# Smart-Electro Stick For Women's Safety

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**Abstract:-** India, which sees itself as a promising power and economic center, is still trapped in cities of the evils of various patriarchs such as violence, lobola, crimes against women, worst of all, rape. Women's safety issues should be either at home, outside or in their workplace. Stories of violence against women are beyond their reach. Also we know that there are many independent womens and girls who are working outside of their houses wether in night shift or in day, also there are many places which are not at all safe for anyone, so there comes the safety related issue. Therefore, in an effort to stem the tide, violence against women can now be eliminated with the help of our Women's Safety Device.

This work has proposed a program called the "Smart Elctro Stick For Women Safety", which contains TTGO-TCALL (GSM GPRS system) module, GPS module and a shock giver circuit intended to injure the abuser, due to where there is an opportunity to flee women It is a system used for the purpose of user safety itslef. The main purpose or not to say that the main purpose of the program is to build a smart device that can help women in some emergencies. There are many devices available for security purposes but those are not integrated, flexible and easy to manage. And that's why this work focuses on ease for everyone and so does our stick is flexible and easy to carry.

However our project mainly focuses on women's safety but the main purpose is to just provide a safety measure for our citizens, so whether the user is of any gender, any age, the main concern is Safety and so does our device do.

**Keywords:** - *TTGO-TCALL, GPRS GSM, GPS*

## Introduction

India is famous all over the world for its traditions, cultures, where women's have a very important place in our society often considered as goddess. Females are working in all organizational units like aeronautics, space, politics, banks, schools, sports, businesses, army, police, and plenty of a lot of. But by seeing the growth in crimes against women's in India we found that there is no value of such cultures, where at one place we pray women's as God and on another place, there is only increasing crimes against women. If women only are not safe in our country, then what is the need of such traditions. As we are witnessing the continuous growth in crime against women as rape, dowry deaths, sexual harassment at home or work place, molestation, kidnapping and abduction, cruelty by husband, relatives, assault on a woman and sex trafficking. Keeping this only in mind our project main objective is to provide a proper security and safety to the women's also our project aims that through this device women's get to know that how they can save themselves from such oppressors. We have focused on that womens do not require anyone to protect themselves.

For this device we've created a style referred to as "Smart Elctro Stick for women's Safety". This device has 3 main functions: -

1) The way to offer shock.

2) By the use of GSM/GPRS module, an emergency message with phone call get received by the emergency contacts.
3) By the use of GPS module, live coordinates of the victim get received by the emergency contacts.

Fig 1 :- Circuit Diagram of the device

## Proposed Work

Fig 1, shows the circuit diagram of the device that explains the connections and how the device is assembled. It also show the components used in this device and those are TTGO T-CALL module (a development board that combines a SIM800L, GSM/GPRS moudle and ESP32 ). A GPS (NEO-6MV2) module, Battery charger (TP4056), 3.7 volt Li-ion Battery (LIR18650), switch and a 3.7 V DC to 3000 V AC converter ( a zap racket circuit consists of Step-up transform, series capacitor and FE transistor).

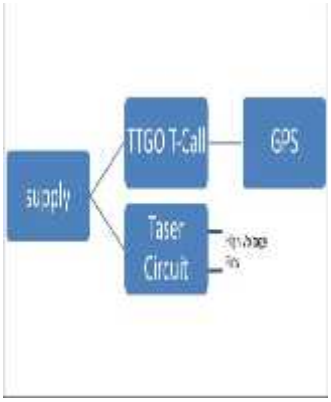


Fig 2 :- Block Diagram of proposed

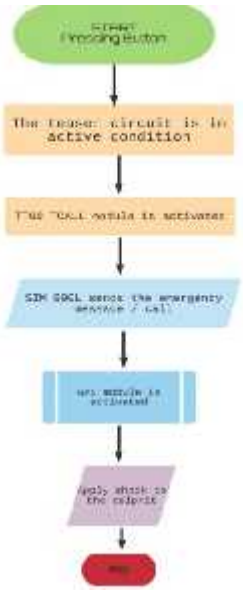

Fig 3: - Flow Chart of the smart stick working

Fig 2 shows the block diagram of SMART Stick working, in which we get to know about the process of the device in which it executes. Fig 3 shows the full step by step working process of the device. It also indicates how the process of the device/components get executed. The boxes in this flow chart (fig 3) shows the importance of each components to be used in this device .

