

Can a new battery material reduce the amount of lithium?

It has been corrected to say that the material can reduce the amount of lithium by as much as 70 percent. We regret the error. Microsoft and the Pacific Northwest National Laboratory used AI and high-performance computing to discover a promising new battery material faster than ever before.

Could a new lithium-ion battery make electric cars more sustainable?

MIT researchers have now designed a battery material that could offer a more sustainable way to power electric cars. The new lithium-ion battery includes a cathode based on organic materials, instead of cobalt or nickel (another metal often used in lithium-ion batteries).

Is AI accelerating the search for new battery materials?

Artificial intelligence (AI) and large-scale cloud computing is speeding up the search for new battery materials. An AI-enhanced collaboration between Microsoft and the Pacific Northwest National Laboratory (PNNL) has already produced one promising new material, which the two are sharing publicly today.

Can a lithium metal anode make solid state batteries?

The research not only describes a new way to make solid state batteries with a lithium metal anode but also offers new understanding into the materials used for these potentially revolutionary batteries. The research is published in Nature Materials.

Could artificial intelligence reduce the reliance on lithium in batteries?

Microsoft in collaboration with the Pacific Northwest National Laboratory (PNNL) has harnessed the power of artificial intelligence (AI) and high-performance computing to discover a novel material that could significantly reduce the reliance on lithium in batteries.

Could MIT battery material be a sustainable way to power electric cars?

Lamborghini has licensed the patent on the technology. Dinc's lab plans to continue developing alternative battery materials and is exploring possible replacement of lithium with sodium or magnesium, which are cheaper and more abundant than lithium. An MIT battery material could offer a more sustainable way to power electric cars.

Implementation of advanced materials in battery manufacturing ensures the above-mentioned standards and leads to innovation in battery technology. Startups are working on both traditional ...

These new approaches in EV battery chemistry promise to enhance efficiency and prolong charge life. New EV Battery Technology 2024: Solid-State and Semi-Solid-State Advances. The electric vehicle (EV) industry ...

This material brings sodium technology closer to competing with lithium-ion batteries. ... The researchers also created a battery prototype using the new material, $\text{Na}_x\text{V}_2(\text{PO}_4)_3$, demonstrating ...

Discover the materials shaping the future of solid-state batteries (SSBs) in our latest article. We explore the unique attributes of solid electrolytes, anodes, and cathodes, detailing how these components enhance safety, longevity, and performance. Learn about the challenges in material selection, sustainability efforts, and emerging trends that promise to ...

As more products begin to depend on battery-based energy storage systems, shifting away from metal-based solutions will be critical to facilitating the green energy ...

A new MIT battery material could offer a more sustainable way to power electric cars. Instead of cobalt or nickel, the new lithium-ion battery includes a cathode based on organic materials.

Li-S Energy's nanotube battery technology. Image used courtesy of Li-S Energy . The U.S. battery developer Lyten plans to build the world's first Li-S battery gigafactory with an annual capacity of 10 GWh at full scale. Production of cells, cathode materials, and lithium metal anodes at the \$1 billion facility near Reno, Nevada, is expected ...

The anode active materials that collect these ions during charging are often carbon-based graphite. Silicon attracts more lithium ions but physically expands in the process, which can damage the ...

A new type of battery, based on a material discovered with the help of AI, is shown being tested in the laboratory. Dan DeLong/Microsoft. Share this: ... medicine and technology. Today, our ...

The researchers targeted a coveted type of battery material: a solid electrolyte. An electrolyte is a material that transfers ions -- electrically charged atoms -- back and forth ...

A brand new substance, which could reduce lithium use in batteries, has been discovered using artificial intelligence (AI) and supercomputing.

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