

Energy Efficiency Improvement of Alcohol Purification Process Using Enhanced Column Arrangements

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Energy efficiency improvement has always been a crucial task for engineers in chemical process industries. As one of the major energy consumers in chemical processes, the distillation column is well-known to play an important role and classified as one of the top priority units to be improved in terms of energy efficiency. The objective in this work is energy efficiency improvement of alcohol purification process by using several thermally enhanced distillation column arrangements. Prefractionator, Thermal Coupling Distillation and Dividing Wall Column are considered to enhance the energy efficiency of the alcohol purification process, and their performances are compared with the conventional existing process. The result showed that these new configurations can reduce energy consumption while maintaining required product purity.

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