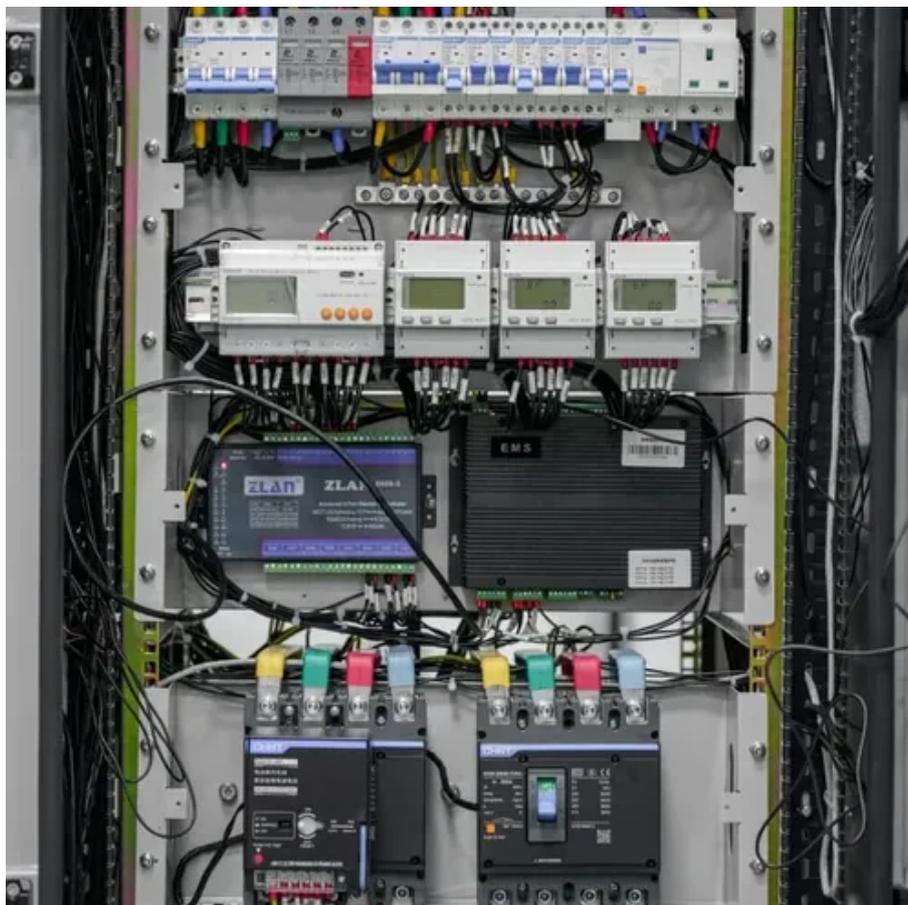




Athens aluminum acid solar container battery





Overview

Can Al-ion batteries be used as a long-term energy storage system?

Potential substitutes for reliable long-term energy storage systems include rechargeable Al-ion batteries. However, their most common electrolyte, liquid aluminum chloride, corrodes the aluminum anode and is highly sensitive to moisture, which exacerbates the corrosion.

How long does a solid-state aluminum-ion battery last?

The solid-state aluminum-ion battery has an exceptionally long life, losing less than 1% of its original capacity after 10,000 charge-discharge cycles. "This new Al-ion design shows the potential for long-lasting, cost-effective, and high-safety energy storage system," said Wei Wang, study co-author.

Could aluminum-ion batteries be a cost-effective and environment-friendly battery?

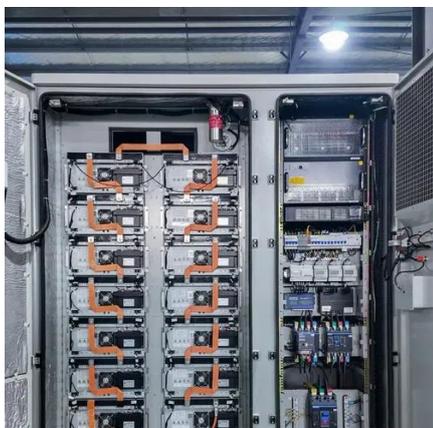
Now, researchers reporting in ACS Central Science have designed a cost-effective and environment-friendly aluminum-ion (Al-ion) battery that could fit the bill. A porous salt produces a solid-state electrolyte that facilitates the smooth movement of aluminum ions, improving this Al-ion battery's performance and longevity.

Could an aluminum-ion battery save energy?