## Literature Review

**Smart Women's Footprint Safety Device ”by N.Viswanath, V. Pakyala III year, Department of Information Technology, G. Associate Professor Muneeswari, Department of Information Technology, SSN College of Engineering, Chennai 2016.**

In this paper, A SMART women safety and protection device is developed and demonstrated. This device will be disconnected from user shoes and can be caused by discretion. When one the foot is bent after four times, a warning message dent via Bluetooth low energy communication to victim’s phone application with victim’s location is attached. The Na¨ıve Bayes separator is used for discovery the results. This low-cost device showed an accuracy of 97.5 percent. The first step is device cutting in user shoes. The next step to establish a Bluetooth connection between device and Smartphone user. The device must be paired with a user Smartphone to work collaboratively by app. Therefore, no unauthorized user can do so connect to device. As BLE (Bluetooth Low Energy) is rented, the phone can be connected to the device without much loss inside the battery. Acceleration the existing sensor on the device will detect the speed values in axes, x, y and z and every second. When the user tap the left foot back using the right foot, I accelerometer senses change within reading within z axis and an alert is sent to start the user's phone with BLE connection. When successive taps are found, I the alert is sent to the user's smartphone on launch BLE connection. When you receive a warning from a device, The app on the smartphone is designed to send to location for four contacts the user can reset to set application. The application can be advanced to inform management.

**“Smart Watch for Women Security based on Io Concept I am looking for ”by M. Fathila, A. Helen, R.Rijwana, Students, Department of Information Technology, Kalaiselvi. V.G. Asst.Prof, Department of Information Technology, Sri Sairam College of Engineering, West Tambaram, Chennai - 600044, held by Anna University, Tamil Nadu, India dated 2017.**

This paper introduces a new process with smart watches. When women or a child wearing this ‘watch me’ is on the state of sexual assault or danger, the sensor present in captures a person's heart rate which will be higher currently and active, this will not only provide alarm sound noticed by people nearby, you will call your subscribed contacts again and with GPS / GSM it will see the nearest police station and let them know, so it would be helpful for the police to get to spot location tracking using GPS, such a system will do lead to a safer and better environment. Basic concept in where the whole process moves is the beginning of heartbeat when it reaches its target heart rate and time. As soon as the heartbeat senses activated makes loud alarm sound to alert people around them to catch their attention. Then look at me immediately sends a warning to the nearest police station at the station. Police can track the location with a GPS tracker it is renewed from time to time. After that it also sends a warning message to emergency contacts saved in order they can get details that the wearer is looking at me you are in danger.

**“Smart Security Solution for Women based on Internet of Items (IoT) ”by G.Harikiran, Electronics and Contact area. BVBCET Hubli-23, India, K. Menasinkai, S.Shirol, ECE Department, BVBCET, Hubballi-31, India written 2016.**

This program proposes the “Smart band” wearable which is continuous communication Smart phone that has internet access. Application is made and completed with all the necessary details

including human behavior and responding to various situations such as anger, fear and anxiety. This creates a signal that is transmitted to the file smart phone. Access is granted to the software or application for GPS services and Messaging arranged in such a way that whenever it receives an emergency signal, can send a request for help and the area connects to the nearest police station, relatives and people in the vicinity of the applicant.The device is connected to a smart phone via a specially designed application that creates an interface between phone and phone. Data collected by smart band like beat rate, body temperature in line with body movement is continuously observed by an app pre-installed on the phone. Application is designed in such a way that it uses GPS for smart phone to track link and monitor file easy tracking movement. A help message is sent to family members and the nearest police station through built-in GSM location within the phone. Application provides a social networking platform to discover this. A specific app installed on their devices receive messages at the same time so that they too can contribute to justice timely delivery. This feature is made by using the user's online phone properties. Control Unit collects information obtained from a smart wrist unit and GPS receiver. All this information is sent by GSM module, from the control unit to the base station. Information from human body temperature sensor, pulse rate senor and changes are collected by wrist replacement. RF module sends data from wrist unit to control unit.

