

Simulation and analysis of integrated gasification combined cycle(IGCC) using ASPEN Plus

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Gradually, care and concern for global air pollution and house warming is growing. For this reason, the necessity for developing substitute technology for generating power with coal is rising. The integrated gasification combined cycle(IGCC) plant is considered with substitute technology for generating power with coal against pulverized coal(PC) power plant because IGCC plant is the environmentally friendly technology. IGCC plant can effectively reduces more than 90% H₂S, more than 90% NO_x, more than 15% CO₂ compared to the PC. Also IGCC plant is easy to connect with carbon capture & storage(CCS). In this study, first, the integrated gasification combined cycle(IGCC) plant and unit processes of IGCC are analyzed. And next, simulations of IGCC with simulator are performed. Finally, characteristic of variables of IGCC plant are studied and most influential variable is selected. Simulation of IGCC is performed by ASPEN Plus[®].