☐ 5 TECHNICAL ELECTRODYNAMICS 2010

CONTENTS

Theoretical electrical engineering and electrophysics

SHCHERBA A.A., PODOLTSEV A.D., KUCHERIAVAYA I.N., ZOLOTARIOV V.M. Electrical transport of water polar molecule in the heterogeneous electrical field in polymeric insulation of high-voltage cables

3

VASETSKY Y.M., MAZURENKO I.L. Parameters of electromagnetic and thermal processes for approximate mathematical models of high-frequency induction heating of electroconductive bands

10

BARANOV M.I. Approximate calculation of maximum plasma temperature in high-current electric spark channel of high-voltage air pressure commutator

18

Conversion of electric energy parameters

KHALIKOV V.A., LYPKIVSKY K.O. Commutation processes and its organization in transformers 22

Electromechanical energy conversion

VASKOVSKY Y.N., GERASKIN A.A. Vibroexcited electromagnetic forces in short-circuit asynchronous motors involving damages in their construction 31

Electric power system and installations

KYRYLENKO O.V., PAVLOVSKY V.V., LUKYANENKO L.M., ZAICHENKO V.B. "Kiev Ring" power system voltage states analysis for the existing and prospective network of the Integrated Ukrainian Power System 39

ZHURAKHIVSKY A.V., KINASH B.M., YATSENKO A.Y., MASLYAK R.Y. Analysis of reliability of voltage transformers operation under ferroresonant conditions

BASOVA A.V., IVANKOV V.F. Temperature calculation in limb sections of magnetic systems of transformers and inductors 52

VOLKOV A.V., METELSKY V.P., VOLKOV V.A. Analysis of functioning and energy efficiency of power active filter for four-wire three-phase AC voltage network

VOVCHENKO A.I., BOHUSLAVSKY L.Z., MYROSHNYCHENKO L.N. Trends in development of high-powered high-voltage pulse current generators in the Institute of Pulse Processes and Technology of Ukraine (review)

69

Information-measuring systems in power engineering

BRAHYNETS I.A., ZAITSEV E.A. Dynamic characteristics of phase laser vibration sensor

To the 70th anniversary of academic of NAS of Ukraine Pivnyak G.G.80

Abstracts 81

RULES of presentation of the papers 83

Institute of Electrodynamics, 2010

47

61