

Supporting Information

Synthesis and Characterization of “Ravine-like” BCN Compounds with High Capacitance

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Figure S1. TEM images and the corresponding HRTEM images of BCN-1000

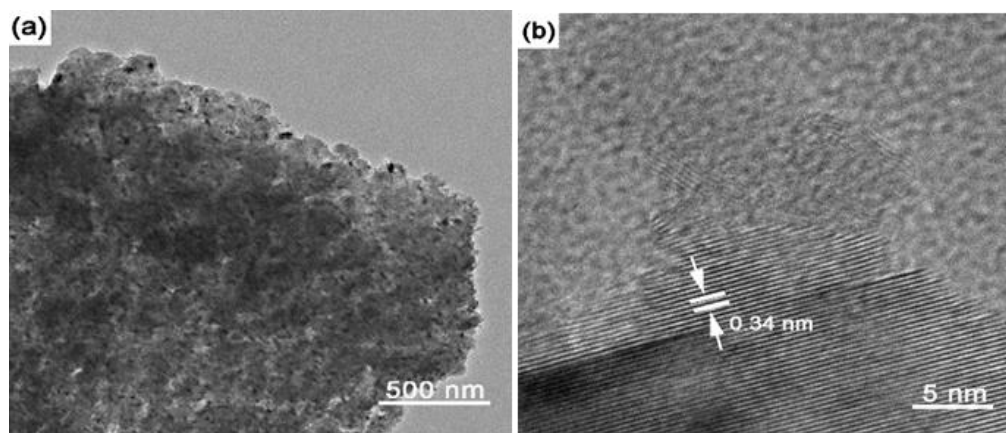


