

OMB Coal-Water Slurry Gasification Technology and Its Applications

Qinghua Guo

Institute of Clean Coal Technology, East China University of Science and Technology
Shanghai

Opposed Multi-Burner (OMB) coal-water slurry (CWS) gasification technology, which was developed by East China University of Science and Technology (ECUST) and Yankuang Group, is a representative coal gasification technology. This gasification process adopts an entrained-flow OMB gasifier to produce syngas that mainly consists of carbon monoxide and hydrogen using CWS and pure oxygen under high pressure and high temperature operating conditions. With many technical advantages, the OMB CWS gasification efficiency is very high, and the carbon conversion rate is normally higher than 98.5%. Up to now, OMB CWS gasification technology has been licensed on 58 projects for a total of 159 gasifiers. The design has coal capacity ranging from 750 to 4000 TPD for single gasifier and pressure ranging from 1.5 MPa to 6.5 MPa. There are 85 gasifiers on 31 different projects currently running smoothly in China with the largest one having a 4000 TPD coal capacity. During the gasifier operation and for the coal type selection process, the FactSage software is a very useful tool for the prediction of high temperature ash/slag viscosity which is an important factor for smooth operating of the entrained-flow gasifier.