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Rate-based Modeling for Internally Heat-integrated Distillation Column (HIDiC) in Binary System

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The model for the bench plant of internally heat-integrated distillation column (HIDiC) with structured packings was developed by a rate-based model and the separation of benzene-toluene binary mixture was simulated. The developed model has been applied as bench-plant for HIDiC, and their separation and operation performance was discussed. The validity of the simulation results was confirmed with the experimental data of the HIDiC bench plant. In addition, the simulation results were also compared with those obtained with the conventional equilibrium model. It was found that the present model can predict the behavior of the bench plant more precisely than the conventional equilibrium model. Moreover, the energy-saving ratio in the HIDiC system has also investigated using this simulator with rate-based model.

Keywords: [Distillation](#), [Heat integration](#), [Simulation](#), [Rate based model](#), [Energy saving](#)

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