

Experimental Investigation of the Effect of Temperature on A PEM Fuel Cell Performance

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Abstract : In this study, performance of proton exchange membrane (PEM) fuel cell was experimentally investigated. The efficiency of energy conversion in PEM fuel cells is dependent on the catalytic activities of the catalysts used in the cathode and anode of membrane electrode assemblies. Membrane is considered the heart of PEM fuel cells without which they cannot produce electricity. PEM fuel cell performance increased with coating carbon nanotube (CNT). CNT show a unique combination of stiffness, strength, and tenacity compared to other fiber materials which usually lack one or more of these properties. Two different experiments were performed and the membrane performance has been determined by repeating the two experiments that were done before coating. The purposes of these experiments are the observation of power change due to a temperature change in the same voltage value.

Keywords : carbon nanotube (CNT), proton exchange membrane (PEM), fuel cell, spin method

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