Characteristics and Electrochemical Performances of Nitrogen-doped Graphene Prepared using different carbon and nitrogen sources as Anode for Lithium Ion Batteries

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Nitrogen-doped graphene (NG) materials were successfully synthesized in one step by the restricted template method. Specifically, the use of different nitrogen sources and carbon sources makes the content of various nitrogen doping structures in NGs different and yields a higher nitrogen doping amount. In the lithium insertion process, nitrogen doping provides more active sites, which effectively improve the specific capacity. As anodes for lithium-ion batteries (LIBs), NGs exhibit excellent electrochemical performance with high reversible specific capacity, good cycle stability, and excellent rate performance.

Keywords: Nitrogen-doped Graphene, Anode material, Lithium-ion batteries

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