

Flow battery product structure





Overview

What are the components of a flow battery?

Flow batteries comprise two components: Electrochemical cell Conversion between chemical and electrical energy External electrolyte storage tanks Energy storage Source: EPRI K. Webb ESE 471 5 Flow Battery Electrochemical Cell Electrochemical cell Two half-cells separated by a proton-exchange membrane (PEM).

What is a true flow battery?

True flow batteries have all the reactants and products of the electro-active chemicals stored external to the power conversion device. Systems in which all the electro-active materials are dissolved in a liquid electrolyte are called redox (for reduction/oxidation) flow batteries.

What is a flow battery?

A flow battery is an electrochemical device that converts the chemical energy of the electro-active materials directly to electrical energy, similar to a conventional battery and fuel cell. However, the electro-active materials in a flow battery are stored mostly externally and are introduced into the device only during operation.

What are the characteristics and benefits of flow batteries?

The major characteristic and benefit flow batteries is the decoupling by design of power and energy. Power is determined by the size and number of cells, energy by the amount of electrolyte. Their low energy density makes flow batteries unsuited for mobile or residential applications, but attractive on industrial and utility scale.



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