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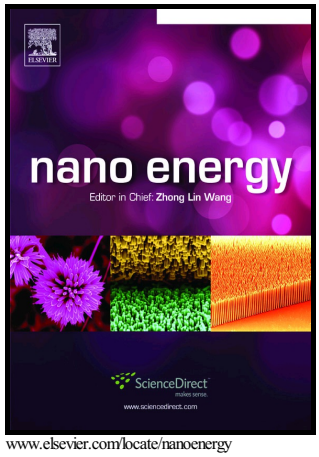

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Fiber Network Composed of Interconnected Yolk-Shell Carbon Nanospheres for High-Performance Lithium-Sulfur Batteries

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Abstract

Lithium-sulfur (Li-S) batteries are a promising candidate for next-generation energy storage devices. However, rapid performance decay at high-sulfur-loading condition is emerged as one of the main obstacles restricting the practical application of Li-S batteries. Here we develop a facile electrospinning method for synthesizing the interconnected yolk-shell carbon nanospheres assembled fiber network to construct self-supporting sulfur cathodes. Benefiting from high surface area, nitrogen atom doping, and synergetic effect between yolk and shell, the yolk-shell carbon fiber network is a promising sulfur hosting material for high-sulfur-loading Li-S batteries. With 70 wt% and 4 mg cm^{-2} of sulfur, the yolk-shell carbon fiber network derived

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