

### Simple modeling of Gravity sliding column (GSC) for VOC stripping

최수환, 노고산, 이재형\*  
한국과학기술원 생명화학공학과  
(jayhlee@kaist.ac.kr\*)

Legal restriction for VOC (Volatile Organic Compound) concentration in chemical products is getting stricter, due to its toxicity. To meet this restriction with classic VOC stripping processes, it costs huge amount of money. Therefore, an innovative way of VOC stripping is strongly needed. GSC, Gravity Sliding Column can overcome the limit of classic way as a new type of separation column. GSC has stages of inclined plates and liquid flows like a film on the surface of the plate. It counter-currently contacts with stripping gas to perform mass transfer. GSC can achieve the desired separation level with relatively small volume of the column. Also, it provides the obviously shorter residence time than other columns; it could be few seconds. This feature can make high quality polymers by reducing the thermal damage. In this research, we established the multi-stage model of GSC by describing VCM stripping in PVC production process with gPROMS, the simulation software platform. The data were fitted to experimental data to get unknown parameters. Through this model, we expect to reveal the key factor which affects separation ability. This could help finding optimal operation condition to accomplish high efficiency.