

ABSTRACTS

- Afanasov A.V.* 3
TO THE PROBLEM OF FEEDING POWER CHOICING FOR A STAND WITH MUTUAL LOADING MOTORS.

Questions concerned to feeding power choice for a stand pretended for testing of DC motors are considered taking into account divergence of their magnetic characteristics.

Index terms – **DC motor, mutual loading, losses of power, feeding power.**

- Badovskij V.A.* 10
AUTOMATED COMPUTATING PROGRAM OF LOADING MODE IN TURBOGENERATOR USING NUMERICAL-FIELD METHODS.

The article deals with a program that allows to date geometric parameters in a turbogenerator and automating of its LOADING MODE. The program is made using of DELPHI and LUA programming languages, but for numerically-field computation used it calls FEMM program. Computation results are presented produced by the program.

Index terms – **turbogenerator, loading mode, computation, numerical-field methods.**

- Besprozvannyh A.V.* 14
THERMO-TRIBO-ELECTRIC POTENTIAL USED FOR ESTIMATION OF CABLES POLYMERIC ISOLATION AT ITS AGEING.

After cooling cables with polymeric isolation, for example, at transition of power units to scheduled functioning modes, on their veins there is a voltage. It is resulted by electrization of isolation under mutual friction of its veins – thermo-tribo-electrical effect. It is established, that the potential value is different in new and old cables. It caused by the isolation ageing and grows at oxidation of its surface.

Index terms – **cable, polymeric isolation, ageing, estimation.**

- Bojko N.I., Koniaga S.F.* 23
ELECTRIC FIELD COMPUTATION IN THE MULTIDISK ELECTRODE SYSTEM.

The article deals with a evaluation of the sharply nonuniform electric field with the finite difference method. It is analyzed the distribution of the field in systems with different geometrical parameters.

Index terms – **finite difference method, iteration, electric field, disc.**

Vishnevsky A.Je., Grischuk Ju.S.

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**RELEASER FOR AUTOMATIC SWITCHES ON THE
BASE OF THE MSP430F MICROCONTROLLER.**

An analysis of releasers for automatic switches is resulted. A modernized scheme of releasers on the base of the MSP430F microcontroller is offered for automatic switches. It allows increase its accuracy, speed reliability, noise stability and reduce its power consumption and cost.

Index terms – **circuit breaker, control system, microcontroller.**

Gaevskaja N.A., Galajko L.P.

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**ANALYSIS OF UNSTATIONARY THERMAL
PROCESSES IN THE SWITCH-RELUCTANCE MOTOR
INTENDED FOR A WASHING-MACHINE USING A
SIMULATION MODEL AND THE SIMULINK PROGRAM.**

In the paper a simulation model of unstationary thermal processes in the switch-reluctance motor intended for a washing-machine is improved and realized in the SIMULINK program. The model is addition to the before developed model of stationary thermal processes. It takes into account magnetic and electric losses and allows analyzing working modes of the motors.

Index terms – **switch-reluctance motor, thermal processes.**

Goncharov Je.V.

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**MAGNETIC PERMEABILITY COMPUTATION IN THE
HIGH TEMPERATURE SUPERCONDUCTING WINDING.**

In the paper, a high temperature superconducting winding is considered and the method of its magnetic permeability computation is proposed, that it is necessary for an electromagnetic computation. Influence of winding method on the magnetic permeability is analyzed.

Index terms – **high temperature superconducting winding, magnetic permeability, computation.**

Gurin A.G., Mostovoj S.P., Jarmak O.N., Kovalek P.E., Gontar Yu.G.

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**SPECIFICITIES OF PRESSURE IMPULSE FORMING IN
BORING CASING COLLECTOR ZONE OF THE OIL WELL
BY THE ACTION OF ELECTROHYDRAULIC DISCHARGE.**

For the purpose of oil extraction intensification from deep wells the problems of electro hydraulic discharge influence on the oil-bearing strata are considered taking into account natural vibrations spectrum of the boring casing and perforations in the collector zone.

Index terms - **oil well collector, boring casing, perforations,**

electro hydraulic discharge, low-frequency oscillations.

Zaderihin A.A.

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ANALYSIS OF ELECTRIC FIELD IN A TERMINATING SYSTEM WITH TOROID SCREEN.

Strength of electric field on end fittings of polymeric insulator corrects by protecting screen. Analyses of distribution of the field is got up using its mathematical model.

Index terms – **cable, end fittings, polymeric insulator, electric field, modeling.**

Kim En DAR, Sychenko V.I., Kalmykov V.L., Kizim V.I.

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EXPERIENCE OF RESEARCH OF SENESCENCE OF LINEAR POLYMERIC INSULATORS

The results of speed-up tests of polymeric insulators are presented at influence of high temperature, humidity and tension, and loading-time dependences are resulted in view of different concentrations of acid environment. The laboratory researches in a climatic chamber are compared with exploitation date. A conclusion about a dominated factor of high temperature is done due to results of durability decline process in a shell-bar border.

