

Contents

01	<b>Jacek F. GIERAS</b> - Ultra high-speed ground transportation systems: Current Status and a vision for the future	1
02	<b>Mirosław MIKOŁAJEWSKI</b> - Output voltage control in the Class E ZVS inverter by frequency or reactance regulation	8
03	<b>Mateusz KUC, Wojciech SUŁEK, Dariusz KANIA</b> - Hardware implementation of the QC-LDPC decoder in the FPGA structure	16
04	<b>Bojan Vovčko, Klemen Sredenšek, Sebastijan Seme</b> - Analytical modelling of water sheet-and-tube Photovoltaic Thermal Collector	21
05	<b>Olexii BIALOBRZHESKYI, Dmytro ROD`KIN</b> - Apparent Power Effectiveness for the Assessment of the Efficiency of the Cable Transmission Line in the Supply System with Sinusoidal Current	26
06	<b>Rostyslav YATSIUK, Dmytro MAMCHUR</b> - The design of field-oriented control system with artificial neural network to control faulty induction motor	30
07	<b>Jagraplon Obma, Worawat Sa-ngiamvibool</b> - The Non-Substrate Interdigital Capacitor Level Sensor	34
08	<b>Brahim KEHILECHE, Younes CHIBA, Abdelhalim TLEMÇANI, and Noureddine HENINI</b> - Numerical prediction of thermal performance of an electrocaloric device based on ceramic material	38
09	<b>Messaoud ZOBEIDI, Fatiha LAKDJA, Yamina Ahlem GHERBI, Fatima Zohra GHERBI</b> - Effect of a wind generator on the optimal location of FACTS	43
10	<b>Daniel KORENCIAK, Matej KUBIS, Milan SEBOK, Miroslav GUTTEN, Matej KUCERA</b> - Analysis of Automotive Ignition Systems in Laboratory Conditions	48
11	<b>Yaroslav PARANCHUK, Pavlo EVDOKIMOV, Oleksiy KUZNYETSOV</b> - Electromechanical positioning system with a neuro-fuzzy corrector	52
12	<b>Salama MANJANG, Yuli Asmi RAHMAN</b> - Distributed photovoltaic integration as complementary energy: consideration of solutions for power loss and load demand growth problems	56
13	<b>Prawech JANCHAI, Thitiporn JANDA, Adirek JANTAKUN</b> - Voltage-mode Second-order Filter and Quadrature Oscillator Based-on Differential Difference Current Conveyors and Only Grounded Elements	62
14	<b>Maciej ZDANOWSKI</b> - Model analysis and experimental research on streaming electrification current of insulating liquids	68
15	<b>Jacek MAJCHER</b> - The use of an electroseparator with bifilar winding for extracting germ from crushed rape seed	71
16	<b>Stanisław GALLA, Arkadiusz SZEWCZYK, Janusz SMULKO</b> - The methods for analyzing the quality of supercapacitor samples based on noise measurements	74
17	<b>Paweł POCZEKAJŁO, Robert SUSZYŃSKI</b> - Pipeline realization of the Laplace filter to 2D medical images processing	80
18	<b>Henryk BANACH</b> - The theoretical considerations regarding the condition of occurrence of maximum efficiency for a squirrel cage and ring induction motor	85
19	<b>Andrii KASHKANOV, Volodymyr KUZHEL, Igor Piotr KURYTNIK, Volodymyr KUCHERUK</b> - Automotive lighting: method of assessing the visibility of objects in the light of car headlights	90
20	<b>Tomasz RYMARCZYK, Bartosz PRZYSUCHA, Paweł PAWLIK</b> - Analysis of multi-source data for monitoring and control of intelligent technological systems	95