Figure S1A. TEM images and the corresponding HRTEM images of BCN-1100

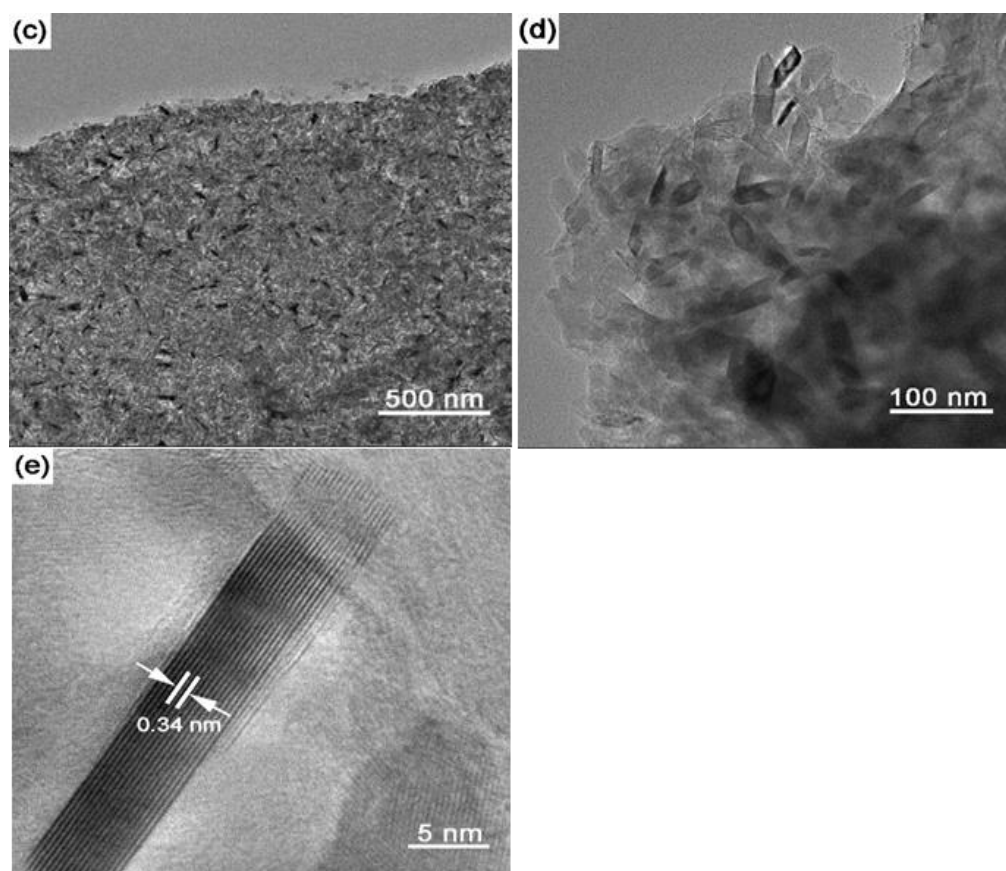


Figure S1B. TEM images and the corresponding HRTEM images of BN-1200

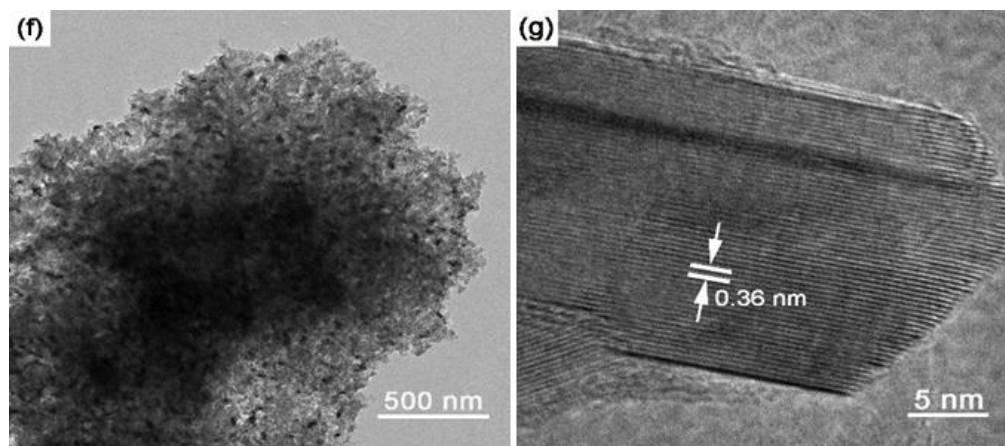


Figure S2. EDS and Elemental Mapping of BCN-800

