

## ABSTRACT

*Water infuse loss detector is a device that used to detect the presence of bubbles and the infusion volume, using photodiode and infrared sensors. In the use of automatic infusion is very easy to monitor intravenous fluids endless but these are only located in the VIP area. While the inpatient room have no monitoring by the infusion fluid endless. Moreover, the absence of monitoring the provision of infusion inpatients that's so extremely dangerous for the patient. The Importance of nurse in monitoring the infusion case used by hospitalized patients and to provide appropriate information to provide the action, avoiding mistakes in replacement infusion, such as air into body tissues or blood in and out of infusion hose. This tool can help optimize work as well as to speed up the handling of replacement infusion fless and help the nurses to monitor the fluid administered.*

*Photodiode and infrared sensors are used to monitor the volume of fluid in the infusion, there are 500ml, 250ml, and 100ml, besides the bubble sensors will also monitor the presence of air bubbles in the infusion hose. Monitoring of volume and bubble will be controlled by AT89s51 microcontroller. Buzzer will be sounds when there is a bubble and volume of intravenous fluid 100 ml already. The display seven segment will show the fluid volume of 100 ml, 250 ml, and 500 ml.*

*From the results obtained volume measurements were performed value 3.2% of error for 250ml volume and 0% of error in 400ml volume. Which the measurements were performed in 25 times for each volume per level. In the error calcullation ( $\Sigma\%$  Error), it can concluded that the error is still within limits of tolerable and in the manufacture of this tool is appropriate planning*

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**Keywords:** *Infrared, Photodioda, Infusion, Microcontroller*