

## SUMMARY

The diploma project comprises: 153 pages, 74 figures, 21 tables, 11 appendix.

In this diploma project, the synthesis and research of energy-efficient systems of vector speed-control system for induction drive is performed and a comparative analysis of the proposed and known systems is carried out. In the synthesis, such optimal control strategies as the maximum moment on an ampere, minimization of losses in copper and minimization of losses in copper and steel are used. Different structural realizations of optimal systems are considered. Through simulation, the performance of the considered systems in the software provided by MatLab «Simulink» was checked. In studies, the nonlinearity of the magnetization curve is taken into account. When minimizing total losses in the engine, a mathematical model is applied taking into account losses in steel.

In the dissertation discusses the application of energy saving technologies in electric drives of Siemens Ukraine

INDUCTION MOTOR, VECTOR CONTROL, OPTIMAL STRATEGIES, LOSS OF CORE, LOSS OF STEEL, EFFICIENCY, TRANSIENTS, STRUCTURAL IMPLEMENTATIONS.