

2019 International Conference on Power Generation Systems and Renewable Energy Technologies (PGSRET 2019)

**Istanbul, Turkey
26 – 27 August 2019**



**IEEE Catalog Number: CFP19PGS-POD
ISBN: 978-1-7281-2302-8**

**Copyright © 2019 by the Institute of Electrical and Electronics Engineers, Inc.
All Rights Reserved**

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

****** This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number:	CFP19PGS-POD
ISBN (Print-On-Demand):	978-1-7281-2302-8
ISBN (Online):	978-1-7281-2301-1

Additional Copies of This Publication Are Available From:

Curran Associates, Inc
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: (845) 758-0400
Fax: (845) 758-2633
E-mail: curran@proceedings.com
Web: www.proceedings.com

CURRAN ASSOCIATES INC.
proceedings
.com

Table of Contents

Correlation between Wind Generation and Load in Croatian Power System.....	1
<i>Dubravko Sabolić, Ivan Sičaja and Igor Ivanković</i>	
Performance Analysis of New Hydrofoil for Tidal Current Turbines.....	N/A
<i>Mourad Nachtane, Mostapha Tarfaoui and Dennoun Saifaoui</i>	
The Novel Wave Energy Harvesting Buoy.....	8
<i>George Nerubenko, Vladimir Blintsov, Andriy Mozgovyy and Ivan Biliuk</i>	
The Impact of the Financial Incentive Levels of Demand Response Programs on the Generation Cost of Solar-Integrated Power Systems.....	14
<i>Stephen Afonaa-Mensah, Qian Wang and Wisdom Opore</i>	
Performance and cost analysis of solar systems considering different PV and inverter models.....	20
<i>Mohamed Albattal and Bahadir Tunaboğlu</i>	
Simulation and Hardware Implementation of Photovoltaic Maximum Power Point Tracking System.....	25
<i>Shoroug Alweheshi, Aisha Abdelali, Muhanad Albarassi, Ahmed Hammoda and Adel Mohamed</i>	
Fault Tolerant Control of Rhine-Meuse Delta Water System: A Performance Assessment Based Approach.....	31
<i>Mojtaba Kordestani, Ali Akbar Safavi, Narjes Sharafi and Mehrdad Saif</i>	
Efficiency Analysis of Photo-Voltaic Thermal Air Collectors.....	39
<i>M. Fterich, H. Chowikhi, H. Bentaher, S. Sandoval-Torres and Aref Maalej</i>	
Differential Evolution Optimization Algorithm Based on Generation Systems Reliability Assessment Integrated with Wind Energy.....	45
<i>Athraa Ali Kadhem, Noor Izzri Abdul Wahab and Ahmed N. Abdalla</i>	
Mathematical modeling of PEM electrolyzer and design of a voltage controller by the SMPWM approach.....	51
<i>Mohamed Koundi and Hassan El Fadil</i>	
Smart Grid Reliability Using Reliable Block Diagram Case Study: Adrar's Isolated Network of Algeria.....	57
<i>Boussahoua Bouziane and Elmaouhab Ali</i>	
Optimization of the Regional Allocation of Wind Power Capacity.....	63
<i>Burcu Cansu İnanç, Kadir Ertogral and Kürşad Derinkuyu</i>	
Research of electromagnetic parameters for improvement of efficiency of special electric drives and components.....	69
<i>Vladimir Karandey, Boris Popov, Olga Popova and Viktor Afanasyev</i>	
A Fast Fault Detection and Identification Approach in Power Distribution Systems.....	74
<i>Fazel Mohammadi, Gholam-Abbas Nazri and Mehrdad Saif</i>	

