2021 31st Australasian Universities Power Engineering Conference (AUPEC 2021)

Perth, Australia 26 – 30 September 2021



IEEE Catalog Number: CFP2166D-POD ISBN: 978-1-6654-2374-8

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:
 CFP2166D-POD

 ISBN (Print-On-Demand):
 978-1-6654-2374-8

 ISBN (Online):
 978-1-6654-3451-5

ISSN: 2474-1493

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



2021 31st Australasian Universities Power Engineering Conference (AUPEC)

TABLE OF CONTENTS

Paper ID	Paper Title	Author Names	Page No.
2	Closed-loop Control Design for a New Multi-input Multi-output DC/DC Converter	Ran Li, Xinan Zhang, Herbert lu, Tat Kei Chau and Yulin Liu	1
3	A Novel Data-driven Excitation Control for the MPPT of Wound Rotor Synchronous Generator based Wind Turbine	Tianhao Qie, Tat Kei Chau, Xinan Zhang, Herbert Iu, Tyrone Fernando, Yang Yu and Yulin Liu	6
4	Development and Planning of a Hybrid Power System based on Advance Optimization Approach	Liaqat Ali, S. M. Muyeen and Arindam Ghosh	13
5	A Novel Discontinuous Mode Piezoelectric Energy Harvesting Circuit for Low-Voltage Applications	Mahesh Edla, Yee Yan Lim, Deguchi Mikio and Ricardo Vasquez Padilla	19
6	A Novel Adaptive Model Predictive Control Strategy of Solid Oxide Fuel Cell in Power Systems	Yulin Liu, Tat Kei Chau, Yingjie Hu, Xinan Zhang, Herbert Iu, Tyrone Fernando and Ran Li	24
7	A Family of Fault-tolerant Single-phase 15-level Inverters for UPS Applications	Tohid Rahimi, Ehsan Pashajavid, Mehdi Fallah, Josep Pou, Ali Arefi and Ka-Hong Loo	30
11	Digital Twin Real-time Hybrid Simulation Platform for Engineering Education in Renewable Energy	Xinan Zhang, Ran Li, Ujjal Manandhar and Yuxuan Wang	36
12	Online Security Assessment of Low- Inertia Power Systems: A Real-Time Frequency Stability Tool for the Australian South-West Interconnected System	Alireza Fereidouni, Julius Susanto, Pierluigi Mancarella, Teresa Smit, Nicky Hong and Dean Sharafi	42
13	Application of Battery State of Charge Swing Control for Overall Performance Improvement in Diesel-Solar Hybrid Off- Grid Power Systems	Shane Overington and Sumedha Rajakaruna	51
15	Evaluating of Frequency Response Time Characteristics of Large Scale Energy Storage Systems in High	Gunathilaka Athapaththu Mudiyanselage Tirantha Bandara, Sumedha Rajakaruna and Arindam Ghosh	60

	Renewable Energy Penetrated Power Systems		
17	System Strength Enhancement with Synchronous Condensers for Power Systems with High Penetration of Renewable Energy Generators	Nimisha Upadhayay, Mithulananthan Nadarajah and Arindam Ghosh	66
18	Customer-Side Voltage Regulation to Mitigate PV-induced Power Quality Problems in Radial Distribution Networks	Andrew Forbes, Md Moktadir Rahman, Ali Arefi, Oscar Alonso and Javid Maleki Delarestaghi	71
19	Marginal Cost of Reliability Improvement for Standalone Microgrids	Sakthivelnathan Nallainathan, Ali Arefi, Christopher Lund, Ali Mehrizi-Sani and David Stephens	77
20	Energy Management Strategy of Islanded Hybrid DC/AC Microgrid with Energy Storage System	Yuxuan Wang, Xinan Zhang, Herbert Iu, Tyrone Fernando and Manandhar Ujjal	83
21	A Multi-level Interleaved DC/DC Converter for Hybrid Energy Storage System in DC Microgrids	Hao Deng, Zifan Lin, Xinan Zhang, Herbert lu, Tyrone Fernando and Yulin Liu	89
22	A Novel Single-Input Multi-output DC/DC Converter With Constant Current Mode Operation	Zifan Lin, Hao Deng, Xinan Zhang, Herbert Iu, Tyrone Fernando, Chris Townsend and Yulin Liu	95
27	The Substation of the Future	Chirag Mistry and Chee-Pinp Teoh	100
28	Application of Constrained K-Means Algorithm for Phase Identification	Shane Overington, David Edwards, Pierce Trinkl and Andrew Buckley	114
29	IPM Motor Optimization for Electric Vehicles Considering Driving Cycles	Seyed Payam Emami, Emad Roshandel, Amin Mahmoudi and Solmaz Khaourzade	120
30	Comparative Study on Induction Machines: Three-Phase vs. Five-Phase Winding Configurations	Zhi Cao, Gabriel Andres Rojas Cardenas, Emad Roshandel, Amin Mahmoudi, Solmaz Kahourzade and Wen L. Soong	125
31	A Linear-based Model for Multi- Microgrid Energy Sharing- A Western Australia Case Study	Ali Azizivahed, Ehsan Razavi, Ali Arefi and Chris Lund	131
32	Event-Triggered Deadbeat Control for HESS with Bidirectional Multiport Tri-Level Converter	Jie Wang, Dingnan Xin, Weiwen Peng and Benfei Wang	137
34	Non-unit Protection Algorithm for MTDC Systems Based on Transient Variance of Current	Yan Li, Jiapeng Li, Runbin Cao, Shudan Wang, Faxi Peng, Yujun Li, Weihuang Huang and Yonghui Liu	142

35	An Adaptive Sliding Mode Excitation Controller Design for Synchronous Generators	Tushar Kanti Roy, Farjana Faria, Subarto Kumar Ghosh and Md. Abu Hanif Pramanik	148
36	Speed Control of a DC-DC Buck Converter Fed DC Motor Using an Adaptive Backstepping Sliding Mode Control Approach	Tushar Kanti Roy, Md. Abu Hanif Pramanik, Farjana Faria and Subarto Kumar Ghosh	154
37	Harmonic Issues in a Multi-drive Network with Resonances at the Grid Impedance Under Low and High Damping Cases	Arash Moradi, Firuz Zare and Dinesh Kumar	160
38	Issues on Autonomous AC Microgrid Operated at Constant Frequency	Daming Zhang	166
39	Non-Isolated Single-Switch Zeta Based High-Step up DC-DC Converter with Coupled Inductor	Armin Abadifard, Pedram Ghavidel, Seyed Hossein Hosseini and Masoud Farhadi	173
41	Load Frequency Control in Two Area Power System using GA, SA and PSO Algorithms: A Comparative Study	Ahmed Mohammedosman, Muntasir Magzoub and Awadh Ba Wazir	179
42	Assessing Reliability of Smart Grid Against Cyberattacks using Stability Index	Muhammad Rashed, Iqbal Gondal, Joarder Kamruzzaman and Syed Islam	187
43	Democratic Current Sharing Controller for Modular Multi-Parallel Rectifiers (MMR)	Ali Sunbul, Firuz Zare, Rahul Sharma and Arindam Ghosh	193
44	End-of-life Failure Probability Assessment Considering Electric Vehicle Integration	Jinping Zhao, Ali Arefi and Alberto Borghetti	199
45	Design Strategy for 2-phase Switched Capacitor Charge Pump	Wing-Kong Ng, Nesimi Ertugrul, Wing- Shan Tam and Chi-Wah Kok	205
46	Proton Exchange Membrane Fuel Cell in DC Microgrids with a New Adaptive Model Predictive Control	Yulin Liu, Yingjie Hu, Yuxuan Wang, Tat Kei Chau, Xinan Zhang, Herbert Iu, Tyrone Fernando and Tianhao Qie	211
47	Islanding Detection using Time Domain Information of Type-IV Wind Integrated System	Ruchita Nale, Monalisa Biswal, Ramesh C. Bansal and Raj M. Naidoo	217
48	Stateflow based Modeling of Multi Agent System for Smart Microgrid Energy Management	Sujil A, Rajesh Kumar, Ramesh Bansal and Raj Naidoo	223

