

סמינריון

הנד מוזמנת להרצאה סמינריונית של הפקולטה להנדסת מכונות שתתקיים ביום ד' 16.09.2020

(כ"ז באלול, תש"פ), בשעה 14:30 באמצעות הזום :

<https://technion.zoom.us/j/97762733871>

מרצה : אביעד חביב

מנחה : פרופ' ח לאוניד טרטקובסקי

על הנושא :

Performance optimization of a UAV engine for high altitude flight conditions

The seminar will be given in Hebrew

תקציר ההרצאה :

Many aircrafts use internal combustion engines as a source of power for propulsion. Due to low density of the surrounding air at high altitudes, optimization is needed for proper fuel burning process. The supercharging increases the air pressure at the intake manifold and compensates for the surround air low density. By burning more fuel, higher amount of fuel energy is released and converted to the mechanical work. Therefore supercharging needs to be designed and adjusted to engine operation range, requirements and specifications. The main purpose of the research was optimization of the engine design to achieve efficient operation with maximum power at altitudes higher than the engine was originally designed for.

This work presents and analyzes various solutions and suggests a method that best suits the study goals and limitations. The work includes both theoretical and experimental parts. In the theoretical part, a computer engine model was developed to simulate the engine performance for each method. In the experimental part, a Rotax 914F engine was studied using the laboratory engine dynamometer test bench with default configuration, and later, an upgraded configuration which implemented the method that showed the best performance in the theoretical part.

בברכה,

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מרכז הסמינרים