Supporting Information

Ultrasmall MoC Nanoparticles Embedded in 3D Frameworks of Nitrogen-Doped Porous Carbon as Anode Materials for Efficient Lithium Storage with Pseudocapacitance

Xiudong Chen[1,2†], Li-Ping Lv[1,†], Weiwei Sun[1], Yiyang Hu[1], Xuechun Tao[1], Yong Wang[1,*]

[1]*School of Environmental and Chemical Engineering, Shanghai University, Shangda Road 99, Shanghai, 200444, P. R. China*

[2]*School of Chemistry and Chemical Engineering, Qiannan Normal College for Nationalities, Duyun, Guizhou, P. R. China, 558000*

*Corresponding authors: Tel: +86-21-66137723; fax: +86-21-66137725.

Email address: yongwang@shu.edu.cn (Y. Wang)

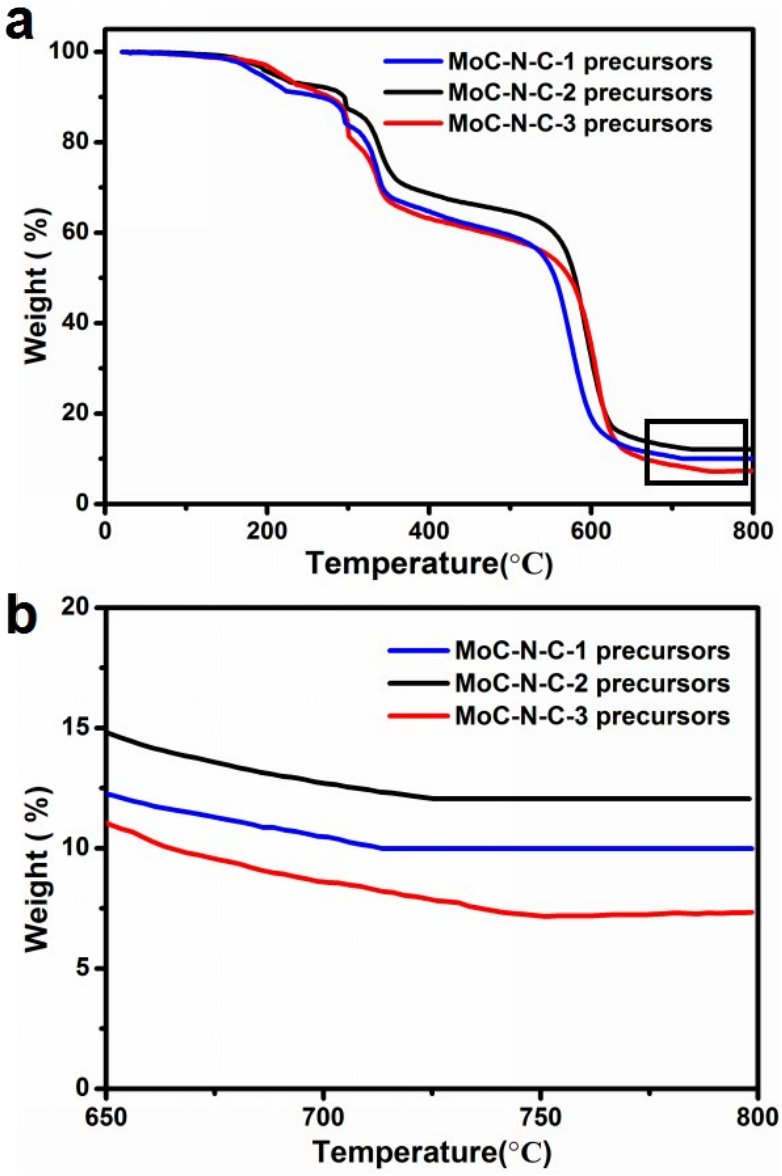

Fig. S1 (a) TGA curve of the precursors for synthesizing MoC-N-C-1, MoC-N-C-2 and MoC-N-C-3 in N_2, (b) Enlarged view marked with black boxes in (a).

