

# PRZEGŁĄD ELEKTROTECHNICZNY (Electrical Review) Vol 2011, No 10

## Contents

01	<b>Wiesław WILCZYŃSKI, Ryszard ZAPAŚNIK</b> - Polish Institute of Electrical Engineering 1946 – 2011	1
02	<b>Mieczysław NOWAK, Roman BARLIK, Piotr GRZEJSZCZAK, Jacek RĄBKOWSKI</b> - Silicon carbide Schottky Barrier Diodes in PWM voltage source inverters with MOSFETs - experimental investigations	18
03	<b>Mieczysław NOWAK, Roman BARLIK, Piotr GRZEJSZCZAK, Jacek RĄBKOWSKI</b> - Silicon carbide Schottky Barrier Diodes in PWM voltage source inverters with MOSFETs - simulating investigations	24
04	<b>Janusz ZARĘBSKI, Jacek DĄBROWSKI, Damian BISEWSKI</b> - Measurements of thermal parameters of silicon carbide semiconductor devices	29
05	<b>Janusz ZARĘBSKI, Jacek DĄBROWSKI</b> - Electrothermal Model of SiC Power Schottky Diodes	33
06	<b>Andrzej DZIEDZIC, Adam KŁOSOWICZ, Paweł WINIARSKI, Karol NITSCH, Tomasz PIASECKI, Grażyna KOZIOŁ, Wojciech STĘPLEWSKI</b> - Chosen electrical properties and stability of passive components embedded in printed circuit boards	39
07	<b>Norbert TUŚNIO, Janusz TUŚNIO</b> - On-board siren warning against approaching the overhead high voltage transmission lines	45
08	<b>Marcin BYCZUK</b> - Rotary visual stimulator for research into visual evoked potentials	49
09	<b>Adam Witold STADLER, Zbigniew ZAWIŚLAK, Marcin SŁOMA, Małgorzata JAKUBOWSKA</b> - Noise properties of CNT-based polymer resistors	52
10	<b>Damian GRZECZHCA</b> - People detection in the smoke area based on image taken by infrared camera	56
11	<b>Bernard WYRWÓŁ</b> - AVR-FPGA-FIS Fuzzy Logic Development System	60
12	<b>Bernard WYRWÓŁ</b> - Using graph greedy coloring algorithms in the hardware implementation of the HFIS fuzzy inference system	64
13	<b>Ewa KLIMIEC, Wiesław ZARASKA, Szymon KUCZYŃSKI</b> - The investigation of piezoelectric polyethylene terephthalate (PET) films from a certain angle of its application as stretching and compression sensors	68
14	<b>Krzysztof TABOREK</b> - Analytical method of performance prediction of multiprocessor systems	72
15	<b>Piotr KYZIOŁ, Jerzy RUTKOWSKI</b> - Four terminal testing method 4-tBT of analog electronic circuit	76
16	<b>Andrzej HANDKIEWICZ, Szymon SZCZĘSNY, Mariusz NAUMOWICZ, Michał MEŁOSIK, Piotr KATARZYŃSKI</b> - Generation of SI filters layout using the row strategy	80
17	<b>Robert KĘDZIERAWSKI, Mateusz PASTERNAK</b> - Analysis of the time windows applicability in the frequency domain to simplify the GPR images interpretation	84
18	<b>Jacek JAKUSZ, Waldemar JENDERNALIK, Grzegorz BLAKIEWICZ, Robert PIOTROWSKI, Stanisław SZCZEPANIŃSKI</b> - Ultra-low power analogue CMOS vision chip	88
19	<b>Adrian BEKASIEWICZ, Piotr KURGAN, Marek KITLIŃSKI</b> - Compact broadband multi-way 1:6 power divider	92
20	<b>Wojciech GRZESIAK, Tomasz MAJ, Piotr CIEŚLIŃSKI</b> - Programmable laboratory resistor	95
21	<b>Adrian BEKASIEWICZ, Piotr KURGAN, Piotr DURAJ, Marek KITLIŃSKI</b> - Compact antenna array comprising fractal-shaped microstrip radiators	98
