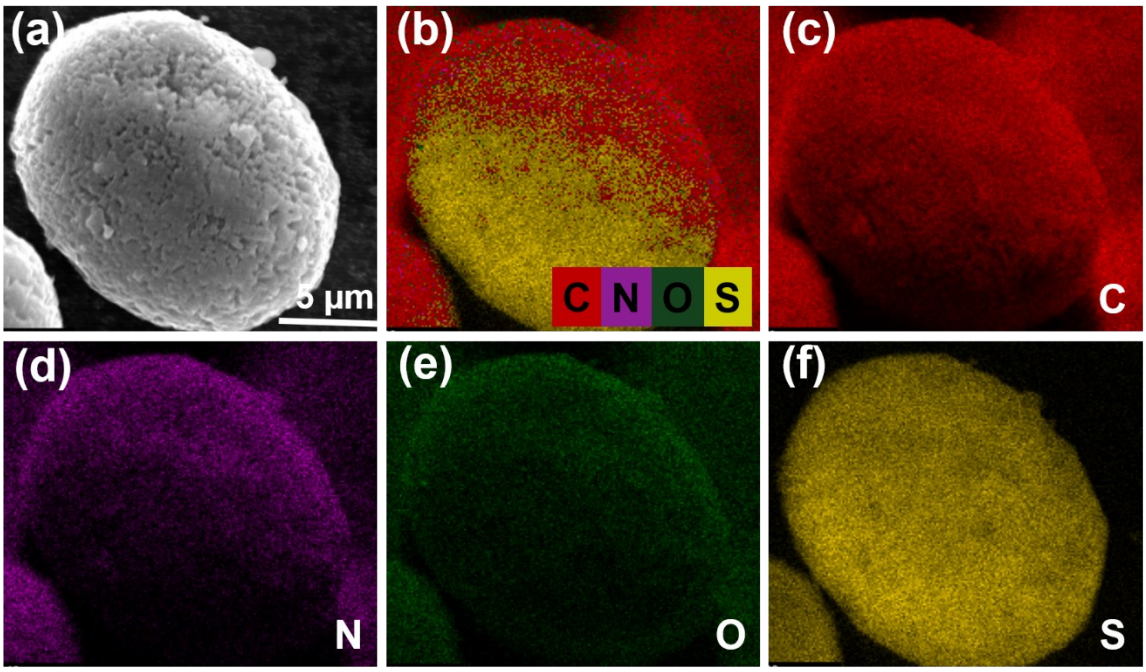

Figure S5. SEM image (a) and (b-f) SEM-EDS elemental mapping of NSPC-1000.

