

分离工程

涡流空气分级机转笼结构对其分级性能的影响

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摘要 摘要: 研究了涡流空气分级机底盘开口与封闭两种型式的转笼对分级指标的影响。重质CaCO₃物料试验表明: 采用底盘开口转笼时, 切割粒径小, 分级精度低; 随着分级转速增加, 切割粒径对风速的敏感性下降。另外, 用激光多普勒测速计测量了上述两种转笼结构的分级机环形区的流场特性, 结果表明: 转笼底盘开口, 环形区气流出现旁路, 进入转笼径向风速减小, 造成分级物料切割粒径减小; 底盘封闭的分级机环形区内靠近转笼处, 切向风速突变增大, 特别是轴向上湍流度的增大, 有利于团聚物料的分散和分级精度的提高。

关键词

[涡流空气分级机](#) [转笼](#) [分级指标](#) [激光多普勒](#) [流场特性](#)

分类号

Effect of rotor structure on classification characteristics of turbo air classifier

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Abstract

The effect of the structure of the rotors with openings in the bottom plate and without openings on the classification characteristics of a turbo air classifier was investigated. Ground calcium carbonate was used in the classification tests. The cut size of classified particles became smaller and the classification precision was reduced in the case with openings. The effect of wind speed on classification particles cut size decreased with increasing rotor speed in the classification process. On the other hand, the flow field of the annular regions in both cases was measured with laser Doppler velocimeter (LDV). The results demonstrated that the radial wind speed decreased in the case with openings due to split-flow, resulting in a smaller cut size. In the vicinity of the rotor without openings, the abrupt increase of tangential wind speed and especially intensified axial turbulence brought about adequate disagglomeration and higher classification precision.

Key words

[turbo air classifier](#) [rotor](#) [classification index](#) [laser Doppler](#) [flow field characteristics](#)

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