

**Contents**

01	<b>Jan MACHOWSKI, Piotr KACEJKO</b> - Influence of the on-load control of the tap changing step-up transformer on the reactive power capability curve of the generating unit	1
02	<b>Marcin KAMINSKI, Teresa ORŁOWSKA-KOWALSKA</b> - Neural controllers trained off-line applied in speed control structure of two-mass drive	9
03	<b>Frederik STEFANSKI, Amadeusz NOWAK, Bartosz MINOROWICZ</b> - Pneumatic single flapper nozzle valve driven by piezoelectric tube	13
04	<b>Zbigniew KŁOSOWSKI</b> - The analysis of the possible use of wind turbines for voltage stabilization in the power node of MV line with the use of a real-time simulator	20
05	<b>Zbigniew MIKOŚ, Marcin JACHIMSKI, Grzegorz WRÓBEL</b> - General purpose function blocks with inputs expanding functionality for control of technological drives	28
06	<b>Safat B. Wali, Mohammad A. Hannan and Shahrum Abdullah, Aini Hussain, Salina A. Samad</b> - Shape Matching and Color Segmentation Based Traffic Sign Detection System	36
07	<b>Haidar Samet, Abdollah Kavousi-Fard, Sina Rajabi</b> - A modified teaching-learning based optimization for the location and size of two SVCs to compensate the railway's voltage drop	41
08	<b>José A. JARDINI, Thales SOUSA, Rubén A. ROMERO, Marcos J. RIDER, Marco A. B. HORITA, Marcos BASSINI and Marcos R. CAVALHEIRO</b> - Power Flow Control in the Converters Interconnecting AC-DC Meshed Systems	46
09	<b>Danyelle M. M. SANTANA, Niraldo R. FERREIRA, Fabiano F. COSTA, Antonio C. de C. LIMA</b> - A Novel Prony Approach for Synchronous Generator Parameter Estimation	50
10	<b>Krystian BABIOCH, Krzysztof JASKOT</b> - Inspection robot	55
11	<b>Andrzej GALECKI, Arkadiusz KASZEWSKI, Lech M. GRZESIAK, Bartłomiej UFNALSKI</b> - Control system of the grid-connected converter based on a state current regulator with oscillatory terms	65
12	<b>Michał BORECKI, Bolesław KUCA, Tomasz KISIELEWICZ, İlhan TARIMER, Heorgiy LYSIAK</b> - Practices of lightning protection of medium-voltage overhead lines with covered conductors	70
13	<b>Dariusz SOBCZYŃSKI, Wiesława MALSKA, Anna KOZIOROWSKA</b> - Research of the impact of selected equipment used in laboratory at the Institute of Applied Biotechnology and Basic Science for the supply line	73
14	<b>Krzysztof KONOPKO</b> - Implementation of the nonlinear signal processing methods in digital systems	77
15	<b>Artur DZIUŁKO, Adam MILCZAREK, Mariusz MALINOWSKI</b> - Implementation of Equal Reactive Power Sharing Algorithm in Droop-Controlled Islanded AC Microgrid	81
16	<b>Tadeusz SKOCZKOWSKI, Sławomir BIELECKI</b> - The Compulsion to Ensure the Interests of End-Users in the Process of a Smart Grid Building	88
17	<b>Marek GARBARUK, Norbert LITWIŃCZUK</b> - Short-time Fourier transform of ultrawideband pulses UWB	95
18	<b>Jerzy MIKULIK, Jakub JURASZ</b> - Determination of photovoltaic installation nominal power based on electrical energy consumption profile in the context of prosumer policy	99
19	<b>Serhii W. ZABOLOTNI, Zygmunt Lech WARSZA</b> - Semi-parametric estimation of the change-point of parameters of the non-Gaussian sequences by polynomial maximization method	102
20	<b>Agnieszka BIEŃKOWSKA</b> - TQM maturity and organizational effectiveness of accredited testing and calibration laboratories operating in Poland	108
21	<b>Paweł BIEŃKOWSKI, Paweł CAŁA, Bartłomiej ZUBRZAK, Jaromir SOBIECH</b> - The electromagnetic field of the bands above 40 GHz - applications and measurement possibilities	112
22	<b>Lech BOROWIK, Adam JAKUBAS</b> - Measurements of the selected electrical parameters of textile materials for applications in smart clothing	115
23	<b>Lech BOROWIK, Adrian BARASIŃSKI</b> - Electrical installations in building energy-saving in the aspect of the fire hazard	118
24	<b>Paweł CAŁA, Paweł BIEŃKOWSKI</b> - Influence of spectacle frames on exposure of electromagnetic field from popular telecommunication systems working in UHF band	122
25	<b>Antoni CIEŚLA, Wojciech KRASZEWSKI, Mikołaj SKOWRON, Przemysław SYREK</b> - The effects of magnetic fields on seed germination	125
26	<b>Andriy CZABAN, Marek LIS, Andrzej POPENDA, Marek PATRO, Marcjan NOWAK</b> - Mathematical model of the electrical set consisted of power transformer, induction motors, nonlinear load RL and battery of capacitors	129
27	<b>Paweł DRZYMAŁA, Henryk WELFLE</b> - The estimation of additional losses in the transformer windings using numerical methods of field calculation	133
28	<b>Jerzy FILIPIAK, Grzegorz STECZKO, Sebastian KOSTRZEWA, Łukasz WCISŁO</b> - Acceleration sensors surface acoustic wave parameters	136
29	<b>Jerzy FILIPIAK, Grzegorz STECZKO, Sebastian KOSTRZEWA, Łukasz WCISŁO</b> - Surface acoustic wave devices	140
30	<b>Aleksander GĄSIORSKI, Zdzisław POSYŁEK, Tomasz DRÓŻDŻ</b> - Prototype lab station for researching the fusibility of using tube method	144

