

# **2023 IEEE PES 15th Asia-Pacific Power and Energy Engineering Conference (APPEEC 2023)**

**Chiang Mai, Thailand  
6-9 December 2023**



**IEEE Catalog Number: CFP23PEE-POD  
ISBN: 979-8-3503-1810-4**

**Copyright © 2023 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:	CFP23PEE-POD
ISBN (Print-On-Demand):	979-8-3503-1810-4
ISBN (Online):	979-8-3503-1809-8

**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](mailto:curran@proceedings.com)  
Web: [www.proceedings.com](http://www.proceedings.com)

CURRAN ASSOCIATES INC.  
**proceedings**  
.com

## TABLE OF CONTENTS

Sales Forecasting for Life Insurance on Primary and Supplementary Policies Using Seasonal and Trend Methods.....	1
<i>Panrawe Boonsom, Chanin Wongyai, Duang-Arthit Srimoon</i>	
Multi-Relational Clustering of Spatiotemporal Wind Velocity in South Africa .....	7
<i>Theunis Oosthuizen, Chantelle Y Van Staden</i>	
Incorporating Battery Degradation Costs into EV Charging Scheduling: A Neural Network and MILP-Based Approach.....	13
<i>Can Berk Saner, Anupam Trivedi, Anurag Sharma, Dipti Srinivasan</i>	
Comparison of Different Tuning Approaches for Multi-Band Power System Stabilizers.....	19
<i>Durvesh Kalke, Gurunath Gurralla, Vibhuti Sahu</i>	
Tuning of IEEE-PSS3C Dual-Input Power System Stabilizer.....	25
<i>Durvesh Kalke, Gurunath Gurralla</i>	
Monitoring Primary Frequency Response Using High Resolution Data from Wide Area Measurement Systems .....	31
<i>Aman Gautam, Rahul Shukla, Deepak Kumar, Vivek Pandey, S. C. Saxena</i>	
Evaluating Regional Inertia-Based COI with Synchrophasor Measurement.....	33
<i>Thongchart Kerdphol, Naowarat Tephiruk, Tossaporn Surinkaew</i>	
Comparative Analysis of Power System Oscillation Using RMS Filter, Prony, and Modal Analysis.....	39
<i>Yoon-Seong Choi, Wol-Guk Park, Su-Hyeon Lee, Seongmin Pyo, Dongho Lee</i>	
Synchronization of Interregional Transmission System – Field Testing and PhasorPoint WAMS Application .....	40
<i>Tushar Patil, Neelima Tambey, Sergiu Cebotari, Nourdine Lahojauji, K. Hay</i>	
Analysis of Cause and Solutions for the Damaged 115 kV Cable Connector Used by the Metropolitan Electricity Authority .....	47
<i>Pornchai Sestasombut</i>	
Distribution System Reliability Enhancement Using High-Speed Vacuum Circuit Breaker.....	52
<i>Chanintorn Sangracha, Chanchai Pongsuwan</i>	
A Two-Terminal Fault Location Method Based on Particle Swarm Optimization BP Neural Network.....	57
<i>Xunhua Luo, Pengjun Jia, Jingyang Wu, Zhiming Ding</i>	
The New Design for Low Loss and High Reliability of MEA’s Overhead 69 kV and 115 kV Sub-Transmission Line in Urban Area.....	63
<i>Jintasit Rumkidkarn, Ratchakorn Panhorthong</i>	
Tiered Reliability Assessment of Electric Distribution Utilities Using DEA with Malmquist Index .....	67
<i>Thunwa Boonlert, Pornsuda Thampipattanakul, Komsan Hongesombut, Dulpichet Rerkpreedapong</i>	