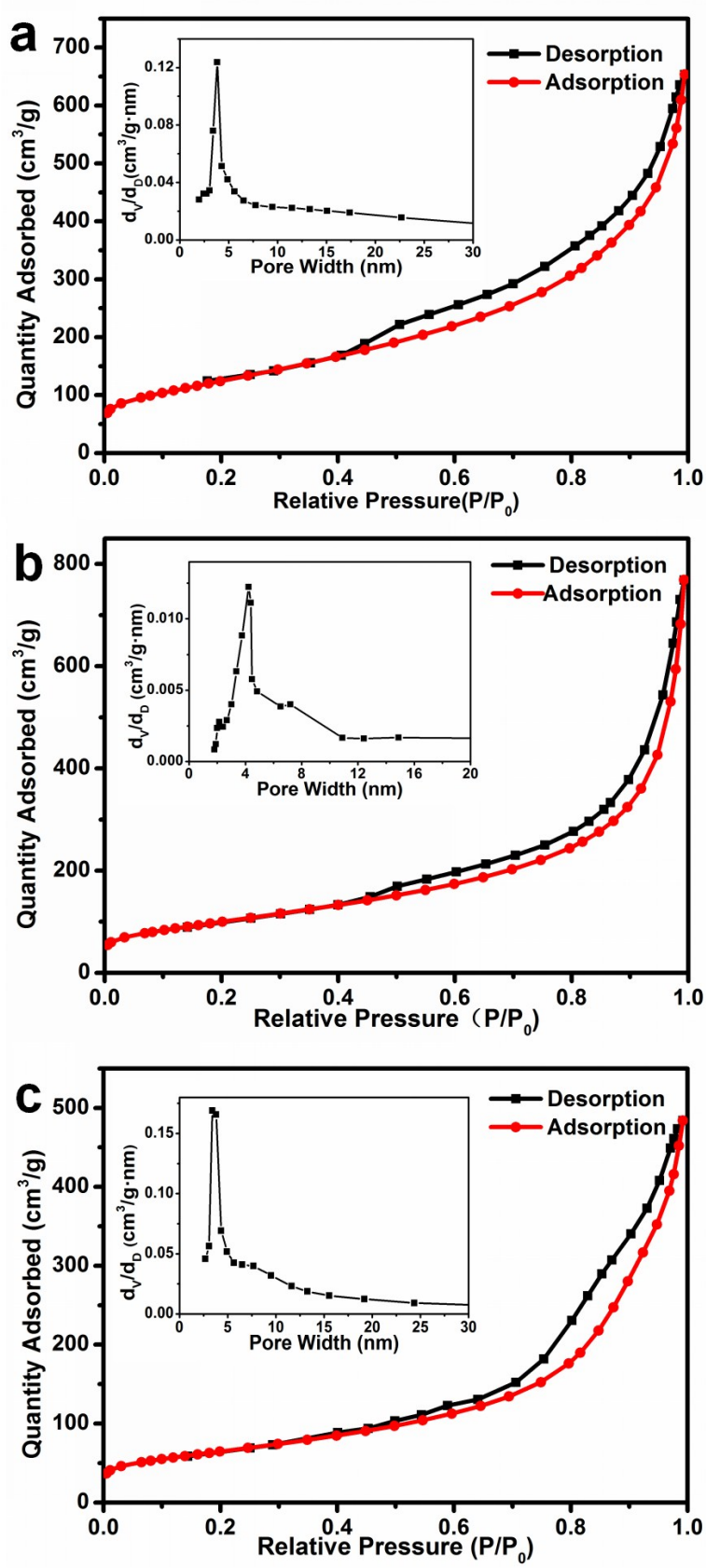

Fig. S2 Nitrogen adsorption/desorption isotherms of (a) MoC-N-C-1, (b) MoC-N-C-2 and (c) MoC-N-C-3. The inset curves are the corresponding Barrett-Joyner-Halenda (BJH) pore size distribution plots.

