The Study of Retention Analysis of Solutes in a Four-Zone Simulated Moving Bed Unit

양진효, 김진일, 롱벤텍, 김일용, 박영수, 구윤모*
인하대학교
(ymkoo@inha.ac.kr*)

Simulated moving bed (SMB) process was invented at early 1960's. It has been used for a large-scale separation by mainly petrochemical industry. As the biotechnology is developed, the necessary to separate various biologically-useful products with large-amount and high purity is grown up. The studies about the separation or purification for biologically-useful materials using continuous chromatographic process such as SMB, annular chromatography, and so on, were reported. The regulations such as cGMP (Current Good Manufacturing Practice) of FDA (Food and Drug Administration) for the food and pharmaceutical production processes are also become the important issue. This study was accordingly focused on retention behaviors of solutes in a conventional four-zone (1-1-1-1) SMB unit. A D-sugar and a rare sugar were employed as a model component for the simulation experiments. Under several assumption of industrial operation, the retention behaviors of solutes which are obtained from the raffinate and extract port were analyzed by the control of solutes in the feed.