

## **Solar Based Women And Children Safety Gadget**

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**Abstract:**In our country, at present situation women security is taking as major requirement .The government all the protection departments are strictly following their rules and always try to secure women. But still women can't feel independent and suffer from these types of problems like harassments, sexual abused, kidnapping. In this chapter we are proposing gadget which is installed in a bangle (or) locket. Through this gadget we can easily identify and will able to give protection immidietly.This gadget is designed in the form of bangle because it is easy to wear. This gadget is also used to protect children from kidnap through the locket. In this gadget we are using switch, GSM module, GPS module, Pulse sensor, Arduino (ATmega328p micro controller), Buzzer, Solar panel. Through this gadget we can protect women as well as children. Once the gadget is activated it will track the places of "particular person" who needs protection using GPS and sends emergency messages using GSM to already pre-registered mobile numbers. i.e., police control room, medical system etc. The pulse sensor checks the pulse of victim and sends SMS's to ambulance at every 10 seconds by using GPS. In this gadget we are using Arduino because it is low cost compared to microcontroller. This gadget is very easy to carry.

**KEYWORDS:**Emergency button, Solar panel, Buzzer, GPS module, GSM module, Pulse sensor, Arduino.

### **1. INTRODUCTION:**

Now a days in the world the major problems are faced by women and children. Women can't move freely in the society. Mainly due to fear of kidnapping or being physically or sexually abused. Children mostly kidnapped. The problems which are facing by women are not only the condition at outside but also it may happen at home. Even in 21st century where technology provided many Apps and she teams etc for women. But still they are facing problems. Today's women are working in various sectors across political, cultural, medical and technical etc. So it is very important to individuals that they should protect themselves. They should have self confidence. So for this we must create such type environment around them. That they feel secured. When they are alone in problems, the good way to solve these problems like Robbery, Sexually harassment, domestic violence, and attempt to kidnap is to identify defense and see for resources to help from hazardous situations. If she faced unexpected problems and feel alone then in that situation this device will guard her and helps her by associating current location and health condition to police, her family and ambulance through SMS's and calls or through Buzzer.

### **2. LITERATURE REVIEW:**

Suraksha implemented a device to help women in distress using microcontroller and in this

paper the device has taken the parameters of pulse and force of the woman whether they are normal or abnormal, if they are abnormal then the GSM device will give the information to the police. But in this when we go for a gsm device if the person is not in GSM location then this will be the drawback of the method.

Mr A Vaibhav described women security system which will be used to protect women from dangerous situations. In this the system is working based on the microcontroller. Here he used GPS, GSM, Mem's sensor, shock wave circuit. If there occur any miss happening the Mem's sensor will sends the current location to police. The Mem's sensor will send information automatically so if the victim is in normal situation then also the sensor will sensing this is the drawback of this system

Dr. Sridhar mandapati,sravya pamidi, sriharshitha ambati are implemented a mobile based women safety application by using android app that is I Safety. . Through this app they can alert the police and family by simple touching the app it sends the call for the first added guardian number . But if she forgot the mobile then this will be the drawback of this method.

Abhijith paradkar, implemented all in one intelligent safety system for women security. by using a App IPROB. When she feel insecure she will just shaking the mobile above the predefined threshold value then automatically the system will be

activate. If she cannot able to shake mobile in near the threshold value then the system cannot activate this is the drawback of the system.

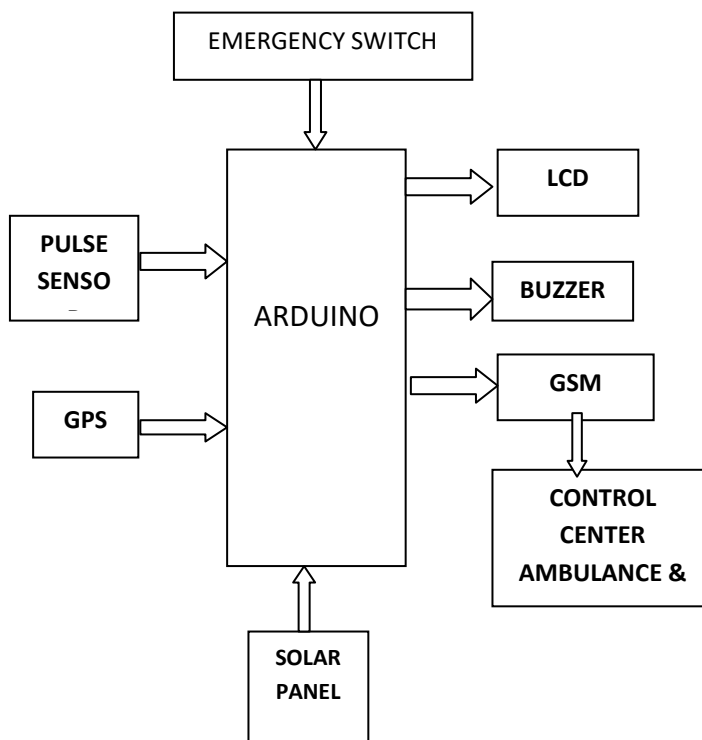
Thooyavan v proposed a mobile application which works based on wireless communication and MEMS accelerometer .The MEMS accelerometer is used for monitor the sudden fall and attack of the women. This information will send to police by the GPS. If the mobile is not available to victim then the

work will not be done this is the drawback of this system.

