

# **ANALYSIS OF POWER RESISTANCE AND ELECTRICITY RESISTIVITY OF VARIETY OF IMMERSION COOLANTS AS SUPPORT OF ELECTRIC VEHICLE BATTERY COOLING**

by

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## ***ABSTRACT***

This study aims to determine the value of resistance power and resistivity of various immersion coolant as a support for cooling electric vehicle batteries with a Wheatstone bridge and conductivity meter as a method of collecting data on variations in the volume of various immersion fluids. The data collection used in this study was the first using a Wheatstone bridge, each variety of liquid (VCO, Corn Oil and Liquid Pc Ice Coolant) was varied (100 ml, 150 ml and 200 ml), with Ra (3.290  $\Omega$ ). The results of this study indicate that in this study, the electrical conductivity of the immersion liquid with VCO resistance (100 ml, 150 ml and 200 ml) was 194.110  $\Omega$ , VCO resistance (100 ml, 150 ml and 200 ml) was 194.110  $\Omega$  and resistance VCO (100 ml, 150 ml and 200 ml) was 194.110  $\Omega$ . Liquid pc ice coolant volume of 100 ml is 9.870  $\Omega$ , 150 ml volume is 16.450  $\Omega$  and 200 ml volume is 36.190  $\Omega$  and for measuring the electrical conductivity of various types of cooling immersion fluids with the first conductivity meter, VCO (virgin coconut oil) with a volume of 200 ml obtained a resistivity value of 0 us/cm, the second was Corn Oil with a volume of 200 ml, a resistivity value of 0 us/cm was obtained and the third Liquid Pc Ice Coolant with a volume of 200 ml was a resistivity value of 4 us/cm. the table shows that the resistivity values of the three liquids are the largest, namely Liquid PC Ice Coolant 4 us/cm and the lowest resistivity values, namely VCO and corn oil, are equal to 0 us/cm. So it can be concluded from the various cooling immersion liquids studied that the resistance value of VCO (virgin coconut oil) and corn oil is obtained the same value, although the volume is different, while the resistance value of Liquid PC ice coolant is lower and the large volume greatly affects the resistance value. The more the volume, the greater the resistance value.

Keywords : Resistivitas, Resistivity, Jembatan wheatstone, Conductivity Meter, Virgin Coconut Oil, corn oil, Liquid Pc Ice Coolant.