Core-shell MnO₂/S Composite as High-Performance Cathode Materials for Li-S Batteries

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A novel structure of core-shell MnO₂/S composite was designed as cathode materials for Li-S batteries. This structure could efficiently inhibit the polysulfide dissolution and improve the conductivity at the same time. As a result, the cycle performance of Li-S battery was greatly improved due to the presence of core-shell MnO₂/S composite. The results show that the specific capacity of core-shell MnO₂/S composite is 1200 mAh g⁻¹ at 0.1 C. After 100 cycles, the specific capacity remains 715 mAh g⁻¹ at 0.5 C, showing perfect cycle performance.

Keywords: Core-shell structure, MnO₂/S composites, Li-S battery, Electrochemical performance

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