COMSOL Flow Battery

35 add-on modules with dedicated user interfaces and tools for modeling and simulation in electromagnetics, fluid flow, heat transfer, structural mechanics, acoustics, and chemical engineering

Learn how to model a vanadium redox flow battery by coupling secondary and tertiary current distribution models. Get the tutorial model here.

The overpotential, dissociation rate, electrode potential distributions and current density are suggested in this study to analyze the Nickel Vanadium Redox Flow Battery (NVRFB).

See how high-fidelity multiphysics models can be combined with lightweight models and measured data to create digital twins through this hybrid vehicle battery pack example.

The zinc bromine redox flow battery is an electrochemical energy storage technology suitable for stationary applications. Compared to other flow battery chemistries, the Zn-Br cell potentially features ...

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This model simulates a soluble lead-acid flow battery during an applied charge-discharge load cycle. The surface chemistry of the positive electrode is modeled by using two different lead oxides and two ...

The flow-by fluid flow approach using flow channels is reducing pressure drops and pumping losses compared to the flow-through approach, but might lead to lower limiting current densities due to low ...

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