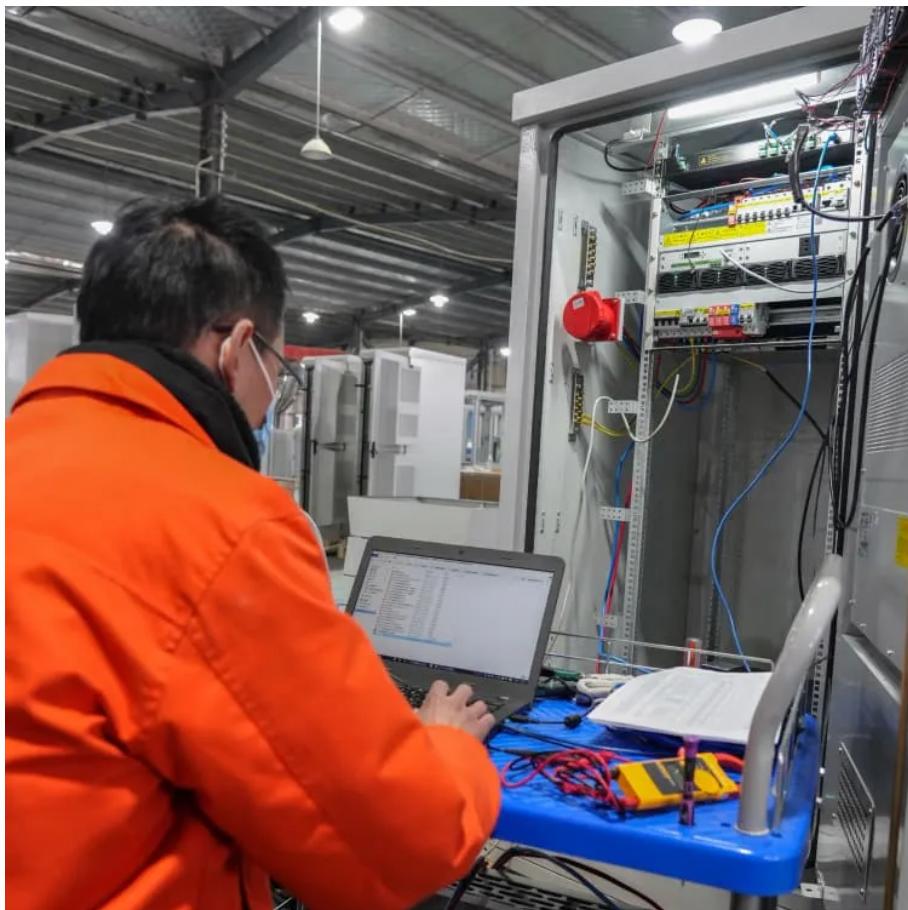




MODERNIZATION SOLAR

## Flow Battery 3D





## Overview

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What is a redox flow battery (VRFB)?

As a novel energy storage technology, flow batteries have received growing attentions due to their safety, sustainability, long-life cycles and excellent stability. All vanadium redox flow battery (VRFB) is a promising candidate, especially it is the most mature flow battery at the current stage [ 5 ]. Fig. 1 shows the working principle of VRFB.

How a 3D model is built for a VRFB with interdigitated flow field?

A 3D model is built for a VRFB with interdigitated flow field. Details can be found in Fig. 2. The interdigitated flow field is applied in VRFB to 1) decrease the ohmic loss; 2) save the pump power; 3) supply the reactants uniformly in the electrolyte.

How does inlet flow rate affect battery performance?

Increasing the inlet flow rate and SOC can both improve the battery performance. However, increased inlet flow rate results in a significant pressure loss, especially at a low temperature, subsequently reducing the overall efficiency of the system.



## Flow Battery 3D



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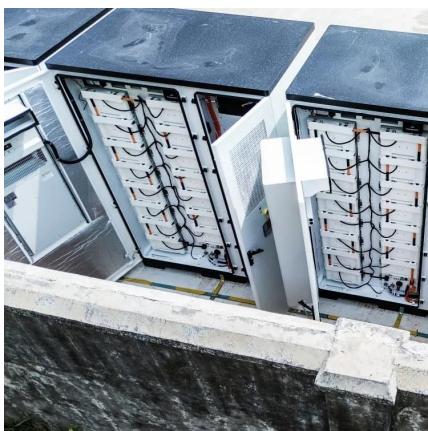


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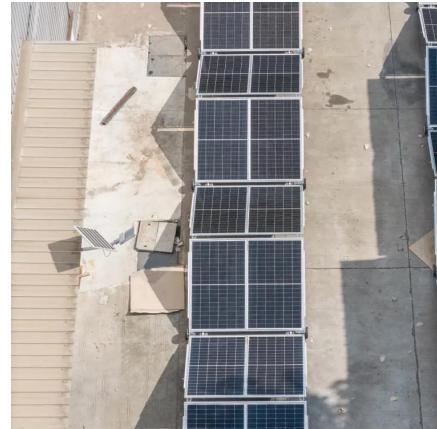
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Oct 15, 2018 · Analysis of flow field design on vanadium redox flow battery performance: Development of 3D computational fluid dynamic model and experimental validation

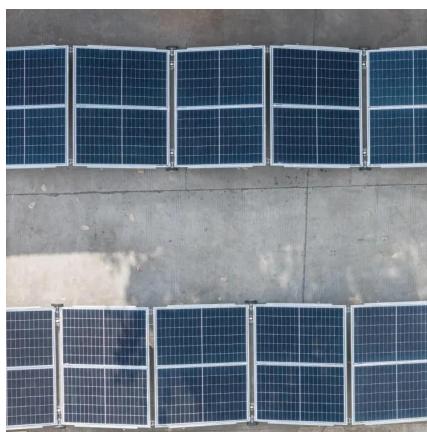


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