

# Electricity Generation by Thermoelectric Module

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Thermoelectric Generator on Bike Exhaust Manifold

The thermoelectric generator (TEG) is a device for directly converting thermal energy into electrical energy based on the see-beck effect and it has presented urgent potential in the case of waste heat recovery. As an important cause for the fuel crisis and environmental pollution, the only 30% of heat generated is being utilized by the vehicles of internal combustion engine from gasoline fuels. During this process, the remaining 40% of the heat is lost through waste manifold exhaust pipe and 30% by the coolant during this cycle. The TEG using automobile waste exhaust as heat source is assumed to a new way to reduce engine loads as well as the alternator and then decrease fuel rate consumption and environmental pollution.

Dave Shrey and Satani Kaushal, students of Mechanical Engineering Department of C. U. Shah University has done this project which can be used to utilize the waste heat energy of bike engines into electricity for multipurpose use in Automobiles. This system is economical, easy to implement and does not produce any burden on Bike efficiency or engine efficiency. They attempted to use the waste heat energy produced by the engine. Thus, electricity produced can be used in to glow car indicators, to run music system, to charge batteries.

They created the TEG module in minimum cost of only Rs. 1560, by which the output created is 6 voltages from all four TEGs module. After it the voltage of actual output can be step up by chopper circuit for maximum 40 voltage and can be used in two-wheeler as essential need as mobile charging port or to use head light of the vehicles. This module also can be used to get more power if using in heavy vehicles.

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