

Flow Battery Base





Overview

What is acid-base flow battery (ABFB)?

Acid-base flow battery (ABFB) is a novel and environmentally friendly technology based on the reversible water dissociation by bipolar membranes, and it stores electricity in the form of chemical energy in acid and base solutions.

Why is acid-base flow battery important?

In this regard, thanks to the safe and cost-effective battery chemistry, the acid-base flow battery can play a role towards the development of environmentally safe and sustainable energy storage systems.

Can acid-base flow batteries provide seasonal energy storage?

6. Conclusions The aim of this work is to present the state-of-the-art and latest developments of acid-base flow batteries (ABFBs) as a promising technology to provide seasonal energy storage by means of water dissociation with bipolar membranes.

What is acid-base flow battery based on reversible water dissociation?

AQUABATTERY is an acid-base flow battery based on reversible water dissociation, developed in the Netherlands. The battery stores electricity in the form of chemical energy in acid, base and saltwater solutions, which are kept in separate tanks. Pumps circulate these fluids through a power stack with electrodes separated by membranes.



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The acid-base flow battery , TU Delft Repository

Acid-base flow battery (ABFB) is a novel and environmentally friendly technology based on the reversible water dissociation by bipolar membranes, and it stores electricity in the form of ...

Electrical Characterization and Modeling of an Innovative Acid/Base

Dec 9, 2024 · The main contribution is therefore the assessment of the potential use of this technology and the possibility of modeling it with already established approaches. Innovative ...

Acid-Base Flow Battery, Based on Reverse Electrodialysis with ...

Nov 19, 2019 · Neutralization of acid and base to produce electricity in the process of reverse electrodialysis with bipolar membranes (REDBP) presents an interesting but until now fairly ...

Mild pH-decoupling aqueous flow battery with practical pH ...

Feb 19, 2024 · Establishing pH differences in aqueous flow batteries widens their voltage window, but acid-base mixing shortens their lifespan. In this study, the authors introduced a pH ...

Acid-Base Flow Battery, Based on Reverse ...

Nov 19, 2019 · Neutralization of acid and base to produce electricity in the process of reverse electrodialysis with bipolar membranes (REDBP) ...

The Acid-Base Flow Battery: Sustainable Energy Storage via ...

Dec 10, 2020 · The increasing share of renewables in electric grids nowadays causes a growing daily and seasonal mismatch between electricity generation and demand. In this regard, novel ...

The Acid-Base Flow Battery: Sustainable Energy Storage via ...

Dec 10, 2020 · Acid-base flow battery (ABFB) is a novel and environmentally friendly technology based on the reversible water dissociation by bipolar membranes, and it stores electricity in ...

Novel flow technology

Nov 21, 2025 · NOVEL FLOW BATTERY AQUABATTERY is an acid-base flow battery based on reversible water dissociation, developed in the Netherlands. The battery stores electricity in ...

Performance and Perspectives of an Acid/Base Flow ...

Jun 29, 2023 · Acid-Base Flow Batteries (AB-FBs) are a viable solution because they are safe and environmentally sustainable and work well with modern smart grids. The working principle ...

New insights into the performance of an acid-base electrochemical flow

Sep 15, 2021 · This proof-of-concept was firstly patented by the University of Alicante [43] and



later published as a new Acid-Base Electrochemical Flow Battery (ABEFB) [44], using sodium ...

The acid-base flow battery: Tradeoffs between energy ...

Apr 1, 2025 · The deployment of renewable energy inevitably relies on environmentally friendly energy storage systems. An acid-base flow battery (ABFB) uses the pri...

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