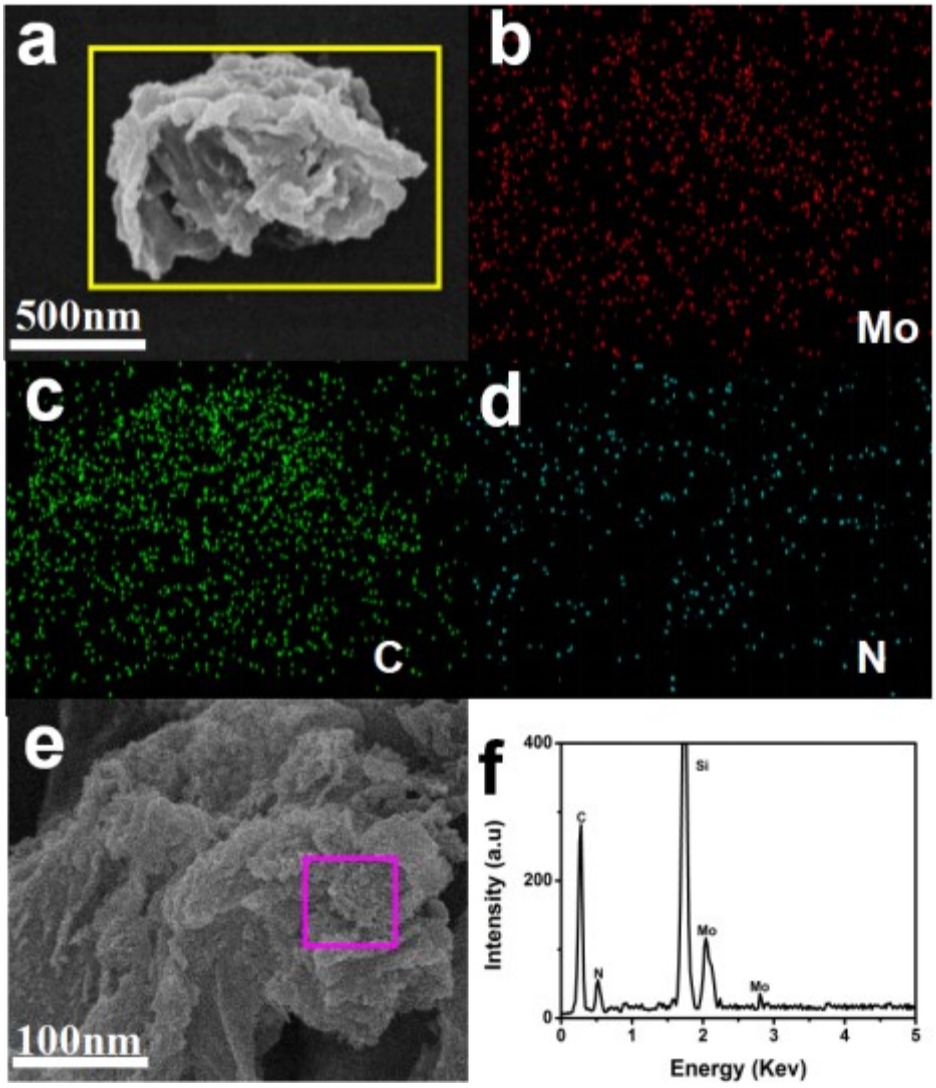

Fig. S3 (a-d) Elemental mapping images and (e-f) the EDS spectra of MoC-N-C-2.