In-Situ Dodecylbenzenesulfonic acid -Catalyzed Transesterification of Micro Algae Chlorella Sp. for Biodiesel Production.....	78
<i>Ali A. Jazie, Emad Jadeen Alshebaney and Suhad A. Abed</i>	
DBSA-Catalyzed Biodiesel Production From Sewage Sludge In A Micro-Reactor: Box-Behnken Design Optimization	84
<i>Ali A. Jazie, Suhad A. Abed and H. Pramanik</i>	
Comparative Performance Analysis of Two Chain Planetary Speed Increaseers for Micro-Hydro/Wind Conversion Systems.....	90
<i>Mircea Neagoe, Radu Saulescu and Codruta Jaliu</i>	
Variations of the performance of a PV panel with the number of bypass diodes and partial shading patterns	96
<i>Nader Anani and Haider Ibrahim</i>	
Performance analysis of a biomass-fired cooling/power combined cycle (Ejector Refrigeration and Kalina cycle).....	100
<i>Candeniz Seckin</i>	
Modeling, Simulation, and Analysis of Hybrid Electric Vehicle Using MATLAB/Simulink .	106
<i>Fazel Mohammadi, Gholam-Abbas Nazri and Mehrdad Saif</i>	
Multi-level direct torque control of induction motor using fuzzy-genetic speed regulation .	111
<i>Fouzia Benmessaoud, Abdesselem Chikhi, Belkacem Sebti and Ghoulemallah Boukhalfa</i>	
Broadband Matching of PA-to-PCB Interconnection for X-band Wireless Power Transfer .	116
<i>Ramazan Kopru</i>	
Simulation of Concentrating Photovoltaic/Thermal System Based on Jet Cooling.....	122
<i>Guan Xin, Yuan Fen, Qiu Hao and He Jinan</i>	
Applicability Study of Battery Charging Stations in Off-Grid for Rural Electrification – the case of Rwanda	128
<i>Ghamgeen Rashed, Gilbert Shyirambere, Geoffrey Gasore, Yuanzhang Sun and M.B. Shafik</i>	
The Performance of ACO in the Parameter Identification of a PEM Fuel Cell Model in Comparison to GA and PSO	134
<i>Reem Salim</i>	
Modelling of PSPP Control System by Using Vector Control Principle and VSI.....	140
<i>S. M. Hassan Hosseini and Sina Eslami</i>	
Two-level Optimal Dispatch for Combined Heat and Power Systems Considered Uncertainty	146
<i>Wei Huang, Bo Ye and Liangliang Hua</i>	
Modeling Photovoltaic String in PLECS Under Partial Shading	152
<i>Alper Nabi Akpolat, Yongheng Yang, Frede Blaabjerg, Erkan Dursun and Ahmet Emin Kuzucuoğlu</i>	
Topping nuclear power plants steam cycles with gas turbines as the way of enhancing their efficiency	158
<i>Michal Oziemski</i>	

Augmentation of the Heat Recovery Steam Generator in the CCGT cycle as the way to reduce the CO ₂ emissions	164
<i>Jakub Motylewski</i>	
Design and Analysis of Mobile Hybrid Energy System for Off-Grid Applications	170
<i>Onur Elma and Hossam A. Gabbar</i>	
The Effect of L Tip Vane on the Power and Load of 5MW Horizontal Axis Wind Turbine.	176
<i>Rui Yang, Hao Zhang, Rui Guo, Ai-Yu Liu, Kang-Kang Zhang and Pei Quan</i>	
Primary Frequency Modulation of Solar Photovoltaic-energy Storage Hybrid System Based on Virtual Synchronous Generator	181
<i>Liu Yunxin, Liao Siyang, Sun Yuanzhang, Xu Jian, Ghamgeen Izat Rashed Rashed, Ke Deping, Yao Liangzhong, Yang Jun, Wu Di, Tang Wei and Yang Cheng</i>	
Temperature Dependence Study of Electrochemical Storage Systems.....	187
<i>Attila Göllei and Attila Magyar</i>	
Modelling and experimenting thermal energy storage through the use of PCM in low thermal inertia office	192
<i>Duarte Drumond de Abreu, Rui Costa Neto, Laura Aelenei and Carlos A. Santos Silva</i>	
Optimal control for daily operation planning of a water distribution system with pumped storage	200
<i>Mario Vasak and Hroje Novak</i>	
Hydrodynamic performance of a cavitating marine current turbine.....	N/A
<i>Mehmet Salih Karaalioglu and Sakir Bal</i>	
The Optimal Placement Model for Electric Vehicle Charging Stations	211
<i>Kerem Can Arayici and Gokturk Poyrazoglu</i>	
Designs of diffractive optical elements for solar energy harvesting	215
<i>Alim Yolalmaz and Emre Yüce</i>	
Limitation of spray water flow to steam reheaters as the way of enhancing the BB-1150 boiler efficiency	220
<i>Michal Oziemski</i>	
Improved Monitoring of PV Systems Using Generalized Likelihood Ratio Hypothesis Testing	N/A
<i>Fouzi Harrou, Bilal Taghezouit and Ying Sun</i>	
Latent variable-based prediction methods for a reliable wind power prediction	N/A
<i>Fouzi Harrou, Ahmed Saidi and Ying Sun</i>	
Polish Power Generation Sector in the Conditions of Growing Contribution of Renewable Energy Sources	238
<i>Janusz Buchta, Andrzej Oziemski and Maciej Pawlik</i>	
Steam Power Units on the Path to Increase the Efficiency of Electricity Generation	244
<i>Janusz Buchta and Andrzej Oziemski</i>	
Battery Health Monitoring for Commercialized Electric Vehicle Batteries: Lithium-Ion ...	250
<i>Fawad Ali Shah, Shehzar Shahzad Sheikh, Umer Iftikhar Mir and Syed Owais Athar</i>	

