Abstract

This paper implements a Particle Swarm Optimization (PSO) speed controller for controlling the speed of DC motor. Also traditional Proportional (P), Proportional-Integral (PI) controller have been developed and simulated using MATLAB/SIMULINK. The simulation results indicate that the PI controller has big overshoot, sensitivity to controller gains. The optimization with particle swarm verified the reduction of oscillations as well as improve the steady state error, rise time and overshot in speed response. The simulation results confirmed the system is less sensitive to gain.

References

2. Aziz Ahmed Yogesh Mohan Aasha Chauhan Pradeep Sharma Comparative Study of
DC Motor Drive with P, PI, and Particle Swarm Optimization Speed Controllers


Index Terms

Computer Science  Control Systems

Keywords

Practical Swarm Optimization (PSO), Proportional (P), Proportional-Integral (PI) controller, DC motor.