Evaluating Reliability Improvement Activities on Power Distribution Systems in a Major Urban Center .....	71
<i>Soraphon Kigsirisin, Noppada Teera-Acharyakul, Parnjit Damrongkulkamjorn, Dulpichet Rerkpreedapong</i>	
Assessment of Economic Benefits of Battery Energy Storage System Supplied from Photovoltaic for Commercial Users Considering Historical Data .....	76
<i>Abhishek Joshi, Vikram Cherla, Pradeep Kumar Yemula</i>	
BESS Operation Scheme to Reduce Energy Cost and Demand Charge in an Industrial Microgrid in Thailand.....	82
<i>Jirawat Wongyai, Thavatchai Tayjasanant, Taisuke Masuta</i>	
Optimal Energy Storage System Sizing for Peak Shaving in a NU Dormitory Building .....	88
<i>Naseef Mohamed, Prapita Thanarak, Nipon Ketjoy, Unchittha Prasatsap</i>	
Comparative Study on Performance of SOFC-GT With/Without Anode Exhaust Gas Recirculation.....	94
<i>Suthin Pholboorn, Dang Saebea, Yaneeporn Patcharavorachot</i>	
Modelling and Process Simulation of Indirect Internal Reforming Solid Oxide Fuel Cell Fueled by Glycerol.....	99
<i>Yaneeporn Patcharavorachot, Punyawee Kongkapan, Tanawan Pinnarat, Dang Saebea</i>	
Inertial Characteristics of Gravity Energy Storage Systems.....	104
<i>Wenxuan Tong, Zhengang Lu, Minxiao Han, Haisen Zhao, Guizhi Xu, Guoliang Zhao, Julian David Hunt</i>	
Liquefaction of Waste from Wind Energy Sector Towards Sustainable Fuels.....	109
<i>Sebastian Werle, Szymon Sobek, Hamza Mumtaz, Marcin Sajdak, Roksana Muzyka</i>	
An Optimized Charging for EV Using Numerical Method in Consideration of TOU .....	113
<i>Suphidchaya Atthaporn, Chalie Charoenlarnnoppaput, Prapun Suksompong, Jasada Kudtongngam</i>	
Modelling and Prediction of Energy Efficient Building Climate Toward Digital Twin Integration.....	118
<i>Yasaman Balali, Andrew Busch, Steven O'Keefe</i>	
Improving the Efficiency of Power Distribution Systems with Distribution Transformers Amorphous Core Type.....	124
<i>Ekapat Kaewchinda, Monthol Thawornphan</i>	
Examining the Correlation Between Biofuel Production and Food Prices in Thailand: A Bivariate Wavelet Coherence Analysis Approach.....	128
<i>Natthawadee Khamphiranon, Sotarat Thammaboosadee</i>	
Design and Installation Lightning Protection System to Protect Hybrid Solar Rooftop System.....	134
<i>Narate Charlangsut, Nawin Rodrueang, Sakhon Woothipatanapan, Manat Boonthienthong, Papon Ngamprasert, Nattachote Rugthaicharoencheep</i>	
Load Aggregator Management System Implementation Supporting the Thailand Demand Response Pilot Project 2022-2023 .....	138
<i>Kanokpol Methapatara, Nattanont Chotiheerunyasakaya</i>	
Energy Savings Forecast for Solid-State Lighting in Residential and Commercial Buildings in Bangladesh .....	144
<i>Muhammad Ahad Rahman Miah, Runa Kabir</i>	

