

Contents

01	<b>Piotr SZULAWSKI, Włodzimierz KOCZARA</b> - Modified power generation system of a wound rotor synchronous generator	1
02	<b>Paweł BUŁKOWSKI, Tadeusz CITKO</b> - Class E rectifier bridge supplied by series resonant converter	8
03	<b>Marek ORZYŁOWSKI, Mirosław LEWANDOWSKI</b> - The Application of Fractional Calculus for Supercapacitor Dynamics Modeling	14
04	<b>Paweł DAWIDOWSKI, Kacper SOWA, Mariusz STOSUR, Marcin SZEWCZYK, Przemysław BALCEREK</b> - Reduction of THD by switching frequency optimization in three-level NPC inverter	18
05	<b>Paweł DRZYMAŁA, Henryk WELFLE</b> - Analysis of currents squirrel-cage motor in dynamic states during two-phase short circuit at the terminals of windings	22
06	<b>Aron Abiluly BURLIBAY, Akambay Agybayuly BEISEMBAEV, Waldemar WÓJCIK</b> - Description of the manipulator robot's workspaces with three mobility degrees in the form of the logical expressions	25
07	<b>Maria SKUBLEWSKA-PASZKOWSKA, Jakub SMOŁKA</b> - A method for human gait comparison	30
08	<b>Bohdan BOROWIK, Marcin TOMCZYK, Barbara BOROWIK</b> - Wavelet-neural detection of induction motor drive's faults	34
09	<b>Marcin HABRYCH</b> - Comparison of performance of available current converters under distorted waveform conditions	38
10	<b>Michał GWÓZDŹ</b> - Effectiveness of the Work of an Active Power Filter Based on a Multi-channel Converter	42
11	<b>Dariusz ŻELASKO</b> - Policy-Based Routing on the example of Vyatta system	46
12	<b>Bartosz CHABER, Jacek STARZYŃSKI</b> - Using Computer Modeling to Improve Design of a Stripline	50
13	<b>Jarosław MŁYŃCZAK, Jan KUBICKI, Krzysztof KOPCZYŃSKI</b> - Possibilities of stand-off detection of alcohol in car cabins	53
14	<b>Adam MAĆKOWIAK, Krzysztof SIECZKAREK, Monika ŁOBAZIEWICZ</b> - On possible use of EMC absorbing materials for elimination of electromagnetic disturbances in radio communication systems	57
15	<b>Piotr KAŹMIERCZAK</b> - Photometric measurements of vehicle headlamps after 10 years of exploitation	61
16	<b>Jerzy MARZECKI, Bartosz PAWLICKI</b> - Loads forming based on voltage frequency value in Smart Grids – applications and proposals	65
17	<b>Stanislav KOČMAN, Petr ORSÁG, Pavel SOBOTA</b> - Simulation Models of Power Rectifiers in the EMT-ATP Software	71
18	<b>Omar A. C. Vilcanqui, Antonio C. de C. Lima, Luiz A. L. de Almeida</b> - Adaptive Frequency Compensation in Amplifiers for Protective Relay Testing	75
19	<b>Saweth HONGPRASIT</b> - A New Bandgap Voltage Reference Circuit using CMOS Differential Voltage Current Conveyor	80
20	<b>NOREDDINE BENAIED, ALI HENNAD</b> - ADBQUICKEST Numerical Scheme for Solving Multi-Dimensional Drift-Diffusion Equations	84
21	<b>Aphirak THITINARUEMIT</b> - New Current-mode Three-Inputs One-output Multifunction Filter with Independent Tune of $\omega_0$ and Q	88
22	<b>M. Muthuramalingam, P.S.Manoharan</b> - Simulation and Experimental validation of Distributed MPPT algorithms for partially shaded Photovoltaic systems	92
23	<b>Jerzy ANDRUSZKIEWICZ, Józef LORENC</b> - Conditions for implementation in Poland of price demand side response programs to reduce peak demand for electricity	97
24	<b>Adrian HALINKA, Piotr RZEPKA</b> - Concept of Area Automatic System for Supervisory Control of Autonomous MV Network Structures with Local Electricity Biogas Sources	101
25	<b>Adrian HALINKA, Piotr RZEPKA, Mateusz SZABLICKI</b> - Automatic Systems of Frequency Load Shedding and Balancing of Active Power for Network Areas	105
26	<b>Mirosław KORNATKA</b> - Automation of medium voltage networks operation and the their reliability level	109
27	<b>Rafał KUMALA, Paweł SOWA</b> - Identification of the disruptions in the coupled multi voltage transmission lines	113
28	<b>Katarzyna ŁUSZCZ, Paweł SOWA</b> - Chaos behavior simulation of the nonlinear dynamic ferroresonance phenomena	116
29	<b>Mirosław PAROL</b> - Analysis of indexes concerning interruptions in delivery of electricity in distribution networks	122
30	<b>Janusz SOWIŃSKI</b> - Cost of electricity from renewable energy sources	127

