

**PERANCANGAN *CHARGING SYSTEM BATTERY*  
AUTOMATIC 48 VOLT BERBASIS ARDUINO UNTUK  
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**ABSTRACT**

*A battery is an electronic device that can store voltage and electric current. The battery is an important component in a vehicle, but the battery cannot release energy continuously. Therefore, the battery charging device in this study uses SMPS (switch mode power supply) because it is more efficient. In the controller device, a microcontroller plays a role in regulating the relay as a breaker which is controlled by Arduino Uno by using a sensor circuit as a parameter, so that the battery does not experience excess voltage when charging. In this study, the method used is experimental, which compares the charging time between the charging voltage of 53.5v and 51.1v. The data obtained from the results of the study indicate that the length of time it takes to charge the battery with a charging voltage of 53.5v takes 2 hours, while it takes 2.5 hours to charge the battery with a charging voltage of 51.1v.*

**Keywords:** *Switch Mode Power Supply, Arduino Uno, Sensor, Relay*