**ABSTRACT SHEET FOR PAPER**

**Type of Paper (Fill the appropriate box with black colour)**

* **Technical Paper**
* **Review Paper**

**TITLE OF PAPER: Re-Designing the Thermoelectric Generator and extending its application to electric vehicles.**

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**Experiment work/simulation done: Yes(Not yet done)**

Details about the experiment/simulation: We will be experimenting with different materials and their amalgamation and thus, get their thermal simulations and electric efficiency for the Seebeck.

**ABSTRACT:**

Our paper aims at researching upon implementing the Seebeck effect using a different technique, rather than the traditional methods of implementation. We will not be using the standard P-N strip approach but instead, use mixtures of MS Junctions and implement it using transistorial approach.

The research project also extends the application of the Seebeck effect to the field of Electric Vehicles. The heat generated from the accumulator, collectively with the heat sink provided by the coolant, can be effectively used to generate current. Increasing the overall efficiency would be guaranteed by integrating the Seebeck with the BMS. We would be using a number of Seebecks which would turn on and off where and when required, automatically. Further, we will design an efficient heat transfer method, for the application and research for the best material amalgamation for getting the most efficient output of the thus, re-designed Seebeck generator.

**KEYWORDS:**

**Thermoelectric Effect, Battery Management System, Electric vehicle, Semiconductors, Junctions, Metal- Semiconductor(MS) junctions, Heat sink, Heat flow.**

**REFERENCES:- Books/articles/webpage/journals/sources of study** (Note: Example, if it is a web source then mention the complete link of the page. The source mentioned will be used to verify the content in the paper.) **:**

1)https://searchnetworking.techtarget.com/definition/Seebeck-effect

2)https://searchnetworking.techtarget.com/definition/Seebeck-effects

3) https://www.youtube.com/watch?v=kV\_OQ6D0d44

4)<https://ieeexplore.iee>e.org/search/searchresult.jsp?newsearch=true&queryText=SeeBeck%20effect

5)https://www.researchgate.net/publication/282237443

**BACKGROUND AND SCOPE OF THE PAPER:**

The research can effectively increase the efficiency of an electric vehicle by using the waste heat generated, to produce electricity to power the Low voltage systems and PCBs. The heat source and sink are already present in every car (The battery and the coolant system), we are just utilizing it for a better purpose.

This perspective of the Thermoelectric generation has never been touched upon. The new method implementation of the TEG (one in the paper) will also increase the overall efficiency of the TEG model. Also, new materials have been experimented with for getting the optimal results.

The research also opens up many new possibilities of experimenting with the physical and chemical parameters of the used materials to increase the efficiency all the more.

We are thus, recreating the Seebeck to increase its efficiency and also extend the application to the Electric vehicle Sector.