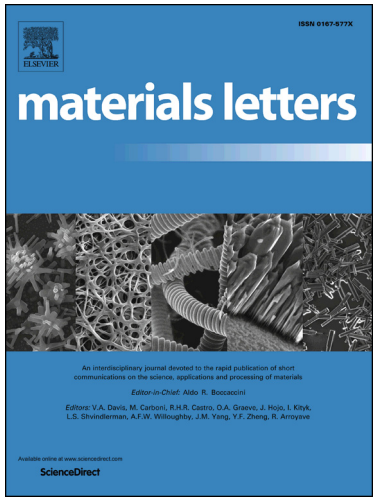

Porous g-C_3N_4 with high pyridine N/sulfur composites as the cathode for high performance lithium-sulfur battery

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Porous g-C_3N_4 with high pyridine N/sulfur composites as the cathode for high performance lithium-sulfur battery

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Abstract

Lithium-sulfur battery has become to be one of the most promising electrochemical energy storage systems on account of the high theoretical specific capacity (1673mAh/g) and high energy density (2600Wh/kg). However, the relatively complicated producing process of the host materials and lithium-sulfur battery' cycling instability still hinder the commercialization of Li-S battery. Herein, a facile, inexpensive and scalable thermal treatment method was designed to synthesize the host material porous g-C_3N_4 composed by graphite-like two-dimensional rippled sheets and high content of pyridine N, improving the properties of Li-S batteries. Because of the high charge polarity and peculiar porous structure, the porous g-C_3N_4/S cathode delivered high initial discharge capacity of 1050mAh/g.