

POWER ELECTRONICS & POWER SYSTEM TITLES 2015-2016

Power drives :

1. Current Limit Strategy for BLDC Motor Drive with Minimized DC-Link Capacitor
2. A Torque Ripple Compensation Technique for a Low Cost Brushless DCMotor Drive
3. Position Sensorless Control without Phase Shifter for High-speed BLDCMotors with Low Inductance and Nonideal Back EMF
4. Angular Modulation of Dual-VSI Fed Open-End Motor for Electrical Vehicle Applications
5. Performance Analysis of Linear Induction Motor of Electromagnetic Catapult
6. Advanced Integrated Modeling and Analysis for Adjustable Speed Drives ofInduction Motors Operating With Minimum Losses
7. A New Formulation of Reactive Power Based Model Reference Adaptive System for Sensorless Induction Motor Drive
8. Simple Flux Regulation for Improving State Estimation at Very Low and Zero Speed of a Speed Sensorless Direct Torque Control of InductionMotor Drive

SOLAR MPPT SYSTEM:

1. Direct MPPT algorithm for PV sources with only voltage measurements
2. P-Q and P-V Control of Photovoltaic Generators in Distribution Systems
3. Real-Time HIL Implementation of Sliding Mode Control for Standalone System Based on PV Array Without Using Dumpload
4. Energy Storage System from DC Bus with Port for Solar Module
5. A Novel Control Strategy for Stand-alone Solar PV Systems with Enhanced Battery Life
6. A New Low-Cost Centralized MPPT Controller System for Multiply Distributed Photovoltaic Power Conditioning Modules
7. An Optimal Maximum Power Point Tracking Algorithm for PV Systems With Climatic Parameters Estimation

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Z-Network based projects:

1. An Energy Stored Quasi-Z Source Cascade Multilevel Inverter based Photovoltaic Power Generation System
2. An AC Z-source Converter Based on Gamma Structure with Safe-Commutation Strategy
3. A Comparison between Single-Phase Quasi-Z-Source and Quasi-Switched-Boost Inverters
4. A Single-phase PV Quasi-Z-source Inverter with Reduced Capacitance using Modified Modulation and Double-Frequency Ripple Suppression Control
5. Switched-Coupled-Inductor Quasi-Z-Source Inverter
6. A Novel Quasi-Z-Source Inverter Topology With Special Coupled Inductors For Input Current Ripples Cancellation.

POWER QUALITY AND HARMONICS FILTERINGS:

1. A PLL-Less Scheme for Single-Phase Grid Interfaced Load Compensating Solar PV Generation System
2. A Filtering Scheme to Reduce the Penetration of Harmonics Into Transmission Systems
3. Detection of Grid Voltage Fundamental and Harmonic Components Using Kalman Filter and Generalized Averaging Method
4. A Single-Phase Active Device for Power Quality Improvement of Electrified Transportation
5. Control of Single-Phase Power Converters Connected to Low Voltage Distorted Power Systems with Variable Compensation Objectives
6. Power Factor Corrected Zeta Converter Based Improved Power Quality Switched Mode Power Supply
7. A Robust Synchronization to Enhance the Power Quality of Renewable Energy Systems
8. A Synchronization Method for Single-Phase Grid-Tied Inverters

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9. Variable Forgetting Factor Recursive Least Square Control Algorithm for DSTATCOM
10. A New Virtual Harmonic Impedance Scheme for Harmonic Power Sharing in an Islanded Microgrid
11. Optimal Design of High-Order Passive-Damped Filters for Grid-Connected Applications

PFC CONVERTERS:

1. Efficient Single-Switch Boost-Dual-Input Flyback PFC Converter with Reduced Switching Loss
2. Implementation of Bridgeless Cuk Power Factor Corrector with Positive Output Voltage
3. An Integrated High-Power-Factor Converter with ZVS Transition
4. Modified Interleaved Current Sensorless Control for Three-Level Boost PFC Converter with Considering Voltage Imbalance and Zero-Crossing Current Distortion
5. A Novel Wall-Switched Step-Dimming Concept in LED Lighting Systems using PFC Zeta Converter
6. Design of AC-DC PFC High-Order Converters with Regulated Output Current for Low Power Applications
7. A High Voltage SiC-based Boost PFC for LED Applications
8. Power Factor Corrected Zeta Converter Based Improved Power Quality Switched Mode Power Supply
9. Line Current Distortion Compensation for DCM/CRM Boost PFC Converters
10. PIC-Based Interleaved Buck Power Factor Corrector With Adaptive Slope Compensation
11. A Novel Control Scheme of Quasi-Resonant Valley-Switching for High-Power-Factor AC-to-DC LED Drivers
12. A Bridgeless BHB ZVS-PWM AC-AC Converter for High-Frequency Induction Heating Applications

MULTI LEVEL INVERTER:

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1. A Fault Tolerant Single Phase Five-level Inverter for Grid Independent PV systems
2. An Energy Stored Quasi-Z Source Cascade Multilevel Inverter based Photovoltaic Power Generation System
3. A new switching scheme for a new multi level inverter topology for grid connected PV systems
4. Implementation of SVM to improve the performance of a nine level inverter with reduced number of switches
5. Optimal Low Switching Frequency Pulsewidth Modulation of Nine-Level Cascade Inverter
6. An Innovative Scheme of Symmetric Multilevel Voltage Source Inverter with Lower Number of Circuit Devices

