

TEMPERATURE CONTROLLED BODYSUIT FOR ARMY PERSON

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ABSTRACT

Nowadays the world has uncertain and insecurity situation that means the war is cultivated in any time. At the same time the soldiers to join in army is very less. In this critical occasion we have to protect our soldier's lives. To increase the soldier's lives we have created a solution based on embedded systems using IOT. In this project we provide the special advanced techno suit for the army soldiers. For avoiding this problem, we found this suit. This suite is multi purposed suit. It is providing the location of soldier and injuries of the soldiers though IOT data base. IOT is a technology used for security purpose and they are used to safeguard the connected devices and networks in them, it also involves interconnecting computing devices by internet. It reduces the body temperature will goes to high and vice versa goes low increase the temperature it will helps to maintain the body health of the soldiers. It helps the soldiers to maintain his body conditions in a sustainable manner.

Keywords: Multipurpose suit, Maintain body condition, Peltier Plate.

1. INTRODUCTION

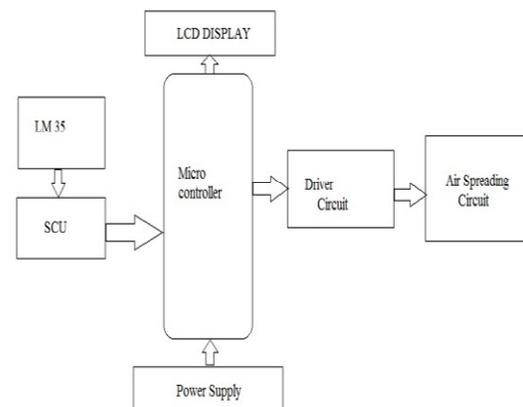
Indian soldiers are the most important resource of our country. They play a very important role to protect the country and the peoples livening in the country. Army, Air Force, Navy and Marines all comes under the term soldiers they are always ready to take and hold their duties in extreme weather conditions. The Armed Forces personnel are issued with two types of extreme climate protective clothing. The first version is issued to troops deployed in areas where temperatures do not fall below -20°C and are not perpetually snowbound. This ensemble consists of woollen inner underpants, woollen shirt, serge pants, woollen jersey, and anorak style parka with hood, woollen socks, snow boots, mittens and impermeable gloves. The specially designed EJackets will give better production to the soldiers working in extreme weather conditions. This E-Jacket will operate in twomodes:

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inside the uniform which helps the soldiers to bear any kind of external environment and he can efficiently work without heat stress or cold stress. The heat-protective clothing can provide a protection for their safety from the external climatic conditions. The proposed system is adaptable jacket based on climate conditions using ARM microcontroller, by which the people/user can easily control the temperature of the jacket. The Peltier plate temperature automatically adjusts according to the condition of the relay circuit. The user wears a climate adaptable jacket as a dress, it observe the temperature status in the LCD, which is placed in this jacket.

2. SYSTEM ARCHITECTURE



3. WORKING PRINCIPLE

We are going to control the temperature at the region of army persons, in this 6-volt battery is used throughout the circuit as power supply. The temperature sensor and pulse sensor are connected to the microcontroller (ATMEGA 328P). Here we are using LCD display for displaying value of temperature sensor and pulse sensor. The LED also displaying value of Peltier plate. Thermoelectric cooler operates according to the Peltier effect. The effect creates a temperature difference by transferring heat between two electric junctions. The relay is simple switches which are operated both electrically and mechanically. The buzzer used to indicate the dangerous sound at

DRIVER CIRCUIT

A relay is an electrically operated switch. Many relays use an electromagnet to operate a switching mechanism mechanically, but other operating principles are also used. Relays are used where it is necessary to control a circuit by a low-power signal (with complete electrical isolation between control and controlled circuits), or where several circuits must be controlled by one signal

7. CONCLUSION

The project "Temperature controlled bodysuit for army person" is successfully implemented. This system is smaller, less weight and having low power consumption, so it is very efficient. It helps the soldiers to work even in extreme climatic conditions. For the future expansion, this uniform can easily power by a small portable solar panel and echo friendly too. The use of solar panel gives continuous power output. We can also include rain drop sensors, humidity sensors for working purposes. These jackets can be wearable in all weather conditions. We can utilize this jacket to shield us from over-heating & cooling. We can also place heart beat sensor in the jacket.

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