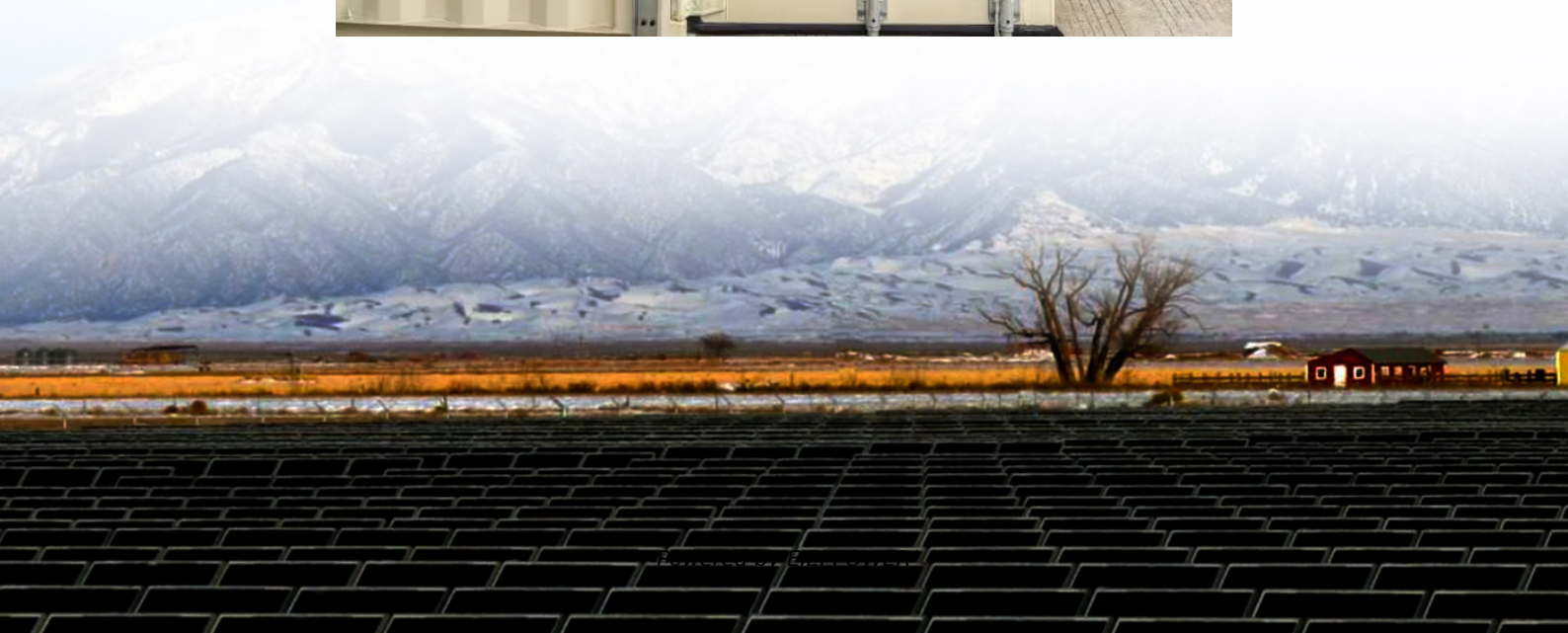


Sucre Flow Battery





Overview

Can a new flow battery design improve grid energy storage capacity?

A new flow battery design achieves long life and capacity for grid energy storage from renewable fuels. A common food and medicine additive has shown it can boost the capacity and longevity of a next-generation flow battery design in a record-setting experiment.

What is a flow battery?

To provide full day, utility scale energy storage as more wind and solar power enter the grid, a flow battery fits the bill. Flow batteries leverage the ability of specialized liquids to create an electrical current when they flow adjacent to each other, separated by a thin membrane.

Can β -cyclodextrin be used in flow batteries?

Legacy engineering firms like Cummins are also working to develop a new generation of flow batteries (see more CleanTechnica coverage here). The Pacific Northwest National Laboratory's contribution is the first ever use of β -cyclodextrin, a simple sugar derived from starch, in a flow battery formula.

What are redox flow batteries?

Redox flow batteries are an emerging technology for electrochemical energy storage that could help enhance the use of power produced by renewable energy resources. Scientists have addressed some of .



Sucre Flow Battery



[Vitamin B2 And Sugar Power A Safer Home Flow Battery ...](#)

Oct 15, 2025 · Household batteries rarely draw inspiration from breakfast. A new prototype does, tapping vitamin B2 and simple glucose to move electrons with surprising force. In ACS Energy ...

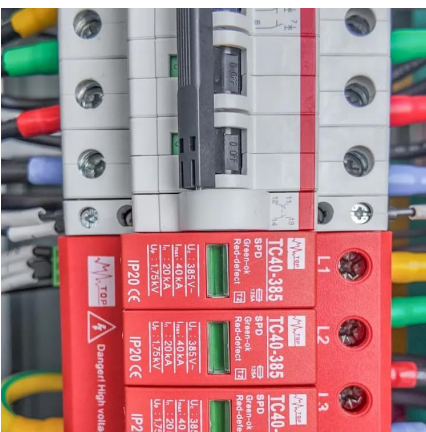
New glucose-powered flow battery uses vitamin B2 to create ...

