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Characterization of Cathode Polarization

One method of characterizing a fuel cell is to develop an equivalent circuit that describes the behavior of the fuel cell. This can be done by using Electrochemical Impedance Spectroscopy (EIS). However, it is difficult to differentiate between components during this process, so changes in one part of the cell affect measurements from a different part. By isolating the components in a symmetrical cell, a better depiction of the components’ behavior can be achieved making it more apparent what effects are due to polarization from the cathode. Increased polarization may be a result of decreased surface area from coarsening at the cathode/electrolyte interface from the sintering process. Research from the University of Florida suggests characterizing cathode polarization with changing temperature to get a better understanding of cathode operation. This poster will describe symmetric cell composition, and testing, as well as ceramic cathode polarization characteristics.