

Experimental Analysis of Electrical Energy Producing Using the Waste Heat of Exhaust Gas by the Help of Thermoelectric Generator

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Abstract : The focus of this study is to analyse the results of heat recovery from exhaust gas which is produced by an internal combustion engine (ICE). To obtain a small amount of energy, an exhaust system which is suitable for recovery waste heat has been constructed. Totally 27 TEGs have been used to convert from the heat to electric energy. By producing a small amount of this energy by the help of thermoelectric generators can reduce engine loads thus decreasing pollutant emissions, fuel consumption, and CO₂. This case study is conducted in an effort to better understand and improve the performance of thermoelectric heat recovery systems for automotive use. As a result of this study, 0,45 A averaged current rate, 13,02 V averaged voltage rate and 5,8 W averaged electrical energy have been produced in a five hours operation time.

Keywords : thermoelectric, peltier, thermoelectric generator (TEG), exhaust, cogeneration

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