

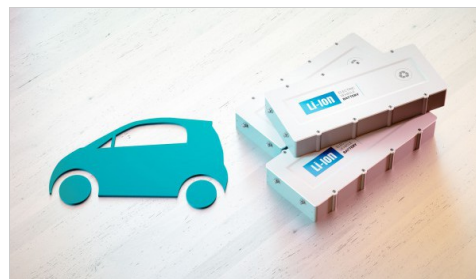
Huawei files patent for a sulfide-based solid-state battery with up to 3,000 km of range

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Huawei has advanced its efforts in energy storage by patenting a sulfide-based solid-state battery. This innovation aims to provide a driving range of up to 3,000 km with ultrafast-charging capabilities in just five minutes.



Source: Getty Images/ Petmal

Huawei's patent reveals a battery architecture with energy densities between 400 and 500 watt-hours per kilogram (Wh/kg), which is significantly higher than conventional lithium-ion cells. A highlighted feature is the doping of sulfide electrolytes with nitrogen to improve electrochemical stability, addressing challenges at the lithium interface to enhance safety and cycle life.

Huawei's interest in solid-state batteries is part of a wider trend among mainland Chinese technology and automotive firms endeavoring to innovate battery technology and reduce dependence on established suppliers such as CATL and BYD.

Although Huawei does not produce power batteries, its research in upstream battery materials indicates a strategic focus on this sector. Earlier in 2025, Huawei filed another patent on the synthesis of sulfide electrolytes, emphasizing the material's high conductivity but high production cost.

Mainland Chinese electric vehicle and technology sectors are keen to explore solid-state technologies, aiming to regain control over global battery manufacturing, a significant cost component in EV production. For instance, Xiaomi has also filed patents to optimize ion transport, underscoring the sector's focus on battery innovation relevant to both vehicles and mobile electronics.

While Huawei's claims regarding battery range and charging speed have garnered attention, experts noted that these remain theoretical, given current infrastructure limitations. This development has stirred global competition, with Japanese and South Korean media expressing concern about mainland China's rapid advancements in next-generation battery technologies.

Meanwhile, traditional leaders such as Toyota, Panasonic and Samsung continue their solid-state battery research and development. Toyota has unveiled a prototype with a 1,200-km range and a 10-minute charge time.

Mainland Chinese battery manufacturers are progressing toward industrialization, with CATL planning pilot production of a hybrid solid-state battery by 2027. Companies including Gotion High-Tech and Beijing WeLion are making strides in the small-scale production of advanced solid-state batteries. However, challenges such as lower ionic conductivity, interfacial resistance and high production costs remain obstacles to mass adoption.

Huawei's involvement adds momentum to mainland China's pursuit of battery innovation, setting the stage for potentially revolutionary changes in electric mobility. The success of these technologies in redefining industry standards hinges on translating laboratory breakthroughs into scalable manufacturing.

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