

Contents

01	Aleksandra RAKOWSKA - HV and EHV power lines – a world records	1
02	Krzesztof WALCZAK, Wojciech SIKORSKI, Wiesław GIL - Multi-module system for partial discharge monitoring using AE, HF and UHF methods	5
03	Wojciech SIKORSKI - Ultra-sensitive acoustic emission transducers for partial discharge monitoring in power transformers	10
04	Tomasz BŁAŻEJCZYK, Krzesztof KRASUSKI - Experimental investigation with use the optical fiber current sensor installed in the pole of medium-voltage circuit breaker	17
05	Barbara FLORKOWSKA, Marek FLORKOWSKI, Paweł ZYDROŃ, Józef ROEHRICH - Experimental evaluation of breakdown voltage and life time for models of the low voltage electrical motors windings	21
06	Marek ZENKER - Dielectric response of Nomex impregnated with synthetic ester based on measurements using PDC	26
07	Wiesław GIL - The measure properties of on-line bushing monitoring devices	30
08	Szymon BANASZAK, Konstanty M. GAWRYLCZYK - The application of polar graphs in frequency response analysis of transformer windings	34
09	Przemysław FATYGA, Hubert MORANDA - Dielectric response in frequency domain of the cellulose-synthetic ester and mineral oil mixture insulating sys	38
10	Kamil FILIK, Grzegorz KARNAS, Paweł SZCZUPAK, Lesław KARPINSKI, Grzegorz MASŁOWSKI, Robert ZIEMBA - Lightning current distribution in a laboratory model of lightning protection system	42
11	Przemysław GOŚCIŃSKI, Grzegorz DOMBEK, Zbigniew NADOLNY, Bolesław BRÓDKA - Numerical calculations of temperature field of power transformer	46
12	Michał KOZIOŁ, Tomasz BOCZAR - Optical spectra emitted by electrical discharges generated in the insulating oil	50
13	Krzesztof ŁOWCZOWSKI - Influence of power cable laying on cable sheath losses – simulation in PowerFactory	54
14	Michał KUNICKI - Partial discharge detection and analysis using UHF method	58
15	Filip POLAK, Wojciech SIKORSKI, Krzesztof SIODŁA - Possibility evaluation of UHF antennas array application to the localisation of partial discharges	63
16	Jakub SIERCHUŁA - Multi-criterial comparative analysis of the generating units at nuclear power plants and conventional power plants on selected examples	67
17	Marcin STANEK - Lightning breakdown voltage of insulating natural esters in relation to mineral oil	71
18	Cyprian SZYMczAK, Wojciech SIKORSKI - Design and optimization of UHF antennas for partial discharge monitoring in power transformer	75
19	Marek FLORKOWSKI, Jakub FURGAŁ, Paweł KŁYS, Maciej KUNIEWSKI, Piotr PAJĄK - Influence of steepness for voltage strokes on propagation of overvoltages in transformers	80
20	Hubert MORANDA, Piotr PRZYBYŁEK, Hanna MOŚCICKA-GRZESIAK - Surface resistivity of pressboard immersed in mineral oil or synthetic ester	84
21	Maciej JAROSZEWSKI, Przemysław KURNYTA - Electrification currents measurements of natural ester obtained by rotating disc method	88
22	Piotr PRZYBYŁEK - Water solubility in synthetic ester and mixture of ester with mineral oil in aspect of cellulose insulation drying	92
23	Grzegorz DOMBEK, Jarosław GIELNIAK - Investigation of the flash point of the insulating liquids exposed to partial discharges	96
24	Marek FLORKOWSKI, Jakub FURGAŁ, Maciej KUNIEWSKI, Piotr PAJĄK - Overvoltage impacts of insulation systems for transformers during voltage tests and in exploitation conditions	100
25	Dominik DUDA, Marek SZADKOWSKI - Earth continuity conductors in SPB system of HV cables	104
26	Krzesztof SZUCHNIK - 110 kV cable sheaths overvoltage exposure in specially bonded systems incoming to a substation with high short-circuit power – Single Point Bonded system	108
27	Dominik DUDA, Marek SZADKOWSKI - Selection of surge arresters to protect the outer casings of high-voltage cables	112
28	Dominik DUDA, Krzesztof MAŹNIEWSKI, Marek SZADKOWSKI - Electro-insulating covers of rigid busducts 110 kV as part of the additional shock protection	116
29	Piotr PAPLINSKI ¹ , Przemysław RANACHOWSKI - Microscopic investigations of microstructure and degradation effects in operated MO varistors	120
30	Ryszard KACPRZYK, Adam PELESZ - Influence of the impulse voltage on the residual charge	126
31	Adam PELESZ - Surface charge influence on the flashover voltage of composite insulator model working at HVDC	130
32	Paweł ZYDROŃ, Józef ROEHRICH, Michał BONK, Łukasz FUŠNIK - Time-frequency analysis of signals registered during partial discharges researches	134

