

论文

气固磁场流态化分选细粒煤

宋树磊, 赵跃民, 骆振福, 唐利刚, 杨旭亮

中国矿业大学 化工学院 煤炭加工与高效洁净利用教育部重点实验室, 江苏 徐州 221116

摘要:

利用研制的横流式气固磁稳定流化床, 以0.074~0.045 mm粒级磁铁矿粉和磁珠作为高密度和低密度分选介质, 对6.0~0.5 mm 细粒煤进行连续分选试验。结果表明: 当处于稳定流化时, 磁场气固流化床比普通气固流化床具有更宽的稳定操作气速范围; 外加磁场使磁性颗粒沿磁力线形成平行磁链, 增大了床层空隙率, 形成了分布均匀的通道, 气体通过时不会产生气泡, 由此形成了稳定的散式气固磁场流化床; 高密度分选和低密度分选的可能偏差分别为0.085, 0.075 g/cm³。

关键词: 磁场流化床; 细粒煤分选; 流化特性; 磁链

Fine coal particles separation by air solid magnetic fluidization

Abstract:

Continuous separation tests of fine coal particles of 6.0-0.5 mm were done by a crossflow air solid magnetically stabilized fluidized bed (MSFB), which used 0.074-0.045 mm magnetite powder and magnetite beads as medium of high and low density separation respectively. The results show that the range of steadily operational air velocity in air solid magnetically fluidized beds is broader than that in standard air solid fluidized beds when they are at stable fluidization. External magnetic field compels the magnetic grains to form parallel magnetic chains following the magnetic induction lines, which enlarge the bed voidage and form the uniform air channels. Air bubbles cannot be produced when the air flows through the channels, thus stable and particulate air solid magnetically fluidized beds coming into being. The possible deviation of high and low density separation are 0.085 and 0.075 g/cm³ respectively.

Keywords: magnetically fluidized beds; fine coal separation; fluidization characteristics; magnetic chains

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通讯作者: 宋树磊

作者简介: 宋树磊(1973—), 男, 山东临沂人, 讲师, 博士

作者Email: slsong@cumt.edu.cn

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