50	A novel data-driven SOH prediction model for lithium-ion batteries	Ehsan Kheirkhah-Rad and Moein Moeini- Aghtaie	229
51	Probabilistic Voltage Stability Analysis Considering Variable Wind Generation and Different Control Modes	Mohammed Alzubaidi, Kazi N. Hasan, Lasantha Meegahapola and Mir Toufikur Rahman	235
52	Optimal Investment Decision for Cotton Farm Microgrid Design	Yunfeng Lin, Jiatong Wang, Jiangfeng Zhang and Li Li	241
53	Modelling of 4-Junction PV Cell Considering MPPT for Conversion Efficiency Enhancement	Divishalika Gungi, Narottam Das and Rajvikram Elavarasan	247
54	Power Quality Issue and Mitigation Technique at High PV Penetration in Electricity Grid	Dronika Sirigiri, Narottam Das and Ramesh C Bansal	253
55	A Novel Forward-Backward Zero Bus Power Flow Method for the Placement of Renewable DGs in Distribution Network	Soumyabrata Barik, Debapriya Das, Ramesh Bansal, Raj Naidoo and Narottam Das	259
56	Mathematical Analysis on Harmonics Mitigation Using a Phase-Shifted Transformer based Twelve-Pulse Variable Frequency Drive	Abdullah Mujahid, Akhtar Kalam, Seyed Morteza Alizadeh and Yuanyuan Fan	265
58	Provision of Synthetic Inertia by Alternate Arm Converters in VSC-HVDC Systems	Xinyuan Liu, Pingyang Sun, Felipe Arrano-Vargas and Georgios Konstantinou	271
59	Fuzzy Logic-Pitch Angle Controller for SCIG based Wind Turbine	Ahmed Salem and Azza Eldesouky	276
60	AC and DC Fault Analysis in Hybrid Multi-Converter DC Grids	Pingyang Sun, Harith Wickramasinghe and Georgios Konstantinou	282
61	Propulsion System of Electric Vehicles: Review	Emad Roshandel, Amin Mahmoudi, Solmaz Kahourzade, Armaghan Tahir and Nuwantha Fernando	287
62	A Review in a Single-Stage Inverter Design for a PV Micro-grid Integration in Sudanese National Grid	Ayat Y. Elshreef, Mohamed Hayati, Soha N.Babiker, Tasneem I.M. Abdelmagid, Mudar Ibrahim Malik and Ziad M. Ali	293
63	Design and Analysis Technologies of High Speed Permanent Magnet Machines	Lin Liu, Youguang Guo, Gang Lei and Jianguo Zhu	300
64	Optimal Sizing of PV-Battery Systems in Buildings Considering Carbon Pricing	José Iria and Qi Huang	306

	Optimal Placement of SVC using		
	Residue Technique and Coordination with PSS for Damping Inter-Area	Chirag Rohit, Kuldeep Yadav and Pranav	
65	Oscillations	Darji	312
	PV Cell Output Power Enhancement by		
66	Cooling and Reduction of Reflection Losses from Mirror	Gokul Basavaraj, Narottam Das, Biplob Ray and Firoz Alam	318
	A Comparative Analysis of Speed	Tray and The Zatam	
	Estimation Techniques of Induction		
	Motor Drive using Non-linear Kalman	Sofia Banu, Teena Johnson and Tukaram	
67	Filters	Moger	324
	Mathematical Modeling and Parameter	Hadi Dahiayan Alimana Amaday Hadam	
68	Estimation of a Coordinated Turbine- Boiler Controlled Steam Power Plant	Hadi Rabieyan, Alireza Arastou, Hesam Karrari and Mehdi Karrari	330
	An Efficient FPGA Based Scalar V/f	Umar Waleed, Muhammad Waseem,	
	Control of Three Phase Induction Motor	Hammad Shaukat, Ali Ijaz, Abdulaziz	
69	for Electric Vehicles	Almalaq and Mohamed A. Mohamed	336
		Rahmat Khezri, Amin Mahmoudi, Nesimi	
70	Battery Lifetime Modelling in Planning Studies of Microgrids: A Review	Ertugrul, Mostafa F. Shaaban and Ali Bidram	342
70	Studies of Microgras. A Review		342
	Case Studies of Event Detection for	Teena Johnson, Abhinandan Pathak, Shantanu Ajay Arya, Sagar Dipesh	
	Indian Power System using Signal	Dahanuwala, Prathamesh Gachhi and	
72	Processing Methods	Tukaram Moger	348
	AC and DC House Wiring Efficiency		
73	Estimations using Mathematical Modelling Approach	Junaid A. Qureshi, Tek Tjing Lie, Kosala Gunawardane and Nihal Kularatna	354
	Probabilistic Assessment of Static Load	Canavaradile and Mila Malaradia	
	Model Parameters in Renewable-rich	Mir Toufikur Rahman, Kazi N. Hasan,	
74	Power Systems	Peter Sokolowski and Hazlie Mokhlis	360
	High Frequency Transformer Based		
75	Dual Active Bridge Converters for DFIG	Tania Parveen, Junwei Lu and Jacob	366
/3	Wind Turbine Systems	Tierney	300
76	Short circuit performance of transformers in solar PV systems	Sreeram V, Rajkumar M, S Sudhakara Reddy, T Gurudev, Maroti	372
	A Model Predictive Control for Cotton	,	
77	Farm Microgrid Systems in Australia	Yunfeng Lin, Jiangfeng Zhang and Li Li	377
	Modelling and Control of Multi-phase	Kevin Sun, Hugh Torresan and Terry	
78	PMSM in ANSYS and PLECS	Summers	383

	Dispatch Strategy Based Optimized	Md. Fatin Ishraque, Md. Mortuza Ali,	
	Design of an Offgrid Hybrid Microgrid	Shezan Arefin, Md. Rabiul Islam, Hasan	
79	Using Renewable Sources	Masrur and Md Moktadir Rahman	389
80	A New Control Scheme for Three- Phase Non-Isolated Grid Feeding PV Inverter	Sumaya Jahan, Shuvra Prokash Biswas, Md Kamal Hosain, Md Rabiul Islam, Md Moktadir Rahman and Youguang Guo	395
81	Quality of Service and Energy Management of Electric Vehicles: A Review	Rajeshkumar Ramraj, Ehsan Pashajavid and Sanath Alahakoon	401
82	DQ Transformation Based Control of Single-Phase Grid-Tied Inverter	Muhammad Waqas, Toqeer Ahmed, Rajvikram Madurai Elavarasan, Asad Waqar, Kenneth Leong, Rishi Pugazhendhi, Narottam Das and Muhammad Waqas Jeelani	407
83	A Stability Assesment and Estimation of Equivalent Damping Gain for SSR Stability by Nyquist stability criterion in DFIG-based windfarms	Chirag Rohit, Pranav Darji and Hitesh Jariwala	413
84	Hybridization of Conventional Cars Using Retrofitted Wheel Hub Motors	Hayden Phelan and Sanath Alahakoon	419
85	Impact of demand side management on Peer-to-Peer energy trading in a DC microgrid	Udayanka G.K. Mulleriyawage and Weixiang Shen	426
86	Selective Harmonics Elimination in Multilevel Inverter Using Bio-Inspired Intelligent Algorithms	Rawal Shahbaz, Toqeer Ahmed, Rajvikram Madurai Elavarasan, Kannadasan Raju, Muhammad Waqas and Umashankar Subramaniam	432
87	Feasibility study of integrating photovoltaic generation power plant into a distribution network in Pakistan	Uzma Azhar, Arqam Ilyas, Weixiang Shen and Mehdi Korki	438
89	An Overview of Electric Vehicle Charging Data Acquisition and Grid Connection Standards for Power System Studies and EV-Grid Integration	Syed Shafin Ali, Rawdah Rawdah and Kazi N. Hasan	444
90	Operational Challenges and Enabling Technologies for Grid Integration of Electric Vehicles	Rawdah Rawdah, Syed Shafin Ali and Kazi N. Hasan	450
91	A Review on Cascaded Multilevel Inverter Control Strategies	Geethu Asokkumar Seena, Christopher Townsend, Tyrone Fernando, Herbert lu, Farzad Farajizadeh and Xinan Zhang	456