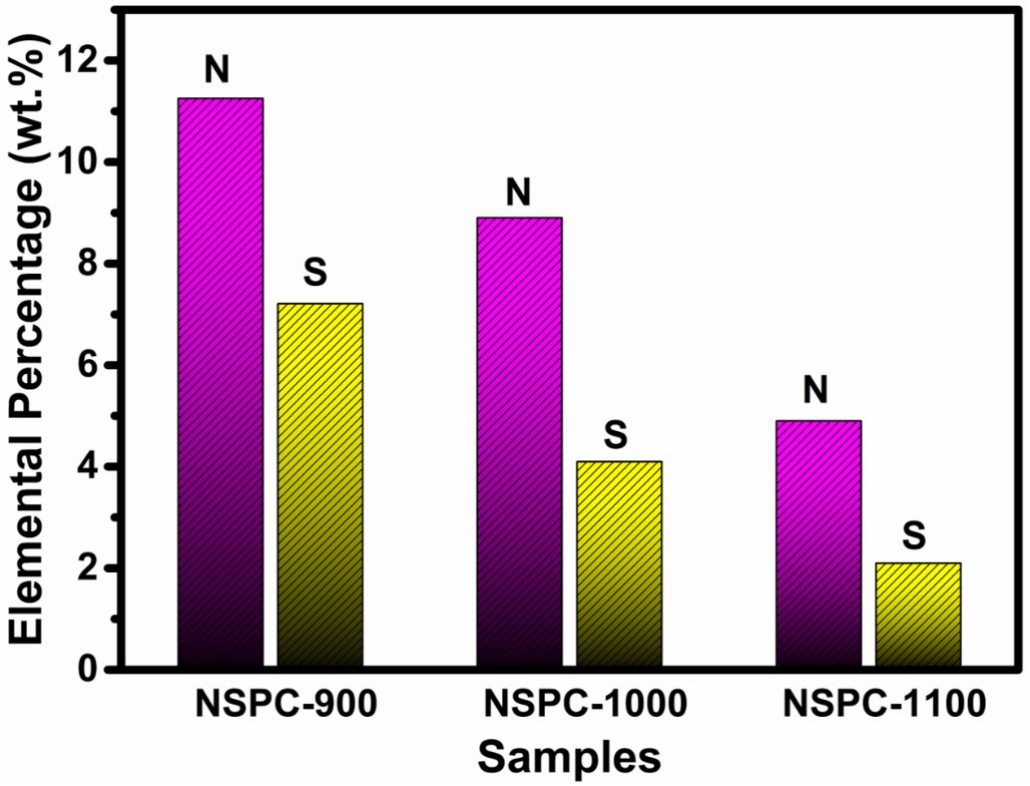

Figure S6. Elemental composition of as-prepared $NSPC_X$ samples.

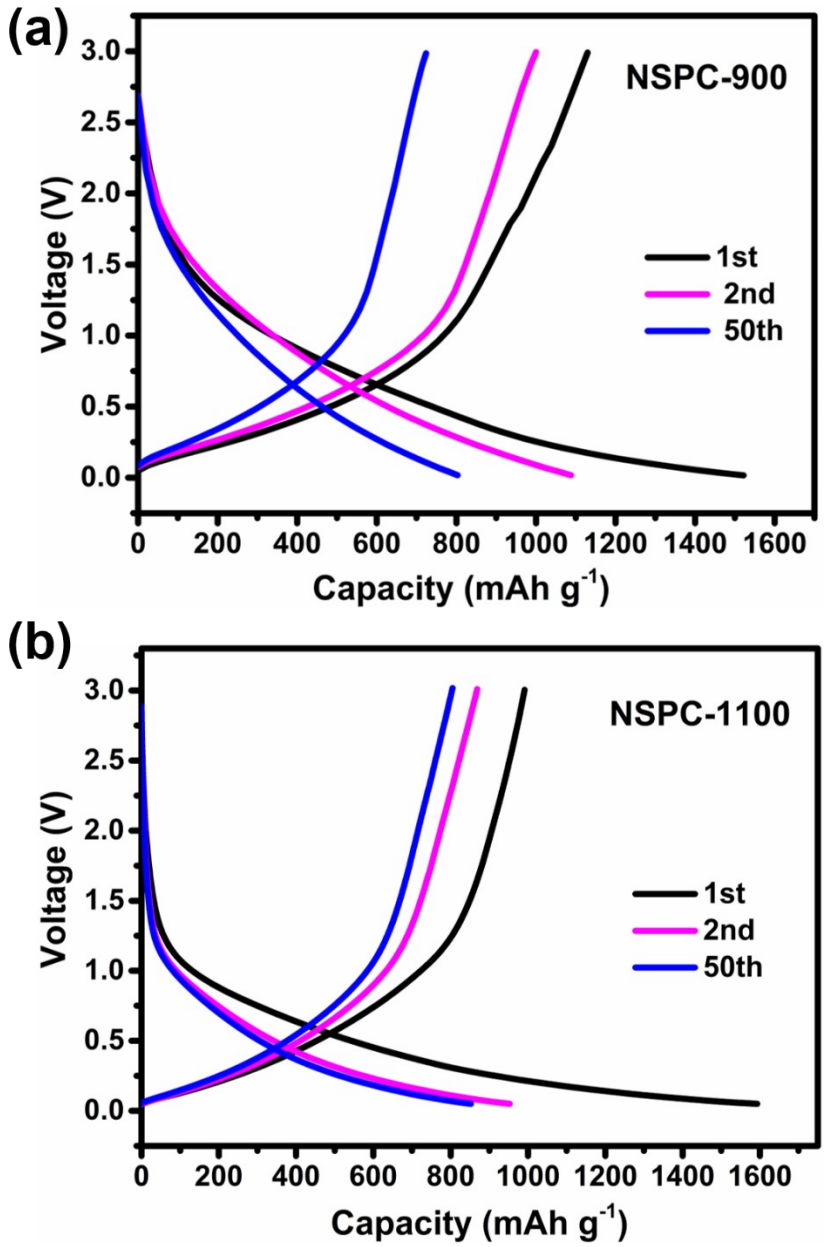

Figure S7. Charge-discharge curves for (a) NSPC-900 and (b) NSPC-1100 at a current density of 0.1 A g^{-1}.

