

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.

How does a blade battery work?

Arranged in an array in one pack, each cell serves as a structural beam to help withstand the force. The aluminum honeycomb-like structure, with high-strength panels on upper and lower side of the pack, greatly enhances the rigidity in vertical direction. It is this revolutionary design that gives optimised strength to the Blade Battery.

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 pack 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.

What are the benefits of a blade battery?

Efficiency and extended range are other benefits of the Blade Battery, offering greater power density for optimal performance and efficiency, including faster charging. BYD CTP (Cell to Pack) technology makes the difference, with the Blade Battery increasing space utilization by 50%.

Why is BYD's blade battery revolutionary?

BYD's blade battery is revolutionary in several ways. We are happy to explain why this is the case, as well as the importance of the so-called Nail Penetration Test. One of the most important parts of an electric vehicle is the battery system. After years of study, research and development, BYD has come up with the Blade Battery.

If you continue browsing, you accept the use of this technology. For more information please see our Cookies Statement. Customize ... Blade Battery emits neither smoke nor fire after being penetrated, and its surface temperature only reaches 30 to 60 °C. Under the same conditions, a ternary lithium battery mostly exceeds 500 °C and violently burns, and while a conventional ...

With cell-to-pack technology, BYD designed the module-free battery pack using the Blade Cell. The geometry of the Blade Cell is a key to the realization of the module-free battery pack. With the module-free pack design, VCTPR and GCTPR can be ...

By making EVs cheaper, the Blade Battery 2.0 could accelerate the shift away from fossil fuels to electric power, reducing carbon emissions from transportation. This technology also focuses on longevity and efficiency, which could mean fewer batteries end up in landfills over time, enhancing the sustainability of electric mobility.

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Shape diagram of BYD blade cell (Source: State Intellectual Property Office) The volume/energy density of blade batteries is 50% higher than that of traditional lithium iron phosphate batteries. According to the patent, the ...

The blade battery, developed by BYD, has emerged as a promising innovation in the field. This review paper provides a comprehensive overview of blade battery technology, c...

Shape diagram of BYD blade cell (Source: State Intellectual Property Office) The volume/energy density of blade batteries is 50% higher than that of traditional lithium iron phosphate batteries. According to the patent, the "blade battery" technology has a volume energy density of more than 330Wh/L, which is more than 30% higher than the ...

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Oxygen release in conventional batteries can fuel fires, but the Blade Battery's design prevents this, making it much safer in the event of damage or failure. Innovations behind BYD Blade Battery. Several patents have been filed by BYD related to this technology. Here are some key patents associated with the Blade Battery:

However, it would take a few more years before real battery technology would begin to coalesce. In the late 18th century, Luigi Galvani and Alessandro Volta conducted experiments with "Voltaic ...

Download scientific diagram | Cell-to-pack technology a,b, A schematic illustration of a conventional battery pack (a) and a blade battery pack (b). The conventional battery pack uses cells to ...

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One of the most important parts of an electric vehicle is the battery system. After years of study, research and development, BYD has come up with the Blade Battery. What is so special about this system? Blade Battery offers new levels of safety, durability and performance, as well as increased battery space utilisation.

BYD, a global leader in electric vehicle (EV) innovation, has consistently pushed the boundaries of battery technology with its groundbreaking Blade Battery, based on Lithium Iron Phosphate (LFP) chemistry. This battery has already garnered widespread attention for its unique combination of safety, durability, and efficiency. As the automotive ...

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