### 3. PROPOSED METHOD:

The main and major purpose of this paper is to secure the women from dangerous situations and protect the children from kidnapping. The block diagram of proposed method is shown in below figure

### 4. BLOCK DIAGRAM:



This block diagram consists of Arduino, LCD, Buzzer, GSM, GPS, pulse sensor, solar panel, and emergency switch.

This gadget consists of a switch button. When the victim is feeling insecure she will press the button switch as switch pressed by the women the Arduino gets the command. Arduino is also a type of microcontroller (Atmega328p). Arduino will get the current latitude and longitude value of the victim with the help of GPS module. Its stands for Global Positioning System, which gives the current data, time, longitude, latitude, altitude, speed and travel direction /heading among and other data any device. The pulse sensor also becomes active and starts sensing the pulse value of the victim and sends this value to the Arduino. The pulse sensor amped is a plug-and-play heart-rate sensor for Arduino. It's essentially combines a simple optical heart rate

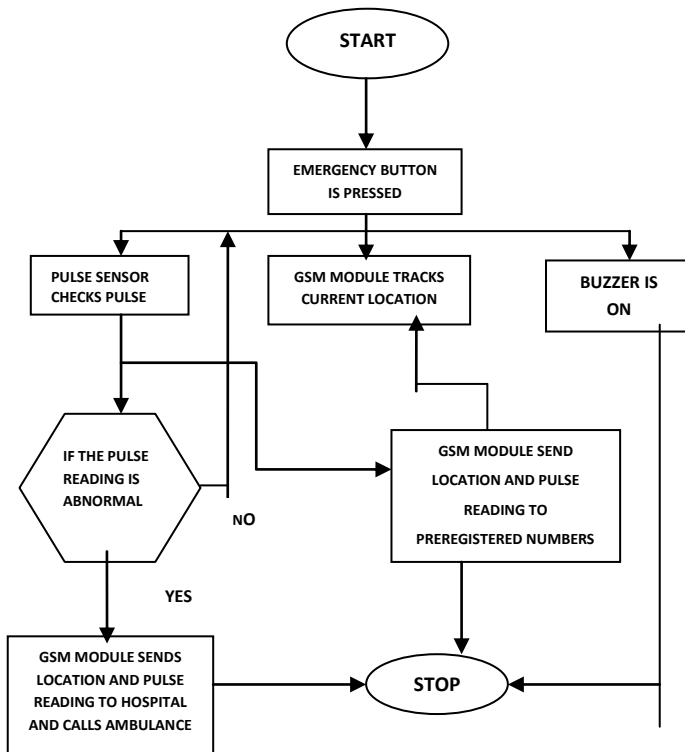
sensor with amplification and noise cancellation circuitry making it fast and easy to get perfect pulse readings.

The Arduino switch ON the buzzer present in the device so that victim will feel free. The buzzer will also ring at the police station so that the police will know some people are in problem. Then the police will alert and Arduino sends the SMS of current location and reading to the preregistered mobile numbers of the police and family member with the help of GSM module. GSM which stands for Global System for Mobile communication is a digital mobile telephone system. This GSM can also be connected to micro phone and loud speaker. The GSM sends the current location and other data at every 10 seconds. The police can easily traced the location of victim even though location is changed continuously. This GSM module can also calls the 5

pre-registered numbers. If in case the call cannot be taken then the message will sent.

The working procedure of this gadget is shown in below flow chart.

**Flow chart:**



In case if the pulse reading also goes abnormal then the Arduino command the GSM module to send the pulse reading by SMS and to call the ambulance so that the immediate medical help can be provided .

This all work need power. So solar panel placed on bangle for power generation and the remaining system is kept inside the bangle.

**5. FUTURE SCOPE**

In this device we are using Arduino why because the cost of microcontroller is much high compared to Arduino. If we use micro controller then we can also install a App which can send the current location to the nearby people. By this way the nearby people can respond, the victim will be protected as soon as possible. It is also used in military applications for tracking of soldiers if he got kidnapped. We can also place camera which capture the persons. We can also insert shock system. if she need secure then she can give shock to person And we can install more applications to protect quickly.

**6. CONCLUSION:**

In this paper we are discussed about design and implementation of a solar based gadget which protects women from critical issues like physical or sexual abused, harassment, kidnapping etc.The children can also be protected from kidnapping. If the society changes their mindset we can protect the victim fast.

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