

Real-Time Implementation of Self-Tuning Fuzzy-PID Controller for First Order Plus Dead Time System Base on Microcontroller STM32

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Abstract : First order plus dead time (FOPDT) is a high dynamic system. Therefore, the controller must be intelligent. This paper presents the development and implementation of self-tuning Fuzzy-PID controller for controlling the FOPDT system. The water level process used represented FOPDT system and the mathematical model of the system was approximated by using System Identification toolbox in Matlab. The control programming and Fuzzy-PID algorithm used Matlab/Simulink and run on Microcontroller STM32.

Keywords : real-time control, self-tuning fuzzy-PID, FOPDT system, the water lever process

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