

Rechargeable molten storage salt battery energy

Rechargeable molten storage salt battery energy

In a recent paper published in Cell Reports Physical Science, they demonstrated how freezing and thawing a molten salt solution creates a rechargeable battery that can store energy...

Molten-salt batteries are a class of battery that uses molten salts as an electrolyte and offers both a high energy density and a high power density. Traditional non-rechargeable thermal batteries can be stored in their solid state at room temperature for long periods of time before being activated by heating.

Li et al. construct a rechargeable battery with earth-abundant elements that can be frozen to preserve the stored electric energy, like preserving food in a freezer. With heat, the energy can be effectively recovered even months later, potentially opening new possibilities toward seasonal energy storage and renewable energy integration.

In this review, the general principles of molten salts and recent research progresses on molten salt-based battery materials are surveyed. Molten-salt synthesis of electrode materials, including sintering and electrolysis, are emerging as competitive substitutes for conventional synthesis techniques.

Rechargeable Molten Salt Battery Freezes Energy in Place for Long-Term Storage

Close-up of the freeze-thaw battery developed by the Pacific Northwest National Laboratory team.

Andrea Starr/Pacific Northwest National Laboratory

If you're enjoying this article, consider supporting our award-winning journalism by subscribing. By purchasing a subscription you are helping to ensure the future of impactful stories about the discoveries and ideas shaping our world today.

Anna Blaustein is a science journalist. She has a bachelor's degree in biology from Bowdoin College and a master's degree in science writing from the Massachusetts Institute of Technology.

Scientific American is part of Springer Nature, which owns or has commercial relations with thousands of scientific publications (many of them can be found at). Scientific American maintains a strict policy of editorial independence in reporting developments in science to our readers.

During spring in the Pacific Northwest, meltwater from thawing snow rushes down rivers and the wind often blows hard. These forces spin the region's many power turbines and generate a bounty of electricity at a time of mild temperatures and relatively low energy demand. But much of this seasonal surplus electricity--which

Rechargeable molten storage salt battery energy

could power air conditioners come summer--is lost because batteries cannot store it long enough.

Molten-salt batteries are a class of battery that uses molten salts as an electrolyte and offers both a high energy density and a high power density. Traditional non-rechargeable thermal batteries can be stored in their solid state at room temperature for long periods of time before being activated by heating. Rechargeable liquid-metal batteries are used for industrial power backup, special electric vehicles'citation needed'and for grid energy storage, to balance out intermittent renewable power sources such as solar panels and wind turbines.

Contact us for free full report

Web: <https://www.kary.com.pl/contact-us/>

Email: energystorage2000@gmail.com

WhatsApp: 8613816583346

