Fully Thermally Coupled Distillation Column Design Using Kremser Approximate Group Methods

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Abstract
A new structure design method combining Kremser group methods and approximate methods to determine an optimal design structure of fully thermally coupled distillation column is proposed. Different feed mixtures are analyzed in order to investigate the effects of feed composition and relative volatilities of the feed mixtures on the design performance. The components of the feed mixtures attempted belong to natural gas liquids, ranging from C3 through nC6, and are picked up and grouped to make mixtures with different ease separability index (ESI). The design method gives an optimum structure for a given ternary separation. With outcome of the structure design, thermodynamic efficiency, and optimal internal flow distribution are examined.

Keywords: Thermally Coupled Distillation, ternary separation, group methods, optimal structure design.

References


