



Team ID: T072

Team Name: Innovators (as registered in portal)

PS Number: PYS120

PS Title: thermoregulatory suit

Domain: open domain

Category: hardware



## **Problem Statement:**

- ★ In various environments , maintaining a comfortable Body temperature is essential for human performance and health
- ★ There is a need for innovative solution that helps to regulate the temperature effectively, ensuring comfort and efficiency across different external conditions..



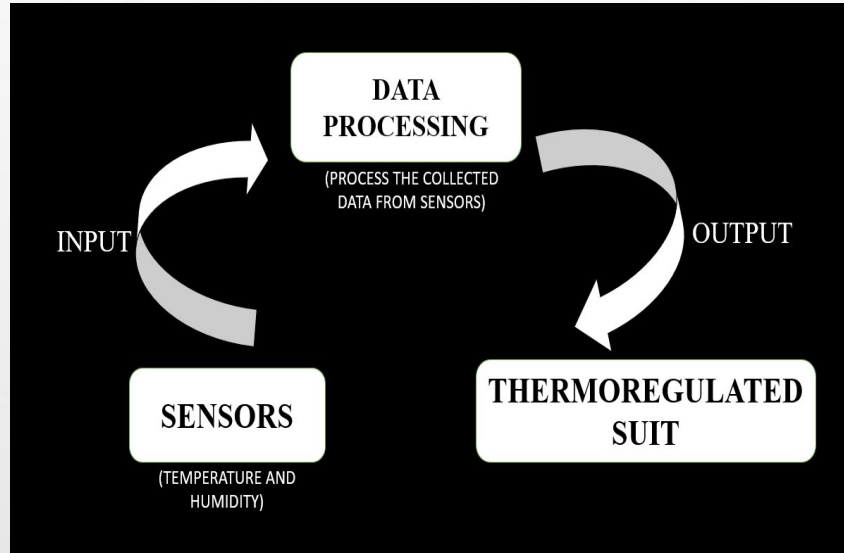
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# Proposed Solution:

## THERMOREGULATORY SUIT

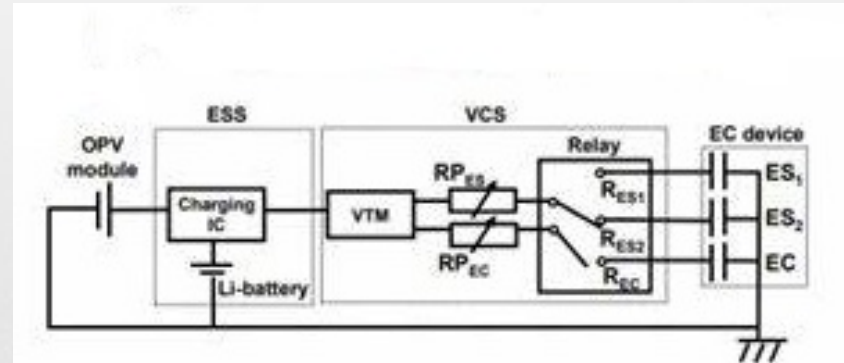
- Observe the external temperature and the body temperature and provides the optimum temperature to the body.
- The temperature of the suit can be set both manually or by the detected statement.



## Architecture & Hardware-Software:

Some hardware you can mention:

- Temperature sensors (thermistors, thermocouples)
- Heating/Cooling elements (electric heaters, phase-change materials)
- Control units (microcontrollers, Arduino boards)
- Phase-change materials (PCM)ol units (Arduino boards)



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## **Impact and Future Scope:**

- In environments with extreme temperatures, this suit helps in maintaining the constant body temperature and reduces the risk of heat stress and hypothermia.
- This suit improves safety by providing optimal temperature to the body and preserves cognitive function.

## **Benefits:**

- Thermoregulatory clothing offers numerous benefits, particularly in terms of enhancing comfort, performance, and well-being across various environments and activities.

## **Research and References:**

Thermoregulatory clothing with temperature-adaptive multimodal body heat regulation - ScienceDirect



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**THANK  
YOU !**