

## **ABSTRACT**

*Accumulator is the most important device in supporting vehicle electrical system. This is because the accumulator has a function as a supplier of electric current and as a support system of lighting, starter, ignition, and accessories such as tape and television in the car. So, it needs to control and maintain condition of the accumulator. On a accumulator, there is an additional parameter to consider in monitoring the condition of the accumulator, one of which is the position of liquid accumulator in each cells. The position of liquid accumulator should located between upper and lower level. If the loquid is under the lower level it will damage the cells but if the liquid is above the upper level it will allow the liquid to overflow.*

*The objective of this final project is to design and create device that can help users to monitor the accumulator liquid. This device monitors the voltage value that is generated by the poles of accumulator and the level of accumulator liquid in each cells. The voltage will be incorporated into the voltage divider circuit and will be connected to the ADC pin microcontroller. The liquid level is obtained by inserting three metal lead in which the first metal lead connected to VCC, the second as a sign of upper level limit and the third as sign of lower level limit. If the second metal have voltage that means the position of the water exceeds the upper level. If the second metal haven't voltage and the third metal have voltage that means the position of the water on between the upper level and lower level. If the second and third metal haven't voltage that means the position of the water is under the lower level. Each input will be entered the microcontroller and the microcontroller will display the accumulator voltage and liquid accumulator level in each cell via LCD.*

*The system consists of a voltage divider block, comparator block and ATmega8535 minimum system block can run well. It is characterized by each block can work if be integrated. In ADC testing, LCD can display the real voltage value of accumulator about 11,82 volt. In liquid accumulator level testing, there are 7 from 10 success testing. So, the success rate is achieved 70 %. So this device can be used by users to know the voltage value and accumulator liquid level in each cells.*

*Key words: voltage, lead metal plates, a microcontroller, LCD*