

## الاية

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

قال تعالى :

﴿ قَالُوا سُبْحَانَكَ لَا عِلْمَ لَنَا إِلَّا مَا عَلَّمْتَنَا إِنَّكَ أَنْتَ الْعَلِيمُ الْحَكِيمُ ﴾

سورة البقرة (٣٢)

# **DEDICATION**

To our mothers and fathers,  
Sisters and brothers,  
our teachers,  
and our colleagues

# ACKNOWLEDGEMENT

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# ABSTRACT

Proportional, Integral and derivative (PID) controllers a control strategy that has been successfully used over many years. Most widely-used controller in the industries because of their simplicity, robustness and successful practical application.

PID controller have many type (P, PI, PD, PID) is this research will study the design and theory of it.

Many tuning methods have been proposed for PID controllers. In this study will compare some of these tuning methods for step input with third order system with the aid of MATLAB and SIMULINK we extract the results and compare the result.

## مستخلص

المتحكممة التناسبية التفاضلية التكاملية (PID) هي استراتيجية تحكم تم تطبيقها بنجاح على مر السنين في نطاق واسع و ذلك لبساطتها ومتانتها و النجاح العملي عند تطبيقها.

للمتحكممة عدة انواع (P, PI, PD and PID) سنقوم بدراسة المتحكممة من حيث التصميم والنظرية.

اقترحنا العديد من الأساليب لضبط (توليف) وحداتها، في هذه الدراسة سنقوم بمقارنة بعض طرق الضبط لنظام من الدرجة الثالثة ومحاكته بمساعدة برنامجي (SIMULINK and MATLAB) واستخراج النتائج.

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## LIST OF ABBREVIATION

P	Proportional controller
PI	Proportional and integrator controller
PID	Proportional, integrator and derivative controller
PD	Proportional and derivative controller
PLCs	Programmable logic controllers