

PRZEGLĄD ELEKTROTECHNICZNY Vol 2011, No 6

Contents

01	Jacek MALKO - Smart grid – need or trend	1
02	Jan POPCZYK - Synergism	6
03	Janusz MINDYKOWSKI, Tomasz TARASIUK - Assessment of electric power quality in the isolated systems based on the case of ship networks Part I - parameters and legal instruments	17
04	Janusz MINDYKOWSKI, Tomasz TARASIUK - Assessment of electric power quality in the isolated systems based on the case of ship networks Part II - methods and measurement instrumentation	23
05	Donat ZEMEŁKO - Electromagnetic compatibility of fixed installations	31
06	Irena WASIAK - The concept of smart electrical power microgrids	35
07	Marek GAŁA - The application of artificial neural networks in the estimation of the influence of nonlinear loads on the power quality	42
08	Yang HAN, Lin XU - A survey of the Smart Grid Technologies: background, motivation and practical applications	47
09	Désiré D. RASOLOMAMPIONONA, François MAEGHT, Pierre-Yves CRESSON, Patrick FAVIER - Experimental solar-based charging station for electric vehicles	58
10	Sylwester ROBAK, Desire D. RASOLOMAMPIONONA - Distributed energy resources - the state of the art	63
11	Paweł MŁODZIKOWSKI, Adam MILCZAREK, Mariusz MALINOWSKI - Control algorithm of a DC/AC converter for a small wind power plant	67
12	Grzegorz WRONA, Marek JASIŃSKI, Marian P. KAŻMIERKOWSKI, Małgorzata BOBROWSKA-RAFAŁ, Marek KORZENIEWSKI - Floating Point DSP TMS320F28xx in control systems for Renewable Energy Sources RES	73
13	Paweł ZIELONKA, Marek JASIŃSKI, Małgorzata BOBROWSKA-RAFAŁ, Andrzej SIKORSKI - Control of AC-DC converter when voltage dips in supply line occurs	79
14	Szymon PIASECKI, Marek JASIŃSKI, Krzysztof RAFAŁ, Marek KORZENIEWSKI, Aritz MILICUA - Higher harmonics compensation in grid-connected PWM converters for renewable energy interface and active filtering	85
15	Michał ROLAK, Radosław KOT, Mariusz MALINOWSKI, Zbigniew GORYCA, J. Tomasz SZUSTER - AC/DC converter with Maximum Power Point Tracking algorithm for complex solution of Small Wind Turbine	91
16	Andrzej SIKORSKI, Marek KORZENIEWSKI, Mariusz MALINOWSKI - AC/DC converter in small hydroelectric power plant	97
17	Krzysztof KULIKOWSKI, Andrzej SIKORSKI, Marek JASIŃSKI - Direct Torque Control-3 Levels-3 Areas control method of induction motor	101
18	Rafał GRODZKI, Andrzej SIKORSKI, Marek JASIŃSKI - Predictive control algorithms of the AC/DC converter	105
19	Tadeusz PŁATEK - Comparative analysis of power losses in three-level FLC and NPC inverters	111
20	Tomasz LERCH - Transient states of wind power plant with doubly fed induction generator	118
21	Paweł SZCZEPANKOWSKI, Daniel WOJCIECHOWSKI, Krzysztof Jakub SZWARC - A novel 3D-SVPWM modulation for three level four legs NPC converter	125
22	Mohammad ARASTEH, Abdolreza RAHMATI, Shahrokh FARHANGI, Adib ABRISHAMIFAR - DTC strategy for a DSP-based Five-Level Flying-Capacitor Drive with improved flux estimation	132
23	Brahim BERBAOUI, Chellali BENACHAIBA, Mustapha RAHLI, Hamza TEDJINI - An efficient algorithm to tuning PI-controller parameters for shunt active power filter using ant colony optimization	140
24	Krzysztof KAJSTURA, Dariusz KANIA - A decomposition state assignment method of finite state machines oriented towards minimization of power	146
25	Mirosław GAJER - The implementation of the evolutionary computations in the domain of electrical circuits theory	150
26	Wiktor JAKOWLUK - Design of an optimal actuation signal for identification of a torsional spring system	154
27	Jiri PETRZELA, Tomas GOTTHANS - Chaotic oscillators with single polynomial nonlinearity and digital sampled dynamics	161
28	Adam POPOWICZ - Alignment of periods in periodic signals	164
29	Maciej SIWCZYŃSKI - The relationship between reactive power and voltage stability in nonsinusoidal situation	169
30	Paweł SWORNOWSKI - The ideal measuring software	174
31	BAI LIANGYU, TANG HOUJUN, XU YANG - Two-objective optimization design for the transcutaneous energy transmission system	180
32	Marek PENHAKER, Vladimir KASIK, David KORPAS - Electrical parameters measurement and testing of implantable cardioverters – defibrillators	186
33	Wojciech PIETROWSKI - Application of Radial Basis Neural Network to diagnostics of induction motor stator faults using axial flux	190
34	Ryszard SZCZERBANOWSKI, Kazimierz ZAKRZEWSKI - The calculation of power losses in transformer electrical sheets	193
35	Maria Carmela DI PIAZZA, Antonella RAGUSA, Gianpaolo VITALE - Magnetic material performance of transformers in common mode active EMI filters for bearing current suppression	198
36	Krzysztof MAJER - The influence of submagnetizing of the core on the content of higher harmonic vibration and noise of transformer cores	202
37	Lech BOROWIK, Rajmund WŁODARZ - Diagnostics of the cooling systems in the power transformers	206
38	Daniel GAJDA, Andrzej MORAWSKI, Andrzej ZALESKI, Tomasz CETNER, Adam PRESZ - Enhancement of critical current density in superconducting wires NbTi	209
39	Juraj KURIMSKÝ, Bystrík DOLNÍK - Recovery voltage in ZnO ceramics	214
40	Tadeusz KNYCH, Beata SMYRAK, Monika WALKOWICZ - Problem of hydrogen embrittlement of copper used for conductors in fireproof cables	218

