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A Novel Carbon-decorated Hollow Flower-like MoS₂ Nanostructure Wrapped with RGO for Enhanced Sodium-ion Storage

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Abstract

A novel composite nanomaterial that consisting of few-layer MoS₂ modified by pyrolyzed conductive carbon was self-assembled into hollow flower-like nanostructures, and wrapped with the reduced graphene oxide (RGO) networks *via* a facile one-pot hydrothermal synthesis route. This unique nanostructure of the sample possesses large specific surface area and expanded interlayer, which could provide more adsorption sites for Na⁺ and better buffer the volume change in Na⁺ insertion and deinsertion. Moreover, by incorporated with carbonaceous materials involving both amorphous carbon and RGO, the limited electrical conductivities and structural stability of MoS₂ can be improved effectively, meanwhile the aggregation of 2D layer materials is also relieved, promoting the fluent transport of sodium ion and leading to

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