

# New energy vehicles have solid-state batteries

When will a car be powered by a solid-state battery?

Actual cars powered by solid-state batteries seem to be perpetually on the horizon: Toyota's original target date for commercializing them in the early 2020s has now slipped to the late 2020s, for example. When it comes to batteries, "Toyota has said a lot of things in the last ten years, none of which have come through," cautions Ceder.

Why are solid-state batteries the next big thing for EVs?

Solid-state battery compositions will make batteries smaller and more energy dense. That means an EV can either go further with more batteries, or do the same range but be more lightweight and, crucially, cheaper with fewer batteries.

Will solid-state batteries become a reality in 5 years?

Widespread use of solid-state batteries may be difficult to see in the next 3 years, but it's expected to be realized in 5 years, BYD chief scientist Lian Yubo said today in a speech at the 2024 World New Energy Vehicle Congress (WNEVC 2024) in Haikou, Hainan province.

What is a solid state battery?

In a solid-state battery, the make-up is simplified. The liquid is replaced by a solid block, which is lighter than its counterpart and can carry more energy within the same capacity. The solid element is also less reactive than the liquid, so it's much less likely to ignite if punctured or heated.

Can a solid state battery make electric cars lighter?

But solid state technology has its own challenges, and it's not the only way automakers could achieve lighter, cheaper and faster charging electric vehicles. The main difference between a solid state battery and the lithium-ion batteries currently used in electric cars is a component known as the electrolyte.

Does Mercedes have a solid-state EV battery?

Its solid-state battery cells based on the FEST platform were delivered to Mercedes earlier this summer. On Tuesday, Factorial introduced its latest breakthrough, Solstice. The new all-solid-state EV battery was developed with Mercedes to power its next-gen models.

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Mercedes unveiled its new all-solid-state EV batteries promising higher energy density and safety. Developed with Factorial, its new all-solid-state battery "breakthrough" can extend...

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"Metal-based SSB are ideal for portable applications like electric vehicles, by offering longer ranges, lower weight, faster charging, and enhanced safety than standard lithium-ion batteries. They can also enhance consumer electronics with better battery life and reliability," Garc&#237;a-M&#233;ndez said. "Despite significant progress, plenty of ...

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The solid-state battery (SSB) is a novel technology that has a higher specific energy density than conventional batteries. This is possible by replacing the conventional liquid electrolyte inside batteries with a solid electrolyte to bring more benefits and safety. This study aims to estimate the future of SSBs; three cases are developed to ...

Chinese manufacturers have announced budget cars for 2024 featuring batteries based not on the lithium that powers today's best electric vehicles (EVs), but on cheap sodium -- one of the...

6 ???&#183; Toyota has claimed that it will begin offering cars with solid-state batteries and a range of 750 miles as early as 2027, and ... Today's best commercial lithium-ion batteries have an energy density of about 280 watt-hours per kilogram (Wh/kg), up from 100 in the 1990s and much higher than about 75 Wh/kg for lead-acid batteries. The theoretical maximum of lithium-ion ...

Samsung Announces Battery Capable of 600 Miles of Range. August 3, 2024: At the SNE Battery Day in Seoul, South Korea, Samsung announced a solid-state battery product boasting the capability...

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Car companies including Stellantis, Hyundai and Volkswagen have also teamed up with firms working on solid state batteries. The technology holds the promise of batteries that are smaller...

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