

be resulted that the case with lower membrane thickness has better performance.

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NOMENCLATURES

a	Water activity
C	Molar concentration (mol/m ³)
D	Mass diffusion coefficient (m ² /s)
F	Faraday constant (C/mol)
I	Local current density (A/m ²)
J	Exchange current density (A/m ²)
K	Permeability (m ²)
M	Molecular weight (kg/mol)
n_d	Electro-osmotic drag coefficient
P	Pressure (Pa)
R	Universal gas constant (J/mol-K)
T	Temperature (K)
t	Thickness
\vec{u}	Velocity vector
V_{cell}	Cell voltage
V_{oc}	Open-circuit voltage
W	Width
X	Mole fraction
Greek letters	
α	Water transfer coefficient
ε^{eff}	Effective porosity
ρ	Density (kg/m ³)
ϕ_e	Electrolyte phase potential (v)
μ	Viscosity (kg/m-s)
σ_e	Membrane conductivity (1/ohm-m)
λ	Water content in the membrane
ζ	Stoichiometric ratio
η	Over potential (v)