



1 Evaluation of safe and high-performant bromine cathodes: hydrogen-bromine single cell.

2 Principle of hydrogen-bromine redox flow battery.

3 Safe energy storage through electrolyte development: Storage of charged bromine with bromine complexation agent in the form of a two-phase liquid system vs. pure HBr/Br_2 electrolyte.

BROMINE REDOX FLOW BATTERIES RESEARCH AND APPLICATION

Redox flow batteries are finding increasing application in energy storage. Bromine-based redox flow battery systems are regarded as one of the next-generation redox flow battery technologies. With our expertise we provide our customers with research and development services for bromine-based redox flow batteries, from basic and applied research up to system solutions.

We assist our customers in the development of bromine-based redox flow batteries. In our research we meet safety requirements for bromine use through a combination of elaborated chemistry and engineering. In order to improve the battery performance we are focusing on both converter cell and storage systems.

Our offer

- Development of bromine-based electrolyte formulation.
- R&D of half cells and single cells in different bromine-based chemistries – H_2/Br_2 , Zn/Br_2 and other customized cell chemistry. Process engineering on gaseous/liquid/(liquid) fluidic system to improve charge and discharge performance.
- Testing and developing customized cell components for bromine-based batteries.
- Developing analytical methods and diagnostic tools for quantification according to customer requirements.
- Drafting and execution of feasibility studies for different bromine cell chemistries and recommendations for product development.
- Flexible work on customer-specific questions.
- Methods: Half-cell electrochemistry – cell performance, including in-situ half-cell performance with various electrochemical methods; surface survey and electrolyte survey using analytics and spectroscopic methods.

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