

2024 9th International Conference on Technology and Energy Management (ICTEM 2024)

**Behshahr, Mazandaran, Iran
14-15 February 2024**



**IEEE Catalog Number: CFP24CU2-POD
ISBN: 979-8-3503-2980-3**

**Copyright © 2024 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:	CFP24CU2-POD
ISBN (Print-On-Demand):	979-8-3503-2980-3
ISBN (Online):	979-8-3503-2979-7

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 Content

Paper Code	Paper Title	Page
1003	Useful Application of Machine learning Methods in Smart Grids: A Mini Review	1-7
1005	Multi-objective stochastic optimization of a greenhouse energy system using an integrated demand-supply model	8-12
1006	Flywheel Energy Storage: Challenges in Microgrids	13-19
1009	Mathematical Constraints of Photovoltaic Modules with Double-Diode Model	20-26
1015	Optimizing energy of carbon dioxide absorption in distilled water using ultrasonic system through response surface methodology	27-31
1018	Designing a Novel Optimal Energy Management to Determine the Contribution and Effect of Primary Sources on the Structure and Components Size of Smart Microgrids and Smart Buildings	32-38
1020	Design and Implementation of Maximum Power Point Tracking (MPPT) of Photovoltaic Cells (PV) With High Step-up DC-DC converter	39-44
1023	Optimal Placement and Sizing of Distributed Generation and Capacitors with the aim of Reducing Power Losses and Line Density in the Radial Distribution Network	45-50
1024	Simultaneous Optimizing of Location and Capacity for Distributed Generator and Capacitor with the Aim of Reducing Power Losses and the Density in the Radial Distribution Network	51-55
1026	Two-dimensional bilayer phosphorenes: a tunable platform for nanoscale heat energy transfer	56-60
1028	An Interleaved Non-Isolated High Step-Up DC-DC Converter Using Coupled Inductors and Voltage Multiplier Cells	61-67
1038	A Low Cost High Power Triboelectric Nanogenerator Based on Activated Carbon	68-71
1044	Optimal Design of a stand alone microgrid including uncertainty of data	72-76
1045	Decoupled Double Synchronous Reference Frame Sequence Extraction Technique: A Compact Review on Applications in Microgrids	77-83
1046	Design and Analysis of Double Stator Induction Generator with DC auxiliary field for Wind Energy Generation	84-89
1047	Fault Ride Through Enhancement Methods in Wind Energy Systems: A Brief Review	90-95
1051	Optimizing and Simulating the Stand-Alone Hybrid Renewable Energy Systems for Bandar-e Anzali in Iran	96-103
1053	Analyze and Construction of a Photovoltaic (PV) Power Plant Connected to the Grid to Produce Maximum Power on the Roof of the Building	104-108
1055	Optimal Design of Hybrid Renewable Energy System (WT/Bio/FC) based on Mountaineering Team-Based Optimization	109-115
1056	Global MPPT Optimization for PV Modules in Partial Shading: Corona Virus Search Optimizer	116-121
1057	A novel Fuzzy type-2 PI repetitive control methodology for harmonic elimination in distributed generation sources	122-128
1058	StateEVMan: Advanced Predictive Ensemble Optimization of Electric Vehicle Charging Stations	129-134
1059	Advanced Predictive Modeling of Pollutant Gas Emissions in the Automotive Industry based on Machine Learning	135-140

