

Contents

01	Robert Marek RACZKOWSKI¹, Sylwester ROBAK - Electricity storage system as a means of improving flexibility of the power system with a large share of RES generation	1
02	Badrul Hisham Ahmad, Taha Raad Al-Shaikhli, Nornikman Hassan, Ayman Mohammed Ibrahim, P. E. Lim, Nurul Syahira Nordin - A review on echo and phase inverted scanning in acoustic microscopy for failure analysis	9
03	Ahmed M. Agwa, Shaaban M. Shaaban - Siting hydropower plant by rough set and combinative distance-based assessment	15
04	Bachir BOUMEDIENE, Attalah SMAILI, Tayeb ALLAOUI, Abderrahmane BERKANI, Fabrizio MARIGNETTI - Backstepping Control Strategy for Multi-source Energy System based Flying capacitor Inverter and PMSG	21
05	Yuriy VARETSKY, Zbigniew HANZELKA, Volodymyr KONOVAL, Beata KUSHKA - Considerations regarding the parallel operation of transformers - an example case in the mining industry	30
06	Sebastian DUDZIK, Anna PODSIĘDLIK, Adam RAPALSKI - Test stand to design control algorithms for mobile robots	35
07	Chamberlin Stéphane Azebaze Mboving, Andrzej Firlit - Investigation of the line-reactor influence on the active power filter and hybrid active power filter efficiency: practical approach	39
08	Anna PIWOWAR - Realization of low pass parametric filters	45
09	Piotr PRUSKI, Stefan PASZEK - Determination of generating units critical for the power system angular stability	51
10	Piotr ZIENTEK - Assessment of the results of tests of main insulation of electric machines with direct voltage	56
11	Igor Razzhivin, Aleksey Suvorov, Mikhail Andreev, Alisher Askarov - Development of Automatic Pitch Angle Control Mathematical Model for Type-4 Wind Turbines Specialized Hybrid Processor	60
12	Elena Sosnina, Andrey Shalukho, Leonid Veselov - Research on Application Efficiency of SOFC on Biogas for Power Supply of Agricultural Enterprises	64
13	Pavlo HERASYMENKO - Mathematical analysis of dual-frequency load current of two-inverter power supply for induction heating systems	69
14	M.T. Alkhayyat, Mohammed Y. Suliman - Neuro Fuzzy based SSSC for Active and Reactive Power Control in AC Lines with Reduced Oscillation	75
15	Amir Abu_Ai_Aish, Wael Salah, Mohammad Ahmed, Mohd. Alrashdan, Wael AL-Sawalmeh - Implementation of Contactless angular Speed Measurement Based on Photo Sensor	80
16	Michał ANDRASIAK, Artur BACZEWSKI, Józef BOGOWICZ, Mariusz CHABERA, Kacper KAŻMIERCZAK, Jan KLIMASZEWSKI, Tymoteusz KOSIŃSKI, Andrzej ŁUBIAN, Michał MATUSIAK, Agnieszka MISIARZ, Janusz PRACZ, Jacek RZADKIEWICZ, Marcin WOJCIECHOWSKI, Sławomir WRONKA, Tomasz ZAKRZEWSKI - Microwave generator for apparatus test against HPM	84
17	Mohamed Arbi KHLIFI, Azzedine DRAOU - Voltage and power rise mitigation for solar PV integration in The Distribution Network	87
18	Fedor VASILYEV¹, Vladimir ISAEV¹, Maksim KOROBKOV - The influence of the PCB design and the process of their manufacturing on the possibility of a defect-free production	91
19	Inna Honcharuk, Ihor Kupchuk, Olena Solona, Oleksiy Tokarchuk, Natalia Telekalo - Experimental research of oscillation parameters of vibrating-rotor crusher	97
20	Skrypnyck Anatolii, Kozhan Dmytro - Using nodal specific transportation costs to determine economically beneficial distributed generation source location areas in radial electrical power distribution systems	101
21	Ferroudja BOUALI, Hassane MOHELLEBI, Ghania YOUSFI - Coupled Circuit Method Applied to the detection of Defects in a Conductive Multilayer Device	106
22	Hadda NOUAR, Toufik TAHRI, Djilali BENYOUCEF, Younes CHIBA, Mouloud DENAI, Abdelghani AZIZI - Investigation of Climate Effects on the Performance of Solar Chimney Power Plants Using Numerical and Analytical Models: A Case Study for Chlef, Algeria of object models	112
23	MD Saeed Hasan JOARDER, Lokesh KULHARI, Badrul Hisham bin AHMAD, Kanad RAY - MOX based E- Nose for Non-Invasive Biomedical Applications	119
24	Mohamed Boudiaf KOURA, Ahmed Hamida BOUDINAR, Azeddine BENDIABDELLAH, Ameer Fethi AIMER, Zakaria GHERABI - Rotor Faults Diagnosis by Adjustable Window Function	123
25	Mohammed Yassine Dennai, Hamza Tedjini, Abdelfatah Nasri, Djamel Taibi - MPC controller of PV system based Three-Level NPC Inverter under different climatic conditions connected to the grid	130
26	Wasana BOONSONG - Internet of Things for Enhancement the Quality of Community: Case Study of Aquatic Nursery in Songkhla Lake Basin	138
27	Tomasz RYMARCZYK², Krzysztof KRÓL, Andrzej ZAWADZKI, Michał OLESZEK, Grzegorz KŁOSOWSKI - An intelligent sensor platform with an open architecture for monitoring and controlling cyber-physical	141
28	Tomasz CIEPLAK, Tomasz RYMARCZYK, Grzegorz KŁOSOWSKI, Michał MAJ, Damian PLISZCZUK, Paweł RYMARCZYK - Methods of process mining and prediction using deep learning	146
29	Jerzy FIOŁKA - Detection of knocking combustion in gasoline engines based on the HVD method	150
30	Shatha Y. Ismail, Zozan Saadallah Hussain, Hassaan TH. H. Thabet, Thabit H. Thabit - Using PI Controller Unit for Controlling the Water Temperature in Oil Fired Heaters by PLC Techniques	157
31	Sławomir TUMAŃSKI - Modern methods of electrical steel testing – a review	162
32	Yuriy SAYENKO, Ryszard PAWEŁEK, Andrii MOLCHAN, Ewa DYKA - Power quality experimental research at the Primorsky wind power station	168
33	Jerzy HICKIEWICZ, Piotr RATAJ, Przemysław SADŁOWSKI - Associations of Polish electrotechnics during World War I	174