

## 석탄가스 고압연소시 배기가스 배출특성에 관한 실험적 연구

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### The experimental study on the emission characteristics of the coal gas in the condition of high pressure combustion

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Recently, the interest of the study about IGCC(Integrated Gasification Combined Cycle), one of New & Renewable Energy technologies, has been increased due to the United Nations Framework Convention on Climate Change, the Low Carbon Green Growth policy, etc. Also, with this interest of IGCC, the study on the gas turbine utilizing the synthetic gas is performing actively. In the study of the gas turbine characteristic, the power performance and the combustion efficiency are mainly discussed and also the concern about the exhaust gas is being taken care of due to the increasing awareness of the environment. With this, we would like to go over the exhaust gas emission characteristic by the synthetic gas inflow in this test. In order to conduct such a test, we constructed a synthetic gas supplying system to supply the synthetic gases (H<sub>2</sub>: hydrogen, N<sub>2</sub>: nitrogen, CO: carbon monoxide, CO<sub>2</sub>: carbon dioxide, and H<sub>2</sub>O: steam) quantitatively and this combustion test was conducted by controlling the supplied synthetic gases artificially. The concentration of the exhaust gases appeared variously depending on the differences of the inflow nitrogen amount and the steam amount, whether or not the carbon dioxide flow in and so on. The results of the test can be able to be utilized for the IGCC study by understanding the exhaust gas emission characteristic of the coal gas turbine by synthetic gas composition.

**Key words** : Integrated Gasification Combined Cycle(석탄가스화 복합발전), Synthetic gas(합성가스), Gas turbine(가스터빈), 배기가스(Exhaust gas)

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