The Planning of Distribution System Efficiency Improvement by Selective Capacitor Size and Position Technique .....	150
<i>Sakhon Woothipatanapan, Narate Charlangsut, Poonsri Wannakarn, Nattachote Rugthaicharoencheep</i>	
Stochastic Model Predictive Control for Solar Homes with Battery Energy Storage.....	154
<i>Scott Watts, Iain Macgill</i>	
Optimal Placement and Sizing of Distribution Generator in Active Distribution System with Solar Farm Using Grey Wolf Optimization Technique .....	160
<i>Chaimongkol Pengtem, Saksit Deelum, Natin Janjamraj, Sillawat Romphochai, Pimnapat Bhumkittipich, Krischonme Bhumkittipich</i>	
Techno-Economic Analysis of Rooftop PVs in Low Voltage Distribution Systems for Rural Electrification: A Case Study in Cambodia .....	166
<i>Vannak Vai, Hideaki Ohgaki</i>	
Perception of Prospective Users on Autonomous Shuttle as a Smart Mobility Service: A Case of Chulalongkorn University, Thailand .....	171
<i>Sorawit Narupitii, Yodphol Phetcharavut, Ratchakorn Pakpisutkul</i>	
Domestic Hot Water Heat Pump: Modelling, Analysis and Flexibility Assessment.....	177
<i>Sindhu Kanya Nalini Ramakrishna, Torbjörn Thiringer</i>	
Smart Mobility for Enhanced Transit-Oriented Development: Traffic Microsimulation Approach .....	182
<i>Varameth Vichiensan, Vasinee Wasuntarasook, Masanobu Kii, Yoshitsugu Hayashi</i>	
An Integration of IoT and IoE Towards Sustainable Building Energy Management .....	188
<i>Muhammad Ahad Rahman Miah, Runa Kabir, Leshunus Sidq</i>	
Operation Scheduling for Multiple HVAC Systems Under Power Constraints.....	194
<i>Theint Theint Thu, Kenshiro Kato, Dafang Zhao, Hiroki Nishikawa, Ittetsu Taniguchi, Takao Onoye</i>	
First Step to Carbon Neutrality in Higher Education: A Case Study in a Private University .....	200
<i>Pattananit Petchchedchoo, Rachata Khumboon, Varis Limlawan, Nit Petcharak</i>	
A Theoretical Assessment Framework for Demand Response Literature .....	205
<i>Katya D. O. Soegiharto, David C. H. Wallom</i>	
Mitigation of High Penetration Level of Fast Charging Stations in the Distribution Power System Using Feeder Reconfiguration.....	211
<i>Paramet Nuamkoksung, Noppanut Chitgreeyan, Rungphet Kongnok, Yuttana Kongjeen, Krittidet Buayai, Kaan Kerdchuen</i>	
Fault Location, Isolation, and Service Restoration Using Current-Only Directional Approach with Simple Low-Cost Communication .....	215
<i>Pannita Rajakrom, Campbell Booth, Qiteng Hong, Asawin Rajakrom</i>	
Study on the Installation of Harmonic Filter Circuits for Industrial Plants Connected to Solar Energy Systems and Low Harmonic Currents.....	221
<i>Chongrag Boonseng, Poomipat Gitnumlapcharoen, Rapeepornpat Boonseng</i>	
Single Ended Fault Location Method for Lines Connected with Inverter Based Renewable Resources .....	227
<i>O. D. Naidu, Aarthi V, Kukkala Likhitha</i>	

Traveling Wave Based Selective Auto-Reclosing Protection Scheme for Two-Terminal Mixed Lines Using Single Ended Data.....	233
<i>O. D. Naidu</i>	
Installation of an Online Power Quality Monitoring System for the Industry and Applications.....	237
<i>C. Boonseng, P. Gitnumlapcharoen, R. Boonseng</i>	
Distance Protection for Lines Connected with Type III Wind Farms: Problems and Solution.....	243
<i>O. D. Naidu, Neethu George, Vedanta Pradhan</i>	
Zero Sequence Current Detection Method of High Impedance Faults Using Distortion Waveform in Distribution Networks .....	249
<i>Jiraphat Manmoh, Watcharin Srirattanawichaikul</i>	
Classification Methods for Recognition of Power Quality Disturbances in Distribution Networks Using Artificial Neural Network .....	254
<i>Wassanan Buasi, Watcharin Srirattanawichaikul</i>	
Criteria Setting of Overcurrent Relay Coordination of Substation in Bhutan Interconnected to the Infinite Indian Grid.....	259
<i>Cheten Tshering, Channarong Banmongkol</i>	
Stability Management and Design for DC Electric Power Network and Systems .....	264
<i>Masaaki Komatsu, Phaisarn Sudwilai</i>	
Cooperative Management Model for an Overlapping Distribution Network Area - Part I: Problem Formulation .....	270
<i>Pornthep Chiraprawattrakun, Nopbhorn Leeprechanon, Sumet Tangprasert</i>	
Introducing Demand-Side Renewable Portfolio Standard Regulation for the Building Sector: A Case of Thailand.....	276
<i>Sumet Tangprasert, Nopbhorn Leeprechanon, Pornthep Chiraprawattrakun</i>	
Design and Development of P2P Negawatt Trading DApp with Blockchain.....	282
<i>Maya P, P. Abdul Salam</i>	
Cooperative Management Model for an Overlapping Distribution Network Area - Part II: Pricing the Use of Distribution System .....	287
<i>Pornthep Chiraprawattrakun, Nopbhorn Leeprechanon, Sumet Tangprasert</i>	
Load Uncertainty-Aware Economic Dispatch .....	296
<i>Keerti Rawal, Aijaz Ahmad</i>	
The Design of Unbundling in the Distribution Power Sector to Implement the Policy of Third Party Access (TPA) in Thailand.....	302
<i>Woravich Rojthavol, Nopbhorn Leeprechanon</i>	
Renewable Energy Power's Investment and Production Strategy for Cost-Sharing Centralized Noncooperative Game Model of Power Sales with Power Grid's Risk Avoidance.....	307
<i>Danhu Li, Jiazhu Xu, Ke Duan, Yingting Ye</i>	
Analysis of Financial Gain and Loss of P2P Energy Trading Models in the Metropolitan Electricity Authority Area.....	313
<i>Piyapong Prachuab</i>	
Peer-To-Peer Electricity Trading: A Policy Approach for Rwanda .....	319
<i>Rahman Mabano, Jesse Thornburg</i>	

