Aspen Plus와 Spreadsheets Program을 이용한 초산 탈수탑의 최적화 시스템 개발

신학철, 김정환, 이희석, 한종훈*
포항공과대학교
(chan@postech.ac.kr*)

The recovery process of acetic acid, which is used for TA (Terephthalic Acid) production process as a solvent has been studied and applied to the industries. However, it needs efficient energy consumption and the minimization of the loss of Acetic acid because the dehydration tower s one of the big energy consumers in the whole process. In this study, the system is developed to minimize the operating cost that is considered energy consumption of dehydration tower. The simulation model is formed to Microsoft Excel with Aspen Plus Simulation Engine. And it's also connected to real time process DB. In order to increase the accuracy of the model, physical property model parameters were regressed using the VLE (Vapor-Liquid Equilibrium) experimental data of acetic acid and water. The efficiencies of column unit were tuned for being adapted to reality using real process data. The objective function of the optimization consisted of the steam cost which is used in the reboiler, the profile of generated steam from the condenser and the amount of acetic acid in the distillate.