## PRZEGLĄD ELEKTROTECHNICZNY Vol 2014, No 8

### Contents

31	<b>Dorota TYPAŃSKA, Łukasz PUTZ</b> - Testing of an electronically controlled engine with a gasoline direct injection system	132
32	<b>Marcin BEDNAREK, Tadeusz DĄBROWSKI, Michał WIŚNIOŚ</b> - Diagnosing the Communication Threats in Industrial Control System	138
33	<b>Robert BERCZYŃSKI, Stanisław Jan KULAS</b> - Calculation and analysis of busbars current carrying paths in terms of their configuration	144
34	<b>Tomasz CIECHULSKI, Stanisław OSOWSKI</b> - Comparison of three methods of load forecasting in a small power system based on neural networks	148
35	<b>Piotr CZAJKA, Wojciech MIZAK, Jacek GALAS, Adam CZYŻEWSKI, Maciej KOCHANOWSKI, Dariusz LITWIN, Maciej SOCJUSZ</b> - Laser profilometer for reconstruction of the surface geometry	152
36	<b>Jacek JAKUBOWSKI, Bogumił BRYKALSKI, Andrzej MICHALSKI</b> - A Procedure to Form the Waveform of the Magnetic Field in an Electromagnetic Flow Meter	157
37	<b>Adam JOŚKO</b> - QRS complex morphologies identification by the Lipschitz exponents of Wavelet Transform	161
38	<b>Kamil KAMIŃSKI, Andrzej P. DOBROWOLSKI, Ewelina MAJDA</b> - Evaluation of functionality speaker recognition system for downgraded voice signal quality	164
39	<b>Piotr KANIEWSKI, Stanisław KONATOWSKI</b> - Software Toolbox for Simulation of Integrated Navigation Systems	168
40	<b>Dominik KĘSEK, Andrzej RACHALSKI</b> - Applying of MBS signal for air flow velocity and thermal diffusivity measurement	172
41	<b>Marcin KOŁODZIEJ, Andrzej MAJKOWSKI, Remigiusz Jan RAK</b> - The use of clustering for automatic detection of eye blinking artifacts in the EEG signal	175
42	<b>Stanisław KONATOWSKI, Piotr KANIEWSKI</b> - Smoothing algorithms used in integrated navigation system of SAR radar	178
43	<b>Michał KOWALEWSKI</b> - Usage of excitation signals with designed shapes for diagnosis of high-impedance objects with use of impedance spectroscopy method	182
44	<b>Tomasz KRASZEWSKI, Grzegorz CZOPIK</b> - UWB in the indoor objects localization	186
45	<b>Daniel KRÓL, Marcin KOŁODZIEJ, Andrzej MAJKOWSKI, Remigiusz J. RAK</b> - The use of independent component analysis for automatic elimination of eye blink artifacts	192
46	<b>Artur KULIŃCZAK, Grzegorz PANKANIN</b> - Von Karman vortex street modelling with ANSYS FLUENT package application	195
47	<b>Tomasz LATKOWSKI, Stanisław OSOWSKI</b> - Feature selection methods in application to gene expression: autism data	199
48	<b>Jolanta PACAN, Jacek JAKUBOWSKI</b> - Assessment of the repeatability of keypoints detected in visible and infrared face images	205
49	<b>Michał PAWŁOWSKI, Marek PAWŁOWSKI, Marek SUPRONIUK</b> - Apparatus limitations of measuring capacitance kinetics in DLTS method	209
50	<b>Michał NASTERNAK, Marcin KOŁODZIEJ, Andrzej MAJKOWSKI, Remigiusz J. RAK</b> - Recognition of gender from a facial image	213
51	<b>Tomasz KOWALUK, Eugeniusz RATAJCZYK</b> - Comparative analysis of research of cross section areas of machine elements	216
52	<b>Zbigniew STAROSZCZYK, Eugeniusz MISIUK</b> - The method for Simulink/SimPowerSystems nonlinear core transformer model parameterization based on real transformer core data observations	220
53	<b>Marek SUPRONIUK, Paweł KAMIŃSKI, Roman KOZŁOWSKI, Jarosław ŻELAZKO, Michał KWESTARZ, Michał PAWŁOWSKI</b> - Modelling of defect centers influence on the resistivity of silicon single crystals	226
54	<b>Bolesław TYNC</b> - An active balanced bridge	230
55	<b>Zbigniew WATRAL, Andrzej MICHALSKI, Jacek STARZYŃSKI</b> - Optimisation of the coil of electromagnetic flowmeter	236
56	<b>Marian WNUK, Zdzisław CHUDY</b> - Power measurement of electromagnetic microwave pulse	239
57	<b>Krzysztof OPRZĘDKIEWICZ, Witold GŁOWACZ, Mieczysław ZACZYK, Janusz TENETA, Łukasz WIĘCKOWSKI</b> - An identification of interval model an elevation angle in oriented PV system	243