Index terms – **polymeric insulators, laboratory researches, exploitation date.**

Krjukova N.V., Lupikov V.S., Rudas Ju.D., Erisov A.V., Petrov S.V.

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FEATURES OF VECTOR DIAGRAMS BUILDING FOR THREE-PHASE CHAINS AT CHANGE OF PHASES SET.

The features of construction and comparison of vector diagrams for an electric chain with a magnetic linked contour are considered in the systems of straight and back revolved vectors. By analogy with operations above the vectors of currents, entered an operation above the vectors of magnetic moments of contours in three-phase chain with magnetic links. Obtained results are used for theoretical ground of magnetic moment dependence from phases set in three-phase electric chains with magnetic linked contour

Index terms – **three-phase chains, phases set, vector diagrams.**

Latynin Ju.M., Lupikov V.S.

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ANALYSIS OF AN EDUCATIONAL MANUAL IN ELECTRICAL ENGINEERING.

In close, a system analysis of an educational manual in electrical engineering is resulted as an educational mean for students of electrical unengineering specialties. In summary it is noted that the manual

does not respond to modern requirements of higher school.

Index terms – **electrical engineering, manual, analysis.**

Leljuk N.A.

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MODELING OF VIBRATION PROCESSES IN THE MECHANICAL SYSTEM OF CIRCUIT BREAKER TURNED TYPE BASED ON THE GRAPH THEORY.

Forming of mathematical model in a mechanical system is considered for an electromagnet of the automatic circuit breaker of turned type. The table of analogues between parameters of linear and turned type mechanical systems is resulted. The system of matrix equations describing vibration process in contacts of the circuit breaker is received.

Index terms – **automatic circuit breaker, electromagnet, turned type, vibration, modeling, graph theory.**

Mishin V.I., Chuenko R.N.

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INTERNAL CAPACITY COMPENSATION OF REACTIVE POWER IN AN ASYNCHRONOUS MOTOR.

The effect of internal capacity compensation of reactive power in an AC motor is considered. It based on combined using of two stator windings as workings and compensating ones, at connected as turning autotransformer loading on an electric capacity.

Index terms – **AC motor, reactive power, capacity compensation.**

Rezinkina M.M., Grinchenko V.S.

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CHOICE OF PARAMETERS IN MULTI-LAYERED CONDUCTING SCREENS BY COMPUTING METHOD.

The choice of parameters in multi-layered conducting screens is proposed by computing method. It is shown that multi-layered screens allow substantially to increase the screening coefficient at less expense of the screen metal.

Index terms – **conducting screen, parameters, screening coefficient, computing method.**

Rudenko S. S., Petkov A. A.

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ELECTROTHERMAL COMPUTATION OF HIGH-VOLTAGE RESISTORS.

The analysis of publications, devoted the electro-thermal computation of resistors is resulted in the paper. Directions of further researches are certain, that will provide community of approaches to computing of resistors used in high-voltage impulsive tester installations.

Index terms – **high-voltage resistors, electro-thermal computa-**

tion, review.

Sebko V.P., Sebko V.V., Bagmet O.L.

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CONTACT EDDY-CURRENT CONVERTOR WITH QUASI-STATIC MAGNETIC FIELD.

Possibility of using of contact eddy-current convertor with quasi-static magnetic field is considered for measurements of magnetic, electric and geometrical parameters in cylindrical conductors. Formulas for computation of specific conductivity, relative magnetic permeance and radius of the conductor are proposed.

Index terms – **cylindrical conductor, measurements, eddy-current convertor.**

Stepanenko A. A.

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WAYS OF DIMINISHING OF POWER LOSSES IN ELECTRODYNAMICS CONVERTORS.

Ways of thermal emission diminishing in elements of an electro-dynamics converter of disk type are offered.

Index terms – **electrodynamics converter, power losses.**

Fediaj A.S., Shvidkij A.V.

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INSPECTION OF CABLES WITH RUBBER ISOLATION IN THE PROCESS OF SENESCENCE

Cables state is estimated by measuring of electric characteristics in the process of their senescence. At the inspection of control cables of complex designs it is possible to explore their different isolating intervals applying combined measuring schemes.

Index terms – **cables, rubber isolation, senescence, electric characteristics.**

Homenko I.V.

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DEVELOPMENT OF MEANS AND METHODS FOR CONTINUOUS CONTROL OF ENERGY CONSUMPTION IN THREE-PHASE NETWORKS.

A problem concerned effective control of electric energy parameters as in three-phase network so basic users. Decisions are based on wide using of mathematical methods, measuring means and non-standard approaches to forming of diagnostic parameters. The basic results of the work is a theoretical and practical development of methods and means for a complex control of parameters in electric networks and power users of electric energy in the process of exploitation.

Index terms – **three-phase networks, control of energy consumption, methods, means.**