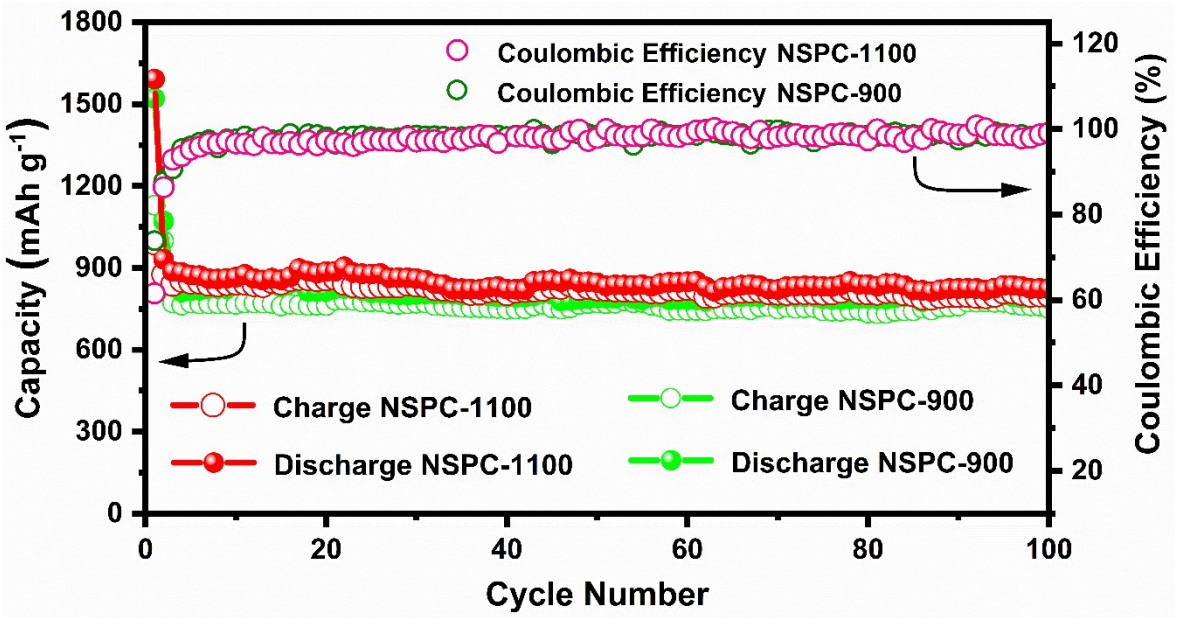

Figure S8. Cycling performance and corresponding Coulombic efficiencies of NSPC-900 and NSPC-1100 samples at 0.1 A g^{-1}.

