J Appl Mech Eng 2017, 6:5(Suppl)
DOI: 10.4172/2168-9873-C1-012

Improvement of single cell structure of molten hydroxide direct carbon fuel cells by CFD simulation molten

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Improvement of Single Cell Structure of Molten Hydroxide Direct Carbon Fuel Cells by CFD Simulation Molten Hydroxide direct carbon fuel cell (MHDCFC) is a kind of clean and efficient fuel cells. However, MHDCFC cannot be applied in industry. Design a single battery assembly into a battery pack, used in power plants to produce electricity. Methanol fuel cell and molten carbonate fuel cell has been industrialized, while reference to their single-cell flow-field design, Flow-field design of MHDCFC plays an important role affecting the cell performance. Tow flow patterns, paralleled and one serpentine, are taken from the literature on cooling of electronics and they are implemented in a computational model as Flow-field channels in the anode and cathode side of a MHDCFC. Ansys fluent as a simulation software for fluid dynamics calculation, fuel distribution and current density distribution. The two flow patterns simulation comparison to select the optimal performance. Determine the flow with Arrhenius formula, calculate the velocity of flow: $k=Ae^{-Ea/RT}$

Reynolds number was calculated by the velocity of flow: $Re=\frac{\rho u L}{\mu}$

Determine the initial parameters, simulation, while the production of solid models for validation.

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