Energy efficiency improvement in the PO/SM process by utilizing Dividing Wall Column and Vapor Recompression Column

장성근, 롱벤덱, Yus Donald Chaniago, 이문용*
영남대학교
(mynlee@ynu.ac.kr*)

PO/SM process is an very important in petro-chemistry process. PO and SM are basic materials of the Urethane and Polystyrene production process, respectively. However it takes too much energy consumption. Reducing the energy consumption is inevitable in this process. In this work, our aim is retrofit to reduce the energy consumption. Dividing Wall Column, which works on the basis of Fully Thermally Coupled Distillation System (FTCDS), and Vapor Recompression Column, which works on the principle of a heat pump, are chosen for this study due to its lower energy consumption as compared to the conventional column system. The results show that the dividing wall column and vapor recompression column can reduce the reboiler and condenser duty, significantly.