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Ziegler Nichols Based Integral Proportional Controller for Superheated Steam Temperature Control System

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Abstract : In this paper, Integral Proportional (I-P) controller is employed for superheated steam temperature control system. The Ziegler-Nichols (Z-N) method is used for the tuning of I-P controller. The performance analysis of Z-N based I-P controller is assessed on superheated steam system of 500-MW boiler. The comparison of transient response parameters such as rise time, settling time, and overshoot is made with Z-N based Proportional Integral (PI) controller. It is observed from the results that Z-N based I-P controller completely eliminates the overshoot in the output response.

Keywords : superheated steam, process reaction curve, PI and I-P controller, Ziegler-Nichols Tuning
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