IEEE Projects Titles 2015-2016

Power Electronics & Drives

1. A Family of Soft-Switching DC–DC Converters Based on a Phase-Shift-Controlled Active Boost Rectifier
2. A Three-Level Quasi-Two-Stage Single-Phase PFC Converter with Flexible Output Voltage and Improved Conversion Efficiency
3. Analysis of Dual-Carrier Modulator for Bidirectional Non-inverting Buck–Boost Converter
4. Bang–Bang Charge Control for LLC Resonant Converters
5. DC/DC Buck Power Converter as a Smooth Starter for a DC Motor Based on a Hierarchical Control
6. High-Gain Resonant Switched-Capacitor Cell-Based DC/DC Converter for Offshore Wind Energy Systems
7. Modular Snubberless Bidirectional Soft-Switching Current-Fed Dual 6-Pack (CFD6P) DC/DC Converter
8. Switch Short-Circuit Fault Diagnosis and Remedial Strategy for Full-Bridge DC–DC Converters
9. A High Gain Input-Parallel Output-Series DC/DC Converter With Dual Coupled Inductors
10. A Novel Control Method for Transformerless H-Bridge Cascaded STATCOM With Star Configuration
11. A Novel Control Strategy of Suppressing DC Current Injection to the Grid for Single-Phase PV Inverter
13. Capacitor Voltage Balancing of a Five-Level ANPC Converter Using Phase-Shifted PWM
14. Discontinuous Modulation Scheme for a Differential-Mode ´ Cuk Inverter
15. Derivation, Analysis, and Comparison of Nonisolated Single-Switch High Step-up Converters With Low Voltage Stress
16. The Worst Conducted EMI Spectrum of Critical Conduction Mode Boost PFC Converter
17. A High Step-Down Multiple Output Converter With Wide Input Voltage Range Based on Quasi Two-Stage Architecture and Dual-Output LLC Resonant Converter
18. A High-Frequency Model for a PCM Buck Converter
19. A Nonisolated Multiinput Multioutput DC–DC Boost Converter for Electric Vehicle Applications
20. A Novel Accurate Primary-Side Control (PSC) Method for Half-Bridge (HB) LLC Converter
21. Adaptive Peak-Inductor-Current-Controlled PFM Boost Converter With a Near-Threshold Startup Voltage and High Efficiency
22. Alternative Source-Port-Tolerant Series-Connected Double-Input DC–DC Converter
23. Developing Prognostic Models Using Duality Principles for DC-to-DC Converters
24. Double Modulation Technique for a ZVS Self-Oscillating Half-Bridge Inverter
25. Double-Phase High-Efficiency, Wide Load Range High-Voltage/Low-Voltage LLC DC/DC Converter for Electric/Hybrid Vehicles
27. Hybrid Transformer ZVS/ZCS DC–DC Converter With Optimized Magnetics and Improved Power Devices Utilization for Photovoltaic Module Applications
28. Modeling and Triple-Loop Control of ZVS Grid-Connected DC/AC Converters for Three-Phase Balanced Micro Inverter Application
30. Robust Sliding-Mode Control Design for a Voltage Regulated Quadratic Boost Converter
31. Switching State Vector Selection Strategies for Paralleled Multilevel Current-Fed Inverter Under Unequal DC-Link Currents Condition
32. A Fully Integrated Three-Level Isolated Single-Stage PFC Converter
33. A High-Efficiency DC–DC Boost Converter for a Miniaturized Microbial Fuel Cell
34. A Novel Load Adaptive ZVS Auxiliary Circuit for PWM Three-Level DC–DC Converters
35. Buck-Derived Converters Based on Gallium Nitride Devices for Envelope Tracking Applications
36. High-Frequency-Fed Unity Power-Factor AC-DC Power Converter With One Switching Per Cycle
37. Multicell Switched-Inductor/Switched-Capacitor Combined Active-Network Converters
38. Decoupling of Fluctuating Power in Single-Phase Systems Through a Symmetrical Half-Bridge Circuit
40. A Digitally Controlled Critical Mode Boost Power Factor Corrector With Optimized Additional On Time and Reduced Circulating Losses
