

# ***DESIGN OF LIGHT TRAP DEVICE FOR PLANTHOUSE PESTS AND BIRD REPELLENTS ON RICE PLANTS USING IOT-BASED SOLAR POWER GENERATION***

**M. Ridho Afani**

*Electrical Engineering Study Program, Faculty of Science & Technology  
University of Technology Yogyakarta  
Jl. Ringroad Utara Jombor Sleman Yogyakarta  
E-mail : [Ridhom289askj@gmail.com](mailto:Ridhom289askj@gmail.com)*

## ***ABSTRACT***

*Solar power plants (PLTS) are one of the renewable power plants that have great potential for use in the future. By utilizing sunlight, photovoltaics work to convert sunlight energy into electrical energy. The main problem in the agricultural system in Indonesia is the brown planthopper pest which can reduce the quality of rice and bird repellent which can reduce the quantity of rice. In this study, the research will build a light trap for brown planthopper pests and bird repellent based on IoT. This system will automatically turn on the light trap at 18.00-06.00 WIB and the servo motor at 06.00-18.00 WIB. The success rate of 100% of the 2 system control tests can operate according to time and can be controlled using the blynk application. Based on the test results, PLTS is used as an energy source by utilizing batteries through a charging system using solar panels during the day, then at night the battery is used to turn on the light trap. Measurement of battery usage in real time and determining the output parameters of voltage, ampere and power. NTP testing was carried out with time system parameters having an accuracy level of 100% and PIR 1 sensor on the system was able to detect with an accuracy level of 83.3% and PIR 2 with an accuracy level of 91.6%.*

***Keywords:*** *PLTS, Bird pests, brown planthopper pests, IoT.*