Research of LI-S Battery with Porous Carbon from Garlic Peel

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In this research, mesoporous carbon was synthesized from garlic peel for cathode material in lithium-sulfur battery. Separated two samples were carbonized by normal carbonization (garlic peel carbon; GPC) and hydrothermal (GPC/HT) methods. The synthesized carbon material GPC/HT have been found to be Meso-porous with a large specific surface area (2470 m2 g-1)and a high inner pore volume(1.1 cm3 g-1) as calculated with BET. The sulfur content were determined by thermogravimetric analysis. The loading of sulfur in the GPC-S and GPC/HT-S composites are estimated to 78.8 wt.% and 87.6 wt.%, respectively. When evaluating its electrochemical properties, the GPC/HT-S composite displays an excellent cycle performance. The specific discharge capacity still reaches 720 mAh g-1 after 100 cycles.

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