

论文

复合型煤泥旋流器流场模拟

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摘要:

简要分析了目前选煤厂常用的煤泥洗选工艺, 并提出了一种新型的复合型煤泥旋流器; 介绍了复合型煤泥旋流器的结构及工作原理, 利用Fluent软件对复合型煤泥旋流器流场进行了模拟, 分析了复合型煤泥旋流器不同空间内的流体切向速度、轴向速度及径向速度, 得出复合型煤泥旋流器内存在较大的切向速度、轴向速度及径向速度, 为煤泥在径向上分层及轴向上分离提供了动力, 复合型煤泥旋流器在同一时段内既完成细煤泥分级又完成粗煤泥分选是完全可行的, 可进一步进行实践试验研究。

关键词: 复合型煤泥旋流器; 流场模拟; 分级分选

Flow field simulation of the composite slime cyclone

Abstract:

Based on the analysis of the fine coal separation technologies currently used in coal preparation plants, a novel composite slime cyclone is proposed, and its structure and operating principle are introduced in this study. With the Fluent 6.3 software, the flow field in composite slime cyclone is simulated and the tangential, axial and radial velocities in the different spaces in composite slime cyclone are analyzed in detail. It can be determined that higher tangential, axial and radial velocities exist in the composite slime cyclone, and the power can be supplied for fine coal to delaminate radially and separate axially. Therefore, it concludes that it is feasible for composite slime cyclone to achieve simultaneously fine coal classification and separation, and the actual tests can be conducted.

Keywords: composite slime cyclone; flow field simulation; classification and separation

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