

Can nitrogen dopant improve lithium-sulfur battery performance?

Increasing the amount of the nitrogen dopant, especially pyridinic-N species, in carbonaceous materials has been shown to significantly enhance the performance of lithium-sulfur (Li-S) batteries.

Why do we need advanced lithium-ion batteries?

Advanced lithium-ion batteries are urgently needed in consumer electronic products, electric vehicles, and energy storage, while the traditional carbonaceous anode materials with relatively low specific capacity gradually become difficult to meet the practical requirements in the market.

What happened to Ning Li?

In 2014, Ning Li was struck by a vehicle while crossing the street on the University of Alabama in Huntsville campus. Li's husband, seeing the accident, suffered a heart attack and died a year later in 2015. For Li, this accident caused permanent brain damage that resulted in Alzheimer's disease shortly after.

Who is Ning Li?

Ning LI | Professor (Associate) | Ph. D | Beijing Institute of Technology, Beijing | BIT | School of Materials Science & Engineering | Research profile Dr. Ning Li is currently an associate Professor at Beijing Institute of Technology, and a researcher at Beijing Institute of Technology Chongqing Innovation Center.

Do high energy lithium-ion batteries have a reaction mechanism?

Increasing interest in high energy lithium-ion batteries triggers the demand of clarifying the reaction mechanism in battery cathodes during high potential operations. However, the reaction mechanism often involves both transition metal and oxygen activities that remain elusive.

Are layered lithium-rich cathode materials suitable for advanced lithium-ion batteries?

Layered lithium-rich cathode materials have been considered as competitive candidates for advanced lithium-ion batteries, due to their merits in high capacity (more than 250 mAh/g), low cost and environmental benignity. However, they still suffer from poor rate capability and modest cycling performance.

Preparation and electrochemical performance of Li-rich layered cathode material, $\text{Li}[\text{Ni}_{0.2}\text{Li}_{0.2}\text{Mn}_{0.6}]\text{O}_2$, for lithium-ion batteries

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The US has approved Ioneer's Rhyolite Ridge Lithium-Boron Project, which will produce batteries for over 370,000 EVs annually for 26 years. The US has approved Ioneer's Rhyolite Ridge Lithium ...

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Surface coating is the most common method to suppress such interfacial problems for Ni-rich materials. This review focuses on the surface engineering of the Ni-rich materials in recent years, including the species used in coating, synthetic strategies of uniform coating layer, and the positive effects of coating species on the active materials.

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