Using Thermally Coupled Distillation Systems – Side Rectifiers to Retrofit the Multicomponent Distillation Sequences

Le Cao Nhien, 최봉구, Yuli Amalia Husnil, FENG WEI,
Le Quang Minh, 이문용*
영남대
(mynlee@ynu.ac.kr*)

Thermally coupled distillation systems (TCDS) were achieved through the implementation of interconnecting streams (liquid and vapor streams) between two columns. Each interconnection replaces one reboiler or one condenser from one of the columns, thus providing potential energy and cost savings. In recent years, a large number of capital investment projects in the petrochemical processing industry were retrofit projects.

This research reports the design for retrofitting multicomponent distillation sequences to TCDS -SRs (side rectifier) with specific emphasis on the utilization of the existing hardware with minimal construction effort and investment costs. The simulation results show that the TCDS -SRs can reduce a large amount of energy consumption than the conventional sequences. "This research was supported by Basic Science Research Program through the National Research Foundation of Korea (NRF) funded by the Ministry of Education, Science and Technology (2012012532)."