

## **ABSTRACT**

The application of electronic technology in human life has produced variety of appropriate technologies that can help people to solve the problems that arise in everyday life. It's often we hear there is a rider who has run out of fuel while on a trip just because of forgetting to refuel the vehicle or due to the volume of the fuel panel on the vehicle is damaged or inaccurate. Moreover, if the rider is at a city or county he does not recognize, then the rider will be in trouble finding and determining the refueling point (gas stations) located closest to his position.

In this thesis designed a warning system on running out fuel level of vehicle and the nearest gas station finding system by utilizing GPS technology in smartphones android. To do the reading volume of fuel, designed a cylindrical capacitive sensor which made of solid aluminum and hollow cylindrical aluminium.

After doing research and testing, resulted capacitive sensors which capable of reading several volumes of liquids, such as gasoline with an error of 7.22%, diesel with 5.37% error , lubricating oil with 4.63% error, as well as cooking oil 7.88% error. And Cari SPBU application that have been created can facilitate the rider in search of the nearest gas station based on the mileage of the vehicle's fuel left, as well as effective as a reminder if the vehicle running out of fuel.

**Keyword:** GPS, android, smartphone, gas station, capacitive sensor