

### S3 Technologies

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Projects

#### **2017 - 2018 EEE (POWER ELECTRONICS/ POWER SYSTEMS )**

<b>Project Code</b>	<b>IEEE 2017-18 EEE Project Titles</b>	<b>Year</b>
S301	A Family of Neutral-Point-Clamped Circuits of Single-Phase PV Inverters: Generalized Principle and Implementation	2017
S302	A Highly Efficient and Reliable Inverter Configuration Based Cascaded Multi-Level Inverter for PV Systems	2017
S303	A Multilevel Transformerless Inverter employing Ground Connection between PV Negative Terminal and Grid Neutral point	2017
S304	A New Six-Switch Five-Level Active Neutral Point Clamped Inverter for PV Applications	2017
S305	A Novel Single Stage Single Phase Reconfigurable Inverter Topology for a Solar Powered Hybrid AC/DC Home	2017
S306	A Single-Phase Transformerless Inverter with Charge Pump Circuit Concept for Grid- Tied PV Applications	2017
S307	An Improved Zero-Current-Switching Single-Phase Transformerless PV H6 Inverter with Switching Loss-Free	2017
S308	Delta Power Control Strategy for Multi-String Grid-Connected PV Inverters	2017
S309	Design of C'uk Derived Transformerless Common Grounded PV Micro-inverter in CCM	2017
S310	Modified Single-Phase Single-Stage Grid-tied Flying Inductor Inverter with MPPT and Suppressed Leakage Current	2017
S311	Modulation Technique for Single-Phase Transformerless Photovoltaic Inverters with Reactive Power Capability	2017
S312	Non-linear PWM Controlled Single-phase Boost Mode Grid-Connected Photovoltaic Inverter with Limited Storage Inductance Current	2017
S313	Reactive Power Control for Single-phase Grid-tie Inverters using Quasi Sinusoidal Waveform	2017
S314	Single-stage Three-phase Current-source Photovoltaic Grid-connected Inverter with High Voltage Transmission Ratio	2017
S315	A Medium Frequency Transformer-Based Wind Energy Conversion System Used for Current Source Converter Based Offshore Wind Farm	2017

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S316	Bipolar Operation Investigation of Current Source Converter-Based Wind Energy Conversion Systems	2017
S317	Control Strategy of Wind Turbine Based on Permanent Magnet Synchronous Generator and Energy Storage for Stand-Alone Systems	2017
S318	Novel Isolated Power Conditioning Unit for Micro Wind Turbine Applications	2017
S319	Replacing the Grid Interface Transformer in Wind Energy Conversion System With Solid-State Transformer	2017
S320	A Decentralized Dynamic Power Sharing Strategy for Hybrid Energy Storage System in Autonomous DC Microgrid	2017
S321	Bi-Directional Single-Stage Grid-Connected Inverter for Battery Energy Storage System	2017
S322	Control of Hybrid AC/DC Microgrid Involving Energy Storage and Pulsed Loads	2017
S323	Electric Vehicle Charging Station with an Energy Storage Stage for Split-DC Bus Voltage Balancing	2017
S324	Hybrid Energy Storage System MicroGrids Integration For Power Quality Improvement Using Four Leg Three Level NPC Inverter and Second Order Sliding Mode Control	2017
S325	Analysis, Design, Modelling and Control of an Interleaved-Boost Full-Bridge Three-Port Converter for Hybrid Renewable Energy Systems	2017
S326	Design and Implementation of an Amorphous High Frequency Transformer Coupling Multiple Converters in a Smart Micro Grid	2017
S327	Dual-DC-Port Asymmetrical Multi-Level Inverters with Reduced Conversion Stages and Enhanced Conversion Efficiency	2017
S328	Dual-Transformer based Asymmetrical Triple-Port Active Bridge (DT-ATAB) Isolated DC-DC Converter	2017
S329	A 4-Switch Single-Stage Single-Phase Buck-Boost Inverter	2017
S330	A Highly Reliable and High Efficiency Quasi Single-Stage Buck-Boost Inverter	2017
S331	Interleaved Resonant Boost Inverter Featuring SiC Module for High Performance Induction Heating	2017

