SUMMARY

The diploma project comprises: pages 87, figures 18, appendix 1 and the 4 pages A1 of graphical part.

The purpose of the diploma project is to synthesize a novel algorithm of self-commissioning function for electrical parameters initialization of the interior permanent magnets synchronous motor.

The algorithm of indirect vector control of the speed (angular position) of the interior permanent magnets synchronous motor was synthesized, which provided the synchronous motor control system with such properties as global exponential processing of the given speed (angular position) and direct component of stator current along d-axis and also reached solvability in control of electrical and mechanical coordinates. Synthesized algorithm allow improve energetic efficiency of the machine without affecting on the control processes of mechanical coordinates.

In this thesis project the algorithm of self-commissioning function for electrical and mechanical parameters initialization of the interior permanent magnets synchronous motor was synthesized, which provide initialization of six unknown motor parameters and torque perturbation and does not required preliminarily information about any of the machine parameters.

SALIENCE, SYNCHRONOUS MOTOR, PARAMETERS INITIALIZATION, SELF-COMMISSIONING, VECTOR CONTROL, ANGULAR SPEED, ANGULAR POSITION