Optimization of Heat-Integrated Thermally Coupled Reactive Distillation System for the Formic Acid Production

펠리시아, Le Quang Minh, Feng Wei, Pham Ngoc Tram, Le Cao Nhien, Hao-Yeh Lee[1], 이문용†

영남대학교; [1]NTUST

(mynlee@yu.ac.kr†)

Optimization of heat-integrated thermally coupled RD system for the formic acid production was investigated successfully in this work. The obtained optimum structure, which refers to Huang's process, was then used as reference to the other. The thermally coupled configuration, the external HI configuration and the double effect thermally coupled (DETC) configuration were proposed in this work. As results, the remixing effect can be reduced and the total energy consumption can be obtained less than the base case design. In addition, the results showed that the DETC configuration was the best alternative in term of energy performance for this work. 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) and also supported by Priority Research Centers Program through the National Research Foundation of Korea (NRF) funded by the Ministry of Education (2014R1A6A1031189).