To create the solid electrolyte, the researchers introduced an inert aluminum fluoride salt to the liquid electrolyte already containing aluminum ions. This new aluminum-ion battery could be a long-lasting, affordable, and safe way to store energy. American Chemical Society



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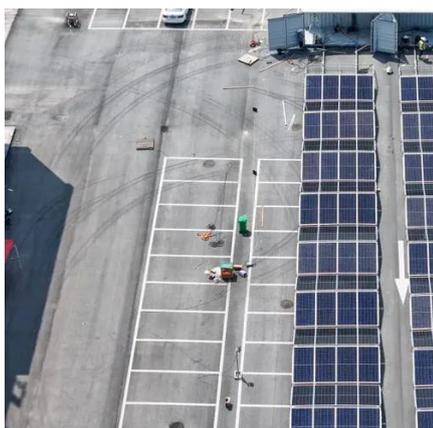


[Eco-friendly aluminum battery lasts 10,000 cycles ...](#)

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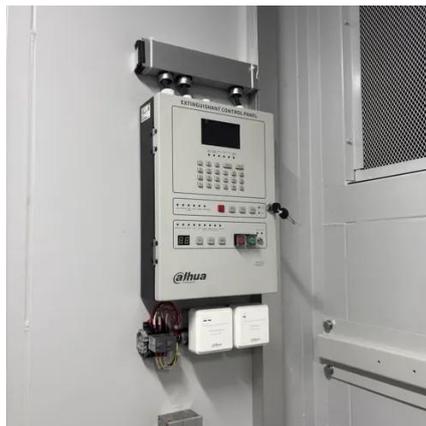
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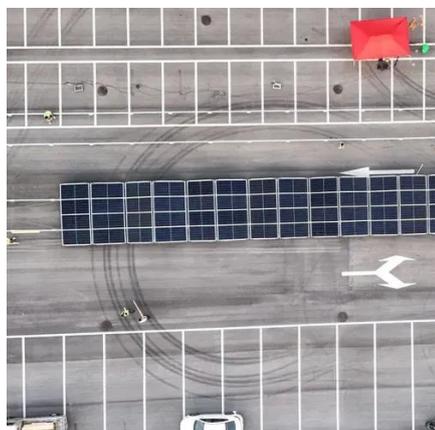


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New design makes aluminum batteries last longer

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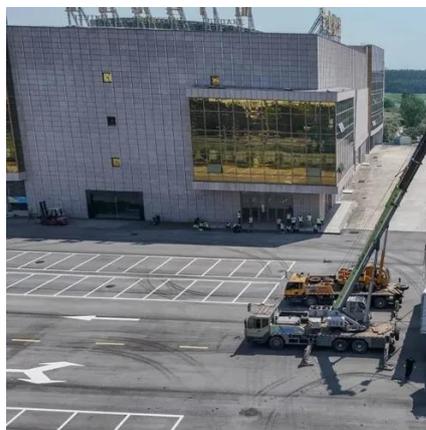
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[Athens aluminum acid energy storage battery](#)

A new solid-state electrolyte aluminum-ion battery is developed by the researchers to tackle the challenges faced in the renewable energy storage system by making it faster, more durable, ...



[Eco-friendly aluminum battery lasts 10,000 cycles ...](#)

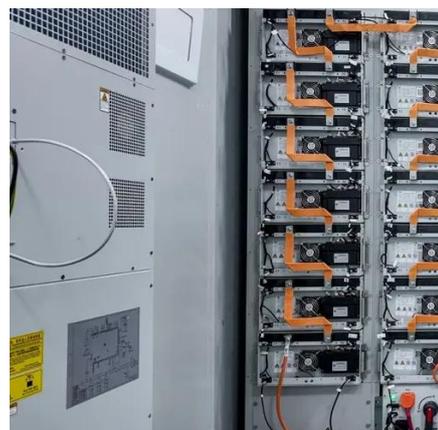
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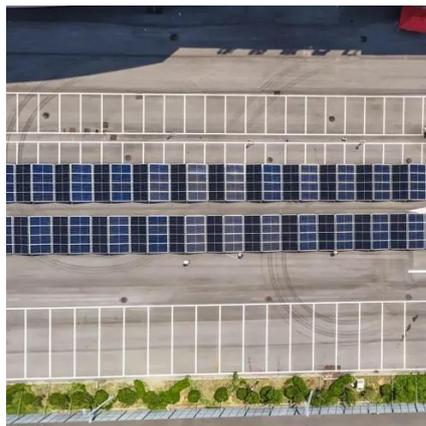
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