22	<b>Mariusz ZDANOWSKI, Jacek RĄBKOWSKI, Roman BARLIK</b> - Comparative analysis of power losses in three phase PWM inverters with Silicon Carbide active devices	101
23	<b>Jacek JANUCKI, Krzysztof KICZYŃSKI</b> - Application of laser induced plasma spectroscopy for remote detection of explosives	106
24	<b>Piotr JANTOS, Tomasz GOLONEK, Jerzy RUTKOWSKI</b> - A functional testing of analogue electronic circuits with the use of specification approximation in the time-domain response features space	110
25	<b>Zbigniew RYMARSKI</b> - The Influence of the Output Filter Parameters Tolerance and the Load on the PID/CDM Control of the Single Phase VSI	114
26	<b>Dariusz KOMOROWSKI, Stanisław PIETRASZEK</b> - An application of multichannel A/D converter for direct recording of biomedical signals	118
27	<b>Krzysztof WAWRYN, Robert SUSZYŃSKI</b> - The self-calibrated DAC with switched current	122
28	<b>Robert SUSZYŃSKI, Krzysztof WAWRYN, Robert WIRSKI</b> - 2D signal processing for identification and tracking moving object	126
29	<b>Bartosz OSTROWSKI, Paweł PEŁCZYŃSKI, Remigiusz DANYCH</b> - Hardware interface vision&sound system to support the blind in the independent movement	130
30	<b>Józef DRABAREK</b> - Artificial intelligence methods in data protection techniques	133
31	<b>Wojciech TOCZEK</b> - Experimental test bench for analog fault emulation	136
32	<b>Janusz TUŚNIO</b> - The design for the determination of run time and speed of selected special mechanisms	140
33	<b>Mateusz TAŃSKI, Michał JANKE, Robert BARBUCHA, Katarzyna GARASZ, Marek KOCIK, Jerzy MIZERACZYK</b> - Miniature ElectroHydrodynamic Pump Driven by DC Voltage for Dielectric Liquids	144
34	<b>Adam Konrad RUTKOWSKI, Adam KAWALEC</b> - The system of the passive through the wall detection of moving objects by means of GSM signals	147
35	<b>Aneta HAPKA, Włodzimierz JANKE</b> - The influence of the operation conditions on the DC characteristics of the silicon carbide MPS diodes	152
36	<b>Piotr RATUŚNIAK</b> - Design of linear algebra hardware accelerators dedicated to implementation in FPGA devices	155
37	<b>Łukasz CHRUSZCZYK, Jerzy RUTKOWSKI</b> - Tolerance Maximisation in Fault Diagnosis of Analogue Electronic Circuits	159
38	<b>Andrzej KUCZYŃSKI</b> - Simultaneous recognition of catastrophic and parametric faults in nonlinear analog circuits	164
39	<b>Marek KORZYBSKI, Marek OSSOWSKI</b> - Evolutionary stimuli selection for fault diagnosis in analog circuits	167
40	<b>Zbigniew SUSZYŃSKI, Mateusz KOSIKOWSKI</b> - Active thermography excited optically and by convection	171
41	<b>Marta WALENCZYKOWSKA, Adam KAWALEC</b> - Possibility of using waveforms of transmitters of opportunity for passive radars	174
42	<b>Robert Piotr SARZAŁA, Michał WASIAK</b> - Thermal-electrical modelling of quantum cascade lasers	177
43	<b>Jarosław KRAŚNIEWSKI, Maciej OLEKSY</b> - Measurement results of static current-voltage characteristics of white power LED	180
44	X National Conference of Electronics	183