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IEEE Dot Net | Java | Embedded | Image Processing | Android | Networking | VLSI | Application  
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S332	Maximum Boost Control of Diode-assisted Buckboost Voltage Source Inverter with Minimum Switching Frequency	2017
S333	Modeling and Optimization of a Zero Voltage Switching Inverter for High Efficiency and Miniaturization	2017
S334	A New Class of Single-Phase High-Frequency Isolated Z-Source AC-AC Converters with Reduced Passive Components	2017
S335	A Novel Nine-Level Inverter Employing One Voltage Source and Reduced Components as High Frequency AC Power Source	2017
S336	Enhanced-Boost Quasi-Z-Source Inverters with Two Switched Impedance Network	2017
S337	High Voltage Gain Half-Bridge Z-Source Inverter with Low Voltage Stress on Capacitors	2017
S338	Quasi Cascaded H-Bridge Five-Level Boost Inverter	2017
S339	Steady-State Analysis and Design Considerations of High Voltage Gain Switched Z-Source Inverter with Continuous Input Current	2017
S340	A Novel Method of Reducing Commutation Torque Ripple for Brushless DC Motor Based on Cuk Converter	2017
S341	Commutation Torque Ripple Reduction in BLDC Motor Using Modified SEPIC Converter and Three-level NPC Inverter	2017
S342	Commutation Torque Ripple Suppression Strategy for Brushless DC Motors With a Novel Non-inductive Boost Front End	2017
S343	Design and Demonstration of High Power Density Inverter for Aircraft Applications	2017
S344	Quasi-Z-Source Indirect Matrix Converter Fed Induction Motor Drive for Flow Control of Dye in Paper Mill	2017
S345	A New Integration Method for an Electric Vehicle Wireless Charging System Using LCC Compensation Topology: Analysis and Design	2017
S346	Bidirectional Current-Fed-Half-Bridge (C)(LC) –(LC) Configuration for Inductive Wireless Power Transfer System	2017
S347	Higher Order Compensation for Inductive-Power-Transfer Converters with Constant-Voltage or Constant-Current Output Combating Transformer Parameter Constraints	2017

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IEEE Dot Net | Java | Embedded | Image Processing | Android | Networking | VLSI | Application  
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S348	Modeling and Analysis of AC Output Power Factor for Wireless Chargers in Electric Vehicles	2017
S349	SiC based Z-Source Resonant Converter with Constant Frequency and Load Regulation for EV Wireless Charger	2017
S350	Simultaneous Wireless Power/Data Transfer for Electric Vehicle Charging	2017
S351	A cascaded Couple Inductor- Reverse high step up converter integrating three-winding coupled inductor and diode-capacitor technique	2017
S352	A New Negative Output Buck-Boost Converter with Wide Conversion Ratio	2017
S353	A Novel Structure for Single Switch Non-Isolated Transformerless Buck-Boost dc-dc Converter	2017
S354	Analysis and Design of Impulse Commutated Zero Current Switching Single Inductor Current-fed Three-phase Push-pull Converter	2017
S355	Design and Analysis of a Class of Zero Fundamental Ripple Converters	2017
S356	High-Efficiency Asymmetric Forward-Flyback Converter for Wide Output Power Range	2017
S357	Passive Regenerative and Dissipative Snubber Cells for Isolated SEPIC Converters: Analysis, Design, and Comparison	2017
S358	A High Efficiency Step-Up Current-Fed Push-Pull Quasi-Resonant Converter with Fewer Components for Fuel Cell Application	2017
S359	A High-Voltage-Gain DC-DC Converter Based on Modified Dickson Charge Pump Voltage Multiplier	2017
S360	High Step-Up PWM DC-DC Converter with Coupled-Inductor and Resonant Switched-Capacitor	2017
S361	Ultra-Large Gain Step-Up Coupled Inductor DC-DC Converter With Asymmetric Voltage Multiplier Network for a Sustainable Energy System	2017
S362	Zero-Ripple Input Current High Step-Up Boost-SEPIC DC-DC Converter with Reduced Switch Voltage Stress	2017
S363	A Control Map for a Bidirectional PWM Plus Phase-Shift-Modulated Push-Pull DC-DC Converter	2017

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S364	A Family of True Zero Voltage Zero Current Switching (ZVZCS) Non-isolated Bidirectional DC-DC Converter with Wide Soft Switching Range	2017
S365	A Novel Reversal Coupled Inductor High-Conversion-Ratio Bi-directional DC-DC Converter	2017
S366	Cascaded High-Voltage-Gain Bidirectional Switched-Capacitor DC-DC Converters for Distributed Energy Resources Applications	2017
S367	High Light-Load Efficiency Power Conversion Scheme Using Integrated Bidirectional Buck Converter for Paralleled Server Power Supplies	2017
S368	Interleaved Switched-Capacitor Bidirectional DC-DC Converter with Wide Voltage-Gain Range for Energy Storage Systems	2017
S369	A Dual Buck-Boost AC/DC Converter for DC Nano-Grid with Three Terminal Outputs	2017
S370	Analysis and Design of an Input-Series Two-Transistor Forward Converter for High-Input Voltage Multiple-Output Applications	2017
S371	Design and Implementation of a High Efficiency Multiple Output Charger based on the Time Division Multiple Control Technique	2017
S372	Improved Power Quality Bridgeless Converter Based SMPS for Arc Welding	2017
S373	A Single-Switch AC-DC LED Driver Based on a Boost-Flyback PFC Converter with Lossless Snubber	2017
S374	An AC-DC LED Driver with a Two Parallel Inverted Buck Topology for Reducing the Light Flicker in Lighting Applications to Low-Risk Levels	2017
S375	Analysis and Design of a Single-Stage Isolated AC-DC LED Driver with a Voltage Doubler Rectifier	2017
S376	Flyback-Based Three-Port Topologies for Electrolytic Capacitor-Less LED Drivers	2017
S377	Single-Stage Single-Switch Four-Output Resonant LED Driver with High Power Factor and Passive Current Balancing	2017
S378	Single-Switch Coupled-Inductor-Based Two-Channel LED Driver with a Passive Regenerative Snubber	2017
S379	A Boost PFC Stage Utilized as Half-Bridge Converter for High Efficiency DC-DC Stage in Power Supply Unit	2017

