**SECURITY WRIST BAND FOR WOMEN**

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**1**

**SECURITY WRIST BAND FOR WOMEN is a smart wrist band targeted for the individual to keep their self-safety as consideration**.

This application claims… \*(Patent number, date) \*

SECURITY WRIST BAND FOR WOMEN is a smart wrist band which not only tells the time but also can call for emergency with the help of Arduino based sensor system. As well as it detects the pulse rate of the individual, i.e., when the person is in a tense situation the wristband detects the pulse rate of the person wearing it and gives the alert to the saved contacts.

**2**

**FIELD OF THE INVENTION**

As far as our country is considered, there are many cases when a woman faces the situation when they need to call for emergency help. And that is why, their family members must also be sure about their security. Being a responsible citizen of India we must contribute our part towards the country. This security wristband will play a major part in security towards women as well as men of our country.

*Therefore, keeping this in mind, we need something that could do this job at the root level itself and is cost-effective and user-friendly also small scale machinery, having less cost and effective, can be used easily by an individual.*

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**SEARCH TERMS/LIST OF SYNONYMS**

SECURITY WRIST BAND FOR WOMEN, Smart wristband, Arduino, Heart rate monitor, GSM Module, GPS Module, and battery. Cost effective and light weighted parts will make the wearable band light and easy to wear. Defined algorithm for cooperative functioning of the parts together to make the wristband work efficiently.

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**BRIEF BACKGROUND OF THE EXISTING KNOWLEDGE**

**[1]“SMART SECURITY SOLUTIONS BASED ON INTERNET OF THINGS (IoT)”**

Mr.Pampapathi B. M1 , Komal Singh2 , Madhavi V3 , Madhu B Yallaraddi4 , Mangala Desai5 Asst. Professor, CSE dept., RYM Engineering College, Ballari, India1 CSE dept., RYM Engineering College, Ballari, India2,3,4,5. This is a Smart Security Band for women that is based on IOT**.**

Flaws:

*i.* The one carrying the application for the same can only receive the alarm signal for help.

*ii.* The app designed for the band uses the GPS of the smartphone, so if the phone is lost during an emergency, we can’t determine the exact location of the person.

*iii.* During an emergency, alerts can’t be sent to the hospitals or the police stations.

**[2] “SMART INTELLIGENT SECURITY SYSTEM FOR WOMEN”**

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Flaws:

*i.* Due to a large Gas motor and camera sensor the wrist watch could be a bit uncomfortable to wear.

*ii.* Leakage of gas motors could be uncertain or sometimes can be a dangerous situation.

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**DESCRIPTION OF THE INVENTION**

Today, the safety of women becomes a major issue, such apps exist, and they are equally smart to rob a victim of a phone. Here we present the band, which provides protection for women. This helps to identify women and ask for resources to help in difficult situations. The primary goal of this phone is to deliver safety and security. As an independent nation women are still safe today. The system allows you to know the exact location of the women with the device, where the belt is reloaded with an accelerometer, at a predetermined angle, and the message is automatically sent to the selected contact list. That SMS containing Latitude and Longitude information contains a self-defense shock. It sends location to a predefined contact number for latitude and longitude. When a victim attacks a woman, that time of shock is used to punish the attacker to protect himself.

The design is implemented using Arduino Uno connected with accelerometer, GSM and GPS systems in a modular way to accommodate different types of location tracking. Depending on the overall design of the system, the hardware and software system is a real-time monitoring system where the status of women and location information will be provided for immediate assistance.

This nature of an awareness plays a crucial role towards providing Women Safety in the fastest way possible in a self- defense manner. The proposed design will deal with critical issues faced by women in the recent past and will help solve them through technology. With further innovation and research towards this project can be implemented in different areas of security and surveillance. For the desired area, this system can perform the real time monitoring.

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**DESCRIPTION OF THE INVENTION IN DETAIL**

Security wrist band is a smart wearable technology that is much needed in the society considering women's safety in the current scenario.

Components of ‘SECURITY WRISTBAND’

1. Security wristband which consists of :-

**a)** Sensors

Sensors which are used

1. Temperature sensor
2. Pulse-rate sensor
3. Heart-rate sensor

**b)** Arduino Nano

**c)** GSM Module

**d)** GSM Sim Tool

**e)** SOS Switch

**f)** Wrist Band

**g)** 2\*9V Cells

SOS Switch

ON/OFF

Switch

9V Battery

ARDUINO

NANO wristband for women project

SIM Tool

800L

GSM Module

Pulse-rate sensor wristband for women project

Heart-rate sensor

Temperature sensor

***Fig. 1 Block Diagram of the proposed System***

***Smart Bands***

Mainly Smart Watch consists of the sensor layer which is able to measure the biological parameters of the women at tensed situations and triggers the messages to care takers and behaves accordingly.

Its Problem Statement goes like :-

1. To design an embedded system for women protection with capabilities to sense pulse rate, body temperature and to track their motion in case of emergencies and take required actions.
2. To be a wearable device worn on the wrist that doesn't hurt anyone's wrist.
3. To recognise a person's situation and act accordingly.

***Description of the sensors that were used:***

a. Temperature sensors :

The temperature sensor here used is of LM35 series are the temperature devices that produces an output voltage linearly proportional to centigrade temperature

*Calibration is done directly in centigrade*

*Suitable for remote application*

*Rated for the full -55 to 150 degree celsius range*

*b.* *Pulse-rate sensor :*

It uses to measures the nervousness / stress of the person that may have been incurred due to the situation

It works by emitting vibrations in the pressure points that we have on our body.

c. Heart-rate sensor :

It works when the person comes in a situation which deals with anxiety. This sensor measures the heart-rate and sends the signal further.

It's basically a plug-and-play sensor to be used in one go.

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**ADVANTAGES**

The proposed system has following advantages over the prior invention

1. **Cost effective** Use of low-cost hardware providing most accurate results will be considered.

2. **High accuracy** Reducing cost must not affect the efficiency and accuracy of the results we can expect from them.

3. **Power independent** Will have cells in itself, so that the device needs no external power source to work in real time.

4. **Expected output** The hardware must be well connected to provide the expected output with minimum possible errors.

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**USE / APPLICATION**

1. Able to locate the person using GPS coordinates
2. Can be able to sense increased heart-rate during panic situations.
3. Can be worn by anyone and everywhere.
4. Can be used in a situation that requires immediate action.