

## ABSTRACT

The diploma project is made on 90 pages and contains 39 pictures, 3 tables, 3 annexes and 3 posters A1.

The purpose of this diploma project is the design and research of the electric drive of an industrial manipulator which designed to automate the technological process, namely the electric drive of turn the manipulator, based on the introduction of a permanent magnet synchronous motor. The modernization of the knot of the turning mechanism is based on the use of a vector-controlled electric drive.

The following main tasks were solved to achieve the set goal: an analytical review of industrial robots and manipulators was carried out, the design features of the mechanism indicated, the calculation of power and the choice of the electric motor was carried out, the system of vector control of the electric drive of the manipulator rotation was investigated on a given trajectory, the functional scheme of the electric drive was developed.

The diploma project deals with the choice of engine power; working in re-short-term mode of operation. The variants of kinematic schemes of typical mechanisms for positioning of working bodies used in industry are considered.

The calculation and implementation of this diploma project was provided through the use of software packages: MATLAB, Microsoft Office Word and sPlan.

INDUSTRIAL ROBOT, ELECTRIC POWER, PERMANENT MAGNET SYNCHRONOUS MOTOR, THREE-PHASE INVERTER, VECTOR CONTROL, MODELING, AUTOMATION.

Letter	№ of doc.	Sign.	Date						
Devel.	V.Platon			Automated electric drive of industrial manipulator  SUMMARY	L.	Page	Pages		
Checked	V.Tirayev					8	90		
N. Contr.	B.Priymak				NTUU «Igor Sikorsky Kyiv Polytechnic Institute», <i>FEA</i>				
Approved.	S Peresada								