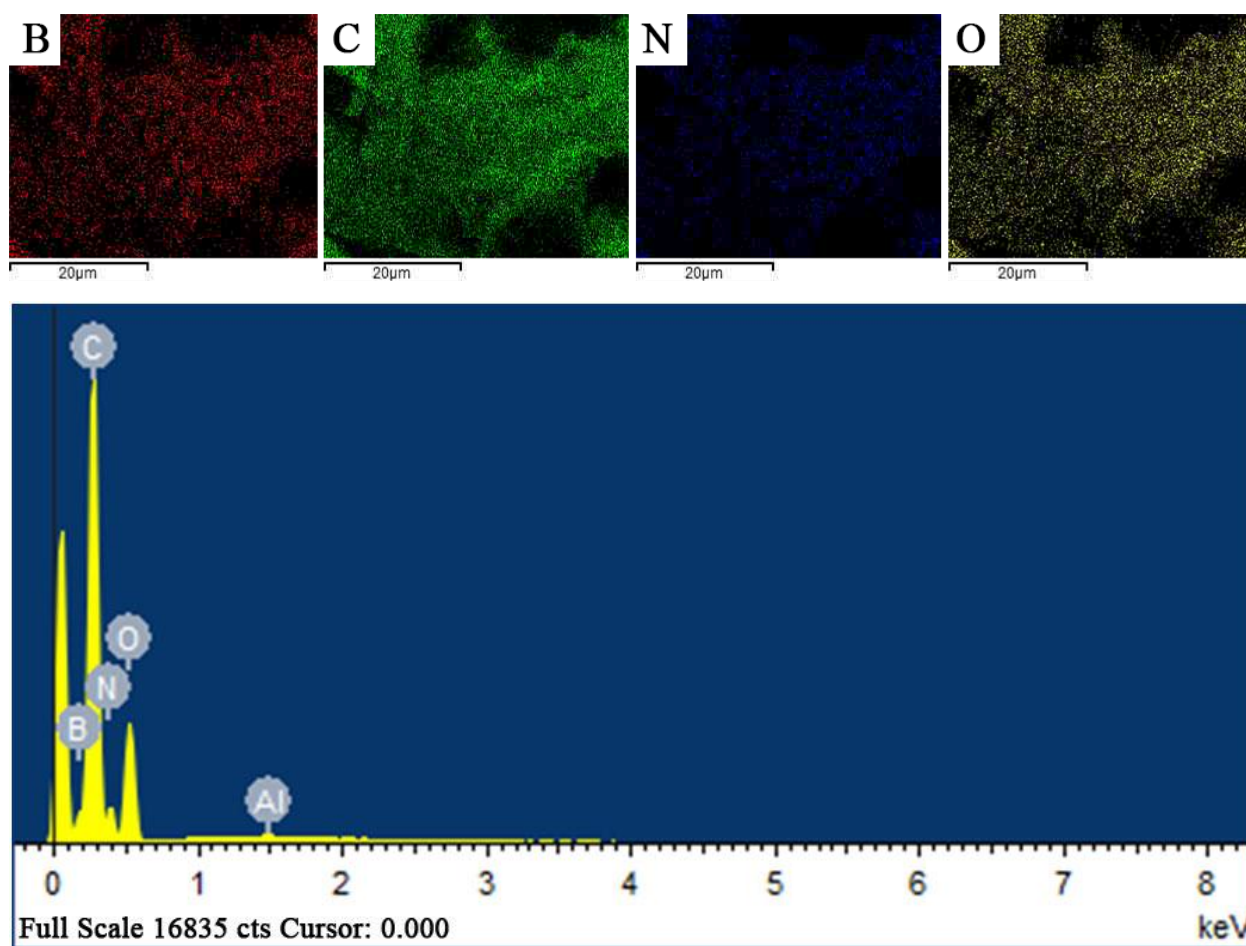


Figure S2A. EDS and Elemental Mapping of BCN-1000

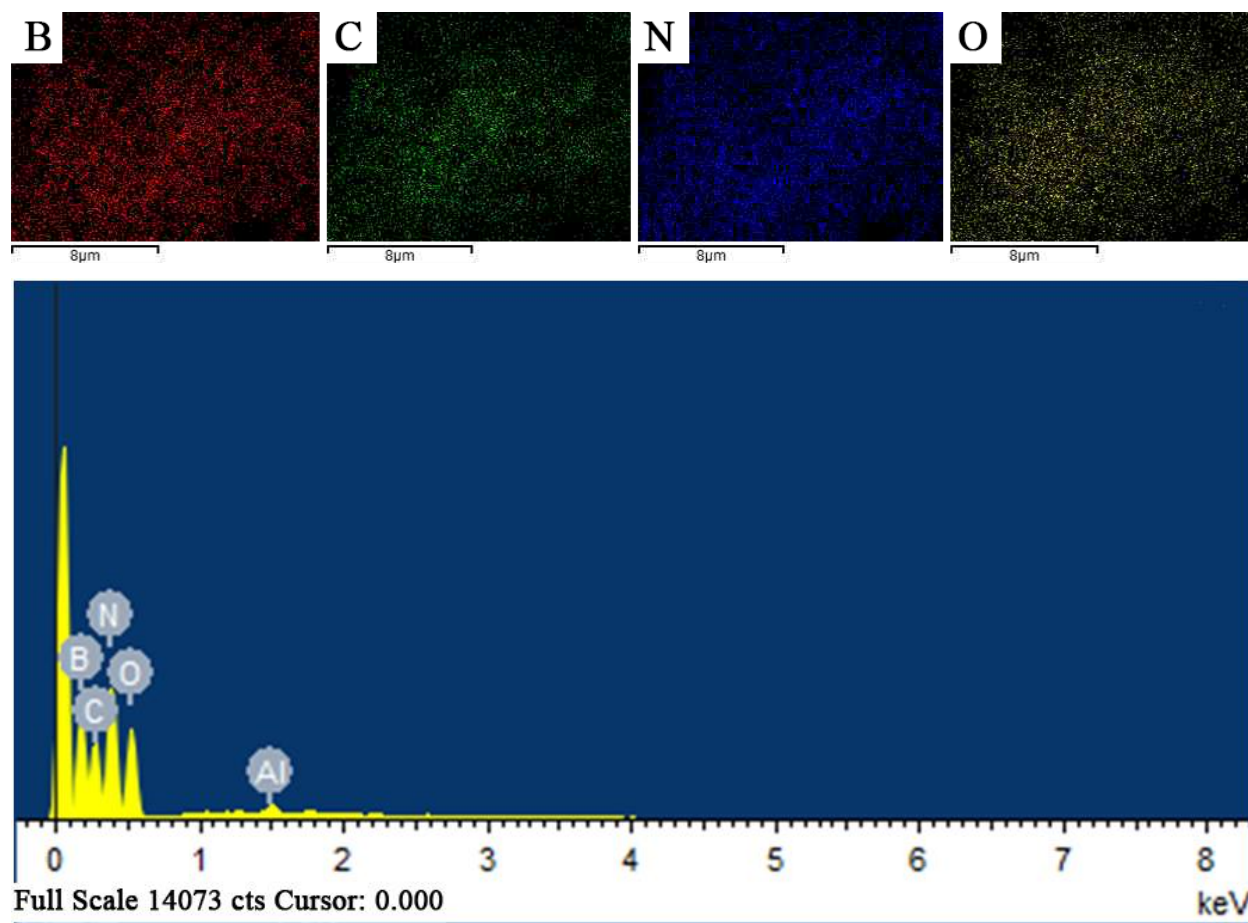


Figure S2B. EDS and Elemental Mapping of BN-1200

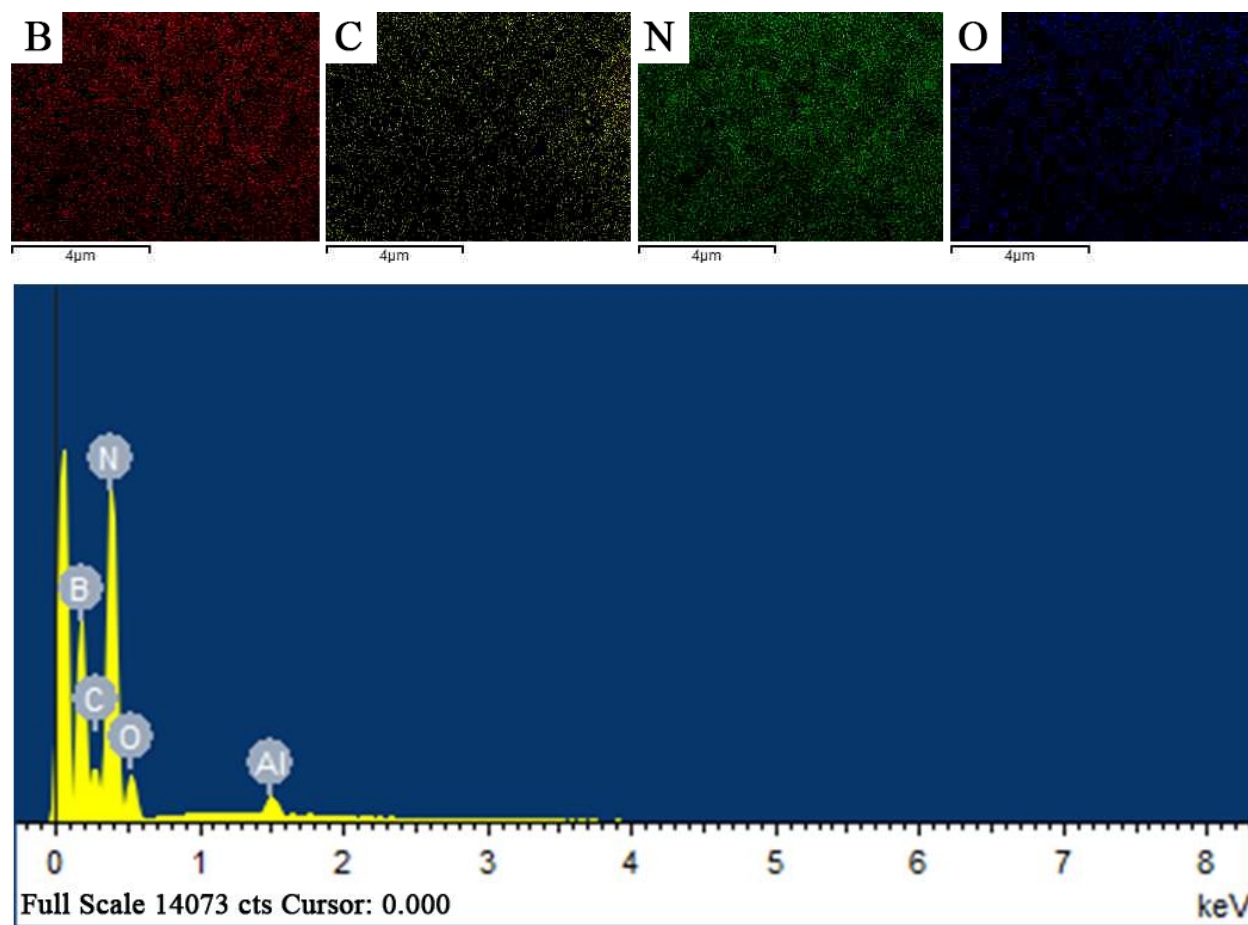


Figure S3. Adsorption and desorption curve of