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SOLAR POWERED SMART ULTRASONIC INSECTS' REPELLENT WITH DTMF AND MANUAL CONTROL FOR AGRICULTURE

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I. INTRODUCTION

As we move towards a more digitalized future, it is directly proportional to increase in urbanization and industrialization. This is the main cause of generation of large amount of waste. As per the report published by World Bank, approximately 1.3 billion tones of municipal waste is generated every year and it is expected to rise to approximately 2.2 billion tons per year by 2025. Due to this waste lies littered in the surrounding, dumped on open lands and this becomes major problem for various types of disease causing bacteria and viruses which is why waste management is of vital importance.

Segregation makes it possible to reuse and recycle the waste effectively. So the waste management becomes an important concern for the health and well-being of the society. Presently, the waste segregation is done manually by installing different bins for collecting different type of waste such as wet, dry and metal etc. But this method has lot of discrepancy; one is being the Unawareness of most people towards waste management. Due to lack of different proper segregation methods, a large amount of untreated waste is dumped as landfills. So our idea is to make a garbage segregator which can identify the type of waste and put them in bins accordingly and automatically. Implementing our project at household level will reduce waste the expenditure on wadisposal, manual effort Required for segregation and the waste could be easily being recycled, reused and

LITERATURE SURVEY:

The automaton automotive is remotely controlled by a mobile phone exploitation the DTMF methodology to manoeuvre the automotive altogether directions. Text Name: IEEE, Year

Abstract—

The Main Purpose Of our Project Is to Design And implement a device Against Insects, Pests etc....Using ultrasonic Frequency Generator which is named as ultrasonic pest repellent.

The project represents a smart gadget to avert the calamitous effects of west bugs in the farming land as well as in household commodities.

In this paper, development and performance analysis of smart ultrasonic insects repellent device has been demonstrated.

This device is able to generate different types of frequencies which are very helpful to repel different types of insects.

It can be controlled from any distance with DTMF (Dual Tone Multi Frequency) technology.

Besides, manual control with night mode via LDR (Light Dependent Resistor) has also been employed.

The device would be charged through solar energy system which is a cost effective approach.

A power amplifier along with a microcontroller known as Arduino Uno as well as solar charger circuit regulator and solar panel are used.

The implementation of this device in farmland has shown a great reduction of bugs attack compared to the other land which doesn't have one.

KEY WORDS:

Arduino uno, solar charge unit, 16x2 displays, gsm module

Published: 2017 Technology Used: These paper displays will be controlled by pressing a button on the user's phone that generates a DTMF signal that the signal can withstand multiple interactions that crystal rectifier to the vehicle's movement.[1]

Sonic pesticides area unit noisy tools in a shot to repel, deter, or kill unwanted animals, like insects, rodents, birds, and huge mammals. There is area unit several insects on the market purchasable that claim to be effective. By 2019, sonic persecutor devices on the market devices employed in residential applications have not been shown to be effective in science studies. For this reason, the utilization of those devices is not suggested for the treatment of common insect issues. though some researcher's area unit developing inventions that show the potential sure as shooting pesticides, these technologies can still be commercially on the market.[2]

Aedes albopictus two-winged insects look at Device look at". Mosquito repellent materials, two-winged insects Repelled® DX-600 and adios Mosquito® were tested in boxes to be tested by exposing the hands of adults' mosquito (Sause). 2 looks at sets area unit wiped out quarter-hour. exposure. In 2018, within the initial set each hand was place in an exceedingly box, one in all that command a metal. within the second set, one hand is introduced at a time, holding or turning the phone off. Devices did not show performance altogether tests. A dismissal that seems to be thirty.3% thanks to Anti-Pic® within the initial look at set is not [3] Design an intolerable pesticide".

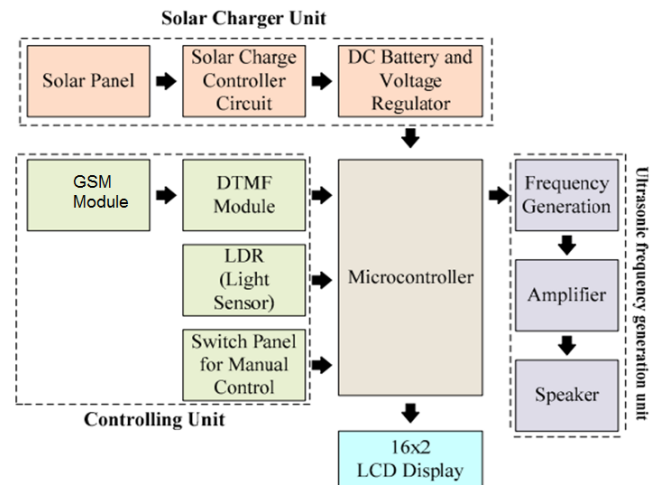
Support for dismissal support for a non-permanent detector project because it relies on a frequency of assembly that can remove insects in small areas.

