

摘 要

石油炼化行业中催化重整工艺是使用相应的原料油，经过相应的化学方法加工转化形成相对应的产物，如芳烃，高辛烷值汽油。其在石油炼化行业中的地位举足轻重，而且就目前的发展情况来看，全球的BTX产量中越有五分之三石油催化重整工艺生产的，尤其是在发达国家中载具用油的生产方式催化重整工艺占据了十分之三的最大比重。

本设计的催化剂使用双金属铂-铈催化剂，催化重整工艺采用连续式半再生固定床催化重整工艺。设计主要包括：物料衡算和热量衡算，催化重整反应器，催化重整加热炉，流量泵的选择与相应设计计算，确定了原料油加工所需的设备结构，规格等。并用Auto CAD绘制带控制点的工艺流程图和设备装配图。通过此次设计加深了对催化重整反应的全面理解。提高了我面对问题和解决问题的综合能力。

关键词：催化重整；重整反应器；重整加热炉

Abstract

The catalytic reforming process in the petroleum refining and chemical industry is to use the corresponding raw oil and process and transform it into corresponding products through corresponding chemical methods, such as aromatic hydrocarbons and high-octane gasoline. Its position in the petroleum refining and chemical industry plays a decisive role, and as far as the current development is concerned, more than three-fifths of the global BTX production is produced by the Long March process catalyzed by petroleum, especially in developed countries. The catalytic reforming process occupies the largest proportion of three-tenths.

The catalyst of this design uses a bimetallic platinum-rhenium catalyst, and the catalytic reforming process uses a continuous semi-regenerative fixed bed catalytic reforming process. The main contents of the design include: material balance calculation and heat balance calculation, catalytic reforming reactor, catalytic reforming heating furnace, flow pump selection and corresponding design calculation, and the equipment structure and specifications required for raw oil processing are determined. And use AutoCAD to draw the process flow chart with control points and equipment assembly drawings. This design has deepened the overall understanding of the catalytic reforming reaction. Improve my comprehensive ability to face problems and solve problems.

Keywords: Catalytic reforming; Reforming reactor; Reforming furnace

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