samples; (a) BCN-800; (b) BCN-900; (c) BCN-1000; (d) BCN-1100; (e) BN-1200

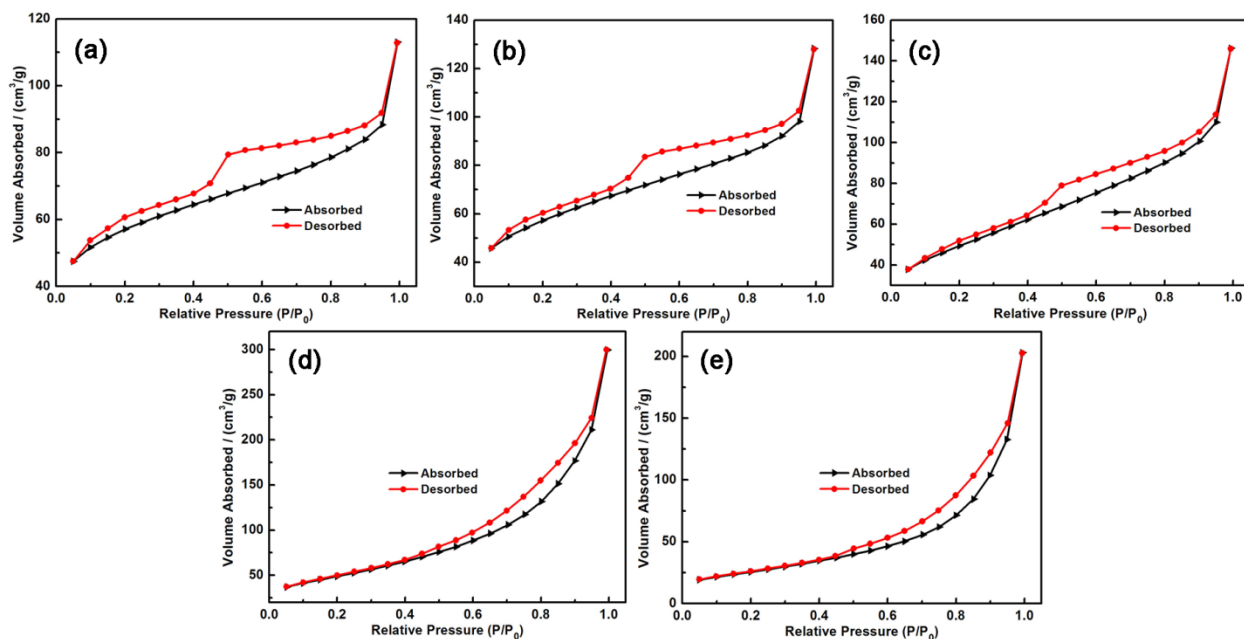


Table S1. Specific surface area of samples

Sample	BCN-800	BCN-900	BCN-1000	BCN-1100	BN-1200
specific surface area	198.0 m ² /g	193.4 m ² /g	174.9 m ² /g	175.9 m ² /g	92.9 m ² /g

