DESIGN DEVELOPMENT OF 12V LITHIUM ION BATTERY CELL CONDITION MONITORING INDICATORS

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ABSTRACT

Electric vehicles are one solution to the problem of pollution and global warming. The main component of electric vehicles is the battery. In general, electric vehicles use lithium ion batteries. Lithium ion batteries have a maximum voltage of 4.2 volts, so when applied to electric vehicles you have to assemble the lithium ion battery according to what is needed by the electric vehicle. In this research, the author will carry out design tests for battery cell condition indicators to find out what the results are. the final condition of the type 18650 lithium ion battery cells which are arranged in 3 series and 5 parallels, at the specified discharge and charge times. Therefore, the author would like to raise a research topic entitled "Design Development of 12V Lithium Ion Battery Cell Condition Monitoring Indicators" The lithium ion battery used has a voltage of 3.7V and a capacity of 2500mAh, the battery discharge uses a 20W resistor load for 1 hour and 12V 2A charging. To find the voltage and current values, use the PZEM-017 sensor, while to find the temperature, use the NTC Thermistor sensor. The output of these two sensors is then processed on the Arduino board and then displayed on the 16x2 LCD in the form of voltage, current and temperature in real time.

Keywords: *Lithium Ion Battery, Voltage, Current, Temperature.*