

Non-equilibrium Behavior of Batch Distillation of Binary Mixture

이명현, 유일환, 라인영, 정희석, 안은경, 안기철, 한원희†

동양대학교

(whhan@dyu.ac.kr[†])

We give a non-equilibrium theoretical analysis of batch distillation of binary mixtures of ethanol and water and compare it with a series of experiments of transient batch distillation of the binary mixtures. Transient mass and energy balances with a thermodynamic model are used to predict the time dependent top product composition and flow rate under a given heating condition to achieve the target ethanol concentration with minimum power consumption. The top products and the bottom products compositions are measured with high precision. The experimental results are compared with the computation results with experimental results. The common equilibrium analysis and the non-equilibrium analysis are compared.