

Title: New energy battery storage box structure

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Why is battery pack box structure important?

Abstract. 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.

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.

What is a power battery pack box?

The power battery pack box is the core component of the BEV. The power battery pack provides energy for the whole vehicle, and the battery module is protected by the outer casing. The battery pack is generally fixed at the bottom of the car, below the passenger compartment, by means of bolt connections.

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 beam and the side of the battery pack box. Figure 10 shows the distribution of the stress nephogram of the battery pack box during the collision.

Specific structure of the design model [6] In another study, the structure of new energy vehicle battery pack boxes was optimized. A battery pack model was established, followed by finite element static ...

Energy storage batteries are at the heart of today's renewable energy revolution, powering everything from electric vehicles to large-scale grid systems. From the smallest unit, the cell, to the complete ...

The integrated structure design and battery pack power, from the monomer to the system, are the main influencing factors. Therefore, by choosing suitable high-energy ratio monomer cells, it can be ...

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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, and ...

Finite Element Analysis and Structural Optimization of Power Battery Box for New Energy Electric Vehicle [J]. Journal of Hebei University of Water Resources and Electric Engineering, ...

In previous studies, many battery pack box structures had large volume and complex structures. By establishing models in virtual prototypes and simulating and analyzing the ...

The New Energy Vehicle Battery Box is a critical element that ensures safe, efficient, and reliable energy storage for EVs.

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