

Imidazolium – poly(arylene ether ketone) electrolyte membrane as hydroxide ion conductor

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A major electrolyte of AFC 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. So we are studying to substitute polymer electrolyte for liquid electrolyte.

In this study, we developed poly arylene ether ketone (PAEK) containing pendant imidazolium group as 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 and so on.