

Reactive Top Dividing Wall Column for Cumene Production Process

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This paper proposed a reactive top dividing wall column for the cumene production process. This process intensification is aimed to integrate two different processes, a reactive distillation and a dividing wall column, for reducing energy consumption. From a conventional reactive distillation, this configuration was modified into a reactive top dividing wall column, which the column structures were maintained same as a conventional reactive distillation. In both configurations, there is no “remixing effects”. But, the benefit from a side vapor stream of thermal coupling still can be enjoyed for the irreversible reaction system. As a result, this proposed configuration can reduce the energy requirements and saved 31% of total energy. 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).