

## Synthesis and Characterization of Highly Ordered Mesoporous Carbons with Hetero Elements for Li-S Battery

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To approach the high theoretical specific capacity (1675 mA hg<sup>-1</sup>) and energy density (2600 W h kg<sup>-1</sup>) of Li-S batteries. in addition to The Li-S battery is environmentally friendly and cost effective, nontoxic.

Nevertheless, it has been difficult to develop a practical Li-S battery partly limited by the problems of low electrical conductivity of sulfur, dissolution of polysulfide in electrolyte, and volume expansion of sulfur during discharge. These problems cause poor cycle life, low specific capacity, and low energy efficiency.

So these problems are improve using highly ordered mesoporous carbon. Highly ordered mesoporous carbon is high surface area (1500m<sup>2</sup>•g<sup>-1</sup>) and high pore volume (2cc•g<sup>-1</sup>). In addition to various carbon precursors using synthesis of highly ordered mesoporous carbons with hetero elements.

Hetero elements are nitrogen ,sulfur. So carbon included nitrogen, sulfur. it is using good electronic conductivity.

It is highly ordered mesoporous carbons/S composite. high Utilization of Sulfur and good cycle performance, cyclability.