Hydrodynamic Analysis for Dividing Wall Column with Sieve Tray using Computational Fluid Dynamics

Feng Wei, 구웬롱, Andika Riezqa, 김서은, 이문용[†]

영남대학교

(mynlee@yu.ac.kr[†])

Dividing wall columns (DWCs) effectively reduce the energy requirement by up to 30%, while also lowering the engineering and hardware costs compared to those of conventional direct and indirect distillation sequences. Although many advances in the design, simulation, operation and control of DWCs are well‒known, Computational Fluid Dynamics (CFD) studies and hydrodynamic analysis for such systems are few. In this paper, hydrodynamic analysis for DWC with sieve tray using CFD (ANSYS Fluent v16.2) is presented. The system air‒water in DWC was studied, analyzed and evaluated. The k‒epsilon RNG model was employed to solve the problem. The Tetrahedrons meshing method is used. The result was verified by HYSYS.