

## ABSTRACT

The bachelor thesis contains 95 pages, 60 figures, 3 plots, and appendices.

The objective of the thesis is development of a concept for research of electric drive control systems based on the frequency converter ABB ACS 55. The object of investigation of the thesis is processes of automatic control of electromechanical conversion in induction motor fed from the frequency converter. The subject of research is laws of the frequency control of induction motor fed from the ABB ACS 55. The thesis categorizes the knowledge about functional and technical possibilities of the converter ABB ACS 55. Experimental tests were carried out for the induction motor drive based on the ACS 55 under linear and quadratic frequency control laws. The research develops the methodology of experiments performance. The parameters of the induction motor were also identified. The block diagrams describing the control system were verified by simulations matching the experimental results.

FREQUENCY CONVERTER, INDUCTION MOTOR, LINEAR LAW OF CONTROL, QUADRATIC LAW OF CONTROL, MATHEMATICAL MODEL, AUTOMATED ELECTROMECHANICAL SYSTEM

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