

Flow battery potential





Overview

Are flow batteries the future of energy storage?

Flow batteries are positioned as a prime option for long-duration energy storage, addressing the challenge of intermittency in renewable energy sources like wind and solar. Governments around the world are advocating for increased adoption of these energy sources.

How do flow batteries work?

Flow batteries work by utilizing the principles of oxidation and reduction (redox) reactions. Here's a simplified breakdown of the process: During charging, electrical energy drives chemical reactions in the electrolyte, storing energy.

Are flow batteries a sustainable solution?

Flow batteries represent a versatile and sustainable solution for large-scale energy storage challenges. Their ability to store renewable energy efficiently, combined with their durability and safety, positions them as a key player in the transition to a greener energy future.

How can a flow battery increase energy density?

To increase energy density, metal deposition chemistry, with low redox potentials and high capacity, can be adapted to combine with the flow battery (Fig. 1b); these technologies are called hybrid RFBs ¹². For example, Li-metal-based flow batteries can achieve a voltage of over 3 V, which is beneficial for high-energy systems.



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