Analysis of Synchronizing Power-Based Synchrophasor for Real-Time Inertia Estimation.....	324
<i>Thongchart Kerdphol</i>	
Design Power System Stabilizer Based on Transient Energy Flow Theory .....	330
<i>Changhua Zhang, Zihao Xu, Wanqing Yang, Gang Wang, Qunying Liu, Shengyong Ye, Yunfeng Wu, Shuheng Chen</i>	
Generator Inertia Estimation in the Frequency Domain Using Ambient Data of the Rotor Speed and Electrical Power .....	336
<i>Jin Kwon Hwang, Janne Seppänen</i>	
Automatic Transfer System for the Energy Management in PEA .....	341
<i>Anurak Choeichum, Jaturapat Suasongsin</i>	
Analysis of Constant Frequency Quasi-Resonant Double ZVS Boost Converter Using State-Plane Diagram.....	347
<i>Qi Zhou, Somboon Sooksatra</i>	
Four-Quadrant Supply Using Buck-Boost Converter with Common Ground and Non-Isolation .....	353
<i>Somboon Sooksatra, Wanchai Subsingha</i>	
State-Plane Diagram Analysis of Series Resonant Converter Used for Wireless EV Battery Charging .....	359
<i>Somboon Sooksatra, Wanchai Subsingha</i>	
PWM Current Programmed Control Technique Via Non-Inverting Boost-Buck Converter Control for Unity Power Factor.....	364
<i>Somboon Sooksatra, Sarawut Janpong</i>	
Transmission Network Expansion with Significant Wind Power Integration Considering Locational Marginal Price .....	369
<i>Ba Djibeyrou, Tsuji Takao</i>	
Grid-Forming STATCOM with Energy Storage to Alleviate Temporary Overvoltage.....	375
<i>Ruiqi Zhang, Zhuhu Hua, Xuzhu Dong, Shang Lei</i>	
A GIS-Network Analysis in Planning Location for Lampang Smart Mobility Hubs .....	381
<i>Umpiga Shummadtayar</i>	
Systematic Literature Review: The Influential Factors of Pedestrian Streets Management; Case Studies of Secondary Provinces, Northern Thailand .....	386
<i>Phoowadech Wongsom, Tanut Waroonkun, Vitul Lieorungruang, Umpiga Shummadtayar</i>	
Driving Towards Sustainable Development: Advancing Stakeholder Engagement in Smart Mobility for Campus Towns in Thailand.....	393
<i>Pawinee Iamtrakul, Sararad Chayphong</i>	
A Centralised Fault Location, Isolation, and Service Restoration Approach for Rural Microgrid System Using Reclosers and Sectionalizers .....	399
<i>Piyadanai Pachanapan, Autthaporn Supannon</i>	
The Economic Analysis Consider Carbon Credit from Hybrid Solar Rooftop System .....	405
<i>Manat Boonthienthong, Natchapol Ruangsap, Narate Charlangsut, Nattachote Rugthaicharoencheep</i>	
Early Fault Diagnosis of Medium Voltage Covered Conductor Overhead Lines .....	409
<i>Lu Cheng, Jiahu Guo, Huizhi Luo</i>	

