

## عنوان مقاله:

Checking out the effects of geometric parameters of the fuel cells with polymer membrane on cell s function

## محل انتشار:

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## خلاصه مقاله:

In general, designing flow channels in the bipolar plate and the geometry and thickness of constituent layers of the cell are one of the important parameters which interestingly effects on cell function. In this research, the effects of barrier shape (Rectangular ,semi-circular), dimensions of barrier and number of barrier on oxygen transporting into the GDL/CL layer, production flow also cathode s pressure drop in the case of single phase flow has been investigated by placing one or more barriers in cathode channel of fuel cell of Polymer membrane. For this purpose, equations of conservation of mass, conservation of energy and momentum in the cathode by numerical method have been solved. The results show that channel with rectangular obstacles (with 5 barriers and 70% channel occupation), has maximum flow production (approximately 0.034% more than normal channel), the highest speed rising in the gas diffusion layer and the highest concentration of oxygen in catalyst layer despite of the highest pressure drop (approximately 19.84 .times greater than normal channel) in the case of single phase flow

## کلمات کلیدی:

.Polymeric fuel cell, Obstacles, Function, Single-Phase Flow

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/870734>

