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 versatile, and it can be used for light and heavy-duty application. 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 is detects a metal rubbish, the solenoid will to 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 has completed, the fabrication started. The fabrication process involved the various manufacturing process 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 movement and sequences of the sorting device. This project involved multi disciplinary application such as mechanical, electrical and programming.

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