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Abstract of PhD dissertation entitled

"Studies on the impact of compression-ignition engines with alternative fuels and analysis of their reaction on performance parameters of the selected means of transport"

In the doctoral dissertation, there are discussed the issues concerning powering of engines with self-ignition with the mixtures of diesel oil and fatty acid methyl esters with simultaneous changes of the fuel injection controller's settings

The purpose of the study there is the development of a method and construction of a model of assessment of the impact of the addition of biocomponent to the diesel oil on the selected values of performance parameters of the means of transport and establishment of the optimum setting of the fuel injection controller of a drive unit powered with the analysed mixtures due to the properties of the performance parameters of that unit.

This dissertation consists of ten chapters, such as: introduction, analysis of the state of knowledge, issues, methodology, analysis of research results including the evaluation model and conclusions.

Based on the analysis of the literature, for the tests there were designated ten performance parameters. In research was used mixtures of diesel oil and a biocomponent in the proportions of 10%, 30% and 50% and 50% with an additive improving the lubricating and viscosity properties. There have been assessed the changes introduced in the fuel injection controller's settings, which consisted in the increase of the dose of fuel and the increase of the air supercharging.