

Analytical Design of PI controller for Servo Optimal Control of Unstable First Order Process

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In this paper, the analytical design method is considered to find the optimal PI parameters for servo optimal control of unstable first order process with constraints. The objective function for the optimal design is to minimize both the rate of change of the manipulated variable and the controlled error for a given set-point change subject. The simulation results show the proposed method finds a global optimum point in an efficient manner and thus the resulting PI controller results in the optimal responses in any case. ACKNOWLEDGMENT This research was supported by Basic Science Research Program through the National Research Foundation of Korea (NRF) funded by the Ministry of Education, Science and Technology.

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