

State-of-the-Art Understanding of Water Management in PEFCs

Matthew M. Mench^{a,b,*}

^aElectrochemical Energy Storage and Conversion Laboratory, The Department of Mechanical, Aerospace and Biomedical Engineering, The University of Tennessee Knoxville, 37996

^bOak Ridge National Laboratory, Oak Ridge Tennessee, 37831

Despite literally hundreds of journal publications which computationally, analytically, or experimentally attempt to dissect and understand water management in polymer electrolyte fuel cells (PEFCs), discrepancies and differences of opinion still exist. This presentation will delve into the body of work and discuss the commonalities and differences in computational and experimental understanding. The goal of this talk will be to describe the state-of-the-art in understanding of water management issues from the interfacial level to the channel and manifold level from freezing to high temperature operation in PEFCs. Additionally, remaining discrepancies in the field will be dissected, and future areas of study will be identified.