

论文

液固流化床分选粗煤泥的试验研究

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摘要:

自制了直径300 mm液固流化床模型机分选试验系统, 并分别设计了中心排料型和周边排料型流体分布器, 分别对0.25~1.00 mm粗煤泥进行了3个不同柱体高度的分选试验。结果表明: 随着水流速度的增加, 精煤灰分、尾煤灰分、精煤可燃体回收率都随之升高; 分选密度达到1.5 g/cm³左右, 可能偏差E值在0.06~0.08; 在一定的上升水流范围内, 高柱体的精煤灰分低于低柱体, 1 800 mm柱体高度下得到的精煤灰分比1 200 mm的精煤灰分低0.6%~1.2%; 1 500 mm柱体高度下的分选效果最佳, 中心排料型流体分布器的E值较低, 分选效果优于周边排料型流体分布器。

关键词: 液固流化床; 粗煤泥; 柱体高度; 中心排料; 周边排料

Experimental study on coarse coal slime separation in a liquid solid fluidized bed separator

Abstract:

A liquid solid fluidized bed model in 300 mm diameter was established, and two kinds of liquid distributors, a central discharge and a peripheral discharge, were designed into the hindered fluidized bed separator. The beneficiation performance of the fluidized bed was investigated using 0.25~1.00 mm coarse coal slime in three different heights of separator and in the two distributors. The experimental results show that the clean coal ash content, the tailings ash content, and the combustible material recovery all increase as the superficial water velocity increases. The probable error E ranging 0.06~0.08 was obtained at the separation density of about 1.5 g/cm³. At a certain superficial water velocity, the clean coal ash content decreases along with the increase of the height of the separator, and the clean coal ash content of 1 800 mm height is 0.6% to 1.2% lower than that of 1 200 mm height. The optimal separation effect of the height of the separator is 1 500 mm. Additionally, the probable error E of the central discharge is lower, and its separation effect is also better than that of the peripheral discharge.

Keywords: liquid solid fluidized bed; coarse coal slime; column height; central discharge; peripheral discharge

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