Electronic supplementary information for

Decorated resol derived mesoporous carbon: highly ordered microstructure, rich boron incorporation, and excellent electrochemical capacitance

Xiaochen Zhao,[a,e] Qiang Zhang,[b] Bingsen Zhang,[c] Cheng-Meng Chen,[d] Jinming Xu,[a,e] Aiqin Wang,[a] Dang Sheng Su,[*c] Tao Zhang[*a]

[a] *State Key Laboratory of Catalysis, Dalian Institute of Chemical Physics, Chinese Academy of Science, PO Box 110, Dalian,116023, P. R. China. E-mail: taozhang@dicp.ac.cn*
[b] *Beijing Key Laboratory of Green Chemical Reaction Engineering and Technology, Department of Chemical Engineering, Tsinghua University, Beijing 100084, P. R. China.*
[c] *Shenyang National Laboratory for Materials Science Institute of Metal Research, Chinese Academy of Sciences, 72 Wenhua Road, Shenyang 110016, P. R. China E-mail: dssu@imr.ac.cn*
[d] *Key Laboratory of Carbon Materials, Institute of Coal Chemistry, Chinese Academy of Sciences, Taoyuan South Road 27, Taiyuan 030001, P.R. China*
[e] *Graduate University of Chinese Academy of Science, Beijing 100049, P. R. China.*

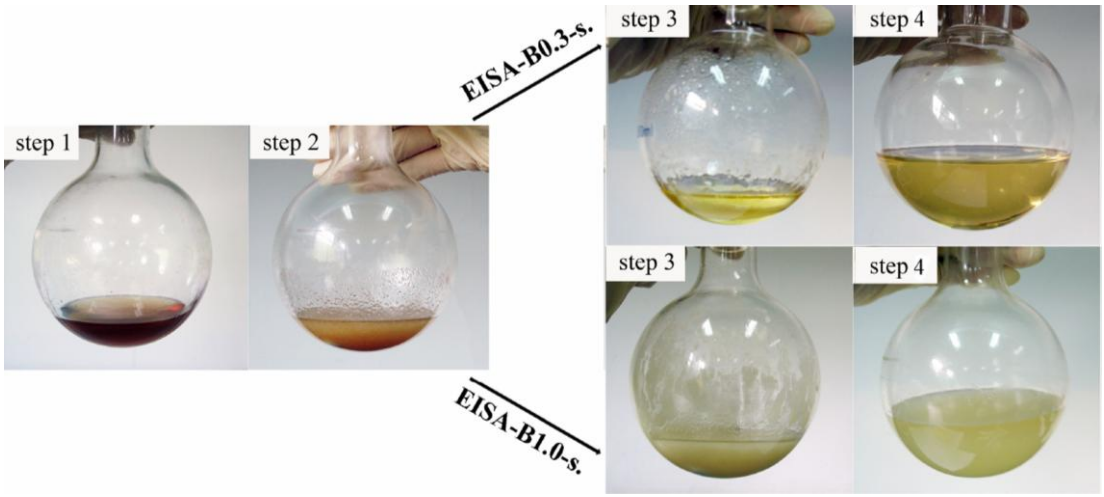

Fig. S1 The photographs of synthesizing B-modified resol with different B additions: *step 1* showed water-free monomethylol phenols, *step 2* showed the mixture of boric acid and water-free monomethylol phenols, *step 3* showed the pre-polymerized B-modified resol after dehydration at the temperature of 120^{o}C and *step 4* showed the diluted solution of B-modified resol in water free ethanol. The images of B0.3-OMC in step3-4 is transparent, while that of B1.0-OMC is turbid indicate that when the ratio of B to phenol is 0.3, all boric acid added were reacted and formed a homogeneously B-modified resol; however, when the ratio increased to 1.0, the boric acid is obviously overdosed, resulting a mixture of un-reacted boric acid and B-modified resol in a turbid appearance.

