

Synthesis and characterization of PEM for high temperature proton exchange membrane fuel cell

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Commercial membranes for proton exchange membrane fuel cell(PEMFC) is widely used because of their many advanced properties. But, there are still many problems to be solved due to its low operation temperature, around 80°C, of fuel cell. To overcome these matters, high temperature PEMFC worked at temperature above 150°C have been studied. In this study, PBI(m-PBI) membrane was synthesized by introducing inorganic material. To make the membrane electrode assembly(MEA), membrane and electrode which is gas diffusion layer(GDL) sprayed with Pt supported on carbon as catalyst were attached and pressed. The properties of the membrane were characterized by impedance analyzer(proton conductivity) and cell station(single cell performance).