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Controllability comparisons of a reactive dividing-wall column for transesterification of methyl acetate and isopropanol

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Highlights:

- Several control structures are introduced to the RDWC process.
- Controllability of these control structures is investigated and compared.
- The last three control structures can handle the disturbances very well.
- The feed-flowrate ratio scheme shortens the time coming to a new steady state.

Abstract:

Dynamic simulation has received researchers' attention for its practical application in industry. In this work, five control structures are introduced to the reactive dividing-wall column process, with different control strategies of the internal liquid stream across the wall. Controllability of these control structures is investigated and compared. From the result, the control structure that the flowrate of the internal liquid stream is ratioed to the liquid flowrate of the tray of the column, has the best performance among

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