RESONANT CONVERTERS:

1. Resonant Converter With Resonant-Voltage-Multiplier Rectifier and Constant Frequency Phase-Shift Control For Isolated Buck-Boost Power Conversion
2. Analysis and Design of Single-Switch Forward-Flyback Two-Channel LED Driver with Resonant-Blocking Capacitor
3. Efficiency Optimization of LLC Resonant Converters Operating in Wide Input- and/or Output-Voltage Range by On-the-Fly Topology-Morphing
4. Flying-Capacitor Based Hybrid LLC Converters with Input Voltage Auto-Balance Ability for High Voltage Applications
5. Proportional-Resonant Current Controllers Design Based on Desired Transient Performance
6. DCM-based Zero-Voltage Switching Control of a Bidirectional DC-DC Converter With Variable Switching Frequency
7. Operating Conditions Monitoring for High Power Density and Cost-Effective Resonant Power Converters
8. Analysis and Parameter Optimization of Start-up Process for LLC Resonant Converter
9. A Zero-Voltage-Transition Bidirectional DC/DC Converter
Study on the Single-stage Forward-flyback PFC Converter with QR Control

WIND ENERGY CONVERSION SYSTEM:

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1. Split Converter-Fed SRM Drive for Flexible Charging in EV/HEV Applications
2. Contribution of VSC-HVDC to Frequency Regulation of Power Systems With Offshore Wind Generation
3. A Discrete-Time Direct Torque Control for Direct-Drive PMSG-Based Wind Energy Conversion Systems
4. A Single Sensor Based MPPT Controller for Wind-Driven Induction Generators Supplying DC Microgrid
5. Wound Rotor Machine With Single-Phase Stator and Three-Phase Rotor Windings Controlled by Isolated Three-Phase Inverter
6. Using Improved Power Electronics Modeling and Turbine Control to Improve Wind Turbine Reliability
7. On the Design and Capacity of Grounding Systems for Grid-Connected DGUs
8. Maximum Power Point Tracking Strategy for Large-Scale Wind Generation Systems Considering Wind Turbine Dynamics
9. Reinforcement Learning-Based Intelligent Maximum Power Point Tracking Control for Wind Energy Conversion Systems

FACTS CONTROL:

1. A New Control Strategy for Distributed Static Compensators Considering Transmission Reactive Flow Constraints
2. FACTS Devices Allocation via Sparse Optimization
3. A Fast LP Approach for Enhanced Utilization of Variable Impedance Based FACTS Devices
4. Individual Phase Current Control Based on Optimal Zero Sequence Current Separation for a Star-Connected Cascade STATCOM under Unbalanced Conditions
5. Full-bridge Reactive Power Compensator with Minimized Equipped Capacitor and its Application to Static Var Compensator
6. Online Reference Limitation Method of Shunt-Connected Converters to the Grid to Avoid Exceeding Voltage and Current Limits Under Unbalanced Operation
7. Application of PI and Super Twisting Drivers to Voltage Regulation of Wind farm via StatCom

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8. Reduced Capacitance Thin-Film H-Bridge
Multilevel STATCOM Control Utilizing an Analytic Filtering Scheme
9. Modulation and Control of Transformer-less UPFC
10. An Integrated Dynamic Voltage Restorer-Ultracapacitor Design for Improving
Power Quality of the Distribution Grid
11. Dynamic Voltage Restorer Based on Three-Phases Inverters Cascaded Through an
Open-End Winding Transformer
12. Control strategy for Single-phase Transformerless Three-leg Unified Power
Quality Conditioner Based on Space Vector Modulation
13. Implementation of Hybrid Filter for 12-Pulse Thyristor Rectifier Supplying High-
Current Variable-Voltage DC Load
14. Shunt Active Power Filter With Open-End Winding Transformer and Series-
Connected Converters

HYBRID CONVERTERS:

1. Performance Analysis of Bidirectional DC-DC Converters for Electric Vehicles
2. Flying-Capacitor Based Hybrid LLC Converters with Input Voltage Auto-Balance
Ability for High Voltage Applications
3. A Hybrid Estimator for Active/Reactive Power Control of Single-Phase Distributed
Generation Systems with Energy Storage
4. Robust Global Stabilization of the DC-DC Boost Converter via Hybrid Control
5. Hybrid Modulation Scheme for High Frequency AC Link Inverter
6. Hybrid IPT Topologies With Constant Current or Constant Voltage Output for
Battery Charging Applications
7. Design, Operation and Control of S3 Inverter for Single-Phase Micro-Grid
Applications
8. Hybrid Three-Level and Half-Bridge DC-DC Converter With Reduced Circulating
Loss and Output Filter Inductance
9. Analysis of CLL Resonant Converter with Semi Bridgeless Active Rectifier
and Hybrid Control
10. A New Hybrid Boosting Converter (HBC) for Renewable Energy Applications

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11. High Gain Zero Voltage Switching Bidirectional converter with reduced number of switches
12. The Hybrid-Cascaded DC–DC Converters Suitable for HVdc Applications
13. Hybrid PWM-Resonant Converter for Electric Vehicle On-Board Battery Chargers
14. Burst Mode Elimination in High Power LLC Resonant Battery Charger for Electric Vehicles