

### Design of FTCDC Column for LPG Process

황규석\*, UWITONZE Hosanna, Amit Goyal, Minchul Ha  
부산대학교  
(kshwang@pusan.ac.kr\*)

A fully thermally coupled distillation column is conceived and applied to a system of pretreated natural gas stream containing C3 through nC7. The design procedure, rigorous structural design, is stepped in two main steps: computation of the limiting requirements and rigorous simulation using material and energy balances. The results of the proposed design are compared with the design of a conventional two-column system (direct sequence); the comparison shows that the fully thermally coupled distillation column requires 34.4% less energy than conventional system. For the comparison of required energy cost, it is pointed out that the thermodynamic efficiency of fully thermally coupled distillation is higher than that of conventional distillation in the separation of the example ternary mixture considered.