

Global Ion Exchange Membrane of All-Vanadium Redox Flow Battery Market Research Report 2022

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Abstracts

The global Ion Exchange Membrane of All-Vanadium Redox Flow Battery market was valued at 1.02 Million USD in 2021 and will grow with a CAGR of 18.5% from 2021 to 2027, based on HNY Research newly published report.

The prime objective of this report is to provide the insights on the post COVID-19 impact which will help market players in this field evaluate their business approaches. Also, this report covers market segmentation by major market vendors, types, applications/end users and geography (North America, East Asia, Europe, South Asia, Southeast Asia, Middle East, Africa, Oceania, South America).

The vanadium redox battery (VRB) (or Vanadium flow battery) is a type of rechargeable flow battery that employs vanadium ions in different oxidation states to store chemical potential energy. The vanadium redox battery exploits the ability of vanadium to exist in solution in four different oxidation states, and uses this property to make a battery that has just one electroactive element instead of two. As the schematic shown in Fig, a vanadium redox-flow battery has two chambers, a positive chamber and a negative chamber, separated by an ion-exchange membrane. These two chambers are circulated with electrolytes containing active species of vanadium in different valence states, VO_2^+/VO_2^+ in the positive electrolyte and V^{2+}/V^{3+} in the negative electrolyte. During discharge process, VO_2^+ is reduced to VO_2^+ at the positive electrode and V^{2+} is oxidized to V^{3+} at the negative electrode, as shown in Equation(1) and (2). The reactions proceed in the opposite direction during charge process. The active species are normally dissolved in a strong acid, and the protons transport across the ion-exchange membrane to balance the charge. In our report, we cover the ion exchange membrane of all-vanadium redox flow battery. Commercial ion-exchange membranes

should have high proton conductivity, good selectivity, and especially low cost. At present, ion-exchange membrane prices are still too high. This affects the installed capacity of vanadium redox flow battery.

By Market Vendors:

Chemours (DuPont)

FuMa-Tech

Golden Energy Fuel Cell

Dalian Institute of Chemical Physics

By Types:

Full-fluorination Ion Exchange Membrane

Non-fluorination Ion Exchange Membrane

By Applications:

Renewable Power Supply

Industrial Grid (Excluding Renewable Power) Adjustment and Management

Key Indicators Analysed

Market Players & Competitor Analysis: The report covers the key players of the industry including Company Profile, Product Specifications, Production Capacity/Sales, Revenue, Price and Gross Margin 2016-2027 & Sales with a thorough analysis of the market's competitive landscape and detailed information on vendors and comprehensive details of factors that will challenge the growth of major market vendors.

Global and Regional Market Analysis: The report includes Global & Regional market status and outlook 2016-2027. Further the report provides break down details about each region & countries covered in the report. Identifying its sales, sales volume & revenue forecast. With detailed analysis by types and applications.

Market Trends: Market key trends which include Increased Competition and Continuous Innovations.

Opportunities and Drivers: Identifying the Growing Demands and New Technology

Porters Five Force Analysis: The report provides with the state of competition in industry depending on five basic forces: threat of new entrants, bargaining power of suppliers, bargaining power of buyers, threat of substitute products or services, and existing industry rivalry.

Key Reasons to Purchase

To gain insightful analyses of the market and have comprehensive understanding of the global market and its commercial landscape.

Assess the production processes, major issues, and solutions to mitigate the development risk.

To understand the most affecting driving and restraining forces in the market and its impact in the global market.

Learn about the market strategies that are being adopted by leading respective organizations.

To understand the future outlook and prospects for the market.

Besides the standard structure reports, we also provide custom research according to specific requirements

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