Development of high durable metallic bipolar plate for 
Polymer Electrolyte Membrane Fuel Cells

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Metallic bipolar plate is one of the promising candidate material for PEMFC because of mechanical strength, low gas permeability, electrical and thermal conductivity. However, the corrosion is the main obstacle of metallic bipolar plate, and many investigations, especially coating on base metal, have been carried out to avoid corrosion. Gold is considered as the one of the best coating material because of its corrosion resistance and electrical conductivity.

In this study, gold coated metallic bipolar plate was developed and evaluated. Due to our coating process, gold can be well-adhere to the base material, and hydrophobic material on its gold surface was coated by dipping method for better water management. To verify coating reliability, a single fuel cell (50cm²) was evaluated, and its durability over 4000hrs was demonstrated.

Key words: Polymer Electrolyte Membrane Fuel Cell (고분자전해질연료전지), 금속분리판 (Metallic Bipolar plate)

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