

A preparation and characterization of Nafion/Polypyrrole composite membrane for the application of DMFC

박호석, 홍원희*, 김여진
한국과학기술원 생명화학공학과
(Hwhong@kaist.ac.kr*)

In this study, the representatively commercial perfluorinated membranes or Nafion were modified and characterized. Commercial perfluorinated membranes (Nafion) were impregnated with pyrrole monomer and in-situ polymerized by oxidant. They were polymerized depending on the pyrrole's concentration and impregnation time. At the specific extent of concentration and impregnation time, the modified membranes can exhibit the reduced permeability to fuel crossover in comparison to the unmodified membranes, often without a significant increase in ionic resistance.

The enhancement of cell performance is affected by membrane's morphology and pyrrole's distribution.