Figure S4. (a) The survey scan of XPS on BCN-700; (b) B 1s XPS peak; (c) C 1s XPS peak and (d) N 1s XPS peak.

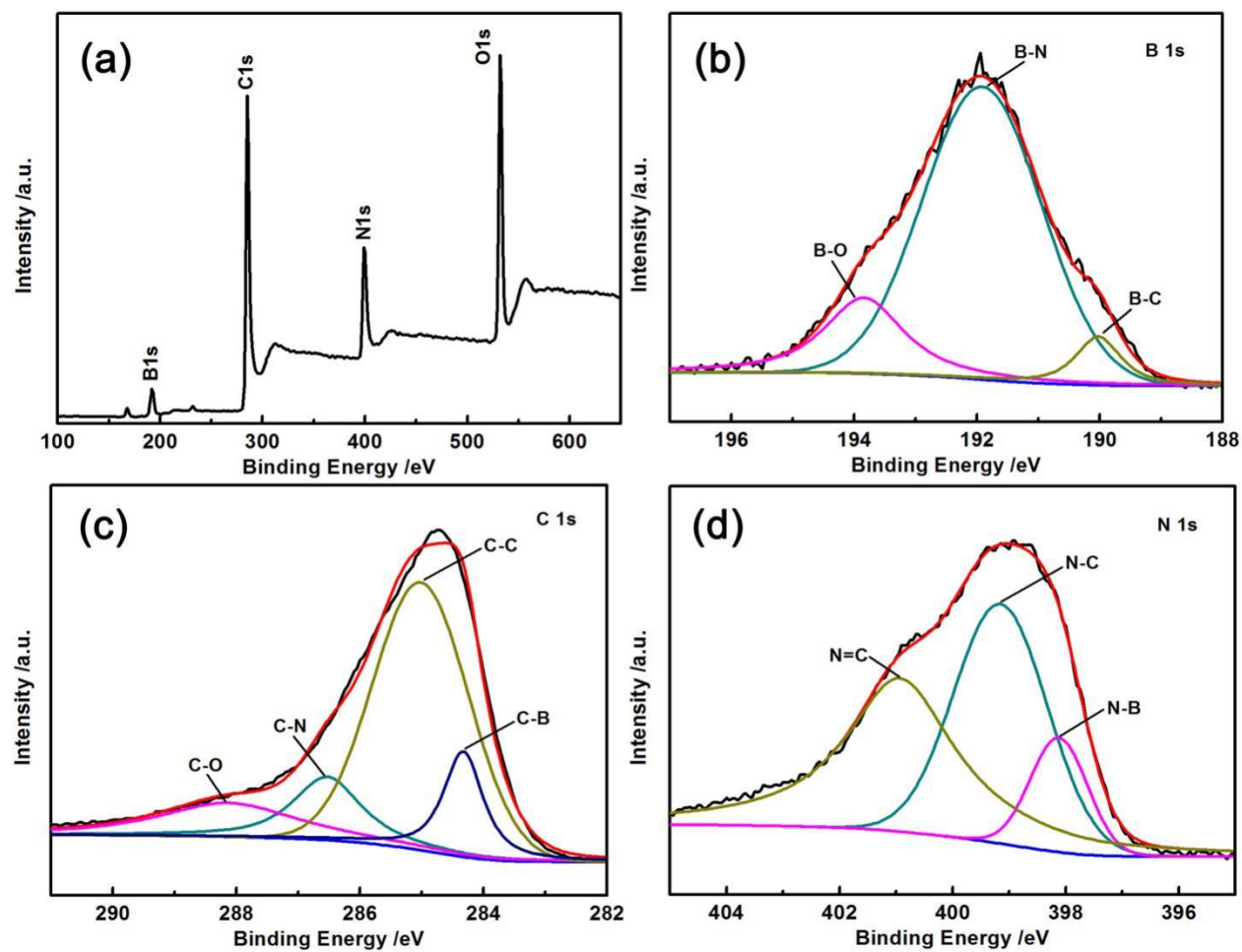


Figure S5. (a) The survey scan of XPS on BCN-900; (b) B 1s XPS peak; (c) C 1s XPS peak and (d) N 1s XPS peak

