

Effect of stoichiometry on cell performance in polymer electrolyte fuel cells under non-water-flooding condition

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Two-phase-based mathematical modeling of polymer electrolyte fuel cells is conducted to predict and analyze the effect of stoichiometry on cell performance under non-water-flooding conditions. Since the variation of stoichiometry stands for amount of fuel supply into anode and cathode flow channels, it is closely related to fuel gas kinetics. In this study, we have separately simulated the effect of anode and cathode stoichiometry on cell performance and analyzed it with gas transport kinetics.