

New Energy Battery Bracket Production Process

Can 3D printing be used to design a battery bracket?

As a consequence, it is particularly imperative to undertake lightweight design optimization for the battery bracket of new energy vehicles by applying 3D printing technology. To actualize this goal, Rhino software was initially employed for 3D modeling to design the battery bracket system for a pure electric vehicle in China.

How is a battery bracket made?

The geometrically reconstructed battery bracket exhibits a clear structure. The lower part of the bracket can be manufactured by stamping, while the lugs can be produced through milling or stamping processes. Welding can be utilized for connecting the bracket with the lugs, thus fulfilling the requirements for mass production within the enterprise.

How to improve battery pack performance for new energy electric vehicles?

Certainly, to strengthen the all-round performance of the battery pack system for new energy electric vehicles, further experiments are essential. These may include 3D printing of high-performance cooling water circuits for batteries, assessing the impact resistance of battery systems, and other relevant studies.

What is a battery bracket for EVs?

Finite element analysis (FEA) of a battery bracket tailored for EVs. This bracket plays a pivotal role in securing the battery pack, ensuring structural integrity, and dampening vibrations and impacts during vehicle operation. The design process incorporates meticulous material selection, weight optimization, and manufacturability

How RHINO software is used to design a battery bracket system?

To actualize this goal, Rhino software was initially employed for 3D modeling to design the battery bracket system for a pure electric vehicle in China. Subsequently, topology optimization design of the battery bracket was carried out by adopting Altair Inspire software.

Do battery pack brackets meet production requirements?

As revealed by the assembly results, the components of the battery pack bracket are tightly coordinated with each other, with no evident assembly conflicts, revealing that the dimensional accuracy and fit of the completed parts meet production requirements.

In the production process of new energy batteries, the MES system can collect various data during the production process. It can also carry out digital management and control of workshop equipment and production processes while based on the requirements of production process management and quality management[2].

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2. Analysis in Digital Upgrade Plan for New Energy Battery Production . 2.1. Enterprise level overall planning . The overall planning of the enterprise layer is an important foundation to ensure the digitization and networking of the manufacturing process of new energy batteries. In the process of adapting to the

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The battery is integrated into the chassis of the new energy-pure electric car, which has a higher percentage of unsprung mass, a lower center of gravity, and improved stability. For vehicle...

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insights into the behavior of battery brackets under high-energy impact events. This information is instrumental in guiding design improvements and optimization strategies to enhance the crashworthiness and safety of battery brackets in electric vehicles. Additionally, crash test data is ...

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Load and restraining position of a battery tray of an electric vehicle. Analysis results. On the basis of the aforementioned analysis parameter settings, the initial model of the lower battery tray bracket is imported into Altair Inspire software for initial strength analysis, and the results are depicted in Fig. 3. Upon observation, it is noted that the maximum displacement of the lower ...

Figure 1 introduces the current state-of-the-art battery manufacturing process, which includes three major parts: electrode preparation, cell assembly, and battery electrochemistry activation. First, the active material

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(AM), conductive additive, and binder are mixed to form a uniform slurry with the solvent. For the cathode, N-methyl pyrrolidone (NMP) ...

Chalco new energy power battery aluminum material recommendation Power battery shell-1050 3003 3005 hot-rolled aluminum coil plate The new energy power battery shells on the market are mainly square in shape, usually made of 3003 aluminum alloy using hot rolled deep drawing process. Depending on the design requirements of the power battery, the thickness and width ...

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Regarding energy density, Li-ion batteries have increased their capacity over the years, allowing more energy to be stored in a smaller and lighter package [8]; this is possible through the ...

With the intensification of national policy support and the enhancement of new energy vehicle technology, new energy vehicles have been widely used and promoted. In 2021, the sales of new energy vehicles in China completed 3.521 million units, ranking first in the world for seven consecutive years.

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