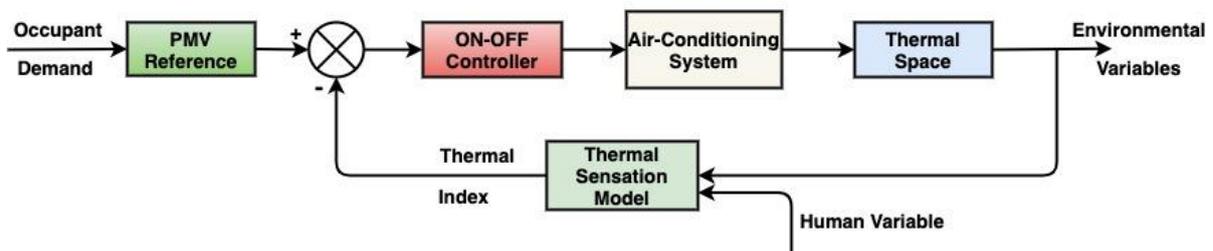


## A Control Apparatus for Controlling Operation of a Heating, Ventilating and Air-Conditioning (HVAC) System and a Process Therefor

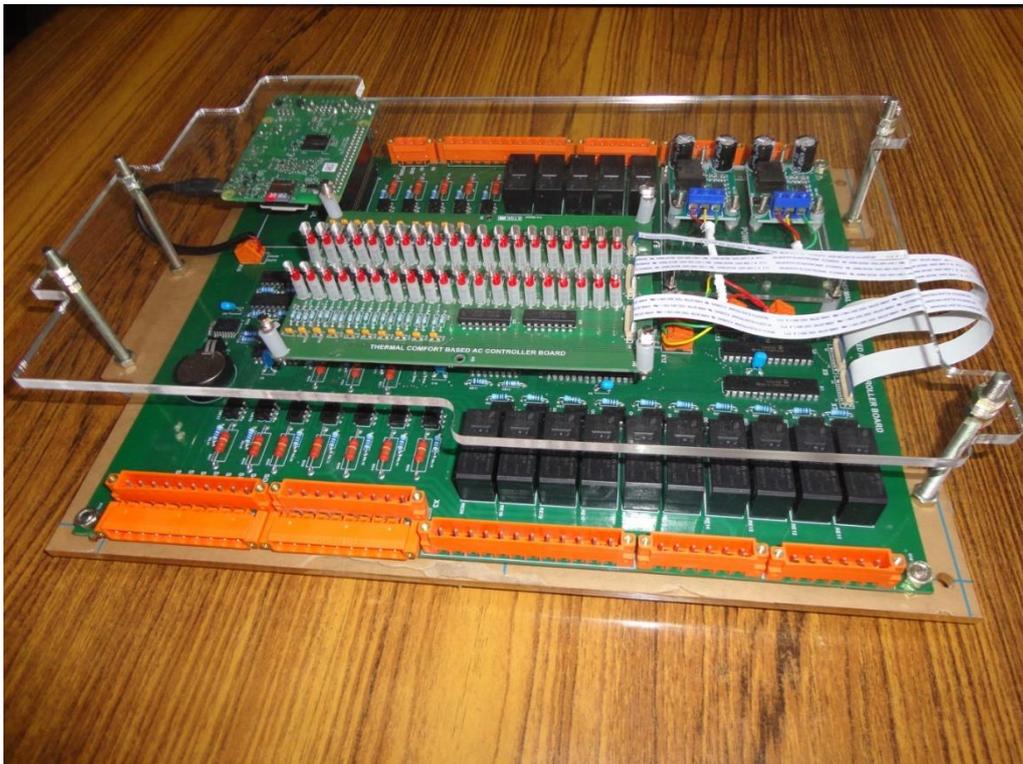
Indian Patent No: 311564, Application No: 94/DEL/2010, Date of filing: 18/01/2010, Date of grant: 24/04/2019. The technology has been transferred to Indian Railways.

Authors: **M. Kumar and I. N. Kar**

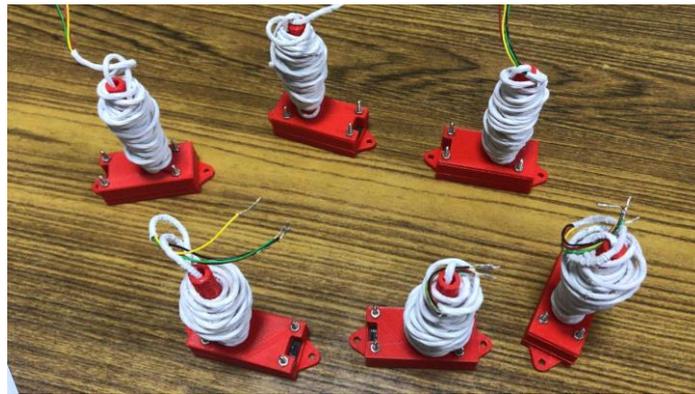
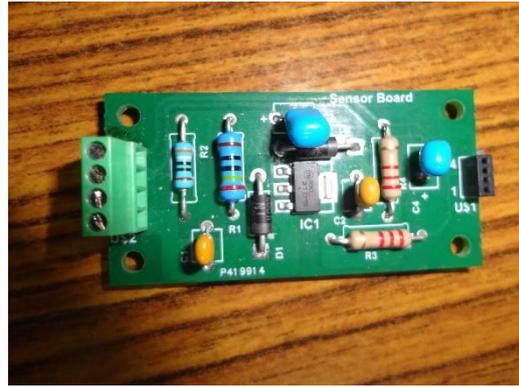
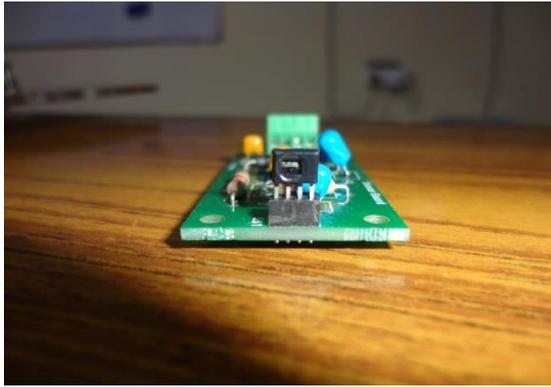
To improve the control performance of an air-conditioning system, a novel thermal sensation index based ON-OFF control system is implemented. A block diagram representation of the control scheme and the controller board are shown below. The performance of control apparatus is found to be better than a temperature based ON-OFF control scheme in terms of thermal comfort. This was an attempt to achieve comfortable train journey along with the minimal use of blankets.



Block diagram



A snapshot of main controller board



Sensor board

### Relevant References

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