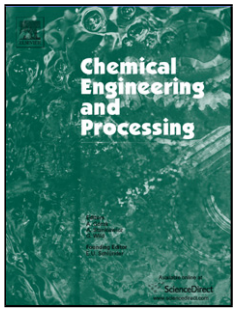

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Innovative Ethylene Glycol Diacetate synthesis process in a single reactive distillation column

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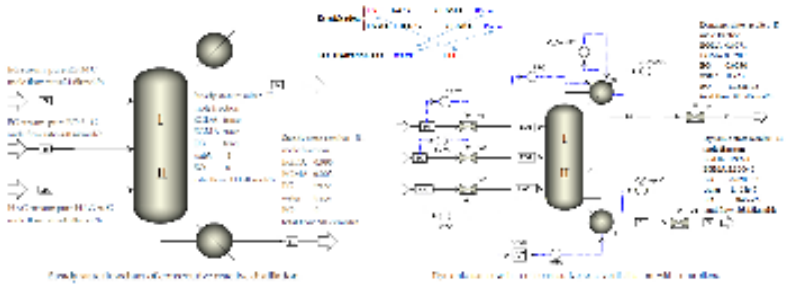
Graphical abstract



Highlights

- High purity ethylene glycol diacetate was gotten in a single reactive distillation.
- As an auxiliary reaction, the hydration of ethylene oxide (EO) was proposed.
- Energy consumption was saved more than 48% achieved by the dynamic state simulation.

Abstract

In this paper, an innovative ethylene glycol diacetate (EGDA) synthesis process in a single reactive distillation column has been investigated. The consecutive, reversible second-order esterification of ethylene glycol (EG) with acetic acid (HAC) to ethylene glycol monoacetate (EGMA) and ethylene glycol diacetate (EGDA) were