ABSTRACT

Sukawana CTC (Crushing, Tearing and Curling) black tea factory is one of PTPN VIII's factory in Bandung barat, West Java. It has production capacity until 2.5 ton of dry tea a day. It has been established in 1980 with semi automatic production system. Sortir and grading workstsion is one part of six workstasions in Sukawana factory. It has function to sortir black tea from the fibres or other small particel and grading black tea to some standar grade quality.

Sortir and grading tea must be done carrefully. If in processing has occured mistake, it will be make bad quality. Nowadays, sorting and grading process in this factory needs many employers, Mistaken has been done that human error factor. It cause sorting and grading not perfectly processed.

This research made to design a tool which can monitoring sorting and grading process and controling it automatically using Human Machine Interface (HMI) and Programmable Logic Controller (PLC). There are five main steps to desain this system, They are identification step, analisis step, creative step, system design step, and sumarry step. The identification step is first step in designing system include take the problem according by objectives that want be got using literature study and field study. Analyze the process and design the model automation is the next step. Design and testing the system model to hope that system is completelly sucess and can be implemented ang the last is take the result.

Result from this research are monitoring and controlling system in sorting and grading station was sucessfully designed and make the system more flexible and can remote from other area.

Key Words : *Human Machine Interface* (HMI), *Programmable Logic Controller* (PLC), CTC (*Crushing-Tearing-Curling*), sorting and grading, monitoring and controlling.