

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.

Are acid base flow batteries environmentally friendly?

In this paper, the acid base flow battery is re-established as an environmental friendly means of storing electricity using electrolyte consisting of NaCl salt. To achieve a high specific energy, we have performed charge and discharge cycles over the entire pH range (0-14) at several current densities.

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

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 ...

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 ...

The studied system is an energy storage system based on a reversible acid-base reaction. In this system called acid base flow battery (AB-FB), energy is being stored in acid ...

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 ...

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 ...

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 deployment of renewable energy inevitably relies on environmentally friendly energy storage systems. An acid-base flow battery (ABFB) uses the principle of bipolar ...

The Acid/Base Flow Battery (AB-FB) is a cutting-edge technology that allows energy to be stored in the form of acidic and alkaline solutions (van Egmond et al., 2018).

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