

Synthesis of high-concentration B and N co-doped porous carbon polyhedra and their supercapacitive properties

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Supporting Information

Table S1. Element distributions and porous textures of BN-PCPs and N-PCPs obtained from XPS analysis and nitrogen adsorption-desorption isotherms.

Sample	At% C	At% N	At% O	At% B	S _{BET} [m ² g ⁻¹]	S _{micro} [m ² g ⁻¹]	Average Pore Diameter [nm]	Pore Volumes [cm ³ g ⁻¹]
N-PCPs	90.45	5.05	4.5	-	612	537	2.4	0.37
BN-PCPs	67.06	8.10	14.16	10.68	57	5	7.2	0.10

Table S2. The values of the specific capacitances of different porous carbons reported in the literatures using three-electrode systems.

Material	Electrolyte	Potential range / V	Scan rate / mV s ⁻¹	Capacitance/ F g ⁻¹	N or/and B content	Ref.
MOF-derived porous carbons						
BN-PCPs	1.0 M H ₂ SO ₄	-0.1-0.7	20	262 F g ⁻¹	N (8.10 at. %) B (10.68 at. %)	This work
N-PCPs	1.0 M H ₂ SO ₄	-0.1-0.7	20	84 F g ⁻¹	N (5.05 at. %)	This work
Z-900	0.5 M H ₂ SO ₄	-0.2-1.0	20	158 F g ⁻¹	/	S1
NPC-800	0.5 M H ₂ SO ₄	0.0-0.8	20	238 F g ⁻¹	N (0.80 wt. %)	S2
CZIF69a	0.5 M H ₂ SO ₄	-0.241-0.759	20	156 F g ⁻¹	N (1.20 wt. %)	S3
B-doped porous carbons						
BNC-7	6.0 M KOH	-0.9--0.1	20	149 F g ⁻¹	N (9.20 at. %) B (9.60 at. %)	S4
BNC-9	6.0 M KOH	-0.9--0.1	20	172 F g ⁻¹	N (7.10 at. %) B (8.40 at. %)	S4

BNC-15	6.0 M KOH	-0.9--0.1	20	151 F g ⁻¹	N (4.90 at. %) B (4.80 at. %)	S4
K-BPC	1.0 M Na ₂ SO ₄	-0.4-0.6	20	139 F g ⁻¹	B (0.034 at. %)	S5
Carbon aerogel-derived carbons						
COU-2	1.0 M H ₂ SO ₄	-0.2-0.8	5	175 F g ⁻¹	Without N or B doping	S6
K-COU-2	1.0 M H ₂ SO ₄	-0.2-0.8	5	225 F g ⁻¹	Without N or B doping	S6

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