

## SUMMARY

Diploma project contains pages - 114, drawings - 30, tables - 24 and graphic part on 6 sheets A1.

An analytical review of energy efficiency optimization strategies for a vector-controlled induction motor is performed. Mathematical models of an induction motor in a rotating coordinate system oriented by the rotor flux vector taking into account the saturation effect of the main magnetic circuit, as well as a model that takes into account eddy current losses and hysteresis losses. The synthesis of single-zone vector speed control systems for an induction motor is performed. Analytical dependences of rotor flux coupling and orthogonal components of stator current on electromagnetic moment and motor speed from the conditions of minimization of total electricity losses in copper and steel are found. The structural scheme of the energy-optimal system of speed control of the induction motor which provides not only desirable power indicators, but also high quality of transients is developed.

INDUCTION MOTOR, VECTOR CONTROL, ENERGY OPTIMAL CONTROL, MATHEMATICAL MODEL, IRON LOSSES, FREQUENCY CONVERTER, MAGNETIZATION CURVE.

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		№ of document	Signature	Date	Efficiency maximization of vector-controlled induction motors in steady state.  Summary	Lit.	Page	Pages
		S. Oshurko						
Checked by		O. Tolochko					6	114
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