



ABSTRACT

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INNOVATION



SEEBECK EFFECT BASED ELECTRO THERMAL CONVERTER

Jeghan A/L Thangarajah*
Chua Shang Hang*
Aiman Fahmi bin Mohd Zul*
Kumarathevan A/L Tharmalingam*
Mahamad bin Hj. Hamid*

*Sekolah Menengah Kebangsaan Ibrahim, Jalan Kolam Air, 08000 Sungai Petani, Kedah

Abstract

We aim to create a device, known as, Seebeck Effect Based Electro Thermal Converter (SEBET Converter) to convert thermoelectric energy into electrical energy. Current hot issues such as wastage of electricity in the form of heat energy and great amount of heat loss in factories are demanding our attention. SEBET Converter can be used to reduce heat loss and generate more electricity effectively. SEBET Converter is produced and functions based on the Seebeck effect. The temperature difference between two dissimilar electrical conductors or semiconductors can produce a voltage difference between the two substances. SEBET Converter uses thermoshield to trap the heat energy while inside SEBET Converter, difference of temperature is generated, and thermoelectric plates are used to convert thermoelectric energy into electrical energy. The electricity produced by SEBET Converter is constant and stable. Heat loss can be reduced, and more electrical energy can be produced using SEBET Converter. SEBET Converter can be used to charge phones and supply electricity to some electrical devices, and, in a bigger size, can be used in factories to convert a huge amount of heat loss into electrical energy. Besides, SEBET Converter is also made using recycle materials, which makes the SEBET Converter an eco-friendly one. To be mentioned, e-waste (waste of electrical products) are used to make SEBET Converter. SEBET Converter can convert thermoelectric energy into electrical energy effectively based on the Seebeck Effect. Therefore, we hope that SEBET Converter can help build a greener environment and an eco-friendly society. We also wish that SEBET Converter can be applied in countries that are short of electricity supply to provide them unlimited electricity source.

Novelty and Uniqueness:

SEBET Converter is an innovation of current power bank. Current power bank is shown below:

COMPARISON

1. Current power bank obtains its electricity through charging while SEBET Converter gains its electricity through heating.
2. Current power bank can only be used to charge phones; some larger ones can be used to charge laptop. While SEBET Converter can be used in a larger scale, it can be used to generate electricity in houses, factories and more.

3. Current power bank has a limited source of electricity while SEBET Converter can generate unlimited source of electricity in the presence of enough heat energy.
4. Current power bank has a high chance of exploding while SEBET Converter is safe to use.

Keyword: Seebeck effect, electro thermal converter

Potential commercialization: SEBET Converter is also made using recycle materials, which makes SEBET Converter an eco-friendly one. To be mentioned, e-waste (waste of electronic products) are also used to make SEBET Converter. Therefore, the amount of e-waste can be reduced through producing more SEBET Converters.

We are targeting the international stage as we think that SEBET Converter has the potential to be applied in many countries that have low access to electricity. For example, many countries in sub-Saharan Africa has very low access to electricity, which in turn causes several inconveniences to the locals.

SEBET Converter can produce unlimited electricity using heat energy and act as a source of renewable energy. It can supply infinite electricity to the needy if there is presence of heat energy.

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