Abstract

In this work, two different types of controllers have been used: the first one presents the application of fuzzy logic for DC motor speed control using Adaptive Tabu Search optimization, and the second is Ziegler-Nichols methods for PID controller tuning.

A comparative study was done for two types of controllers: adaptive tabu search based tuning of fuzzy controller (Fuzzy-ATS) and Ziegler-Nichols methods for PID controller tuning to control nonlinear drive.

The work's main objective is to obtain the best performance of the system in both transient and steady-state response, represented by minimum settling time and minimum overshoot under various conditions such as changing load, speed, and both load and speed of the motor.
References


Index Terms

Computer Science Circuits and Systems

Keywords

Adaptive Tabu search, DC motor, Fuzzy Controller, Optimal Control.