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A Review of the Experimental Study and Analysis of PEM Fuel Cell Performance with Different Pressure Ranges

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ABSTRACT

This article presents an experimental review of the effect of operating pressure on the humidifying chambers of the gas on the cell temperature and reagent consumption. The electrical shrinkage resistance between the anode and cathode plates and the gas diffusion layer in PEM fuel cells has attracted much attention. The result of the test is brought about by way of separation. The curves show the different effects of using the parameter on the PEM fuel cell function. The nature of the end computers and the relationship between them are discussed.

Key Word- PEM fuel cell; Experimental approach; Different pressure range:

1 Introduction

The effects of various actions on the activation of proton exchange membrane (PEM) fuel cells were studied using pure hydrogen on the anode side and air on the cathode side. Examples are made with different thermal treatment of fuel cells, different thermal treatment of cathode and anode, different functions and different combinations of these preparations. Cellular fuel cells are now in the light because electricity levels are higher than any cellular solution. Among other types, cellular polymer electrolytic (PEM) fuel cells are the basis of technology and research to increase its efficiency, leading to production and manufacturing. The Proton Exchange Membrane, also known as the Polymer Electrolyte Membrane, Fuel cells (PEMFC) is electrical devices that convert energy. PEMFCs generate electricity by combining hydrogen and oxygen, constantly evaporating from the air, making water and heating at low temperatures. The heart of PEMFCs is a compound of polymer electrolyte.

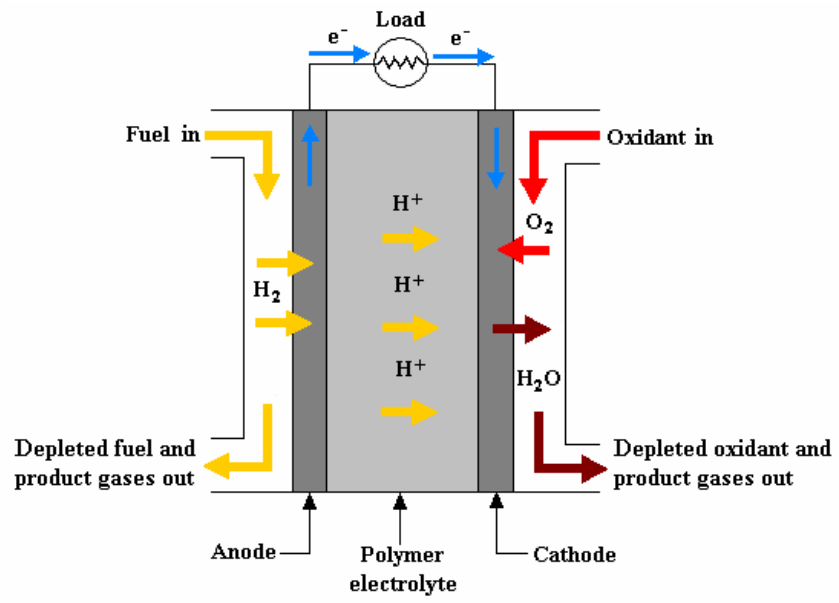

Figure 1 PEM fuel cell

The breakdown of hydrogen in protons and electrons occurs at the top of the anode. Proteins cut through the membrane attached to oxygen and electrons at the water-producing level of the water source. The membrane opens a barrier that prevents hydrogen and oxygen from separating. Proteins should be easy to measure, but they should be expensive to force the electron into external circulation and provide useful functions. The polymer membrane has a low melting point, which prevents temperatures down to below 100 degrees C. Normal temperatures are between 50 to 70 degrees C. PEMFCs have many properties. , including low operating temperatures and high efficiency (typically 50-70% in the fuel cell. collection and 40-60% throughout the process), which makes them more competitive in the energy applications of vehicles and vehicles.

In the production of a proton exchange membrane (PEM) for fuel cells, the extinguishing gas delivers fuel to the cell through a stream of gas poured onto the collection plates. There are a number of pump projects. The most common design is to make the place of the snake shown in the picture. With this type of travel field, active gases are mainly sent to distribution areas through opportunities.

Interest in proton exchange membrane (PEM) fuel cell has increased due to the selected heat exchangers, low air pressure, and fast start. However, many irreversible losses in PEM fat cell disrupt its function and reduce its effectiveness. Loss of ohms is one of the major losses in the performance of fuel cells.

Proton cell fuel (PEM) fuel cells have been accepted as the best competitor to electric vehicles for driving, distributing power, and transferring portable electricity. Research and development in the fuel and gas sector has increased over the years, but at present, the cost of fuel cell systems may not be a reasonable product. Recently, various tests have been performed on PEM fuel cells formulating selected chemicals. Because of its ability to regulate environmental pollution and the effects of fuel consumption, fuel cells have emerged as effective fuel substitutes. Like a fuel cell fuel uses a certain amount of chemical fuel for optimal energy. But chemical energy, such as batteries, is converted into electricity without the usual cheap electricity.

