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# Review on Working model of Electricity Theft Identification System

Yash Hole<sup>1</sup>, Vaibhav Shrinath<sup>2</sup>, Ramesh Dhut<sup>3</sup>, Sujal Chavan<sup>4</sup>, Mithun Bhavsar<sup>5</sup>.

Diploma Student, Department of Electrical Engineering, Mahatma Gandhi Mission Polytechnic Collage – [MGM's Polytechnic] Aurangabad, affiliated with MSBTE Maharashtra, India.<sup>1,2,3,4</sup>

Professor, Department of Electrical Engineering, Mahatma Gandhi Mission Polytechnic Collage – [MGM's Polytechnic] Aurangabad, affiliated with MSBTE Maharashtra, India<sup>5</sup>

**ABSTRACT:** Electricity theft is a major problem in the power system network all over the world, which is illegal and should be strictly prohibited. Electricity theft can be defined as the use of electrical power without any contract with the supplier. To eliminate power theft, the location of power theft should be known so that appropriate action can be taken against the legal offenders. The circuit consists of Arduino, GSM, LCD, ESP module and current transformer. For higher currents meter cannot be used so current sensing is done by current transformer.

**KEYWORDS:** Arduino, theft, current, power.

## I. INTRODUCTION

At this point of technological development the problem of illegal use of electricity can be solved by using GSM without any human control. The implementation of this system will save a huge amount of electricity, and will make electricity available to more number of consumers than before. In highly populated countries like India, China. Electricity theft can be defined as the use of electrical power without any legal contract with the supplier.

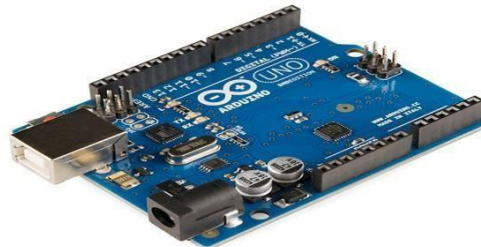
## II. LITERATURE SURVEY

The electricity provider company divides the electricity bill equally on the same customer who has the right to use electricity, but illegal customers are not included in this bill. License customers paid the entire electricity bill, those customers are very few. The electricity provider company is not able to take individual meter reading of the farmer. they are equal to all usage charges on some customers only they have the right. The illegal customers are safe and are getting continuous benefits without any compensation, but indirectly the electricity usage charges are paid by the licensee farmer. So, we have decided to overcome the illegal use of electricity by using IoT i.e. smart technology. The system takes continuous readings from the distribution system and uploads them to the web page through IoT..

## III. PROPOSED SYSTEM DEVELOPMENT

### • ARDUINO MICROCONTROLLER

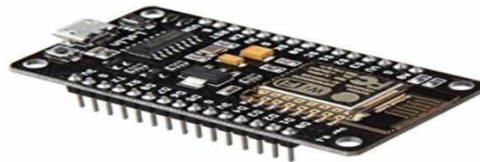
The Arduino Uno R3 is a removable, dual-inline-package (DIP) microcontroller board based on the ATmega328 AVR microcontroller. Features 20 digital input/output pins programmable, which can be loaded from the easy-to-use Arduino computer program



**Fig.1 Arduino UNO**

- WIFI MODULE(ESP8266)

The ESP8266 is a Wi-Fi chip of low cost with a full TCP/IP stack and MCU. This small module helps microcontrollers to connect to Wi-Fi networks and using Hayes-style commands make simple TCP/IP connections



**Fig.2 WIFI MODULE**

- GSM MODULE

A GSM module or GPRS module is a chip or circuit that will be used to establish communication between a mobile device or computing machine and a GSM or GPRS system. Modem (modulator- demodulator) is an important part here.



**Fig.3 GSM Module**

**Working of system :**

For power theft detection consider the case of regular domestic power supply of 220V. We connect two step down transformers in parallel at either end of the given power supply. The primary windings of both the transformers are connected to the power supply while the secondary The circuit is connected to the winding rectifier. Step down transformer will step down 220V AC to 5V AC Both transformers are connected to rectifier circuit which will convert AC to DC. The rectifier circuit is connected to the Arduino micro controller which works as a current comparator i.e. the Arduino controller will compare the current fed by the two transformers. Arduino controller is connected to GSM module and LCD. Display the output at the end. If the current from the second transformer is less than that from the first transformer then the 'theft' condition will be displayed

