

Contents

01	<b>Mariusz RUDZIŃSKI, Marek WESOŁOWSKI, Włodzimierz STRUPIŃSKI</b> - Blue, green and white light emitters based on III-N semiconductors	1
02	<b>Jan SROKA</b> - $ \Delta NSA_{SAC}  > 4dB$ – and what next?	14
03	<b>Marek MICHALCZUK, Bartomiej UFNALSKI, Lech M. GRZESIAK, Piotr RUMNIAK</b> - Power converter-based electrochemical battery emulator	18
04	<b>Sylwester ROBAK, Adrian PAWLICKI, Bartosz PAWLICKI</b> - The analysis of the voltage and current asymmetry in the power transmission lines	23
05	<b>Adam TOMASZUK, Jakub DAWIDZIUK</b> - Low Voltage Photovoltaic System with P-V Curve Evaluation MPPT Algorithm Implementation	32
06	<b>Adam KRUPA, Jakub DAWIDZIUK</b> - High efficiency isolated DC/DC boost converter with planar magnetics for photovoltaic applications	35
07	<b>Tadeusz BEWSZKO</b> - Minimization of a yearly network demand charge for a customer supplied from a high voltage network	39
08	<b>Wiesław MICZULSKI, Piotr POWROŹNIK</b> - Dependence of mobile robot task scheduling on fitness functions	43
09	<b>Tadeusz NIEDZIELA</b> - (Hg,Zn)Te Photon Detectors of Thermal Radiation	48
10	<b>Jerzy WITKOWSKI, Mariusz JAŚNIKOWSKI</b> - Isotopic Spectrometer System for Use in Industrial Measurements	55
11	<b>Adam KOCHAN, Tomasz TRAWIŃSKI</b> - Simulation research on hybrid electromechanical device - BLDC motor, torsion torque generator - for torsional vibration spectrum identification of drive systems	60
12	<b>Marek OSSOWSKI, Marek KORZYBSKI</b> - Fast optimization schemes for feature selection in analog circuits fault diagnosis	65
13	<b>Wojciech WALENDZIUK, Adam IDŹKOWSKI</b> - Comparative research on the uroflowmetry system based on a weight transducer	70
14	<b>Marek ZARĘBA</b> - The method of analysis of the stationary field in a tabular busbar DC with the variable heat transfer coefficient on its surface	74
15	<b>Dorota TYPAŃSKA, Tomasz JARMUDA</b> - Improving the energy efficiency of lighting through the use of KNX system	80
16	<b>Adam SZCZEŚNIAK, Jacek SZCZEŚNIAK</b> - Application of read-only memory to conversion of signals of optoelectronic position transducer	84
17	<b>A. L. L. Murari, H. G. Tabares, G. A. L. Vargas, E. A. Belati, V. A. de Sousa, M. B. C. Salles and A. J. Sguarezi Filho</b> - Study of Transmission System with Wind Power Control and Optimal Reactive Power Flow	88
18	<b>William M. DA ROSA and Edmarcio A. BELATI</b> - First-Order Sensitivity Applied in Power Distribution System	94
19	<b>Renuga VERAYIAH, Azah MOHAMED, Hussain SHAREEF, Izham ZAINAL ABIDIN</b> - Review of Under-voltage Load Shedding Schemes in Power System Operation	99
20	<b>Juxiong He, Min Li, Guo Chen, Zhi Wang</b> - Error Analysis and Antenna Array Placement Optimization of Localization System for Partial Discharge in Substation	104
21	<b>Waldemar KAMRAT</b> - Implementation of econometric modeling procedures in programming processes and investment effectiveness evaluation in power industry	108
22	<b>Iva PAVLOVA- MARCINIAK</b> - World and EU normative documents and the RSE development in Poland	115
23	<b>Tomasz POPLAWSKI</b> - Forecast wind generation problem in Polish Power System	119
24	<b>Maksymilian PRZYGRODZKI, Rafał TURCZAK, Rafał GWÓŹDŹ, Sławomir KAŁUŻA</b> - The Assessment of Grid Access Capacity of National Transmission System in Long-term Horizon	123
25	<b>Andrzej RUSEK, Ihor SHCHUR, Marcjan NOWAK, Marek PATRO</b> - Mathematical model of a dynamics triple-mass system with elastic connections based on example of the part of a plate mill processing line with the roller table transporting line	127
26	<b>Adrian HALINKA, Mateusz SZABLICKI</b> - Distance protection on the multi-ended power lines (the new methods of calculating the impedance)	131
27	<b>Jacek WASILEWSKI</b> Application of ARIMAX models to short-term electric energy production forecasting at wind micro power plants	135
28	<b>Piotr RZEPKA, Edward SIWY, Mateusz SZABLICKI, Bernard WITEK</b> - Impact of the voltage dips caused by faults in distribution network on the industrial loads operation. Selected issues	139
29	<b>Krzysztof BERNACKI, Artur NOGA</b> - Influence of heat sink dimensions and source location on the radiated emission	144
30	<b>Krzysztof BERNACKI, Dominik WYBRAŃCZYK, Adam POPOWICZ, Dariusz MEISER</b> - Comparative analysis of the radiated disturbances emissions for unmanned aerial vehicle including electric motor systems	148

