A reflection on lithium ion battery cathode

Amongst the most promising next-generation energy storage technologies, Lithium-Sulfur (Li-S) batteries stand as the leading candidate to surpass Li-ion batteries and help facilitate the ever ...

The design of electrode parameters is a crucial determinant of the rate and quantity of lithium storage, which directly impacts the energy density and overall performance of lithium-ion ...

We demonstrate that for polycrystalline LiNi 0.33 Mn 0.33 Co 0.33 O 2 c-axis textured thin film cathodes of rechargeable lithium-ion batteries, the kinetics of Li storage and release including ...

Full-component pyrolysis can process organic components and reduce cathode materials, making it a key focus in green recycling of lithium-ion batteries (LIBs). However, the leaching ...

Here, using X-ray diffraction, resonant inelastic X-ray scattering and X-ray absorption near-edge spectra experiments, we investigated an amorphous Li-V-O-F cathode (a-LVOF) with ...

A machine learning model predicts the cycle life of lithium-metal batteries using features extracted from first-cycle charge-discharge data and impedance spectroscopy. Trained on 43 cells with ...

Nano One Materials Corp TSX:NANO, a process technology company specializing in lithium-ion battery cathode active materials (CAM), looks increasingly well-positioned to benefit from the ...

This study uses the cathode of spent ternary lithium-ion batteries in rocking-chair capacitive deionization to achieve the closed-loop lithium recovery from the leachate of spent batteries.

This study assesses the material, environmental, and economic performance of closed-loop lithium-ion battery (LIB) recycling amid China"s electric vehicle ambitions, indicating that a ...

The growing demand for high-energy, safe, and sustainable lithium-ion batteries has increased interest in nickel-rich cathode materials and solid-state electrolytes. This study presents a ...

The CATMAT project is researching next-generation cathode materials that could significantly increase the energy density of lithium-ion batteries. There is an urgent need to increase the range of electric vehicles ...

Understanding lithium-ion battery materials at the atomic scale is crucial for improving their electrochemical performance and long-term stability. However, in scanning transmission ...

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Understanding the electrode microstructure and cell performance plays a critical role in the Li-ion battery manufacturing process. In this work, a Coarse-Grained Molecular ...

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Insights into Cation Migration and Intermixing in Advanced Cathode Materials for Lithium-Ion Batteries ?????????????????????? ???? ???? ?? ?(? ...

This innovative technique combination provides new insights into the chemical composition of three morphologies found on the anode surface in a long-term cycled lithium-ion battery, ...

ABSTRACT: Lithium-ion battery (LIB) recycling technologies are advancing rapidly, with higher recovery eficiencies, lower energy demand, and more complex supply chains. Previous life ...

Efficient Photo-Oxidation Leaching of Ni and Co in a Spent Lithium-Ion Battery Cathode by Homogeneous UV/H2O2 ??UV/H2O2??????????????????Ni?Co ??? ...

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