Abstract

Fuzzy Logic with PID control (IFLC) has been applied for various applications which provide better performances compared to independent FLC, and PID. Although expert-system-based solutions are effective in controlling the processes, design of Fuzzy logic controller has traditionally been achieved through a process of trial and error. Such approach cannot obtain optimized FLC; more formal methods of knowledge base optimization are required. Genetic Algorithms (GAs) provide such a method to optimize the FLC parameters to globally optimum. In this paper, the FLC and the PID controller is optimally designed using the genetic algorithm. The effectiveness of the proposed approach (GAIFLC) is compared to a previous IFLC designed based on trial and error method and conventional PID controller for a three tank system. The simulation results of the proposed approach provide a satisfactory response in all means.

Reference

Index Terms

Electronics

Control Systems

Key words

FLC

GA

PID

Optimization

IFLC