

Self-Heat Recuperative of Reactive Top Dividing Wall Column for Cumene Process

펠리시아, 김종환¹, 펑웨이¹, 이문용^{1,†}

영남대학교; ¹영남대

(mynlee@ynu.ac.kr[†])

This study developed an innovative configuration for cumene production process from an energy efficiency point of view by investigating the feasibility of self-heat recuperation technology to the process using a reactive top dividing wall column. The optimization was done for the structure of the reactive top dividing wall column so that lower energy requirement could be obtained. Later on heat-integrated arrangement was proposed and a side-reboiler was placed on the reactive distillation column part. The innovative configuration provided preferable conditions for the self-heat recuperation by avoiding the remixing effect and reducing the energy requirement. The result showed that the innovative configuration could save up 30% of the overall energy requirement, compared to the conventional sequence. This research was supported by Basic Science Research Program through the National Research Foundation of Korea (NRF) funded by the Ministry of Education (2015R1D1A3A01015621). This study was also supported by Priority Research Centers Program through the National Research Foundation of Korea (NRF) funded by the Ministry of Education (2014R1A6A1031189).