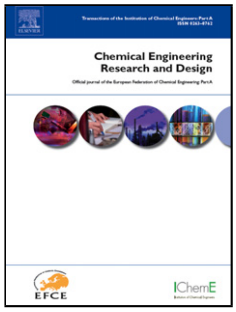

Title: Rigorous Modeling, Simulation and Optimization of a Conventional and Nonconventional Batch Reactive Distillation Column: a comparative study of dynamic optimization approaches

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Highlights

1. The optimization of reactive and nonreactive batch distillation columns with and without dividing wall is presented.
2. Orthogonal collocation over finite elements and control vector parameterization discretization methods are used and compared, reducing the solution time when the second method is used.
3. The addition of a dividing wall to a conventional batch distillation column shows no benefits in terms of energy savings and improvements in the final product purity.