中国化学工程学报 2006 14(2):284-290 ISSN: 1004-9541 CN: 44-1827/TQ

SYSTEM ENGINEERING

工业铂重组重整催化剂动态模型与优化

倪炜烨, 苏宏业, 褚健, 钱积新

National Laboratory of Industrial Control Technology, Institute of Advanced Process Control, Zhejiang University, Hangzhou 310027, China

收稿日期: 修回日期: 网络版发布日期: 接受日期:

摘要: A new 10-lump kinetic model for naphtha catalytic reforming reactions is discussed. By developing this model as a user module, a whole industrial continuous catalytic reforming process is simulated on Aspen plus platform. The technique utilizes the strong databases, complete sets of modules, and flexible simulation tools of the Aspen plus system and retains the characteristics of the proposed kinetic model. The calculated results are in fair agreement with the actual operating data. Based on the model of the whole reforming process, the process is optimized and the optimization results are tested in the actual industrial unit for about two months. The test shows that the process profit increases about 1000yuan·h-1 averagely, which is close to the calculated result.

关键词: catalytic reforming; kinetic model; Aspen plus; computer simulation; process optimization;

分类号:

DOI:

Modeling, Simulation and Optimization of a Whole Industrial Catalytic Naphtha Reforming Process on Aspen Plus Platform

NI Weiye, SU Hongye, QU Jian

National Laboratory of Industrial Control Technology, Institute of Advanced Process Control, Zhejiang University, Hangzhou 310027, China

Received Revised Online Accepted

Abstract: A new 10-lump kinetic model for naphtha catalytic reforming reactions is discussed. By developing this model as a user module, a whole industrial continuous catalytic reforming process is simulated on Aspen plus platform. The technique utilizes the strong databases, complete sets of modules, and flexible simulation tools of the Aspen plus system and retains the characteristics of the proposed kinetic model. The calculated results are in fair agreement with the actual operating data. Based on the model of the whole reforming process, the process is optimized and the optimization results are tested in the actual industrial unit for about two months. The test shows that the process profit increases about 1000yuan·h-1 averagely, which is close to the calculated result.

Key words: catalytic reforming; kinetic model; Aspen plus; computer simulation; process optimization;

通讯作者:

电子邮件 hongyi@iipc.zju.edu.cn

作者个人主页: 倪 炜烨; 苏宏业; 褚健; 钱积新

扩展功能

本文信息

Supporting info

PDF(283KB)

[HTML全文](0KB)

参考文献

服务与反馈

把本文推荐给朋友

加入我的书架

加入引用管理器

引用本文

Email Alert

文章反馈

浏览反馈信息

相关信息

本刊中 包含“Catalytic reforming”的相关文章

本文作者相关文章

倪炜烨

苏宏业

褚健

钱积新