

### 基于燃烧实验的卫燃带结渣特性分析

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### Slagging characteristic analysis of coal ash on refractory plates during combustion

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**摘要** 将两种结渣倾向对比明显的煤粉送入均匀布置有三种卫燃带耐火材料板的煤粉炉内进行燃烧, 待燃烧完成后观察不同煤种在不同卫燃带耐火材料板表面的结渣特性, 并对卫燃带耐火材料板横断面进行能谱分析, 得出不同条件下煤灰对卫燃带耐火材料板的侵蚀程度。实验结果表明, 随炉内温度的升高, 卫燃带耐火材料板表面的结渣程度以及煤灰对卫燃带耐火材料板的渗透、侵蚀程度均随之增大, 特别是当炉温高于煤灰熔融温度时, 卫燃带耐火材料板表面结渣程度将急剧增大; 锅炉实际运行中, 若可保证卫燃带表面温度在锅炉最高负荷时不超过所燃煤种的煤灰熔融温度, 便可有效减少卫燃带表面结渣的可能性; 碳化硅质卫燃带相对于刚玉质卫燃带具有优越的抗结渣性能。

**关键词:** 燃烧 卫燃带 结渣 侵蚀

**Abstract:** Two pulverized coals with different slagging tendencies were combusted in a pulverized coal boiler in which three kinds of refractory plates were arranged uniformly. After combustion, the slagging behavior of coal ash on the refractory plates was observed. In order to examine the degree of corrosion by fly ash, the cross-sectional of refractory plates were investigated by energy spectrum analysis. The results show that with the rise of temperature in the furnace, the slagging degree on the surface of refractory plates and the corrosion degree increase. When the temperature in the furnace is higher than the melting temperature of fly ash, the slagging degree on the surface of refractory plates increases sharply. In industrial boilers, the surface temperature of refractory plates lower than the fly ash melting temperature can effectively reduce the possibility of surface slagging. In addition, compared with the jade texture refractory plates, the silicon carbide refractory plate has superior anti-slagging properties.

**Key words:** combustion refractory plate slagging corrosion

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