Abstracts

ELECTROENGEENIRING: Prominent events and great names

Baranov M.I. **5**

Oliver Heaviside and his requirements to the world treasure of science

A short essay on the scientific activity of the prominent English physicist Heaviside played an important role in the development of classical electrodynamics, operating calculus and theories of wire and wireless electrical communication is presented.

Key words – **electromagnetic theory, history, requirement, operating calculus**, **electrical communication.**

Electrical Mashines and Apparatus

Bolyukh V.F., Markov A.M., Luchuk V.F., Shchukin I.S. **15**

Research on a Dynamic Induction Motor Excited from a Low-Voltage Capacitive Accumulator

Efficiency criteria for a dynamic induction motor operating in various modes are introduced. The motor operation is studied under excitation from a capacitive accumulator providing various inductor current pulse shapes. Utilization of a low-voltage high-capacitance capacitive accumulator is advisable for a small number of the inductor winding turns and a large cross-section of the inductor conductive bus. A motor model intended for platter punching is built and tested.

Key words – **dynamic induction motor, low-voltage capacitive accumulator, efficiency criteria, inductor current pulse shapes, platter punching.**

Golenkov G.M., Bondar R.P. **22**

Application of a vibroexciter with an induction motor for drifting operations

Problems of application of various methods of trenchless well-drifting are considered. Existing designs are analyzed and estimation of their functioning is made. A design of a linear induction vibroexciter is introduced, theoretical grounds of its operation elaborated.

Key words – **trenchless technology, linear induction motor, magnetizing force.**

Petrushin V.S. **25**

Present status and prospects of adjustable-speed induction motor production

A survey of current designs of adjustable-speed induction motors is presented. A rational system approach for the motors design and optimization is proposed. Economic efficiency of adjustable-speed induction motors application in electric drives with semiconductor converters is substantiated.

Key words – **electric drive, adjustable-speed induction motor, design, optimization.**

Stavinsky A.A., Stavinsky R.A., Plakhtyr O.O. **30**

Methods of special requirements assurance for electric power equipment based on transformers and transformer converters with spatial structure of the active part

Directions and engineering solutions of providing required electromagnetic compatibility factors and improving special transformers on the basis of spatial structure of the active part with parallel shaping surfaces of winding windows and rods are analyzed.

Key words – **electromagnetic compatibility, low-magnetic transformer, converter transformer, controllable transformer.**

Tchaban A. **37**

Features of Ψ- and A-models of an induction motor in phase coordinates

A comparative analysis of Ψ- and A-models of an induction motor in phase coordinates is suggested. A new approach for building A-models of an induction motor in phase coordinates is introduced. Differential equations of the A-model are presented in Cauchy normal form. Results of currents and motor speed computation are used to show advantage of A-model in computation practice.

Key words – **induction motor, phase coordinates, A-model, computation.**

Electrical Engineering: Theory

Bezprozvannykh A.V. **40**

Hygroscopic humidifying of a polyethylene-sheathed telephone cable

For two years, a telephone distribution cable has been in a vessel relative humidity in which made practically 100 %. Capacitance and dielectric loss tangent have been periodically measured. It is revealed that with time, swelling, along with humidifying, of polymeric polyethylene sheath and isolation is observed. Hygroscopic moisture from the earth surface penetrates into the material and dissolves. Thus, the thickness of the isolation and the sheath increases, while the length – decreases.

Key words – **telephone cable, electric capacity, dielectric loss tangent, hygroscopic moisture, humidifying.**

Zavgorodniy V.D. **45**

A quantum mechanical model of induction-type angle transducers (Part 6 Contactless limited-angle transducers)

New designs of contactless limited-angle transducers based on transversal magnetic flux structures are described. Results of the designs analysis on the basis of M.Faraday's ideas and terminology and their comparison with experimental data are given.

Key words – **induction angle transducer, contactless angle transducer, limited angle transducer, electro-tonic state.**

Lupikov V.S., Krjukova N.V., Mashnev A.J., Petrov S.V., Pelevin D.J., Shubcov V.J. **51**

Improvement of a magnetic field homogeneity in the working volume of a magnetic measuring stand

Experimental researches of magnetic field distributing in the working volume of a magnetic measuring stand of the Magnetism Department of Electrodynamics Institute of National Academy of Science of Ukraine are resulted. Recommendations on increasing of measuring exactness on the stand are given for the permanent external magnetic field.

Key words – **electrical equipment, space device, external magnetic field, measurement, magnetic measuring stand. working volume.**

Electric Transport

Education Structure in "Electrical Engineering" and "Electromechanics"

Information