

عنوان مقاله:

Design and Synthesis of Heat Integrated Distillation Sequences (HIDS) for a Separation Plant

محل انتشار:

ششمین کنگره بین المللی مهندسی شیمی (سال: 1388)

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خلاصه مقاله:

This paper discusses an industrial case study: synthesis of simple and heat integrated distillation sequences (HIDS) for separation of a multi-component hydrocarbon mixture. The distillation schemes presented in this work employ the heat integration principles to significantly reduce their heat requirements of this plant. This work started from the simulation of the existing plant, by which the parameters of the system were identified. Then, all appropriate sequences of simple columns (SC) determined and designed for a non-sharp separation of this mixture. Also, possible cases of heat integrated schemes designed for this plant. After designing all these configurations, comparisons made between different cases from viewpoint of energy consumption, vapour flow rate in columns and finally, the total annual cost (TAC). Then, the best sequence is selected for this separation. Results indicate that a heat integration scheme has the least total annual cost (TAC).

کلمات کلیدی:

(Simple Column (SC), Heat Integration Distillation Sequence (HIDS), Non-sharp Separation, Total Annual Cost (TAC)

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