# PRZEGŁĄD ELEKTROTECHNICZNY (Electrical Review) Vol 2011, No 10

## Contents

45	<b>Zbigniew CZAJA, Michał KOWALEWSKI, Romuald ZIELONKO</b> - Usage of Two-Center Basis function classifier for analog parts faults diagnosis of electronic embedded systems	184
46	<b>Tadeusz DĄBROWSKI, Marcin BEDNAREK, Krzysztof FOKOW</b> - Test procedures and diagnostic inference in the case of uncertain symptoms	188
47	<b>Andrzej P. DOBROWOLSKI, Ewelina MAJDA</b> - Evaluation of the usefulness of selected features of the speech signal for automatic speaker recognition systems	193
48	<b>Bogdan DZIADAK, Andrzej KALICKI, Łukasz MAKOWSKI, Andrzej MICHALSKI, Zbigniew STAROSZCZYK</b> - System for Environment Dynamic Threats States Observation: Functional-Organizational Project and its Partial Solutions Verification	198
49	<b>Jerzy HOJA, Grzegorz LENTKA</b> - Impedance spectroscopy measurement system for technical objects diagnostics	204
50	<b>Stanisław KONATOWSKI, Bartosz SOSNOWSKI</b> - Non-linear filtering effectiveness evaluation in the process of maneuvering object tracking	208
51	<b>Marcin KOWALSKI, Robert FRANKOWSKI, Marek ZIELIŃSKI</b> - Calibration a time interval measurement system designed to the clock phase fluctuations measurement	214
52	<b>Łukasz MAKOWSKI, Bartosz SAWICKI</b> - The feasibility study for application of distributed hashing tables into WSN	220
53	<b>Mirosław SIERGIEJCZYK, Stanisław GAGO</b> - Systems of automatic surveillance of the fiber optic networks	224
54	<b>Michał PAWŁOWSKI, Marek SUPRONIUK</b> - The effect of model adequacy error of the correlation method for studies of defect centres by photoinduced transient spectroscopy	230
55	<b>Carlos VILACHÁ PÉREZ, Julio César MOREIRA MEIRA, Edelmiro MÍGUEZ GARCÍA, Antonio FERNÁNDEZ OTERO</b> - Massive Jacobi Power Flow Based On SIMD-Processor	236
56	<b>Julio César MOREIRA MEIRA, Edelmiro MÍGUEZ GARCÍA, Carlos VILACHÁ PÉREZ, Antonio FERNÁNDEZ OTERO</b> - Parallelization of an optimal power flow with a multicore symmetric shared memory computer	241
57	<b>Mohamed ARROUF, Farida BENABID</b> - Photovoltaic Pumping System Based on Intel 80C196KC Microcontroller	246
58	<b>Mohamed TAHAR, Kadda MEGUENNI ZEMALACHE, Abdelhafid OMARI</b> - Control of an Under-Actuated X4-flyer using Integral Backstepping Controller	251
59	<b>Kaigui XIE, Jing JI</b> - Recognizing the Reliability Non-coherence Components of Multiple Parallel Transmission Lines	257
60	<b>Stanisław CZEPIEL</b> - Load power losses in a medium-voltage network lines	262
61	<b>Jerzy SZKUTNIK, Krystyna BAUM</b> - Technical and economic aspects of power grids reconstruction on the basis of high temperature low sag conductor	267
62	<b>Jan MACHOWSKI, Piotr KACEJKO, Piotr MILLER</b> - Criteria for closing of transmission network ring structures	272
63	<b>Bogusław KAROLEWSKI</b> - Simulation of island work of industrial supply network	281
64	<b>Antoni KLAJN</b> - Post arc current after forced switching-off of the current in vacuum	286
65	<b>Piotr BOGUSZ, Mariusz KORKOSZ, Jan PROKOP</b> - A Field-Circuit modeling of BLDC Motor for Aircraft Hybrid Drive	291
66	<b>Maciej KOZŁOWSKI, Krzysztof TOMCZUK, Jan SZCZYPIOR</b> - Methodology of determining basic technical parameters of electric-drive car	299
67	<b>Marcin BARAŃSKI, Artur POLAK</b> - Thermal diagnostic in electrical machines	305
68	<b>Artur RYDOSZ, Wojciech MAZIAZ</b> - Thermal investigations of LTCC gas preconcentrators	309
69	<b>Milan ŠEBÖK, Miroslav GUTTEN, Matej KUČERA</b> - Diagnostics of electric equipments by means of thermovision	313
70	<b>Ewa PIOTROWSKA, Andrzej CHOCHOWSKI</b> - Analysis of the resistance heating models of different elements	318
71	<b>Piotr BARMUTA, Kazimierz CYWIŃSKI</b> - Powder flux electrification in the powder coatings devices	321
72	<b>Cezary KACZMAREK</b> - Optical wavelength discriminator based on a Sagnac loop with a birefringent fiber	325
73	<b>Stanisław RAWICKI, Marcin NOWAK</b> - New elements in multicriterional optimization of condenser capacitance for induction motor with three-phase winding of stator and single-phase supply	328
74	<b>Siavash NAKHAEI, Alireza JALILIAN</b> - Comparison of Three Autotransformer Based 24-Pulse AC-DC Converters Incorporated DC Ripple Rejection Technique Feeding VCIMD and DTCIMD Loads	335
75	<b>Si WENRONG, Fu CHENZHAO, Gao KAI, Huang HUA, Ni HAO</b> - Study on time-frequency extractors for partial discharge pulse current used in sequence grouping and identification	340
76	<b>Jianjun HUANG, Yafei ZHANG, Xiongwei ZHANG, Zou XIA</b> - A Nonnegative Subspace Approach for Packet Loss Concealment	350
77	<b>Abdelhafid SEMMAH, Ahmed MASSOUM, Habib HAMDAOUI, Patrice WIRA</b> - Comparative Study of PI and Fuzzy DC Voltage Control for a DPC- PWM Rectifier	355
78	<b>Mohammadali ABBASIAN, Arash H. ISFAHANI, Saeideh SHAHGHASEMI, Farid SHEIKHOLESLAM</b> - Effects of Permanent Magnet Synchronous Generator and Wind Turbine Parameters on the Performance of a Small-Scale Wind Power Generation System	360
79	<b>Aleksandar LEBL, Dragan MITIĆ, Žarko MARKOV</b> - Calculation of Signalling RTP Packet Error Probability in Internet	364
80	<b>Mimoun YOUNES, Farid BENHAMIDA</b> - Genetic Algorithm-Particle Swarm Optimization (GA-PSO) for Economic Load Dispatch	369
81	<b>Jian SUN, Xiongwei ZHANG</b> - Analysis of State-Space Model based Voice Conversion	373