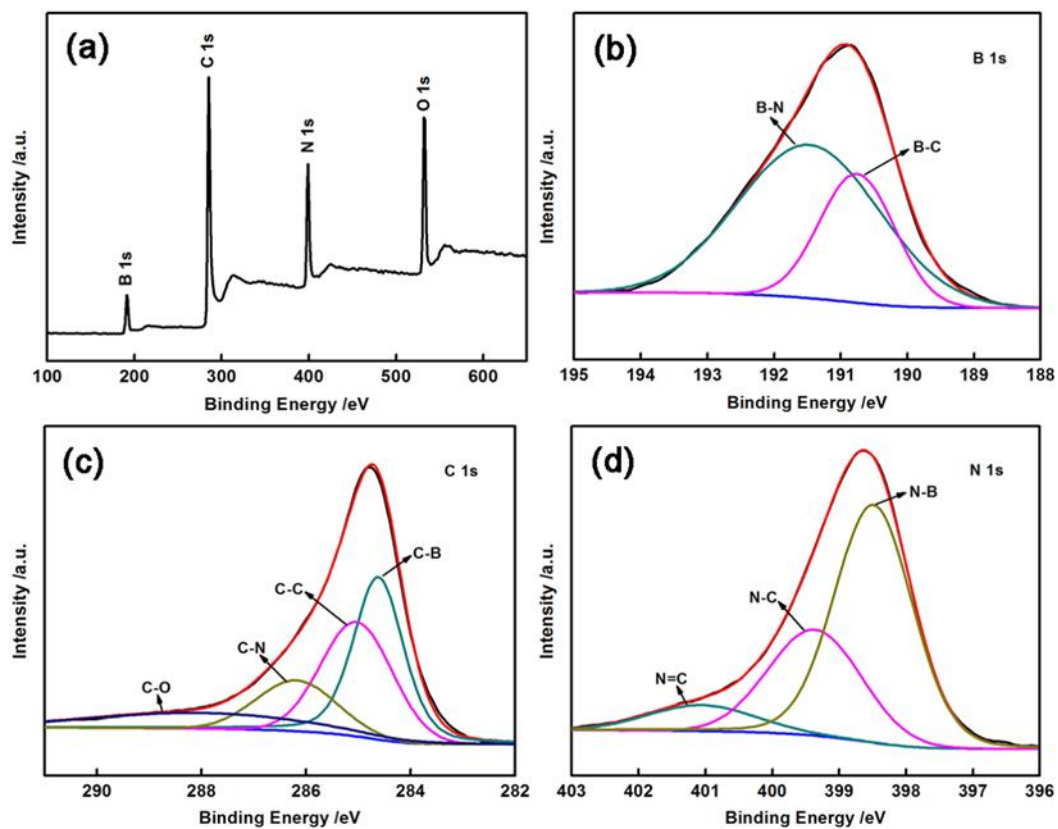


Figure S6. (a) The survey scan of XPS on BCN-1000; (b) B 1s XPS peak; (c) C 1s XPS peak and (d) N 1s XPS peak

