

Contents

01	Tadeusz KACZOREK - Normal positive linear systems and electrical circuits	1
02	Arthur Hermano Rezende ROSA, Lenin Martins Ferreira MORAIS, Seleme Isaac SELEME JÚNIOR - Practical hybrid solutions based on nonlinear controllers applied to PFC boost converter	8
03	Mykhaylo ZAGIRNYAK, Dmytro MAMCHUR, Andrii KALINOV - An Algorithm for Induction Motor Monitoring System Based on Electrical Signals Analysis	15
04	Mahmoud M.S. ALSUOD, Oleksandr USHKARENKO, Olga DOROGAN - Sources of independent power supply for protection relay	19
05	Abdelghani BOUKRERIS, Abdelkader MEKRI, Ben-yssaad KRALOUA, Ali HENNAD - A Two-dimensional modeling positive and negative streamer discharge at high pressure	27
06	Alexandr NOVOZHILOV, Alexandra POTAPENKO, Timofey NOVOZHILOV - Process Simulation in Induction Motor where Short-Circuit Rotor Bar is Failed during Run-down Regime	33
07	Dmytro SNIZHKO, Ghazi BANI-KHALED, Kateryna MUZYKA, Guobao XU - Apparatus "Spark" for luminescent and electrochemiluminescent measurements	38
08	Andrzej GAŁECKI, Marek MICHALCZUK, Arkadiusz KASZEWSKI, Bartłomiej UFNALSKI, Lech M. GRZESIAK - Particle swarm optimization of the multioscillatory LQR for a three-phase grid-tie converter	43
09	Arkadiusz KASZEWSKI, Andrzej STRAS', Andrzej GAŁECKI, Marek MICHALCZUK, Bartłomiej UFNALSKI, Lech M. GRZESIAK - An Open- Laboratory setup of an AC/DC/DC power electronics converter for an energy storage system	49
10	Andrzej Ł. CHOJNACKI - Analysis of daily, weekly and annual load variability of electricity in power networks of communal and industrial customers	56
11	Tomasz RYMARCZYK, Jan SIKORA, Krzysztof POLAKOWSKI, Przemysław ADAMKIEWICZ - Effective ultrasound and radio tomography imaging algorithm for two-dimensional problems	62
12	Jarosław WROTNIAK, Wiesław JAKUBIK, Paulina POWROŻNIK, Agnieszka STOLARCZYK, Mirosław MAGNUSKI - Acoustical studies of polymer (RR)-P3HT type for the determination of DMMP in air	70
13	Piotr LEGUTKO - The problem of short circuits in integrated gate drivers operating at 30 MHz	74
14	Iryna KLIMOVICH, Fadei KOMAROV, Valery ZAIKOV, Marek OPIELAK, Tomasz N. KOŁTUNOWICZ - Optical properties of Ti-Al-C-N films: effects of deposition parameters and carbon content	78
15	Nadzeya SHUTKO, Pavel URBANOVICH, Paweł ZUKOWSKI - A method of syntactic text steganography based on modification of the document-container aprosh	82
16	Mirosław MAZUR, Janusz PARTYKA - Optimization of the three-way, autonomous renewable energy power supply system in the residential building	86
17	Bagher BABA ALI, Waldemar WÓJCIK, Orken MAMYRBAYEV, Mussa TURDALYULY, Nurbapa MEKEBAYEV - Speech Recognizer-Based Non-Uniform Spectral Compression for Robust MFCC Feature Extraction	90
18	Marcin KAMIŃSKI, Karol NAJDEK - Uninterruptible power supply UPS with active compensation of reactive and distortion power	94
19	Adam STECKIEWICZ, Agnieszka CHOROSZUCHO - Arrangement of structure of a conductive periodic material based on the analysis of electromagnetic phenomena using multi-criteria scheme	99
20	Tomasz BISKUP, Henryk KOŁODZIEJ, Tomasz WOLNIK, Emil KRÓL - Gearless low-speed PMSM drive with estimator of perturbed rotor position angle	103
21	Norbert PAŁKA, Elżbieta CZERWIŃSKA, Mieczysław SZUSTAKOWSKI, Leon JODŁOWSKI, Marek PISZCZEK, Jarosław MŁYŃCZAK, Michał WALCZAKOWSKI, Marcin KOWALSKI, Artur GRUDZIĘN, Wiesław CIURAPIŃSKI, Janusz WRÓBEL, Jacek OLEJNIK, Bartosz KOŚCIUG, Iwona BADACZEWSKA, Konrad PIOTROWSKI, Paweł HOŁOWEŃKO, Paweł POZNIAK, Szymon PACHLA- Entry Exit System – research on biometric verification	109
22	Andrzej NIEDWOROK, Jarosław MICHALAK, Marcin ZYGMANOWSKI - The influence of AC ripple current component on warming up process of fixing cable elements	115
23	Ryszard STRZELECKI, Wojciech MATELSKI, Valentin TOMASOV - Hybrid stepless distribution transformer with four-quadrant AC/DC/AC converter at low voltage side - simulation tests	121
24	Marek NOWAK, Stanisław PIRÓG - Simulation studies of the Proportional Resonant controller	128
25	Anna KOZIOROWSKA, Katarzyna KOZIOŁ, Sebastian GNIADY, Maria ROMEROWICZ-MISIELAK - An electromagnetic field with a frequency of 50 Hz and a magnetic induction of 2.5 mT affects spermatogonia mouse cells (GC-1spg line)	132
26	Maciej GLINIĄK, Maciej OZIEMBŁOWSKI, Magdalena DRÓŻDŻ, Tomasz DRÓŻDŻ, Piotr NAWARA, Paweł KIEŁBASA, Marek OSTAFIN - The possibilities of automation of the manual line for dismantling waste electrical and electronic equipment	136
27	Mirosław PAROL, Michał POŁECKI - Laboratory stand for studies of photovoltaic inverters work	140
28	Remigiusz OLEJNIK - Network Stack of the HopeMesh Experimental Wireless Mesh Network	144
29	Kamil PADUSZYŃSKI, Katarzyna NOWAK - Basic definitions related to the influence of electric current on living organisms	149
30	Bartłomiej TWOREK - Development of electric systems for hybrid and electric vehicles	152
31	Zbigniew ŁUKASIK, Andriy CZABAN, Andrzej SZAFRANIEC - Mathematical model of asynchronous pump drive with distributed mechanical parameters	155