

1kW급 암모니아기반 수소 발생장치(1kW-class ammonia based hydrogen generator)

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Owing to the increasing demand for highly efficient and low emission energy alternatives to conventional fossil fuel based resources, hydrogen has attracted significant attention. To address this issue, we demonstrated a 1kW power generation system utilizing NH₃ as a initial fuel, applicable to fuel cells. We developed ruthenium based catalysts and tested their activities towards NH₃ dehydrogenation as a function of temperature 550°C to 650°C at the atmospheric pressure and the gas-hourly-space-velocity(GHSV) of 5,012 to 10,000 mL/g_{cat} · h. It was found that ammonia decomposed to give hydrogen with the conversion of 99.7% at the GHSV 5,012 mL/g_{cat} · h and 823K.