## **IJARSCT**



International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)

Volume 2, Issue 2, May 2022

## Thermoelectric Air Condition

Aher Aniket, Aware Saurabh, Gaikar Rushikesh, Handge Vaibhav, Prof. Mr. B. S. Vikhe

Department of Mechanical Engineering

Sir Visvesvaraya Institute of Technology (SVIT), Nashik, Maharashtra, India

**Abstract:** In thermoelectric material, electrical energy can be directly converted into Thermal energy and thermal energy is converted into electrical energy. Direct conversion between electrical and thermal energy is possible due to two important thermoelectric effects one The Seebeck effect and other the Peltier effect. The Seebeck effect refers the existence of an electric potential across a thermoelectric material subject to temperature gradient. The Peltier effect refer to the absorption of heat in one end of a thermoelectric material and the release of heat from the opposite end due to the current flow through the material.

Keywords: Peltier, Peltier Effect, Thermal Energy, Refrigeration

## REFERENCES

- [1]. Bartlett, S &Sukuse L, 2007, Design and build an air conditioned helmet using thermoelectric devices, Final Year Project, University of Adelaide.
- [2]. Buist, RJ & Streitwieser, GD March 16-18,1988, The thermoelectricly cooled helmet, The Seventeenth International Thermoelectric Conference, Arlington, Texas.
- [3]. Bulat, L & Nekhoroshev, Y 2003, Thermoelectric cooling-heating unit for thermostatic body of pickup refrigerated trucks, 22ndinternational conference on thermoelectrics.
- [4]. Harrington, SS 2009, Thermoelectric air cooling device, Patent Application Publication, US Patent Number 5623828.
- [5]. Harvie, MR 2005, Personal cooling and heating system, Patent Application Publication, US Patent Number 6915641.
- [6]. Hyeung, SC, Sangkook, Y & Kwang-il, W 2007, Development of atemperature-controlled car-seat system utilizing thermoelectricdevice, Applied Thermal Engineering, pp 2841-2849.
- [7]. Koetzsch, J & Madden, M 2009, Thermoelectric cooling forindustrial enclosures, Rittal White Paper 304, pp 1-6.
- [8]. Larid 2009, Thermoelectric AssembliModules for Industrial Applications, Application Note, Larid Technologies.
- [9]. Lauwers, W & Angleo, SD 2009, The Cooling VestEvaporative Cooling, Final Year Degree Project, Worcester polytechnic institute.
- [10]. Marlow Industries, Thermoelectric Cooling systems Design Guide, pp -11, Dallas, Texas.
- [11]. Melcor 2010, Thermoelectric Handbook, Laird Technologies.
- [12]. McStravick, M et.al 2009, Medical travel pack with cooling System, Patent Application Publication, US Patent Number 49845A1.
- [13]. Rowe, DM & Bhandari CM 2000, Modern thermoelectrics. Reston Publishing, USA.
- [14]. Rowe, DM 1995, CRC handbook of thermoelectrics. Boca Raton, FL: CRCPress.
- [15]. Rowe, DM2006, Thermoelectrics Handbook: Macro to Nano. Boca Raton, FL: CRCPress.
- [16]. ST Microelectronics 2004, 300W Secondary Controlled Two switch forward converter with L5991A, AN1621 Application Note. Tan, FL &Fok, SC 2008, Metho.

DOI: 10.48175/568