Designed to be an inexpensive insect powder. people can't hear these high frequency sounds. Sadly, not all insects do the same with an intolerable frequency. and some parts of the insects were expelled at thirty-five kc, some parts of the area were expelled by thirty-eight to forty kc. Therefore, to maximize power, the frequency of the inaudible generator should vary indefinitely between the boundary limits. [4] In our country every year, insects cause economic disruption. A hidden and common pest infestation gradually invades crops and fields but causes good damage to the agricultural area and snakes as dangerous animals harm farmers and local people. However, these pests and animals cannot be found in their treatable category and the farmer will use pesticides and insect powder without knowing it. this can reduce the chance of further injury.

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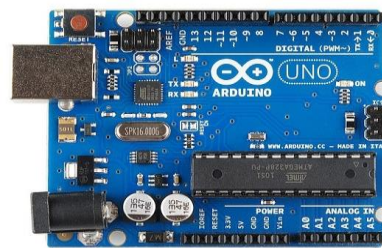
SUGGESTED ACTIVITY:

Block drawing



The proposed device model has been used for the agricultural system but at the same time, this may be suitable for other domestic purposes. Farmers can keep the device either in automatic mode or in manual mode depending on their need. Considering the economic and environmental impact of conventional chemical pesticides, this sound-based ultrasonic technology is even better.

1. ARDUINO:



Arduino has the open-source electronic platform on easy-to-use software and hardware system

2.LDR sensor:



Light Dependent Resistors (LDR) are also called photoresistors. They are made of high-resistance semiconductor materials. When light strikes a chord, photons energize electrons. This allows them to jump at a steady pace and thus run electricity. It works on the principle of image processing. Image processing is a visible factor in the performance of objects

3.S OLAR CHARGE UNIT:

Protects the battery (12V) from overcharging. Reduce system storage and increase battery life. Automatically charged index. Reliability is high 10amp to 40amp charging current Monitors current recurring current flow



6. Microcontroller:

All of these features make it ideal for the use of the highest level of A / D in automotive, industrial, electrical and consumer applications.

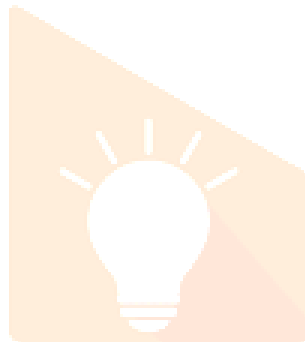
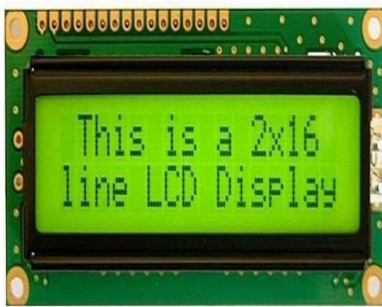


7. GSM MODULE:

A GSM modem or a GSM module is a hardware tool that uses GSM telephony technology to provide a data connection to a remote network. From a mobile phone network view, they look exactly like a normal cell phone, including the need for a SIM card identification on the network.



4.16x2LCDDisplay: 16x2 lcd display is used to display the content passed from the arduino.



5.DTMFTECHNOLOGY:



Dual Tone Multi Frequency, or DTMF as it is more commonly known, is a technical term for sound frequencies produced when a call is pressed. DTMF, also known as touch tone, was used to signal telephone to and from local exchanges, although today it receives many applications in the field of telecommunications and call centers.

8. Dc Battery and voltage regulator:

- Dc Battery: DC batteries use current, one-way flow and are commonly used to power small appliances, radios, laptops, cell phones and other electrical gadgets..
- Voltage regulator: A voltage regulator is a system designed to automatically maintain a constant voltage. A voltage regulator may use a simple feed-forward design or may include negative feedback. It may use an electromechanical mechanism, or electronic components..

9.RESULT AND DISCUSSION:

- The proposed device model will be implemented for the agricultural system but at the same time, this can be suitable for other domestic purposes. Farmers can keep the device either in auto mode or manual mode according to their necessity. Considering the economic and environmental impact of conventional chemical pesticides, this ultrasonic sound-based technology is far better. Conventional noise system and chemical pesticides bring sound and air pollution respectively which is harmful to human body. The smart ultrasonic sound repellent device won't create such type of pollution. Besides, it is environment friendly as its charging system is fully depended on a solar panel. Although this study evaluates the effects of ultrasound waves against pests and bugs

further studies of ultrasonic waves as an effective medium of controlling pest behavior are also still open.

10.CONCLUSION:

This project helps in agriculture in many ways by reducing the chemicals use for insects killing not completely but can be reduced the use of harmful chemical which results in some environment effects also.

For effective use it is better to use a greater number of solar panels [more volts], sensors.

10.Reference

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