

过程系统工程

催化裂化装置再生器主风裕量的动态分析

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收稿日期 2007-1-10 修回日期 2007-7-13 网络版发布日期 2008-1-14 接受日期

摘要

以某催化裂化装置为基础, 建立反应-再生系统的动态机理数学模型。从生产操作和闭环控制的角度, 用动态优化的方法对再生器的主风裕量进行了计算, 指出过程动态特性对主风设计裕量的选取有着很大影响。在考虑工艺和设备条件变化留出的稳态裕量之外, 需要留出一定的动态裕量以满足过程操作和控制的要求, 其大小与控制系统设计有关。系统对控制器性能的要求愈高, 所需要的主风裕量应愈大。故在进行工艺设计时需要对照系统的控制性能和主风设计裕量进行综合考虑, 使设计结果既能满足工艺要求, 又能实现良好的自动控制。

关键词 [催化裂化装置](#) [动态优化](#) [稳态裕量](#) [动态裕量](#) [主风](#)

分类号

Analysis of air flow rate margin in FCCU regenerator based on dynamic model

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Abstract

A dynamic model of a FCCU reactor/regenerator was established by mechanism analysis. From the point of view of operation and control, the margin of air flow rate in FCCU regenerator was calculated by dynamic optimization. From the result it could be concluded that the process dynamic characteristics had a great effect on the margin of air flow rate. Besides the steady margin for the variation in process and equipment, the dynamic margin for control must be considered and its size is related to the control system. The higher the control performance is wanted, the greater the air flow rate margin is required. During process design the control performance and the margin of air flow rate should be studied as a whole so that the design result can both satisfy process demand and achieve good control performance.

Key words

[FCCU](#) [dynamic optimization](#) [steady margin](#) [dynamic margin](#) [air flow rate](#)

DOI:

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