PRZEGLĄD ELEKTROTECHNICZNY (Electrical Review) Vol 2010, No 12

Contents

01	**Carlos LEMOS ANTUNES** - Magnetic leakage flux replication in power transformer rooms for biological experiments	1
02	**Stanisław APANASEWICZ, Stanisław PAWŁOWSKI** - On certain properties of electromagnetic field in free space	5
03	**Karol BEDNAREK -** Electromagnetic field generated by heavy-current equipment and its effects on the environment	9
04	**Robert BIEDA, Adam ŚWITOŃSKI, Sebastian KWIATEK, Wojciech LATOS, Grzegorz CIEŚLAR, Aleksander SIEROŃ, Konrad WOJCIECHOWSKI -** Classification by support vector machine aided the diagnosis cancer domains in multispectral endoscopic imaging	13
05	**Paweł BIEŃKOWSKI, Bartłomiej ZUBRZAK** - Generation and measurement of pulse and modulated electromagnetic fields	17
06	**Andrzej BOCHNIAK, Arkadiusz MIASKOWSKI, Andrzej KRAWCZYK, Andrzej WAC-WŁODARCZYK -** The application of confocal microwave imaging technique to the detection of 3D objects	21
07	**Goga CVETKOVKSKI, Lidija PETKOVSKA -** Specific power optimal design of permanent magnet synchronous motor using GA	24
08	**Tomasz DŁUGOSZ -** Analytical and numerical methods in the analysis of electromagnetic field measurement accuracy	28
09	**Ivo DOLEŽEL, Lenka DUBCOVÁ** - Incompressible flow of electrically conductive medium in time-variable magnetic field solved in monolithic formulation	32
10	**Jarosław DOMIN, Roman KROCZEK -** Rail step of hybrid electromagnetic launcher with pneumatic aid - electromechanical calculation	36
11	**Stefan F. FILIPOWICZ, Tomasz RYMARCZYK -** Choice of algorithms to image reconstruction and measurement methods to examine defects of tree trunks	38
12	**Piotr GAS -** Temperature inside tumor as time function in RF hyperthermia	42
13	**Zygmunt GRABARCZYK, Paweł TARKOWSKI** - Radioelectronic methods for ESD detection and localization	46
14	**Miralem HADŽISELIMOVIĆ, Ignacijo BILUŠ, Bojan ŠTUMBERGER** - Method for torque determination of a wind turbine	49
15	**Pavel KARBAN, František MACH, Ivo DOLEŽEL** - Induction heating of nonmagnetic cylindrical billets by rotation in magnetic field produced by static permanent magnets	53
16	**Leszek KASPRZYK, Andrzej TOMCZEWSKI, Karol BEDNAREK** - Efficiency and economic aspects in electromagnetic and optimization calculations of electrical systems	57
17	**Paweł KIELAN, Tomasz TRAWIŃSKI** - Utilization of software Matlab/Simulink to research possibilities control of motors in closed loop via Internet	61
18	**Jarosław KIELISZEK, Jaromir SOBIECH, Wanda STANKIEWICZ, Witold RONGIES -** Measurements of induced currents as the part of assessment of professional exposition on electromagnetic field	65
19	**Zlatko KOLONDZOVSKI** - Determination of coefficients of thermal convection in a high-speed electrical machine using the computational fluid dynamics	68
20	**Andrzej KRAWCZYK, Arkadiusz MIASKOWSKI, Ewa ŁADA-TONDYRA, Yoshiyuki ISHIHARA** - Healing of orthopaedic diseases by means of electromagnetic field	72
21	**Roman KUBACKI, Krzysztof NIEWĘGŁOWSKI** - Radiation from earphone set of mobile phones	75
22	**Marek KUCHTA, Marian WNUK -** Modeling of resilient support of a dental prosthesis	79
23	**Miklós KUCZMANN** - Nonlinearity in the finite element simulations	83
24	**Tine MARČIČ, Bojan ŠTUMBERGER, Ivan ZAGRADIŠNIK, Gorazd ŠTUMBERGER, Miralem HADŽISELIMOVIĆ, Peter VIRTIČ, Peter PIŠEK** - Comparison of induction motor with capacitors in the auxiliary phase and line-start IPM synchronous motor performance	87
25	**Dániel MARCSA, Miklós KUCZMANN -** Optimization and finite element analysis of 3-pole magnetic bearing with nonlinear material	91
26	**Paweł A. MAZUREK -** The emission of the electric and magnetic fields from the GlidArc plasma reactor	95
27	**Arkadiusz MIASKOWSKI, Bartosz SAWICKI, Andrzej KRAWCZYK, Sotoshi YAMADA -** The application of magnetic fluid hyperthermia to breast cancer treatment	99
28	**Marcin KACZMAREK** - Investigation of pitting and crevice corrosion resistance of NiTi alloy by means of electrochemical methods	102
29	**Joanna MICHAŁOWSKA-SAMONEK, Arkadiusz MIASKOWSKI, Andrzej WAC-WŁODARCZYK** - The distribution of electromagnetic field of high frequency in breast gland	106
