

Contents

01	Iztok BRINOVAR, Gregor SRPČIČ, Bojan ŠTUMBERGER, Miralem HADŽISELIMOVIĆ, Sebastijan SEME - Numerical Analysis of the Electromagnetic Brake	1
02	Gregor SRPČIČ, Iztok BRINOVAR, Miralem HADŽISELIMOVIĆ, Bojan ŠTUMBERGER, Sebastijan SEME - Numerical modelling of linear generators	4
03	Zsolt HORVÁTH¹, András EDELMAYER - Determining the dwell time constraint for switched \mathcal{H}_∞ filters	7
04	Tadeusz JULISZEWSKI, Paweł KIEŁBASA, Mirosław ZAGÓRDA, Sylwia TOMECKA, Jerzy KARCZEWSKI, Akinsunmade AKINNIYI - The comparison of the results of the examination of cultivated soil thickening by means of penetration and georadar methods	12
05	Piotr GAS¹, Arkadiusz MIASKOWSKI - SAR optimization for multi-dipole antenna array with regard to local hyperthermia	17
06	Agnieszka BIENKOWSKA, Katarzyna TWOREK - IT reliability and the results of accredited laboratories functioning in Poland	21
07	Paweł DRZYMAŁA, Henryk WELFLE - Advanced mechanisms of data exchange and processing in the SQL Server and Azure SQL Database environment with the use JSON standard	25
08	Paweł DRZYMAŁA, Henryk WELFLE, Agnieszka DRZYMAŁA - Effective processing and integration of large data sets in the Hadoop environment	29
09	Marek GAŁA, Andrzej JĄDERKO - Assessment of the impact of the micro wind turbine on the power quality in the distribution network	33
10	Agnieszka DURAJ, Magdalena LUDWICKA - Modelling volatility of time series data containing outliers observations with ARCH effect	37
11	Aleksander GAŚIORSKI, Maciej GLINIAK, Zdzisław POSYŁEK - Prototype optimized induction heater with 370 kHz operating frequency working with the fundamental harmonic of the excitation circuit	41
12	Aleksander GAŚIORSKI, Zdzisław POSYŁEK I, Sławomir KURPASKA - Investigation of a prototype of an induction device for heating a ferromagnetic tool for thermal modeling of wax dental molds	45
13	Andriy CHABAN, Andrzej SZAFRANIEC, Vitaliy LEVONIUK - Mathematical modelling of transient processes in power systems considering effect of high-voltage circuit breakers	49
14	Paweł KIEŁBASA, Tomasz DRÓZDŹ, Mirosław ZAGÓRDA, Sławomir KURPASKA, Zdzisław POSYŁEK - The use of resistance tensometry to space identification of differentiation of selected properties of soil	53
15	Jarosław W. KŁOS, Karol BEDNAREK, Leszek KASPRZYK, Szymon MIESZCZAK - Technical solutions and operations principles of the memristors	57
16	Jarosław KNAGA, Krzysztof NĘCKA, Kazimierz RUTKOWSKI - Analysis of the daily work efficiency of an autonomous solar installation	61
17	Grzegorz KOMARZYNIAC, Andrzej WAC-WŁODARCZYK, Joanna KOZIEŁ - Analysis of the current distribution in layers of a second generation superconducting tapes	65
18	Ewa KORZENIEWSKA, Agnieszka DRZYMAŁA, Artur SZCZĘSNY, Rafał ZAWIŚLAK, Sebastian SEME - Photovoltaic power plants - legal, economic and ecological aspects	69
19	Ewa KORZENIEWSKA, Maria WALCZAK, Joanna SEKULSKA-NALEWAJKO, Jarosław GOĆLAWSKI - The impact of the laser beam on the tendency of polyester fabrics for pilling	73
20	Joanna KOZIEŁ, Krzysztof PRZYSTUPA - Using the FTA method to analyze the quality of an uninterruptible power supply unit preparation UPS	77
21	Piotr CHABECKI, Ihor BORDUN, Fedir IVASHCHYSHYN - Highly dispersed carbon powder separation by triboelectric method	81
22	Jerzy CHUDORLIŃSKI, Leszek KSIAŻEK - System for magnetic field therapy and light therapy	85
23	Ilona GAŁAŻKA-CZARNECKA, Ewa KORZENIEWSKA, Andrzej CZARNECKI, Krzysztof POLITOWSKI - Modification of polyphenol content in wines using pulsed electric field	89
24	Maciej GLINIAK, Jarosław KNAGA, Marcin TOMASIK, Anna LIS, Ernest POPARDOWSKI, Matylda GLINIAK - The use of natural luminescence for the detection of radionuclides in hard coal combustion products	93
25	Krzysztof NĘCKA, Jarosław KNAGA - Analysis of the impact of location and orientation of the PV power plant on the time of return on investment	07
26	Witold SYGOCKI, Ewa KORZENIEWSKA - Why do specialists in electromagnetism and OSH need altmetric indicators	101
27	Witold SYGOCKI, Jadwiga WOŹNIAK-KASPEREK - Issues of electromagnetism and occupational health and safety in selected knowledge organization systems - state of affairs and some consequences	105
28	Dariusz SZTAFROWSKI, Jacek GUMIELA - The analysis of the influence of selection of digital simulation parameters to precision of the obtained results and time of numerical calculation	109
29	Małgorzata TROJANOWSKA - Analysis of electricity supply of rural households in the aspect of threats from currents and electromagnetic fields	113
30	Karolina TRZYNIEC, Tadeusz JULISZEWSKI, Piotr NAWARA, Ernest POPARDOWSKI, Maciej OZIEMBŁOWSKI - Using emission of photons to evaluate the quality of exotic fruits	117

