

Power Generation by Waste Material

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Abstract: Thermometric generators (TEGs) are small solid state devices that generate electricity directly from heat. They have the potential to be applied in waste heat recovery systems and be used as a primary heat engine as a generator. In this study, a direct heat to electricity (DHE) technology using the thermoelectric effect, without the need to change through mechanical energy, was applied to harvest low-enthalpy thermal work. The power generator assembled with TEG modules had an installed power of 1 KW at a temperature difference of around 120 °C. The power generated by the thermoelectric system is almost directly proportional to the temperature difference between the hot and the cold sides. A Cost Analysis of the technology, however suggests that, the material costs are too high for typical thermoelectric power generation applications at mean temperatures below 135°C. Above 275°C, many bulk thermoelectric materials can achieve costs below Rs.72/W. The major barrier to economical thermo electric power generation at these higher temperatures results from system costs for heat exchangers and ceramic plates. For cooling applications, we find that several thermoelectric materials can be cost competitive and commercially promising.

Keywords: Heating panels, Led Bulbs, zaar box, IN4007, Battery 4.5V, Resistors, capacitors

REFERENCES

- [1]. IJCRT, Department of Electrical and Electronic Engineering Shree Rammurti Smarak College O Engineering and Technology Bareilly, UP-243202.
- [2]. "Generation of electricity using solid waste" Project reference No: 45S-BE-1864 By Dr. Nalini E Rebello, Mr. Anvith V B adikana, Mr. Muhamma Shunaif, Ms. Sahana J.
- [3]. Electricity generation by waste materials" International Journal of Advanced in Science Communication and Technology (IJAR SCT Volume 2, Issue 3, May 2022 By Mr. Ashish R Chandane, Mr. Sagar D. Hedau, MR. Lucky S Sarode