## ABSTRACTS


***Adamova S.V. Kosulina N.G.***

**APPLICATION OF ELECTROPHYSICAL MOVABLE SETTING KEFU-01 FOR DESTRUCTION ELIMINATION OF NIGHTLY INSECTS-WRECKERS IN GARDENS.**

Application of electrophysical movable setting KEFU-01 with high-voltage pulse devices for destruction of night insects-wreckers in gardens are resulted.

*Index terms* – **high-voltage pulse devices, electrophysical setting, insects-wreckers.**

***Varshamova I.S., Lupikov V.S., Geljarovskaja O.A., Rudas Ju.D.***

**ESTIMATION OF RESISTANCE VARIANCES IN ELECTROMAGNET COILS DURING LONG HEATING.**

Data of experimental researches of compensational electromagnets with ferromagnetic cores and without them are resulted. The estimation of resistance variances of the coils depending on heating time is received. Recommendations about coils currents correction in the electromagnets used as executive elements in parametrical automatic systems of external magnetic field compensation are offered.

*Index terms* - **electromagnet, resistance, variances, experimental researches.**

***Vodotovka V.I., Sasimova I.A.***

**FEATURES OF WOOL DRYING BY MICROWAVE.**

The process of wool drying largely depends on dielectric permanent wool, constrained and mobile water, and also from the gradient of pressure inwardly in layer of wool. Advantages of the wool drying by microwaves are resulted.

*Index terms* – **electromagnetic waves, microwaves drying, dielectric permanent wool**.

***Grischuk Ju.S., Timoshenko R.F.***

**ANALYSIS OF RELIABILITY IN MICROPROCESSOR DEVICES USED AT RELAY PROTECTION.**

A comparative analysis of reliability in different types of relay used for protection of electrical power systems is carried out. Advantages and lacks of electromechanical and microprocessor protection relays devices are revealed. Application of high-efficiency noise proof microcontrollers is offered.

*Index terms* - **relay protection, microprocessor, reliability**.

***Zarviro V.O., Grischuk Ju.S.***

**AUTOMATION OF RESEARCHES AND TESTS IN MICROWAVES.**

The block diagramme of automatic researches is developed for microwaves. The base microcontroller for carrying out the researches is chosen. The algorithm for researches of operating modes in the microwave is developed.

*Index terms* – **microwaves, testing, automatic researches, block diagramme, microcontroller.**

***Korban N.P.***

**ANALYSIS OF DISTRIBUTION OF A MAGNETIC FIELD DISSIPATED BY A DEFECT IN SONE MAGNETIZED FERROMAGNETIC BODY.**

A design procedure for computation of a magnetic field produced by a defect in some magnetized ferromagnetic body is resulted based on adaptation of the integrated equations method. On the basis of numerical modeling results experiments are fulfilled and analysis of the defect magnetic field is made. The basic laws and distribution parameters are grounded.

*Index terms* – **magnetized ferromagnetic body, defect, magnetic field, computation, distribution parameters.**

***Korol E.G., Lupikov V.S.***

**ESTIMATION OF NONLINEARITY OF CHARACTERISTICS IN ELECTROMAGNETS FOR A MAGNETIC MOMENT COMPENSATION IN POVER EQUIPMENT (Part 2).**

Estimations of distortions and harmonics factors and also entrance and target functions are received for a hysteresis loop of a ferromagnetic material. Analytical parities for these functions are received. Results are recommended for using at designing of automatic systems for high-precision compensation of magnetic moments in the power equipment.

*Index terms* – **power equipment, external magnetic field, magnetic moment, compensation, electromagnet, hysteresis loop, modeling.**

***Lomov S.G., Stepanenko A.A.***

**TO THE QUESTION ON POSSIBILITY OF IONIC EXCHANGE IMPROVEMENT IN CONSTRUCTION ELEMENTS OF MOLECULAR CONDENSERS WITH THE DOUBLE ELECTRIC LAYER.**

A design, principle of operation and basic characteristics are resulted for some modern molecular condensers. Advantages of the condenser section performance from mica paper are presented in comparison with traditional-used miplate and micopore ones.

*Index terms – molecular condenser, basic characteristics, mica paper.*

***Lu Chan, Chernyshov N.N., Lupikov V.S., Jartovskij S.M., Voronoj R.V., Ditiatkin V.I., Rusakov S.A., Himich A.I.***

**MOVEMENT OF CHARGED PARTICLES IN ELECTROMAGNETIC STATIC FIELDS.**

Questions of movement of electronic streams in static electric and magnetic fields and their managements in accelerators are considered.

*Index terms* – **electronic streams, static electric and magnetic fields, spatial charge, high-frequency waves.**

***Moroz A.N.***

**MATHEMATICAL MODEL OF TRANSVERSAL VIBRATIONS IN THE CYLINDRICAL PIEZOELECTRIC SENSOR.**

Researches of the set vibrations in piezoceramic cylinder with the radial type of polarization is resulted; they allow to expect the optimum parameters of piezoceramic sensor, at which its sensitiveness arrives maximal in the frequencies diapason.

