

Blade battery energy storage system structure diagram

What is a blade battery?

The structure of the Blade Battery from cell to pack. At the center of the design of the Blade Battery is the cell geometry, which has a much lower aspect ratio compared with conventional cylindrical or prismatic cells. According to BYD's patents, the cell depth (Z axis) is 13.5 mm while the cell length (X axis) can range from 600 mm to 2500 mm.

What is a BYD blade cell?

The BYD Blade cell or perhaps more importantly is the deletion of the module and move to cell to pack. An enabler for LFP chemistry and low cost EV battery packs. Prismatic cells, as the name suggests these are a prismatic block, normally with the outer case made from aluminium.

What is a module-free blade battery?

The module-free Blade Battery, however, takes advantage of its blade cells to increase the volumetric energy density by up to 50%, suggesting a potential VCTPR and GCTPR of 62.4% and 84.5%, respectively. Although the Blade Battery shows a lot of promise, the blade geometry is not perfect.

What is the difference between a module and a blade battery?

The height of the Blade Battery is reduced by ~50 mm, compared with regular LFP battery back with modules, providing more space to the passengers and decreasing the coefficient of drag (0.233 cd for BYD Han). In the Z direction, the structure of the Blade Battery is completely different from conventional module-based battery packs (Figure 3).

What is a BYD blade battery?

"The Blade Battery - Unsheathed to Safeguard the World", Wang Chuanfu, BYD Chairman and President, said that the Blade Battery reflects BYD's determination to resolve issues in battery safety while also redefining safety standards for the entire industry. BYD are able to make cells to a range of dimensions.

Does a module-free blade battery increase volumetric energy density?

Even worse, this low volumetric energy density often requires car designers to make room for a larger pack. The module-free Blade Battery, however, takes advantage of its blade cells to increase the volumetric energy density by up to 50%, suggesting a potential VCTPR and GCTPR of 62.4% and 84.5%, respectively.

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A battery technology, christened the BYD Blade battery, promised to set a new benchmark in battery safety when the announcement was made in 2020. The BYD Blade battery was planned to be used in select cars, ...

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BYD make a number of claims around the battery in this design: integrated 8-in-1 assembly = > Cell to Body design. structural architecture. high expandability of the e-platform 3.0 creates a larger axle-to-length ratio = > A ...

The blade battery's unique design and structure contribute to its key advantages. Unlike traditional cylindrical or ... vehicles, energy storage systems, and other industries requiring high ...

Battery energy storage systems have gained increasing interest for serving grid support in various application tasks. In particular, systems based on lithium-ion batteries have evolved rapidly ...

The Blade Battery is BYD's realization of the CTP concept (Figure 1). Figure 1. The structure of the Blade Battery from cell to pack. BYD Blade Battery-Inspired by CTP Geometry. At the center of the design of the ...

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BYD CTP (Cell to Pack) technology makes the difference, with the Blade Battery increasing space utilization by 50%. This improves energy density and allows more batteries in a compact space, with a longer driving ...

A battery energy storage system is of three main parts; batteries, inverter-based power conversion system (PCS) and a Control unit called battery management system (BMS). Figure 1 below presents the block ...

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