

Optimal Design of Thermally Coupled Distillation Columns in The Case of Debottlenecking

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Fully thermally coupled distillation column (FTCDC) is rapidly applied in a variety of chemical processes because of its high energy saving efficiency for separation of multicomponents. In this work, the dividing wall column (DWC) is studied in the case of debottlenecking. The optimal design of column sequences involving both conventional and DWC has been considered in terms of the total number of trays, the position of feed tray, side stream tray. The internal recycle flow distribution around the dividing wall was investigated as search variables. Several columns arrangements were analyzed and the results show that the DWC requires less investment and energy cost than conventional distillation.