

عنوان مقاله:

Acetone process energy recovery by means of energy analysis

محل انتشار:

سومین کنفرانس ملی و اولین کنفرانس بین المللی پژوهش های کاربردی در علوم شیمی و مهندسی شیمی و سومین کنفرانس ملی و اولین کنفرانس بین المللی پژوهش های کاربردی در زیست شناسی (سال: 1395)

تعداد صفحات اصل مقاله: 8

نویسندگان:

Ehsan kianfar - *Ph.D. Student, Department of Chemical Engineering, Arak Branch, Islamic Azad University, Arak, Iran*

Mahmoud Salimi - *Ph.D. Student, Department of Chemical Engineering, Arak Branch, Islamic Azad University, Arak, Iran*

seyed mohammad faghiih - *Ph.D. Student, Department of Chemical Engineering, Arak Branch, Islamic Azad University, Arak, Iran*

Jafar baghbani - *Ph.D. Department of Chemical Engineering, Arak Branch, Islamic Azad University, Arak, Iran*

خلاصه مقاله:

Dehydration of isopropyl alcohol is a method of acetone production which is endothermic. Thus isopropyl 88% w/w soluble in water is preheated in a thermal convertor up to 102 degrees centigrade and is inserted into R-401 reactor. Reactor's internal temperature is kept in optimum temperature 349 degrees centigrade using H-401 oven. Exerting flow of R-401 reactor is cooled using two water refrigerants and water flow 5 degrees centigrade to facilitate separation. In this paper, energy recovery of acetone production process is analyzed. The aim of this study is to recover valuable sources of energy and modify thermal convertors network in this process. According to energy analysis, hot exerting flow of reactor contains valuable amounts of energy and grate potential to preheat feed without using vapor. On the other hand, by transferring the energy of hot exerting flow of R-401 reactor, the temperature of this flow will reduce 44 degrees centigrade which lowers the thermal convertors after reactor. Of the results of this study, we can mention 30720 kilograms daily vapor storage and a daily 1867200 kilograms decrease in cooling fluid .and thermal convertors

کلمات کلیدی:

Energy analysis, Thermal convertor, Thermal network modification, Energy recovery

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/517273>

