

短文

磨矿分级过程动态优化控制

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摘要:

建立了基于改进粒级质量平衡模型(PBM)的质量指标预测模型和保证过程最优运行的优化计算模型,提出了基于反馈校正的动态优化控制方案. 首先由优化模型计算最优控制律,为消除过程扰动及其他不确定因素影响,引入质量指标反馈调节机制;然后智能控制单元根据人工测试和期望质量指标间的偏差对最优控制律进行反馈修正. 现场实验结果表明,该方案能够稳定过程产品质量,实现过程节能降耗.

关键词: 磨矿分级过程; 动态优化控制; 节能降耗

Dynamic optimization control for grinding and classification process

Abstract:

Quality index predictive model based on improved population balance model(PBM), optimization model guaranteeing process optimum operation and a dynamic optimization control scheme based on feedback correction are developed. Firstly, the optimal control laws are derived from the optimization model, and the production quality index feedback correction is employed for eliminating the effects of disturbances and other uncertainties of the grinding and classification process. The optimal control laws are compensated and adjusted by the intelligent control unit according to the differences between the values of the feedback obtained by workers and the desired quality indices. Field experiments show that the production quality of the process is improved, and power saving and energy conservation are realized.

Keywords: grinding and classification process; dynamic optimization control; power saving and energy conservation

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