

Random Resistor Network Model for the Performance Prediction of Composite Anode with Structured Electrolyte for SOFC

저항 네트워크 모델을 이용한 SOFC내 고체 전해질의 구조변경에 따른 ANODE 성능예측

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The micro model of porous anode electrode, a mixture of electronic and ionic conductors, was theoretically examined by random resistor network model. Flat and structured electrolyte block inserted models were studied and compared for the reduction of polarization resistance. A various parameters such as volume fraction, electrode thickness and block size were investigated on polarization resistance. The minimum polarization resistance for the optimum design and density of percolated particles were discussed. In this study, it was found that proposed structured electrolyte model will be helpful for the improvement of electrode performance.