

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

Regarding the gravitational flow tank, this is not a complicated process. The change of the manipulated variable affected the controlled variable immediately in this system. This causes the cascade controller to control the liquid height of the tank better than the DMC since the IAE values of the cascade controller are smaller than the ones of the DMC.

With regards to the plug-flow reactor and CSTR, these systems are more complicated than the gravitational flow tank. The change of the manipulated variable does not affect the controlled variable immediately, but the change of the manipulated variable affected the controlled variable after 15 seconds. This causes the IAE value of the DMC to be lower than the one of the feedback control in the case of the disturbance of feed flowrate change.

In the case of the depropanizer column, it is a complicated system in which the change of the manipulated variable slowly affects the controlled variable. Compared to the cascade control system, the DMC controls the temperatures at trays no.6 and no.25 faster than the cascade control system with the changing of feed composition, feed flowrate, and setpoint of temperature of tray no.6. Moreover, the IAE values of DMC have a lower value than the cascade control. This shows that the DMC has a higher performance than the cascade control.