**“The Novel of a Women's Protection Program by using the Smart Security Device” of K. Seelam Asst.Prof. EIE Department, K.Prasanti Asst. Department of EIE, V.R. Siddhartha Engineering College dated 2018.**

This paper describes a safe and secure system for women containing Arduino control and alternative the senses. When women are at risk, the device sees body parameters as heart rate, change in temperature, movement of the victim with flex sensor, MEMS accelerometer and victim voice audible, I heard a noise. When the sensor exceeds the limit, device is activated and follows the location of the file the victim is using a GPS module. The victim's location is being sent to the contact number registered by the GSM module. The principle subsequently receiving body parameter signals from the various senses that communicate with women become are in a state of threat which is why after the discovery of signals, sensor sends electronic signals emitted to controller. Sensors involved in this proposal system flex sensor, temperature sensor, MEMS accelerometer, sound sensor, heartbeat sensor. Each sensor is used to find the symptoms of middle-aged people (women) unusual circumstances. When the values of any sensor fall limit limit indicated that women are at risk and in the case of the victim, where 4 out of 5 nerves sensors exceed the limit the buzzer is active. GPS therefore transfers location to Arduino and then Arduino transmits the signal to GSM. Finally I a message of warning “I am in danger” and length and length long-term location is sent to a registered contact number. So the performance of the sensor and buzzer follows the direction of location of the victim using GPS with the help of GSM 800L used sends the local message to the corresponding contacts with a delay of 10 secs.

**"Design of a Women's Safety Device" by D. Chitkara, Department of Technology and Communications, B.Parshuram, Institute of Technology, in collaboration with Gugu Gobind Singh Indraprastha, University Delhi, India, N. Sachdeva, Y. Vashisht, Department of Technology and Communications, North India Engineering College, in association with**

**Gugu Gobind Singh Indraprastha, University Delhi, India.**

The device has been around made in the form of a glove and completely electronic. The person who only uses the glove should activate the circuits put inside the glove to attack the oppressors and protect he in any danger. Rotation is inserted inside the glove between the protective and protective layers of glove. The outer part of the region was fine tight, so as not to cause injury to the wearer and the person using it is completely safe. Driving the layer on the palm side in action gives a shocking shock to the oppressor. The shock will be intense and frightening again only muscle cuts will occur. The shock is not it is deadly but has a great effect on the functioning of the muscles of the oppressor. So the wearer can easily overcome anything the abuser with complete freedom and without fear. The made so that the oppressor would not die with the amount of shock done, but weakened with a decrease in muscle mass in his body. The device is gone during long periods of continuous testing in construction and results. The device is ready to operate implementation. The palm side of the glove is the driving force a layer that can be worn by the wearer in contact with any violent activity. The device is in glove mode containing electrical circuits. Region exists near the part of the hand of the glove that is securely and completely secured close. The palm side of the glove will be conducting lead inside the glove and film running above glove that will transmit shock waves to the invader. The glove will be fitted with some kind of it will not hurt the person wearing the glove.

**“Women's Measurement Program Raspberry Pi ”by R. Meghana, K.G. Rashmi, H. Keerthana, S. Saranya UG Scholar, ECE, Department, RR Institute of Technology, Bangalore. L.Niranjan Asst. Professor, ECE, Department, RR Institute of Technology, Bangalore.**