# PRZEGŁĄD ELEKTROTECHNICZNY Vol 2015, No 1

## Contents

31	<b>Andrzej JĄDERKO, Michał K. KOWALEWSKI</b> - Wind parameters determining in renewable power sector	148
32	<b>Andrzej JĄDERKO, Maciej SWADOWSKI, Krzysztof ZYGOŃ</b> - Optimization of the modern switch mode power supplies	152
33	<b>Łukasz JANUSZKIEWICZ</b> - Simplified human body model for analysis of wireless systems operating In the proximity of posed human body	156
34	<b>Bolesław KALICKI, Józef MRÓZ, Andrzej KRAWCZYK, Anna JUNG, Agnieszka LIPIŃSKA-OPAŁKA, Agnieszka IWANISZCZUK, Janusz ŻUBER, Piotr MURAWSKI</b> - Long-term effects of treatment of the Complex Regional Pain Syndrome type I (CRPS I) using magnetotherapy obtained in the thermography examination	159
35	<b>Ewa KORZENIEWSKA, Agnieszka DURAJ, Cezary KONECZNY, Andrzej KRAWCZYK</b> - Thin film electrodes as elements of telemedicine systems	162
36	<b>Andrzej KRAWCZYK, Katarzyna CIOSK, Barbara GROCHOWICZ</b> - Risk and hazard in electromagnetic field – critical analysis of terms	166
37	<b>Eugeniusz KURGAN, Piotr GAS</b> - Simulation of the electromagnetic field and temperature distribution in human tissue in RF hyperthermia	169
38	<b>Marcin LEPLAWY</b> - Indoors localization system with the use of WiFi and other network standards	173
39	<b>Liliana BYCZKOWSKA-LIPIŃSKA, Agnieszka WOSIAK</b> - Feature Selection and Classification Techniques in the Assessment of the State for Large Power Transformers	175
40	<b>Oleksandr MAKARCHUK, Andrzej RUSEK, Ihor SHCHUR, Vsevolod SHCHUR</b> - The electromagnetic transformer of mechanical energy into heat for wind turbine	179
41	<b>Paweł MATUSZCZYK, Tomasz POPŁAWSKI, Janusz FLASZA</b> - The potential and possibilities of energy electromagnetic radiation of the Sun	183
42	<b>Paweł NIEDBALSKI, Stefan F. FILIPOWICZ</b> - Problem Burst Supresion in monitoring and brain diagnostics of premature infants	188
43	<b>Anna PŁAWIAK-MOWNA, Wojciech ZAJĄC, Grzegorz ANDRZEJEWSKI</b> - Electromagnetism in elderly healthcare policy	192
44	<b>Andrzej RUSEK, Andriy CZABAN, Marek LIS, Marek PATRO, Tomasz ŚLIWIŃSKI</b> - Mathematical model of a rolling mill including elastic elements in a power transmission line with the consideration of the distributed mechanical parameters	195
45	<b>Ihor SHCHUR, Andrzej RUSEK, Maksym MANDZYUK</b> - Power effective work of PMSM in electric vehicles at the account of magnetic saturation and iron losses	199
46	<b>Przemysław SYREK, Antoni CIEŚLA, Wojciech KRASZEWSKI, Mikołaj SKOWRON</b> - The impact of the magnetic field of applicators on the environment depending on the signal's parameters	203
47	<b>Krzysztof SZEWCZYK</b> - The shape of surface in rotors pole as a forming element of torque and braking torque in hybrid step motor with permanent magnets	205
48	<b>Peter VRTIČ, Peter MRAK, Grigoris PAPAGIANNIS, Georgios C. CHRISTOFORIDIS, Ioannis KOUMPAROU, Maria HADJIPANAYI, George E. GEORGHIOU</b> - Project PV-NET: Promotion of photovoltaic energy through net metering optimization	208
49	<b>Mykhaylo ZAGIRNYAK, Aleksandr SERDIUK, Tetyana KORENKOVA</b> - Limits of noncavitation operation of an electrohydraulic complex with a variable-frequency electric drive	212
50	<b>Mykhaylo ZAGIRNYAK, Viacheslav PRUS, Anna MIROSHNYKOVA</b> - Ways of efficiency improvement of local diagnostic of the cores of induction motor stators	217
51	<b>Tomasz KISIELEWICZ, Carlo MAZZETTI, Giovanni Battista LO PIPARO</b> - Apparatus safety in front of overvoltages coming from the power lines	221