Analysis of new energy battery methods

How bibliometric method is used in research related to Nev batteries?
This study used the bibliometric method to systematically organize the published literatureto provide new perspectives for research related to the recycling of NEV batteries. Bibliometrics combines statistical knowledge to study the characteristics of literature on related topics.

How can machine learning and IoT improve battery performance?
Additionally,the integration of machine learning- and IoT-based algorithms with data-driven methods enhances the performance matrix of the system and results in a precise estimationof the battery state.

How does a battery management system work?
Internal operating constraints such as temperature, voltage, and current are monitored and controlled by the BMS when the battery is being charged and drained. To achieve a better performance, the BMS technically determines the SoC and SoH of the battery.

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 chainresearch 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.

Can deep learning improve battery performance?
The methods employed include the enhancement of the WHO algorithm to optimize battery performance and the incorporation of deep learning techniques for predictive maintenance and energy management. The key findings indicate a significant improvementin battery lifespan and efficiency with reduced maintenance costs.

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 .

This study takes a new energy vehicle as the research object, establishing a three-dimensional model of the battery box based on CATIA software, importing it into ANSYS ...

Changing the government"s cash subsidy methods, such as providing free batteries or combining new energy to reduce on-grid tariffs, will help increase the second use value of the NEV battery. In ...

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Based on this, this paper uses the visualization method to preprocess, clean, and parse collected original battery data (hexadecimal), followed by visualization and analysis of the parsed data, and finally the K ...

Batteries must be carefully scrutinized to ensure that they are safe for use. This article will discuss the role that battery materials analysis plays in maintaining the safety and quality of existing batteries and in the development of new and improved types.

Effective cell balancing is crucial for optimizing the performance, lifespan, and safety of lithium-ion batteries in electric vehicles (EVs). This study explores various cell balancing methods, ...

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In this study, we conducted an in-depth analysis of the current status of research on NEV battery recycling from a new perspective using bibliometric methods and visualization ...

In this study, we conducted an in-depth analysis of the current status of research on NEV battery recycling from a new perspective using bibliometric methods and visualization software. This study shows that research targeting the recycling of NEV batteries is growing rapidly, and collaborative networks exist among researchers from different ...

Electric vehicle (EV) battery technology is at the forefront of the shift towards sustainable transportation. However, maximising the environmental and economic benefits of ...

With the yearly increasing market penetration of new-energy vehicles in China, the retirement of power batteries has gradually become a scale, and most of the waste batteries have entered informal recycling channels, which has induced a series of environmental problems. Considering this issue, we introduced the system dynamics (SD), stimulus organism response ...

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In general, energy density is a key component in battery development, and scientists are constantly developing new methods and technologies to make existing batteries more energy proficient and safe. This will make it possible to design energy storage devices that are more powerful and lighter for a range of applications. When there is an ...

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Based on this, this paper uses the visualization method to preprocess, clean, and parse collected original battery data (hexadecimal), followed by visualization and analysis of the parsed data, and finally the K-Nearest Neighbor (KNN) algorithm is used to predict the SOC.

We employed bibliometrics analysis methods to make statistics on the publication year, the number of ... State, Dual extended Kalman filter, Range estimation, Battery energy storage system, Fuel cell, EVs, Ni-MH battery, Wavelet neural network, and EKF. The number #0 - #9 represent that the number of keywords ranked from high to low. The Cluster #0 State of ...

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