

SUMMARY

The diploma project contains 119 pages, 36 pictures, 7 tables, 6 graphic material sheets.

The aim of this dissertation is the synthesis of a system of vector two-zone control of a synchronous motor with permanent magnets (PMSM), taking into account optimal control strategies, weakening of the field and restrictions on the current and voltage of the stator.

An analytical review of the literature on the topic of optimal control and weakening of the PMSM field, the main approaches to the implementation of optimal control systems, their shortcomings and assumptions was carried out.

The power calculation and the choice of the electric motor, which is specially designed for use in hybrid and electric transport, have been made.

Synthesized system of vector two-zone control PMSM, which implements optimal control strategies ("maximum torque per amp", "maximum torque per volt"), field weakening and takes into account the current and stator voltage limitations.

The synthesized system was compared with the conventional system of vector two-zone control and its energy efficiency was proved.

ELECTRIC MOTOR, TRACTION ELECTRIC DRIVE, SYNCHRONOUS ENGINE, FREQUENCY TRANSFORMER, OPTIMUM CONTROL, ROLLING THE FIELD, DUZOUNNOE MANAGEMENT.

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<i>Reviewer.</i>						Igor Sikorsky KPI Chair. ESA-ED, gr. ED-51m		
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<i>Approv..</i>	<i>S. Peresada</i>							