	An Enhanced Frequency-Fixed All-Pass	Samir Gautam, Yuezhu Lu, Dylan Lu,	
92	Filter PLL for Single-Phase Application	Weidong Xiao and Saad Hasan	462
	Neural State Feedback Control of Reserve Energy Utilization for Coal- Fired Power Plants to Enhance		
93	Frequency Performance	Xiaoming Li and Xinghuo Yu	468
94	New Method for Battery Sizing in Microgrids by Seeing Battery Autonomy as a Chance Constraint	Fareeha Anwar, Asad Waqar, Rajvikram Madurai Elavarasan, Md. Rabiul Islam, Md Moktadir Rahman and Muhammad Zahid	473
95	Harmonic current detection method of double frequency phase lock based on cascade SOGI	Zhaoyang Yan, Shida Wang and S. M. Muyeen	479
96	Numerical Investigation of AC Loss in HTS Bulks Subjected to Rotating Magnetic Fields	Wafa Ali Soomro, Youguang Guo, Hai Yan Lu, Jian Guo Zhu, Jian Xun Jin and Boyang Shen	485
98	Islanded and Grid connected operation of PV based microgrid with HESS	rdal Sehİrlİ and Ömer Usta	489
99	Comparative study of Unscented and Extended Kalman Filtering methods for State-of-Charge Estimation of Lithium-Ion Battery in EVs	Mansi Bhandarkar, Rutuja Kulkarni, Tanvi Kumbhar, Milind Patankar and Prachi Mukherji	495
100	A Planning Method of Technical Specifications Revision for Renewable Energy Generation Integration to Power Grids	Jun Wu, Hong Wang, Xinyi Lai, Yuan Yan, Yuzhong Zhou and Fushuan Wen	501
101	An Overview of Axial-Flux Induction Machine	Zhi Cao, Amin Mahmoudi, Solmaz Kahourzade and Wen L. Soong	506
102	Real-Time Simulation of a Naval Platform Power and Energy System	Jake Stringfellow, Wang Kong, Daniel Birt, Nathan Marks and Hugh Torresan	512
103	High-Dimensional State Estimation Using an Adaptive Ensemble Adjustment Kalman Filter for Lithium-Ion Batteries	Yang Li, Binyu Xiong, Jinrui Tang and San Shing Choi	518
104	Modelling and Operation of a Price- Signal Controlled Market-based Virtual Power Plant	Chathuranga D.W. Wanninayaka Mudiyanselage, Hareesh Ravuru, Gauri M. Sankhe and Kazi N. Hasan	524
105	An Overview of Electric Motors for Electric Vehicles	Zhi Cao, Amin Mahmoudi, Solmaz Kahourzade and Wen L. Soong	530

	Renewable energy ecosystems-Cyber	Raja Sekhar Ravi, Deepak Tripathy,	
106	Security Design for safe Distributed Energy Resources integration	Haoling Zhao, Alireza Jolfaei, Viduni Pathirana and Sattar Seifollahi	536
100		Fattiliana and Sattai Selioliani	330
	Numerical Performance of Different Formulations for Alternating Current		
107	Optimal Power Flow	Sayed Abdullah Sadat and Kibaek Kim	542
	Distributed Cooperative Control of DC	,	
	Microgrids, Current Regulation and	Saeed H. Hanzaei, Mehran Ektesabi,	
108	Voltage Tracking	Saman A. Gorji and Mehdi Korki	548
		Saeed H. Hanzaei, Mehran Ektesabi,	
		Saman A. Gorji, Mehdi Korki and Ronald	
109	Control of DC Microgrids: A Review	Leon	554
	Minimizing electricity costs using biogas		
110	generated from food waste	Derick Lima, Li Li and Jiangfeng Zhang	560
	Optimal Recloser Placement in Power	Sonal Dhole, Mushfik Fahim Mir, Kazi N.	
111	Networks Based on Reliability and Cost- Benefit Analysis	Hasan, Abid Farhan, Jalil Yaghoobi, Alex Veselov and David Dart	566
- '''	•	veselov aliu Daviu Dali	500
	Participation of Community-Scale Battery Energy Storage in Power	Hassan Alsharif, Mahdi Jalili and Kazi N	
112	System Frequency Regulation	Hasan	572
	A Fast and Reliable Blocked Bus Bar		
	Protection Scheme Leveraging on		
	Sampled Value and GOOSE Protection	Shantanu Kumar, Ahmed Abu Siada,	
113	based on IEC 61850 Architecture	Narottam Das and Syed Islam	578
		Syed Umaid Ali, Asad Waqar, Rajvikram	
	Model Predictive Control for three phase rectifier with grid connected and	Madurai Elavarasan, Rishi Pugazhendhi, Md Moktadir Rahman, Md. Rabiul Islam	
114	T	and Muhammad Aamir	583
	A New PWM Scheme to Improve the		
	Input Power Quality of 18-Pulse	Sharmin Shila, Shuvra Prokash Biswas,	
	Rectifier Fed 3-level NPC Inverter	Md. Rabiul Islam, Md Moktadir Rahman,	
115	Based Induction Motor Drive	Gm Shafiullah and Oscar Alonso Sadaba	590
	A Medium Voltage CHB Inverter with a	0	
	Modified THPWM for Step-Up- Transformer-Less and Line-Filter-Less	Shuvra Prokash Biswas, Md. Rabiul Islam, Md. Shamim Anower, Md Moktadir	
116	Grid Integration	Rahman and Ali Arefi	596
		Shashotto Sworov Haque, Shuvra	
	A Single-Phase Single Switch High	Prokash Biswas, Kaniz Fatima Nipa, Md.	
447	Performance SEPIC AC-DC Power	Rabiul Islam, Md Moktadir Rahman and	000
117	Converter	Ali Arefi	602