# PRZEGLĄD ELEKTROTECHNICZNY Vol 2014, No 7

## Contents

31	<b>Marek BUGAJ, Marian WNUK</b> - Modeling the propagation of electromagnetic waves in ideal and real conditions	152
32	<b>Jerzy CHUDORLIŃSKI</b> - Technical and law problems for power protection unit compatible with the requirements EMC	156
33	<b>Artur DŁUŻNIEWSKI, Łukasz JOHN, Mieczysław LASKOWSKI</b> - Selection of elements limiting the amplitude of the electromagnetic disturbances in electronic circuits	160
34	<b>Artur DŁUŻNIEWSKI, Łukasz JOHN, Mieczysław LASKOWSKI</b> - Evaluate the level of electromagnetic fields in the vicinity of the railway route	164
35	<b>Stanisław GALLA</b> - Temperature gradient measurements of SMD protection devices	168
36	<b>Mariusz GAMRACKI</b> - Modeling the propagation of lightning electromagnetic disturbance over a lossy ground	171
37	<b>Andrzej KACZMAREK, Rafał NAMIOTKO</b> - Estimating the sensitivity thresholds for critical infrastructure installations to the effects of high power pulsed electromagnetic field	175
38	<b>Piotr KAMIŃSKI, Michał KACZMAREK</b> - Floating ground - the path for conductive disturbances in active filter circuit	179
39	<b>Marek KAŁUSKI, Marek MICHALAK, Karolina SPALT, Monika SZAFRAŃSKA</b> - Practical examples of big equipment lack of electromagnetic compatibility	183
40	<b>Andrzej KASPRZAK, Marek ORLIKOWSKI, Dariusz BRODECKI</b> - Harmonic Current Emission Measurements of LED Lighting Products Available in the Market	187
41	<b>Wojciech KRAJEWSKI</b> - Analysis of possibility of partial discharge initialization during bare-hand works on HV objects	191
42	<b>Sławomir LIGENZA, Cezary WOREK, Rafał WIDÓREK</b> - Conducted emission filter in resonant converter for high power LED lighting applications.	195
43	<b>Aleksander LISOWIEC</b> - The use of Rogowski coil manufactured in multilayer PCB technology for the measurement of emissions of harmonic currents	199
44	<b>Paweł A. MAZUREK</b> - Identification of electromagnetic disturbances in the power supply circuit of plasma reactor at different gas mixtures	203
45	<b>Tadeusz MISSALA</b> - Model calibration of EMC interactions in a robotic stationary installation	207
46	<b>Jan MOCHA, Dariusz WÓJCIK, Aleksander SOBOTNICKI</b> - Issues of medical equipment protection to defibrillation pulse	210
47	<b>Leszek NOWOSIELSKI</b> - The shielding efficiency methodology measurement basing on high power electromagnetic pulse generator	214
48	<b>Leszek NOWOSIELSKI, Marian WNUK, Michał SIŁACZUK</b> - The ray-tracing method for electromagnetic wave propagation modelling	218
49	<b>Leszek NOWOSIELSKI, Rafał PRZESMYCKI, Borys BOGDAN</b> - Ambient noise factor measurement	222
50	<b>Igor ZHEZHELENKO, Yuri SAYENKO, Tatiana BARANENKO, Ryszard PAWELEK</b> - Engineering Methods of Evaluation of Additional Power Losses in Electric Power Networks at Non-Sinusoidal Conditions	226
51	<b>Ryszard PAWELEK, Irena WASIAK</b> - Comparative measurements of voltage harmonics in transmission network of 400 kV	230
52	<b>Ryszard PAWELEK</b> - Analysis of current and voltage higher harmonics measurements performed in selected traction substation	234
53	<b>Kazimierz PIWOWARCZYK, Rafał PRZESMYCKI, Leszek NOWOSIELSKI</b> - Analysis of radiated emissions of vehicle internal combustion	239
54	<b>Kazimierz PIWOWARCZYK, Marian WNUK, Leszek NOWOSIELSKI</b> - Analytical model of the HPEM pulse	243
55	<b>Rafał PRZESMYCKI</b> - Identification of hardware interfaces in complex systems based on radiated emissions	247
56	<b>Rafał PRZESMYCKI, Marian WNUK</b> - Method for measuring leakages based on electromagnetic emissions radiated by CPUs	251
57	<b>Rafał PRZESMYCKI</b> - EMC requirements for equipment used in the Armed Forces - Effect of standard NO-06-A500:2012 measurement results	255
58	<b>Piotr TYRAWA</b> - Calibration rod antennas – passive and active	259
59	<b>Bartosz MINOROWICZ, Frederik STEFANSKI</b> - Proposal of a new group of magnetorheological dampers	263