

ABSTRACT

Master's dissertation contains: 144 pages; 50 drawings; 28 tables; 6 sheets with graphic part; 102 sources in the list of links.

The system of intellectual economic control of the asynchronous drive of an electric vehicle was constructed on the basis of classical system with direct field oriented control of the AD, supplemented by a neural network optimizer of power losses. The mathematical description of automation of electric drive and model of power losses, considering magnetic losses in the engine, are obtained. The neural network was designed to optimize power losses in two zones of AD speed control. The synthesis of digital stator current regulators, rotor flow and moment of AD is made. The optimizer of losses in the AD was modified by extending the range of changes for optimization parameter from nominal level, which allowed to increase the effect of economic control in the first zone of AD rates. The complex mathematical model of the system of the intellectual economic control of the electric motor AD is constructed in the environment of Matlab / Simulink. The comparative researches of traditional and intellectual economic control of AD while driving the electric vehicle have been made within and outside the city, which have shown the possibility of obtaining a significant effect from the implementation of the solutions proposed in the dissertation.

INTELLIGENT CONTROL, ASYNCHRON DRIVE, NEURAL NETWORK, VECTOR CONTROL, LOSS OPTIMIZATOR, ELECTRIC TRANSPORT, SPEED CONTROL.

					141.2105.006.МД			
					Smart economical control of electric vehicles with AD			
Зм.	Арк.	№ докум.	Підпис	Дата				
Розробив	Долганов О.О.				Abstract			
Перевішив	Приймак Б.І.							
Н. КОНТР.					НТУУ «КПІ ім. І. Сікорського»			
Затв.	Пересада С. М.				Каф. АЕМС-ЕП			