# 2021 1st International Conference on Power Electronics and Energy (ICPEE 2021)

Bhubaneswar, India 2 – 3 January 2021



IEEE Catalog Number: CFP21ONF-POD ISBN: 978-1-7281-8775-4

### 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:
 CFP21ONF-POD

 ISBN (Print-On-Demand):
 978-1-7281-8775-4

 ISBN (Online):
 978-1-7281-8774-7

#### **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



## 1st IEEE International Conference on Power Electronics & Energy (ICPEE 2021) 2nd - 3rd January 2021

Bhubaneswar, India

(A Fully Virtual IEEE Conference)

Organized by KIIT, Deemed to be University, Bhubaneswar and IEEE Bhubaneswar Subsection Bhubaneswar, Odisha, India

### **Table of Content**

Pg. No.	Paper ID	Paper Title	Author(s)
110.	ID	Effects of Load Models and Load Growth in	Pritish Kumar Mohanty
		Distribution System in Presence of Distributed	Deepak Kumar Lal
1	7	Generator	Beepak Kumar Lar
		Performance Evaluation of Energy Storage	Rana Das
7	9	Systems for Stationary & Mobile applications	Uday Mhaskar
		PQ Analysis & Control Design of Different Level	Mrutyunjaya Mangaraj
13	12	VSI Based DSTATCOM	Jogeswara Sabat
		Analysis of VFD Induction Motor Current	Sunny V. John
		Disturbances by Prony Analysis and Motor	K. S. Rama Rao
18	17	Redesign by Intelligent Optimization Techniques	R. Srinivasa Rao
		Comparative Analysis of Algorithm based	Mitali Ray
		Automatic Efficacy Enhancement of Lighting	Padarbinda Samal
24	19	Control System	Chinmoy Kumar Panigrahi
		Comparative analysis of various P & O MPPT	
• •		algorithm for PV system under varying radiation	Saibal Manna
29	26	condition	Ashok Kumar Akella
		Moth flame optimization based fractional order	Debidasi Mohanty
2.5	20	controller for frequency regulation of hybrid	Dr. Sidhartha Panda
35	28	power system with UC and UPFC	G (1' DI
			Swetalina Bhuyan
		Analysis of Engagement Description for	Sunita Halder nee Dey Subrata Paul
40	30	Analysis of Frequency Regulation for a Hydro-Thermal System with ALFC-DR Model	Sabita Chaine
40	30	Trydro-Thermal System with ALFC-DR Woder	Aashish Kumar Bohre
		Analysis of Grid Connected Hybrid Micro-grid	Parimal Acharjee
45	31	with Different Utility Tariffs	Yashwant Sawle
7.5	31	Control of Two-Stage OFF-Board Electric Vehicle	Aakash Kumar Seth
51	36	Charger	Mukhtiar Singh
J 1	30	Study of Energy Management System and IOT	Negasa Muleta
57	39	Integration in Smart Grid	Dr. Altaf Q. H. Badar
- /			Prasun Mishra
			Cristian Lascu
		Dead-time Compensation and Soft-starting of VSI	Michael Møller Bech
		fed High Power Low Voltage Induction Motor	Bjørn Rannestad
62	40	Drive	Stig Munk-Neilsen

