

What is the research focus of NEV battery recycling?

Keyword analysis shows that the research focus has shifted from lead-acid batteries to the more advantageous lithium batteries. Supply chain research related to NEV battery recycling has also been emphasized. The closed-loop supply chain and circular economy of NEV batteries have received considerable attention in recent years.

Should NEV battery recycling literature be collected from all databases?

Only the literature in the WOSCC database was collected, and the literature in other databases, such as Google and Scopus, was not included. In the future, literature related to NEV battery recycling should be collected from all databases to provide a more comprehensive picture of developments in the field.

How can a closed-loop supply chain promote the recycling of NEV batteries?

Establishing an efficient closed-loop supply chain for NEV batteries can create a multi-win situation that benefits the environment, society, and people. The rapid development of the NEV market has led to the development of waste battery recycling. Positive and effective incentive policies can promote the recycling of NEV batteries.

How can machine learning improve the recycling process of used NEV batteries?

The screening process of used NEV batteries can be accelerated using machine learning parameter clustering methods. Combined with artificial intelligence technology, manual battery dismantling can be gradually decreased to improve labor efficiency and enhance the overall safety of the recycling process.

How to promote the use of NEV batteries?

To promote the use of NEVs, multiple values of battery recycling in terms of economic benefits and environmental protection are considered. Establishing a management system for the full life cycle of NEV batteries should be promoted. Fig. 9. Bubble chart showing annual trends for the top 20 journals in publications. 3.5.

What are the factors affecting NEV battery recycling?

The selection of recycling channels is an important aspect of NEV battery recycling. The battery recycling rate is a key factor affecting the competitive position of NEV manufacturers. Battery endurance and advertising effects within the supply chain also affect the choice of recycling channels and recycling prices.

In this study, we introduce a computational framework using generative AI to optimize lithium-ion battery electrode design. By rapidly predicting ideal manufacturing conditions, our method enhances battery performance and efficiency. This advancement can significantly impact electric vehicle technology and large-scale energy storage ...

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3 ???· The resulting batteries achieved 0.24 mWh of storage capacity, 0.4 to 0.9 V of output voltage, 97 % bio-based materials, and > 90 % battery capacity usage from the IoT device (0.22 mWh), being this a crucial aspect to achieve a tailored-energy battery. Such battery configurations did not vary throughout the battery versions 2 and 3 (see Section 4 in the supplementary ...

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for the processing of most lithium-battery raw materials. The Nation would benefit greatly from development and growth of cost-competitive domestic materials processing for . lithium-battery materials. The elimination of critical minerals (such as cobalt and nickel) from lithium batteries, and new processes that decrease the cost of battery materials such . as cathodes, anodes, ...

Battery Energy is an interdisciplinary journal focused on advanced energy materials with an emphasis on batteries and their empowerment processes. Abstract Currently, the main drivers for developing Li-ion batteries for efficient energy applications include energy density, cost, calendar life, and safety. The high energy/capacity anodes and c... Skip to ...

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With the rapid development of China's new energy vehicle industry, the scale of the power battery industry has gradually expanded, directly driving the demand for raw materials for power batteries. Raw material supply, cost and power battery recycling will directly or indirectly affect the healthy and sustainable development of China's new ...

Enterprises should actively adopt new technologies using low-cobalt and cobalt-free technologies to solve the raw material problem and utilize green solvents to improve ...

The technology development and widespread application of power battery technology in electric vehicles have laid a solid foundation for the advancement of new battery technologies in the energy storage market. Moreover, the expansion of the energy storage market will provide momentum for new battery technology manufacturers. Forecasts indicate that ...

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