New energy aluminum battery box structure 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.

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.

Can aluminum and high-strength steel connect a battery pack box?

Li et al. analyzed the connection between aluminum and high-strength steel,expounded on the current status of the connection technology of new energy vehicle battery pack boxes,and put forward the point of view that the connection-related issues such as matrix damage,interface failure,and long welding cycle need to be further studied.

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.

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.

Disclosed is a new energy battery box assembly structure, comprising side surface profiles, end face profiles, water-cooling profiles, and plugging blocks. The two side surface profiles...

At first, this paper establishes the three-dimensional entity model and finite element model, and the stress state of battery box under extreme conditions of steep turning ...

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 ...

Structural Analysis of Battery Pack Box for New Energy Vehicles Based on the Application of Basic Foam Aluminum Materials. Congcheng Ma 1, ... The box structure of the ...

Schematic diagram of bathtub chassis [3]. One of the typical solutions for electric cars is to place the battery pack on the floor. Nevertheless, in this design, the ...

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 resistance, ...

The battery element material is an aluminum structure made by ATL Pride with characteristics of large temperature difference withstand, higher peak value of electric heating, over 120Wh/kg ...

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 finite element...

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 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 ...

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 ...

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 ...

The original schematic diagram of the power battery system. ... the power battery box structure should be ... X. Research and Application of the New Energy Vehicle ...

Strength analysis of the lower battery tray bracket for a electric vehicle Methods of analysis. For the convenience of analysis, the designed lower bracket model was scaled ...

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 lightweight design to...

battery boxes of electric vehicles, and designed a new battery box structure. Yang, S.J [2] analyzed the dynamic and static characteristics of the battery box for an enterprise"s electric ...

The battery box is a pure incremental component in new energy vehicles, and the value of a single vehicle is about 3,000 yuan. The battery box is mainly composed of an upper cover and a lower case, which is the "skeleton" ...

The battery box is a pure incremental component in new energy vehicles, and the value of a single vehicle is about 3,000 yuan. The battery box is mainly composed of an upper ...

[1] Zhao H. W., Chen X. K. and L Y 2009 Topology optimization of power battery packs for electric vehicles Journal of Jilin University 39 846-850 Google Scholar [2] Yang S. J. ...

Web: https://centrifugalslurrypump.es