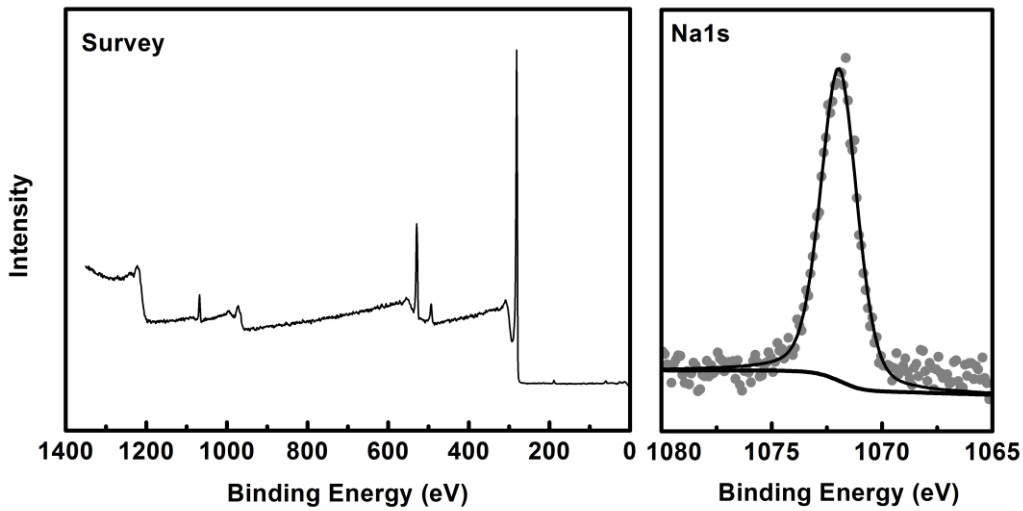

Fig. S2 Survey analysis and Na1s fine scanning XPS spectra of B0.3-OMC.

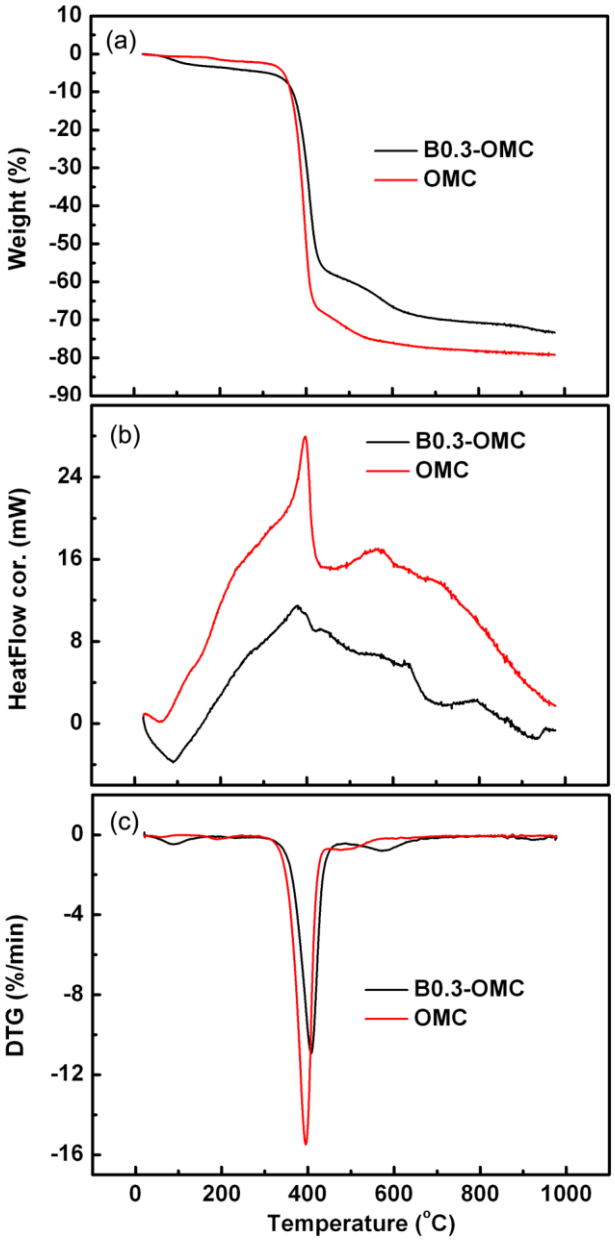

Fig. S3 TGA analysis of B0.3-OMC and OMC precursor in nitrogen at a rate of 10 ^{o}C/min: (a) TG profiles, (b) heat flow profiles, and (c) DTA curves.