PRZEGŁĄD ELEKTROTECHNICZNY Vol 2016, No 10

Contents

33	January Lech MIKULSKI - Actual procedure tests insulation systems overhead line 400 kV	138
34	Radosław SZCZERBOWSKI, Aleksandra RAKOWSKA - Technical Aspects of the Construction and Connection of Wind Power Plants	142
35	Bartłomiej ADAMCZYK, Marek FLORKOWSKI - Analysis of surge overvoltages in layer winding of power transformer	147
36	Paweł RÓZGA - Electrical discharges in point-insulating plate electrode system in selected dielectric liquids at high voltage lightning impulse	151
37	Hubert MORAŃDA, Krzysztof WALCZAK, Hanna MOŚCICKA-GRZESIAK - Partial discharges in electroinsulating system of cellulose-mineral oil and cellulose-synthetic ester	155
38	Paweł ZYDROŃ, Michał BONK, Łukasz FUŠNIK, Bartłomiej SZAFRANIAK - Influence of temperature on parameters of low-voltage surge arresters' metal-oxide varistors investigated by impedance spectroscopy methods	158
39	Krzysztof KOGUT, Bolesław MAZUREK, Krzysztof KASPRZYK, Beata ZBOROMIRSKA – WNUKIEWICZ - Electrical strength of the tube insulator with modified surface	163
40	Krzysztof WIECZOREK, Maciej JAROSZEWSKI - Partial discharges on the composite insulators surfaces	167
41	Witold BRETUJ, Krzysztof WIECZOREK - The behavior of the composite and ceramic insulators hybrid arrangement in operating conditions	171
42	L.V.BADICU, U. BRONIECKI, W. KOŁTUNOWICZ, Jan SUBOCZ², Marek ZENKER², Andrzej MROZIK - Analysis of the technical condition of bushings in the pre-emergency	175
43	Maciej OWSINSKI, Piotr PAPLINSKI, Przemysław SUL, Hubert ŚMIETANKA - Exposure to electromagnetic field of personnel of High Current Laboratory	179
44	Krzysztof SROKA, Ireneusz GRZĄDZIELSKI, Adam KURZYŃSKI - Large urban CHP-plant in defense processes and restitution of polish power system	183
45	Ireneusz GRZĄDZIELSKI, Krzysztof SROKA - Hydroelectric power plant Dychow as blackstart source to restoration of production capacity of thermal power stations	190
46	M. D. B. MELO, H. X. ARAUJO, A. F. da ROCHA - A Novel Methodology for Signal Recovery in Linear Time Invariant Systems for Medicine Applications	199
47	Piotr GRUGEL - The influence of low voltage network's impedance on parallel active power filter's performance controlled with the use of two different control algorithms	204
48	Tomasz CIECHULSKI, Stanisław OSOWSKI - The application of self-organizing methods in Kohonen network for prediction of the profiles of load in a small power system	209
49	Grzegorz DZIUBIŃSKI, Piotr KISAŁA - The analysis of Bragg grating key parameters and their influence on final gratings spectral characteristic	214
50	Przemysław ORŁOWSKI - Analysis of two-criteria optimization problem with application to automatic orders control system for inventory with long-delay supply with feedback-feedforward controller and Smith predictor	218
51	Nadya SHUTKO - The use of aprosh and kerning in text steganography	222
52	Andrzej PRZYTULSKI - The electrical parameters: of the thyroid, thymus, heart, intercostal muscles and lungs	226
53	Adrian CHMIELEWSKI, Szymon GONTARZ, Robert GUMIŃSKI, Jędrzej MĄCZAK, Przemysław SZULIM - Research on electrochemical energy stores	231
54	Magdalena DUDEK, Piotr CELOWSKI, Bartłomiej LIS Andrzej RAŹNIAK, Piotr DUDEK - A 360W laboratory electric power generator incorporating a low-temperature PEMFC fuel cell stack cooled using a liquid medium	235
55	Andrzej WILK, Krzysztof KARWOWSKI, Sławomir JUDEK, Miroslaw MIZAN - Modeling and simulation of dynamics the traction current collector.	243
56	Piotr GAJEWSKI, Krzysztof PIEŃKOWSKI - Direct Torque Control and Direct Power Control of wind turbine system with PMSG	249
57	Erik FEDERAU, Erik BLASIUS, Przemysław JANIK - Classification of control features related to microgrid operation standardisation	254
58	Łukasz SOBOLEWSKI, Wiesław MICZULSKI - Application of neural networks for predicting selected time scales on the basis of UTC and UTC _r scales	258
59	Kazimierz KRZYWICKI, Alexander BARKALOV, Grzegorz ANDRZEJEWSKI, Larysa TITARENKO, Małgorzata KOŁOPIEŃCZYK - SoC Research and Development Platform for Distributed Embedded Systems	262
60	Grzegorz LENTKA, Sławomir TYBORCZYK - Distributed measurement system with data transmission secured using XXTEA algorithm	266
61	Sławomir NOWICKI, Przemysław OTOMAŃSKI², Grzegorz WICZYŃSKI - Voltage fluctuation interaction on LED switching power supply	270
62	Ryszard SIKORA - The critical comments on the use of fractional derivatives in the theory of electrical circuits	274
63	Marek BARTOSIK, Waldemar KAMRAT, Marian KAŹMIERKOWSKI, Włodzimierz LEWANDOWSKI, Maciej PAWLIK, Tadeusz PERYT, Tadeusz SKOCZKOWSKI, Andrzej STRUPCZEWSKI, Adam SZELĄG - Generation of electricity - diagnosis and therapy	277
64	Andrzej WIŚNIEWSKI - LED Luminaires	288