

# SMART GAS STOVE: CONTROLLING A SIMPLE GAS STOVE USING IOT

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## Abstract

In this 20<sup>th</sup> century many of us in the technology field have had converted every little things into automated or machine operated things. Now coming back from huge world I started thinking the old traditional way of cooking in a LPG gas stove or burner. Though there are alternative way of cooking are also available in this time like induction cooking. In India it is more likely to find a gas-stove in every 8 out of 10 house. Keeping in mind with many such cases such as leakage of gas, forgetting to off the burner in time, over-cooking due to forgetting about the dish when engaged in a different work, now this is prototype of a iot based project to ensure that all possible safety measures are being taken from the gadget itself to make it easier and helpful for any cooker without having a tension of anything. Moreover this gadget can be fitted in any gas-stove out there in the market and can give information directly to the user in the smartphone app with the sensor sensing the position of the burner nobe, fire state, fire intensity, manually controlling of the nobe, setting timer and to start the fire with just a button tap in the smart-phone.

**Key Words:** IOT, SMART GAS BURNER, Smart Cooking, Safety measures

## 1. INTRODUCTION

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### 1.1 OBJECTIVE

To make the kitchen with a technically advance I had proposed this paper which can help user in the following ways:

1. Gas leakage checking
2. Fire state checking
3. Nobe position

4. Manual control of nobe at desired position
5. 3 set position of the nobe
6. Timer
7. 2 Option can user take when the timer goes down:
  - a) To set nobe at low
  - b) To put the burner off

## 2. PROPOSED SYSTEM

The components used:

1. Servo
2. Servo stand
3. Gas Lighter Circuit
4. Relay
5. Gas Sensor
6. Fire sensor

### 2.1 HARDWARE COMPONENTS

#### ESP8266 NodeMCU

NodeMCU is open-source firmware and development kits that helps you to prototype or build IoT products. It includes firmware that runs on the ESP8266 Wi-Fi SoC from Espressif Systems, and hardware which is based on the ESP-12 module. The firmware uses the Lua scripting language. It is based on the eLua project and built on the Espressif Non-OS SDK for ESP8266. This model is choosed due to some advantages over other development kit:

- a) Low cost
- b) Small with inbuilt WIFI
- c) Low power consumption
- d) All data structured can be used

#### Servo

Servo is an automatic device that uses error-sensing negative feedback to correct the action of a mechanism. Here it is used to rotate the nobe of the gas burner attached to the burner nobe with screw and the servo is attached to the gas burner body with the servo stand.

### Gas-Lighter Circuit

A general electronic lighter circuit which runs in the mechanism of sparking or ignition system for firing up the gas burner at desired time.

### Relay

It is a electronic switch which is used to switch on the gas lighter at desired time of use.

### Fire sensor

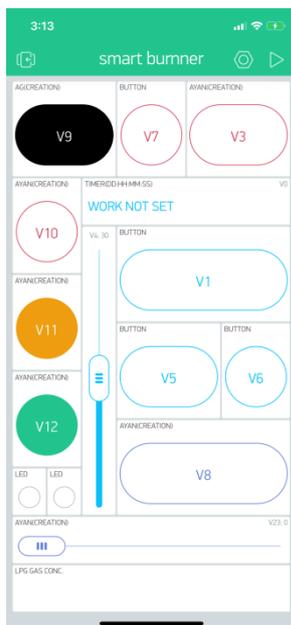
It is low cost fire detection sensor which is used to detect the state of fire in the burner.

### Gas Sensor

This is also a low cost simple sensor which can sense the LPG level in the kitchen

### App used--Blynk

Here in the app I had designed some button, led, switch and notification enable to give the user to interact with the gas-burner and get information through it.



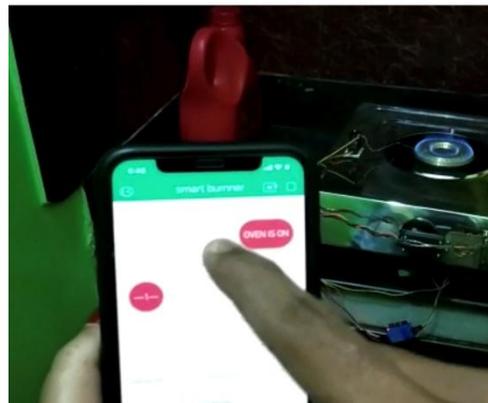
**FIG-1: APP DETAILS**

### 2.2 METHODOLOGY

The suggested system is an IOT application which suggests and advises the cooker the correct information about the gas burner. The front end of the system is developed using JavaScript. The user can login through the app to collect the sensor information as well as to control the system. Only Admin can do the customization of the app view other user can only use through the app and many user can control the burner with the app only whom the admin wants to.

### 3. CONCLUSION

The proposed system provides a cooking solution for Indian moms to control the gas-burner remotely using a smart-phone. This project uses many sensor data and task operated according to the users command using a machine learning algorithm which can be viewed in a smartphone application. This prototype also help the user for a handsfree experience in cooking keeping every safety aspects in mind to reduce the risk of accidents.



**FIG-2: DEVICE IN WORKING**

### REFERENCES

- [1] <https://www.instructables.com/id/Simple-Led-Control-With-Blynk-and-NodeMCU-Esp8266>.
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