1060	Comparative Analysis of Energy Efficiency Evaluation Methods for Buildings: ISO 13790 vs. EnergyPlus Simulation	141-145
1062	Very Short-Term Forecasting of Heating Energy Produced by Solar Parabolic Trough Collectors in a Residential Water Heater	146-150
1069	Enhancing Distribution System Resilience: A Comparative Study of Batteries and Hydrogen Energy Storage Systems	151-155
1070	Assessing the GHG mitigation pathways in the Iran energy supply system	156-160
1074	A New Multilevel Inverter with Limited Switching Devices and DC Sources	161-166
1079	Integrating Distributed Energy Resources into Smart Grid by SGED Model	167-173
1080	A Review of Renewable Energy Technologies from Economic and Energy Perspective	N/A
1081	A Novel Li-Ion Battery Charge Management System for Applying in Renewable Energies Based on Pulse Charge Method	179-184
1087	Performance of Bifacial Solar System for 1MW grid-connected solar power plant in Mashhad, Iran: Design, Simulation and Economic Analysis	185-190
1088	Sliding Mode-based Extremum Seeking Control for Maximum Power Point Tracking for Photovoltaic Systems Considering Insolation and Ambient Temperature Variations	191-197
1089	Payback Cycles: A New Concept to Decide for Energy Storage Expansion Planning	198-204
1090	Energy and exergy analysis of Wastewater Sludge Gasification: A Case Study in Kerman Province, Iran	205-209
1091	Steam consumption prediction in a tire factory using machine learning approaches	210-215
1092	A study on the solution of using nano-RTV-coated insulators for reducing energy loss in Electric power industry	216-220
1093	Evaluating the Non-participation Penalty in Renewable Energy Utilization to Supply a Portion of Electricity for large Industries in Iran	221-227
1097	On the Accuracy of Linear DistFlow Method: A Comparison Survey	228-234
1098	Maximizing Energy Performance in Hot and Humid Climates: Passive Cooling Techniques for Gulf Area Buildings	235-242
1099	A Comparative Analysis of High-Rise Building Shapes and Orientations on the Performance and Energy Generation of Building Integrated Photovoltaic Systems in Tehran	243-247
1100	The height of the potential barrier of Li-ion displacement in TiO ₂ nanolayer	N/A
1102	Optimal energy management of active buildings by participating in peer-to-peer energy markets	251-256
1103	A Practical Approach with Ensemble-Driven Rate of Penetration Prediction and Optimization	257-263
1104	Resiliency-oriented scheduling of a residential community with a shared electric vehicle parking lot	264-268
1106	Economic Analysis of Energy Efficiency Programs with Energy Storage Systems on the Optimal Smart Microgrid Energy Management	269-275
1107	Residential Electricity Demand Forecasting Employing a Highly Accurate BiLSTM Intelligent Model	276-281
1108	Applying Data Science to Assess Cyber Security of Renewable Energy and Reserve Markets to Ensure System Reliability	282-286
1111	Hydrogen Pinch Analysis with Recycled Hydrogen Approach by Energy Management of Refinery Processes in Optimal State	287-291
1114	Simulation of a nitric acid production unit in Aspen Hysys	N/A

1127	Energy and Environmental Study of HVAC Systems for a High-rise Building using Simulation by DesignBuilder and RetScreen	296-300
1132	Probabilistic Energy Routing Algorithm Enabling Reliability Assessment in Local Energy Internet	301-306
1133	A Single Electrode Triboelectric Nanogenerator for Harvesting Footsteps Energy on the Gym Floor	307-311
1134	Enhancing Transparency in the Peer-to-Peer Transactive Energy Market: Smart Contract Monitoring in Bilateral Negotiations with the Ethereum Platform	312-319
1139	Evaluating the Environmental Benefits of a Photovoltaic-Based Microgrid for Industrial Hydrogen Production in Hot and Dry Region of Iran	320-325
1140	Optimal Clustering of Distributed Power Resources, Considering Communication Time Delay and Smart Grid Constraints	326-330
1145	GlorEST: A Demand Power Forecasting Automated Machine Learning Tree-based Pipeline Optimization Predictive Precise Model	331-335
1147	Comprehensive Review of Energy Storage Systems for Smart Grids: Technologies and Applications	336-343
1148	Energy Management in Grid-Connected Microgrids by Using Harris Hawks Optimization	344-348
1150	Enhancing Efficiency in Bidirectional DC-DC Converters through PSO-Based Optimization	349-354
1151	Effect of Mahan Solar Farm as PV-STATCOM on Short Circuit Fault and Reactive Power Compensation Using Aquila Optimizer	355-360
1152	Insights and Research Trends of Dust and Cleaning in Solar Energy: A Bibliometric Review Study	361-366
1154	A Comparative Study of the Proposed ANN-based Machine Learning MPPT Method in a Large-Scale Grid-Connected PV System under Variable Climatic Conditions	367-373
1156	Energy consumption optimization & Improving performance in CPU of the implantable cardioverter defibrillator with using design and hardware implementation of CNN neural network on Zynq	374-379
1157	Economic Optimization of Outage Centers in Power Distribution Utilities	380-387
1158	Analyzing energy consumption, IAQ, and thermal comfort conditions under three different strategies of personalized ventilation	388-392
1159	Stratum ventilation, a novel approach for energy reduction and improving indoor environments	393-397
1160	An Economic Model for Optimal placement and Capacity Determination of DGs using Genetic Algorithm	398-404
1161	FPGA based designing Central processing unit of Implantable Cardiac Defibrillators with low energy consumption by using CNN deep neural network	405-410
1163	High Frequency Behavior Evaluation of Grounding System in Wind Farms	411-417
1166	Economic-Environmental Analysis of Smart Power System in the Presence of Dynamic Line Rating and Energy Storage System	418-423
1169	An Interleaved Non-Isolated High Step-Up DC-DC Converter: Integrated Built-in Transformer and Coupled Inductor	424-430
1173	Enhanced Internal Short Circuit Diagnosis of Lithium-Ion Batteries Using an Equivalent Circuit Model and Machine Learning algorithms	431-436
1174	Improving Transient Stability in Power Systems Through Integration of Large-Scale Photovoltaic Power Plants	437-442
1175	A three-winding coupled inductor-based three-port ultra-high step-up DC-DC converter for renewable energy applications	443-448