Generation Using Artificial Neural Networks Analysis of Wave Energy Converters and Impacts of Mechanical Energy Storage on Power Characteristic and System Efficiency Micro Controller Based Digital Control System Demonstration Platform An Effective Approach for Locational Marginal Price Calculation at Distribution Level A Robust Bidding Strategy for VPPs Including Gamified Customer Engagement Benefit Based Transmission Expansion Planning for ASEAN Power Grid Inertia Response: A Review for Australian Power System Floating Solar PV and Hydropower in Australia: Feasibility, Future Investigations and Challenges Virtual Inertia a must for mitigation of frequency instability in Microgrids: A COMPREHENSIVE REVIEW Control of Total Ashon Ashon Ashon Normal Planning Reactive Power Dispatch problem: An application of Modified Ant Lion Optimal Renergy Management With Distributed Generation and Energy Michael Negrevitsky, A Glazunova, E Aksaeva and E Semshikov Aksaeva and E Semshikov Aksaeva and E Semshikov Aksaeva and E Semshikov Aksaeva and E Semshikov Aksaeva and E Semshikov Aksaeva and E Semshikov Aksaeva and E Semshikov Aksaeva and E Semshikov Aksaeva and E Semshikov Aksaeva and E Semshikov Aksaeva and E Semshikov Aksaeva and E Semshikov Aksaeva and E Semshikov Aksaeva and E Semshikov Aksaeva and E Semshikov Aksaeva and E Semshikov Aksaeva and E Semshikov Aksaeva and E Semshikov Asaeva and E Semshikov Diag Gao, Nesimi Ertugrul and Boyin Diag Gao		Determining the Flexibility of Power Systems with High Share of Wind		
Analysis of Wave Energy Converters and Impacts of Mechanical Energy Storage on Power Characteristic and System Efficiency Micro Controller Based Digital Control System Demonstration Platform An Effective Approach for Locational Marginal Price Calculation at Distribution Level A Robust Bidding Strategy for VPPs Including Gamified Customer Engagement Benefit Based Transmission Expansion Planning for ASEAN Power Grid Inertia Shortfall and the Capability of Inverter-based Generation to Provide Incettail Response: A Review for Australia: Feasibility, Future Investigations and Challenges Virtual Inertia a must for mitigation of frequency instability in Microgrids: A COMPREHENSIVE REVIEW Solution of an Optimal Reactive Power Dispatch problem: An application of Modified Ant Lion Optimizer Optimal Home Energy Management With Distributed Generation and Energy Vinglia Fang, Binyu Xiong, Kun Qin, Yang		•	Michael Negnevitsky, A Glazunova, E	
and Impacts of Mechanical Energy Storage on Power Characteristic and System Efficiency Micro Controller Based Digital Control System Demonstration Platform An Effective Approach for Locational Marginal Price Calculation at 121 Distribution Level A Robust Bidding Strategy for VPPs Including Gamified Customer Engagement Benefit Based Transmission Expansion Planning for ASEAN Power Grid Inertial Shortfall and the Capability of Inverter-based Generation to Provide Inertial Response: A Review for Australia: Feasibility, Future Siciang Solar PV and Hydropower in Australia: Feasibility, Future Solating Solar PV and Hydropower in Australia: Feasibility in Microgrids: A COMPREHENSIVE REVIEW Solution of an Optimal Reactive Power Dispatch problem: An application of Modified Ant Lion Optimizer Nothing Solar PV and Agangement With Distributed Generation and Energy Vingjia Fang, Binyu Xiong, Kun Qin, Yang Qiang Gao, Nesimi Ertugrul and Boyin Ding 613 Qiang Gao, Nesimi Ertugrul and Boyin Ding 613 614 615 615 616 617 618 619 619 619 619 619 619 619	118	Networks	Aksaeva and E Semshikov	607
Storage on Power Characteristic and System Efficiency Ding 613 Micro Controller Based Digital Control System Demonstration Platform Dean Sorensen and Sanath Alahakoon 618 An Effective Approach for Locational Marginal Price Calculation at Distribution Level Jiangfeng Zhang 626 A Robust Bidding Strategy for VPPs Including Gamified Customer Engagement Arindam Ghosh 632 Benefit Based Transmission Expansion Planning for ASEAN Power Grid Inverter-based Generation to Provide Inertial Response: A Review for Australian Power System Thanh Tung To and Mohammed Haque 644 Floating Solar PV and Hydropower in Australia: Feasibility, Future 125 Investigations and Challenges Seyedfoad Taghizadeh 2650 Virtual Inertia a must for mitigation of frequency instability in Microgrids: A COMPREHENSIVE REVIEW And Solution of an Optimal Reactive Power Dispatch problem: An application of Modified Ant Lion Optimizer Rao and R Ashok Bakkiyaraj 667 Optimal Home Energy Management With Distributed Generation and Energy Vingijia Fang, Binyu Xiong, Kun Qin, Yang 626 Ali Azizivahed, Ali Arefi, Li Li and Jiangfeng Zhang 626 Bean Sorensen and Sanath Alahakoon 618 Ali Azizivahed, Ali Arefi, Li Li and Jiangfeng Zhang 626 Behnaz Behi, Ali Arefi, Ali Arefi, Ali Arefi, Ali Arefi, Ali Arefi, Phillip Jennings, Ali Arafi, Ashaha Mahilip Jennings, Ali Arefi, Ali Arefi, Aram And Mohammed Haque 642 Floating Gamified Customer 126 Ali Azien Ali Arefi, Ashkan Najmizadeh and Seyedfoad Taghizadeh 650 Solution of an Optimal Reactive Power Dispatch problem: An application of Rao and R Ashok Bakkiyaraj 661				
Micro Controller Based Digital Control System Demonstration Platform An Effective Approach for Locational Marginal Price Calculation at Distribution Level A Robust Bidding Strategy for VPPs Including Gamiffied Customer Engagement Benefit Based Transmission Expansion Planning for ASEAN Power Grid Inertia Shortfall and the Capability of Inverter-based Generation to Provide Inertial Response: A Review for Australia: Feasibility, Future Investigations and Challenges Virtual Inertia a must for mitigation of frequency instability in Microgrids: A COMPREHENSIVE REVIEW Solution of an Optimal Reactive Power Dispatch problem: An application of Micro Controller Based Digital Control Dean Sorensen and Sanath Alahakoon 619 Ali Azizivahed, Ali Arefi, Li Li and Jiangfeng Zhang Ali Azizivahed, Ali Arefi, Philip Jennings, Almantas Pivrikas, Arian Gorjy and Arindam Ghosh 626 Tofael Ahmed, Saad Mekhilef and Rakibuzzaman Shah 637 Tofael Ahmed, Saad Mekhilef and Rakibuzzaman Shah 638 Tofael Ahmed, Saad Mekhilef and Rakibuzzaman Shah 639 Tofael Ahmed, Saad Mekhilef and Rakibuzzaman Shah 640 Thanh Tung To and Mohammed Haque 641 Floating Solar PV and Hydropower in Australia: Feasibility, Future Sofia Mahmood, Sara Deilami and Seyedfoad Taghizadeh 641 Thanh Tung To and Mohammed Haque 642 Floating Solar PV and Hydropower in Australia: Feasibility in Microgrids: A COMPREHENSIVE REVIEW Solution of an Optimal Reactive Power Dispatch problem: An application of Modified Ant Lion Optimizer Grid frequency support from inverter Connected generation Optimal Home Energy Management With Distributed Generation and Energy Vingjia Fang, Binyu Xiong, Kun Qin, Yang		,	Oissa a Ossa Nasiasi Estamal and Basin	
Micro Controller Based Digital Control System Demonstration Platform An Effective Approach for Locational Marginal Price Calculation at Distribution Level A Robust Bidding Strategy for VPPs Including Gamified Customer Engagement Benefit Based Transmission Expansion Planning for ASEAN Power Grid Inertia Shortfall and the Capability of Inverter-based Generation to Provide Inertial Response: A Review for Australia: Feasibility, Future Itolating Solar PV and Hydropower in Australia: Feasibility, Future Itolating Solar PV and Hydropower in Australia: Feasibility, Future Solution of an Optimal Reactive Power Dispatch problem: An application of Modified Ant Lion Optimizer Optimal Home Energy Management With Distributed Generation and Energy Ali Azizivahed, Ali Arefi, Li Li and Jiangfeng Zhang Behnaz Behi, Ali Arefi, Philip Jennings, Ali Azizivahed, Ali Arefi, Li Li and Jiangfeng Zhang Behnaz Behi, Ali Arefi, Philip Jennings, Almantas Pivrikas, Arian Gorjy and Arindam Ghosh Tofael Ahmed, Saad Mekhilef and Rakibuzzaman Shah 636 Tofael Ahmed, Saad Mekhilef and Rakibuzzaman Shah 637 Tofael Ahmed, Saad Mekhilef and Rakibuzzaman Shah 638 Tofael Ahmed, Saad Mekhilef and Rakibuzzaman Shah 639 Tofael Ahmed, Saad Mekhilef and Rakibuzzaman Shah 639 Tofael Ahmed, Saad Mekhilef and Rakibuzzaman Shah 630 Tofael Ahmed, Saad Mekhilef and Rakibuzzaman Shah 630 Tofael Ahmed, Saad Mekhilef and Rakibuzzaman Shah 631 Tofael Ahmed, Saad Mekhilef and Rakibuzzaman Shah 632 Tofael Ahmed, Saad Mekhilef and Rakibuzzaman Shah 638 Tofael Ahmed, Saad Mekhilef and Rakibuzzaman Shah 639 Tofael Ahmed, Saad Mekhilef and Rakibuzaman Shah	119			613
