

# **“THERMOELECTRIC POWER GENERATION SYSTEM (Use of Waste Heat)”**

**Under the Supervision of Er. Asheesh Kumar Soni**

## **ABSTRACT**

The ever growing huge demand for electricity needs is to be fulfilled with taking in consideration the environment factor. Thus, recycling of energy must be done as effectively as possible. Harnessing of the heat energy wasted from automobiles, industries, domestic appliances etc. all of which can generate power. Industries and automobile sector is the main source for the supply of waste heat which can generate power that can be further used for powering various accessories thus increasing the overall efficiency of the system itself. Technology under study in this project for waste heat recovery is called TEG which stands for Thermo-Electric Generators based on the “See Beck Effect”. TEG is a device which makes use of the temperature gradient across it to generate an electromotive force (EMF). TEGs are most suitable for waste heat recovery applications due to lack of mechanical parts, low maintenance and high durability and are proved in space missions over the past decades. The focus of this project is to produce electricity from waste heat in domestic purpose.

Thermoelectricity is the science of conversion of heat energy (temperature difference) into electrical energy (See beck effect) and vice versa (Peltier effect). These are mutually reversible. Thermoelectric power generation is a direct consequence of the See beck effect. The See beck effect is the conversion of temperature differences into electricity by a closed loop formed by two different metals joined in two places, with a temperature difference between the junctions; as the metals respond differently to the temperature difference, a current loop and a magnetic field is being created. Waste heat trapped from industry can be utilized in the industry itself. Waste heat from automobile cannot be easily trapped and utilized by us as much as the waste heat from a burning stove is for household purposes.

When the cookware is placed on the iron stand, the flame heats up the bottom of the cookware to cook the food, but a heat from the flame also escapes around the surroundings. To trap this heat, a second aluminium pot is used which heats up very fast by trapping some of the heat escaping environment, thus making use of the heat which would have been otherwise wasted.

## IMAGE OF PROJECT



MAYANK KUMAR BAJPAY

DIVISHA SINGHANSHIKA

SIKANDARADITYA

SHIKHA KUMARI



FINAL YEAR ,REC BANDA.