PRZEGLĄD ELEKTROTECHNICZNY Vol 2019, No 1

Contents

31	Andrzej WAC-WŁODARCZYK, Piotr ZIŃ - Computer methods used to modelling the magnetic field of guide with electric current	121
32	AGNIESZKA WANTUCH - Cathodic protection of underground sections of electric traction	125
33	Joanna WYSZKOWSKA, Milena JANKOWSKA, Piotr GAS - Electromagnetic Fields and Neurodegenerative Diseases	129
34	Joanna MICHAŁOWSKA¹, Jerzy JÓZWIK - Prediction of the parameters of magnetic field of CNC machine tools	134
35	Joanna WYSZKOWSKA, Przemysław GRODZICKI, Marcin SZCZYGIEŁ - Electromagnetic Fields and Colony Collapse Disorder of the Honeybee	137
36	Mykhaylo ZAGIRNYAK, Viacheslav MELNYKOV, Andrii KALINOV - The review of methods and systems of the fault-tolerant control of variable-frequency electric drives	141
37	Mykhaylo ZAGIRNYAK, Viacheslav PRUS, Vasyl SHYNKARENKO - The assessment of the processes of aging of the electric machines with structural unit defects using the genetic approach	145
38	Anna ZIELIŃSKA - Charging infrastructure and testing of the electric vehicle energy battery decline	149
39	Tomasz RYMARCZYK¹, Grzegorz KŁOSOWSKI, Paweł TCHÓRZEWSKI, Tomasz CIEPLAK, Edward KOZŁOWSKI - Area monitoring using the ERT method with multisensor electrodes	153
40	Tomasz RYMARCZYK, Edward KOZŁOWSKI, Grzegorz KŁOSOWSKI, Paweł RYMARCZYK, Przemysław ADAMKIEWICZ, Jan SIKORA - Detection of seepages in flood embankments using the ElasticNET method	157
41	Zdravko PRAUNSEIS, Tadeja PAVLINA - Fracture Testing of Energy Materials for Application in Electrical Engineering	161
42	Klemen SREDENŠEK, Sebastijan SEME - Parameter determination of a solar cell model using differential evolution algorithm	165
43	Dariusz SAWICKI, Agnieszka WOLSKA, Tobias PORSCHE - Glare assessment for research and development of measurement methods	169
44	Mariusz KŁOS, Krzysztof ZAGRAJEK, Piotr BICZEL, Łukasz SOSNOWSKI - Issues related to the connection to the distribution network of electric bus charging stations	177
45	Milan ŠIMKO¹, Milan CHUPÁČ - The theory of asymmetrical delay line with the surface acoustic wave for non-electric sensors	182
46	Abdelhaq AMAR BENSABER, Mustapha BENGHANEM, Abdelmadjid GUEROUAD, Mohammed AMAR BENSABER - Power flow control and management of a Hybrid Power System	186
47	Amine CHENAFI, Mohammed CHENAFI, Abdellah MANSOURI, Abdelkader CHAKER - Global Stability of Backstepping Control with Robust Nonlinear Observer of Induction Motor in (α, β) Frame	191
48	Ikhlas KITTA, Salama MANJANG, Ida RACHMANIAR, Faris MARICAR - Tropical climate effects on corona power losses on 275 kV transmission lines in the South Sulawesi system	197
49	Apinan AURASOPON, Wanchai KHAMSE - An improved local search involving bee colony optimization using lambda iteration combined with a golden section search method to solve an economic dispatch problem	202
50	Mohammed BOUKABBOUT, Ben-Yssaad KRALOUA, Ali HENNAD - DC glow discharge modelling by using electrons transport parameters from the BOLSIG+ code	209
51	Konstantin KOVALEV, Nickolay IVANOV, Ekaterina TULINOVA, Julia NEKRASOVA - Methodic of calculation of fully HTS salient-pole electrical machine	213
52	Maciej SIWCZYŃSKI, Marcin JARACZEWSKI - Orthogonal and Distorted Non-orthogonal Sampling of Harmonic Signals	219
53	Bogusław KAROLEWSKI¹, Paweł RADZIK - Determining the parameters of induction motors circuit models	223
54	Kamil BARGIEŁ, Damian BISEWSKI, Janusz ZARĘBSKI - Modelling of SiC-JFET in PSPICE	231
55	Łukasz GRAKOWSKI, Katarzyna GĘBCZYK - Analysis of transient states during the switching on operation of small hydropower plants - computer simulations using the EMT-ATP program	235
56	Marian HYLIA - Control of synchronous machines set with microprocessor-controlled excitation units in high-voltage tests station	239
57	Sławomir Andrzej TORBUS - Possibilities of thermal connection of single mode fibers used in metrology	245