COMPUTER CONTROL OF BATCH PROCESS PLANT
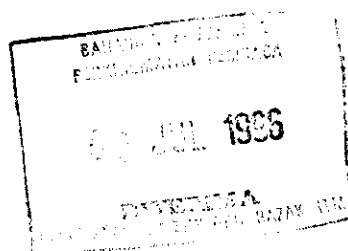
(SOFTWARE AND HARDWARE DEVELOPMENT)

Thesis is presented in partial fulfilment for the award of the
Advanced Diploma in Electrical Engineering of
INSTITUT TEKNOLOGI MARA

Bahagian R......... & .... Pembaca
Per........ ....ak
....A

EA.....
F.....

1996

ABD. SHUKOR BIN KELINNG
Department of Electrical Engineering
INSTITUT TEKNOLOGI MARA
40450 Shah Alam
JUN 1996

Abstract

This project looks up mostly in which more enhanced computer control can be provided in the batch process plant. The competitive pressure in batch process plant production and difficulties in planning and control all call for improved design of batch process plants and provide an incentive for application of computer-aided methods. Personal computer is being used in data acquisition and control boards. The plant is simulated by using stepper motor where the motion or rotation of the motor can be controlled by the computer. The interfacing boards are inserted into the computer bus slots and linked with the selected plant which is simulate by using stepping motor.

ACKNOWLEDGMENT

In the name of Allah, the Beneficent and the merciful, I would like to express deepest gratitude to my project advisor, Dr. Yusof bin Md. Salleh who deserves most credit for his continuous inspiration and guidance in giving ideas and assistance in this project.

My gratitude also goes to Encik Ahmad Jamal bin Salim and Encik Uzir bin Kamaluddin for their guidance and willingness in sharing knowledge, ideas and sources of information towards the accomplishment of this project.

Special thank for project co-ordinator, Encik Mohd. Zaini bin Jamaluddin for his continuous information and support. Also thanks to my classmates and friends for their suggestions and contribution to this project.

Abd. Shukor bin Keling

INSTITUT TEKNOLOGI MARA

Shah Alam

Selangor

COMPUTER CONTROL OF BATCH PROCESS PLANT

(SOFTWARE AND HARDWARE DEVELOPMENT)

CONTENTS	Page No

CHAPTER 1

1.0 INTRODUCTION

Batch process requires sequential, continuous and supervisory control to effectively control total plant production. Although these control functions may be performed in control facility, increased reliability and flexibility can be achieved by distributing the control responsibility throughout the system.

Process industry in our time has experienced plenty of changes in its technology to improve the productions especially in chemical and food industries by reducing the plant operating as well as by improving the production efficiency[1]. The process industry has been divided into main categories[4] :

   a) Continuous process
   b) Batch process

As continuous processes are much easier to standardize and optimize than the batch process, the control system for the process has always well ahead. However, recent