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S380	A Family of Single-Phase Hybrid Step-Down PFC Converters	2017
S381	A Family of Single-Phase Voltage-Doubler High-Power-Factor SEPIC Rectifiers Operating in DCM	2017
S382	Flexible Mode Bridgeless Boost PFC Rectifier with High Efficiency over a Wide Range of Input Voltage	2017
S383	A Hybrid ZVZCS Dual-Transformer-Based Full-Bridge Converter Operating in DCM for MVDC Grids	2017
S384	A New ZVT Snubber Cell for PWM-PFC Boost Converter	2017
S385	A T-Type Isolated Zero Voltage Switching DC-DC Converter With Capacitive Output	2017
S386	High Efficiency Soft-Switching AC-DC Converter with Single-Power-Conversion Method	2017
S387	Soft-Switching Dual-Flyback DC-DC Converter with Improved Efficiency and Reduced Output Ripple Current	2017
S388	A New Dual-Bridge Series Resonant DC-DC Converter with Dual-Tank	2017
S389	Analysis and Design of Current-Fed High Step Up PWM Controlled Quasi-Resonant DC-DC Converter for Fuel Cell Applications	2017
S390	Analysis and Design of SQR Based High Voltage LLC Resonant DC-DC Converter	2017
S391	Design and Steady State Analysis of Parallel Resonant DC-DC Converter for High Voltage Power Generator	2017
S392	Dual-Bridge LLC Resonant Converter with Fixed-Frequency PWM Control for Wide Input Applications	2017
S393	High-Performance Quasi-Z-Source Series Resonant DC-DC Converter for Photovoltaic Module Level Power Electronics Applications	2017
S394	Hybrid Z-Source Boost DC-DC Converters	2017
S395	Load and Source Battery Simulator based on Z-Source Rectifier	2017
S396	Quasi-Z-Source Network-Based Hybrid Power Supply System for Aluminum Electrolysis Industry	2017

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IEEE Dot Net | Java | Embedded | Image Processing | Android | Networking | VLSI | Application  
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S397	Wide Input-Voltage Range Boost Three-Level DC-DC Converter with Quasi-Z Source for Fuel Cell Vehicles	2017
S398	A Novel Interleaved Non-Isolated Ultra High Step-Up DC-DC Converter with ZVS Performance	2017
S399	A Novel Soft-Switching Interleaved Coupled-Inductor Boost Converter with Only Single Auxiliary Circuit	2017
S3100	Discontinuous Current Mode Operation of Two-Phase Interleaved Boost Dc-dc Converter with Coupled-inductor	2017
S3101	Interleaved LLC (iLLC) Resonant Converter with Hybrid Rectifier and Variable-Frequency Plus Phase-Shift (VFPPS) Control For Wide Output Voltage Range Applications	2017
S3102	Zero-Voltage Transition Interleaved Boost Converter with an Auxiliary Coupled Inductor	2017
S3103	A Comprehensive Design Approach of Power Electronic-Based Distributed Generation Units Focused on Power Quality Improvement	2017
S3104	A Low Capacitance Cascaded H-Bridge Multi-Level StatCom	2017
S3105	A Superconducting Magnetic Energy Storage-Emulator/Battery Supported Dynamic Voltage Restorer	2017
S3106	Hybrid Energy Storage System MicroGrids Integration For Power Quality Improvement Using Four Leg Three Level NPC Inverter and Second Order Sliding Mode Control	2017
S3107	On the Application of Single-phase Voltage Sag Compensators in Three-Phase Systems	2017
S3108	Power Quality Enhancement for a Grid Connected Wind Turbine Energy System	2017
S3109	Series Compensator Based on Cascaded Transformers Coupled with Three-Phase Bridge Converters	2017
S3110	Simultaneous Microgrid Voltage and Current Harmonics Compensation Using Coordinated Control of Dual-Interfacing-Converters	2017
S3111	Single-Phase to Three-Phase Unified Power Quality Conditioner Applied in Single Wire Earth Return Electric Power Distribution Grids	2017
S3112	Time-Varying and Constant Switching Frequency Based Sliding Mode Control Methods for Transformerless DVR Employing Half-Bridge VSI	2017
S3113	Unbalanced Control Strategy for a Thyristor Controlled LC-Coupling Hybrid Active Power Filter (TCLC-HAPF) in Three-phase Three-wire Systems	2017

S3114	Voltage control with PV inverters in low voltage networks – In depth analysis of different concepts and parameterization criteria	2017
S3115	Voltage Flicker Mitigation Employing Smart Loads with High Penetration of Renewable Energy in Distribution Systems	2017