

Can new battery technologies reshape energy systems?

We explore cutting-edge new battery technologies that hold the potential to reshape energy systems, drive sustainability, and support the green transition.

Which EV battery company has made significant progress in 2024?

Contemporary Amperex Technology Co. Limited (CATL), the world's largest EV battery maker, made significant progress in solid-state batteries in 2024. The company has entered trial production of 20 amp-hour (Ah) solid-state cells, achieving an energy density of 500 Wh/kg--a 40% improvement over existing lithium-ion batteries.

Could a new energy source make batteries more powerful?

Columbia Engineers have developed a new, more powerful "fuel" for batteries--an electrolyte that is not only longer-lasting but also cheaper to produce. Renewable energy sources like wind and solar are essential for the future of our planet, but they face a major hurdle: they don't consistently generate power when demand is high.

Are solid-state batteries paving the way for a new era of energy storage?

Rapid advancements in solid-state battery technology are paving the way for a new era of energy storage solutions, with the potential to transform everything from electric vehicles to renewable energy systems.

Which companies have made advances in battery recycling technology in 2024?

Several companies made advances in battery recycling technology in 2024. Altilium has developed a hydrometallurgical recycling technology that achieved over 97% lithium recovery from LFP batteries. The company has demonstrated its ability to recycle both LFP and NMC batteries.

Could a new aluminum-ion battery save energy?

US scientists claim to duplicate AI model for peanuts This new aluminum-ion battery could be a long-lasting, affordable, and safe way to store energy. American Chemical Society Researchers have developed a new aluminum-ion battery that could address critical challenges in renewable energy storage.

Breakthrough in Sodium-Ion Battery Energy Density by US Researchers; Farasis Energy's Sodium-Ion Batteries Power First EV Rollout; Altris Receives \$7.6M for Sodium-Ion Battery Plant; Altris and Clarios Unite to ...

Stanford's breakthrough in lithium metal battery technology promises to extend EV ranges and battery life through a simple resting protocol, enhancing commercial viability. ... Scientists have been testing a variety of ...

Higher energy density. With a higher energy density of 458 watt-hours per kilogram (Wh/kg) compared to the 396 Wh/kg in older sodium-ion batteries, this material brings sodium technology closer to ...

1 Introduction. Lithium-ion batteries (LIBs) have been at the forefront of portable electronic devices and electric vehicles for decades, driving technological advancements that have shaped the modern era (Weiss et al., ...

These lower energy densities mean that range is limited. The ultra-compact cars expected to run on sodium batteries have advertised ranges of around 250-300 km, ...

Discover the latest breakthroughs in EV battery technology for 2025. From solid-state batteries to silicon anodes and fast charging, learn what's new and exciting in the world of electric vehicles.

Batteries with higher energy density can store more energy in a smaller space. This is beneficial for electric vehicles and portable electronics. Maximizing energy density is why lithium-ion batteries are popular, particularly ...

Flow batteries are emerging as a transformative technology for large-scale energy storage, offering scalability and long-duration storage to address the intermittency of renewable energy sources like solar and wind.

Battery 2030+ is the "European large-scale research initiative for future battery technologies" with an approach focusing on the most critical steps that can enable the acceleration of the ...

... home storage batteries can still play a crucial role in storing cheaper and cleaner energy. For instance, a standalone battery storage system without solar can allow you to store energy from the grid when it's cheaper - ...

Northvolt has made a breakthrough in a new battery technology used for energy storage that the ... Lithium batteries used in electric cars have an energy density of up to about 250-300Wh per kg ...

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