

Performance Improvement of Integrated Natural Gas Fuel Processor for PEMFCs

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Recently, newly designed fuel processor prototype II had been built and tested. The thermal efficiency is increased to 80% with optimizing the heat exchange between reforming processes and steam generator, which increase the overall temperature of steam reforming process. The composition of produced gas from low temperature water gas shift process is 73.6 vol.% H₂, 19.7 vol.% CO₂, 1.7 vol.% CO, and 2.8 vol.% CH₄ leading the methane conversion of 88%. The newly designed preferential oxidation reactor is also under investigation and will be tested with fuel processor.