ANALYSIS OF THE USE OF ALUMINUM ANODE 1100 AND ALUMINUM 5052 WITH ELECTROLYTE VARIATIONS KOH DAN H_2SO_4 ON THE PERFORMANCE OF ALUMINUM-AIR BATTERIES

By

Bayuaji Baskara Putra Wibowo

Study Program of Automotive Engineering, Majoring of EngineeringThe State Polytechnic of Jember

ABSTRACT

This study aims to analyze the performance of aluminum-air batteries using 1100 aluminum and 5052 aluminum anodes using 50% KOH and 50% H2SO4 electrolyte solutions, with testing in the form of voltage and current measurements. Voltage and current measurements are carried out every 10 minutes for 1 hour with 5x testing and for current measurements using a 5W7Ω5J resistor. This study results that with the anode of 1100 alumnium material, if the voltage is sorted from highest to lowest according to the variation of the electrolyte solution, it is using KOH (1.28 V) and H2SO4 (1.09 V) solutions. For the 5052 aluminum anode is a solution of KOH (1.31 V) and H2SO4 (1.08 V). As for the current if sorted, for the 1100 aluminum anode is a solution of KOH (11.83 mA), and H2SO4 (2.88 mA). And for the 5052 aluminum anode is a solution of KOH (17.56 mA) and H2SO4 (2.38 mA).

***Keyword** : Aluminium – air battery, Aluminium 1100, Aluminium 5052*