

Characteristics of The Al-Reinforced Matrix with A Lithium source for Long-Term Operation of MCFCs

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Mechanical properties of the matrix are important factors to improve stability of molten carbonate fuel cells (MCFCs) in long-term. The formation of void which is caused by electrolyte loss consequentially leads to matrix cracking with gas crossover through the matrix. In order to enhance the mechanical strength of the matrix, Al and Al₂O₃ are added. Li-ion shortage caused by a lithiated Al reaction in the matrix is compensated by addition of a lithium ion source. Effect of the Al-reinforced matrix with a lithium source is investigated in a single cell test.