

Contents

01	Jolanta CHMIELIŃSKA, Marek KUCHTA, Roman KUBACKI, Marek DRAS, Krzysztof WIERNY - Selected methods of electronic equipment protection against electromagnetic weapon	1
02	Paweł A. MAZUREK, Krzysztof BERNACKI, Artur NOGA - The levels of high-frequency electromagnetic emissions in the urban environment	9
03	Piotr ŁUKOWSKI, Dariusz LASKOWSKI - Measurements of bit rate of various GSM operators	13
04	Dariusz LASKOWSKI , Piotr ŁUKOWSKI - The factors determining the reliability of IT network administrator	16
05	Robert BERCZYŃSKI - The test stand for determining contacts movement parameters of electrical short circuit switch	21
06	Robert BERCZYŃSKI, Stanisław Jan KULAS - Diagnosing the dynamics of contacts movement of high-voltage electrical switches	24
07	Kazimierz BANASIAK - Analysis of signals with long pulse repetition period	29
08	Bogumił BRYKALSKI, Jacek JAKUBOWSKI - The possibility to improve the measuring algorithm in electromagnetic flowmeter with the use of the energy dissipated by the coil during the process of its pulse excitation	34
09	Stanisław KULAS, Henryk SURONOWICZ, Marek SUPRONIUK, Katarzyna MICHTA - Conception a single - phase hybrid switch for power applications	37
10	Jan MATUSZEWSKI - The road signs recognition in an intelligent car devices	41
11	Adrian CHMIELEWSKI, Szymon GONTARZ, Robert GUMIŃSKI, Jędrzej MĄCZAK, Przemysław SZULIM - Analysis of influence of operational parameters on micro cogeneration system vibrations	45
12	PIOTR FIGÓŃ - Numerical analysis of surge waveforms, research results	54
13	Michał ŁABOWSKI, Piotr KANIEWSKI, Jacek PASZEK - Concept of pedestrian navigation system	58
14	Jacek PASZEK, Piotr KANIEWSKI, Michał ŁABOWSKI - Inertial sensor random errors analysis using Variance methods	62
15	Marek SZULIM, Katarzyna CIOSK, Marek KUCHTA, Jacek PAŚ - Error of the evaluation method of the effectiveness of object's physical protection system	68
16	Lech BOROWIK, Artur CYWIŃSKI - Current-carrying capacity parallel single-core LV cable	71
17	Paweł CAŁA, Paweł BIĘNKOWSKI - Exposure systems of GSM900/UMTS2100/ISM2400 antennas for biomedical research	75
18	Antoni CIEŚLA, Mikołaj SKOWRON, Przemysław SYREK, Wojciech KRASZEWSKI, Damian LACHENDROWICZ - Analysis of the magnetic field around the track to levitate disc made of superconductor YBaCuO	78
19	Andriy CZABAN, Marek LIS, Andrzej GASTOŁEK, Jarosław SOSNOWSKI - Mathematical modeling work of induction generators in composite energy systems	82
20	Paweł DRZYMAŁA, Henryk WELFLE - Experimental verification of method determining the transient components of torque for squirrel-cage induction motor at the two-phase short circuit condition	86
21	Paweł CZAJA, Andrzej JĄDERKO - Operation Effectiveness of Residual Current Protective Devices in Electrical Drives with PWM Voltage Inverter	89
22	Ewa KORZENIEWSKA, Piotr MURAWSKI, Andrzej KRAWCZYK, Ryszard PAWLAK - Defect detection in electroconductive thin layers via thermography method	93
23	Marcin KOWOL, Janusz KOŁODZIEJ, Marian ŁUKANISZYN - Simulation of the magnetic gear	96
24	Maciej ŁOPUCKI, Agnieszka GRAFKA, Piotr BIJAK - Experimental models under in vitro and in vivo conditions used in research on the effects of the electromagnetic field on human tissue - a summary of own research conducted in the years 2001-2014	102
25	Paweł MATUSZCZYK, Tomasz POPŁAWSKI, Janusz FLASZA - Prosumer energy development on the example cogeneration CHP	105
26	Krzysztof NECKA, Stanisław LIS, Tomasz DRÓŻDŻ, Piotr NAWARA, Paulina WRONA, Maciej OZIEMBŁOWSKI - Characteristics of the prototype laboratory equipment for the investigation of the ash melting temperature in the tube furnace	109
27	Maciej OZIEMBŁOWSKI, Tomasz DRÓŻDŻ, Łukasz BOBAK, Krzysztof NECKA, Stanisław LIS, Piotr NAWARA , Paulina WRONA - Concentrated Microwave Field CMF as unconventional preservation methods of liquid food in the framework of „hurdle theory”	113
28	Antoni SAWICKI, Maciej HALTOF - Modeling the gliding discharge in GA plasma generators	117
29	Witold SYGOCKI, Ewa KORZENIEWSKA - Representation of issues of electromagnetism and occupational safety in the network	120
30	Artur WDOWIAK, Paweł A. MAZUREK - The influence of electromagnetic waves on the human reproduction	124

