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硝酸钙对内蒙古褐煤热解和气化特性的影响

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Effects of calcium nitrate on pyrolysis and gasification behavior of lignite from In

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- 摘要
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全文: PDF (652 KB)　HTML (1 KB)　输出: BibTeX | EndNote (RIS)　背景资料

摘要 在小型固定床反应装置上开展了内蒙古褐煤原煤(RC)和脱灰煤(DC)以及分别负载钙盐的煤样的热解实验,并对热解所
样开展了焦样与水蒸气气化反应的实验研究。结果表明,硝酸钙的添加对煤的热解和气化阶段均有影响。在热解阶段,硝酸钙
在能显著改变主要气相产物H_2、CO_2和CO等组分的逸出规律和累积生成量;在气化阶段,作为催化剂的碱土金属,降低了焦样
化反应活化能,更有利于气化反应的进行。

关键词： 硝酸钙　煤热解　煤气化　气相产物

Abstract： The pyrolysis of original coal(a lignite from Inner Mongolia), acid washing deashed coal and
calcium nitrate loaded coal was investigated in a small fixed-bed reactor, and the gasification activity wi
steam for different chars was compared as well. The results show that both coal pyrolysis and gasificatic
processes are affected by addition of calcium nitrate. Calcium nitrate can obviously promote the pyrolysi
reaction and change the release regularity and cumulative quantity of main gaseous products(H_2, CO_2 ar
CO); while the alkaline-earth metal as a catalyst can reduce the gasification activation energy and prom
the char gasification with steam.

Key words： calcium nitrate　coal pyrolysis　coal gasification　gaseous products

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