Abstracts

ELECTRO ENGINEERING: Prominent events and great names

Baranov M.I. **5**

Radio electronics: short history of its formation as the thematic applied-physics field of both electricity and scientific-and-technological advance of the humanity.

The paper presents a brief review of the basic achievements of the humanity in the field of generation, transmission, reception and amplification of high-frequency electromagnetic vibrations in micrometer–meter ranges of wavelengths related to such an advanced branch of science and technology as radio electronics.

Key words – **radio electronics, high-frequency electromagnetic vibrations, radio wave, generation, transmission, reception, amplification.**

Electrical Mashines and Apparatus

Bezotosniy V.F., Vlasenko EV, .Kozlov V.V., Afanaseva I.O., Nabokova O.V., Emeljanov V.L. **10**

Some actual directions of nondestructive control of material properties by electromagnetic methods.

Problems of control of non-electrical and electrical parameters of materials by electromagnetic methods are considered in this article. An automated nondestructive control system for mechanical stresses in electronics elements is introduced.

Key words – **control of non-electrical parameters, nondestructive control, mechanical stresses.**

Grechko A.M. **14**

Dynamic characteristics of an electromagnet with a single-position magnetic latch.

Dynamic characteristics of an electromagnetic drive with a single-position magnetic latch for medium-voltage vacuum circuit breaker are studied.

Key words – **electromagnetic drive, single-position magnetic latch, dynamic characteristics.**

Zhemerov G.G., Kolesnik V.J. **19**

Analysis of processes in an active rectifier - current source in asynchronous machines starting system.

Application of an active rectifier - current source in the starting system of asynchronous machines on the basis of a current source inverter is considered in the article. Expressions for determination of voltages and currents in the network filter of the active rectifier – current source elements are obtained. Output voltage waveform of the active rectifier is analyzed.

Key words – **active rectifier - current source, current source inverter, network filter.**

Klymenko B.V. **26**

Electrical and magnetic devices: terminology of International Electrical Dictionary.

The paper considers a number of problems concerning introduction of terms and definitions from International Electrical Dictionary (IED). We begin publishing a nonofficial translation of an IED part, namely, *part 151 - Electrical and magnetic devices*, with the author's comments and explanations.

Key words – **International Electrical Dictionary terminology introduction, nonofficial translation.**

Makogon S.A. **33**

Simulation of unidirectional magnetic forces in a coaxial-linear synchronous vibrator with an asymmetrically positioned armature.

Unidirectional magnetic forces and traction characteristics for a coaxial-linear synchronous vibrator with a toothed and toothless stator are analysed by a finite element method.

Key words – **FEM, linear vibrator, magnetic forces.**

Milykh V.I., Tkachenko S.V. **36**

Force interactions in a linear electric motor for seismic vibrations sources.

Force interactions in a linear pulse electrodynamic motor for sources of seismic vibrations are considered. The motor differs in its cylindrical electromagnetic system and its strong magnetic saturation. Contribution of electrodynamic and magnetic constituents to the total traction force is revealed. Force behavior as function of the relative position of the armature and the reactor as well as mmf of their windings is specified.

Key words – **pulse electrodynamic electric motor, seismic vibrations, force interactions.**

Radimov I.N., Guliy M.V., Rimsha V.V., Tran Thi Thu Huong **40**

Parameters of a brushless DC motor with permanent magnets.

Calculation and identification of parameters of a brushless DC motor with permanent magnets are presented.

Key words – **brushless DC motor, magnetic field, parameters, inductance.**

Electrical Engineering: Theory

High Electrical and Magnetic Field Engineering