

The Effect of Sealing Pressures on Electrochemical Performances for a 100 cm² Single Molten Carbonate Fuel Cell

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In this study, the effects of sealing pressures on electrochemical performances on a 100 cm² class molten carbonate fuel cell (MCFC) were examined by measuring N₂ crossover, the flow rate of outlet gas at various pressure differences, the voltage at 150 mA/cm² and electrochemical impedance spectroscopy curve. The cell voltage at 150 mA/cm² was significantly decreased at 0.5 Kg_f/cm², which come from the increase of internal resistance of a MCFC. This increase of internal resistance means the rise of the temperature of MCFC by internal resistance drop (Joule heating). In addition, the temperature rise by the increase of internal resistance of 100 cm² class MCFCs was estimated by using a commercial process simulator.