

# **Durability Test of Parallel Series Lithium Ion Batteries in Electric Vehicles**

by

**A. Riski Risaldi**

*Study Program of Automotive Engineering, Majoring of Engineering  
The State Polytechnic of Jember*

## **ABSTRACT**

This study aims to determine the lithium-ion battery against the variation in loading during the discharge / charge process and also to determine the real capacity of the lithium-ion battery against the variation in loading given. This research was conducted in March – June 2022 at the PT Manufaktur Dynamic Indonesia (MDI) Workshop in Oktak River, Karangrejo, Jember Regency. This research is also to find out the time required for the charging process on the battery used. The method used is the primary data method of lithium ion batteries in electric vehicles. The tests carried out on electric vehicle durability tests are testing the initial voltage, final voltage, current, charger length, distance, speed produced. In the test, the two best data were obtained, namely the first best test data electric current with a voltage of 81.1 Volts (initial voltage), 72 Volts (final voltage), 12.2 (Current), 60 minutes (charger length), 11.5 (distance), 35 km / h (Speed). While in the best data to the two electric currents with a voltage of 80.5 (initial voltage), 71.5 Volts (final voltage), 12.5 (Current), 59.5 minutes (length of charger), 11.4 (distance), 35 km/h (Speed).

**Key word:** *Electric Vehicles, Lithium ion Batteries, Durability*