PRZEGLĄD ELEKTROTECHNICZNY Vol 2011, No 6

41	Sławomir JODZIS, Tomasz SMOLIŃSKI, Piotr SÓWKA - Application of a concentric actuator for ozone synthesis under surface discharge conditions	223
42	Zbigniew St. SOBKOW, Artur RYDOSZ - FPGA implemented temperature controller for mid-IR methane optical detector	227
43	Stanisław GAD, Agnieszka PAWLAK - Energy equivalents of different types of plant biomass	230
44	JUNHAO LI, YANMING LI, GUOLI WANG, Martin D. JUDD - PD pulse burst characteristics in differently aged transformer oils under AC conditions	236
45	Konrad BOJAR - Trend extraction from noisy discrete signals by means of singular spectrum analysis and morphological despiking	241
46	Teresa ORŁOWSKA-KOWALSKA, Grzegorz TARCHAŁA - Sliding-mode speed and torque control of the induction motor	245
47	Milos SOTAK - Sequential Monte Carlo methods for navigation systems	249
48	Amin SADRI, Ali Asghar BEHESHTI SHIRAZI, Masoomeh ZAMENI - New image registration method based on the physical forces	253
49	YUJIE LIANG, PEILIN LIU, JING LIU - A Realities simulation platform of LR-WPAN in Smart Home Grid	261
50	Mirosław PAROL, Marcin KUŻMA - Protection against electric shock in low voltage microgrids	265
51	Ryszard ZACIRKA, Janusz KONIECZNY - The method of improving safe use of devices to be operated manually	271
52	Sławomir Andrzej TORBUS, Andrzej JORDAN - Simulation analysis of the impact of the deployment of conductors of high-voltage line 110 kV on the accuracy measurement of current using interferometric sensor	275
53	YIJIE WANG, WEI WANG, DIANGUO XU - Electronic ballast of metal halide lamp for projector with digital control	279
54	Aleksandra D. CVETKOVIĆ, Mihajlo Č. STEFANOVIĆ, Nikola M. SEKULOVIĆ, Dejan N. MILIĆ, Dusan M. STEFANOVIĆ, Zoran J. POPOVIĆ - Second-order statistics of dual SC macrodiversity system over channels affected by Nakagami- <i>m</i> fading and correlated gamma shadowing	284
55	New books: Tomasz Adrikowski, Dawid Buła, Krzysztof Dębowski, Marcin Maciążek, Marian Pasko - Analysis of properties of power active filters (Zygmunt Piątek)	289
56	On the centenary of the birth of professor Jana Kożuchowski	290
57	Prof. dr hab. inż. Andrzej Horodecki (1925-2011)	295