

What is a battery housing?

Current battery housing designs 4, 5, typically made of solid metallic materials and located at the bottom of the vehicle, are usually heavy to ensure adequate protection. To progress the state-of-the-art battery housing design, efforts have been devoted towards lightweight, high mechanical performance, and efficient thermal management 6.

Could a battery housing be located below the passenger compartment floor?

This paper develops some engineering analyses and shows sketches of some possible solutions that could be adopted. The possible consequences on the position of the vehicle center of gravity, which in turn could affect the vehicle drivability, lead to locate the battery housing below the passenger compartment floor.

Where is the battery housing located in a car?

In order to lower the possible negative consequences, the battery housing is generally located below the passenger compartment floor. This solution is also one of the most interesting in terms of battery pack protection in case of a lateral impact and for easy serviceability and maintenance.

What is a single battery housing unit?

A single battery housing unit is regarded as a representative component of the entire battery pack, and the dimensions are related to the overall size as entailed in Eq. (1). The design domain is intended to be occupied by lattices.

What is a stainless steel EV battery compartment?

Stainless steel concept for an EV battery compartment. Li-ion modules for EVs generate a significant amount of heat inside the sealed battery housing. In the event of damage, the liquid coolant must not come into direct contact with the modules.

Why should you choose a fiber composite battery enclosure?

The excellent properties of the fiber composite construction make the battery enclosure a supporting element of the vehicle structure. We accompany you in all stages of your product development: from planning and conception to product completion and serial production in automotive quality and high volumes - and all this at attractive costs.

They are especially suited for the battery compartments that house lithium-ion (Li-ion) battery packs in electric vehicles (EVs). Crash safety and weight saving are important. But the critical factor is heat resistance in case of fire. An important new addition to the portfolio is the Forta H-Series grade of ultra-high strength stainless steel.

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 ...

Battery housing, a protective casing encapsulating the battery, must fulfil competing engineering requirements of high stiffness and effective thermal management whilst being...

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 [6].

EV battery enclosures made from 3D roll-formed AHSS steel; Optimizing floor cross beams to minimize crash intrusion on EV battery packs; And optimizing energy-absorbing beams for the EV's sill (rocker panel)

Appl. Sci. 2020, 10, 4532 3 of 23 Figure 2. Illustration of a multilayered housing for battery casing. Metallic cellular structured materials are basically material with pores and have a density less

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