THE TEMPERATURE CONTROL SYSTEM DESIGN USING FUZZY LOGIC CONTROL IN SHIFT CONVERTER IN AMMONIA PLANT UNIT 1 PT. PETROKIMIA GRESIK

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Abstract
In the petrochemical industry, there is an ammonia plant that produces ammonia and carbon dioxide gas. Both of these raw materials is the main raw material in the manufacture of urea. One is a process in the manufacture of ammonia synthesis gas purification. Purification was carried out by way of conversion of CO gas that is in the synthesis gas. In this research, will be designed to shift converter temperature control using fuzzy logic control. Analysis of the performance of the High Temperature Shift Converter system that works optimally at a temperature of 360oC is settling time (ts) = 68 sec, rise time (tr) = 54.4 seconds, the delay time (td) = 34 seconds, maximum overshoot (Mp) = 13.56% and error = 2%. For Low Temperature Shift Converter that works optimally at a temperature of 200oC, the performance of the system is settling time (ts) = 110 sec, rise time (tr) = 88 seconds, the delay time (td) = 55 seconds, maximum overshoot (MOV) = 27 % and error = 2.15%. Based on the data validation, error for the simulated data HTSC error to 0.60% and 0.63% LTSC simulation data

Key words: Fuzzy Logic Control, delay time, rise time, peak time, settling time, error, maximum overshoot
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