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IOT Based Smart Menstrual Cramps Relief and Tracking Belt

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Abstract -
Menstrual cramps are a common problem that cause pain and discomfort in many women. This paper presents a Internet of Things (IoT)based smart cramps relief and tracking belt that helps in reducing pain and monitoring basic health conditions.

It also provides heat and vibration therapy to relax muscles and relief cramps. It also includes sensors to measure pulse rate and humidity for better understanding of the user's condition. An ESP32 microcontroller collects the data and sends it to a mobile application, where the user can view the information and it control the device and also control manually switch ON and OFF.

1. INTRODUCTION

Menstrual cramps are every females problem that can affect daily activities and comfort. Many females use hot water bags or medicines for relief, but these are not always easy to use.

With the help of IoT and wearable technology, smart devices can now provide better solutions. This paper presents a smart belt that helps reduce pain and also monitors basic health conditions.

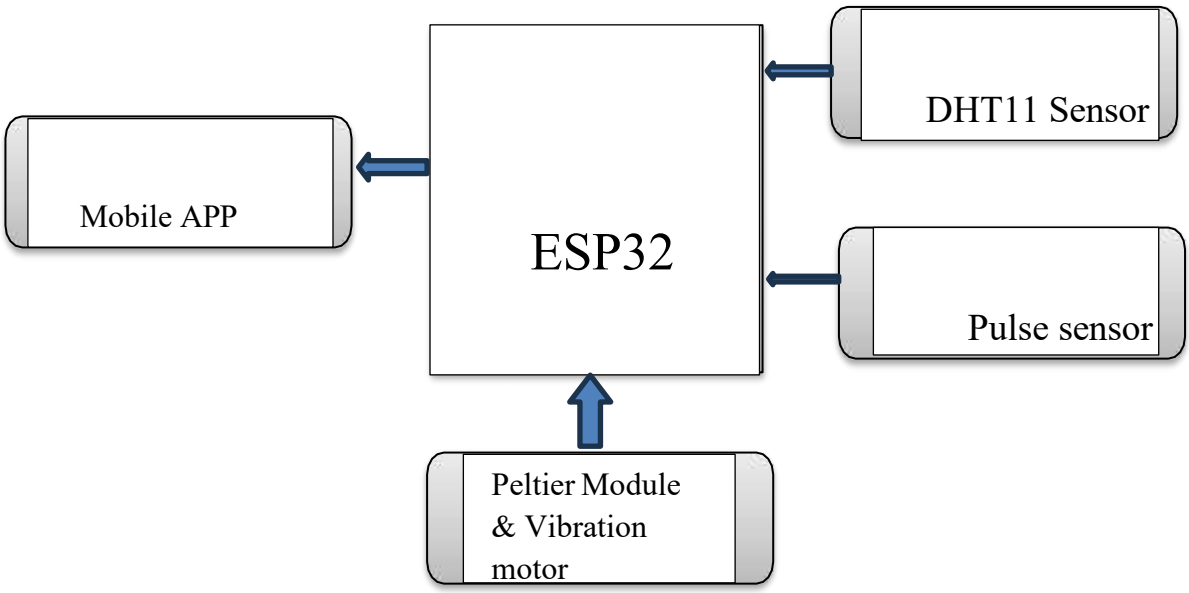
The belt uses heat and vibration for pain relief and includes sensors to measure pulse rate and humidity. The data is sent to a mobile app, allowing the user to monitor and control the device.

2. BODY OF PAPER

2.1 System Architecture

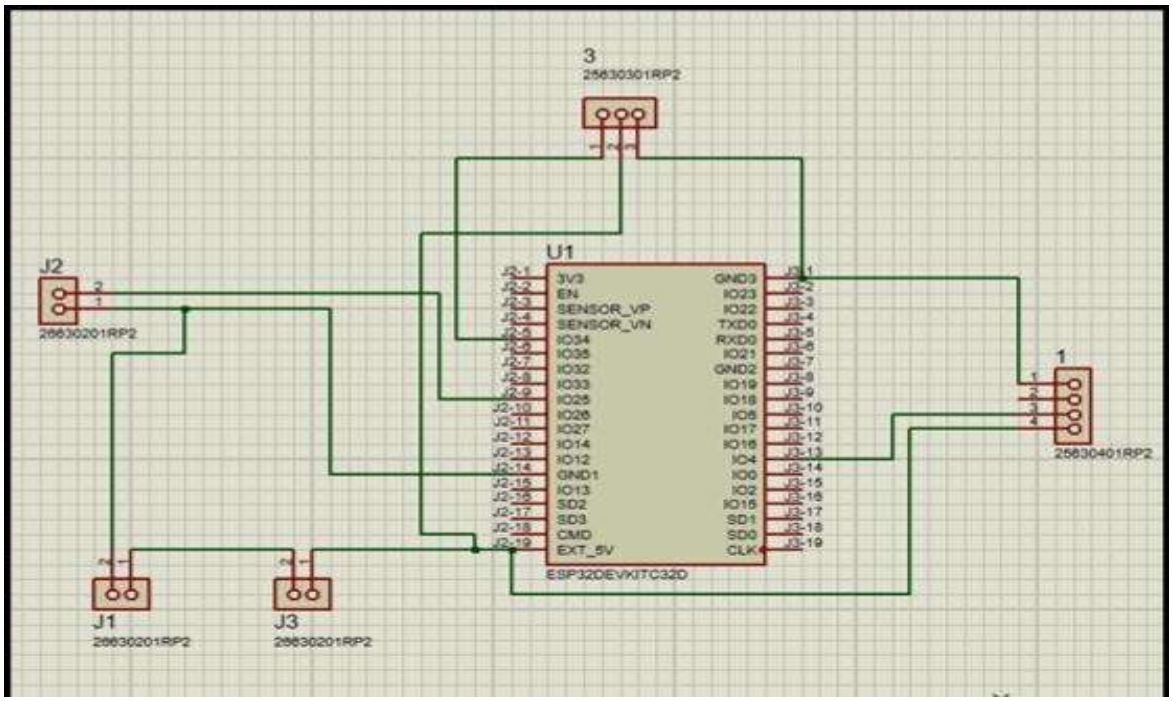
- ESP32 microcontroller
- Peltier module
- Vibration motor
- Pulse sensor
- DHT11 sensor
- Mobile application

Fig -1: Block Diagram



2.2 Working Principle

Fig -2: Circuit Diagram



When the user wears the belt, the sensors start collecting data. The pulse sensor measures heart rate, and the DHT11 sensor checks temperature and humidity.

The ESP32 processes this data and sends it to the Blynk mobile application. The user can see the data in real time and control the belt using the Blynk app.

The Peltier module provides warm heat to relax muscles, while the vibration motor gives gentle vibrations that help reduce pain.

3. CONCLUSIONS

The smart belt provides an effective and simple solution for menstrual pain relief. It combines heat therapy, vibration therapy, and health monitoring in one device.

The system is easy to use, portable, and comfortable for daily use. The real-time monitoring feature also allows users to better understand their health condition.

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