Evaluation of Impact on Voltage Regulation by Management of Electric Vehicle Charging in Japanese Actual Distribution Network Model.....	415
<i>Tatsuki Okuno, Akihisa Kaneko, Yasuhiro Hayashi, Ishimaru Masaaki, Minoru Doi</i>	
Diagnosis Method of Relay Protection Strap Status Based on Human Factor Identification.....	421
<i>Rang Li, Zhongqing Li, Huaqiang Li, Qili Gao, Xiao He, Hanfang Zhang, Chunliang Wu, Peng Guo</i>	
Voltage Regulation Using Adaptive Reactive Power Droop Control Based on Available Capacity of Electric Vehicle Fast Charging Stations.....	425
<i>Nichaphon Wannasuya, Paramet Wirasanti</i>	
Optimal Sizing and Adaptive Charging Strategy for the Battery Swapping Station .....	430
<i>Aqsa Siddiqua, Vikram Cherala, Pradeep Kumar Yemula</i>	
Analysis a Magnetic Field While Charging the Electric Vehicle Under Mobile Phone Operation by Using Finite Element Method.....	436
<i>Thanapait Phonyiam, Arnon Isaramongkolrak</i>	
Heuristic Methods for EV Charging Scheduling in Fast Charging Stations with Modular Architecture: A Comparative Analysis .....	440
<i>Can Berk Saner, Jaydeep Saha, Anurag Sharma, Dipti Srinivasan</i>	
The Conceptualization of a Modular Substation Strategic for the Impending Proliferation of Electric Vehicles .....	446
<i>Prachaya Nawajamtrakul, Kitisak Laipradidkorn</i>	
Multi-Objective Optimization Design of High Power Density Embedded V-Type Permanent Magnet Synchronous Motor .....	450
<i>Qitao Yu, Jian Gao, Chengxu Li, Shoudao Huang, Kun Liu</i>	
The Pilot Project of EV Charging Management Implemented in MEA's Distribution Power System.....	455
<i>Varawut Kornsiluk</i>	
Analysis of Rotor Acceleration Speed and Vibrations in a High-Speed Single-Drive Bearingless Motor.....	459
<i>Theeraphong Srichiangsa</i>	
Voltage Control of Single-Phase Self Excited Induction Generator Supplying Nonlinear Loads Using Static VAR Compensator .....	464
<i>Nuttapong Prapurt, Vijit Kinnares</i>	
Optimal Placement of EV Fast Charging Stations and Distributed PV/BESS in Power Distribution System Based on Minimized Power Loss .....	470
<i>Saksit Deem, Tossaporn Charoenchan, Pimnapat Bhumkittipich, Natin Janjamraj, Sillawat Romphochai, Krischonme Bhumkittipich, Sergej Baum, Nadarajah Mithulananthan</i>	
Machine Learning-Based OWC Diagnosis Using Real Measured Data from Wave Power Plants .....	476
<i>Fares M'Zoughi, Jon Lekube, Izaskun Garrido, Aitor J. Garrido</i>	
Mitigating Undesirable Oscillatory Behavior in Barge-Type Floating Offshore Wind Turbines Through Oscillating Water Columns .....	482
<i>Payam Aboutalebi, Dong Trong Nguyen, Aitor J. Garrido, Izaskun Garrido</i>	