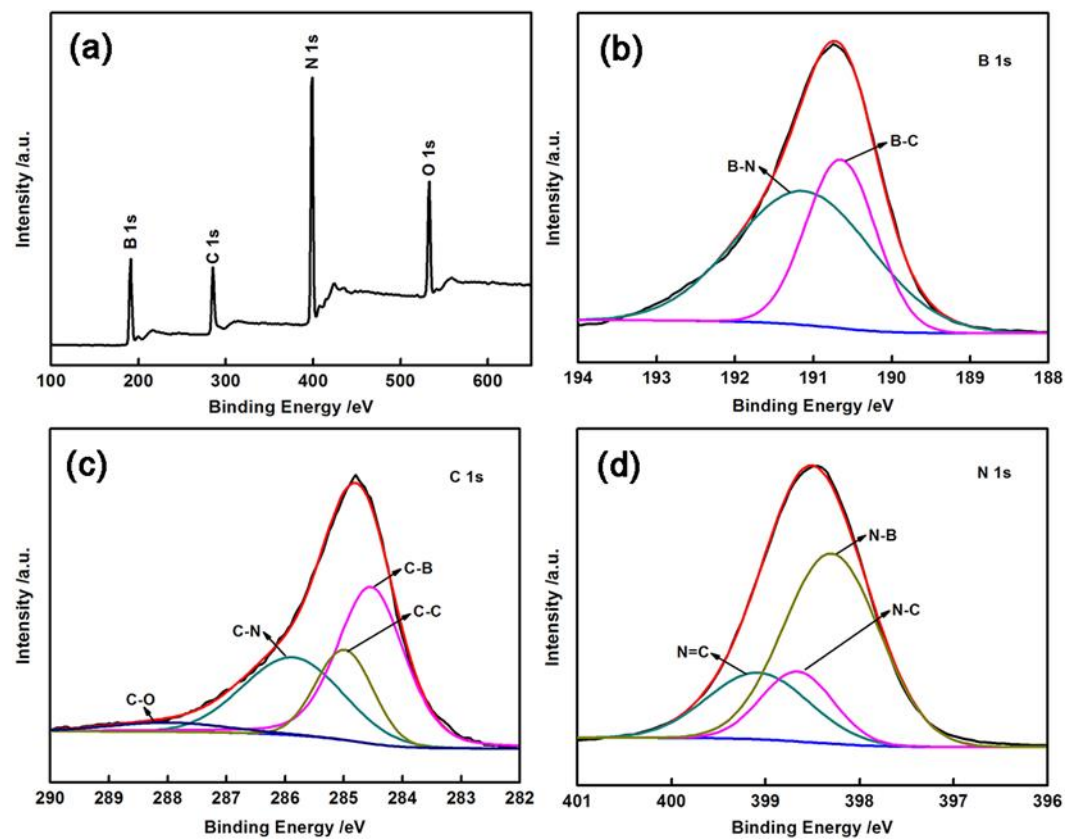


Figure S7. (a) The survey scan of XPS on BCN-1100; (b) B 1s XPS peak; (c) C 1s XPS peak and (d) N 1s XPS peak

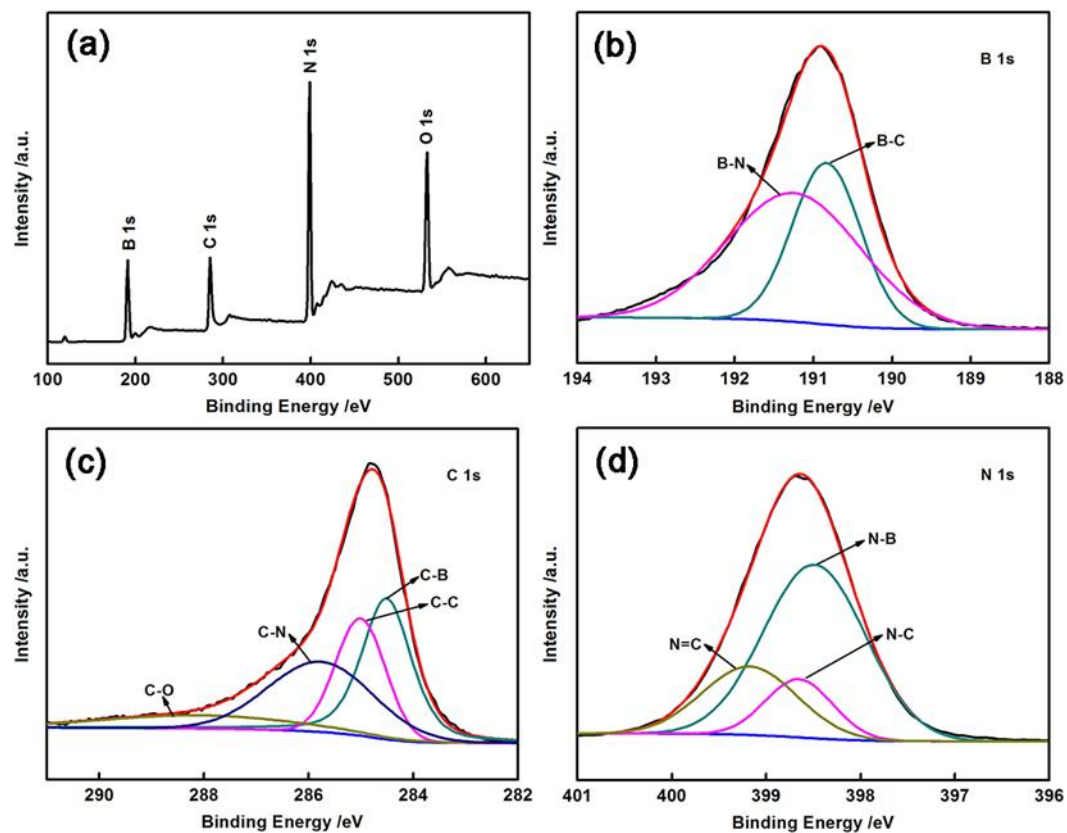
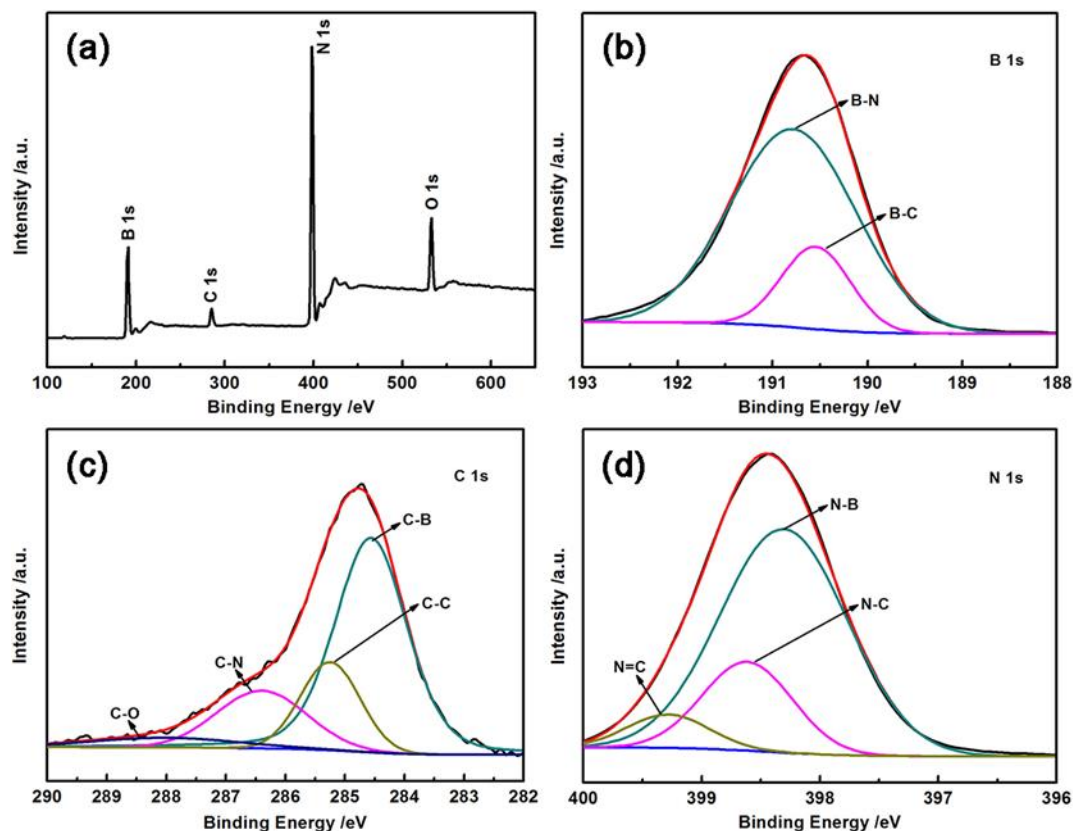


