

**DESIGN AND FABRICATE A MODEL FOR SORTING  
METAL AND NON-METAL RUBBISH**

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## **ABSTRACT**

This project focuses on the design and fabrication of a sorting device. The function of a sorting device is to separate the metal and non-metal rubbish. This application is suitable for a recycling process. The main component used in this project is the conveyor. A chain conveyor is selected because it is versatile, and it can be used for light and heavy-duty applications. The sorting device is designed to be robust.

Other components used are the electrical elements such as the electric motor, proximity sensor and solenoid. The electric motor is used to drive the conveyor and arm. When the proximity sensor detects a metal rubbish, the solenoid will pick up the metal rubbish. The solenoid is located at the end of the arm.

The design of the sorting device starts from a 3-D design using computer-aided design application. After the 3-D conceptual design is completed, the fabrication started. The fabrication process involved various manufacturing processes such as welding, drilling and bending. The interfacing will be done after the fabrication process has completed. The interfacing process integrates the sorting device to the PLC. The PLC programming is used in this project to control all the movements and sequences of the sorting device. This project involved multi-disciplinary application such as mechanical, electrical and programming.

## TABLE OF CONTENTS

<b>CONTENTS</b>	<b>PAGE</b>
PAGE TITLE	i
ACKNOWLEDGEMENT	ii
ABSTRACT	iii
TABLE OF CONTENTS	iv
LIST OF TABLES	v
LIST OF FIGURES	vi

### CHAPTER 1 INTRODUCTION

1.1	Overview	1
1.2	Background of Project	2
1.3	Problem Statement	2
1.4	Objective	3
1.5	Significant Project	3
1.6	Scope Project	4
1.7	Methodology	4
	1.7.1 Literature Research	4
	1.7.2 PLC Programming	5
	1.7.3 Design of Model	5
	1.7.4 Fabricate and Interface the Model	5
	1.7.5 Trial Runs (Testing)	6

## **CHAPTER 2 LITERATURE REVIEW**

2.1	Introduction	7
2.2	Review of recycling rubbish process	7
2.2.1	Recycling process are used by Green Recycle Limited at United Kingdom (UK)	8
2.2.1.1	Paper and Card	8
2.2.1.2	Plastics Steel and Aluminum	9
2.2.3	Recycling Process used by Lambeth Council's services in London	10
2.3	Review of Conveyor	11
2.3.1	Belts Conveyor	11
2.3.2	The Belts Conveyor Structure	13
2.3.3	Chain Conveyor	13
2.3.4	The Chain Conveyor Component	14
2.3.4.1	Chains	14
2.3.4.2	Sprockets	15
2.3.4.3	Slat Attachments	15
2.3.4.4	Slats	15
2.3.4.5	Conveyor speed	16
2.3.4.6	Chain Pitch and Slat Size	16
2.3.5	The Chain Conveyor structure	17

## **CHAPTER 3 AUTOMATION AND PROGRAMMABLE LOGIC CONTROLLER (PLC)**

3.1	What is Automation?	18
3.2	History of Automation	19
3.3	The Advantages and Disadvantages of Automation System	20
3.3.1	The advantages of Automation System	20
3.3.2	The disadvantages of Automation System	20
3.4	What is PLC?	21