

## عنوان مقاله:

Synthesis and Characterization of New Proton Conducting Hybrid Membranes for Fuel Cells Based on Poly(vinyl alcohol) and Sulfonated Nanoporous Silica

## محل انتشار:

سومین همایش پیل سوختی ایران (سال: 1388)

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## خلاصه مقاله:

This method has been realized by preparing hybrid membranes containing SO<sub>3</sub>H functionalized nanoporous Si-SBA-15 as hydrophilic inorganic modifier, glutaraldehyde, GLA, as cross-linking agent in a poly(vinyl alcohol), PVA, matrix. The different hybrid membranes are characterized concerning their thermal stability, water uptake, ATR and proton conductivity. Different PVA-based membranes (PVA, PVA:GLA, PVA:SBA-15 and PVA:GLA:SBA-15) were compared with each other. Compared with the pure PVA membrane, the hybrid membranes containing modified silica displayed lower thermal stability due to role of the modified silica particles as nucleation centers. In addition, the hybrid membranes showed lower water uptake but higher proton conductivity than the corresponding membranes without Si-SBA-15.

## کلمات کلیدی:

(Hybrid membranes; Sulfonated nanoporous silica; Fuel cells; Poly(vinyl alcohol)

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/74585>

