Abstract

The present work elaborates the process design methodology for the evaluation of the distillation systems based on the economic, exergetic and environmental point of view, the greenhouse gas (GHG) emissions. The methodology proposes the Heat Integrated Pressure Swing Distillation Sequence (HiPSDS) is economic and reduces the GHG emissions than the conventional Extractive Distillation Sequence (EDS) and the Pressure Swing Distillation Sequence (PSDS) for the case study of isobutyl alcohol and isobutyl acetate with the solvents for EDS and with low pressure variations for PSDS and HiPSDS. The study demonstrates that the exergy analysis can predict the results of the economic and environmental evaluation associated with the process design.
GHG Emissions and Energy Minimization using Heat Integrated Pressure Swing Distillation Sequence (HiPSDS) for the Separation of Azeotropic Mixture

- Lucia Angelo, McCallum Bradley R., "Energy targeting and minimum energy distillation column sequences," Computers and Chemical Engineering, 34, 931-942


**Index Terms**

Computer Science

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**Keywords**

EDS  PSDS  HiPSDS  Simulation  GHG emissions