POSITION CONTROL SYSTEM
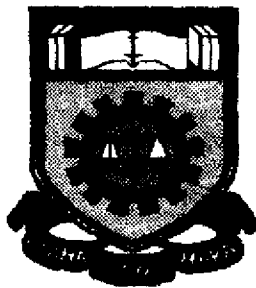
(HARDWARE AND SOFTWARE DEVELOPMENT)

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ABSTRACT

In certain batch process plants, there are needs to control a liquid level to a required level precisely. A device such as level controller will continuously monitor and control the level according to the position of the liquid level sensor. This project is about controlling the position of such sensor vertically moved, represents the required level. A simulator program will simulate the level controller either increasing or decreasing by controlling inlets or outlets respectively, until the requested level is met. At the same time an animated tank status in a form of liquid level is displayed in order to show the liquid level progress. The plant is simulated by using stepper motor where the motion or rotation of the motor can be controlled by computer.

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CHAPTER 1

INTRODUCTION

1.1 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 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 two main categories [3]:

a) Continuous process
b) Batch process

As continuous process, it is much easier to standardize and optimize than the batch process, the control system for the process has always well ahead. However, recent development shows a renewed interest in batch process for a variety of reasons. The main reason is that the batch process offer flexibility in producing multiple products in a single plant through plant sharing and in doing so, it is more economical.

Continuous process is often regarded as the mass production of an industry. A product is made by passing it through different pieces of specialized equipment, operates in a single steady state and performs one dedicated processing function