Battery module sealing technology

How to seal a battery?
The seal should firmly adhere to the lid and have a good compression set. Various technologies are available to achieve this. Among them: mechanically foamed polyurethanes or two component silicones,such as elastomers or foams. If the battery is only rarely opened or not at all,adhesive are possible solutions.

Can pouch cells be integrated into a battery module?
The integration of pouch cells into a battery module presents a challengein that the cells must be held firmly in place,but also must be protected from damage.

How to choose adhesives and sealants for high-voltage batteries?
The selection of adhesives and sealants depends on the desired strengths, service considerations and to a great extent on the manufacturing requirements. A wide spectrum of adhesive systems offers the industrial designer new technology options and thermal management solutions for high-voltage batteries.

What is a pouch cell with frame seal?
In the first concept - pouch cells with frame seal - a firm thermoplasticis designed to fit the specific cell design. This holds the cell securely and enables the implementation of additional functions like a predetermined break point for cells using "blow-off channels".

What is a modular battery?
Modular concepts are preferred for low volume cars or for trucks, delivery vans, special vehicles, buses or trains. The typical design of a high-voltage battery for the automotive sector offers many options for replacing mechanical fastenings with adhesive solutions.

How to choose a battery cover seal?
The customer's individual requirements on the serviceability of the batteryare decisive for selecting the cover seal. If frequent service is expected,the cover can be mechanically fastened with a foam or elastomer seal. The seal should firmly adhere to the lid and have a good compression set. Various technologies are available to achieve this.

An automotive battery pack for use in electric vehicles consists of a large number of individual battery cells that are structurally held and electrically connected.

A sealing plate and a battery module. The sealing plate comprises: a body part, which is a plate, the body part comprising a first surface, a second surface, a top surface, and a bottom surface, the first surface and the second surface being provided opposite to each other in a thickness direction of the body part, the second surface being adapted to face a battery cell in the ...

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International Research Journal of Engineering and Technology (IRJET) e-ISSN: 2395-0056 Volume: 08 Issue: 01 | Jan 2021 p-ISSN: 2395-0072 ... A Review on Design and Optimization of Cooling Plate for Battery Module of an Electric Vehicle ... sealing and reliability, and can take away the heat of each ...

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In fact, battery is a generic term for all three, while battery cell, battery module and battery pack are different forms of batteries in different stages of application. The smallest of these units is the battery cell, several cells can form a module, ...

The typical design of a high-voltage battery for the automotive sector offers many options for replacing mechanical fastenings with adhesive solutions. The battery housing ...

At the module level, thermal adhesives provide cell bonding and fixation, connect the cells to the cooling system, and support module sealing. When used for fixation at the ...

It covers multiple process steps, including electrode segment, battery cell segment, module segment, electrode appearance inspection, battery cell top cover welding inspection, battery cell appearance inspection, module ...

Freudenberg Sealing Technologies is introducing a new product that drastically reduces battery fires and completely prevents thermal propagation, known as the chain reaction of thermal runaways. ... The last comparable technology change in the automotive industry took place in the early 1990s, when the shift from purely mechanical to microchip ...

Matched to the requirements of the new technology, an extensive portfolio of high-performance materials made by leading manufacturers, especially for use in lightweight construction, battery technology, thermal management, electric motors, electric and electronic components as well as 3D printing, are available to users.

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