In this case paper, the proposed belt model will provide Women in need paper, so they can do this very late at night. Proposed the model contains various sensors Continuous measure of the parameters are different. Raspberry Pi controller as the main source for receiving input signals from sensors so that the sensors receive input signals from the threat or dangerous or unfamiliar people if possible. The sensors used are LM35 temperature sensors, MEMS accelerometers, heart rate sensors, flexible sensors and acoustic sensors. GSM is used send a warning message to the registered contact number. Track the location of people (women). The program in the background this is to receive the body parameter signal from the corresponding sensor when in contact with the malignant threat means that after receiving the signal, the sensor sends a electrical signal on the controller. Raspberry Pi finds signal from the sensor as an analog input signal, so it creates individual output output parameters. The senses are used to detect the signal of a person (woman) in an unusual situation. If the value of any signal is heard exceeds the limit indicating that the woman is in threatening situation and depends on the victim's condition, the buzzer is active when 4 out of 5 sensors exceed the limit. Therefore, GPS sends the location to Gingerbread Pi, which sends signal to GSM. Finally, they are not registered contact number will receive a warning message “I am in danger” and height and vertical position. Therefore, the making of sensor and buzzer uses GPS to track the victim's location and, with the help of the GSM 800L used, sends the location 10-second correspondent message Delay.

**Smart Band for Women's Safety Based on the Internet of Items (IoT) ”by**

**S.More, R. Borate, S. Dardige, S. Salekar, UG students, Department of Computer Engineering, NES College of Engineering Pune, Maharashtra, (India) Professor D. S. Gogawale, Professor, Department of Computer Engineering, NES College of Engineering Pune, Maharashtra, (India).**
The main purpose of the program is to provide security and safety. For this one smart band and Android application is improved. The project works automatically on the pulse sensor and heat sensor. Heart reading for those women are used by the app to protect him. If he is emergency situation and an urgent message is sent to a family member and the nearest police station with GPS the victim's location. And this emergency message is being sent application therefore provide a social platform .. In this paper we will include comparing data from sensors with training database, if a variation occurs the message will be send to the nearest police station, family, friend and GPS a place to provide safety for vulnerable women. The women will be caught with a wearable rate sensor sensor as well heat sensor. A 10-second sensor will be sent to it server. The server will have training data set with normal heart rate and temperature according to age group. If an unusual value is found in an a warning message will be sent to women in charge of clothing, considering a few circumstances like him in stress or running. If women do not respond within the allotted time then three warning messages will be sent to his family member, himself a friend, the nearest police station and his GPS location. However if his answer is right the system will be the same stop the normal way of working.

**" SMART INTELLIGENT SECURITY SYSTEM FOR WOMEN" by G.Miriyala B. Tech, Department of ECE D.M.S.S.V.H College of Engineering, Machilipatnam, and Andhra Pradesh, India, P. Sunil Assistant Professor in the Department of E.C.E.D.S.S.V.H College Engineering, Machilipatnam, Andhra Pradesh, India R. Yadlapalli, V. Lakshmi Pasam, T. Kondapalli, A. Miriyala B. Tech, Department of ECE DMSS College of Engineering, Machilipatnam, Andhra Pradesh, India.**
Proposed plan is designed to create a portable device such as wrist belt containing Pressure switch, Raspberry pi 2, GSM modem, GPS receiver, alarm alarm, tear gas, and live video. When the Press button is used, then the device will automatically work with fraction of milliseconds. Soon the location of the victim will be tracked and text messages sent emergency contacts. The alarm sounding unit will be triggered and will produce a siren sound asking for help.The attacker may be injured with the help of tear gas the victim may flee. The face of the attacker can be received by Live Streaming Video will process the file the victim's status uses the preferred IP address. Live streaming video using webcam Gas extraction is also available fitted with mirrors that serve as a new weapon in intelligent technology.

