

Visualization of Water Formation in the PEMFC and the Effects of Interfacial Pressure on Its Performance

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ABSTRACT

The design trend of the state-of-art PEMFC is moving into larger area and higher current, the water and thermal management of a PEMFC stack becomes much more complex and important than just a single cell. Since both the flooding and dry-up problems influence the mass transfer inside the PEMFC and hence deteriorate its performance, in this propose project. A proton exchanges membrane fuel cell to probe into transparent form Serpentine channel with the experiment in this research, Use the of micro-flow visualization system in order to observe the formation of water .In the mean time measured under different entries is distributed actually, And use the pressure film into the pressure of contacting to spread floor and flow the contact pressure among a board to the gas. It is visual to assemble the interface pressure further, and the quantity mixed with the relevant physical quantity is examined, The ones that to probe into water of the fuel cell and heat and turn into the mechanism and assemble between the interface pressures are closed and connecting with. play important roles.

Keywords : PEMFC stack , water and thermal management , proton exchanges membrane , pressure film

Table of Contents

封面內頁 簽名頁 授權書.....	iii	中文摘要.....	v	英文摘要.....	v
要.....	vi	誌謝.....	vii	目錄.....	ix
圖目錄.....	xii	表目錄.....	xvi	符號說明.....	xvii
第一章 前言.....	1	1.1 文獻回顧.....	1	1.1.1 性能測試實驗文獻.....	2
1.1.2 理論模式數值分析文獻.....	5	1.2 研究動機.....	13	1.3 燃料電池之基本介紹.....	14
1.3.1 歷史.....	14	1.3.2 質子交換膜燃料電池 (PEMFC)	18	1.3.3 燃料電池的基本構造.....	19
第二章 研究方法.....	26	2.1 PEMFC 實驗器材.....	26	2.2 實驗架構.....	30
2.2.1 流場觀測設備與單電池性能測試系統.....	30	2.2.2 界面壓力量測技術介紹.....	33	2.2.3 壓力分析程式簡介.....	35
2.2.4 螺栓組態介紹.....	38	2.2.5 交流阻抗儀介紹.....	38	2.2.6 壓力實驗測試步驟.....	39
2.2.7 性能實驗測試步驟.....	43	2.3 實驗流量參數設定.....	47	第三章 結果與討論.....	48
3.1 水氣生成之實驗結果.....	48	3.1.1 單進單出水氣生成結果.....	48	3.1.2 水氣生成實驗與模擬比對.....	51
3.1.3 雙進單出水氣生成結果.....	53	3.2 單電池壓力分析之實驗結果.....	55	3.2.1 空心端板實驗結果.....	58
3.2.2 實心端板實驗結果.....	61	第四章 結論.....	64	4.1 水氣生成結論.....	64
4.1.1 單入單出水氣生成.....	64	4.1.2 雙入單出水氣生成.....	64	4.2 組裝界面壓力結論.....	65
參考文獻.....	65	附錄.....	66		74

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