41. A Family of Zero-Current-Transition Transformerless Photovoltaic Grid-Connected Inverter
42. A Quasi-Unipolar SPWM Full-Bridge Transformerless PV Grid-Connected Inverter with Constant Common-Mode Voltage
43. A Step-up Resonant Converter for Grid-Connected Renewable Energy Sources
44. An Interleaved High-Power Flyback Inverter for Photovoltaic Applications
45. Automatic Current Sharing of an Input-Parallel Output-Parallel (IPOP)-Connected DC-DC Converter System With Chain-Connected Rectifiers
46. Carrier-Based Discontinuous PWM Method for Vienna Rectifiers
47. DC-DC Converters Dynamic Modeling With State Observer-Based Parameter Estimation
48. Design of Single-Switch Inverters for Variable Resistance/Load Modulation Operation
49. Hardware-Efficient Programmable-Deviation Controller for Indirect Energy Transfer DC-DC Converters
50. High-Efficiency Two-Inductor PFC Boost Converter Employing SPDT Relay
51. Impedance Matching in Photovoltaic Systems Using Cascaded Boost Converters and Sliding-Mode Control
52. Improving the Regulation Range of EV Battery Chargers With L3C2 Resonant Converters
53. Three-Level Single-Phase Bridgeless PFC Rectifiers
54. Three-Port DC-DC Converter for Stand-Alone Photovoltaic Systems
55. Time-Varying Compensation for Peak Current-Controlled PFC Boost Converter
56. Ultrahigh Step-Down Converter
57. A New Interleaved Three-Phase Single-Stage PFC AC–DC Converter With Flying Capacitor
58. A Single-Phase Rectifier Having Two Independent Voltage Outputs With Reduced Fundamental Frequency Voltage Ripples
59. A Single-Stage Solar-Powered LED Display Driver Using Power Channel Time Multiplexing Technique
60. A Submodule Implementation for Parallel Connection of Capacitors in Modular Multilevel Converters
62. An Extended Lyapunov-Function-Based Control Strategy for Single-Phase UPS Inverters
63. An Immune-Algorithm-Based Dead-Time Elimination PWM Control Strategy in a Single-Phase Inverter
64. Analysis of Critical Inductance and Capacitor Voltage Ripple for a Bidirectional Z-Source Inverter
65. Automatic Resonant Frequency Tracking in Parallel LLC Boost DC–DC Converter
66. Dead-Time Compensation Method Based on Current Ripple Estimation
67. Embedded Control of n-Level DC–DC–AC Inverter
68. Extended Application of D-S Digital Control to a Single-Phase Bidirectional Inverter With an LCL Filter
69. Frequency Adaptive Selective Harmonic Control for Grid-Connected Inverters
70. Losses in Medium-Voltage Megawatt-Rated Direct AC/AC Power Electronics Converters
71. Minimization of the DC Component in Transformerless Three-Phase Grid-Connected Photovoltaic Inverters
72. Modeling Bidirectional Contactless Grid Interfaces With a Soft DC-Link
73. ON/OFF Control of a Modular DC–DC Converter Based on Active-Clamp LLC Modules
74. Prediction of Subharmonic Oscillation in I2 Controlled Buck Converters in CCM
75. Three-Level DC Converter for Balancing DC 800-V Voltage
76. A Current-Sourced LED Driver Compatible With Fluorescent Lamp Ballasts
77. A Family of High-Voltage Gain Single-Phase Hybrid Switched-Capacitor PFC Rectifiers
78. A Fast DC-Bus Voltage Controller for Bidirectional Single-Phase AC/DC Converters
79. A Novel and Simple Single-Phase Modulator for the Nested Neutral-Point Clamped (NNPC) Converter
80. A Novel High Step-up DC/DC Converter Based on Integrating Coupled Inductor and Switched-Capacitor Techniques for Renewable Energy Applications
81. A Novel Primary-Side Controlled Universal-Input AC–DC LED Driver Based on a Source-Driving Control Scheme
82. An Adaptive ZVS Full-Bridge DC–DC Converter With Reduced Conduction Losses and Frequency Variation Range