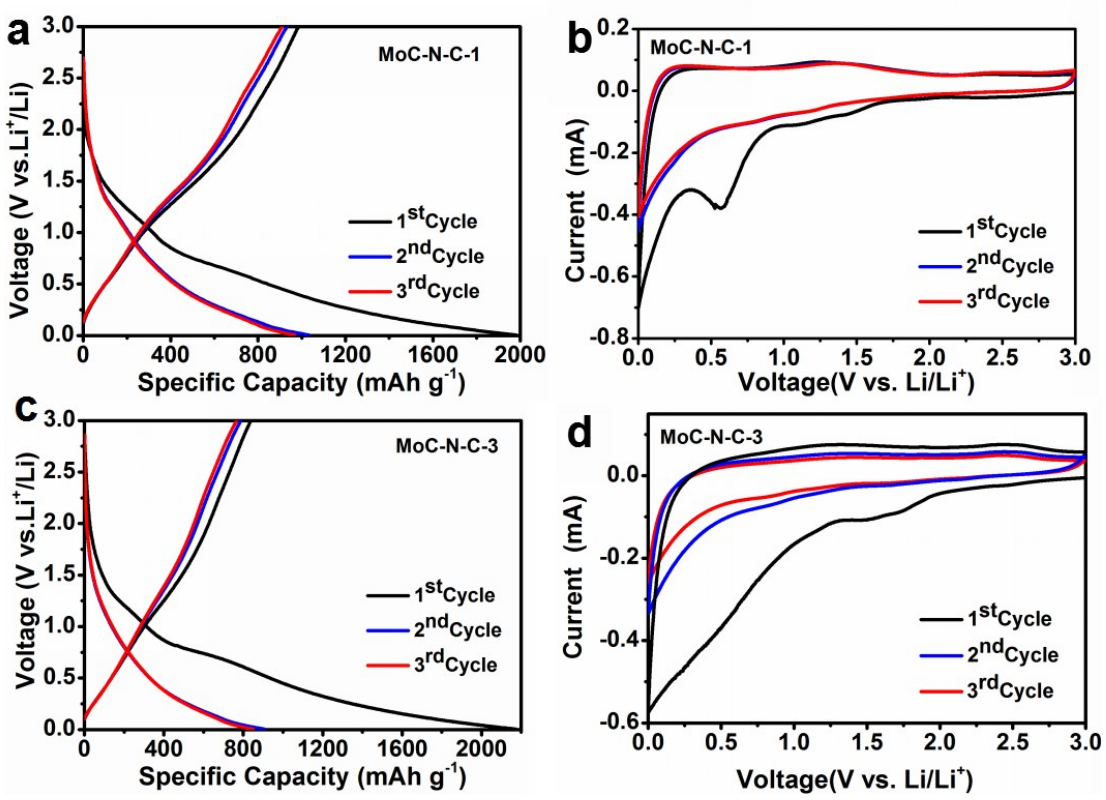

Fig. S4 (a, c) charge/discharge curves of MoC-N-C-1 and MoC-N-C-3 for the first three cycles at 100 mA g^{-1}. (b, d) The first three CV curves of MoC-N-C-1 and MoC-N-C-3 at a current density of 100 mA g^{-1} in the range of 0.001 ~ 3 V.

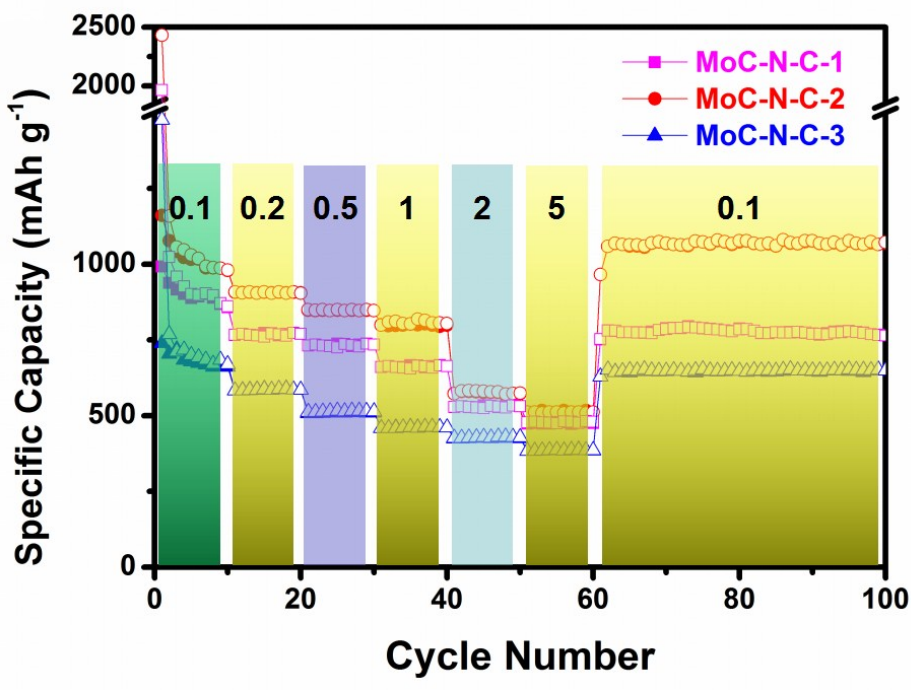

Fig. S5 Rate capability of MoC-N-C-1, MoC-N-C-2, MoC-N-C-3 obtained at various current densities from 0.1 to 5 A g^{-1} and then back to 0.1 A g^{-1} in the potential window of 0.001-3.0 V.

