

PARAFFIN LEVEL DETECTOR IN EDIBLE OIL USING IOT

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Introduction

Usually, people are very fond of foods it may be home-cooked food or roadside food. Therefore, large amounts of oils are needed to cope up with the high consumption of oils for deep-fat frying. Because of more profits, alternative ways are added to this situation among these ways is to find another heating medium for deep-fat frying. Therefore, two types of oils can fulfill most of the aforementioned parameters, i.e., Paraffin oils and jojoba oil, and consequently can be utilized for the deep-fat frying process.

Liquid paraffin oil is mineral oil and is a by-product of crude oil distillation. It is transparent, colorless, odorless, and tasteless oil, which is mainly composed of high-boiling alkane derivatives. Liquid paraffin (high-boiling mineral oil) is a mixture of higher molecular weight alkane derivatives. It is not soluble in water and is also known to have low reactivity. Paraffin oil and paraffin wax have found a wide range of industrial, medical, and cosmetic uses in modern times.

Objective

Our main purpose is to detect the level of paraffin content in cooking oil. If paraffin content is more, it causes Headaches, Cancer, Kidney damage, Birth defects, Bone Marrow damage, Respiratory issues, Nausea. To overcome these problems, by knowing the paraffin level present in cooking oil, To verify these values our project can be used by the authorities and food inspection department. In Modern times Cooking Oil is most commonly used in daily life, but the public knowingly or unknowingly neglected the drawback from this. So, the idea was to reveal the amount of paraffin present in the Oil.

Methodology

The proposed system is divided into two parts.

1. Detection of paraffin oil.

2. Store the data in cloud and visualization.

- Liquid paraffin oil is mineral oil and is a by-product of crude oil distillation.
- It is transparent, colorless, odorless and tasteless, which is very harmful for the health if it is crossed above 20% of the edible oil mixture. To detect amount of paraffin in edible oil paraffin pH probe is used, which gives an analog output by voltages, there voltage is applied by a formula and we get the paraffin percentage.

$$\text{(Analog value - 110) / (1023 - 110)}$$

- By practical we take 10ml of paraffin oil in 990ml of cold pressed oil and detect the paraffin in percentage.
- By this method we get the paraffin up to 1000ml mixed in 1000ml of edible oil, this process is called calibration.
- The other part of our project is IoT which receives data from the hardware and stored in the cloud and it can be visualized later for the comparison of app which is made by google server.

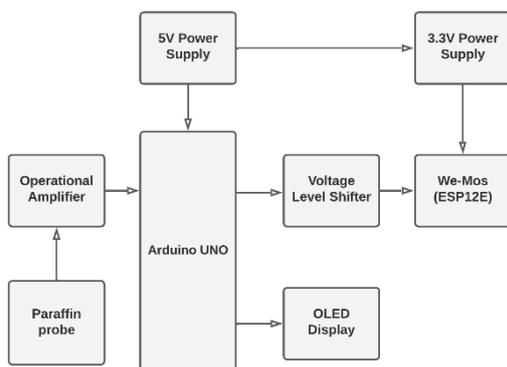


Fig. 1: Block Diagram of the proposed work

Result and Conclusion

The paraffin probe is dipped into the oil sample, it will detect the paraffin content of the oil and display the value in percentage and the value will be sent to the cloud by using Wi-Fi module and store the value in Thing Speak which is open source. Even the value can be accessed in the application for regular update. The thing to be noted is that the analysis of trace contaminants is challenging not only due to the need for sample preparation and enrichment but also due to the need for complex multidimensional chromatography. The paraffin level detector in edible oil using IoT is suitable for detecting the contamination of edible oil, this makes the system cost-efficient.

Scope for Future Work

Through this endeavor, we can help our culture better comprehend cooking oil. It's appropriate for food and health agencies to utilize. Every residence can benefit from the suggested system. by knowing the paraffin level present in cooking oil. To verify these values the project can be used by the authorities and food inspection department.