83. Analytical Model of the Half-Bridge Series Resonant Inverter for Improved Power Conversion Efficiency and Performance
84. Bridgeless PFC-Modified SEPIC Rectifier With Extended Gain for Universal Input Voltage Applications
85. Direct AC/DC Rectifier With Mitigated Low-Frequency Ripple Through Inductor-Current Waveform Control
86. Front-End Converter With Integrated PFC and DC-DC Functions for a Fuel Cell UPS With DSP-Based Control
87. Hybrid-Type Full-Bridge DC/DC Converter With High Efficiency
88. Interleaved Boost-Integrated LLC Resonant Converter With Fixed-Frequency PWM Control for Renewable Energy Generation Applications
89. Optimal Design of DCM LCC Resonant Converter With Inductive Filter Based on Mode Boundary Map
90. A Fully Soft-Switched Single Switch Isolated DC–DC Converter
91. A High-Efficiency PFM Half-Bridge Converter Utilizing a Half-Bridge LLC Converter Under Light Load Conditions
92. A Multiphase Synchronous Buck Converter With a Fully Integrated Current Balancing Scheme
93. A Novel Line Frequency Multistage Conduction LED Driver With High Power Factor
94. A Single-Stage Photovoltaic System for a Dual-Inverter-Fed Open-End Winding Induction Motor Drive for Pumping Applications
95. Aalborg Inverter – A New Type of “Buck in Buck, Boost in Boost” Grid-Tied Inverter
96. Analysis of Active-Network Converter With Coupled Inductors
97. Decentralized Inverse-Droop Control for Input-Series–Output-Parallel DC–DC Converters
98. Frequency-Based Energy-Management Strategy for Stand-Alone Systems With Distributed Battery Storage
99. Grid-Connected Forward Micro inverter With Primary-Parallel Secondary-Series Transformer
100. High Step-Up Interleaved Forward-Flyback Boost Converter With Three-Winding Coupled Inductors
101. High-Efficiency-Isolated Single-Input Multiple-Output Bidirectional Converter
102. Interleaved Phase-Shift Full-Bridge Converter With Transformer Winding Series-Parallel Auto regulated (SPAR) Current Doubler Rectifier
103. Model Predictive Control Methods to Reduce Common-Mode Voltage for Three-Phase Voltage Source Inverters
104. Modeling and Analysis of Resonant Switched-Capacitor Converters With Free-Wheeling ZCS
105. Modeling and Controller Design of a Semi isolated Multiinput Converter for a Hybrid PV/Wind Power Charger System
106. Proposed Switching Losses Model for Integrated Point-of-Load Synchronous Buck Converters
107. Resonant Switched-Capacitor Voltage Regulator With Ideal Transient Response
108. Versatile Control of Unidirectional AC–DC Boost Converters for Power Quality Mitigation
109. Wide Damping Region for LCL-Type Grid-Connected Inverter With an Improved Capacitor-Current-Feedback Method
110. A Family of Two-Switch Boosting Switched-Capacitor Converters
111. A New Isolated Auxiliary Current Pump Module for Load Transient Mitigation of Isolated/Nonisolated Step-Up/Step-Down DC–DC Converter
112. A Novel Control Scheme of DCM Boost PFC Converter
113. A Secondary-Side Phase-Shift-Controlled LLC Resonant Converter With Reduced Conduction Loss at Normal Operation for Hold-Up Time Compensation Application
114. Active Power and DC Voltage Coordinative Control for Cascaded DC–AC Converter With Bidirectional Power Application
115. Analysis and Design of Charge Pump-Assisted High Step-Up Tapped Inductor SEPIC Converter With an “Inductorless” Regenerative Snubber
116. Extended Boost Active-Switched-Capacitor/ Switched-Inductor Quasi-Z-Source Inverters
117. Observer-Based Control of LLC DC/DC Resonant Converter Using Extended Describing Functions
118. Reliability Evaluation of Conventional and Interleaved DC–DC Boost Converters

