

# **Power battery box pack structure design**





## Overview

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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.

What is a power battery pack design scheme?

Through weight reduction and structural optimization, an innovative power battery pack design scheme is proposed, aiming to achieve a more efficient and lighter electric vehicle power system.

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.

How a battery pack is designed?

With reference to the existing models on the market, the battery pack structure of the model is designed according to the main parameters of the model, and a simplified electric vehicle battery pack model is established by Creo and the material information is determined.



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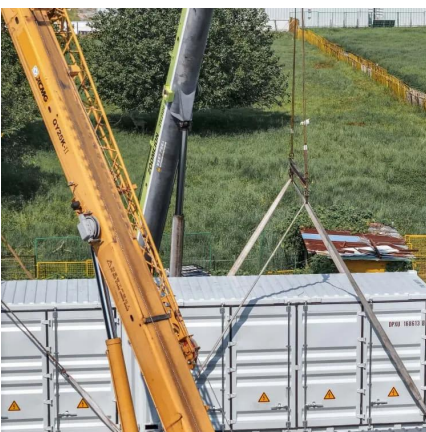
### [on Structure of New Energy Power Battery Package](#)

Sep 10, 2023 · In previous studies, many battery pack box structures had large volume and complex structures. By establishing models in virtual prototypes and simulating and analyzing ...



### **Structural Design and Packing Technology Optimization of Power Battery**

Sep 17, 2025 · The structural parts of the battery pack, such as the upper cover, enclosure, and lower cover, provide safe isolation and protect the cells from external impacts. The electrical ...



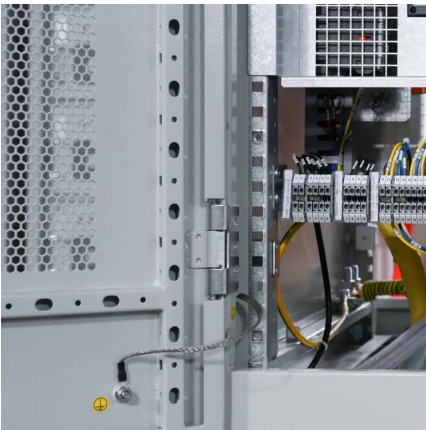
### [Structural Analysis of Battery Pack Box for New Energy ...](#)

Oct 1, 2022 · 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 ...



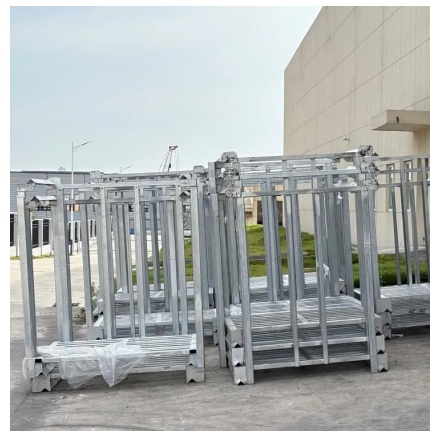
[Design approach for electric vehicle battery packs based on](#)

Jan 30, 2024 · This work proposes a multi-domain modelling methodology to support the design of new battery packs for automotive applications. The methodology allows electro-thermal ...



**Lightweight Design of Power Battery Pack Structure of Pure ...**

In order to improve the range of pure electric vehicle and the structural safety of power battery pack, taking the power battery pack of a type of pure electric vehicle as the research object, ...



[Structural design and optimization of power battery pack](#)

Jul 15, 2020 · Firstly, structural improvement design and light alloy material replacement for high-strength steel battery pack of a pure electric vehicle were carried out, which improved the safety ...





### Optimization Analysis of Power Battery Pack Box Structure ...

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### Optimization Analysis of Power Battery Pack Box Structure ...

Finite Element Model Analysis  
Finite Element Model Analysis of Battery Pack Box  
Optimum Design of Battery Pack Box Filled with Foam Aluminum Material  
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. The safety of the power battery pack is one o See more on link.springer ResearchGate

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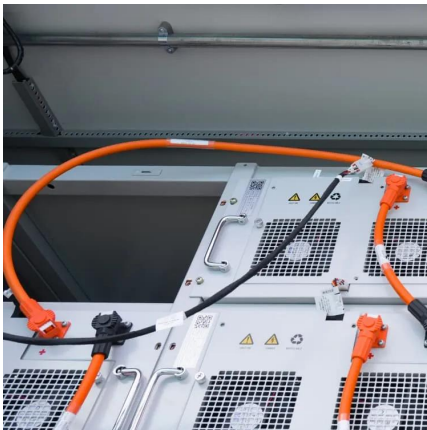
### [EV Battery Pack Design: Structure, Safety & Optimization](#)

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### Optimization and Structural Analysis of Automotive Battery ...

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### Research on Lightweight Structure of New Energy Vehicle Power Battery

Jun 4, 2023 · In the past few decades, research on battery pack boxes has mainly focused on functionality, and now there has been research on other aspects of performance, such as ...



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