

Performance of poly(ether ether ketone) based semi-IPN type proton exchange membranes at low humidity condition

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In this research, hydrocarbon polymer electrolyte membrane was prepared, and investigated cell performance with various humidity. This composite membrane based on poly(ether ether ketone) were prepared with additive such as mesoporous material, organo siloxane network, and organo metal complex. Both of mesoporous material and organo siloxane network were introduced into PEM to improve the ion conductivity. The introduced organo metal complex enhanced the chemical durability. This materials were evaluated effect on cell performance with humidity and optimized ratio of materials in composite membrane was suggested.