An Effective Approach for Locational Marginal Price Calculation at Distribution Level A Robust Bidding Strategy for VPPs Including Gamified Customer Engagement Benefit Based Transmission Expansion Planning for ASEAN Power Grid Inertia Shortfall and the Capability of Inverter-based Generation to Provide Inertial Response: A Review for Australia: Feasibility, Future Investigations and Challenges Virtual Inertia a must for mitigation of frequency instability in Microgrids: A COMPREHENSIVE REVIEW Solution of an Optimal Reactive Power Dispatch problem: An application of Modified Ant Lion Optimizer Australia Home Energy Management With Distributed Generation and Energy Dean Sorensen and Sanath Alahakoon Ali Azizivahed, Ali Arefi, Li Li and Jiangfeng Zhang Ali Azizivahed, Ali Arefi, Li Li and Jiangfeng Zhang Ali Azizivahed, Ali Arefi, Li Li and Jiangfeng Zhang Ali Azizivahed, Ali Arefi, Li Li and Jiangfeng Zhang Ali Azizivahed, Ali Arefi, Li Li and Jiangfeng Zhang Ali Azizivahed, Ali Arefi, Li Li and Jiangfeng Zhang Ali Azizivahed, Ali Arefi, Li Li and Jiangfeng Zhang Ali Azizivahed, Ali Arefi, Li Li and Jiangfeng Zhang Behnaz Behi, Ali Arefi, Philip Jennings, Almantas Pivrikas, Arian Gorjy and Arindam Ghosh 632 Tofael Ahmed, Saad Mekhilef and Rakibuzzaman Shah 638 Tofael Ahmed, Saad Mekhilef and Rakibuzzaman Shah 639 Sola Mahmood, Sara Deilami and Seyedfoad Taghizadeh 640 Floating Solar PV and Hydropower in Australia: Feasibility, Future Sofia Mahmood, Sara Deilami and Seyedfoad Taghizadeh 650 Floating Solar PV and Hydropower in Australia: Feasibility of Inverter Sofia Mahmood, Sara Deilami and Seyedfoad Taghizadeh 650 Sola Mahmood, Sara Deilami and Seyedfoad Taghizadeh 650 Sofia Mahmood, Sara Deila		•	9	
Marginal Price Calculation at Distribution Level Jiangfeng Zhang 626 A Robust Bidding Strategy for VPPs Including Gamified Customer Engagement Arindam Ghosh 632 Benefit Based Transmission Expansion Planning for ASEAN Power Grid Tofael Ahmed, Saad Mekhillef and Rakibuzzaman Shah 636 Inertia Shortfall and the Capability of Inverter-based Generation to Provide Inertial Response: A Review for Australia: Feasibility, Future Investigations and Challenges Virtual Inertia a must for mitigation of frequency instability in Microgrids: A COMPREHENSIVE REVIEW Solution of an Optimal Reactive Power Dispatch problem: An application of Modified Ant Lion Optimizer Night and Energy Management With Distributed Generation and Energy Yingjia Fang, Binyu Xiong, Kun Qin, Yang 626 A Robust Bidding Strategy for VPPs Behnarg Change (Ali Arefi, Ali Arefi, Amirmehdi Yazdani, Ashkan Najmizadeh and Shervin Fani 655	120		Dean Sorensen and Sanath Alahakoon	619
A Robust Bidding Strategy for VPPs Including Gamified Customer Arindam Ghosh A Final Benefit Based Transmission Expansion Planning for ASEAN Power Grid Rakibuzzaman Shah 638 Inertia Shortfall and the Capability of Inverter-based Generation to Provide Inertial Response: A Review for Australia: Feasibility, Future Investigations and Challenges Virtual Inertia a must for mitigation of frequency instability in Microgrids: A COMPREHENSIVE REVIEW Solution of an Optimal Reactive Power Dispatch problem: An application of Modified Ant Lion Optimizer Solution Modified Ant Lion Optimizer Solution Modified Generation and Energy Vingjia Fang, Binyu Xiong, Kun Qin, Yang 122 (Yingjia Fang, Binyu Xiong, Kun Qin, Yang)				
A Robust Bidding Strategy for VPPs Including Gamified Customer Engagement Benefit Based Transmission Expansion 123 Planning for ASEAN Power Grid Inertia Shortfall and the Capability of Inverter-based Generation to Provide Inertial Response: A Review for 124 Australian Power System Floating Solar PV and Hydropower in Australia: Feasibility, Future 125 Investigations and Challenges Virtual Inertia a must for mitigation of frequency instability in Microgrids: A COMPREHENSIVE REVIEW Solution of an Optimal Reactive Power Dispatch problem: An application of Modified Ant Lion Optimizer Arindam Ghosh Tofael Ahmed, Saad Mekhilef and Rakibuzzaman Shah 638 Thanh Tung To and Mohammed Haque 644 Sofia Mahmood, Sara Deilami and Seyedfoad Taghizadeh 650 Hormoz Mehrkhodavandi, Ali Arefi, Amirmehdi Yazdani, Ashkan Najmizadeh and Shervin Fani 655 S N V S K Chaitanya, B Venkateswara Rao and R Ashok Bakkiyaraj 661 Grid frequency support from inverter connected generation Optimal Home Energy Management With Distributed Generation and Energy Vingjia Fang, Binyu Xiong, Kun Qin, Yang	404	•		000
Including Gamified Customer Engagement Almantas Pivrikas, Arian Gorjy and Arindam Ghosh Benefit Based Transmission Expansion Planning for ASEAN Power Grid Inertia Shortfall and the Capability of Inverter-based Generation to Provide Inertial Response: A Review for Australian Power System Thanh Tung To and Mohammed Haque Floating Solar PV and Hydropower in Australia: Feasibility, Future Investigations and Challenges Virtual Inertia a must for mitigation of frequency instability in Microgrids: A COMPREHENSIVE REVIEW Solution of an Optimal Reactive Power Dispatch problem: An application of Modified Ant Lion Optimizer Grid frequency support from inverter connected generation Almantas Pivrikas, Arian Gorjy and Arindam Ghosh Tofael Ahmed, Saad Mekhilef and Rakibuzzaman Shah 638 Tofael Ahmed, Saad Mekhilef and Rakibuzzanan Shah 638 Tofael Ahmed, Saad Mekhilef and Rakibuzzanan Shah 638 Tofael Ahmed, Saad Mekhilef and Rakibuzzana Shah 638 Tofael Ahmed, Saad Mekhilef Rakibuzzanan Shah 638	121	Distribution Level	Jiangteng Zhang	626
122 Engagement Arindam Ghosh 632 Benefit Based Transmission Expansion Planning for ASEAN Power Grid Rakibuzzaman Shah 638 Inertia Shortfall and the Capability of Inverter-based Generation to Provide Inertial Response: A Review for Australian Power System Thanh Tung To and Mohammed Haque 644 Floating Solar PV and Hydropower in Australia: Feasibility, Future Investigations and Challenges Seyedfoad Taghizadeh 650 Virtual Inertia a must for mitigation of frequency instability in Microgrids: A COMPREHENSIVE REVIEW And Shervin Fani 658 Solution of an Optimal Reactive Power Dispatch problem: An application of Modified Ant Lion Optimizer Rao and R Ashok Bakkiyaraj 661 Grid frequency support from inverter connected generation Brown 667 Optimal Home Energy Management With Distributed Generation and Energy Yingjia Fang, Binyu Xiong, Kun Qin, Yang		· · · · · · · · · · · · · · · · · · ·		
Benefit Based Transmission Expansion Planning for ASEAN Power Grid Inertia Shortfall and the Capability of Inverter-based Generation to Provide Inertial Response: A Review for Australian Power System Thanh Tung To and Mohammed Haque Floating Solar PV and Hydropower in Australia: Feasibility, Future Investigations and Challenges Virtual Inertia a must for mitigation of frequency instability in Microgrids: A COMPREHENSIVE REVIEW Solution of an Optimal Reactive Power Dispatch problem: An application of Modified Ant Lion Optimizer Grid frequency support from inverter connected generation Optimal Home Energy Management With Distributed Generation and Energy Tofael Ahmed, Saad Mekhilef and Rakibuzzaman Shah 638 Tofael Ahmed, Saad Mekhilef and Rakibuzzaman Shah 638 Folation Capability of Inverter-Akibuzzaman Shah 638 Tofael Ahmed, Saad Mekhilef and Rakibuzzaman Shah 638 Folation Capability of Inverter-Bakibuzzaman Shah 644 Floating To and Mohammed Haque 644 Solia Mahmood, Sara Deilami and Seyedfoad Taghizadeh Floating To and Mohammed Haque 645 Solia Mahmood, Sara Deilami and Seyedfoad Taghizadeh Seyedfoad Taghi	122	_		632
Planning for ASEAN Power Grid Inertia Shortfall and the Capability of Inverter-based Generation to Provide Inertial Response: A Review for 124 Australian Power System Floating Solar PV and Hydropower in Australia: Feasibility, Future Investigations and Challenges Virtual Inertia a must for mitigation of frequency instability in Microgrids: A COMPREHENSIVE REVIEW Solution of an Optimal Reactive Power Dispatch problem: An application of Modified Ant Lion Optimizer Rakibuzzaman Shah 636 Rakibuzzaman Shah 636 Thanh Tung To and Mohammed Haque Sofia Mahmood, Sara Deilami and Seyedfoad Taghizadeh Hormoz Mehrkhodavandi, Ali Arefi, Amirmehdi Yazdani, Ashkan Najmizadeh and Shervin Fani S N V S K Chaitanya, B Venkateswara Rao and R Ashok Bakkiyaraj Grid frequency support from inverter connected generation Optimal Home Energy Management With Distributed Generation and Energy Yingjia Fang, Binyu Xiong, Kun Qin, Yang	122		-	002
Inertia Shortfall and the Capability of Inverter-based Generation to Provide Inertial Response: A Review for 124 Australian Power System Floating Solar PV and Hydropower in Australia: Feasibility, Future 125 Investigations and Challenges Virtual Inertia a must for mitigation of frequency instability in Microgrids: A COMPREHENSIVE REVIEW Solution of an Optimal Reactive Power Dispatch problem: An application of Modified Ant Lion Optimizer Grid frequency support from inverter 128 Grid frequency Support from inverter Connected generation Optimal Home Energy Management With Distributed Generation and Energy Thanh Tung To and Mohammed Haque 644 Floating To and Mohammed Haque 645 Solia Mahmood, Sara Deilami and Seyedfoad Taghizadeh 656 Hormoz Mehrkhodavandi, Ali Arefi, Amirmehdi Yazdani, Ashkan Najmizadeh and Shervin Fani 657 S N V S K Chaitanya, B Venkateswara Rao and R Ashok Bakkiyaraj 667 Njabulo Mlilo, Tony Ahfock and Jason Brown 667	123	•	I -	638