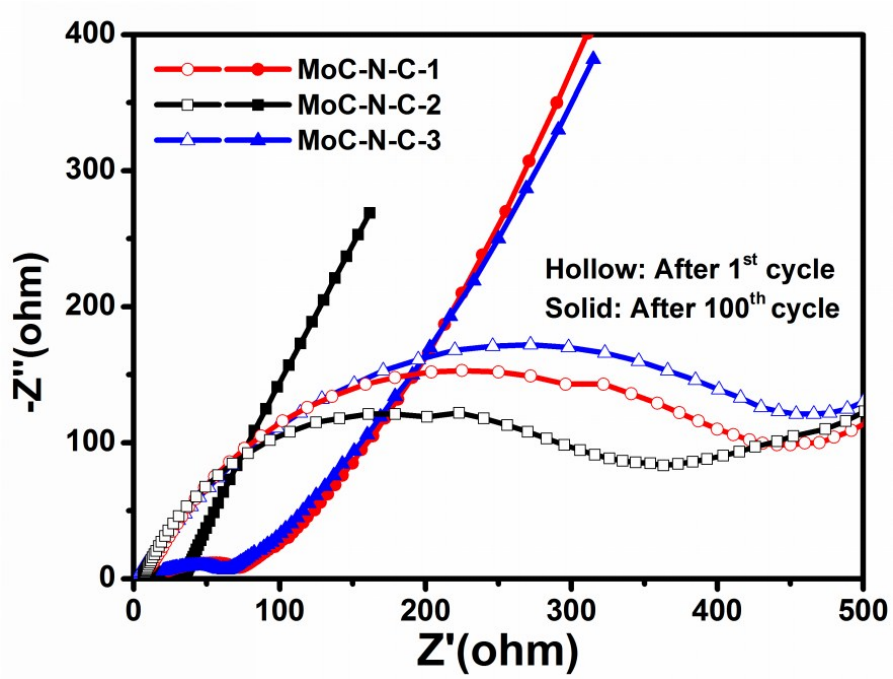

Fig. S6 Nyquist plots for MoC-N-C-1, MoC-N-C-2 and MoC-N-C-3 of first and after 100 cycles.

Table S1. Elemental Analysis and ICP results of MoC-N-C-1, MoC-N-C-2 and MoC-N-C-3

Sample	MoC-N-C-1	MoC-N-C-2	MoC-N-C-3
C (wt%)	81.23	79.81	74.25
N (wt%)	7.61	7.99	7.07
Mo (wt%)	10.86	12.1	18.38

Table S2. Electrochemical properties compared between MoC-N-C and previous

relative reports (IRC: initial reversible capacity, mAh g^{-1}; RRC: retained reversible capacity, mAh g^{-1}; CN: cycle number; CD: current density, A g^{-1}).

Composite	IRC	RRC	CN	CD	Reference
MoC-N-C-2	1138	1246	300	0.1	This work
	836	813	500	1	
	686	675	500	2	
MoC-N-C-1	986	865	300	0.1	This work
MoC-N-C-3	738	658	300	0.1	This work
α-MoC_{1-x}	800	815	200	0.5	1
	~	640	300	1	
MoC	901	664	100	0.2	2
	~	451	3000	10	
Mo_2C	~790	556	100	0.2	2
MoC/graphitic carbon	911	742	50	0.2	3
Mo_2C-C	1054	1197	100	0.1	4
	~860	874	100	0.3	
	~910	778	1000	1	
Mo_2C-C	774	673	50	0.1	5
	~470	402	50	1	
	~380	308	50	2	
Mo_2C/graphene	~830	813	100	0.1	6
MoC/CNF	~280	201.6	300	2	7

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