ABSTRACT

Name	:	*Restu Nur Fauzi*
Study Program	:	*Electrical Engineering*
Title	:	*IoT (Internet of Things) Based Metal and Non-Metal Goods Monitoring System with HMI (Human Machine Interface) Weintek on Conveyor Belts*

Food contaminated with metal can be harmful to the health of the human body. Therefore, a system is needed that can monitor and sort the food automatically. This research aims to create a prototype food sorting system containing metal and non-metallic goods on conveyor belts using PLC, and monitored using an HMI connected to the internet, so that it can be accessed through Weincloud for IoT-based monitoring. The system consists of metal detector sensor, photoelectric sensor, pneumatic system, CP1E PLC, HMI Weintek cMT-2078X, and others. The test results of the system showed that the conditions between foods such as metal-metal, nonmetal-nonmetal, metal-nonmetal, and nonmetal-metal were optimally the minimum density distance for the system to be able to accurately detect these foods without any detection errors being at a distance of 1 cm. QoS testing shows the overall value is in the "Less Good" category.

Keywords: *HMI, IoT, metal and non-metal, metal detector, PLC*