30	**Stanisław PAWŁOWSKI, Jolanta PLEWAKO -** Application of iterative boundary method in determination of 3D harmonic electromagnetic field induced by current ducts	109
31	**Lidija PETKOVSKA, Goga CVETKOVSKI** - FEM based assessment of capacitor sizing on starting characteristics of a single-phase induction motor	113
32	**Anna PŁAWIAK-MOWNA, Andrzej KRAWCZYK -** Cardiac implant patients and RFID technology	117
33	**Andrzej POPENDA -** Concept of modelling of induction machine core losses	120
34	**Andrzej POPENDA -** Determination of the electromagnetic torque of an induction motor containing true magnetic circuit	124
35	**Andrzej RUSEK -** Model for computer simulations of asynchronous induction motor taking into account saturation and current displacement	127
36	**Andrzej RUSEK** - Model for computer simulations of an asynchronous induction motor taking into account iron losses	131
37	**Tomasz RYMARCZYK, Stefan F. FILIPOWICZ, Jan SIKORA** - Various kinds of level set applications in electrical impedance tomography	135
38	**Jaromir SOBIECH, Jarosław KIELISZEK, Marek P. DĄBROWSKI, Wanda STANKIEWICZ-SZYMCZAK -** Application of microwave electromagnetic field in experiments with cell cultures	139
39	**Bojan ŠTUMBERGER, Renato PULKO, Viktor GORIČAN, Miralem HADŽISELIMOVIĆ** - Influence of permanent magnet material on characteristics of permanent magnet assisted reluctance motor	142
40	**Bojan ŠTUMBERGER, Tine MARČIČ, Miralem HADŽISELIMOVIĆ, Gorazd ŠTUMBERGER** - Line-start permanent magnet synchronous motors for semi-hermetic compressor drives	145
41	**Paweł SURDACKI -** Thermal transients of the high temperature superconducting magnesium diboride wires	149

PRZEGLĄD ELEKTROTECHNICZNY (Electrical Review) Vol 2010, No 12

42 **Marcin SZCZYGIEŁ, Tomasz TRAWIŃSKI -** Prototyping of measurement torque system for voice coil motors using field method 153
43 **Tomasz TRAWIŃSKI -** Lagrange and Newton-Euler methods in formulation process of dynamic equation of HDD positioning systems 156
44 **Andrzej WAC-WŁODARCZYK, Tomasz GIŻEWSKI, Ryszard GOLEMAN -** The experimental identification of the Preisach differential surface in the arrangement of AC bridge 160
45 **Andrzej WAC-WŁODARCZYK, Andrzej KACZOR** - Plasma reactor with gliding arc discharge as a source of conducted electromagnetic disturbances 164
46 **Agnieszka WANTUCH** - Cathodic protection of underground objects 167
47 **Andrzej ZACHER, Adam ŚWITOŃSKI, Robert BIEDA, Sebastian KWIATEK, Wojciech LATOS, Grzegorz CIEŚLAR, Aleksander SIERON, Konrad WOJCIECHOWSKI -** Simulation studies of selected aspects of the multispectral endoscopic imaging 170
48 **Ivan ZAGRADIŠNIK, Miralem HADŽISELIMOVIC, Jože RITONJA, Bojan SLEMNIK** - The emLook software package for the analytical and numerical analyses of electrical machines 175
49 **Paweł BODERA, Wanda STANKIEWICZ, Jarosław KIELISZEK, Jaromir SOBIECH, Andrzej KRAWCZYK, Andrzej WOJDAS, Zbigniew SAMOCHODZKI** - Influence of the electromagnetic field (EMF) on the opioid drugs' analgesic effect 179
50 **Maciej I. DĄBROWSKI, Wanda STANKIEWICZ, Aleksander GIETKA, Jolanta BIAŁKOWSKA, Jaromir SOBIECH, Marek P. DĄBROWSKI -** Anti-bacterial effect of the electromagnetic field 182
51 **Martina DONÁTOVÁ, Jiří DEJMEK -** Influence of dmensions of electrodes on pumping head of an MHD pump 185
52 **Agnieszka DURAJ, Andrzej KRAWCZYK** - Finding outliers for large medical datasets 188
53 **Eugeniusz KURGAN -** Dipole moment calculation in two-dimensional DC dielectrophoresis 192
54 **Eugeniusz KURGAN** - Influence of electrolyte parameters on voltage and current density in the PEM fuel cell 196
55 **Mira LISIECKA-BIEŁANOWICZ, Andrzej KRAWCZYK, Adam LUSAWA -** The improved tool in the process of evaluation of electromagnetic therapy 200
56 **Andrzej KRAWCZYK, Ewa ŁADA-TONDYRA -** The first experiments in magnetic stimulation – a history of discoveries within two parallel lives 202
57 **Waldemar CHMIELAK, Włodzimierz KAŁAT** - ATP/EMTP modelling and simulation of current interruptions by vacuum current breaker in respect of post-arc phenomena 208