1177	Feature Selection in Phishing Attack Detection Using Bee Algorithm and Logistic Regression Method	449-452
1180	Wind Farm Power Prediction with Transformer Encoder	453-457
1181	Low-Loss Optical Decoder for Surface Plasmon Polariton Transmission	458-462
1185	Maintaining Safe Operating Temperatures for c-Si Solar Cells: Insights from COMSOL Multiphysics Simulation	463-466
1186	17-Level Asymmetric DC-Link Capacitor Based Inverter	467-471
1188	Employing Machine Learning Algorithms to Identify False Data Injection in Smart Grid	472-476
1190	An innovative PID controller optimization algorithm for two-area power system frequency control and monitoring	477-482
1191	Comparison of Long-term Energy Demand Forecasting in Developing and Developed Countries Using Machine Learning-based Algorithms	483-489
1192	Control Of Battery Pack Charging With Fuzzy Logic Controller And Interleaved Buck Converter In Electric Vehicles	490-494
1195	MPC Controller Design for Variable Speed Wind Turbines in the presence of Actuator Faults	495-499
1198	Thermodynamic Assessment and Optimization of a Solar-Thermal Natural Gas-Driven Polygeneration System: Energy, Exergy and Exergoeconomic Analysis	500-504
1199	Mutual Inductance Prediction of Coaxial Rectangular Planar Coils Using Artificial Neural Network Regression	505-508
1200	Presenting cascade pressure swing distillation for separation of minimum boiling azeotropic mixtures to reduce energy consumption	509-513
1205	Energy consumption minimization in hot and dry climates: analyzing the influence of passive design techniques in buildings in kashan	514-521
1206	A 1-Source 3- ϕ Boost Transformer-less Multilevel Inverter without Leakage Current	522-526
1208	Implementing Demand Response to reduce spinning Reserve Costs in the Electricity Markets	527-533
1209	A new Bi- Objective Stochastic Demand Model Considering Disruption Risk, Partial Back Orders and Lost Sales Using Random Constraints	534-539
1210	Enhancing Power System Stability through Solar Farm-Based Damping of Subsynchronous Oscillations	540-544
1211	100% Power Factor Correction Using DCM Control Technique with Software Feedback	545-551
1212	Using Long Short-Term Memory Networks as Virtual Wind Direction Sensors for Improved Wind Farm Turbines Orientation	552-556
1214	Conceptual Design of a Partial Hybrid Electric Engine for Small UAVs Propulsion System	557-562
1216	Optimal Energy Management in the Electric Vehicles Parking Lot Equipped with Renewable Energy Source	563-568
1218	A single switch ultra-high step-up DC-DC converter based on a coupled Inductor with two output ports for renewable energy applications	569-574
1224	Reduction of losses in active distribution networks by battery energy storage system	575-578
1230	Experimental investigation of the effects of diffuser's height on flow pattern and energy consumption of the impinging jet ventilation system	579-584
1231	Modeling of Light and Carbon Dioxide Concentration in Energetic Dark Greenhouse (EDG)	585-590

