

ABSTRACT

Trash is a serious problem for humans. Moreover, the trash accumulates on the surface of the water. It can cause water contamination, bad smell, flood, etc. The solution to this problem is to make a tool to make it easier to clean floating trash. That's why the Trash Boat was made. In the Trash Boat, alternative energy is needed to help the energy source in that thing. Alternative energy was implemented using solar cells that are connected to solar charger controller. The energy in the Trash Boat is managed using a relay that automatically changes according to the voltage value obtained by the voltage sensor. In addition, it can also maintain the battery longer because of the alternative energy that prevent battery from overdischarging. Trash Boat users can find out the main battery capacity by looking at the battery voltage value displayed on the transmitter. When the battery voltage has more than 12.4 volts, then the battery is fully charged. Then when the battery voltage is less than 12 volts, then the battery capacity is in the lowest state. Charging the backup battery takes about 4 hours at a speed of 0.0375 every 15 minutes. Trash Boat can operate for 5 hours, then will add 1 hours with spare battery that help main battery to electric power supply Trash Boat.

Keywords: solar cell, alternative energy, relay, electric voltage, Trash Boat