

# **Safety of all-aluminum flow batteries**





## Overview

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Can a self-made double-face flow Al-air battery (DFAB) test a battery?

The practical performance of as-prepared samples was investigated using a battery testing system by a self-made double-face flow Al-air battery (DFAB) system, which contained our 3D Al 7075 aluminum alloy anode, a MnOOH-CeO<sub>2</sub> CFP cathode and alkaline aqueous electrolyte with corrosion inhibitors.

What are aqueous flow batteries?

Among different types of energy storage techniques, aqueous flow batteries (FBs) are one of the preferred technologies for large-scale and efficient energy storage due to their advantages of high safety, long cycle life (15 to 20 years), and high efficiency [3 - 5].

Are aluminum-air batteries a problem?

However, aluminum-air batteries face the challenges of continuously accumulated discharge by-products and undesired parasitic hydrogen evolution reaction (HER), which induce inferior performance and service life.

What is the capacity of aluminum air full battery?

Benefiting from the mitigated aluminum anode corrosion and precipitation-free electrolyte, the aluminum-air full battery delivers a high specific capacity of 2096 mAh g<sup>-1</sup> at 25 mA cm<sup>-2</sup>.



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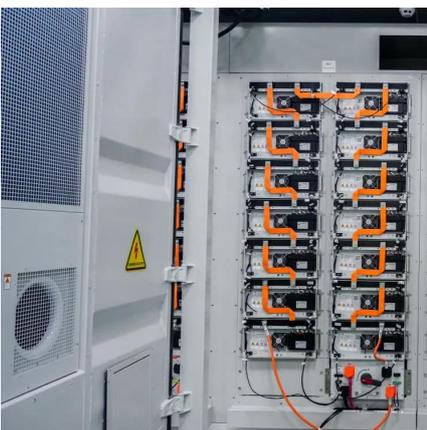


### Microsoft Word

The second section discusses the operating principle and idea of a flow battery. The thesis's second half discusses the safety and fire issues connected with flow batteries, including gas ...

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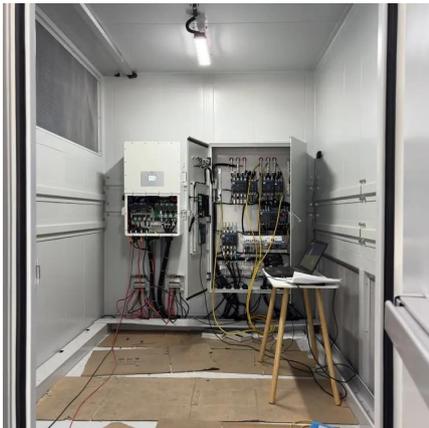
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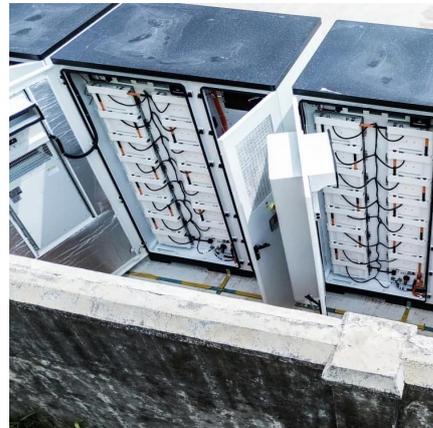


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