Inverter-based Generation to Provide Inertial Response: A Review for 124 Australian Power System Floating Solar PV and Hydropower in Australia: Feasibility, Future Investigations and Challenges Virtual Inertia a must for mitigation of frequency instability in Microgrids: A COMPREHENSIVE REVIEW Solution of an Optimal Reactive Power Dispatch problem: An application of Modified Ant Lion Optimizer Grid frequency support from inverter connected generation Optimal Home Energy Management With Distributed Generation and Energy Thanh Tung To and Mohammed Haque Sofia Mahmood, Sara Deilami and Seyedfoad Taghizadeh Amirmehdi Yazdani, Ashkan Najmizadeh and Shervin Fani Solution of an Optimal Reactive Power Rao and R Ashok Bakkiyaraj S N V S K Chaitanya, B Venkateswara Rao and R Ashok Bakkiyaraj Grid frequency support from inverter connected generation Optimal Home Energy Management With Distributed Generation and Energy Thanh Tung To and Mohammed Haque Sofia Mahmood, Sara Deilami and Seyedfoad Taghizadeh Solution of, Amirmehdi Yazdani, Ashkan Najmizadeh and Shervin Fani S N V S K Chaitanya, B Venkateswara Rao and R Ashok Bakkiyaraj Grid frequency support from inverter connected generation Optimal Home Energy Management With Distributed Generation and Energy Yingjia Fang, Binyu Xiong, Kun Qin, Yang	120		Nanbazzaman onan	- 000
Inertial Response: A Review for Australian Power System Floating Solar PV and Hydropower in Australia: Feasibility, Future Investigations and Challenges Virtual Inertia a must for mitigation of frequency instability in Microgrids: A COMPREHENSIVE REVIEW Solution of an Optimal Reactive Power Dispatch problem: An application of Modified Ant Lion Optimizer Solution of an Optimal Reactive Power Connected generation Optimal Home Energy Management With Distributed Generation and Energy Thanh Tung To and Mohammed Haque Sofia Mahmood, Sara Deilami and Seyedfoad Taghizadeh Amirmehdi Yazdani, Ashkan Najmizadeh and Shervin Fani Solution of an Optimal Reactive Power Dispatch problem: An application of Modified Ant Lion Optimizer Njabulo Miilo, Tony Ahfock and Jason Brown Optimal Home Energy Management With Distributed Generation and Energy Yingjia Fang, Binyu Xiong, Kun Qin, Yang				
Thanh Tung To and Mohammed Haque Floating Solar PV and Hydropower in Australia: Feasibility, Future Investigations and Challenges Virtual Inertia a must for mitigation of frequency instability in Microgrids: A COMPREHENSIVE REVIEW Solution of an Optimal Reactive Power Dispatch problem: An application of Modified Ant Lion Optimizer Grid frequency support from inverter connected generation Optimal Home Energy Management With Distributed Generation and Energy Floating To and Mohammed Haque Sofia Mahmood, Sara Deilami and Seyedfoad Taghizadeh Hormoz Mehrkhodavandi, Ali Arefi, Amirmehdi Yazdani, Ashkan Najmizadeh and Shervin Fani Solution of an Optimal Reactive Power Dispatch problem: An application of Rao and R Ashok Bakkiyaraj Sofia Mahmood, Sara Deilami and Seyedfoad Taghizadeh Soyedfoad Taghizadeh Sofia Mahmood, Sara Deilami and Seyedfoad Taghizadeh Solution of Tormoz Mehrkhodavandi, Ali Arefi, Amirmehdi Yazdani, Ashkan Najmizadeh and Shervin Fani Solution of an Optimal Reactive Power Dispatch problem: An application of Rao and R Ashok Bakkiyaraj Grid frequency support from inverter connected generation Thanh Tung To and Mohammed Haque Sofia Mahmood, Sara Deilami and Seyedfoad Taghizadeh Soyedfoad Taghizadeh Solution of Ashkan Najmizadeh and Shervin Fani 655 Solution of an Optimal Reactive Power Dispatch problem: An application of Rao and R Ashok Bakkiyaraj Grid frequency support from inverter Spanic Power Optimal Home Energy Management With Distributed Generation and Energy Yingjia Fang, Binyu Xiong, Kun Qin, Yang				
Australia: Feasibility, Future Investigations and Challenges Virtual Inertia a must for mitigation of frequency instability in Microgrids: A COMPREHENSIVE REVIEW Solution of an Optimal Reactive Power Dispatch problem: An application of Modified Ant Lion Optimizer Grid frequency support from inverter connected generation Optimal Home Energy Management With Distributed Generation and Energy Sofia Mahmood, Sara Deilami and Seyedfoad Taghizadeh	124		Thanh Tung To and Mohammed Haque	644
125 Investigations and Challenges Virtual Inertia a must for mitigation of frequency instability in Microgrids: A 126 COMPREHENSIVE REVIEW Solution of an Optimal Reactive Power Dispatch problem: An application of Modified Ant Lion Optimizer Grid frequency support from inverter connected generation Optimal Home Energy Management With Distributed Generation and Servin Fange Seyedfoad Taghizadeh Hormoz Mehrkhodavandi, Ali Arefi, Amirmehdi Yazdani, Ashkan Najmizadeh and Shervin Fange Seyedfoad Taghizadeh Hormoz Mehrkhodavandi, Ali Arefi, Amirmehdi Yazdani, Ashkan Najmizadeh and Shervin Fange Seyedfoad Taghizadeh Amirmehdi Yazdani, Ashkan Najmizadeh and Shervin Fange Seyedfoad Taghizadeh Amirmehdi Yazdani, Ashkan Najmizadeh and Shervin Fange Seyedfoad Taghizadeh Amirmehdi Yazdani, Ashkan Najmizadeh and Shervin Fange Seyedfoad Taghizadeh Amirmehdi Yazdani, Ashkan Najmizadeh and Shervin Fange Seyedfoad Taghizadeh Amirmehdi Yazdani, Ashkan Najmizadeh and Shervin Fange Seyedfoad Taghizadeh Amirmehdi Yazdani, Ashkan Najmizadeh and Shervin Fange Seyedfoad Taghizadeh Amirmehdi Yazdani, Ashkan Najmizadeh and Shervin Fange Seyedfoad Taghizadeh Amirmehdi Yazdani, Ashkan Najmizadeh and Shervin Fange Seyedfoad Taghizadeh Amirmehdi Yazdani, Ashkan Najmizadeh and Shervin Fange Seyedfoad Taghizadeh Amirmehdi Yazdani, Ashkan Najmizadeh and Shervin Fange Seyedfoad Taghizadeh Amirmehdi Yazdani, Ashkan Najmizadeh and Shervin Fange Seyedfoad Taghizadeh Amirmehdi Yazdani, Ashkan Najmizadeh and Shervin Fange Seyedfoad Taghizadeh Amirmehdi Yazdani, Ashkan Najmizadeh and Shervin Fange Seyedfoad Taghizadeh Amirmehdi Yazdani, Ashkan Najmizadeh and Shervin Fange Seyedfoad Taghizadeh Amirmehdi Yazdani, Ashkan Najmizadeh and Shervin Fange Seyedfoad Taghizadeh Amirmehdi Yazdani, Ashkan Najmizadeh and Shervin Fange Seyedfoad Taghizadeh Amirmehdi Yazdani, Ashkan Najmizadeh and Shervin Fange Seyedfoad Taghizadeh Amirmehdi Yazdani, Ashkan Najmizadeh and Shervin Fange Seyedfoad Taghizadeh Amirmehdi Yazdani, Ashkan Najmizadeh a		Floating Solar PV and Hydropower in		
Virtual Inertia a must for mitigation of frequency instability in Microgrids: A COMPREHENSIVE REVIEW Solution of an Optimal Reactive Power Dispatch problem: An application of Modified Ant Lion Optimizer Grid frequency support from inverter connected generation Optimal Home Energy Management With Distributed Generation and Energy Virtual Inertia a must for mitigation of Hormoz Mehrkhodavandi, Ali Arefi, Amirmehdi Yazdani, Ashkan Najmizadeh and Shervin Fani 655 S N V S K Chaitanya, B Venkateswara Rao and R Ashok Bakkiyaraj Njabulo Mlilo, Tony Ahfock and Jason Brown 667 Optimal Home Energy Management Yingjia Fang, Binyu Xiong, Kun Qin, Yang		•	I -	
frequency instability in Microgrids: A COMPREHENSIVE REVIEW Solution of an Optimal Reactive Power Dispatch problem: An application of Modified Ant Lion Optimizer Grid frequency support from inverter connected generation Optimal Home Energy Management With Distributed Generation and Energy Amirmehdi Yazdani, Ashkan Najmizadeh and Shervin Fani S N V S K Chaitanya, B Venkateswara Rao and R Ashok Bakkiyaraj 667 Njabulo Mlilo, Tony Ahfock and Jason Brown Optimal Home Energy Management With Distributed Generation and Energy Yingjia Fang, Binyu Xiong, Kun Qin, Yang	125	Investigations and Challenges	Seyedfoad Taghizadeh	650
126 COMPREHENSIVE REVIEW and Shervin Fani Solution of an Optimal Reactive Power Dispatch problem: An application of Modified Ant Lion Optimizer Grid frequency support from inverter connected generation Optimal Home Energy Management With Distributed Generation and Energy and Shervin Fani S N V S K Chaitanya, B Venkateswara Rao and R Ashok Bakkiyaraj Njabulo Mlilo, Tony Ahfock and Jason Brown 667		_	1	
Solution of an Optimal Reactive Power Dispatch problem: An application of Modified Ant Lion Optimizer Grid frequency support from inverter connected generation Optimal Home Energy Management With Distributed Generation and Energy S N V S K Chaitanya, B Venkateswara Rao and R Ashok Bakkiyaraj 661 Njabulo Mlilo, Tony Ahfock and Jason Brown 667 Yingjia Fang, Binyu Xiong, Kun Qin, Yang	126	. , , , ,	1	GEE
Dispatch problem: An application of Modified Ant Lion Optimizer Grid frequency support from inverter connected generation Optimal Home Energy Management With Distributed Generation and Energy S N V S K Chaitanya, B Venkateswara Rao and R Ashok Bakkiyaraj 661 Njabulo Mlilo, Tony Ahfock and Jason Brown 667 Vingjia Fang, Binyu Xiong, Kun Qin, Yang	120		anu Sheivin Falii	000
127 Modified Ant Lion Optimizer Rao and R Ashok Bakkiyaraj 661 Grid frequency support from inverter connected generation Brown 667 Optimal Home Energy Management With Distributed Generation and Energy Yingjia Fang, Binyu Xiong, Kun Qin, Yang		•	SNVSK Chaitanya B Varkatanyara	
Grid frequency support from inverter tonnected generation Optimal Home Energy Management With Distributed Generation and Energy Njabulo Mlilo, Tony Ahfock and Jason Brown 667 Vingjia Fang, Binyu Xiong, Kun Qin, Yang	127	, , ,	<u>-</u>	661
128 connected generation Brown 667 Optimal Home Energy Management With Distributed Generation and Energy Yingjia Fang, Binyu Xiong, Kun Qin, Yang	ļ	·	, ,	
Optimal Home Energy Management With Distributed Generation and Energy Yingjia Fang, Binyu Xiong, Kun Qin, Yang	128		1 -	667
With Distributed Generation and Energy Yingjia Fang, Binyu Xiong, Kun Qin, Yang	120		2.5	307
			Yingija Fang, Binyu Xiong, Kun Qin, Yang	
	129			672
A Secure IoT Based Grid-Connected Nasim Ahmed and Md. Ziaur Rahman				
131 Inverter using RSA Algorithm Khan 678	131	Inverter using RSA Algorithm	Khan	678