Industrial Electronics
119. A Class of Quasi-Switched Boost Inverters
120. A Modular Multilevel Converter Pulse Generation and Capacitor Voltage Balance Method Optimized for FPGA Implementation
121. A Novel Integrated Power Quality Controller for Microgrid
122. A Novel Stabilization Method of LC Input Filter With Constant Power Loads Without Load Performance Compromise in DC Microgrids
123. A Practical Solution of High-Frequency-Link Bidirectional Solid-State Transformer Based on Advanced Components in Hybrid Microgrid
124. A Real-Time Computation Method With Dual Sampling Mode to Improve the Current Control Performance of the LCL-Type Grid-Connected Inverter
125. A Simple Differential Mode EMI Suppressor for the LLCL-Filter-Based Single-Phase Grid-Tied Transformerless Inverter
126. A Zero-Voltage-Transition Bidirectional DC/DC Converter
127. An Enhanced Voltage Sag Compensation Scheme for Dynamic Voltage Restorer
128. An Observer-Based Optimal Voltage Control Scheme for Three-Phase UPS Systems
129. An Optimized Switching Strategy for a Ripple-Canceling Boost Converter
130. Analysis of the Interleaved Isolated Boost Converter with Coupled Inductors
131. Comprehensive Modeling of Single-Phase Quasi-Z-Source Photovoltaic Inverter to Investigate Low-Frequency Voltage and Current Ripple
132. DC-to-DC Converter with Low Input Current Ripple for Maximum Photovoltaic Power Extraction
133. Decoupling-Controlled Triport Composited DC/DC Converter for Multiple Energy Interface
134. Effective Test Bed of 380-V DC Distribution System Using Isolated Power Converters
135. Family of Soft-Switching Single-Switch PWM Converters With Lossless Passive Snubber
137. High-Voltage Tapped-Inductor Buck Converter Utilizing an Autonomous High-Side Switch
138. Hybrid Switched-Inductor Converters for High Step-Up Conversion
139. Large-Signal Characterization of Power Inductors in EV Bidirectional DC-DC Converters Focused on Core Size Optimization
140. Multilevel Modular DC/DC Power Converter for High-Voltage DC-Connected Offshore Wind Energy Applications
141. Novel High-Conversion-Ratio High-Efficiency Isolated Bidirectional DC-DC Converter
142. Predictive Voltage Control of Transformerless Dynamic Voltage Restorer
143. PV Isolated Three-Port Converter and Energy-Balancing Control Method for PV-Battery Power Supply Applications
144. Ripple Eliminator to Smooth DC-Bus Voltage and Reduce the Total Capacitance Required
145. Simplified PWM With Switching Constraint Method to Prevent Circulating Currents for Paralleled Bidirectional AC/DC Converters in Grid-Tied System Using Graphic Analysis
146. Topology Review and Derivation Methodology of Single-Phase Transformerless Photovoltaic Inverters for Leakage Current Suppression
147. Two-Stage Solar Photovoltaic-Based Stand-Alone Scheme Having Battery as Energy Storage Element for Rural Deployment
148. ZCS Bridgeless Boost PFC Rectifier Using Only Two Active Switches

Industrial Application
149. A Novel Double Integrated Buck Offline Power Supply for Solid-State Lighting Applications
150. A Novel Modulation Technique and a New Balancing Control Strategy for a Single-Phase Five-Level ANPC Converter
151. A Novel Switched-Coupled-Inductor DC-DC Step-Up Converter and Its Derivatives
152. A Power Decoupling Method Based on Four-Switch Three-Port DC/DC/AC Converter in DC Microgrid
153. High-Quality Sine Wave Generation Using a Differential Boost Inverter at Higher Operating Frequency
154. Improved-Power-Quality Bridgeless-Converter-Based Multiple-Output SMPS
155. Large-Signal Stabilization of AC Grid Supplying Voltage-Source Converters With LCL-Filters