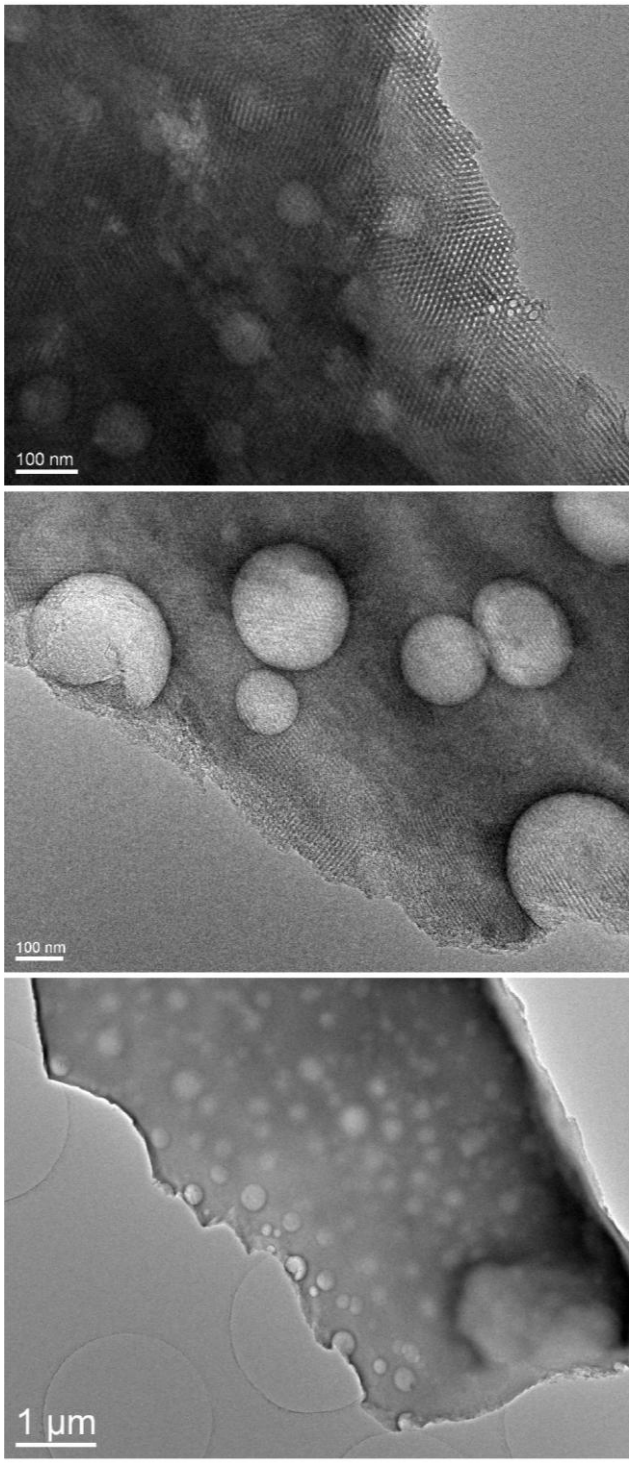

Fig. S4 TEM images of B0.3-OMC in different scales.

Table S1 Comparison of the structural parameters, the B contents and the specific capacitance of B modified mesoporous carbon obtained via different strategies.

Sample	S_{BET} m^2/g	V_p m^3/g	D_p nm	a_0 nm	$B_{cont.}$ wt%	Order	C F/m^2	C F/g
OMC	694	0.48	3.4	10.3	--	Y	0.19	132
B0.1-OMC	551	0.41	3.6	10.3	0.67	Y	0.29	160
B0.3-OMC	462	0.36	3.7	10.5	1.01	Y	0.38	176
B0.6-OMC	314	0.25	3.7	10.5	1.35	Y	0.39	122
B1.0-OMC	357	0.31	3.8	10.6	1.64	Y	0.35	125
OMC[1]	660	0.41	6.28	NA	--	Y	NA	--
BMC-I[1]	383	0.23	7.54	NA	0.24	Y	NA	--
BMC-II[1]	261	0.15	NA	NA	0.30	Y	NA	--
BMC-III[1]	277	0.21	NA	NA	1.12	N	NA	--
OMC[2]	702	0.63	4.7	10.5		Y	0.16	112
BMC-I[2]	707	0.58	4.9	10.9	0.22	Y	0.16	113
BMC-II[2]	707	0.60	5.0	11.8	0.32	Y	0.19	134
BMC-III[2]	641	0.56	4.9	12.2	0.56	Y	0.21	135
OMC[3]	620	0.55	NA	NA	0	Y	0.14	87
BMC-I[3]	660	0.54	NA	NA	0.065	Y	0.17	112
BMC-II[3]	470	0.49	NA	NA	0.16	N	0.21	99

References

[1] X. Zhai, Y. Song, L. Zhi, J. Shi and Q, Guo, *New Carbon Materials*, 2011, **26**, 211-216.

[2] X. C. Zhao, A. Q. Wang, J. W. Yan, G. Q. Sun, L. X. Sun and T. Zhang, *Chem Mater.*, 2010, **22**, 5463-5473.

[3] D. W. Wang, F. Li, Z. G. Chen, G. Q. Lu and H. M. Cheng, *Chem Mater.*, 2008, **20**, 7195-7200.