

Performance Assessment and Evaluation of Catalytic Steam Gasification of Inner Mongolian Lignite in a Two-Inch Lab-Scale Fluidized Bed Gasifier using K_2CO_3

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Steam gasification of Inner Mongolian lignite was studied in a two-inch lab-scale fluidized bed gasifier using K_2CO_3 catalyst. For simplicity of the method of catalyst addition, physical mixing was used to load the catalyst at 1% and 5% wt loading. Steam partial pressure was varied at 0–0.90 atm while gasification temperature was varied at 600C–900C. The amount of gas products was measured along with its heating value, carbon conversion and cold gas efficiency. Recommendations were presented in order to improve the coal gasification process yield.