			Suman Maharana
		D 1T' C 1D 1A D 1	Srija Mukherjee
60	4.1	Dead-Time Compensated Dual Active Bridge with	Dipankar De
68	41	Online Hybrid Optimized Operation	Alberto Castellazzi
		Analysis of Renewable energy integration on	Babita Panda
74	42	Radial Distribution Network	Arjyadhara Pradhan
			Abhimanyu Sahu
		Design of MPC-PSO based Torque Regulator for	Kanungo Barada Mohanty
80	43	DTC-SVM Induction Motor Drive	Rabi Narayan Mishra
		Investigating the Demand Side Management	
		Capabilty of Stand-alone Microgrid with V-I	Sumit Kumar Jha
86	46	Droop Approach	Deepak Kumar
			Debottam Mukherjee
		Power System Fault Classification: An	Samrat Chakraborty
92	48	Imbalanced Learning Approach	Ramashis Banerje
		Inverter Control Strategy for Voltage Unbalance	Nada Ali
98	50	Mitigation	Deepak Kumar
		New Model Predictive & Algorithm DPC based	Abinash Rath
103	51	Shunt Active Power Filters (SAPFs)	Gopalakrishna Srungavarapu
		, ,	Chetan Upadhyay
		SoH analysis of the Lead Acid (LA) battery using	Harsh Patel
109	52	a novel vibration Tool	Tirth Mehta
			Abhishek Kuanar
		Comparison of Simulation Tools for Load Flow	Bibhuprasad Panda
115	53	Analysis	Debasish Behera
		3	Md. Asif Abbas
		Electricity Generation by Fast Moving Vehicles	Mahima Anwar
120	54	using Wind Turbine (Metro Rail)	Mustafizur Rahman Rana
		Indirect IMC-PID controller with extended state	Ankur Yaday
124	57	observer for FOPTD plants	Prabin Kumar Padhy
		Relay based identification for FOPDT system &	Truem rumar rumy
		comparison on measurement accuracy &	Alok Kumar
129	62	sensitivity analysis.	Prabin Kumar Padhy
		Services and Joseph	Samir Gautam
			Waqas Hassan
			Ayush Bhatta
		A Comprehensive Study of Orthogonal Signal	Dylan Dah-Chuan Lu
134	64	Generation Schemes for Single Phase Systems	Weidong Xiao
137	07	Generation benefites for single t have systems	Pratik Kumar Kar
		Grid Integration of Single Phase a Reduced	
142	69	Switch Multilevel Inverter Topology	Anurag Priyadashi
1 → ∠	09	Switch Multilevel inverter Topology	Srinivas Bhaskar Karanki
			C. Shrutika,
			Sahil Matani,
			Siddhartho Chaudhuri,
		Dools EME actionation has a second-second 1 C	Atul Gupta,
1.40	70	Back-EMF estimation based sensorless control of	Shishir Gupta,
148	70	Brushless DC motor	Navdeep Singh
1.7.4	71	Brief Study on Applications of Phasor	Sadasiva Behera
154	71	Measurment Units in Smartgrid Technology	Nalin B. Dev Choudhury

			Debasis Tripathy
		Laboratory Study on Evaluating the Protection	K Urukundu
		system of Radio Communication Antenna for	K A Aravind
150	74	Naval ships against the Direct Lightning Impulse	Pradeep M Nirgude
159	74	Voltages	D
		Malki aliantian land Commetica Managara	Benjamin
		Multi-objective based Congestion Management	Chatuanramthrnghaka
1.65	7.6	considering Generation Rescheduling and Cost	Subhasish Deb
165	76	Minimization using Multi-Verse Optimizer	Subir Datta
		Development of Modified Hysteresis Current	a 1 17 a1
151		Controller Switching Scheme for Multifunctional	Surender Kumar Sharma
171	77	Grid-tied Photovoltaic Inverters	Vijayakumar Gali
		A Comparative Analysis of Supervised Classifiers	Siddhartha Deb Roy
		Employing NCA for Feature Selection to Secure	Sanjoy Debbarma
177	78	AGC Loop against False Data Injections	Subhasish Deb
		Parameter Estimation of Power Transformer in	Aravind M N
183	79	Presence of Bad Measurement Data	O. D. Naidu
			Subhasish Deb
			Benjamin
			Chatuanramthrnghaka
			Subir Datta
		Congestion Management by Generator Real	Sanjoy Debbarma
		Power Rescheduling using Hybrid Grey Wolf	Ksh. Robert Singh
189	81	Optimizer and Cuckoo Search Algorithm	Ramesh Kumar
		An Optimize Configuration of H-Bridge	Sushree Smrutimayee Barah
194	82	Multilevel Inverter	Sasmita Behera
			Sandeep Kumar Mishra
		Optimal Placement of Phasor Measurement Unit	Kunja Bihari Swain
198	83	Using Quantum Particle Swarm Optimization	Murthy Cherukuri
		Determining optimal component sizes for an	
		isolated solar-battery micro-grid using Butterfly	Priyanka Paliwal
202	85	PSO	
		Influence of Rotor Design in BLDC Motor for	Anusha Vadde
208	87	Two -Wheeler Electric Vehicle	Sachin S
		Resilience Assessment of Microgrid Using	Sonal
214	89	Complex Network Theory	Debomita Ghosh
		Mathematical Modeling and Analysis of High	Krishna Kumar Rai
		Voltage High Pulse Power Supply Performance on	A V Giridhar
220	91	Various Loads	D R Jahagirdhar
		Analysis of Multi-Cell Li-ion configurations with	Shreeva Pattnaik
225	93	dissimilar SoC for Battery Swap Application	Olive Ray
			Mukul Chankaya
		Adaptive Kernel Width Maximum Correntropy	Aijaz Ahmad
231	94	based VSC control of grid-tied PV-BESS System	Ikhlaq Hussain
		Power Forecasting with Minimal Loss using	Saroj Padhan
237	95	LSTM and PV Model	Debasis Tripathy
231	73	Inference Based Latent Space Method for False	S. Naresh Ram
		data and Topology estimation under suspect EMS	S. Naresh Kam Sukumar Mishra
243	96	data	
243	<b>プ</b> ひ	uaia	Manoj Kumar Agarwal