Energy Management Models: A Game-Theoretic Optimization Techniques for Energy Management in Smart Grid	256
<i>S. M. Ali, Athar Waseem and Zahid Ullah</i>	
Design and Implementation of an Energy Harvester with a Fluid Core	262
<i>Damla Tavsan, Erol Kurt, Hilal Kurt and Raoul Rashid Nigmatullin</i>	
Research on UHF Wave of Partial Discharge Leakage of Oil-Impregnated Paper Bushing of Power Transformers	267
<i>Xiaoping Yang, Jiansheng Li, Judong Chen, Yuncai Lu, Yuandi Lin and Jun Jiang</i>	
Theoretical study of Intersubband Absorption Coefficient of Conduction Band in GaAsP/GaP Quantum Well Structures	272
<i>Chenini Lynda, Abdelkader Aissat and Vilcot Jean-Pierre</i>	
Web-based Application Design for Coal-Transportation Networks of Thermal Power Plant	276
<i>Da-Ren Chen and Ye-Zheng Chen</i>	
Single-Phase Rectifier with near Sinusoidal Input Current	N/A
<i>Mariana Pletea, Irinel Valentin Pletea and Dimitrie Alexa</i>	
The Influence of Limiting Factors on the Performance of Photovoltaic Cells with Multi-junction Mixed Mode	285
<i>Dennai Benmoussa, Dida Tidjani and Fillali Mostefa</i>	
Influence of Rotor Slot Structure at Starting Torque and Efficiency on Urban Use EV Motor	290
<i>Muhammet Tahir Guneser, Adem Dalcali, Turgut Ozturk and Cemil Ocak</i>	
Simultaneous detection of Dissolved Methane and Ethane in Transformer Oil Based on Laser Raman Spectroscopy	294
<i>Jun Jiang, Zhuowei Wang, Chaohai Zhang, Wanli Xu and Yuan Feng</i>	
Status of India's renewable energy commitments for the Paris Agreement	298
<i>Arvind Mathur and Suneet Singh</i>	
VOLTAGE STABILITY OF WIND TURBINE BASED MICRO GRID USING SIMULATION PLATFORMS	303
<i>Syed Qalb-E-Abbas Kazmi, Abdul Waheed Khawaja, Zunaib Maqsood Haider, Tauheed-Ur-Rahman and Syed Muhammad Ali Musa Kazmi</i>	
Investigating Robustness of Energy Management Maps for SMEs	309
<i>Danica Vukadinovic Greetham and Georgios Giasemidis</i>	
Methodology of computing the entropy generation and researching the thermal characteristics for thermosiphon flat solar collector	315
<i>Yedilkhan Amirgaliyev, Murat Kunelbayev, Omirlan Auelbekov, Aliya Kalizhanova, Ainur Kozbakova and Nazbek Katayev</i>	
Development and research of the control algorithm and software of solar controller for double-circuit solar collectors with thermosiphon circulation	322
<i>Yedilkhan Amirgaliyev, Murat Kunelbayev, Beibut Amirgaliyev, Talgat Sundetov, Didar Yedilkhan and Timur Merembayev</i>	