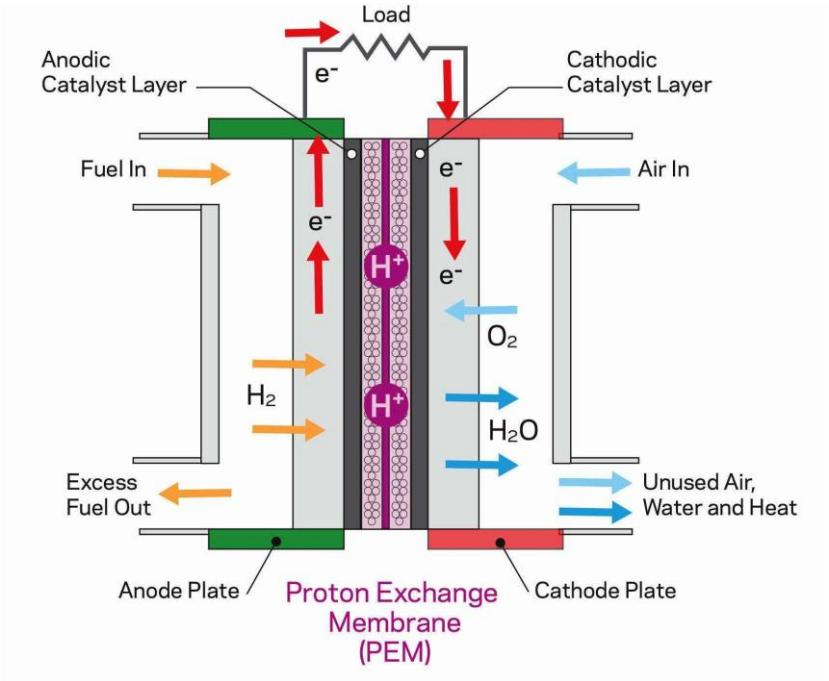

Figure 2 PEM fuel cell with catalyst layer

2 Literature review

Through research, in recent years, research has increased for the production of different types of PEM fuel cells, and the demand for samples has become more rapid, than commercial presses. Regular information is also needed for new cell manufacturers to repair, regenerate and regenerate. The experiments were based on cell temperature, gas humidity, cell energy intensity, and living gas flow. Comparing test results with test data reveals a reasonable agreement. The electrical interactions between bipolar plates (BPP) and thermal gas (GDL) in PEM gas cells have attracted a lot of attention, as they are an important component of all combustion processes that make up an important component

The results of different proton membrane (PEM) transitions were simulated on the anode side with pure hydrogen and air on the code. This is a parliamentary assembly. The results of the experiments were categorized by color classification, which showed the results of different stages of activity in the PEM cell. What might emerge from the encounter and their interactions are discussed. In addition, an fuel cell with all three components summarizes and simulates the results with our test data. The comparison showed a positive correlation between the outcome and the outcome of the test. These electrolyte-rich systems regulate the demand for degraded beverages, and result in the production of many selective sulfur, phosphoric acid, or soluble carbon dioxide. Increased performance power is achieved in SOFC and PEMFC systems by reducing the electrical conductivity and image of

the electrode structure. It is currently trying to reduce the cost of SOFC by reducing the operating temperature to 500-800 ℃ and strengthening the PEMFC system to improve the "liquid" that can be used even at temperatures below 100 ℃.

In this article, a system manager is introduced that makes it possible to check for various types of faults. Change task Error correction is based on lines showing variables measured in the device such as voltage, current volume and temperature. Fuel cell devices can operate even if an error has occurred. Flexible results are based on samples from falsely confirmed lipid cells that are replicated in cell lipid samples. Error logging system is embedded in cell to improve production time and prevent permanent damage to equipment. The test results showed that increasing the flow rate of the inlet gas cathode temperature and purification of temperature cells However, because the cell temperature is above or equal to the anode temperature, the efficiency of the cell is therefore increased due to the dissatisfaction of the cell.

The first depends on the technology and engineering that often comes with many interference-like operations. The second layer is based on membrane electrode assembly (MEA) and engineering, and includes material modification and gas assembly (GDL), cathode layer (CCL), and membrane material. It works in the presence of liquid water. The review also includes recommendations for future research.
Cellular fuel cells are now under light because their cellular electricity levels are higher than any cellular solution. Portable polymer electrolyte (PEM) cells form the basis of technology and research to improve products and productivity leading to production. The aim of this study is to examine and assess the power of mobile business and to increase efficiency. The original 3D model of PEM fat cells and cross-sectional design created in Console Metaphysics combines the effects of continuous water flow and flow-generating currents. using this model He studied the consequences of different cathode trajectories and trajectories. This includes the in-cell home mobility feature. Laboratory studies with various fuel cells using new methods It has been applied in fuel cell functional tests and has been shown to improve performance by up to 26.4%.

3 Conclusion

This paper is presented in the literature of research studies and tests on PEM fuel cells with different levels of hydrogen consumption. The weight increases due to the increased current density and the phase weight of the gas. When there is sufficient separation, the PEM effect of fat cells is improved and the thermal activity is increased. If the cell transfers temperature is higher than the river gas pressure the fuel efficiency of the cell may be reduced. Heat dissipation has a great effect on cell function. At least with these places, low humidity, and speed of lipid activity in cells at high current levels the effect of purification at anode temperature was insignificant.

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