			Ramkrishan Maheshwari
		Dout Controlled Hamilton Model and Control of	
240	00	Port-Controlled Hamilton Model and Control of	Deepak Patil
248	99	Induction Machine with Inverter Output LC Filter	Sanjeet Dwivedi
252	100	Photovoltaic Hosting Capacity Increment in an	Sourav Kumar Sahu
252	100	Unbalanced Active Distribution Network	Debomita Ghosh
	405	A 4D chaotic system with seventeen equilibria:	Piklu Das
257	105	Synchronization and anti-synchronization	Piyush Pratap Singh
			Pragya Nand Singh
			Sanchari Hajari
		Development of Controller HIL Test-bed for	Olive Ray
263	106	Solar-battery integration	S. R. Samantaray
			Rajib Lochan Dash
			Sasmita Tripathy
		Power Quality Improvement of Grid Connected	Banaja Mohanty
269	107	Wind System with STATCOM	Prakash Kumar Hota
		Optimal Frequency Control of PV and Fuel	Gyana Ranjan Biswal
275	111	Cell-based Microgrid System	Banaja Mohanty
		Neural Network Based Time Delay Estimation	
		Between UHF Signals Radiated from Partial	Abhinav Lugun
280	112	Discharge Sources	Anitha Bhukya
			Pratyush Kumar Dwivedi
		Sensorless Speed Control Of Pmsm Motor For	Aakash Kumar Seth
286	115	Wide Speed Range	Mukhtiar Singh
		1 8	Akash Kumar Paul
			A.V.Giridhar
			Krishna Kumar Rai
291	116	Generation of Pulsed Power for Radar Application	A. Kirubakaran
		A Comparative Analysis of Optimal Relay	Raghvendra Tiwari
		Coordination For Different Network	Ravindra Kumar Singh
297	117	Configuration	Niraj Kumar Choudhary
	11,	- comignation	M A Asha Rani
			M Chakkarapani
		Performance Evaluation of R-PLL for Robust	C Nagamani
		Sensorless Operation of DFIG under Harmonics,	
303	118	DC Offset and Phase Jump in Grid Voltage	M. Jaya Bharata Reddy
505	110	20 officer and I have varify in Oria volume	Jogendra K S S
			Balaji Dulipala
		Decision Support Model under Transactive	Ishan Bhand
309	120	Energy Markets for Profit Maximization	Sanjoy Debbarma
303	120	Linergy ividiacts for 1 forth ividalifilization	Manoj Saini
315	121	GSM Based Fuel Theft Detection	Shagufta Khan
313	141	Som Dasca I del Theit Detectivil	Bhargav Praneeth Tangirala
		Bus-Bar Fault Detection and Classification Using	Anamika Yadav
321	123	Fast S-transform and Artificial Neural Network	
321	143	Electric Field and Potential Distribution	Bokka Krishna Chaitanya
			H.P. Shrimathi
227	125	Evaluation of Environmentally Polluted 11 kV	Mithun Mondal
327	125	Polymeric Outdoor Insulators	M ' W 11 T C
222	126	A Novel Step-up 7L Switched Capacitor	Musie Welday Tesfay
333		Multilevel Inverter and Its Extended Structure	Tapas Roy

