# ABSTRACT

*One of the processes that have a major influence in determining the quality of tea is the grinding process. The process of material tranfer that is not maintained well between machines in the milling process leads to waste of time, and the thickness is of the powder not maintained so the sifting process is not optimal. To perform material movements between machines on the milling process, required an average time taken was 2 minutes, the time that used for movement is a waste that can make the process time become more long so to relieve it that there is a need of an existence of material handling in the form of conveyor which can make the process become continue and decrease moving times and help to keep the process of material transfer between machines in the milling process. To design an appropriate conveyor to the milling process required a method that can provide the design according to the needs. By using rational product design process through several stages of clarifying objectives, setting requirements, Determining characteristics, generating alternatives and evaluating alternatives. Rational methods can help peroses design becomes systematic and targeted so that the result will be in accordance with the needs of the user. The results of this design in the form of conveyor to conveyor path length of 21.5 meters, with a height of 9.75 meters and a conveyor end early high (input) 3,75 m conveyor, conveyor width 50 cm, and the slope of the conveyor is 27$^o$ with the conveyor automation system created using siemens S7-1200 PLC and equipped with Human Machine Interface to simplify the process of monitoring and controlling the plant.*

**Keywords :** *Conveyor, Rational Product Design, Automation, SCADA, Black Tea Orthodoks.*