

***Charge And Discharge Testing Of Lithium-Ion Batteries In Electric Vehicles
Based On Load Variations***

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ABSTRACT

This study aims to determine the variation in the loading of people 50 Kg, 60 Kg, 70 Kg can affect the distance and the length of time the battery is used when discharging with speed parameters of 20 Km/Hour and 35 Km/Hour. The method used in this study is the experimental method, conducting road tests in the campus area University of Jember with 3 variations of the rider's load at different speeds. The data obtained from the test results are in the form of speed, distance traveled, time, voltage, current, duration of battery charging. After that, an analysis of the data that has been obtained is carried out to answer the research objectives that have been made. In testing with a speed parameter of 20 Km/Hour the following results were obtained, at a load of 50 Kg it covered a distance of 17.62 Km in 52.21 minutes, at a load of 60 Kg it traveled a distance of 16.47 Km in 48.02 minutes, at a load 70 Kg covers a distance of 14.45 Km in 44.37 minutes which is the shortest distance from the research results. While the test with the speed parameter of 35 Km/Hour gets the following results, at a load of 50 Kg it travels a distance of 19.08 Km in 35.19 minutes which is the farthest distance in this study, at a load of 60 Kg it travels a distance of 18.95 Km in a time 32.62 minutes, at a load of 70 kg, it covers a distance of 17.82 km in 29.24 minutes.

Keywords : *Electric Bicycle, BLDC, Lithium-ion 18650, Charging, Discharging*