

Imidazolium – poly(arylene ether ketone) electrolyte membrane for alkaline fuel cell

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A major electrolyte of alkaline fuel cell is KOH that is remarkable in anion conductivity. But it has a problem because of using the liquid electrolyte which leaks and producing a carbonate by reaction with carbon dioxide in the air. To overcome this problem we think of the solution. I am studying to substitute polymer electrolyte for liquid electrolyte.

In this study, we developed poly arylene ether ketone (PAEK) containing pendant imidazolium group as a hydroxide ion conductor. It were prepared by N,N'-dicyclohexylcarbodiimide, N-hydroxysuccinimide, bromide ethyl amine and 2-methyl imidazole

We analyze molecular weight by GPC and investigate the structure using H NMR, FT-IR. Other properties is checked by ion conductivity, water uptake, swelling and so on.