



**STUDY OF METAL DETECTION SYSTEM
PERFORMANCE USING INDUCTIVE
PROXIMITY SENSOR**

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ABSTRACT

A metal detection system is used widely in numerous industries for various purposes including segregation. In this project, a metal detection system for sorting purpose is developed using the Arduino Uno microcontroller. The aim of this project is to study the performance of metal recognition system by using the inductive proximity sensor. The sensor is implemented on the conveyor belt for the metal detection along with the other hardware components such as infrared (IR) sensor and micro servo motor. Then, the system will identify the materials using the sensors to segregate them based on their respective categories. A complete circuit of the system is mounted on the Arduino Uno board and a few experiments were done to verify the performance of the model. Analysis of the results show the maximum detection range for the inductive proximity sensor is 4 mm for ferrous metal such as mild steel. The accuracy test also been done for other types of metal to study the detection range and the performance of the system.