58 **Sławomir CIEŚLIK, Leszek DĘBOWSKI, Marcin DRECHNY** - The idea of taking into account the real characteristics of controllers in simulation of power systems on the example of reactive power compensation 212
59 **Michał GWÓŹDŹ -** Work analysis of wide-band power electronics inverters 216
60 **Andrzej KASPROWICZ -** Self-Excited Induction Generator with extended range stabilization of frequency 222
61 **Marek KOTT, Bogumiła WNUKOWSKA** - The analysis influence of changes structure branches industries on energy intensity 227
62 **Michał KRYSTKOWIAK** - Realization of simulation model of rectifier with current modulation in output circuit 230
63 **Michał ŁASKAWSKI, Mirosław WCIŚLIK -** Identification of Wiener model parameters for electroheating system 235
64 **Jerzy MARZECKI, Daniel SAGANEK -** Peak loads modeling in rural electrical power MV/LV transformer substations 239
65 **Hala NAJMEDDINE, Khalil El KHAMLICHI DRISSI** - Advanced monitoring with a smart meter 243
66 **Marek SUPRONIUK, Paweł KAMIŃSKI, Michał PAWŁOWSKI, Roman KOZŁOWSKI, Marek PAWŁOWSKI -** An intelligent measurement system for the characterisation of defect centres in semi-insulating materials 247
67 **Zygmunt Lech WARSZA, Maryna GALOVSKA -** Estimators of the measurand value of non-Gaussian probability distributions of data 253
68 **Krzysztof POLAKOWSKI** - The 2,5 D visualisation approach to 3D tomography imaging 259
69 **Paweł DRZYMAŁA, Henryk WELFLE -** Three-dimensional field analysis and forces acting on the High Power Transformer Windings 263
70 **Janusz WRÓBLEWSKI -** Reluctance generator with hybryd excitation and selected charakteristics of steady – state work 267
71 **Houcine MILOUDI, Abdelber BENDAOUD, Mohamed MILOUDI, Abdelkader GOURBI, Helima SLIMANI** - Common mode conducted electromagnetic interference in inverter fed-AC motor 272
72 **Hubert WROTEK, Robert SAŁAT -** Approximation rotational parameters of rolling rotor switched reluctance motor by means of finite element method and artificial neural network 276
73 **Lech M. GRZESIAK, Grzegorz GĄBKA -** Neural network controller of AC induction motor based on Direct Torque Control 280
74 **Omid Sharifi TEHRANI, Mohsen ASHOURIAN -** An FPGA-based implementation of ADALINE neural network with low resource utilization and fast convergence 288
75 **Jan MACHOWSKI -** Control of UPFC in future intelligent transmission network 293
76 **Mirosław PAROL, Paweł PIOTROWSKI -** Electrical energy demand forecasting for 15 minutes forward for needs of control in low voltage electrical networks with installed sources of distributed generation 303
77 **Abdelber BENDAOUD, Farid BENHAMIDA, Amar TILMATINE, Karim MEDLES** - Calculation of induced current in the objects placed in the vicinity of the high voltage transmission lines 310
78 **Grzegorz MASŁOWSKI -** Artificial-triggering lightning and their parameters 315
79 **Jiefeng XIONG, Bolin WANG** - Measuring power system harmonics and interharmonics by envelope spectrum analysis 319
80 **Aneta BUGAJSKA, Maciej WŁODARCZYK** - The analysis of input impedance of a long line with various loads 325
81 **Bogdan MIEDZIŃSKI, Grzegorz WIŚNIEWSKI, Nickolay I. GRECHANYUK , Andrzej GRODZIŃSKI, Artur KOZŁOWSKI -** Applicability of a multilayer condensed multicomponent material in electrical contacts of LV vacuum interrupters 331
82 **Łukasz ZANIEWSKI** - The method comparison of the mass increasing in the electrocrystalisation process 335
83 **Miroslav GUTTEN, Milan TRUNKVALTER** - The monitoring of oil transformer by gas and moisture sensor 338
84 **Milan ŠIMKO, Milan CHUPAČ** - Method of measurement of radio transmitters antenna systems 342
85 **Nikola SEKULOVIC, Mihajlo STEFANOVIC, Dragan DRACA, Aleksandra PANAJOTOVIC, Martina ZDRAVKOVIC** - Switch and stay combining diversity receiver in microcellular mobile radio system 345
86 **Sławomir Andrzej TORBUS, Marek RATUSZEK** - Analysis of the accuracy of measuring current through the interferometric sensor 350
87 **Roman PAŚNICZEK, Krzysztof WILDNER** - Measurements of the electrical signals from the nerve fibers 354
88 **Yusuf ONER, Taner Sercan KART** - A computer-aided educational tool for short circuit current calculations 357