

**RETROFITTING PLYWOOD CUTTING MACHINE  
CONTROLLER USING PROGRAMMABLE LOGIC  
CONTROLLER (PLC)**

**This thesis is presented in partial fulfillment for the award of the  
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## **ABSTRACT**

This thesis present the technique of replacing the conventional relay system with the PLC system by using OMRON CPM1A-40CDR. The control programs employ ladder logic and transform into logic codes via RS232C cable. This will interfaced with the process that does the task of cutting the plywood. The PLC process will be read by QBasic program and then display the process at the screen. Cutting is done using a knife that powered by motor. The size of plywood is according to user selection. This information's are then transfer to decoder to read the rotation of the motor.

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# CHAPTER 1

## INTRODUCTION

### 1.1 Project Background

This project is a joint ventured project between FKE student and Ahmad Bongsu Engineering in Shah Alam. This project is based on machine from Ahmad Bongsu's workshop. The machine is a plywood cutting Machine.

According to Mr. Ahmad Bongsu, the controller of machine system was obsolete, bulky, requires more space, difficult to maintained, rigid and very costly.

The existing controller uses conventional relays and contactors. This controller system using many components such as relay, external timer, external counter and also massive wiring. This system is difficult to maintain due too many component are involved.

To resolve the problems, retrofitting plywood cutting machine controller using PLC project was proposed. This operation of the system is automated by using the "Programmable Logic Controller". The operation remains the same but it uses less component.