## Validation Table

| S.R No. | Review Paper | Author | Problem | Solution |
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| **1.** | Smart Women's Footprint Safety Device. | N.Viswanath, V. Pakyala, G. Muneeswari | Regarding women Safety | A Smart Women's footprint safety device which uses Bluetooth ayatem to send the coordinates of victim to saved contacts. |
| **2.** | Smart Watch for Women Security based on IoT Concept. | M. Fathila, A. Helen, R.Rijwana, Kalaiselvi. V.G. | Safety of the citizens. | Smart watch senses the heartbeat and if it founds abnormal, sends location to all emergency contacts using GPS/GSM. |
| **3.** | Smart Security Solution for Women based on Internet of Items (IoT) | G.Harikiran, K. Menasinkai, S.Shirol | Safety of the individuals. | A smart wearable band which tracks body movement and if found abnormal sends emergency message and location to saved contacts. |
| **4.** | The Novel of a Women's Protection Program by using the Smart Security Device. | K. Seelam, K.Prasanti | Safety related to women's | A safe and secure system for women contains the use of arduino and various sensors for detecting body parameters. |
| **5.** | Design of a Women's Safety Device | D. Chitkara, N. Sachdeva, Y. Vashisht | Safety to the each individuals | A completely electronic glove to attack the oppressors and protect themselves from dangers. |
| **6.** | Women's Measurement Program Raspberry Pi | R. Meghana, K.G. Rashmi, H. Keerthana, S. Saranya, L. Niranjan | Safety Concern for womens | By using sensors different parameters of body get measured if found abnormal, use of raspberry pi sends local and message to saved contacts. |

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| **7.** | Smart Band for Women's Safety Based on the Internet of Items (IoT). | S.More, R. Borate, S. Dardige, S. Salekar, D. S. Gogawale | Women's safety and security | Smart band measures pulse and temperature of body and if found any abnormality, sends location and mesaage to emergency saved contacts. |
| **8.** | SMART INTELLIGENT SECURITY SYSTEM FOR WOMEN. | G.Miriyala, P. Sunil, R. Yadlapalli, V. Lakshmi Pasam, T. Kondapalli, A. Miriyala | Smart Technology | Live Streaming video using webcam, tear gas release and are incorporated in the spectate mode which is a new weapon. |

## Conclusion:

The main purpose of this project is to ensure that all women in the community feel safe and secure while walking at night, on unoccupied roads, while going to schools, colleges, workplaces, etc. to solve problems to some degree. With ongoing research and innovation, it can be used to protect women in critical situations, as women face many problems with regard to their safety. The application of this is very useful to avoid crimes such as rape and any other perverted jokes about girls, girls being caught or abused. We therefore conclude that we have been able to review the various strategies used over the years regarding women's safety. Based on the literature review we proposed a program that would serve as a safe tool for women and that would enable her to provide information on where she is in danger. In today's situation, every woman is facing a problem related to her safety due to the rapid increase in violence against women. This program will help women overcome their fears of going out and pursuing their careers. However we have mainly focused on women's safety but also our device is much familiar so that everyone, whether the user is of any gender or of any age this device can be used by them easily as a safety measure.

## Reference:


- Smart Foot Device for Women Safety" by N.Viswanath, V.Pakyala, G.Muneeswari, Institute of Electrical and Electronics Engineers, volume 16, page 130-134, 2016.
- "A Smart Watch for Women Security based on IOT Concept Watch Me" by M.Fathila, A. Helen, R.Rijwana, Institute of Electrical and Electronics Engineers, volume 17, page 190-194, 2017.
- "Smart Security Solution for Women based on Internet of Things(IOT)" by G.Harikiran, K.Menasinkai, S.Shirol, Institute of Electrical and Electronics Engineers, volume 16, page 3551-3554, 2016.
- "A Novel Approach to Provide Protection for Women by using Smart Security Device" by K.Seelam, K.Prasanti, Institute of Electrical and Electronics Engineers, volume 18, page 351-357, 2018.
- "Design of a Women's Safety Device" by D.Chitkara, N.Sachdeva, Y.Vashisht, Department of Electronics and Communication, Northern India Engineering College, affiliated to Guru Gobind Singh Indraprastha, University Delhi, India.
- "Women Safety Measurement Tracking System Using Raspberry Pi" by R.Meghana , K.G. Rashmi, H. Keerthana, S. Saranya, L.Niranjan ECE, Department, RR Institute of Technology, Bangalore,volume 7, page 771- 776,2019.
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