

MEA 제조방법에 따른 PEMFC의 성능평가

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Effect of MEA fabrication method on the performance of PEMFC

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Abstract : Fabrication method of membrane electrode assembly (MEA) is important factor for the performance of the proton exchange membrane fuel cell (PEMFC). MEA fabrication type can be classified catalyst coated substrate (CCS) type and catalyst coated membrane (CCM) type. Our study focused on the simplification of fabrication process and the improvement of cell performance.

MEA of PEMFC with CCS type and CCM type were prepared, and performances were evaluated and compared in PEMFC unit cells. Impedance experiments of PEMFC was carried out with two types of MEA. And structure of MEA was analyzed by SEM.

The performance of PEMFC with CCM type was better than with CCS type because charge transfer resistance was reduced. In addition, the micro structure of MEA with CCM type revealed uniform interface between membrane and catalyst layer. And CCM type simplified the MEA fabrication by elimination of hot pressing process

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