21	<b>Tomasz RYMARCZYK, Konrad NIDERLA, Konrad KANIA, Michał MAJ, Paweł NITA</b> - Wearable sensor for biopotential measurements of patients' health monitoring	99
22	<b>Vasyl V. KUKHARCHUK, Samoil Sh. KATSYV, Valerii F. HRANIAK, Vyacheslav G. MADYAROV, Volodymyr V. KYIVSKYI, Iryna V. PRYCHEPA, Andrzej KOTYRA, Bakhyt YERALIYEVA, Ainur KOZBAKOVA</b> - Analysis of dependency current harmonics on load and filter parameters for asymmetrical network models	103
23	<b>Eduard MANZIUK, Waldemar WOJCIK, Olexander V. BARMAK, Iurii V. KRAK, Anatoliy KULIAS, Vira A. DRABOVSKA, Vitalina M. PUHACH, Samat SUNDETTOV, Aisha MUSSABEKOVA</b> - Approach to creating an ensemble on a hierarchy of clusters using model decisions correlation	108
24	<b>Boris I. MOKIN, Olexander B. MOKIN, Olena M. KOSARUK, Mashat KALIMOLDAYEV, Waldemar WÓJCIK, Kuanysh MUSLIMOV</b> - Assessment of the knowledge quality level based on fuzzy models of its acquisition processes	114
25	<b>Gulzhan B. KASHAGANOVA, Paweł KOMADA, Gayni KARNAKOVA</b> - Fiber sensors based on the Bragg gratings in security systems	120
26	<b>Roman N. KVYETNYI, Natalia F. KUZMINA, Olexander A. POPLAVSKYY, Vira A. DRABOVSKA, Valentyna B. KUZMIK, Konrad GROMASZEK, Aliya KALIZHANOVA, Saule SMAILOVA</b> - Group decision support system based on Bayesian network	123
27	<b>Waldemar WÓJCIK, Maxat B. ORUNBEKOV, Aynur Zh. TOYGOZHINOVA, Ainagul M. SEITBEKOVA</b> - Difficulties in TETRA operation with moving block in Kazakhstan	129
28	<b>Toshifumi YUJI, Hiroyuki KINOSHITA, Toshio BOUNO, Nuttee THUNGSUK, Sunun TATI, Thaweesak TANARAM, Narong MUNGKUNG</b> - Estimate of Scale Thickness for Iron Pipes in Geothermal Power Generation Using Acoustic Emission Sensor	133
29	<b>Aya MORITA, Fumiaki TAJIMA, Toshifumi YUJI, Sarizam MAMAT and Narong MUNGKUNG</b> - Determination of the Complex Refractive Index of a Subwavelength-diameter Spider Thread on Silver Coating by Light Scattering	138
30	<b>Ahmed M. Agwa</b> - Equilibrium optimization algorithm for automatic generation control of interconnected power systems	143
31	<b>Andrzej KOCIUBIŃSKI, Dawid ZARZECZNY -TUREK</b> - Nickel comb capacitors for real-time monitoring of cancer cell cultures	149
32	<b>Piya SIRIKAN, Chakrapong CHARUMIT</b> - Implementation of Indirect Rotor Field Oriented Control for Three-Phase Induction Motor Drive based on TMS320F28335 DSP	153
33	<b>Chananchai WUTTHITHANYAWAT, Santi WANGNIPPARNTO</b> - Decentralized PI Controller with Coefficient Diagram Method Incorporating Feedforward Controller Based on Inverted Decoupling for Two Input – Two Output System	159
34	<b>Badr Mesned Alshammari, Tawfik Guesmi, Mohammed Eleiwa, Rabeh Abbassi, Mohammed Alghassab</b> - Optimal Technique of reliability and quality Assessment of two-area interconnected power systems	167
35	<b>Piyapat POUNGSRI, Tanaporn PECHKOOL, Aphibal PRUKSANUBAL, Prayoot AKKARAEKTHALIN</b> - Prediction of SAR of Electromagnetic Radiation due to Virtual Reality Headsets in the Human Head	171
36	<b>Krystian Leonard CHRZAN, Marek OLESZ, Stanisław WOJTAS</b> - The first high voltage laboratories in Poland	176