

## Synthesis of N-doped carbon by microwave-assisted pyrolysis ionic liquid for lithium-ion batteries

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Nitrogen-doped carbon (NDC) was prepared by a novel microwave-assisted pyrolysis of ionic liquid method. The carbonation temperature and time of the ionic liquid were obviously dropped down by microwave-assisted pyrolysis. The results of XRD, Raman spectra and FT-IR spectra indicated that the pyrolysis product was graphitic nitrogen-doped carbon. The nitrogen dopant in NDC created a porous structure and a large number of defects, which introduced many active sites for the Li<sup>+</sup> ion adsorption. Consequently, the NDC delivered high electrochemical performances when used as anode for lithium ion batteries. The NDC electrode exhibited a specific capacity of 243.6mAh.g<sup>-1</sup> after 50 cycles at 0.2C and 196mAh.g<sup>-1</sup> after 50 cycles at 1.0C.

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**Keywords:** Nitrogen-doped carbon, Microwave-assisted pyrolysis, Ionic liquid

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