Development of Distribution System Automation for Teaching and Research at ITC: Digital Tool and GUI in MATLAB and SCADA .....	488
<i>Samphors Eng, Vannak Vai, Sothea Oeun, Monychot Sary, Phanit So, Dara Eam, Sokleap Heang, Sievlong Suk, Chhith Chhlonh, Darong Sorn, Kimsrornn Khon, Oudaya Eth</i>	
Optimal Power Flow with Applications of Genetic Algorithm and PowerWorld Simulator .....	493
<i>Tanachot Wattanakitkarn, Ongorn Rattananathawon, Somporn Sirisumrannukul</i>	
A Novel Two-Terminal Asynchronous Fault Location Method Based on Exchange Traveling Wave Information in Fault Section.....	499
<i>Xunhua Luo, Jingyang Wu, Pengjun Jia, Zhiming Deng</i>	
Techno-Economic Feasibility Analysis of Floating Photovoltaic Installation: A Singapore Case Study.....	505
<i>Yingqi Liang, Can Berk Saner, Bingrong Wu, Yuanyuan Feng, Li Na Tam, Xun Min Herman Wong, Guinne Teresa Yu Lin Sng</i>	
Division-Relaxation-Correction Based Optimal Reactive Power Scheduling in Distribution Network with Multi-Types of Distributed Generators.....	511
<i>Shuheng Chen, Rui Zhou, Shiwei Zhang, Qunying Liu, Yang Han, Changhua Zhang</i>	
Hybrid PV Installation Scheme with Optimal Design to Enhance PV System Performance .....	517
<i>Sirawit Hariwon, Panida Thararak, Peerapol Jirapong</i>	
Soft-Switched Microinverter with Active Snubber for Photovoltaic Applications.....	523
<i>Damrong Amorndechaphon, Teerapol Rittisad, Jirabhorn Chaiwongsai, Chanrit Tarasantisuk</i>	
Selection of the Sustainable Lightning Protection Technology for Solar PV System .....	529
<i>Leshunus Sidq, Muhammad Ahad Rahman Miah, Runa Kabir</i>	
Optimizing Smart Inverter Performance for Reliable Voltage Recovery in Korean Power System.....	535
<i>Dong-Yeong Gwon, Yun-Hyuk Choi, Woong-Jae Jeon</i>	
Optimal Siting of Battery Energy Storage System with Multiple PVDG Penetration Levels Considering the Duck Curve Phenomenon.....	540
<i>Joanne Jayne M. Somera, Rodolfo A. Aguirre, Nathanael E. Silava, Erison R. Peñaflor</i>	
Simulation of an Integrated Electricity-Gas System with Changing Load Using Python .....	546
<i>Daewon Go, Jaepil Seo, Jeongsoo Kim, Haechul Choi, Dongho Lee</i>	
A Comprehensive Approach to Energy Management in Smart Cities Across Different Sectors .....	547
<i>Aisha Alshamsi, Abdelfattah Ali, Mostafa F. Shaaban</i>	
Cascaded H-Bridge Multilevel Inverter with Reactive-Power Compensation for Single-Phase Grid-Connected System .....	553
<i>Sakdawut Boontua, Nirudh Jirasuwankul, Prayad Kongsuk, Vjitt Kinnares</i>	
Optimal RE Hybrid with Electric Vehicle Charging Station in Thailand Distribution System Considering Bus Voltage and Line Capacity Limits.....	557
<i>Tanit Menaneatra, Naris Chattranont, Nipawat Phetriang, Chutimon Lertmanokul, Nantiporn Nateprapai, Arnon Teawnarong, Surachai Chaitusaney, Surapad Larbwisuthisaroj</i>	
Renewable Energy Sources Contribution to Short Circuit Current .....	562
<i>Muntathir Al Talaq, Mohammad Almuahini, Hamed Bin Qadhi</i>	

Impact of Higher Renewable Penetration in Small Islanded System – Case Study .....	567
<i>Neelima Tambey, Arun Unni, Sreejith P. M, Rushikesh Deshpande, Srinivasan N, Pritam Sunil, Nitish Kumar</i>	
Nam Theun 2 Hydropower Plant Energy Prediction Using Artificial Neural Network and Genetic Algorithm .....	573
<i>Vanhkham Kongpaseuth, Suriya Kaewarsa</i>	
Behind-The-Meter Solar Disaggregation: The Value of Information .....	579
<i>S. Mahdi Noori R. A, Masoume Mahmoodi, Ahmad Attarha, José Iria, Paul Scott, Dan Gordon</i>	
Appliance Anomaly Detection as NILM Extention.....	585
<i>Madhawa Herath, Thakshila Thilakanayake, Chitral Angammana, Migara Liyanage</i>	
An Image-Based Disaggregation Study of Time Series Energy Data Using Gramian Angular Field .....	591
<i>Nirasha Herath, Madhawa Herath, Thakshila Thilakanayake, Chitral Angammana, Migara Liyanage</i>	
Development of Unbalanced Power Flow Using Artificial Neural Network with PyTorch .....	597
<i>Sirawich Limprapassorn, Nattavit Piamvilai, Ongorn Rattananatthawon, Somporn Sirisumrannukul</i>	
Fuzzy Mixed Integer Linear Programming for Daily Unit Commitment with Pumped Storage Hydropower, EV Charging Demand, and Solar PV Supply .....	603
<i>Dino Ny, Chawalit Jeenanunta, Jun-Ichi Takada, Sapa Chanyachatchawan, Sukita Kaewpasuk, Boonyarit Intiyot, Aussadavut Dumrongsiri</i>	
Rule-Based Classification and Outlier Replacement for Daily Electricity Load Forecasting .....	609
<i>Ei Thu Thu Tun, Pyae Pyae Phy, Chawalit Jeenanunta</i>	
Nationwide Energy and Peak Demand Forecasting: A Case Study in Thailand.....	615
<i>Min Nyan Shwe, Pyae Pyae Phy, Chawalit Jeenanunta</i>	
Machine Learning-Based Solar Cell Anomaly Detection Using Discrete Wavelet Transform and Convolutional Neural Network .....	621
<i>Emmanuel Ede Ogar, Surachai Chaitusaney, Watit Benjapolakul</i>	
Fault Classification from Dissolved Gas Analysis Results Using Machine Learning .....	627
<i>Naris Chattrant, Tanit Menaneatra, Jutanon Kaewmanee</i>	
Solar Photovoltaic Rooftop Detection Using Satellite Imagery and Deep Learning.....	631
<i>Pornchai Chaweewat</i>	
Explainable Deep Learning Models for Smart Meter Data .....	636
<i>Pairote Thurakit, Vladimir Stankovic</i>	
Lightweight Hybrid Local PV Short Term Forecasting Using Both Physics and Data .....	641
<i>Benoit Delinchant, Vincent Imard, Yaiza Bermudez, Frederic Wurtz</i>	
Analyzing Dominant Oscillatory Modes in Power System Using Unidirectional and Bidirectional LSTM Techniques .....	647
<i>Rahul Satheesh, Parthkumar Patel, Akhil V M, Sunitha Rajan</i>	
A Comparative Study of Training Datasets for Learning-Based AC Optimal Power Flow in Distribution Systems .....	653
<i>Ronald R. Cabaoig, Michael Angelo A. Pedrasa</i>	