Oct 16, 2025 · Scientists create a vitamin B2 and glucose-powered flow battery that mimics human metabolism for safer, low-cost energy storage.



[The Flow Battery That is Redefining the Energy Storage ...](#)

Jul 13, 2023 · Researchers based at the Department of Energy's Pacific Northwest National Laboratory (PNNL) have made a breakthrough in redox flow battery technology using a simple ...



[Simple sugar sweetens the deal for improving ...](#)

The addition of a simple sugar, β -cyclodextrin, can boost the performance of flow batteries. A team from the US Department of Energy's Pacific ...

...



[New Flow Battery Lasts All Year On Simple Sugar](#)

Jul 12, 2023 · New flow battery deploys the simple sugar α -cyclodextrin for an abundant, sustainable long duration energy storage formula.



[New glucose-powered flow battery uses ...](#)

Oct 16, 2025 · Scientists create a vitamin B2 and glucose-powered flow battery that mimics human metabolism for safer, low-cost energy storage.



[The Surprising Impact of Sugar on Flow Batteries](#)

Jul 27, 2023 · The electrolyte depends on the chemistry of the flow battery, but in some cases, can be water-based, reducing the risk of fire often associated with lithium-ion batteries. Flow ...





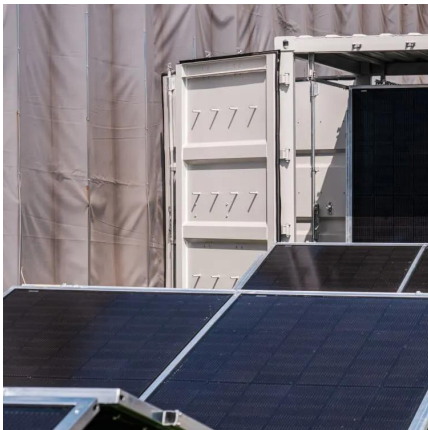
Record-Breaking Advances in Next-Generation Flow Battery ...

Jul 14, 2023 · The study is the next generation of a PNNL-patented flow battery design first described in the journal Science in 2021. There, the researchers showed that another common ...



[Record-Breaking Advances in Next ...](#)

Jul 14, 2023 · The study is the next generation of a PNNL-patented flow battery design first described in the journal Science in 2021. There, the ...



[New Flow Battery Lasts All Year On Simple ...](#)

Jul 12, 2023 · New flow battery deploys the simple sugar β -cyclodextrin for an abundant, sustainable long duration energy storage formula.



Sugar-Infused Flow Batteries Breakthrough to Revolutionize ...

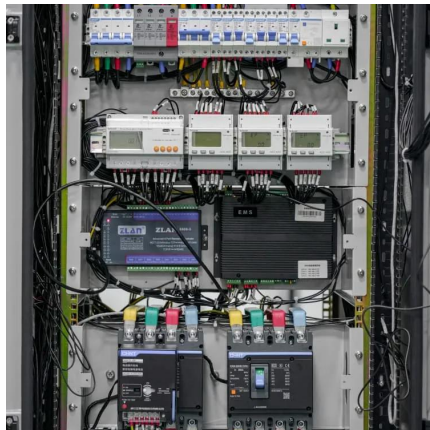
Jul 11, 2023 · Scientists at the US Department of Energy's Pacific Northwest National Laboratory (PNNL) have achieved a groundbreaking advancement in flow batteries technology, utilizing a ...





[The Flow Battery That is Redefining the ...](#)

Jul 13, 2023 · Researchers based at the Department of Energy's Pacific Northwest National Laboratory (PNNL) have made a breakthrough in ...



[Next-Generation Flow Battery Design](#)

Oct 3, 2024 · A common food and medicine additive has shown it can boost the capacity and longevity of a next-generation flow battery design in a record-setting experiment.

[Next-generation flow battery design sets records](#)

Jul 10, 2023 · A new flow battery design achieves long life and capacity for grid energy storage from renewable fuels.



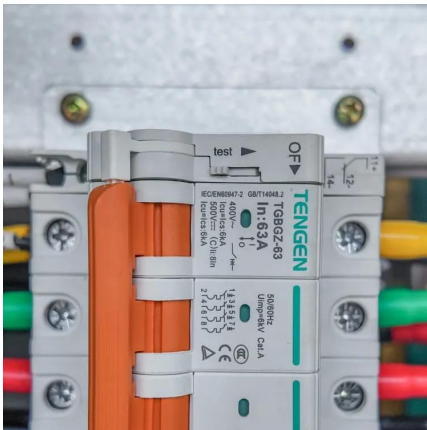
Simple sugar sweetens the deal for improving performance of flow batteries

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