

## Determination of SMB Chromatography Operating Parameters by Aspen Chromatography

Joon Sub Park and In Ho Kim\*

Department of Chemical engineering, Chungnam National University

220, Gung-dong, Yuseong-gu, Daejeon 305-764, Korea

TEL : +82-42-821-7675, FAX : +82-42-822-8995

E-mail : chunns@che.cnu.ac.kr

Simulated Moving Bed (SMB) Chromatography is a suitable process for continuous separation of chiral compounds. We have designed our own lab-scale SMB chromatography using 5 HPLC pumps as well as 6 stainless steel columns to separate a racemic mixture of ibuprofen. Operating parameters for SMB chromatography have been calculated from batch chromatography experiments and the triangle theory. In this presentation, we performed a simulation with Aspen Chromatography which is a powerful tool of chromatographic simulation, and compared the simulation with experimental results for determining SMB operating parameters (flow rates of four zones, switch time and feed concentration and so on).

### Acknowledgement

This research is funded by Bioseparation Process Engineering Research Center (BSEP ERC).

### References

1. G. Dünebier, I. Weirich, K.U. Klatt, "Computationally efficient dynamic modelling and simulation of simulated moving bed chromatographic process with linear isotherms", *Chemical Engineering Science*, Vol. 53, No. 14, 2537-2546.
2. T. H. Yoon, I. H. Kim, "Chiral separation of loxoprofen racemate using SMB(Simulated Moving Bed) chromatography", Dept. Chemical Engineering Chungnam National University, Daejeon, Korea.(2003).