	A Harmonic Power Flow Method for	Ahmadreza Eslami, Michael Negnevitsky,	
132	Steady-State Analysis	Evan Franklin and Sarah Lyden	683
133	State of Charge Estimation of Vanadium Redox Flow Battery Based on Online Equivalent Circuit Model	Sidi Dong, Jun Feng, Yu Zhang, Shiqi Tong, Jinrui Tang and Binyu Xiong	689
135	Building a Low-Cost Climate Chamber to Test Lithium Ion Batteries under Site Conditions	Thomas Youngleson and Sumedha Rajakaruna	695
136	Feasibility Study of Additional Solar PV Generation in a Manufacturing Facility	John McBryde and Sanath Alahakoon	701
137	Design of a Resilient Wide-Area Damping Controller Using African Vultures Optimization Algorithm	Murilo E. C. Bento	709
138	A Solar PV Based Smart EV Charging System with V2G Operation for Grid Support	Sithara S.G Acharige, Md Enamul Haque, Mohammad Taufiqul Arif, Nasser Hosseinzadeh and Sajeeb Saha	715
140	Power Sharing and Voltage Regulation in Islanded DC Microgrids with Centralized Double-Layer Hierarchical Control	Yuan Yao, Nesimi Ertugrul and Ali Pourmousavi Kani	721
141	Comprehensive Method for Determining Transformer Decommissioning Life Considering Economic Life and Physical Life	Yifan Xu, Fuyan Liu, Xinyi Lai, Min Yu, Xiaoyong Yang and Fushuan Wen	727
142	Microgrid and Fleet to Grid Operation of a Hybrid Electric Ferry	Rajib Baran Roy, Sanath Alahakoon and Shantha Gamini Jayasinghe	732
143	Modeling and Performance Assessment of an Efficient Photovoltaic based Grid- Connected Inverter System with Integration of LCL Filter	Pius Sule, Munira Batool and Yuanyuan Fan	738
144	Deployment of Battery Energy Storage System in a Renewable Integrated Distribution Network Based on Long- Term Load Expansion	Hassam Ibrahim Alhammad, Khalid Abdullah Khan, Omar Konash and Muhammad Khalid	744
145	Incentive-Based Assessment of Residential Solar PV Systems: A Case Study	Jaafar Alboali, Abdullah Alsuwaid, Mustafa Aljafar and Muhammad Khalid	750
146	Economic Operation of a Workplace EV Parking Lot under Different Operation Modes	Jiwen Qi, Li Li and Gang Lei	755

