Design of a Flue Heat Energy Conversion System for AMOR AM 01 LPG Gas Stove Based on a Thermoelectric Generator with Finned Reflector Risse Entikaria Rachmanita, S.Pd., M.Si (supervisor)

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ABSTRACT

There is a need for alternative energy sources that have the potential to generate electricity with environmentally friendly processes such as the utilization of exhaust heat from burning LPG gas stoves. The application of finned reflectors on LPG gas stoves to minimize losses that occur in combustion, increase efficiency on the gas stove, and apply a conversion system from a thermoelectric generator to convert waste heat energy into electrical energy directly. This study aims to design a flue heat energy conversion system for the AMOR AM 01 LPG gas stove based on a thermoelectric generator with a finned reflector as an effort to utilize exhaust heat in the combustion of an LPG gas stove, as well as apply the use of a finned reflector to increase the efficiency of the LPG gas stove conversion system. The exhaust heat energy conversion system for the AMOR AM 01 LPG gas stove which has been completed consists of several main components, namely a thermoelectric generator, finned reflector, waterblock, and an AMOR AM 01 LPG gas stove which has been modified according to the plan. The tests that have been carried out include the power and efficiency of the conversion system LPG gas stove with fins. The results of the tests that have been carried out have produced the highest power output of 0.1492 watts with a series thermoelectric generator arrangement using a 22 ohm resistor load. While the efficiency of the finned gas stove conversion system produces the highest efficiency in the first test, which is 94.607%.

Key words: energy conversion system, AMOR AM 01 LPG gas stove, finned reflector