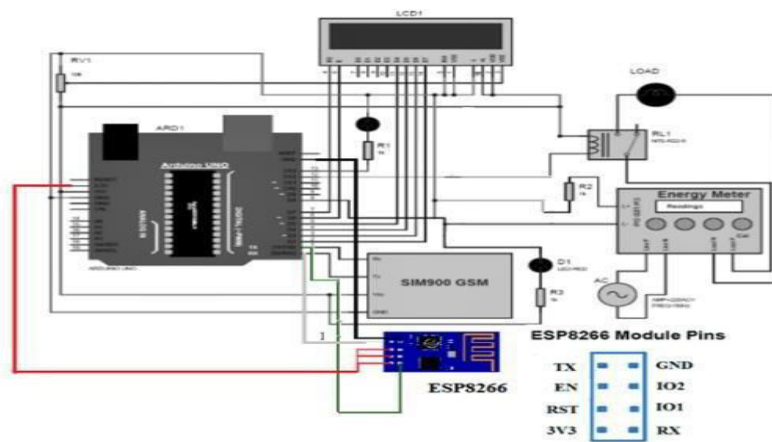


Fig.4 Circuit Diagram

#### IV. APPLICATION

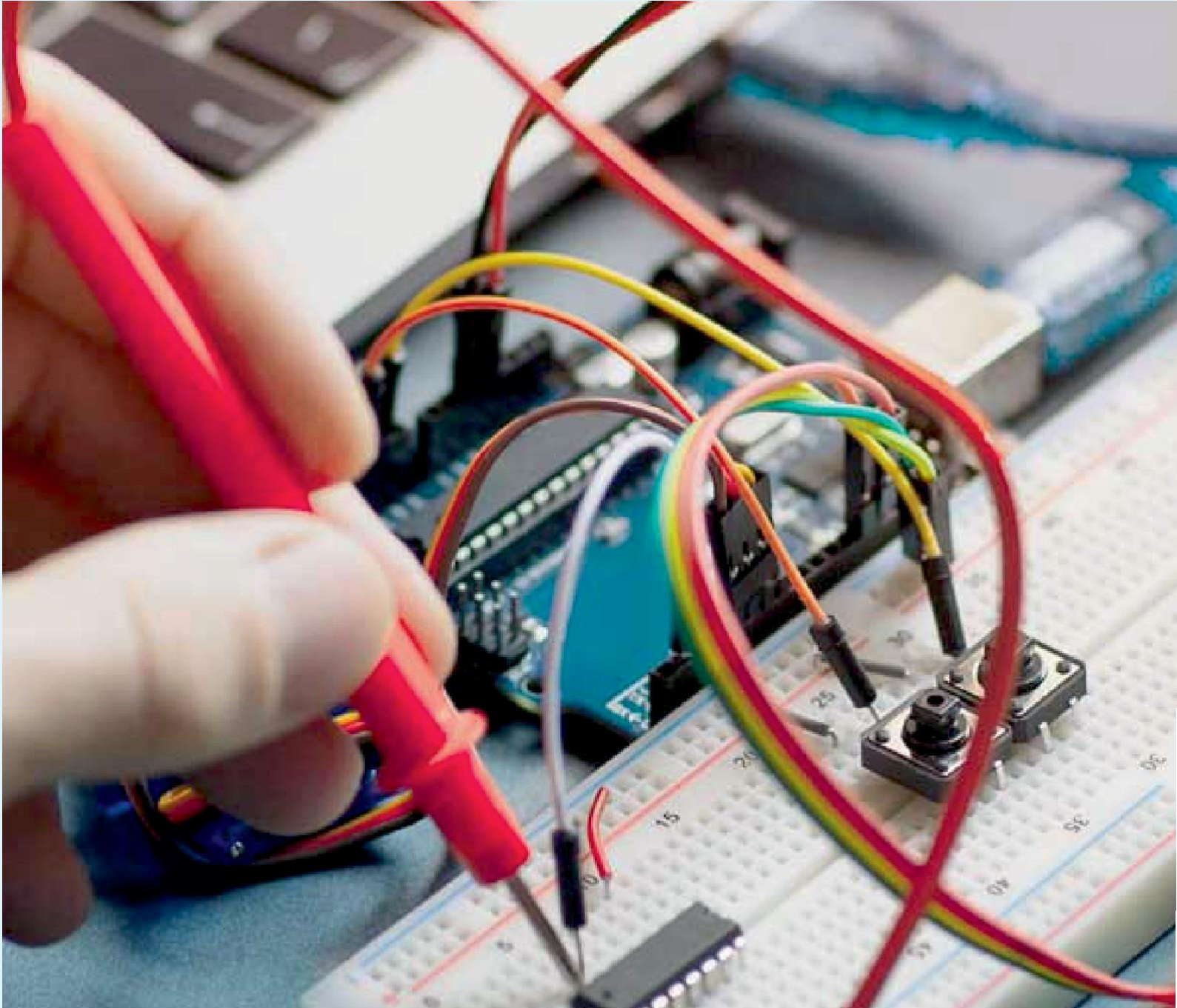
- The system can be accommodated for almost all types of users.
- The concept is particularly suitable for villages and interior areas.
- We prefer to conclude from this design that power theft can be effectively prevented by finding out where power theft occurs by informing the authorities

#### V. CONCLUSION

Using IOT based electricity theft detection kit we can monitor the theft status and also the power utilisation. We can receive alert message if power theft is occurred.

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