

Numerical investigations of multi-component transport in alkaline fuel cell

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In alkaline fuel cell (AFC), distributions in reactant species and electrolyte concentration cause distributions in local current density, temperature and water. As a result, it determines the performance of AFC. To predict the performance, a two-dimensional, computational fluid dynamics (CFD) model was performed by taking into account liquid electrolyte transport through the membrane, including reactant gas dissolution, electrochemical reaction and water generation. For comparison of the AFC performance, detailed studies were performed under different load conditions and some of its parameters. Also, the resulting data was compared with conventional performance data taken from literature.

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