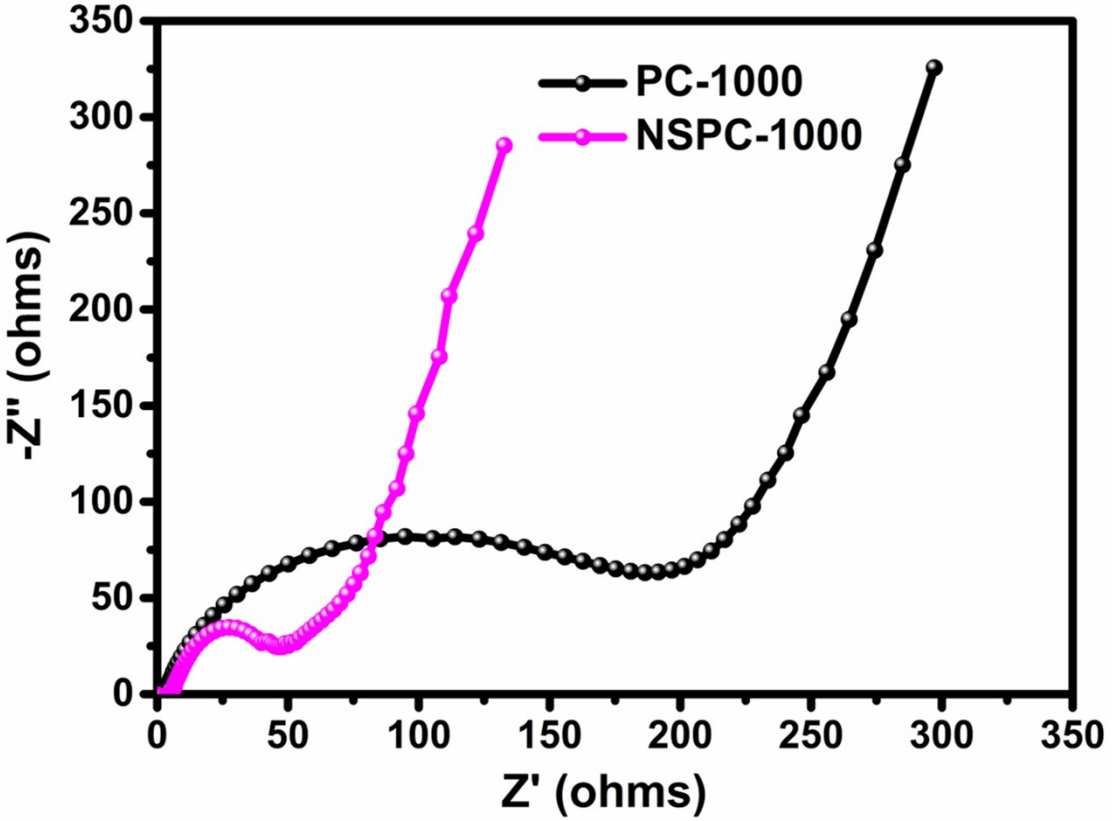

Figure S9. Electrochemical impedance spectra of PC-1000 and NSPC-1000.

Table S2: Comparison of lithium storage performance with recently reported literatures.

Sr. No.	Material/Morphology	Stable Capacity	Cycling Performance	Reference
1	NSPC-1000	935 mA h g^{-1} At 0.1 A g^{-1} after 150 cycles	695 mA h g^{-1} At 5 A g^{-1} after 1150 cycles	This Work
2	S,N-co-doped mesoporous carbon materials	675.1 mA h g^{-1} At 0.1 A g^{-1} after 150 cycles	675.1 mA h g^{-1} At 0.1 A g^{-1} after 150 cycles	[1]
3	Nitrogen and Sulfur Codoped Graphene Electrode Material	1050 mA h g^{-1} At 0.2 A g^{-1} after 500 cycles	297 mA h g^{-1} At 5 A g^{-1} after 1500 cycles	[2]
4	Nitrogen and sulfur dual-doped graphene sheets	490 mA h g^{-1} At 0.1 A g^{-1} after 500 cycles	211 mA h g^{-1} At 1 A g^{-1} after 5000 cycles	[3]
5	Hierarchical porous nitrogen, sulfur, dual-doped carbon	1215 mA h g^{-1} At 0.1 A g^{-1} after 100 cycles	362 mA h g^{-1} At 20 A g^{-1} after 100 cycles	[4]
6	nitrogen and sulfur co-doped porous carbon	768 mA h g^{-1} At 0.7 A g^{-1} after 15 cycles	504 mA h g^{-1} At 3.1 A g^{-1} after 120 cycles	[5]
7	Nitrogen and Phosphorus Codoped Porous Carbon Framework	940 mA h g^{-1} At 0.5 A g^{-1} after 20 cycles	740 mA h g^{-1} At 2 A g^{-1} after 2000 cycles	[6]
8	Nitrogen and sulfur dual-doped carbon films	832.4 mA h g^{-1} At 0.1 A g^{-1} after 42 cycles	357.2 mA h g^{-1} At 2 A g^{-1} after 2000 cycles	[7]
9	Ultrahigh level nitrogen/sulfur co-doped carbon	917 mA h g^{-1} At 0.1 A g^{-1} after 40 cycles	653 mA h g^{-1} At 1 A g^{-1} after 500 cycles	[8]
10	N and S co-doped graphene sheets	732.3 mA h g^{-1} At 0.5 A g^{-1} after 70 cycles	788.2 mA h g^{-1} At 0.1 A g^{-1} after 50 cycles	[9]
11	sulfur doped graphene-based nanosheets	740 mA h g^{-1} At 0.37 A g^{-1} after 10 cycles	290 mA h g^{-1} At 1.48 A g^{-1} after 500 cycles	[10]
12	Hierarchically porous and nitrogen, sulfur-codoped graphene-like microspheres	1180 mA h g^{-1} At 0.05 A g^{-1} after 70 cycles	725 mA h g^{-1} At 0.5 A g^{-1} after 80 cycles	[11]

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