Chapter-8

Generation of Electricity by Using Plastic Waste

[1]P. Sravana Lakshmi, [2]G. Gowtham Kumar, [3]Ch. Manikanta, [4]K. Chandu, [5]L. Vijay Kumar
[1]Faculty, [2,3,4,5.] Student, Dadi Institute of Engineering & Technology, Anakapalle
pslakshmi@diet.edu.in , 20u45a0218@diet.edu.in

In this present scenario everything is computerized. So, usage of power is increased. But production of power is less due to lack of Natural resources. For that we need to consume electricity as much as we can. Here we are using waste management for generating electricity through a heating panel. Industrial waste is generated in industrial processes which is not put into any practical use and is lost, wasted, and dumped into the environment. Recovering the waste material can be conducted through various waste heat recovery technologies to provide valuable energy sources and reduce the overall energy consumption. It can be utilized for various DC loads here we have arranged 4 big LED bulbs which are connected in parallel and we have designed an automatic street lighting system for this system arrangement we have designed a power supply circuit board which contains BC 547 transistor, LDR (light dependent resistor), 1Kilo ohm and 4 Kilo ohm resistors, 8 LED diodes and we have arranged these diodes in parallel connection and the results are shown in an experimental way by using hardware components.

The above Block Diagram Indicates the entire out view of this Project Generation of Electrical Energy by Reutilizing Low lab Grade Waste. The conventional fuels required for production of electricity is decreasing day by day and it is very important to find out alternative sources which can be used as the fuel for the production of electricity especially for developing countries. The natural resources in the form of fossil fuels are the raw materials from which electrical energy is generated and the day-to-day life of the people of today's world is solely dependent on the electrical energy.

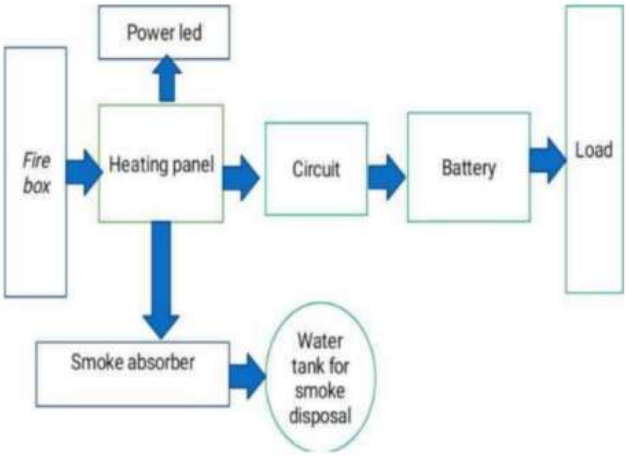

Fig.1: Block Diagram.

The usage of electrical energy is increasing day by day. There is not enough generation of electrical energy to keep up with the demand, and there is a scarcity of raw materials for producing the energy. Alternative sources are now explored to prepare for the future dearth of traditional energy sources. The waste materials can be a good source of energy as the amount of waste is increasing every day, and can help in meeting the electrical energy. Many countries are now switching to renewable energy sources, as they are clean and a suitable substitute for fossil fuels. Some part of the world has already established a few wastes to energy power plants but this is not

enough and there is a huge scope of increasing the overall performance of the systems. For a developing country converting the waste materials into energy is economically advantageous.

The limited availability of primary energy resources, increasing concern of environmental issues of emission sand the growing global demand for conserving energy continue to accelerate the search for technologies of generating electrical power.

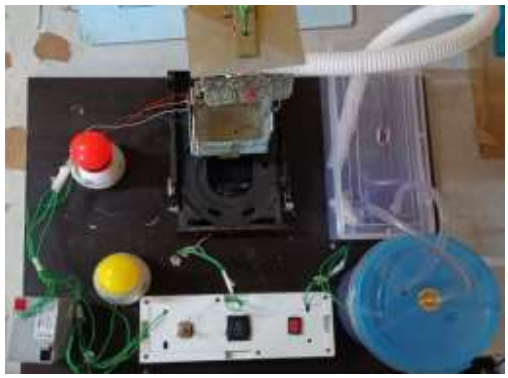

Fig.2: Out Put

Thermoelectric power generators have no we merged as a promising alternative green technology owing to their potential to directly convert waste-heat energy into electrical power. The application of this alternative green technology in converting waste-heat energy into electrical power can improve the overall efficiencies of energy conversion systems.

Currently, a large amount of waste heat is discharged from industry including power utilities and manufacturing plants. Hence most of the research activities have been directed towards the utilization of industrial waste heat. Research on thermoelectric generators might be needed to focus on finding suitable thermoelectric materials that can withstand higher temperatures of various industrial heat sources at a feasible cost with good performance.

- The heat source of the thermoelectric generator serves as a radioactive element for many space probes including the Mars Curiosity rover.
- Solar cells employ only the high frequency part of radiation, and the low frequency heat energy is wasted. Thermoelectric devices integrated with the solar systems can convert the wasted heat energy into useful electricity.
- Waste heat produced from cars and other automobiles, microprocessors and industrial processes can be harvested using thermoelectric generator, thereby increasing the efficiency of the processes/systems.
- It can be used to power outdoor lights, fans, and several instruments like guard alarm systems, radio receivers and TV sets.
- It can also supply energy to green houses, trading kiosks, garages, hangars, cottages, country houses, and amenity rooms.

Electricity will largely replace petrol and diesel as a fuel for road vehicles. It will decrease the pollution. The future of the sector looks bright since by 2026-27 the country's power generation installed capacity will close to 620 GW, of which 38 per cent will be from coal and 44 per cent from renewable energy sources. In the Present days the wastage drastically increasing day by day in this entire waste we can Reutilize the waste. Sadly, present we are not using but by using this project we can Reutilize the waste the input is Garbage Waste and the output is Electrical Energy. We install it in a small box near the Municipal Dustbins people put their Garbage Waste in it. This is a very simple process and easy to install and maintenance.

 ISBN:9798215685907