RESEARCH PAPERS

通用热耦合精馏塔的制控系统的评估

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摘要 The assessment of control configurations for an ideal heat integrated distillation column incorporated with an overhead condenser and a bottom reboiler (general HIDiC) is addressed in this work. It is found that double ratio control configuration, (L/D, V/B), is still the best one among all the possibilities. The control configuration, (Pr - Ps, q), appears to be a feasible one for the general HIDiC and the pressure difference between the rectifying and the stripping sections and feed thermal condition are expected to be consistent manipulative variables for the process. The performance of the general HIDiC can be substantially improved by employing effective multivariable control algorithms.

关键词 <u>distillation</u> <u>control configuration</u> <u>interaction</u> <u>disturbance rejection</u> <u>closed-loop simulation</u>

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Assessment of Control Configurations for a General Heat Integrated Distillation Column

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Abstract The assessment of control configurations for an ideal heat integrated distillation column incorporated with an overhead condenser and a bottom reboiler (general HIDiC) is addressed in this work. It is found that double ratio control configuration, (L/D, V/B), is still the best one among all the possibilities. The control configuration, (Pr - Ps, q), appears to be a feasible one for the general HIDiC and the pressure difference between the rectifying and the stripping sections and feed thermal condition are expected to be consistent manipulative variables for the process. The performance of the general HIDiC can be substantially improved by employing effective multivariable control algorithms.

Key words distillation; control configuration; interaction; disturbance rejection; closed-loop simulation

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