PRZEGŁĄD ELEKTROTECHNICZNY Vol 2016, No 1

Contents

31	Mykhaylo ZAGIRNYAK, Oleksiy CHORNYI, Volodymyr NYKYFOROV, Oksana SAKUN, Kirill PANCHENKO - Experimental research of electromechanical and biological systems compatibility	128
32	Mykhaylo ZAGIRNYAK, Viacheslav PRUS - Use of neuronets in problems of forecasting the reliability of electric machines with a high degree of mean time between failures	132
33	Bartłomiej ZUBRZAK, Jarosław EMILIANOWICZ, Paweł BIĘNKOWSKI - Envelope shaping system for electromagnetic field standard setup	136
34	Michał JAGUSIAK, Tomasz DRÓŻDŻ, Piotr NAWARA, Paweł KIEŁBASA, Stanisław LIS, Paulina WRONA, Krzysztof NECKA, Maciej OZIEMBŁOWSKI - Electromagnetic compatibility in measurements of electric energy	139
35	Katarzyna CIOSK, Roman ŻYŁA - The electromagnetic field of the broadcastingstation in the urban area	145
36	Igor TROYANCHUK, Nina TERESHKO, Maxim BUSHINSKY, Vera FEDOTOVA, Janusz PARTYKA - Magnetic properties of $\text{La}_{0.7}\text{Sr}_{0.3}\text{Mn}_{0.85}\text{Nb}_{0.15-x}\text{Mg}_x\text{O}_3$ system	148
37	Iya TASHLYKOVA-BUSHKEVICH, Julia YAKOVENKO, Iuliana BUSHKEVICH, Paweł ZUKOWSKI - Effect of topography on wettability of rapidly solidified Al-In alloys	151
38	Yuriy BOBALO, Leonid NEDOSTUP, Myroslav KISELYCHNYK, Mykhaylo MELEN - Optimization of processes designed for ensuring the quality and reliability of electronics using cumulative models of defectiveness and total production expenses	155
39	Agileswari K. Ramasamy, Renuga Verayiah, Izham Zainal Abidin, Sugunesan Gunalan, Parthiban Perumal - Study on P-V Curve and V-Q Curve of an Unbalanced Three-Phase System with Different Static Loads	159
40	E. F. Guelber, A. S. V. Cardoso, C. E. Capovilla and H. X. Araujo - A Modified Ultra Wide Band Antenna With Metamaterial Patterns for Telecommunications Systems	166
41	Krzysztof BARTCZAK - Smart energy meters – analysis of advantages and risks accompanying in introduction these devices in Poland	170
42	Ireneusz KUBIAK, Artur PRZYBYSZ - A printing technology and electromagnetic protection of information	177
43	Jacek MALKO, Robert LIS - Cybersecurity Measures for Protection and Control Systems	182
44	Kazimierz JAGIEŁA, Marek GAŁA, Janusz RAK - Use of Orthogonal Components to Determine the Active Power of AC Arc Furnace Based on Measurements of Voltages and Currents	186
45	Zygmunt SZCZERBA, Piotr SZCZERBA - Selected properties of modern pressure transducers	192
46	Sylwester FILIPIAK - Selected evolutionary algorithms for multicriterial optimization based on the example of the programming of the energy distribution systems development	196
47	Mariusz BENESZ, Wiesław NOWAK, Waldemar SZPYRA, Rafał TARKO - Analysis of switching overvoltages in the overhead power lines in statistical terms	201
48	Jacek BIERANOWSKI, Tomasz OLKOWSKI - Optimisation of the electrical power daily load curves in a food processing plant as an example of DSR mechanisms application – case study	205
49	Marcin AUGUSTYNOWICZ, Dariusz SAWICKI - Reconstruction of the relative coordinates of image using projective geometry	208