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New energy battery box structure design diagram

What is a battery pack box structure?

The power battery is the only source of power for battery electric vehicles, and the safety of the battery pack box structure provides an important guarantee for the safe driving of battery electric vehicles. The battery pack box structure shall be of good shock resistance, impact resistance, and durability.

How does a battery pack box work?

The battery pack box is bolted to the chassis structure of the vehicle through the lifting lugs and fixed to the chassis of the vehicle. The internal structure of the battery pack box is shown in Fig. 8. The structure includes the upper-pressure rod, the upper-pressure cover, and the inner frame.

Is a battery box a good structural improvement scheme?

Finally,based on the static and dynamic analysis results of the battery box,the weak points and unreasonable points are improved. The results show that the modified model has a good improvement effect and has basically reached the established design requirements,which verifies the rationalityof the structural improvement scheme.

Where is the battery pack box arranged?

The battery pack box of the target vehicle is arranged under the chassis,below the floor of the passenger compartment,disassembled from the electric vehicle. The appearance structure of the box is shown in Fig. 3. After removing the upper cover,the battery pack module is presented,and the structure is shown in Fig. 4.

How to improve the dynamic performance of a battery box?

By analyzing the modal characteristics and the harmonious response to vibration characteristics of the battery box, the dynamic performance of the battery box has been comprehensively mastered. Finally, based on the static and dynamic analysis results of the battery box, the weak points and unreasonable points are improved.

How does a rigid column affect a battery pack box?

In the analysis of the vehicle side impact test,the rigid column invades the electric vehicle,which deforms the sill beamand the side of the battery pack box. Figure 10 shows the distribution of the stress nephogram of the battery pack box during the collision.

The four primary components of the battery package"s mechanical structure design process are parameter determination, structural initial design, optimization of simulation ...

The box structure of the power battery pack is an important issue to ensure the safe driving of new energy vehicles, which required relatively better vibration resistance, shock ...

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To solve the disadvantages of the low protection grade, high weight, and high cost of the existing locomotive power battery system, this study optimizes the existing scheme ...

Structural Analysis of Battery Pack Box for New Energy Vehicles Based on the Application of Basic Foam Aluminum Materials, Congcheng Ma, Jihong Hou, Fengchong Lan, ...

the battery pack box can improve market competitiveness for manufacturers, and its structure is a key part of the overall performance, especially for battery pack box bodies with high

This paper uses the finite element model analysis method of the whole vehicle to verify the mechanical properties of the foamed aluminum material through experiments, and ...

paper considers the box structure of the battery pack for the new energy vehicles as an example, in which the foam aluminum material is adopted for structural ...

In this work, the structure of the new energy vehicle is optimized by a finite element model, and the side crashworthiness applied to the electric vehicle is analyzed by means of a rigid ...

Now, let"s take a closer look at the architecture of the battery management system design. Battery Management System Subsystem Overview; Battery Monitoring ...

optimal design of the battery pack structure. This paper has established a numerical simulation model to study and optimize the structure of a new energy vehicle power battery pack. The ...

structure of the battery pack box includes the upper-pressure cover, the upper-pressure rod, the lower box body of the battery pack, the inner frame, the lifting lug, the battery module, the ...

The four primary components of the battery package"s mechanical structure design process are parameter determination, structural initial design, optimization of simulation analysis, and physical construction ...

paper considers the box structure of the battery pack for the new energy vehicles as an example, in which the foam aluminum material is adopted for structural lightweight design to...

Since the focus of this paper is on the lightweight design of the battery pack structure, the design and analysis focus on the analysis of the main load structural ...

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 ...

[1] Zhao H. W., Chen X. K. and L Y 2009 Topology optimization of power battery packs for electric vehicles

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Journal of Jilin University 39 846-850 Google Scholar [2] Yang S. J. ...

The prospect of chassis structure design for new energy battery electric vehicles ... The major purpose of the battery mounting box and support system, which are typically part of the ...

By analyzing the modal characteristics and the harmonious response to vibration characteristics of the battery box, the dynamic performance of the battery box has ...

Web: https://centrifugalslurrypump.es