			Condoon Vumor Swain
			Sandeep Kumar Swain
			Lipka Nanda
		A Ct M-14:11 It Ctt	Sandeep Kumar Swain
		A Step-up Multilevel Inverter Structure using	Tapas Roy
220	107	Switched Capacitor technique with Non-isolated	Tanmoy Roy Choudhury
339	127	Power Sources and Reduced Devices	Srikanta Mohapatra
			Ashish Yadav
2.45	100	Economics and Environment Analysis of Hybrid	Shagufta Khan
345	129	System for Rural Hilly Terrain	Md. Tausif Aahmad
		Planning of Unbalanced Distribution Network	Santy Saijeet
		Using Solar Energy Sources under Uncertain	Sriparna Roy Ghatak
351	130	Environment	Sarat Chandra Swain
			Pankaj Deb
			Bijayalaxmi Sethi
			Laxman Rongali
			Manraj Meena
		Generation of high voltage nanosecond pulses	Rishi Verma
356	131	using Pulse Sharpening switch	Archana Sharma
		Comparision of Partial Discharge signal in a Three	Aravinth Subramaniam
		phase Transformer by UHF, TEV and HFCT	Santosh Janaki Raman
361	133	sensors	Sanjib Kumar Panda
		Harmonics Analysis in Power System using	Nayanita Sikder
365	134	Phase-Locking Technique	Ksh. Milan Singh
			Nishit Tiwary
			Venkataramana Naik N
			Anup Kumar Panda
		Fuzzy Logic Based Direct Power Control of Dual	A Narendra
371	135	Active Bridge Converter	Rajesh Kumar Lenka
			Rajesh Kumar Lenka
			Anup Kumar Panda
		Reactive Power Compensation using	Ashish Ranjan Dash
		Vehicle-to-Grid enabled Bidirectional Off-Board	Venkataramana Naik N
376	136	EV Battery Charger	Nishit Tiwary
370	150	Predictive Torque Control Scheme without	
		Weighting Factors for Speed Sensorless Induction	Sukanta Das
382	137	Motor Drive	Sukanta Das
362	137	Effect of V Angle Variation and Strengthening	Chivom Chalzenharty
		Rib On Performance Characteristics of IPMSM	Shivam Chakraborty Sandeep V Nair
388	140	Motor for Electric Vehicles	Kamalesh Hatua
366	140	Wiotor for Electric Venicles	
		Investigation of Los Deviadio Divale A	M. Kalyan Chakavarthi
		Investigation of Log Periodic Dipole Array	A.V. Gridhar
204	1.42	Printed Antenna for recognizing Incipient	D. V. S. S. Siva Sarma
394	143	Discharges in Power Transformer	G. Arun Kumar
		Electromagnetic Characteristics Investigation of	Raja Ram Kumar
		Novel Dual Stator Delta-Shaped Magnet	Priyanka Devi
		Five-Phase Permanent Magnet Synchronous	Chandan Chetri
398	145	Motor for Electrical Vehicle Application	Kundan Kumar
			Burudi Jahnavi
		Power quality improvement with D-STATCOM	Srinivas Bhaskar Karanki
403	148	using combined PR and Comb filter- Controller	Pratik Kumar Kar

