

Profile Position Control of heat integrated distillation column (HIDiC) with external heat exchangers

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Heat integrated distillation columns (HIDiC) which adds or removes heat from an intermediate location in the stripping and rectifying section has been studied. Its high degree of thermal coupling takes a large influence on dynamic behavior of the column and poses a challenging control problems associated with the complex dynamic behaviors. The dynamic behaviors are characterized by high sensitivity to disturbances, strong asymmetric nonlinearity, and a distinct inverse response. A profile position control is proposed to cope with the control difficulties. The profile position in each section of the column is used as controlled variable and pressure difference the rectifying and stripping sections and feed thermal condition.