

## Effects of Flow-rate Ratio on Startup and Cyclic Steady-state Behaviors of Simulated Moving Bed under Linear Conditions

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Simulated moving bed (SMB) chromatography is an advanced technology for separation of various valuable substances. It has received great attentions due to the effective separation performance.

One of the important issues in the SMB operation is the level of trade-offs among the performance parameters when the operating parameters(flow-rate ratios, flow-rates and swiching time) are changed.

In the recent study, we investigated the influence of the flow-rate ratio (m-value) on the startup and the cyclic steady-state performance of the simulated moving bed (SMB) process under the condition of a fixed feed flow-rate.

Each system was evaluated from the view point of four performance parameters (major product concentration, purity, eluent consumption, and productivity).

Flow rate ratios of zones II and III ( $m_2$  and  $m_3$ ) played key roles in the startup and cyclic steady-state behaviors of the performance parameters compared to m-values of zones I and IV ( $m_1$  and  $m_4$ ) in the four-zone SMB process.