

## Transient behavior during the humidity interruption at the cathode of polymer electrolyte membrane (PEM) fuel cell

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Performance of polymer electrolyte membrane (PEM) fuel cell was studied during the humidity interruption of cathode. Several steps of voltage and high frequency resistance (HFR) were observed. Dry humidity condition significantly enhanced the voltage of PEM fuel cell, since it suppressed the flooding effect and increased the oxygen reduction reaction (ORR) rate at cathode. During the humidity interruption the performance of PEM fuel cell could actually exceed the initial performance giving direct evidence for the optimum humidity condition of cathode. These findings have led us to find the way for enhancing the performance of MEA up to ca. 17% depending on the operation condition.