



قال تعالى:

(اللَّهُ نُورُ السَّمَوَاتِ وَالْأَرْضِ مَثَلُ نُورِهِ كَمِثْقَاةٍ فِيهَا
مِصْبَاحٌ الْمِصْبَاحُ فِي زُجَاجَةٍ الزُّجَاجَةُ كَأَنَّهَا كَوْكَبٌ دُرِّيٌّ
يُوقَدُ مِنْ شَجَرَةٍ مُبَارَكَةٍ زَيْتُونَةٍ لَا شَرْقِيَّةٍ وَلَا غَرْبِيَّةٍ يَكَادُ
زَيْتُهَا يُضِيءُ وَلَوْ لَمْ تَمْسَسْهُ نَارٌ نُورٌ عَلَى نُورٍ يَهْدِي اللَّهُ
لِنُورِهِ مَنْ يَلْتَمِذُ يَضِيبُ اللَّهُ الْأَمْثَالَ لِلنَّاسِ وَاللَّهُ بِكُلِّ
شَيْءٍ عَلِيمٌ {35}).

صدق الله العظيم

سورة النور الآية (35)

DEDICATION

To my daughter Noor Ammar Mahmoud

ACKNOWLEDGEMENT

O my lord! So order that I may be grateful for thy favors, which thou has bestowed on me and on my parents, and that I may work the righteousness that will please thee.

I would like to thank all those who supported me and my family. Special thanks are due to my Supervisor/ Head of Electrical Engineering Department, Sudan University of science and technology: Dr. Awadalla Taiyfour Ali, for his support. I greatly express my thanks to my friend Mr. Mohammad Algazali Abdalrahem for his great support and ease of the difficulties.

ABSTRACT

Microcontrollers have been applied successfully to a wide range of practical problems. It has been shown that the performance of these controllers perform better than conventional controllers, especially when applied to processes with multi input multi output(MIMO) requiring more precision, as well as to reduce the human factor.

The main objective of this research is to design a monitoring and control system for storeroom temperature .Firstly, the system has been controlled using ATmega 16 microcontroller. Secondly, the system has been simulated using PROTEUS 7 professional software. Finally, the system has been implemented using printed circuit board (PCB) technology.

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المتحكمات الدقيقة طبقت بنجاح على مجموعة واسعة من المشاكل العملية. ولقد ثبت أن أداء هذه المتحكمات أفضل من أداء المتحكمات التقليدية، وخصوصا عندما تطبق على عمليات تتطلب مزيداً من الدقة، بالإضافة إلى تقليلها للعنصر البشري.

والهدف الرئيسي من هذا البحث هو تصميم نظم رصد ومراقبة درجة الحرارة لمغزّن. أولاً، تمت السيطرة على النظام باستخدام المتحكم ATmega 16. ثانياً، نُفذ النظام المحاكاة باستخدام برنامج Proteus 7 professional. وأخيراً، نُفذ النظام باستخدام تكنولوجيا اللوحات الإلكترونية المطبوعة.

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