New energy battery frame structure design diagram

Can evfd based on battery arrangement be used to design aluminum alloy body structure?
In this paper,the case study demonstrates that the proposed EVFD method based on battery arrangement can be effectively usedto design aluminum alloy body frame structure of EVs,which provides a reference to other EV's body structure design.

How are body frame structures designed?
And then,the body frame structures are designed by multi-load topology optimization and multi-objective parametric optimizationbased on the body structure performance,considering the battery layout and its mass distribution. The developed body structure knowledge base is screened through comparing their structural mechanical properties.

How EV body structure knowledge base is developed?
The developed body structure knowledge base is screened through comparing their structural mechanical properties. The feasibility and accuracy of selected EV's aluminum alloy body frame structure is verified by experiment.

How EV layout is determined?
The layout of vehicle is firstly determined based on battery volumewhich calculated on the basis of power performance of EVs.

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.

What is the stress nephogram of a battery pack box?
Figure 10 shows the distribution of the stress nephogram of the battery pack box during the collision. The maximum stress value of the box is 335.5 MPa, and the maximum stress value of the lifting lug closest to the collision rigid column is 413.4 MPa.

The battery pack is installed at the bottom of the car chassis between the longitudinal beams of the frame, below the floor of the compartment; this paper refers to the original car data using Creo parametric modelling software 8.0 to build the battery pack 3D assembly model, in which the weight of the battery block and battery module is 282.5 kg, the ...

As traditional batteries cannot provide adequate energy density and power density, more and more vehicles are using lithium batteries because of its high working voltage (3 times of traditional battery) and high energy

density (up to 165 Wh/kg, 5 times of traditional battery) [7], [8].Known as "green battery", lithium battery is able to remain stable under ...

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o Design and develop 102kWh Lithium-Ion Battery for full electric vehicle application for a European-OEM, which include the design of Module stack, ... o Modular frame structure HV Traction Battery Pack Design Module Stack Busbar Thermal Management System Cooling Plate Frame and Structures. Title: HV Traction Battery Pack Design

In Section 4.2, the new energy vehicle battery dataset 2 is used for. ... The general structure diagram of the electric vehicle remote ... It can be seen that if it is a real-time information ...

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 software, defines its material properties, conducts grid division, and sets boundary conditions, and then conducts static and modal analysis to obtain the stress and deformation ...

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Electric vehicle and energy storage system with the rapid development of other fields, lithium battery, as the main source of power and energy storage, has attracted much attention for its safety and reliability. Among them, lithium battery pack frame structure design, including cell, battery pack and safety system, is very important to ensure the safety and ...

Structure diagram of the Battery Energy Storage System (BESS), as shown in Figure 2, consists of three main systems: the power conversion system (PCS), energy storage system and the ...

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