

عنوان مقاله:

A thermally compensated method toward reaching high efficiency in polymer electrolyte membrane (PEM) electrolyzers

محل انتشار:

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خلاصه مقاله:

Hydrogen is one of the most promising energy resources for the future. It is stated that the hydrogen is a medium source that can be converted to other types of energy like electricity, heat and fuel for transportation. Regarding several methods for hydrogen production, water electrolysis seems to be the best approach due to its advantages. Lack of waste and zero emissions, utilizing renewable energy resources (RES), preventing fossil fuels and conventional power plants as well as cost-effectiveness especially for long-term prospects are the most significant benefits connected with them. However, the efficiency is an important parameter for such this equipment. Considering the efficiency for RESs is relatively low, electrolyzer unit should have the most possible efficiency to partially compensate the overall efficiency. This matter has been rarely surveyed through the papers and research studies. A method is proposed here based on thermal sensors and especial heating elements. Because the fast response is essential especially for big electrolysis units, this method contingent upon heating devices seems to be helpful.

کلمات کلیدی:

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/1119857>

