

Supplementary Material

Composition and Structural Characteristics of Coal Gasification Slag from Jinhua Furnace and Its Thermochemical Conversion Performance

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Table S1 Parameters of Jinhua furnace

Items	Data
Operating temperature	1250-1550 °C
Operating pressure	4.0 MPa
Syngas pressure	3.8 MPa
Available gas(CO+H ₂)	81.78%
Carbon conversion efficiency	99.63%
By-product steam	27 t/h; 5.4 MPa

TYC and FS under CO₂ atmosphere

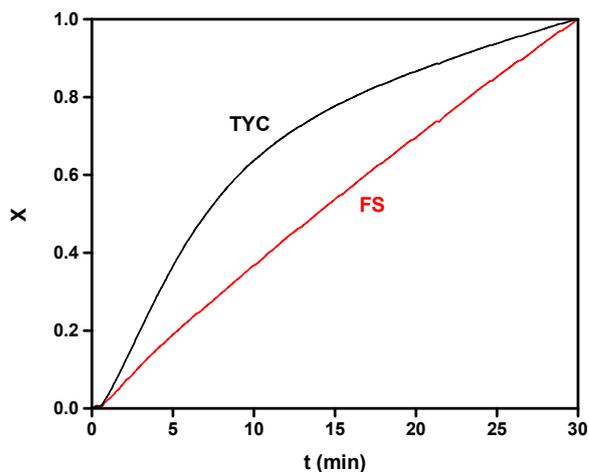


Figure S1 Gasification reactivity of TYC and FS

Experimental Methods: Under an N₂ atmosphere, the temperature was increased from room temperature to 900 °C at a rate of 20 °C/min. After stabilizing for 10 minutes, the atmosphere was switched to CO₂, and the reaction was stopped after 30 minutes.

From the graph, it can be seen that neither of the two samples reached complete gasification after the conventional test of 30 minutes, both samples still exhibit an upward trend. This indicates that the TYC arrangement in FS is relatively stable and not conducive to gasification, which in turn proves that the thermal stability of the residual carbon in FS is quite good.