

# New energy aluminum battery box damaged

Can aluminum and high-strength steel connect a battery pack box?

Li et al. analyzed the connection between aluminum and high-strength steel, expounded on the current status of the connection technology of new energy vehicle battery pack boxes, and put forward the point of view that the connection-related issues such as matrix damage, interface failure, and long welding cycle need to be further studied.

Can aluminum foam be used in a battery pack case?

In the above literature, research has been carried out on the aspects of automotive structural safety, optimization of battery pack box structure, and lightweight technology of new energy vehicles, but the application of aluminum foam material on the battery pack case and the realization of lightweight design are yet to be studied in depth.

Does aluminum make a good battery pack?

The larger the battery, the more aluminum makes sense for battery packs," Asfeth asserted. Bucking that trend is GM's 9000-lb. (4082-kg) Hummer EV, which uses a multi-material battery enclosure. Tesla also has reduced the amount of aluminum in the battery enclosure for the Model 3 and Model Y compared to what was used in its S and X models.

What is a power battery pack box?

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.

How does a rigid column affect a battery pack box?

In the analysis of the vehicle side impact test, the rigid column invades the electric vehicle, which deforms the sill beam and the side of the battery pack box. Figure 10 shows the distribution of the stress nephogram of the battery pack box during the collision.

Why is battery pack box structure important?

Abstract. 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.

Since Sony first commercialised lithium-ion batteries in 1991, they have powered everything from iPhones to electric cars. However, lithium batteries have limitations that make them unsuited for lots of applications. Firstly, they contain dangerous components that can result in batteries catching fire or exploding when they are damaged ...

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In combination with actual engineering needs, this article summarizes the key points of profile design for battery packs by analyzing the requirements of mechanical strength, safety, thermal management and lightweight of battery packs.

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As a new incremental component, the battery box has developed rapidly driven by the high growth of the new energy vehicle market. The battery box is an important component of the...

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Structural Analysis of Battery Pack Box for New Energy Vehicles Based on the Application of Basic Foam Aluminum Materials . Congcheng Ma \* a, Jihong Hou. a, Fengchong Lan. b, Jiqing Cheng. b . a. Guangzhou Vocational College of Technology & Business, Guangdong Province; b. School of Mechanical and Automotive Engineering, South China University of Technology, ...

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The "battle for the box" has kicked off a new wave of creativity among engineers and materials scientists. Roughly 80% of current EVs have an aluminum battery enclosure, but engineers are quick to note that the field is wide open for alternatives, based on vehicle type, duty cycles, volumes, and cost.

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For new energy vehicles, the key component that affects vehicle safety is the battery pack. As the carrier of the battery, the importance of the battery pack cannot be underestimated. The...

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paper considers the box structure of the battery pack for the new energy vehicles as an example, in which the foam aluminum material is adopted for structural lightweight design to...

With the rapid growth in new energy vehicle industry, more and more new energy vehicle battery packs catch fire or even explode due to the internal short circuit. Comparing with...

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