

## Testing of Gas Turbine KingTech with Biodiesel

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**Abstract :** The present work is a part of the research project called 'Testing of gas turbine KingTech with biodiesel', carried out by the Department of Industrial Engineering of the National Technological University at Buenos Aires. The research group aims to experiment with biodiesel in a gas turbine Kingtech K-100 to verify the correct operation of it. In this sense, tests have been developed to obtain real data of parameters inherent to the work cycle, to be used later as parameters of comparison and performance analysis. In the first instance, the study consisted in testing the gas turbine with a mixture composition of 50% Biodiesel and 50% Diesel. The parameters arising from the measurements made were compared with the parameters of the gas turbine with a composition of 100% Diesel. In the second instance, the measured parameters were used to calculate the power generated and the thermal efficiency of the Kingtech K-100 turbine. The turbine was also inspected to verify the status of the internals due to the use of biofuels. The conclusions obtained allow empirically demonstrate that it is feasible to use biodiesel in this type of gas turbines, without the use of this fuel generates a loss of power or degradation of internals.

**Keywords :** biodiesel, efficiency, KingTech, turbine

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