

***Manufacturing of Lithium Ion Battery Life Cycle Detector With Voltage Sensor Based on Arduino Uno***

*by*

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**ABSTRACT**

*Lithium-ion batteries are superior in terms of efficiency and high power density, which allows them to be designed to be lighter and smaller in size and weight. Other advantages of lithium-ion batteries include being able to operate in a wide range of temperatures, fast charging capability, no memory effect, relatively long cycle life and low self-discharge rate. In this case the research plans to make a battery life cycle detector using an Arduino Uno-based voltage sensor. The research was carried out at the Jember State Polytechnic Automotive Machinery Laboratory. Implementation time in February 2022 - September 2022. The method used is the experimental method by testing the discharge of lithium-ion batteries. Tests in this study include the time and battery voltage at the time of discharge. After that, data analysis was carried out. A lithium-ion battery life cycle detector using Arduino Uno has been successfully built and can discharge automatically and monitor voltage, current, time. The test results show that in 15 experiments the data obtained are the average battery used is 298 minutes or 4.96 hours, the voltage is 3.31 V, the current is 0.32 mA, the battery capacity is 1.52 mAh, and the power is 1.08 Watt. The larger the battery capacity stored in a battery, the longer it will take to discharge*

**Keywords:** *Lithium-Ion, Cycle Life, Voltage Sensor, Arduino uno*