TSO-DSO Interaction: Privacy-Preserving Optimal Power Flow with Distributed Generators Using a Machine Learning-Based Approach .....	659
<i>Burak Dindar, Can Berk Saner, Hüseyin Kemal Çakmak, Veit Hagenmeyer</i>	
Forecasting Solar Photovoltaic Power Production with Hybrid Approach of Multilayer CNNs-GRU-BiLSTMs .....	665
<i>Ongorn Rattananathawon, Nattavit Piamvilai, Somporn Sirisumrannukul</i>	
Assessment of Grounding Grid of HV Substation in Terms of Reliability, Economy, and Safety .....	671
<i>Mahmood Al-Moallem, Mohammad Almuahini, Hamed Bin Qadhi</i>	
The Study of Partial Discharge Test on Service-Aged Cable Termination .....	677
<i>Trinai Laohapongpan, Theerayod Wiangtong, Sittipong Kerdmanee, Sakda Lacharochana, Siwakorn Jeenmuang, Norasage Pattanadech</i>	
A Geographic Information System to Estimate Aerator Power and Energy Use in Shrimp Farming.....	682
<i>Chaowanant Jamroen, Thanakorn Thawornpot, Pawita Bunme, Naowarat Tephiruk</i>	
Microstrip Antenna Design for On-Line Partial Discharge Measurement in Load Break Switches.....	687
<i>Phethai Nimsanong</i>	
Fuse Switch Disconnecter Applications in Metropolitan Electricity Authority Low-Voltage System .....	691
<i>Satrirut Jumpeerut, Udom Clodklang</i>	
Power Distribution System Improvement Considering Damage Cost Due to Voltage Sags .....	694
<i>Poonsri Wannakarn, Nitikorn Kesphrom, Supawud Nedphokaew, Nattachote Rugthaicharoencheep</i>	
Enhanced Electrochemical Properties of Bimetallic-Organic Frameworks (BMOF) as Electrodes for Electrochemical Capacitor Applications .....	699
<i>N. S. Zulkepli, I. S. Imaduddin, S. R. Majid</i>	
Effectiveness of Load and Photovoltaic Current Separation Function of Grid Control System in Determining SVR Control Parameters .....	705
<i>Koto Watanabe, Akihisa Kaneko, Yasuhiro Hayashi, Yasunori Iwamoto, Kazuhisa Hikoyama, Hideo Nomura, Tokuhiro Fukuda, Hitoshi Motojima</i>	
Performance of Low Voltage Coupled Grid Forming ESS and Grid Following PV Under Weak Grid Conditions .....	710
<i>Ruben Inzunza, Mohammad Bani Shamseh, Chieko Umeno</i>	
Experiences of VLF Tan Delta Test on MV Cables in MEA Underground Project Area .....	714
<i>Asawin Rajakrom, Preechapol Laochu</i>	
Analysis of Electric Field Distribution on Primary Windings of High-Voltage High-Frequency Transformers with Variables Characteristics .....	718
<i>Supawud Nedphokaew, Nattachote Rugthaicharoencheep, Poonsri Wannakarn, Sakhon Woothipatanapan</i>	

## Author Index