Artificial immune system based optimal fractional order PID control scheme for path tracking of robot manipulator

Publisher: IEEE

2 Author(s) Woorod A. Shutnan ; Turki Y. Abdalla **View All Authors**

Abstract

Document Sections

I. Introduction

II. The Dynamic Model of Robot Manipulator

III. Clonal Selection Algorithm (CSA)

IV. Conventional PID Controller

V. Fractional Order PID Controller

Authors

Figures

References

Keywords

Metrics

More Like This

Abstract: In this paper, an optimal fractional order PID controller is designed for path tracking of robot manipulator. Clonal selection algorithm (CSA) was used to optimize the pa... **View more**

Metadata

Abstract:
In this paper, an optimal fractional order PID controller is designed for path tracking of robot manipulator. Clonal selection algorithm (CSA) was used to optimize the parameters of fractional order PID and conventional PID controllers. To study the effectiveness of the optimized fractional PID controller, its performance is compared with conventional PID controller. Simulation results clearly show that the performance of fractional order PID is better than PID controller in achieving accurate tracking and good robustness.

Published in: 2018 International Conference on Advance of Sustainable Engineering and its Application (ICASEA)

Date of Conference: 14-15 March 2018 **INSPEC Accession Number:** 17807701

Date Added to IEEE *Xplore*: 04 June 2018 **DOI:** 10.1109/ICASEA.2018.8370949

ISBN Information: **Publisher:** IEEE

Conference Location: Wasit, Iraq