New energy passenger car battery structure diagram

Why do new energy vehicles need a power battery pack structure?
In the structure of new energy vehicles,the power battery pack structure is the most important power component,thus,it needs to be designed with a safer and more reasonable structure to meet the requirements of shock resistance and durability.

Why do electric vehicles have a power battery pack?
In the passenger car of electric vehicles,the battery pack is usually suspended under the chassis of the vehicle. Therefore,during vehicle driving,the power battery pack will bear the vibration and impact caused by road roughness.

Why is the box structure of the power battery pack important?
Abstract: 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 durability.

Why do electric vehicles have a box structure?
The box structure of the power battery pack of electric vehicles is the most important protection mechanismwhen vehicles are subjected to impacts and collisions,which is closely related to the life safety and property safety of drivers and passengers.

How a battery box structure can reduce the weight of a car?
After the optimization design of the battery box structure,the weight of the box is reduced by 0.62kg,and the maximum deformation of the whole vehicle in the collision is reduced from 239.1mm to 235.3mm,which means that structural design can realize the goal of weight reduction and safety improvement. 4. CONCLUSIONS

What is the main structure of a battery pack box?
The main 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 single battery,and other structures.

In this paper, the power battery case of a pure electric vehicle is taken as the research object. Based on the analysis of its structural characteristics, a three-dimensional model is...

Chassis layout of new energy vehicle hub electric models [2]. The battery is integrated into the chassis of the new energy-pure electric car, which has a higher percentage of unsprung mass, a ...

Thermal conductive silica gel and power batteries for new energy vehicles. As a high-end thermal conductive

composite material, the thermal conductive silica gel has been widely used in new energy ...

Download scientific diagram | Structure of the electric and ICE passenger car production dataset. For the electric vehicle, the dotted branch should be neglected, whereas for ICE vehicles, the sub ...

The design of the power battery pack system of new energy vehicles should meet some requirements, such as system structure safety, temperature control safety, flexible ...

568 G. Ruan et al. Table 1. Material properties of the aluminum alloy box Material Elastic Poisson"s Density Yield strength model modulus [GPa] ratio [kg/m3] [MPa] 6061-T6 72 0.33 2800 276

This paper takes a BEV as the target model and optimizes the lightweight design of the battery pack box and surrounding structural parts to achieve the goal of ...

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The structure of the battery module studied in this paper is shown in Fig. 1, which consists of individual cell liquid cooling plates and coolant. The parameters of a single cell are provided in Table 1. According to reference [26], the rated energy for a flying car hovering for 1000s is 163.82 kWh. The authors noted in the paper that the ...

Lan et al. proposed a set of methods for analyzing the impact response of the battery pack box and internal structure, established a refined battery pack model, and verified the model through the calculation results of the crash analysis, which provided a basis for the crash analysis and optimization design of the battery pack [8].

Download scientific diagram | Illustration diagrams of battery system for electric vehicle (EV) application. (a) The conventional battery pack and electrics drive system in EVs, (b) the wireless ...

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 durability.

This paper takes a BEV as the target model and optimizes the lightweight design of the battery pack box and surrounding structural parts to achieve the goal of improving vehicle crash safety and lightweight, providing participation in the application of new materials in new energy vehicles.

3.1. Power battery package structure. The electric vehicle to be studied uses a lithium iron phosphate power battery pack as the power source. The power battery pack is mainly composed of a shell, battery module components, electrical components, battery management system (BMS), battery system distribution box

(BDU), lifting lug, inner frame ...

Fundamental design approach is used throughout this work as detailed in the paper for EV passenger car considering regenerative braking and energy consumption analysis. Training of the data set for the adaptive neuro fuzzy network is accomplished using the virtual simulation environment created by co-simulation of MATLAB/Simulink and the IPG Carmaker ...

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