Battery pack shell stretching method

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.

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 to optimize mechanical design of a battery pack enclosure?
In this study, a design optimization methodology is proposed to optimize the features of mechanical design (e.g. minimization of mass, maximization of minimum natural frequency and minimization of maximum deformation) of the battery pack enclosure. The proposed methodology is comprised of four phases.

Why is structure design important for a battery pack?
Despite the remarkable progress in battery technology,there are still many challenges in optimizing the structure design of battery packs to achieve lighter,safer,and more efficient systems. Lightweight design is particularly important because reducing the overall weight of a vehicle can significantly improve energy efficiency and endurance.

How to achieve vibration isolation of battery pack?
Literature study conducted by (Jaguemont et al. 2016) and (Chen et al. 2017) stated that the vibration isolation of the battery pack can be achieved by designing the new structure of battery pack/mounting frame, selecting appropriate materials and placing battery pack in the vehicle.

How many units are there in a battery pack model?
Through the finite element analysis software ANSYS Workbench on the electric vehicle battery pack model of Q235 steel material given a mesh cell division,finally,a model grid was constructed containing 275953 unitsand 546089 nodes.

The battery pack studied in this article is a lithium battery pack, whic h is located in the center of a car chassis. Its total p owe r is 22 kWh, the battery capacit y is 60 Ah, and the total

The utility model provides a lithium battery case stretch forming machine, includes base (1), frame board (4), motor (11), connecting plate (8), stretching arm (10), its characterized in...

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 ...

16x18650 External Battery Pack Shell, 2 USB Output DIY Power Bank, Plastic Shell Box with LCD Display, Power Bank Case, With three Micro/Type C input, Small and light Design(black) Visit the Cuifati Store. 4.1 4.1 out of 5 stars 25 ...

Lightweight research based on battery pack structural strength can improve the endurance and safety of electric vehicles. Based on the adaptive response surface and ...

As for battery shell material, some researchers committed to improve the strength and corrosion resistance of the battery shell through the addition of Ce [24] and CeLa [25]. So far, the only publication reporting on the mechanical properties of Lithium-ion battery shell available was authored by Zhang et al. [26] on cylindrical battery shell ...

alginate (PECSA) film are both used to control the temperature of the battery pack. Results show that the maximum temperature of the battery pack can be controlled below 32 C, when WE coupled with AC is used at a discharge rate of 1.8C within a discharge time of 1000 s. This method yields the highest performance of thermal management.

A mechatronic mechanism can be designed inside or outside battery module/battery pack enclosure to allow the main circuit of electric vehicle to get disengaged in the ...

Safe bidirectional pulse heating method for the lithium-ion battery pack on a high-power electric motorcycle. Author ... Thermocouple 2 is stuck on the surface of the cell to obtain the temperature of the shell. The battery cell is heated by 1C and 2C bidirectional pulse current with 2 Hz frequency, under the temperature of -20 °C and 0 °C ...

566 G. Ruan et al. 2. Research status at home and abroad 2.1. Degree of research on the safety of new energy battery packs In the history of research on automobile power battery packs, foreign ...

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