			Canal Chandra Mahata
			Gopal Chandra Mahato
			Tanmoy Roy Choudhury
			Byamakesh Nayak
		A Study on High DV Donatuation on Smoot Cuid	Dipankar Debnath
400	1.51	A Study on High PV Penetration on Smart Grid:	Subhendu Bikash Santra
409	151	Challenges and its Mitigation using FPPT	Banishree Misra
		The state of the s	Debayani Mishra
41.5	1.5.4	Frequency alleviation in an AC Microgrid using	Anurekha Nayak
415	154	Fuzzy-PI Controller	Manoj Kumar Maharana
410	1.57	High Efficiency Three Phase Interleaved Buck	Akriti Garg
419	157	Converter for Fast Charging of EV	Moumita Das
		Implementation of Predictive Control Algorithm	
		for High Power Factor High Efficiency	
		Soft-switched AC-DC LED	Dipankar Chatterjee
424	158	Driver using Low Cost 8-bit Digital Controller	
			Chidurala Saiprakash
		An ATT Array Configuration for Performance	Alivarani Mohapatra
430	159	Enhancement of PV system Under PSC	Byamakesh Nayak
		UPFC and SMES based Coordinated Control	
		Strategy for Simultaneous Frequency and Voltage	Ch.Naga sai kalyan
435	165	Stability of an Interconnected Power System	
		MPPT of Three-Phase Self-Excited Induction	Mario G. Borja Borja
		Generator During Electric Power Generation From	Sergio Lescano
441	169	Variable Power Sources	Jaime E. Luyo
			Lalu Kumar Yadav
		Sliding Mode Control based Frequency	Mohammad Sharim Khan
447	170	Regulation in an Island Microgrid	Sheetla Prasad
		Design and Development of Machine Learning	Tushar Vats
		based Expert System for Epileptic Seizure	Chetan Kumar
453	179	Diagnosis and Classification Process	
		Design of a Battery Charger Fed from Two Solar	Indrashis Haldar
		Panels Arranged at Different Inclination for	Dipanakar Debnath
459	184	E-rickshaw and DC Microgrid Applications	Tanmoy Roy Choudhury
		<u> </u>	Kantipudi V.V.S.R Chowdary
		Impact of onboard DC-DC Converter for Dynamic	Kundan Kumar
465	187	Wireless Charging of Electric Vehicles	Raja Ram Kumar
			Sushree Shataroopa Mohapatra
		A Comprehensive Review to Analyze the	Manoj Kumar Maharana
470	188	Islanding in Distributed Generation System	Sudhansu Bhusan Pati
		Characterization of ZVS behavior and optimal	
		operating point for three-port current fed Dual	Shashank Kurm
477	192	Active Bridge Interlinking converter	Vivek Agarwal
	- =	An Inertia Emulation Scheme using a Non-linear	Gopakumar Melath
		Backstepping Controller to Enhance the DC Bus	Vivek Agarwal
484	193	Voltage Stiffness of a Grid Tied DC Microgrid	, 1, OK 1 15u1 Wu1
101	173	Virtual Vector based SVPWM-DTC for	Utkal Ranjan Muduli
		Five-Phase Two-Level VSI fed Induction Motor	Ranjan Kumar Behera
490	194	Drive	Tangan Ramar Deneta
496	203	Cyber Physical Implementation of Improved	Nataraj Pragallapati
コクロ	203	Cyber I hysical implementation of improved	rvataraj i raganapan

		Distributed Secondary Control of DC Microgrid	Satish J Ranade
		, c	Olga Lavrova
			Gourav Shankar
			Shashwati Ray
		Development of a Low Cost Phasor Measurement	Shimpy Ralhan Goyal
501	205	Unit for Laboratory Studies	R. Srinivas
			Ranjeeta Patel
		Implementation of Bio-Inspired Flower	Padarbinda Samal
		Pollination Algorithm in Distribution System	Anup Kumar Panda
507	207	Harmonic Mitigation Scheme	Josep M. Guerrero
			Badrinarayan Behera
		Voltage Flicker Mitigation Using VSC-Based	Kamalesh Chandra Rout
514	209	STATCOM to Improve Power Quality	Rudra Narayan Dash
		Optimal Allocation of PMUs in the Eastern	Subhashree Priyadarshini
		Region Indian Power Grid with Maximum	Chinmoy Kumar Panigrahi
519	215	Redundancy	
			Nikhil Mondal
			Soumya Chatterjee
			Nasirul Haque
		Condition Monitoring of Epoxy Mica Composite	Sovan Dalai
		Insulation Used in Rotating Machines	Biswendu Chatterjee
524	216	Employing Electric Modulus	Sivaji Chakravorti
		SCA Based Load Frequency Control	Sunita Pahadasingh
		Incorporating Electric Vehicle Using Cascaded	Chitralekha Jena
528	218	Controller	Chinmoy Kumar Panigrahi
		A Single-Phase Step-Up 5-level	Kasinath Jena
		Switched-Capacitor Inverter with Reduced Device	Chinmoy Kumar Panigrahi
533	237	Count	Krishna Kumar Gupta