## SUMMARY

The Master Thesis consists of 113 pages and encloses 30 figures, 18 tables, 117 references.

In the Master Thesis a synthesis and research of sensorless direct field oriented control algorithms of induction motors with magnetic saturation were carried out. The designed algorithms provide asymptotical reference torque and speed tracking without mechanical coordinates measurements, including flux weaking. The reaserches of dynamic, static and energy characteristics were caried out for designed algorithms. The reaserches were caried out as a simulation in MatLAB environment.

The Start-up project was performed for market promotion purposes.

The obtained results can be implemented in alternating current motors with average requirements to torque and speed performance such as conveyors, pumps, fans, etc.

SENSORLESS FIELD-ORIENTED CONTROL, INDUCTION MOTOR, MAGNETIC SYSTEM SATURATION, CONTROL ALGORITHM, OBSERVER, START-UP.