

发电

## 典型煤种加压热解与气化实验研究

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摘要

为了解压力对煤粉颗粒热解特性与固体煤焦的气化活性的影响, 及其与煤粉颗粒特性的关联关系, 采用加压热重分析仪在常压和3MPa下分析了4种我国典型工业用煤的热解失重特性, 同时对煤焦的孔隙结构和化学组成进行了分析, 并采用常压热分析仪比较了所得煤焦的CO<sub>2</sub>气化特性。结果显示高压不利于煤颗粒的热解, 增加了煤焦的产量, 而煤焦中H元素的含量明显降低; 煤焦的气化活性也有明显降低。压力对不同煤种的影响因煤特性而异, 褐煤焦的比表面积明显减少, 而烟煤、无烟煤与贫煤的比表面积却有所增加, 进而对煤焦气化特性的影响也有明显不同。

关键词 [煤粉颗粒](#) [热解](#) [压力特性](#) [超细煤焦](#) [表面孔隙](#) [气化活性](#)

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## Study on Pressurized Pyrolysis and Gasification of Chinese Typical Coal Samples

Abstract

To understand the influence of pressure on the pyrolysis characteristics and the gasification reactivity of the resultant solid coal char, the pyrolysis of 4 typical Chinese coals samples were carried out at ambient pressure and 3Mpa using pressurized thermogravimetric analyzer, and the pore structure characteristics and elemental components of the resultant char were measured. Simultaneously, the isothermal gasification behavior of solid char particles was investigated using ambient thermal analyzer with CO<sub>2</sub> as gasifying agent. It can be observed the pyrolysis of coal particles was suppressed with pyrolysis pressure increasing from ambient to 3Mpa, and the solid charcoal yield was enhanced. H content of the resultant charcoal decreased while C content increased greatly. The gasification reactivity of solid charcoal was decreased greatly with pyrolysis pressure increasing.

Key words [coal particles](#) [pyrolysis](#) [pressure character](#) [micro-pulverized coal char](#) [surface porosity](#) [gasification reactivity](#)

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