



# 7<sup>th</sup> INTERNATIONAL WORKSHOP ADVANCES IN CLEANER PRODUCTION

## Academic

“CLEANER PRODUCTION FOR ACHIEVING SUSTAINABLE DEVELOPMENT GOALS”

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## Study of Potential for Energy Recovery in Low-Cylinder Diesel Engines and its Environmental Impact

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### Abstract

This study of thermoelectric generators as an energy recovery system in exhaust gases is a constant research challenge. In this paper, the theoretical model that describes the behavior of the thermoelectric modules is exposed and the CFD simulation results across of ANSYS® software too, where the heat exchanger allows improving the efficiency of the modules increasing the transmitted heat and the surface temperature of hot focus, showing the temperature profile of heat exchanger in contact with exhaust gases and the electric potential of modules in the specific temperature. Also, the influence in the decrease of fuel consumption is evaluated and the environmental impact in the decrease of polluting emissions to the atmosphere.

*Keywords: Thermoelectric module, simulation, heat exchanger, fuel, polluting emissions.*

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