

## ABSTRACT

*Until 2020, logistics industry in Indonesia is one of the industry sector which has high level in development and will raises up until 15,4 % or equivalent 4.396 trillion rupiah's. Automation is required in order to maximize distribution and storage in logistic sector. One of the things that can be do is automation in the material handling process of mobile robot which can operated without the operator. This mobile robot uses Visible Light Communication (VLC) technology that can be implemented as a navigation system, so it can replace GPS that does not work optimally in the indoor.*

*This research is to design mobile robot motion control system on VLC based navigation system. Navigation coordinates will be transmitted by modulated the navigation coordinated in visible light which come from lighting system. Furthermore, photosensor as the receiver will transform the light intensity into electric current. Then, information signal contains navigation coordinates that have been received by the receiver will be processed by controller and will be used as input of driver motor to control speed and direction of DC motor.*

*System in this research has feedback in the form of rotation speed which will be processed by controller to determine command that wil be executed by actuator. Results of this system is the accuracy of the mobile robot control system is achieved 100% of 30 times test which done when given mobile robot command to move straight. When mobile robot given move to the right command, mobile robot only has accuracy rate about 63%. While on the move to the left command, accuracy rate of mobile robot movement control is decreased about 23%.*

**Keywords** : *Visible Light Communication, navigation system, and mobile robot movement control.*