

Contents

01	Mateusz POLEWACZYK, Sylwester ROBAK - HVDC transmission systems in modern power systems	1
02	Marek KOŚMIDER, Mateusz CHMIELOWIEC, Ryszard KOWALIK, Emil BARTOSIEWICZ - Didactic use of Ethernet/IP module for DSM-51 Microprocessor Educational System	11
03	Bogdan FABIAŃSKI, Krzysztof ZAWIRSKI - Simplified model of Switched Reluctance Motor for real-time calculations	19
04	Waldemar WOJCIK, Nurlan TEMIRBEKOV, Dossan BAIGEREYEV - Fractional flow formulation for three-phase non-isothermal flow in porous media	24
05	Marta KOLASA - The concept of intelligent system for street lighting control using artificial neural networks	32
06	Michał MAJKA, Janusz KOZAK - The Coreless Superconducting Fault Current Limiter 15 kV 140 A	38
07	Eligiusz PAWŁOWSKI - Galvanic isolation circuit for measuring systems operating in environments with strong electromagnetic disturbances	42
08	Paweł POWROŹNIK, Dariusz Czerwiński - Effectiveness comparison on an artificial neural networks to identify Polish emotional speech	45
09	Andrzej SUMOREK - The Influence of Construction of Bifilar Winding on Efficiency of Electrostatic Bifilar Deduster	47
10	Piotr TEREBUN, Michał KWIATKOWSKI, Jarosław DIATCZYK, Joanna PAWŁAT - Change of contact angle on high impact polystyrene after radio frequency APPJ plasma treatment	53
11	Tadeusz JANOWSKI, Grzegorz WOJTASIEWICZ, Janusz KOZAK, Sławomir KOZAK, Michał MAJKA, Beata KONDRAТОWICZ-KUCEWICZ - Transpositioners of the parallel connected superconducting tapes as an alternative to Roebel cable	57
12	Łukasz WOŹNIAK, Grzegorz WOJTASIEWICZ, Paweł SURDACKI, Grzegorz KOMARZYNIEC, Rafał KWOKA – Influence of superconducting transformer's parameters on transient current limiting	61
13	Andrzej WAC-WŁODARCZYK, Piotr ZIŃ, Tomasz GŁĘWSKI - Effect of insertion changes in a ferromagnet at the differential hysteresis loop for various frequencies of magnetic flux	65
14	Dariusz PUCHAŁA, Kamil STOKFISZEWSKI, Bartłomiej SZCZEPANIĄK, Mykhaylo YATSYMIRSKYY - Effectiveness of Fast Fourier Transform Implementations on GPU and CPU	69
15	Volodymyr EMETS, Jan ROGOWSKI - Solution of the Plane Wave Diffraction Problem by a Strip with Different Boundary Conditions on its Faces	72
16	Marcin CEGIELSKI - Parallel computation of transient processes on OpenCL framework	75
17	Jan IŻYKOWSKI, Eugeniusz ROSOŁOWSKI, Piotr PIERZ - Location of complex faults on overhead power line	79
18	Bartosz SAWICKI, Artur KRUPA - Experiments with models of variability for biological tissues	83
19	Jacek STARZYŃSKI, Robert SZMURŁO, Bartosz CHABER, Zuzanna KRAWCZYK - Web platform for research on IMRT algorithms	87
20	Igor Piotr KURYTKI, Tomasz DRÓŻDŻ², Piotr NAWARA - Sensitivity method for evaluating impact of accuracy of the measurement path during ESD generator verification	90
21	Andrzej KANDYBA, Marian HYLA, Igor KURYTKI - Laboratory research of non-overvoltage transistors control method in AC voltage PWM controller	94
22	Krzysztof SIWEK, Stanisław OSOWSKI - Analysis of Dynamic Models of Epidemic	98
23	Petro STAKHIV, Yuriy KOZAK, Ivanna VASYLCHYSHYN - The procedure of construction of mathematical models for nonlinear dynamical systems based on optimization approach	103
24	Yuriy SHAPOVALOV, Bohdan MANDZIY, Dariya BACHYK - Assessment of Stability Margin of Linear Parametric Amplifiers by the Frequency Symbolic Method	108
25	Konrad SOBOLEWSKI, Kamila JANIA - The concept of using the tent structure as a measure of protection against lightning	112
26	CHAOUCH ABDELLAH, BENDIABDELLAH AZEDDINE, REMUS PUSCA, RAPHAEL ROMARY, JEAN PHILIPPE LECOINTE - Mixed Eccentricity Fault Diagnosis in Saturated Squirrel Cage Induction Motor using Instantaneous Power Spectrum Analysis	116
27	Ahmed M. HASSAN, Amr ABOU-GHAZALA, Ashraf MEGAHED - Mitigation of Steel Making Plants' Electrical Power Quality Problems Using SVC – A Case Study	121
28	Fyodor ROMANIUK, Vladimir RUMIANTSEV, Ivan NOVASH, Yury RUMIANTSEV, Oleksandr BOIKO - Comparative assessment of digital filters for microprocessor-based relay protection	128
29	Miroslaw PAWŁOT - The electrodynamic impact of fault currents on system of aluminum busbar connected by pressure	132
30	Volodymyr KUCHERUK, Igor Piotr KURYTKI, Pavel KULAKOV, Oleg HRABOVSKYI - Invariant embedding method for rotor parameters identification of induction motors	136

