

热能工程

叶片间距对五级叶片百叶窗煤粉浓缩器性能的影响

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摘要: 水平浓淡燃烧技术作为先进的煤粉燃烧技术, 可以使锅炉同时达到稳燃、高效、防腐蚀结渣和低污染排放等方面的要求。作为水平浓淡燃烧技术的关键部件, 百叶窗煤粉浓缩器性能的好坏直接影响到煤粉炉中煤粉燃烧的效果。该文利用百叶窗浓缩器实验装置研究了叶片间距对5级叶片百叶窗浓缩器性能的影响。实验结果表明: 靠前的叶片对浓缩率影响较大, 中间及末级叶片对阻力系数影响较大。各级叶片间距比为1:1:1:3时具有最大浓缩率和居中的阻力系数, 可满足对浓缩效果要求较高的浓缩器; 1:2.25:1:1结构可满足对阻力要求较高的浓缩器。实验结果为百叶窗浓缩器的设计和工业化应用提供了理论依据。

关键词: 百叶窗浓缩器 叶片间距 浓缩率 阻力系数

Effect of Blade Spaces on the Performance of a Five Stage Blades Louver Coal Concentrator

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Abstract: The horizontal bias combustion (HBC) is a combustion technology that has achieved satisfactory comprehensive effects with stability combustion, high combustion efficiency, resistance to slagging and high temperature corrosion and low NOx emission. As the key part of HBC technology, the efficiency of coal combustion in the pulverized fuel boiler is affected by the performance of louver concentrator. A study of the effect of blade spaces in five stages on the performance of the louver concentrator was conducted in a louver concentrator test system. The experimental results show that the front blades have great influence on concentration coefficient and the middle and the rear blades have great influence on resistance coefficient. When the ratio of the space of blades is 1:1:1:3, the maximum concentration coefficient and average resistance coefficient are achieved and it can satisfy the concentrators with high concentrated level. And when ratio of the space of blades is 1:2.25:1:1, it can satisfy the concentrators with low resistance. These tests provide a theoretical basis for the design of louver concentrator and its engineering application.

Keywords: louver concentrator blade space concentration rate resistance coefficient

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