

Development of Next-generation IGCC System with CO₂ Capture

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Abstract

A new highly efficiency IGCC system with CO₂ capture was proposed in this study. The system consists of a new oxygen-CO₂ blown coal gasifier and a closed gas turbine using the gas mixed oxygen with CO₂, which is recycled from exhaust gas, and the CO₂ separation system is not needed in the system. The net thermal efficiency of this system is calculated as more than 40 % (HHV basis, 1300°C class gas turbine) with CO₂ capture and technical subjects for practical use are clarified.