

What is the storage capacity of RGO cathode?

The RGO cathode shows a high sodium storage capacity of 240 mAh g⁻¹ at a current density of 30 mA g⁻¹ over 1000 cycles, which indicates the excellent stability of this material. The morphological and physical characteristics of the reduced graphene oxide prepared by modified Hummer's method [41] are shown in Fig. 1.

Does rGO have nanocavities?

The RGO sheet possesses nanocavities with single layer graphene ~0.6 nm in thickness (G-L). It is found that the defects and single layer graphene coexist in the RGO host, with a thickness of ~0.8 nm for the small RGO sheet (E-F).

Does rGO have a functionalized surface?

The relative contents of C and O were detected and plotted against distance (Fig. 1e). The average atomic ratios of C and O were measured to be 91.2 and 8.8 at.%, respectively. The contents show that the RGO has an extensively functionalized surface and could act more effectively for charge storage.

Can reduced graphene oxide be used as a cathode material for sodium-ion batteries?

Scientific Reports 7, Article number: 40910 (2017) Cite this article We report the feasibility of using reduced graphene oxide (RGO) as a cost-effective and high performance cathode material for sodium-ion batteries (SIBs). Graphene oxide is synthesized by a modified Hummers' method and reduced using a solid-state microwave irradiation method.

What is the C K-edge NEXAFS spectrum of RGO?

Figure 3b shows the C K-edge NEXAFS spectrum of RGO, where the electronic transition occurs from the core level to unoccupied states into $\pi^*C = C$ symmetry around the K and M points of graphene oxide layers and the corresponding peak occurs at 285.3 eV.

Does RGO show good cycling performance and rate capability?

It can be expected that RGO could show good cycling performance and rate capability due to its adsorption mechanism. The outstanding cycling performance of RGO is shown in Fig. 4 a. The electrochemical performance was tested at 0.2 C (40 mAh g⁻¹) and 1 C (200 mAh g⁻¹), respectively.

With the compositional and structural merits, the prepared NiS@C/rGO anode manifests excellent sodium storage performance in terms of high reversible specific capacity (472.3 mAh g⁻¹ at ...

Exploitation of superior anode materials is a key step to realize the pursuit of high-performance sodium-ion batteries. In this work, a reduced graphene oxide-wrapped FeSe₂ (FeSe₂@rGO) ...

Finally, the present study urges electrochemist to design and fabricate advanced Ta₂O₅-rGO composites for

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2.2 Architecture Features. The morphology and structural characteristics of the Bi₂S₃/VS₄/rGO are first characterized. It can be found that the Bi₂S₃ nanorods and VS₄ nanospheres ...

To uniformly encapsulate electrode materials with reduced graphene oxide (rGO) has been a considerable challenge due to the lack of appropriate synthetic methods and/or effective reaction systems. In this study, ...

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