

2020 IEEE Power and Energy Conference at Illinois (PECI 2020)

**Champaign, Illinois, USA
27 – 28 February 2020**



**IEEE Catalog Number: CFP2012J-POD
ISBN: 978-1-7281-5300-1**

**Copyright © 2020 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:	CFP2012J-POD
ISBN (Print-On-Demand):	978-1-7281-5300-1
ISBN (Online):	978-1-7281-5299-8

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
Web: www.proceedings.com

CURRAN ASSOCIATES INC.
proceedings
.com

TABLE OF CONTENTS

ROBUST AND OPTIMAL SINGLE-LOOP VOLTAGE CONTROLLER FOR GRID-FORMING VOLTAGE SOURCE INVERTERS.....	1
<i>Soham Chakraborty ; Sourav Patel ; Murti V. Salapaka</i>	
NEW MMC-BASED MULTILEVEL CONVERTER WITH TWO-AND-ONE SET OF ARMS AND ONE INDUCTOR.....	8
<i>Mahdi Jafari ; Fatemehalsadat Jafarishiadeh ; Arman Ghasemi ; Amin Shojaeighadikolaei ; Sepehr Saadatmand ; Reza Ahmadi</i>	
NEW VOLTAGE BALANCING TECHNIQUE BASED ON CARRIER-DISPOSITION PULSE WIDTH MODULATION FOR MODULAR MULTILEVEL CONVERTER.....	12
<i>Mahdi Jafari ; Sepehr Saadatmand ; Amin Shojaeighadikolaei ; Fatemehalsadat Jafarishiadeh ; Arman Ghasemi ; Ali Mohamed Alshawish ; Reza Ahmadi</i>	
ADAPTIVE RIPPLE CORRELATION CONTROL (ARCC) FOR SOLAR MAXIMUM POWER POINT TRACKING.....	17
<i>Hasan Abed Al Kader Hammoud ; Ali M. Bazzi</i>	
MODEL-BASED MPPT WITH CORRECTIVE RIPPLE CORRELATION CONTROL.....	24
<i>Hasan Abed Al Kader Hammoud ; Ali M. Bazzi</i>	
TRENDS ON PREDICTIVE CONTROL SCHEMES FOR IMPEDANCE SOURCE CONVERTERS.....	30
<i>Zhanfan Yu ; Sally Sajadian</i>	
A HIGH VOLTAGE RATIO THREE-STAGE CASCADED INTERLEAVED BOOST CONVERTERS FOR PV APPLICATION.....	36
<i>Badur M. Alharbi ; Majid A. Alhomim ; Roy A. McCann</i>	
CURRENT STRESS REDUCTION INVESTIGATION OF ISOLATED MMC-BASED DC-DC CONVERTERS.....	41
<i>Mahdi Jafari ; Fatemehalsadat Jafarishiadeh ; Sepehr Saadatmand ; Arman Ghasemi ; Amin Shojaeighadikolaei ; Reza Ahmadi</i>	
QUASI-Z-SOURCE RESONANT FULL BRIDGE CONVERTER FOR WIRELESS POWER TRANSFER WITH SLIDING MODE MODEL PREDICTIVE CONTROL.....	45
<i>Byungchul Kim ; Olga Lavrova</i>	
A NEW FAULT-TOLERANT TOPOLOGY AND OPERATION SCHEME FOR THE HIGH VOLTAGE STAGE IN A THREE-PHASE SOLID-STATE TRANSFORMER.....	51
<i>Ali Mohamed Alshawish ; Saleh Mohamed Eshtaiwi ; Reza Ahmadi ; Sepehr Saadatmand</i>	
VALUE GRADIENT LEARNING APPROACH IN POWER AND FREQUENCY REGULATION OF GRID-CONNECTED SYNCHRONVERTERS.....	56
<i>Sepehr Saadatmand ; Hamad Alharkan ; Pourya Shamsi ; Mehdi Ferdowsi</i>	
ANALYSIS AND MODELING OF MULTI-MODE OPERATION FOR SERIES-PARALLEL CLLC RESONANT CONVERTER.....	62
<i>Zhan Gao ; Cheng Jin ; Kangli Liu ; Jianfeng Zhao</i>	
Q-LEARNING SCHEDULING FOR TRACKING CURRENT CONTROL OF SWITCHED RELUCTANCE MOTOR DRIVES.....	68
<i>Hamad Alharkan ; Pourya Shamsi ; Sepehr Saadatmand ; Mehdi Ferdowsi</i>	
CONCEPTUAL DESIGN OF AN EVTOL AIR SHUTTLE FOR RAPID INTERCITY TRANSPORT.....	74
<i>Jianqiao Xiao ; Noah Salk ; Kiruba Haran</i>	
SIZING AND ALLOCATION OF DISTRIBUTED ENERGY RESOURCES FOR LOSS REDUCTION USING HEURISTIC ALGORITHMS.....	82
<i>Ali Parsa Sirat ; Hossein Mehdipourpicha ; Niloofar Zendehtel ; Hamid Mozafari</i>	
AUTONOMOUS POWER DISPATCH FOR A DEEP SPACE VEHICLE POWER SYSTEM.....	88
<i>Pallavi Kulkarni ; Dionysios Aliprantis ; Benjamin Loop ; Ning Wu</i>	
SHORT-TERM LOAD FORECASTING USING AN LSTM NEURAL NETWORK.....	96
<i>Mohammad Safayet Hossain ; Hisham Mahmood</i>	
A ROBUST MPPT METHOD BASED ON AWILOG-ZALMS ALGORITHM FOR SPV SYSTEMS UNDER VARIOUS LOADS AND NON-UNIFORM IRRADIANCE CONDITIONS.....	102
<i>Haider A. Mohamed Kazim ; Ikhlas Abdel-Qader</i>	
LINE PARAMETER ESTIMATION OF DISTRIBUTION NETWORK AFTER GROUNDING FAULT.....	108
<i>Hao Jin ; Zhan Gao ; Jianfeng Zhao</i>	

KALMAN FILTER APPROACH FOR LINE PARAMETER ESTIMATION FOR LONG TRANSMISSION LINES	114
<i>Yiqi Zhang ; Yuan Liao</i>	
A REVIEW OF METHODOICAL DECENTRALISATION OF ENERGY AND ENERGY TRANSACTIONS UTILISING DISTRIBUTED LEDGER VIA TRANSITION ARCHITECTURE BASED FRAMEWORK	122
<i>Abhinav Rakesh Chopra ; Nirmal-Kumar C. Nair</i>	
INTEREST BASED NEGOTIATION WITH A STRATEGIC APPROACH: ANNEX C ITAIPU BINATIONAL CASE STUDY	128
<i>Manuel García ; Victorio Oxilia ; Ricardo Careaga ; Félix Fernández</i>	
Author Index	