

# ***Design of Life Time Prediction System on Microcontroller Based Motorcycle Valve Regulated Lead Acid Battery***

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## **ABSTRACT**

*This study aims to design a battery life time prediction system tool by comparing the accuracy of the design tool with monitoring tools on the market using actual tools as a reference and predicting battery life based on an increase in battery temperature. The results of the comparison between the design tool and the monitoring tools on the market for measuring temperature values are the design tool accuracy value of 99.57% with a difference of 0.12°C, while the temperature accuracy value for the monitoring tool is 95.02% with a difference of 1.4°C. In measuring the voltage value for the design tool it has an accuracy of 99.56% with a difference of 0.015 V, while the accuracy of the voltage value for the monitoring tool is 97.29% with a difference of 0.368V. In addition, the design tool also measures the current in the battery with an accuracy of 99.23%. The results of the service life prediction are the design life time of the battery, which was initially 5 years at 20°C, will decrease to 1 year and 8 months because the battery temperature increases to 34.98°C.*

**Keywords:** *Life time prediction system, VRLA battery.*