الآية

(رَبِّ قَدْ آتَيْتَنِي مِنَ الْمُلْكِ وَعَلَّمْتَنِي مِن تَأْوِيلِ الْأَحَادِيثِ فَاطِرَ السَّمَاوَاتِ وَالْأَرْضِ

أَنتَ وَلِيِّي فِي الدُّنْيَا وَالْآخِرَةِ تَوَفَّنِي مُسْلِمًا وَأَلْحِقْنِي بِالصَّالِحِينَ)

صدق الله العظيم

الآية ١٠١ من سورة يوسف

DEDICATION

To my mother and father, I will always be as you know me, and I will be always searching for new knowledge and science. I love you both as you supported me all the way to this day. I miss you all.

To my wife, I love you so much, and I will be with you for the rest of my life, as you have been supporting me through my studies. It was a tough year for us, but for the best. With all my love.

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ABSTRACT

Direct Current motor systems have played an important role in the improvement and development of the industrial revolution, making them the heart of different applications beside Alternating Current motor systems. Therefore, the development of a more efficient control strategy that can be used for the control of a DC servomotor system, and a well defined mathematical model that can be used for off line simulation are essential for this type of systems servomotor systems are known to have nonlinear parameters and dynamic factors, such as backlash, dead zone and Coulomb friction that make the systems hard to control using conventional control methods such as Proportional-Integral-Derivative controllers to evaluation the system performances specifications,thesespecifications parameters can be calculated and responses for different inputs can be compared with directly from MATLAB.

المستخلص

منظومات محرك التيار المستمر تلعب دوراً مهماً فى مجال تحسين وتطوير الثورة الصناعية و تعتبرالقلب النابض في مختلف التطبيقات الى جانب محركات التيار المتردد من اجل هذا الغرض فان التطوير والتنمية في معظم استراتيجية كفاءة التحكم تستخدم محرك التيار المستمر المسمى محرك المؤازرة والذى يمكن من استخدام النموذج الرياضى الصحيح والمحاكاة الجوهرية والاساسية فى مثل هذا النوع من المنظومات. منظومات محرك المؤازرة هى منظومات لا خطية لديها ثوابت لا خطية ومعاملات ديناميكية مثل رد الفعل العكسى والمنطقة الميتة والاحتكاك والتى تجعل هذه المنظومات بحاجة الى التحكم مستخدمة فى ذلك الطرق التقليدية وما يعرف بالمتحكم التناسبى التكاملى التفاضلى والمستخدم فى هذا البحث لتقويم مواصفات الادء او الاستجابة لمثل هذا النوع من المنظومات. حيث تمت مقارنة القيم الحسابية لهذه المواصفات مع القيم المستخرجة مباشرةً من بنامج ماتلاب.

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