

THE EDITORIAL BOARD OF THE JOURNAL ELEKTRICHESTVO

**Editor-in-Chief Pavel A. Butyrin, Corresponding Member
of the Russian Academy of Sciences, Moscow Power Engineering Institute (MPEI)**

Section for Theoretical Principles of Electrical Engineering, Converter Systems, and Electrical Materials

P.A. Butyrin (Moscow), Corresponding Member of the Russian Academy of Sciences, MPEI, Section Chairman; **V.N. Kozlov** (St. Petersburg), Dr. Sci. (Eng.), Professor, St. Petersburg State Polytechnic University; **N.V. Korovkin** (St. Petersburg), Dr. Sci. (Eng.), Professor, St. Petersburg State Polytechnic University; **A.A. Koroteyev** (Moscow), Academician of the Russian Academy of Sciences, Moscow Aviation Institute; **A.N. Lagar'kov** (Moscow), Academician of the Russian Academy of Sciences, Institute of Theoretical and Applied Electrodynamics; **F. Rachidi-Haeri** (Lausanne), Professor, Federal Polytechnic Institute in Lausanne (Switzerland); **Yu. K. Rozanov** (Moscow), Dr. Sci. (Eng.), Professor, MPEI; **S.Ye. Ryvkin** (Moscow), Dr. Sci. (Eng.), Institute of Control Problems, Russian Academy of Sciences; **S.V. Serebryannikov** (Moscow), Dr. Sci. (Eng.), Professor, MPEI.

Scientific Editor **B.N. Yevseyev**

Section for Electric Power Engineering

V.A. Stroev (Moscow), Dr. Sci. (Eng.), Professor, MPEI, Section Chairman; **N.I. Voropai** (Irkutsk), Corresponding Member of the Russian Academy of Sciences, Institute of Energy Systems, Siberian Division, Russian Academy of Sciences; **F.L. Kogan** (Moscow), Dr. Sci. (Eng.); **Yu.N. Kucherov** (Moscow), Dr. Sci. (Eng.), OJSC "System Operator of the Unified Energy System"; **N.L. Novikov** (Moscow), Dr. Sci. (Eng.), OJSC "Scientific and Technical Centre of the Federal Grid Company of the Unified Energy System".

Scientific Editor **L.S. Kudinova**

Section for High-Voltage Engineering, Electrical Apparatuses, and Transformers

G.S. Belkin (Moscow), Dr. Sci. (Eng.), All-Russian Institute of Electrical Engineering; **A.R. Koryavin** (Moscow), Dr. Sci. (Eng.), All-Russian Institute of Electrical Engineering; **V.A. Rakov**, Professor and Co-Director of ICLRT University of Florida (USA); **V.Yu. Khomich** (Moscow), Academician of the Russian Academy of Sciences, Institute of Electrophysics and Electric Power Engineering, Russian Academy of Sciences.

Scientific Editor **L.S. Kudinova**

Section of Electrical Machines

V.Ya. Bespalov (Moscow), Dr. Sci. (Eng.), Professor, MPEI, Section Chairman; **K.L. Kovalev** (Moscow), Dr. Sci. (Eng.), Professor, Moscow Aviation Institute; **Yu.G. Shakaryan** (Moscow), Dr. Sci. (Eng.), Professor, OJSC "Scientific and Technical Centre of the Federal Grid Company of the Unified Energy System".

Scientific Editor **B.N. Yevseyev**

Section of Electric Drives and Automation of Technological Processes

A.B. Krasovskii (Moscow), Dr. Sci. (Eng.), Professor, Moscow State Technical University, Section Chairman; **E. Baake** (Hannover), Professor Dr.-Eng., Leibniz University of Hannover (Germany); **V.B. Demidovich** (St. Petersburg), Dr. Sci. (Eng.), Professor, St. Petersburg University of Electrical Engineering; **N.D. Polyakhov** (St. Petersburg), Dr. Sci. (Eng.), Professor, St. Petersburg University of Electrical Engineering.