*Index terms* – **piezoelectric sensor, piezoceramic cylinder, vibrations, optimisation**.

***Nijevskij I.V.***

**RESTORATION OF NORMALIZED PARAMETERS OF GROUND DEVISES ON OPERATING SUBSTATIONS.**

Application of a new mathematical model for computation of electric parameters in complete ground grids is shown. By results of extensive research of the ground devices in substations an efficiency of two-level design at their modernization is proved. Necessity of the ground grids modernization in substations instead of existing reconstruction is confirmed.

*Index terms* – **operating substations, complete ground grids, ground devices, modernization**.

***Ostashevskij N.A., Petrenko A.N.***

**RESEARCH OF THERMAL CONDITIONS IN The frequency-operated ASYNCHRONOUS MOTOR AT VARIOUS REGULATION REGIMS.**

In the paper questions a thermal conditions in the frequency-operated asynchronous motor are researched at various regulation regimes. The motor blocks temperatures are analyzed at step and sinusoidal voltage of power supply. An estimation of thermal risks and optimum use of the established capacity are got up.

*Index terms* – **frequency-operated asynchronous motor, thermal conditions, optimization.**

***Potapskij P.V., Sasimova I.A., Kosulina N.G.***

**DETERMINATION OF ELECTROMAGNETIC FIELDS DISSIPATED IN WOOL by MICROORGANISMS.**

Possibilities of electromagnetic technology application for wool disinfecting are considered.

*Index terms* – **electromagnetic technology, electromagnetic field, microorganism, wool.**

***Rezinkina M.M., Lobjanidze L.E.***

**WORKING OUT OF METHODS FOR MAGNETIC FIELD COMPUTATION IN THE THREE-DIMENSIONAL FERROMAGNETIC OBJECTS.**

Computation of stationary magnetic field in ferromagnetic objects of complicated spatial configurations is described using of final volumes methods and absorbed boundary conditions. As an example, computation of the magnetic field in ferromagnetic rods is performed with the help of the proposed method.

*Index terms* – **three-dimensional ferromagnetic objects, stationary magnetic field, computation, final volumes methods, absorbed boundary conditions.**

***Sergeyev P.Y.***

**PROJECT OF MICTOPROCESSOR-CONTROLLED WELDING ARC POWER SUPPLY DEVICE.**

In the paper a project of the welding arc power supply sours with microcontroller driving is presented. It is shown, that using of the microprocessor allows performing precise managing of welding process, variation of operating modes, expanding service functions nomenclature and simplifying schemotechnical realization owing to that many functions are program carried. The presented algorithm of inverter functioning can made additional help in designing welding devices with high-frequency transformation of electric energy.

*Index terms* – **welding, power supply device, microcontroller driving, microprocessor**.

***Sedova E.A.***

**ANALYSIS OF FILMS FORMATION PROCESSES ON THE SURFACE OF METAL CONDUCTOR WITH CURRENT.**

The analysis of existing theories of films formation processes on the surface of metal conductors is carried out. Prospects of the theories perfection for electric apparatus are shown.

*Index terms* **– electric apparatus, metal conductor, films, formation processes.**

***Sorokin M.S., Arkhipov A.V., Plaksij V.T.***

**RESEARCH OF TARGET SIGNALS SPECTRA OF IN THE PULSE GENERATOR ON AVALANCHE-FLYING DIODE.**

The method and the program of calculation of spectra is developed radio impulse with linear change of phases in front and decline parts of the impulse. Results of analytical conversions and experimental researches are resulted for envelope of the spectrum in a radio impulse with levels of its components –40 дБ concerning the bearing component level.

*Index terms* – **pulse generator, radio pulses, spectrum, phase modulation**.

***Chernyshov N.N., A.I. Alioshin S.I.***

**MULTIDIMENSIONAL SIGNALS AND SYSTEMS.**

The signals and systems with dimension two and more are considered. Possibility of operations reduction is proved using the discrete Fourier transformation.

*Index terms* **– multidimensional sistem, the discrete Fourier transformation**.

***Shaporev P.V., Raiko V.F., Sebko V.P., Nechiporenko D.I., Postoronko A.I.***

**POSSIBILITY OF LIMESTONES CONCENTRATING IN THE CLASS OF 40-150 mm BY THE PHOTOELECTRONIC SEPARATOR.**

Laboratory researches by definition of possibility of limestone sorting by their color are carried out. The reflection factor is defined for different deposits. Relationship between the structure of mixes and their reflection factor value is established. The conclusion about enrichment possibility of limestone by its color to the standard requirements on carbonate raw materials is made.

*Index terms* – **photoelectronic separator, limestone sorting**, **reflection factor**.

***Shevchenko S.Ju.***

**INFLUENCE OF POWER EQUIPMENT ELECTROMAGNETIC FIELDS ON THE ENVIRONMENT.**

An analysis of high-frequency electromagnetic fields sources in the power equipment is resulted. Prospects of perfection of methods modeling high-frequency electromagnetic fields sources are shown.

*Index terms* – **power equipment, electromagnetic field, environment, modeling**.