

ABSTRACT

The master's thesis contains 112 pages of text and includes 31 drawings, 32 tables and 6 A1 posters.

The purpose of the dissertation is the construction, analysis and research of the vector control system of an asynchronous robotomobile engine with the optimization of moment in the high speed zone due to the application of a new algorithm for controlling the field attenuation.

To achieve this goal, the following main tasks were solved: based on an analytical review of torque maximization in the high-velocity zone, the optimal rotor coupling curve was obtained using a genetic algorithm, an advanced algorithm for controlling the attenuation of the AD field was developed, and a complex mathematical model of the control system was developed and a control system was developed.

Calculation and implementation of this diploma project were provided through the use of the following programs: MATLAB R2015b, Microsoft Office Word 2010, Microsoft Office Visio 2010.

TORQUE MAXIMIZING, GENETIC ALGORITHM, ROBOT, ASYNCHRONOUS MOTOR, CONTROL, VECTOR, SYNTHESIS, CONTROLLER, SIMULATION

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