

Can a fault diagnosis model improve the safety of new energy battery vehicles?

Traditional FDM falls far short of the expected results and cannot meet the requirements. Therefore, the fault diagnosis model based on WOA-LSTM algorithm proposed in the study can improve the safety of the power battery of new energy battery vehicles and reduce the probability of safety accidents during the driving process of new energy vehicles.

Can wavelet-neural detection of lithium-ion batteries guarantee the safety of electric vehicles?

The voltage difference value has a strong correlation with the fault occurrence. Experimental results verify the feasibility and advantages of the proposed method. This paper proposes a method of fault detection of Lithium-ion batteries based on wavelet-neural for guaranteeing the safety and reliability of electric vehicles (EVS).

What is the experience-based method of battery fault diagnosis?

The experience-based method is based on the existing prior knowledge, using logical analysis and reasoning the relationship between events to achieve battery fault diagnosis. It can be divided into the expert system, fuzzy logic, and graph theory.

Can lithium-ion battery fault diagnose EV based on real-time voltage?

In this paper, the novel method for lithium-ion battery fault diagnosis of EV based on real-time voltage is presented. The effectiveness of the method is verified based on the real-time data collected by EVs. The related conclusions are drawn as follows:

Can kurtosis detect faults in lithium-ion batteries of electric vehicles?

In this paper, a novel fault diagnosis method for lithium-ion batteries of electric vehicles based on real-time voltage is proposed. Firstly, the voltage distribution of battery cells is confirmed in electric vehicles, and the reasons are analyzed. Furthermore, kurtosis is utilized to discover cell faults for the first time.

How to diagnose lithium-ion battery fault?

To enhance the reliability and safety of lithium-ion batteries, many scholars have proposed different methods for lithium-ion battery fault diagnosis. Current fault diagnosis methods can be divided into three categories: experience-based methods, model-based methods, and data-driven methods [5, 8, 9].

This paper proposes a method of fault detection of Lithium-ion batteries based on wavelet-neural for guaranteeing the safety and reliability of electric vehicles (EVS).

This paper provides a comprehensive review of the anomaly types and detection methods for lithium-ion batteries in electric vehicles. We classify battery anomalies into energy ...

DOI: 10.1080/15435075.2024.2422463 Corpus ID: 274018926; Fault detection method for electric vehicle battery pack based on improved kurtosis and isolation forest @article{Wu2024FaultDM, ...

This paper proposes a semi-supervised fault detection and isolation method for vehicle battery systems, which can accurately detect and isolate early or minor short-circuit ...

The curve of voltage range for the selected period. The data of vehicle No.9 was collected from 17:58:35 on June 13, 2020 to 06:38:29 on November 17, 2020 with a ...

1 INTRODUCTION. Lithium-ion batteries are widely used as power sources for new energy vehicles due to their high energy density, high power density, and long service life. 1, 2 However, it usually requires hundreds ...

A thermal runaway happened in a battery cell of an electric vehicle during driving, and the fire spreads to other batteries in a few minutes. Based on the recorded battery ...

Therefore, the fault diagnosis model based on WOA-LSTM algorithm proposed in the study can improve the safety of the power battery of new energy battery vehicles and ...

Global problems such as environmental pollution and energy depletion have been greatly alleviated by the arrival of electric vehicles (EVs) [1, 2].Lithium-ion batteries have ...

Finally, the proposed method is tested with voltage data from four faulty vehicles. The tests prove that the method has good advance detection ability for both progressive and ...

Electric vehicles (EVs) have emerged as a promising solution for reducing energy consumption and global emissions [1], [2].Lithium-ion batteries, due to their high energy ...

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