Scientific Editor **B.N. Yevseyev**

Deputy Editor-in-Chief **B.N. Yevseyev**

Executive Secretary **L.S. Kudinova**

Literature Editor **T.P. Aleksandrova**

Junior Editor **N.V. Chechunova**

Computer-aided make-up **N.N. Merzlyakov**

Translator **V.I. Filatov**

Editorial office address: Moscow Power Engineering Institute, room Z-111 (Department for Theoretical Principles of Electrical Engineering), Krasnokazarmennaya, 14, Moscow, 111250 Russia
tel/fax (495) 362-7485

E-mail: etr1880@mail.ru; l.s.kudinova@rambler.ru

<http://electro.elpub.ru/>; <http://www.znack.com>

**Full text articles in PDF format available on the website of the Russian
Universal Scientific Electronic Library: www.elibrary.ru**

Publisher of the journal: JSC ZNACK Firm,
General Director **Leonid S. Slutskin**,
tel. (495) 361 93 77,
e-mail: znack1993@rambler.ru

ИЗДАЕТСЯ С ИЮЛЯ 1880 ГОДА

ЭЛЕКТРИЧЕСТВО

5
МАЙ
2016

ЕЖЕМЕСЯЧНЫЙ ТЕОРЕТИЧЕСКИЙ И НАУЧНО-ПРАКТИЧЕСКИЙ ЖУРНАЛ

УЧРЕДИТЕЛИ: РОССИЙСКАЯ АКАДЕМИЯ НАУК (Отделение энергетики, машиностроения, механики
и процессов управления),
РОССИЙСКОЕ НАУЧНО-ТЕХНИЧЕСКОЕ ОБЩЕСТВО ЭНЕРГЕТИКОВ И ЭЛЕКТРОТЕХНИКОВ

СОДЕРЖАНИЕ

CONTENTS

Арцишевский Я.Л., Климова Т.Г., Серов Д.М. Выбор схемно-режимных ситуаций для проверки функционирования автоматического регулятора возбуждения 4

Ya.L. Artsishevskii, T.G. Klimova, D.M. Serov, Choice of Necessary and Sufficient Circuit and Regime Situations for Check of Functioning of AEC 4

Лямец Ю.Я., Широкин М.Ю., Мартынов М.В. Оценивание синусоидальной составляющей кратковременно наблюдаемого процесса короткого замыкания 8

Yu.Ya. Lyamets, M.Yu. Shirokin, M.V. Martynov, The Estimation of Sinusoidal Component of Short Time Observing Process of Short-Circuit 8

Рабинович М.А. Статистические характеристики частоты узкополосного случайного процесса . . 13

M.A. Rabinovich, Statistical Frequency Characteristics of a Narrow-Band Random Process 13

Бахмисов О.В., Кузнецов О.Н. Методика моделирования газотурбинных и парогазовых установок большой мощности при исследовании процессов в ЭЭС. 27

O.V. Bakhmisov, O.N. Kuznetsov, Methods of Simulation of Heavy-Duty Gas Turbine Units and Combined-Cycle Power Plants for Power Systems Studies. 27

Ковалев Л.К., Ковалев К.Л., Конеев С.М.-А., Семенihin В.С. Сверхпроводящий шар в пульсирующем и вращающемся магнитном поле 35

L.K. Kovalev, K.L. Kovalev, S.M.-A. Koneyev, V.S. Semenikhin, A Superconducting Spheroid in Pulsating and Rotating Magnetic Field 35

Челухин В.А., Абрамсон Е.В. Об электроснабжении возможных поселений на Марсе 45

V.A. Chelukhin, E.V. Abramson, About Supplying Power to Possible Settlements on the Mars. 45

Поспелов В.Я., Кузьмин И.Ю., Черевко А.И., Потего П.И., Душкин Ю.В., Сакович И.А. Сравнительный анализ параметров и характеристик управляемых выпрямителей для кораблей арктического региона 53

V.Ya. Pospelov, I. Yu. Kuz'min, A. I. Cherevko, P. I. Potego, Yu. V. Dushkin, I. A. Sakovich, A Comparative Analysis of the Parameters and Characteristics of Controlled Rectifiers Developed for Arctic Ships 53

Мустафаев Р.И., Гасанова Л.Г. Математические модели управляемых трехфазных асинхронных машин 59

R.I. Mustafayev, L.G. Gasanova, Mathematical Models of Three-Phase Controlled Asynchronous Machines 59

ХРОНИКА

CHRONICLE

Исаак Яковлевич Браславский
(К 80-летию со дня рождения) 66

Isaak Yakovlevich Braslavskii
(to Mark the 80th Anniversary) 66

Алексей Иванович Инкин
(Некролог) 68

Aleksei Ivanovich Inkin
(Obituary) 68