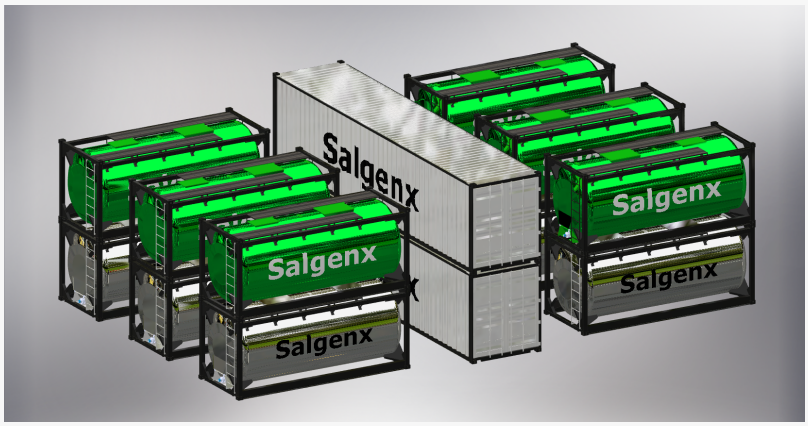
Salgenx Introduces Spinning Anode Technology to Boost Zinc Chloride Saltwater Battery Efficiency and On-demand Hydrogen

New Innovations in Electrode Design and Ion Transfer Set a New Benchmark for Large-Scale Energy Storage Using Zinc Chloride Saltwater Flow Battery Technology



Salgenx 18 MW Grid Scale Battery Storage

MADISON, WISCONSIN, USA, August 26, 2024 /EINPresswire.com/ -- Salgenx, a pioneering leader in energy storage solutions, is proud to unveil its latest advancements in zinc chloride saltwater flow battery technology. Combining the cutting-edge spinning anode design with optimized zinc ion transfer mechanics, Salgenx's innovations promise to significantly enhance the efficiency, durability, and overall performance of large-scale battery systems. These developments not only improve energy storage capabilities but also open new avenues for efficient hydrogen production, marking a milestone in sustainable energy technologies.

Spinning Anode Technology: A Breakthrough in Electrode Efficiency

Central to Salgenx's latest innovations is the spinning anode technology, designed to optimize the performance of the anode in zinc chloride saltwater batteries. Traditionally, the process of chlorine gas evolution at the anode can hinder efficiency due to gas bubbles adhering to the electrode surface, reducing its active area. The spinning anode addresses this challenge by mechanically dislodging these gas bubbles, maintaining a clean and active electrode surface.

Optimized Zinc Ion Transfer: Enhancing Battery and On-demand Hydrogen Production Efficiency

In addition to the spinning anode, Salgenx has made significant advancements in the mechanics of zinc ion transfer within the battery. During the operation of a zinc chloride saltwater battery, zinc ions are disassociated from zinc chloride in the electrolyte and migrate toward the cathode. The efficiency of this process is critical to the overall performance of the battery.

Salgenx's research has identified key factors that influence the efficient transfer of zinc ions:

• Ion Migration and Electrolyte Conductivity: Zinc ions migrate through the electrolyte under the influence of an electric field. By optimizing the electrolyte composition and maintaining a strong electric field, Salgenx ensures that zinc ions are efficiently reduced at the cathode, resulting in effective energy storage.

• Preventing Dendrite Formation: One of the challenges in zinc-based batteries is the formation of dendrites—needle-like structures that can short-circuit the battery. Salgenx's spinning anode helps mitigate this issue by maintaining a consistent ion flow and reducing the likelihood of uneven zinc deposition. Cathode design also helps to reduce dendrite formation.

• Electrolyte Circulation and Additives: Salgenx has also explored the use of electrolyte circulation and specialized additives to maintain a uniform zinc ion concentration near the cathode, further improving the efficiency and safety of the battery system.

Key Features and Benefits of Salgenx's Innovations:

• Enhanced Electrode Efficiency: The spinning anode keeps the surface clear of gas bubbles, ensuring maximum exposure for electrochemical reactions and reducing overpotential.

• Improved Gas Management: The technology effectively manages gas evolution, preventing the formation of gas pockets and ensuring a uniform distribution of ions within the electrolyte.

• Optimized Zinc Ion Transfer: Through careful management of ion migration, electrolyte composition, and innovative design, Salgenx has significantly improved the efficiency of zinc ion reduction and energy storage.

• Increased Durability: The use of high-strength, corrosion-resistant materials in the spinning anode ensures long-term durability, even in the harsh electrochemical environment of a saltwater battery.

• Scalability: Designed for large-scale deployment, Salgenx's innovations are suitable for grid-scale energy storage systems and applications requiring high reliability and efficiency.

A New Era for Large-Scale Energy Storage and On-demand Hydrogen Production

Salgenx's latest advancements set a new standard in the energy storage industry, offering a comprehensive solution that addresses both the efficiency of energy storage and the growing demand for clean hydrogen production. With these innovations, Salgenx is positioned to lead the market in sustainable, cost-effective energy solutions.

Availability and Implementation

Salgenx's spinning anode technology and optimized zinc ion transfer processes are currently being integrated into the company's flagship 3000 kWh saltwater battery systems. These systems are housed in standard 40-foot high cube shipping containers, making them ideal for scalable, grid-scale energy storage solutions.

About Salgenx (a division of Infinity Turbine LLC)

Salgenx is at the forefront of developing innovative, sustainable energy storage solutions. Saltwater batteries provide a safe, non-toxic, and cost-effective alternative to traditional lithium-based energy storage systems. Committed to advancing green technology, Salgenx continues to explore and develop cutting-edge renewable materials and methods to meet the growing global demand for renewable energy storage.

Contact: Greg Giese | CEO | Infinity Turbine LLC | greg@infinityturbine.com | greg@salgenx.com

Saltwater Battery Website: https://salgenx.com
Infinity Turbine Website: https://www.infinityturbine.com

Gregory Giese
Infinity Turbine LLC
+1 6082386001
email us here