1232	Design, Construction and Analysis of a Hybrid Photobioreactor for Enhancing Microalgae Cultivation Using Computational Fluid Dynamics	N/A
1234	Building-Level Multi-Energy Load Forecasting: A Graph Representation Learning Convolution-Based Approach in Smart Meter-Enabled Environments	595-599
1235	Public Policies to Unlock Private Investment in Green Projects (The Case of Iran as a Resource Rich Country)	600-604
1237	Multi-Agent Reinforcement Learning for Providing Flexibility Services in Local Energy Communities	605-610
1238	Exploring Energy and Water saving potential in An Industrial Cooling plant: A Modeling Approach	611-616
1239	Novel Hybrid Fuzzy/Rule-based Energy Management for Grid connected Hybrid Energy Storage System	617-621
1241	Investigation of Hexagonal pin-fin in Jet Impingement Annular Heat Sink	N/A
1242	Smart Energy Management: Enhancing Resilience in Integrated Power Systems with Renewable Energy, Hydrogen Storage, and Risk-Averse Operations	626-632
1243	A selective tungsten emitter with a nearly flat configuration for thermophotovoltaic applications	633-635
1244	Investigation of Effect of Fossil Fuels Prices on CO2 Emission in Iran and China	636-648
1246	A high gain non-isolated DC-DC converter based on coupled-inductor with low voltage stress on switches for renewable energy applications	649-654
1247	Experimental investigation of the effect of flow pattern in underfloor air distribution system on occupants' thermal comfort and energy consumption management	655-658
1248	Optimizing the management of acid gas flaring in Iran	N/A
1249	A Novel Fuzzy/SMC based Energy Management Strategy for Hybrid Energy Storage System in an Isolated DC Microgrid	665-669
1254	Number of Winglet Effects on Natural Frequency of Wind Turbine Blade	670-673
1255	Numerical Analysis of Block Geometry on PEM Fuel-cell Efficiency	674-677
1256	Heat integration of three consecutive distillation columns with a hybrid method for the complete separation of quaternary mixtures	N/A
1260	Minimum Energy Price to Make Net Zero Energy Buildings Cost-Effective – A Study in Various Geographical Climates of Iran	683-687
1261	Heat Integration of Extractive Distillation Process for the Separation of Azeotropic Mixture of Isopropyl Alcohol and Water	N/A
1262	A Bi-Level Optimization Model for Citizen Energy Communities Towards Sustainable Development: A Stackelberg Game Theory Approach	694-698
1263	Developed H-Bridge Based 19-Level Boost Inverter	699-673
1264	Investigating the Role of Private Sector Participation in Distribution Network Expansion Planning through Distributed Energy Resources Installation	704
1266	A New Structure of Symmetric/Asymmetric Single Phase Multilevel Inverter to Reduce the Number of Switches and Total Blocking Voltage	705
1268	Comprehensive Review of Artificial Intelligence Applications in Smart Grid Operations	706
1271	Technology and Energy Management in Material Science	N/A
1273	State-of-the-Art Analysis of Blockchain-Based Industrial IoT (IIoT) for Smart Grids	707-718
1277	Design and simulation of a 30V DC power supply with ripple of less than 15mV for use in renewable energy sources	719-723
1278	Analyzing Fault Detection Methods for Wind Turbines in Smart Grids: A Comparative Review	N/A

1279	Improved performance of Isolated Fly-Back DC/DC Converter for Renewable Energy	731-736
1280	Comparative investigation of adsorption of agricultural pesticides on zeolite imidazole frameworks (ZIF8)	N/A
1281	A High-Gain Common-Ground Single-Switch DC-DC Converter with Low Voltage Stress on the Power Switch and Diodes	742-747
1283	A Hybrid CNN-LSTM Approach Utilizing SCADA Data Enhancing Wind Power Predictions: A Dataset Case Study of Turkey	748-752
1284	A Review on Stability-Oriented Challenges of Low-Inertia Wind-PV-Integrated Grids	753-758
1286	Integrating energy harvesting with active structural control systems: An overview	759-763
1287	A New Method for Heat Integration of Four Sequential Distillation Columns	N/A
1290	Preparation and Modification of Nanoparticles by Plasma Process	N/A