PRZEGŁĄD ELEKTROTECHNICZNY Vol 2016, No 7

Contents

31	Małgorzata DETKA, Zdzisław KACZMAREK - Numerical and experimental analysis of response of uniform optical fiber Bragg grating to a strain with a non-smooth distribution	140
32	Jacek SKIBICKI - Measurement methods of the overhead traction contact line vibrations	144
33	Tomasz WOLNIK - Soft magnetic materials used in the construction of disc electromagnetic circuits	149
34	Maciej SIWCZYŃSKI Andrzej DRWAL Sławomir ŻABA - Energy optimal voltage distribution in complex linear electrical network with pulse or periodic voltage and current signals. Optimal control	156
35	Antoni SAWICKI, Maciej HALTOF - An integral method for determining the parameters of the universal electric arc model describing an arc with a hyperbolic-linear static characteristic	162
36	Marcin RUCIŃSKI, Stanisław ABRAMIK, Piotr MUSZNICKI, Maciej KOLINCIO - Commutation ringing frequency prediction of multi-transformer flyback converter	166
37	Katarzyna RUTCZYŃSKA-WDOWIAK - Parametric identification of induction motor mathematical model with the use of chosen evolutionary algorithm	170
38	Andrzej PRZYBYŁ, Jacek SZCZYPTA - Method of Evolutionary Designing of FPGA-based Controllers	174
39	Andrzej Ł. CHOJNACKI - Evaluation of reliability indicators of 110kV / MV station and MV switchgear stations based on analytical and simulation methods	180
40	Rafał TARKO, Mariusz BENESZ, Wiesław NOWAK, Waldemar SZPYRA - Statistical analysis of faults for determining cross section of medium voltage cables return conductors	186
41	Mariusz MĄCZKA - Calculations of the QCL transport parameters using Büttiker probes	190
42	Stefan KUBISA, Zygmunt. L. WARSZA - Analysis of frequency errors of resistors. Part 2. Frequency correction of the impedance of resistors and its effectiveness	197
43	Sebastian SŁOMIŃSKI - Identification of the luminance measurements problems of multisources LED luminaires	202
44	Dominik Andrzej GÓRSKI, Janusz WIŚNIEWSKI, Włodzimierz KO CZARA - Synchronized connection to grid of inverter excited induction generator driven by micro turbine without speed sensor	206