New energy battery chassis layout principle

How to optimize the chassis structure of new energy vehicles?
Based on variable density topology optimization design theory,a numerical computationis carried out to optimize the chassis structure of new energy vehicles.

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.

What is optimized design of the chassis structure?
The optimized design of the chassis structure is to use advanced CAE technologyto optimize the structure and size parameters of the parts,improve the utilization of materials,and remove unnecessary parts and components under the premise of ensuring or improving the performance of components and controlling the design cost.

What are the three parts of a chassis structure?
According to the different function of the chassis structure spaces, the finite element model of chassis structure is divided into three parts: the front is the engine or motor mounting area; the middle is the battery system installation area, which also bears the mass of passengers; the rear is the trunk area.

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 a chassis structure?
The design mass is fully loaded with 600 kg,and the mass is equally distributed in the middle of the chassis structure. So the chassis structure is a combined deformation of bending and torsion.

More focus has been placed on creating new energy cars that are safer and more energy-efficient due to the development of new energy vehicle technologies and their strategic importance in addressing current energy and environmental issues. The chassis system"s primary components, whether for a conventional fuel vehicle or a new energy vehicle, are the braking, suspension, ...

As the energy conversion and power transmission system of EVs, drive motors and their controllers are an important part of the "Three Verticals and Three Horizontals" R & D layout for China"s new energy vehicles, with the trendency of higher efficiency, higher power density, and higher reliability.

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

Aiming at the two conditions of bending and torsion in the normal operation of new energy vehicles, a single-objective topology optimization is carried out and the results of ...

The chassis structural design of new energy cars is more adaptable and affects vehicle performance compared to fuel-powered vehicles. The integrated battery and high amount of unsprung mass...

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.

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 ...

A new flow battery design achieves long life and capacity for grid energy storage from renewable fuels. ... v-cyclodextrin additive is also the first to speed the electrochemical reaction that stores and then releases the ...

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