



شبكة المعلومات الجامعية

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ



شبكة المعلومات الجامعية
@ ASUNET

جامعة عين شمس

التوثيق الالكتروني والميكرو فيلم

قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
علي هذه الأفلام قد أعدت دون أية تغييرات



يجب أن

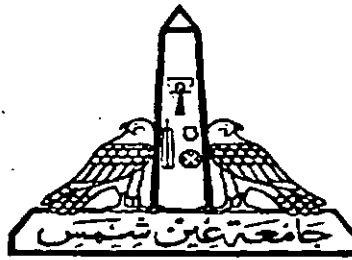
تحفظ هذه الأفلام بعيدا عن الغبار

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15-25- c and relative humidity 20-40%



شبكة المعلومات الجامعية التوثيق الالكتروني والميكرو فيلم



Ain Shams University
Faculty of Engineering
Design and Production Engineering Department

Applying PLC System on Machine Tools

A Thesis Submitted for the Ph. D. degree in
Mechanical Engineering
Production Engineering

By

Eng. Anmar Mohamed Nadiem Badleh
B. Sc., M. Sc. Mechanical Engineering

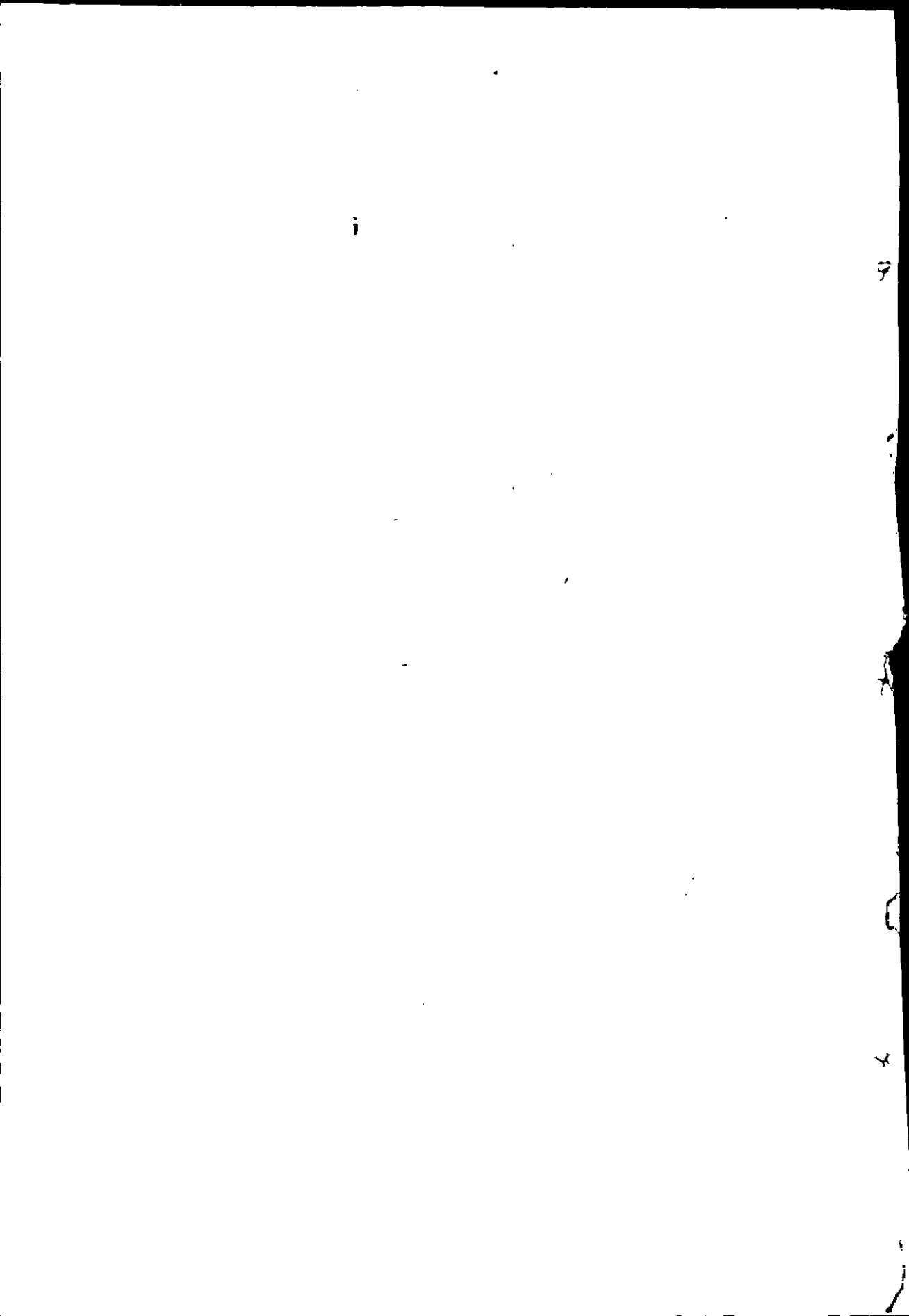
Presented to
Faculty of Engineering
Ain shams University

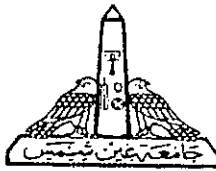
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CAIRO - 2000





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STATEMENT

This thesis is submitted to Ain Shams University for the Ph. D. Degree in Mechanical Engineering.

The work included in this thesis was carried out by the author in the Department of Design and Production Engineering, Ain Shams University.

No part of this thesis has been submitted for a degree or qualification at any other university or institute.

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ACKNOWLEDGMENT

I would like to express my thanks and appreciation to my supervisor ***Prof. Dr. Eng. Monir Mohamed Farid Koura*** for providing me with his plentiful science that helps me in completing this thesis.

I would also like to express my thanks to my assistant supervisor ***Dr. Eng. Mohamed Lotfi Atia Zamzam***, for his support.

I express my thanks to my mother, father and brothers for presenting their moral obligation and tangible support to finish my degree of doctorate.

Finally, I should like to express my thanks to my wife ***Nada Nasser Al Deen*** who helped and supported in the course of the thesis.

Chapter Two

In this chapter a complete experimental testing was designed. It contains the electronic, electrical and integrated circuits, which shaped the machine to be CNC machine. A full PLC, which was suggested in chapter three, is presented. It contains the same input and output devices, which are considered the same as in the industrial numerical control machine.

Chapter Three

This chapter contains the PLC software. It was developed based on controlling two drives X and Y. The chapter contains the bases of developing the software and the manual for using it. Systematically procedure is shown.

Chapter Four

Chapter Four contains the steps, which were followed for the sake of controlling the machine tool by using the hardware and software discussed in chapter 2, 3. Full experimental example (case) was done. The program was edited, operated and executed through the PLC. The results are given.

Chapter Five

This chapter includes the design of the simulating software to simulate the execution of the PLC. It is written in Visual Basic. The bases of designing the software are based on the main criteria given in appendix "A" and on the ladder principles. In this program input and output devices were presented.

Chapter Six

Chapter Six contains the general conclusions, which were drawn from the work. The simulating software proved very successful and can be used in following up execution of the program. This is considered very helpful in training, education and diagnostic purposes. Again the PLC can be used to control machine tools.

