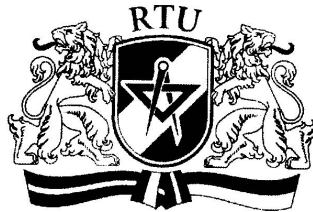


ISSN 2255-9140 print
ISSN 2255-9159 online



ANNO 1862

Scientific Journal
of Riga Technical University

ELECTRICAL, CONTROL AND COMMUNICATION ENGINEERING

2014 / 7

Editor-in-Chief Ilya Galkin

RTU Press
2014

Editorial Board

Editor-in-Chief

Ilya Galkin (Riga Technical University, Latvia)

Section Editors

Electrical Machines and Apparatus (EMA) –

Anouar Belahcen (Aalto University, Finland)

Alexey Kolganov (Ivanovo Power State University, Russian Federation)

Electrical Drives, Mechatronics and Robotics (EDR) –

Valeriy Vodovozov (Tallinn University of Technology, Estonia)

Leonids Ribickis (Latvian Academy of Science, Latvia)

Power Electronic Converters (PEC) –

Dmitri Vinnikov (Tallinn University of Technology, Estonia)

Ivars Rankis (Riga Technical University, Latvia)

Power Electronic Technologies (PEL) –

Enrique Romero-Cadaval (University of Extremadura, Spain)

Ilya Galkin (Riga Technical University, Latvia)

Electromagnetic Compatibility (EMC) –

Ryszard Strzelecki (Gdynia Maritime Academy, Poland)

Electrical Materials, Reliability of and Diagnostics Electrical Equipment (REL) –

Yury Paerand (Donbas State Technical University, Ukraine)

Electric Power Supply (EPS) –

Enrique Romero-Cadaval (University of Extremadura, Spain)

Control Engineering and IT (CTL) –

Mohammad Pourmahmood Aghababa (Urmia University of Technology, Iran)

Editors (Riga Technical University, Latvia)

Ingars Steiks (computer and communication support)

Anastasia Zhiravetska (English proofreading)

Andrew Stepanov (layout and galley editing)

Kristaps Vitols (layout and galley editing)

Editorial Board address

Faculty of Power and Electrical Engineering

Riga Technical University

E-mail: ecce@rtu.lv

Phone: +371 67089918

Fax: +371 67089941

ISBN 978-9934-10-662-0

Electrical, Control and Communication Engineering is a peer-reviewed scientific journal.

Co-published with **De Gruyter Open**.



Abstracted&Indexed: *Astrophysics Data System (ADS), Celdes, CNKI Scholar (China National Knowledge Infrastructure), CNPIEC, EBSCO – Engineering Source, EBSCO – TOC Premier, EBSCO Discovery Service, Google Scholar, J-Gate, JournalTOCs, Naviga (Softweco), Primo Central (ExLibris), ProQuest (relevant databases), ReadCube, Summon (Serials Solutions/ProQuest), TDOne (TDNet), TEMA Technik und Management, Ulrich's Periodicals Directory/ulrichsweb, WorldCat (OCLC) and VINITI database.*

All rights are reserved. No part of this publication may be reproduced, stored, transmitted or disseminated in any form or by any means without prior written permission from Riga Technical University represented by RTU Press to whom all requests to reproduce copyright material should be directed in writing.

© Riga Technical University, 2014

Published by RTU Press, Riga Technical University, 1 Kalku street, Riga, LV-1658, Latvia
Printed by RTU Printing House

Table of Contents

<i>A. Podgornovs, A. Sipovichs</i> Electromechanical Battery EMB Mass Minimization taking into Account its Electrical Machines Rotor Energy.....	5
<i>J. Voitkans, A. Voitkans</i> Tesla Coil Theoretical Model and its Experimental Verification.....	11
<i>J. Gallardo-Lozano, E. Romero-Cadaval, M. I. Milanés-Montero, M. A. Guerrero-Martinez</i> Battery Equalization Control Based on the Shunt Transistor Method	20
<i>A. Suzdalenko, J. Zakis, I. Steiks</i> Current Sensorless Control Algorithm for Single-Phase Three-Level NPC Inverter.....	28
<i>N. Kunicina, A. Galkina, A. Zabasta, A. Patlins, K. Kondratjevs</i> Traffic Route Modelling and Assignment with Intelligent Transport System	34
<i>I. Beinarts, U. Grunde, A. Jakovics</i> Distributed Multi-Sensor Real-Time Building Environmental Parameters Monitoring System with Remote Data Access.....	41
List of Authors.....	47
List of Keywords	48