

Optimization of Integrated Drier Gasifier for Coal Gasification Process

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Coal gasification is one of the representative clean coal technologies, converting low rank coal into syngas. Coal drying process is essential to remove low rank coal's high moisture for efficient gasification process. Two process models of the transport gasifier were developed which focus on different coal drying concepts. The first model uses external heated air as drying gas. The second one is Integrated-Drier(ID) gasifier case using recycled syngas for drying. The energy efficiency of two models was calculated using ASPEN PLUS simulator.

As a result, the concept of ID gasifier is more effective than the other. We also found the optimal recycled syngas ratio and operating condition.