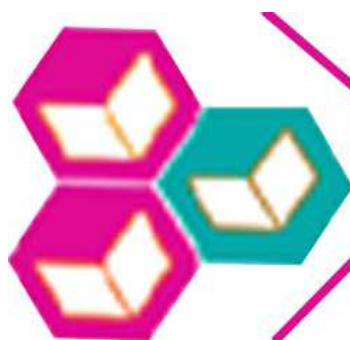# COMPARISON OF TUNING METHODS OF PID CONTROLLER

S. ANUSHA, G. KARPAGAM & E. BHUVANESWARRI

Student, Department of Instrumentation and Control Engineering,

Saranthan College of Engineering (Anna University), Trichy, Tamil Nadu, India

ABSTRACT

The basic objective of this paper is to find a better solution to nonlinear conical tank level process by the tuning of PID controllers. Since conical tank system is predominantly used nowadays in several industries to control of liquid level one of the important parameters and it needs to be controlled. The tuning here has been done using Ziegler Nicholas method (Z-N), Modified Z-N, IMC (InternalModelControl) and TL (Tyreus-Luyben) and CHR (Chien, Hrones, Reswick) methods to linearize the process and to make it attain high stability using these techniques. Also the supremacy of the chosen controller is tested for the various time integral performance criteria like ISE (Integral of the Square error), IAE (Integral of the absolute value of the error), ITAE (Integral of the time-weighted absolute error), and MSE (Mean square error). The above comparison has been done for Single Input Single Output System (SISO) for the conical tank model.

KEYWORDS: PID Controller, Tuning Methods, Error Criterions and Nonlinear Process