عنوان مقاله:

Synthesis and Characterization of Novel Cardo Sulfonated Poly(arylene ether sulfone) as Polymer Membrane Fuel Cell

محل انتشار:

سومین کنفرانس هیدروژن و پیل سوختی (سال: 1394)

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خلاصه مقاله:

Novel cardo poly(arylene ether sulfone)s were prepared using direct copolymerization of 3,3 -disulfonated- 4,4 -dichlorodiphenyl sulfone as synthesized sulfonated dihalide in companion with 4,4 -dichlorodiphenyl sulfone asnonsulfonated dihalide monomer with 4,4 -(4,4 -sulfonylbis-(1,4-phenylene)bis(oxy))dihydroxyanthraquinone asdiol. Copolymers were synthesized with controlled degrees of sulfonation. 1H-NMR and FT-IR spectroscopywere used for characterization of prepared polymers. Differential scanning calorimetry analysis and thermogravimetric analysis were applied for investigation and comparison of their thermal properties. Thepolymers showed potential applications as membrane of fuel cell. Copolymers showed acceptable properties asproton exchange membrane for fuel cells. Ion exchange capacity of membranes was between 0.76 and 1.46 meq/g. The proton conductivities of membranes were increased by increasing the degree of sulfonation and reached to 0.08 S/cm

کلمات کلیدی:

Poly(arylene ether sulfone), 4,4 -(4,4 -sulfonylbis-(1,4-phenylene)bis(oxy))dihydroxyanthraquinone, Fuel cell membrane, Thermal properties, Proton conductivity