

ABSTRACT

The current processing of organic waste causes exhaust gas from diesel shredding machines and shredding machines that still use PLN electricity to cause carbon emissions that can pollute the air. This research aims to design and make a prototype of a solar panel-based organic waste chopping machine with IoT technology integration to overcome carbon emissions from diesel chopping machines and PLN electricity that are not environmentally friendly. This machine uses a 30 watt 12 volt DC motor with a maximum speed of 3500 RPM and is equipped with a Blynk-based monitoring system for real-time control and monitoring. Tests show the performance of the components, including the INA219 sensor and load cell, with low error rates. The machine is capable of producing 23.96 kg/hour of grape leaves, 20.18 kg/hour of ketapang leaves, 19.93 kg/hour of kersen leaves and 21.6 kg/hour of grape leaves with an efficiency of 94.22% for grape leaves, 93.09% for ketapang leaves, 95.17% for kersen leaves and 94.84% for mango leaves. The portable power station takes 15 hours to fully charge and is able to supply load for 18 hours. The blynk application is effectively used up to a distance of 9 meters before disconnection occurs.

Kata Kunci: *Iot, Shredder, Solar Panel, Organic Waste.*