DESIGNING FOUR-PRODUCT DIVIDING WALL COLUMNS FOR SEPARATION OF A MULTICOMPONENT AROMATICS MIXTURE


The original two papers for this oral presentation are available under posters!

CONCEPTUAL DESIGN AND COMPARISON OF FOUR-PRODUCTS DIVIDING WALL COLUMNS FOR SEPARATION OF A MULTICOMPONENT AROMATICS MIXTURE

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Abstract
Preliminary evaluations using a simple but reliable short-cut method indicated that a 15 component aromatic’s mixture can be separated very efficiently into four fractions according to given product specifications employing either a single or a multiple partition wall dividing wall column (DWC). The obtained results have been used to initiate rigorous simulations, to determine the number of stages required in different sections, as well as to obtain internal flows of vapour and liquid necessary for dimensioning and adequate (actual delivery prices) cost estimation. Comparison of total annualized costs indicates that more energy efficient complex configuration with three partition walls is a viable option in present case.

ESTABLISHING INTERNAL CONFIGURATION OF DIVIDING WALL COLUMN FOR SEPARATION OF A MULTICOMPONENT AROMATICS MIXTURE

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Abstract
In this paper the so called V-min diagram method is used to evaluate potential for energy saving and to indicate most beneficial internal configuration for a single dividing column (DWC) considered as an alternative for conventional three columns configuration used in an aromatics processing plant for separation of a multicomponent feed into four specified product streams. A DWC employing multiple partition walls to separate central part of the column into three sections appeared to be a much more attractive option than its, more practical single partition wall counterpart.