

Newly Synthesized Block Copolymers for Polymer Electrolyte Membrane Fuel Cell

최성호, 김 혁, 노태근, 이상우, 김지수, 이원호*

LG화학 기술연구원

(whlee@lgchem.com*)

Sulfonated poly(arylene ether)s-based multi or tri-block copolymers were synthesized and fabricated as polymer electrolyte film, which were evaluated as LG hydrocarbon membrane for PEM fuel cell. The multi or tri-block copolymers were obtained by synthesizing the organic chemical which has SO₃H group as a proton conductor and other agent. We investigated several block copolymers, which has different morphology that induces a microphase separation, water uptake and dimensional stability. The proton conductivities of these block copolymers were compared to the value of the determined Ion Exchange Capacity (IEC). The MEA using the multi or tri-block membranes has a higher performance than the commercial product Nafon 112 membrane at 80 oC.