Comparative Study of Core Loss Models in Three-Phase Self-Excited Reluctance Generators	329
<i>Saleh Al-Senaidi, Abdulrahman Alolah and Majeed Alkanhal</i>	
SuperMC Model of the TRIGA MARK II Reactor and its Validation	334
<i>Rustam Khan, Muhammad Tariq Siddique, Nadeem Shaukat, Sikander Majeed Mirza, Thomas Stummer and Mario Villa</i>	
Performance comparison of (GaAS/GaAs) and (InGaP/GaAs) tunnel junction in multi-junction solar cells	338
<i>Dennai Benmoussa, Fillali Mostefa and Dida Tidjani</i>	
Electromagnetic Analysis of an Axial Flux Permanent Magnet Generator	342
<i>Erol Kurt, Halil Gor and Kayhan Celik</i>	
Effects of Implementing a Diffuser around the Wind Turbine	346
<i>Negin Maftouni and Hoda Parsa</i>	
Energy performance assessment of a DSF building integrated with PV overhangs	350
<i>Niloufar Ziasistani, Faryar Darvishi, Nastaran Ziasistani and Asadollah Javanshir</i>	
Energy performance assessment of PCM buildings considering multiple factors	354
<i>Faryar Darvishi, Elin Markarian, Niloufar Ziasistani, Nastaran Ziasistani and Asadollah Javanshir</i>	
Long Short-Term Memory Network and Support Vector Regression for Electrical Load Forecasting	359
<i>Maryam Imani</i>	
Photocatalysis and energy cost analysis of Vanadia Titania thin films synthesis	365
<i>Rokhsareh Akbarzadeh, Qusay-Payef Ibrahim and Tien-Chien Jen</i>	
Feasibility study of Mg Scrap Hydrolysis for hydrogen generation using HCl by energy cost analysis	368
<i>Qusay-Payef Ibrahim, Rokhsareh Akbarzadeh and Tien-Chien Jen</i>	
Simulation and Control of an Electric Vehicle by Using PSO and Specify Driving Route Topology	371
<i>Mohammed Ayad Alkhafaji and Yunus Uzun</i>	
Producing Bio-electricity and Bio-heat from Urban Sewage Sludge in Turkey Using a Two-Stage Process	377
<i>Aysegul Abusoglu, Amjad Anwari-Moghaddam and Josep Guerrero</i>	
An Innovization-based Model to Approximate Geometric Parameters of Solar Chimney Power Plant for Desired Efficiency and Output Power	381
<i>Azam Asilian Bidgoli and Shahryar Rahnamayan</i>	
Wake Modeling of Tidal Current Turbine Array	389
<i>Sakhi Jan, Saeed Badshah, Muhammad Amjad and Sajjad Ahmad</i>	
Solar Cell Enhancement with Organic Plasmonic Photovoltaics: Case Study of Lut Desert, Iran	394
<i>Alireza Jahangiri, Meysam Mohammadi-Amin and Komeyl Mohammadi-Amin</i>	

Simulation of Solar Cell Absorption Enhancement via Incorporation of Plasmonic Nanoparticles	400
<i>Alireza Jahangiri, Meysam Mohammadi-Amin and Mohsen Bustanchy</i>	
Semi-supervised Event based approach for Residential Non-Intrusive Load Monitoring	N/A
<i>Hajer Salem, Moamar Sayed-Mouchaweh and Moncef Tagina</i>	
Case study and energy analysis for power system management of confectionery factory in Jordan	410
<i>Qusay Ibrahim, Rokhsareh Akbarzadeh, Tien-Chien Jen and Daniel Madyira</i>	
Evaluation of aerated lagoons performance and suggestion to develop more sustainable energy consumption in a STP plant; a case study	414
<i>Rokhsareh Akbarzadeh, Qusay Ibrahim, Tien-Chien Jen and Daniel Madyira</i>	
Investigation of Irradiation Mechanisms while Bombarding Fusion Reactor Wall with Deuterium	417
<i>Yakup Hundur</i>	
An Analysis of High Power Inductor Vibration Behavior in Terms of Air Gaps.....	421
<i>Funda Battal, Selami Balci and Ibrahim Sefa</i>	
System Design for Early Fault Diagnosis of Machines using Vibration Features	427
<i>Muhammad Umar Khan, Muhammad Atif Imtiaz, Sumair Aziz, Zeeshan Kareem, Athar Waseem and Muhammad Ammar Akram</i>	
Eigen Frequency, Frequency Response, and Transient Response Analysis of MEMS T-Shape Cantilever Beam Piezoelectric Micro-Power Generator About 1 KHz.....	433
<i>Mohd H.S Alrashdan</i>	