

The temperature sensor LM 35 monitors the temperature and sends the information to the Arduino continuously. The data that the temperature sensor sends will be in the form of voltage. The scale factor of the LM 35 is 0.01v/Celsius. If there is any occurrence of fire then the temperature surrounding will start to increase. The moment when the threshold value of the temperature is exceeded, the Arduino sends a signal to the GSM module and LCD. Further, the GSM module transmits a text message to the user from the Sim card that was previously inserted in the GSM module. After the message has been delivered by the GSM module, Arduino then processes the information and tells the other components to do their respective jobs.

3. SOFTWARE DESIGN AND FLOW CHART

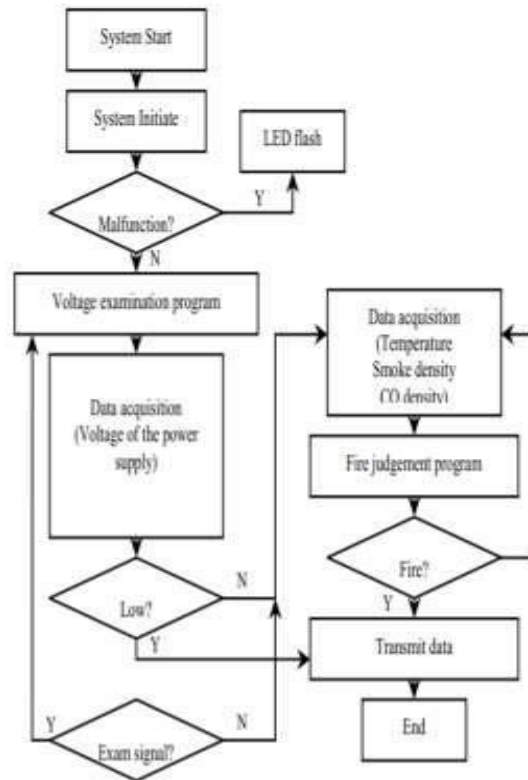


Fig. 2: Flow Diagram

4. EXPERIMENTAL SETUP AND MESSUREMENTS

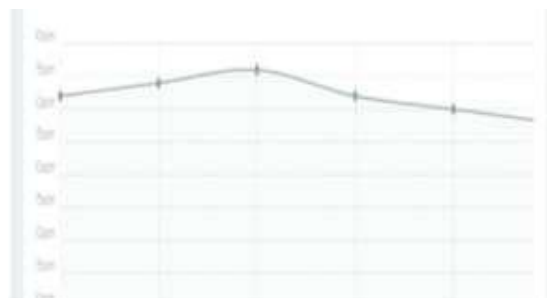


Fig. 3: Threshold Fixing



Fig. 4: Experimental Setup 1

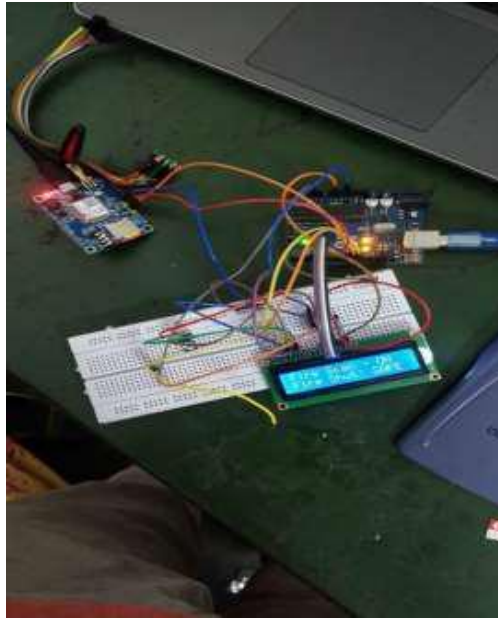


Fig. 5: Experimental Setup 2

5. ACKNOWLEDGMENT

First and foremost, we would like to offer our gratitude to our faculty, Professor Swarnalatha P, who supported us throughout our project with her patience, knowledge and respected our creativity. The project would have not been possible without the support and blessings of our parents. We also acknowledge the help and support provided by the University management for giving us the opportunity of carrying out the project at this prestigious VIT University. At last, we would love to thank each and every one who has been related to this project.

6. CONCLUSION

We have successfully designed the fire alarm system using Arduino and GSM modules. This hardware is working efficiently and tested the experiment several times. We can also include a buzzer if we want any audio warning within the area limits. This project is very much useful in labs, factories, mines. By using this project, we can prevent many of the fire accidents as we get informed well in advance by the GSM module. Because most of the fire accidents happen worse over time. If we could save time, we can prevent further loss. In the future camera module can be added to this product to get live feed.

7. REFERENCES

- [1] Mahalingam, A., R. T. Naayagi, and N. E. Mastorakis. "Design and implementation of an economic gas leakage detector." *Recent Researches in Applications of Electrical and Computer Engineering*, pp. 20-24, 2012.
- [2] Attia, Hussain A., and Halah Y. Ali. "Electronic Design of Liquefied Petroleum Gas Leakage Monitoring, Alarm, and Protection System Based on Discrete Components." *International Journal of Applied Engineering Research*, vol. 11, no. 19, pp. 9721-9726, 2016.
- [3] Apeh, S. T., K. B. Erameh, and U. Iruansi. "Design and Development of Kitchen Gas Leakage Detection and Automatic Gas Shutoff System." *Journal of Emerging Trends in Engineering and Applied Sciences*, vol. 5, no. 3, pp. 222-228, 2014.
- [4] Shrivastava, Ashish, et al. "GSM based gas leakage detection system." *International Journal of Emerging Trends in Electrical and Electronics (IJETEE-ISSN: 2320-9569)* 3.2 (2013).
- [5] Jolhe, B. D., P. A. Potdukhe, and N. S. Gawai. "Automatic LPG Booking, Leakage Detection, and Real-Time Gas Measurement Monitoring System." *International Journal of Engineering Research & Technology (IJERT)* 2.4 (2013): 1192-1195.