

2021 International Conference on Power, Energy and Innovations (ICPEI 2021)

**Nakhon Ratchasima, Thailand
20 – 22 October 2021**



**IEEE Catalog Number: CFP21U84-POD
ISBN: 978-1-6654-0217-0**

**Copyright © 2021 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:	CFP21U84-POD
ISBN (Print-On-Demand):	978-1-6654-0217-0
ISBN (Online):	978-1-6654-0216-3

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

The 2021 International of Power, Energy, and Innovations (ICPEI2021)

Nakhon Ratchasime, Thailand, October 20-21, 2021

Table of Content

Paper Number	Title	Page
PM001	Steady-State Torque Characteristics of Squirrel-Cage Induction Motors Under DC Injection Braking	1 - 4
PM002	Parameter Identification of BLDC Motor by using Adaptive Tabu Search	5 - 8
PM003	Reduction of Energy and Water Loss in the Water Supply Pump Systems by Using PLC with Variable Speed Drives	9 - 12
PW001	Design Power Management of Solar-Fuel Hybrid Sources with Energy Storage System for Quick Charge Station	13 - 16
PW002	Load-Flow Program for Active Radial Distribution Systems	17 - 20
PW003	Peer-to-Peer Electricity Energy trading using Monte Carlo Simulation	21 - 24
PW004	Optimum Generated Power with the Minimum Cost of a Radial network using Firefly and Genetic Algorithms	25 - 28
PW005	Optimal Distribution Level of Energy Management Considering Generation Uncertainties and Demand Response	29 - 32
PW006	Optimal Allocation and Sizing of Photovoltaic-Battery Energy Storage Systems in Distribution Network for Power Loss Minimization	33 - 36
PW007	Optimal Energy Storage System in Residential Micro-Grid for EV Charging Station Penetration	37 - 40
PW008	Power Curtailment Controller for Integrating The Grid-tied PV Inverter with The Solar Hybrid System in Islanding Operation	41 - 44
PW009	Solar Power Aggregation Framework for Virtual Power Plant Trading	45 - 48
PE001	The Fault-Tolerant Single-Switch DC-DC Converter with High Voltage Gain	49 - 52
PE002	Applying Inductor Current Time-Control to Resonant ZCS Boost Converter for Constant Switching Frequency Operation	53 - 56
PE003	Speed Control for a Permanent Magnet Synchronous Motor based on Fuzzy Controller	57 - 60
PE004	The Effect of Parameter Variations of System Stability for AC-DC Power System Feeding Controlled Buck Converter	61 - 64
PE005	Dynamic Voltage Support using PV Inverter to Mitigate Short-term Voltage Stability of Microgrid	65 - 68
PR001	Reliability Assessment of Railway Traction Substations Using Reliability Block Diagram	69 - 72
PR002	Harmonic Modelling and Simulation of an AC Electric Railway System	73 - 76
PR003	Energy Saving with On-board Supercapacitors in MRT Purple Line, Bangkok	77 - 80
PR004	Reducing Rail Potential and Stray Current with NRC-TPS in DC Electrified Railways	81 - 84

Paper Number	Title	Page
PR005	Energy Saving of a DC Railway System by Applying Inverting Substations	85 - 88
PR006	Energy Saving by Train-to-Train Energy-sharing in a DC Rapid Transit Railway System	89 - 92
EM001	Energy Efficiency of the Beverage Vending Machine Refrigeration System	93 - 98
EM002	Monitoring and Energy Control inside Home using Google sheets with Line notification	99 - 102
EM003	Experimental Study and Modeling of Automatic Home Energy Management System using AI	103 - 106
EM004	Home Energy Management Strategy for Electrical Energy Cost Minimization Considering ToU Tariffs	107 - 110
EM005	Energy, Economic, and Environmental (3E) Analysis of PV Water Pump: Case Study of the Tapioca Drip Irrigation System	111 - 114
EM006	Performance and Emissions of a HSDI Diesel Engine Fuelled with Blends of POEE10 and Ethyl Alcohols	N/A
EM007	Potential of Piezoelectric Floor Tile for Harvesting Energy from Human Footsteps	119 - 121
EM008	Performance and Emission Study of Palm Oil Ethyl Ester-Diesel Blends in a HSDI Diesel Engine	122 - 125
EM009	Home Energy Management System and Optimizing Energy in Microgrid Systems	126 - 129
EM010	Scenario Analysis of the Electric Vehicle Promotion Roadmap of Royal Thai Government	130 - 133
EM011	Impact of SOC Estimation on EVs Charging Demand Using a Stochastic Modelling Approach	134 - 137
ER001	Optimal Operation Scheduling of Household Appliances with Solar Photovoltaic	138 - 141
ER002	Analysis of Power Production Profile of Bifacial Solar Plant Optimizing with Load Demand	142 - 145
ER003	Monitoring System of Smart Cassava Farm with Solar Energy by Using Internet of Things	146 - 149
ER004	Comparison of the Cuk, Sepic, and Zeta Converters Circuit Efficiency for Improving the Maximum Power Point Tracking on Photovoltaic Systems	150 - 154
ER005	Feasibility Design of 180 kWp Photovoltaic Grid Connected System for a Future Project in a Thai Technological University	155 - 158
ER006	Comparative Study of Short-Term Photovoltaic Power Generation Forecasting Methods	159 - 162
IN001	An Extensive Demographic Inquiry of HDT Distinction for Localizing and Reestablishing Impulsive Irregularity Illustrations	163 - 166
IN002	Capacity Planning of Access Point Deployment for Indoor Positioning System	167 - 170
IN003	Communication Service Risk Evaluation Based on Risk Balancing Network for Selecting Service Route	171 - 175
IN004	Autopilot Flight Testing of Unmanned Aerial Vehicle	176 - 179
IN005	Test Access Control for an Embedded MAC Unit Based Core using IEEE Std 1687	180 - 183

Paper Number	Title	Page
IN006	Automatic Watering System Model	184 - 187
IN007	Small and Medium-sized Enterprise Cockle Size Sorting Machine using PLC System	188 - 191
IN008	Technology-assisted Learning on Embedded Systems with Multi-single Board	192 - 195
IN009	Partial Discharge Signal Detection in Generators using Wavelet Transforms.	196 - 199
IN010	Investigating the Output Response of the Relative Saturation (RS) Sensor for Measuring the Moisture in Transformer Oil	200 - 203
IN011	Fault Diagnosis of Oil-Immersed Power Transformer: A Case Study	204 - 207
IN012	Analysis of Emergency self-traction system for Mass Rapid Transit System	N/A