Figure S8. (a) The survey scan of XPS on BN-1200; (b) B 1s XPS peak; (c) C 1s XPS peak and (d) N 1s XPS peak



Preparation of electrode.

The active materials (i.e., BCN-700, BCN-800, BCN-900, BCN-1000, BCN-1100, and BN-1200), acetylene black and poly tetra fluoro ethylene (PTFE) binder are mixed in mass ratio of 8: 1: 1. The mixture was dissolved in absolute ethyl alcohol and ultrasound to form homogenous slurries. The homogenous slurries were coated onto cleaned nickel mesh (1 cm² area, 5% hydrochloric acid, ethanol and deionized water each ultrasonic cleaning 20 min) and further dried at 60 °C for 12 h under vacuum. As-formed electrodes were then pressed at a pressure of 4 MPa and the loading in final electrodes is 2.8 mg.

Figure S9. (a) CV curves of BCN-800, BCN-900, BCN-1000, BCN-1100 and BN-1200 at a scan rate of 50 mV/s; (b) discharge curves of samples obtained at different pyrolysis temperatures

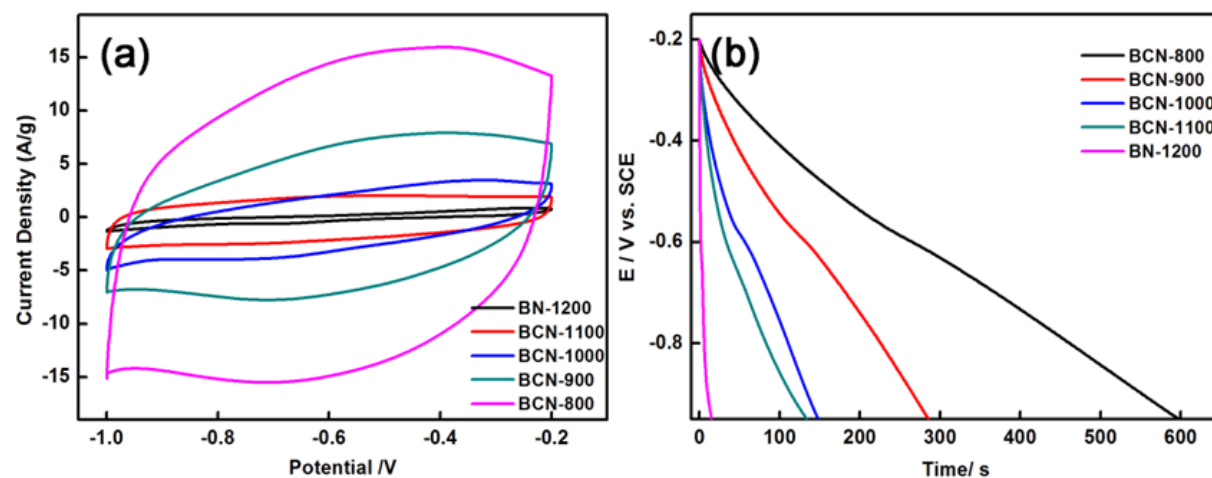


Figure S10. CV curves of BCN-700 at various scan rates in 6.0 M KOH electrolyte solution

