Study of Mass Transfer and Electrical Conduction in a PEM Fuel Cell

邱耀輝、鄭錕燦

E-mail: 9224294@mail.dyu.edu.tw

ABSTRACT

The present is to investigate the influence of gas diffusion layer parameters and flow channel plate parameters on mass transfer and electrical conduction. The parameters considered are thickness and porosity of gas diffusion layer, thickness of flow channel plate, and reactant flow contact area, contact pressure, etc. The results show that mass transfer is better when the reactant flow contact area increases. Both of ohmic resistance of gas diffusion layer and flow channel plate are very small in comparison to the ohmic resistance of PEM. When the contact pressure is less than 10 bar, the contact resistance between gas diffusion layer and flow channel plate is of the same order with the ohmic resistance within a PEM.

Keywords : PEM , Fuel Cell , Mass Transfer , Ohmic Resistance Contact Resistance

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