	Parameter Estimator based Feedback	Mansi Bhagure, Nachiket Sonkusare,	
	Linearization Control strategy of	Mohd Adil Sheikh, Sunny Kumar and	
147	Magnetic Levitation System	Faruk Kazi	761
	A Coordinated Droop Controls and		
	Power Management Scheme for Hybrid		
	Energy Storage Systems in DC	Xin Lin, Ramon Zamora and Craig	
148	Microgrids	Baguley	767
	Review of Battery Balancing		
	Techniques based on Structure and	Md Morshed Alam, Dylan Dah Chuan Lu	
149	Control Strategy	and Ricardo P. Aguilera	773
	Continuous Control Set Model		
	Predictive Control in Grid-Connected	Cameron Smith, Ameen Gargoom,	
150	Solar PV Inverter	Enamul Haque and Aman Oo	779
		Minyung Cha, Shantha G. Jayasinghe,	
454	Power Management Optimisation of a	Hossein Enshaei, Rabiul Islam, Apsara	700
151	Battery/Fuel Cell Hybrid Electric Ferry	Abeysiriwardhane and Sanath Alahakoon	786
	Resistance and Speed Estimation of an		
	Induction Motor: A Perspective on	Sudhir Bhil, Mohit Patil, Vineet	
153	Classical and Dynamic Regression	Uddanwadikar and Mohd Adil Sheikh	792
	Dower Shering and Energy		
	Power Sharing and Energy Management between Supercapacitor		
	and Battery in a Hybrid Energy System	Obaidur Rahman, Duane A. Robinson,	
154	for EVs	Sean Elphick and Sarath Perera	798
104	101 2 4 3	Cean Elpinek and Carati i Cicia	7 30
	Demand Response Scheme for		
	Distribution Transformer Load Relieving	Rangana Gunasekara, Lasantha	
155	using Smart Meter Data	Meegahapola and Mahdi Jalili	804
	Comparative Analysis of CC-CV/CC	Reema Narayanan, Jagadanand G.,	
	Charging and Charge Redistribution in	Nikhil Sasidharan and Shreelakshmi M.	
156	Supercapacitors	P.	810
	· · ·		
	An Agreement Based Dynamic Routing	Shahriar Rahman Fahim, S. M. Muyeen,	
4.50	Method for Fault Diagnosis in Power	Yeahia Sarker, Subrata K. Sarker and	0.45
158	Network with Enhanced Noise Immunity	Sajal K. Das	815
	Deep Learning models for Smart	Palak Maniar, Revati Gunjal, Md. Alamgir	
159	Building Load Profile Prediction	Hossain and Mohd Adil Sheikh	820
	Lood Drofile Drodiction in Occasi	Deveti Curiel Delet Manier Ilder	
160	Load Profile Prediction in Smart	Revati Gunjal, Palak Maniar, Uday	006
160	Building using Data Driven Approaches	Suryawanshi, Adil Sheikh and Sudhir Bhil	826
	IEC 61850 communication and XMPP	Mohd Asim Aftab, S.M. Suhail Hussain,	
161	based design of Virtual Power Plant	Taha Selim Ustun and Akhtar Kalam	832

	Measurement-Based Parameter		
	Identification of DC-DC Converters with		
	Adaptive Approximate Bayesian	Seyyed Rashid Khazeiynasab and Issa	
162	Computation	Batarseh	837