

## ABSTRACT

### *Design Fuzzy PI Control on Networked Control System*

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*The control system that often used and implemented is a direct control system. But the direct control system began to evolve into a indirect control system. This indirect control system can use the network as a connector between the user and the system.*

*Networked Control System is a feedback control system that is connected via network communication channel, which can be shared with the other nodes outside of the control system <sup>[4]</sup>. The control system that used the communication network is shared-networked control system and remote control system. Fuzzy PI Control is a combination of modern control method between algorithm of fuzzy logic control (FLC) and Proportional Integral control. The parameters of PI control that used to determine the characters of response system, determined by the value of  $K_p$  and  $K_i$ . And the value of  $K_p$ ,  $K_i$  is an output value from fuzzy logic. In this study, applied the method of Fuzzy PI Control with a remote control that combines with the concept of Networked Control System to control the water level on the water tank level as the plant*

*The result showed that the Fuzzy-PI Control on the water level control system that using the Networked Control System is influenced by the delay recieved dan delay delivered on the client server wich caused the influence on the respon system. The test results without Networked Control System with setpoint = 8cm obtained value of rise time = 126.2 seconds, settling time = 171.4 seconds, and overshoot = 0,026%. And the results of using Networked Control System with setpoint = 8 cm obtained value rise time = 189.203 seconds, settling time = 230.015 seconds, and overshoot = 0,026%. The differences of performance is caused by network delay on the set point = 8 cm is 0.17921675 seconds when using the Networked Control System.*

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*Keywords: Fuzzy PI Control, Networked Control System, Client Server, Water level.*