



# Proceedings

CLICK ON PROCEEDING TITLES TO OPEN A PAPER

## Monday, September 19, 1:30PM-4:00PM

- The Modular Embedded Multilevel Converter: A Voltage Source Converter with IGBTs and Thyristors
- Multi-Module-Cascade High-Voltage Composite Switch
- Step-Up MMC with Staircase Modulation: Analysis, Control, and Switching Strategy
- A High Step-Up Ratio Soft-Switching DC-DC Converter for Interconnection of MVDC and HVDC Grids
- Fault Tolerant Cell Design for MMC-based Multiport Power Converters
- HIL Platform Design and Controller Verification for MMC Based HVDC Networks
- Energy Storage Opportunities and Capabilities in a Type 3 Wind Turbine Generator
- Assessment of System Frequency Support Effect of a PMSG-WTG Using Torque-Limit Based Inertial Control
- Improved Efficiency of Local EPS through Variable Switching Frequency Control of Distributed Resources
- Smart EV Charging System for Maximising Power Delivery from Renewable Sources
- Instantaneous Frequency Regulation of Microgrids via Power Shedding of Smart Load and Power Limiting of Renewable Generation
- Modeling and identification of harmonic instability problems in wind farms
- A Method for Improving Stability of LCL-Type Grid-Tied Inverters in Weak Grid with Resonant Feed forward Control
- Passivity Enhancement in RES Based Power Plant with Paralleled Grid-Connected Inverters
- Voltage Stability Analysis Using A Complete Model of Grid-Connected Voltage-Source Converters
- Resonant Control for Power Converters Connected to Weak and Micro Grid Systems with Variant Frequency
- Extended-Horizon Finite-Control-Set Predictive Control of a Multilevel Inverter for Grid-Tie Photovoltaic Systems
- A Novel Seamless Transfer Control Strategy For Wide Range Load
- Hybrid Switched-Capacitor Quadratic Boost Converters with Very High DC Gain and Low Voltage Stress On Their Semiconductor Devices
- Mixed Switched-Capacitor Based High Conversion Ratio Converter and Generalization for Renewable Energy Applications
- A High Step-Up DC-DC Converter with Switched-Capacitor and ZVS Realization
- A Flying Capacitor Multilevel Converter with Sampled Valley-Current Detection for Multi-Mode Operation and Capacitor Voltage Balancing
- Resonant Switched Capacitor Stacked Topology Enabling High DC-DC Voltage Conversion Ratios and Efficient Wide Range Regulation
- Bi-Directional Bridge Modular Switched-Capacitor-Based DC-DC Converter with Phase-Shift Control
- A Review of Electronic Inductor Technique for Power Factor Correction in Three-Phase Adjustable Speed Drives
- The Power-Loss Analysis and Efficiency Maximization of A Silicon-Carbide MOSFET Based Three-phase 10kW Bi-directional EV Charger Using Variable-DC-Bus Control
- Modular Multi-Parallel Rectifiers (MMR) with two DC Link Current Sensors
- Comparison of Three-phase Active Rectifier Solutions for Avionic Applications: Impact of the Avionic Standard DO-160 F and Failure Modes

- MultiLevel Asymmetric Single-Phase Current Source Rectifiers
- Three-Phase Unidirectional Rectifiers with Open-End Source and Cascaded Floating Capacitor H-Bridges
- A Generic Topology Derivation Method for Single-phase Converters with Active Capacitive DC-links
- Power Decoupling Method for Single Phase PV System using Cuk derived micro-inverter
- A Multi-port, Isolated PV Microinverter with Low Decoupling Capacitance and Integrated Battery Charger
- A Single Phase Transformerless String Inverter with Large Voltage Swing of Half Bridge Capacitors for Active Power Decoupling
- A-Source Impedance Network
- A Semi-Two-Stage DC-AC Power Conversion System with Improved Efficiency Based on A Dual-input Inverter
- Single-Input Multiple-Output Synchronous dc-dc Buck Converter
- Dual-Input Dual-Output Single-Switch Dc-Dc Converter for Renewable Energy Applications
- A High Step-Up Interleaved Converter with Coupled Inductor and Voltage-Lift Technique
- Single Resonant Cell Based Multilevel Soft-Switching DC-DC Converter for Medium Voltage Conversion
- Unified Model of High Voltage Gain DC-DC Converter with Multi-cell Diode-Capacitor/Inductor Network
- Comparative Evaluation of a Triangular Current Mode (TCM) and Clamp-Switch TCM DC-DC Boost Converter
- Analytically Constrained ZVS Operation To Reduce Commutation Losses for High Boost Dual-Active Bridge Converters
- Passive Auxilliary Circuit for ZVS Operation of A Wide-DC-Range Dual-Active-Bridge Bidirectional Converter for Transportation Applications
- Charge-Based ZVS Modulation of a 3-5 Level Bidirectional Dual Active Bridge DC-DC Converter
- Parallel-Connected Bidirectional Current-Fed Dual Active Bridge DC-DC Converters with Decentralized Control
- Asymmetrical Duty-Cycle Control of Three-Phase Dual-Active Bridge Converter for Soft-Switching Range Extension
- Proposal of Dual Active Bridge Converter with Auxiliary Circuit for Multiple Pulse Width Modulation
- A Simple Low-Cost Common Mode Active EMI Filter Using a push-pull Amplifier
- Two-capacitor Transformer Winding Capacitance Models for Common-Mode EMI Noise Analysis in Isolated DC-DC Converters
- Performance of Common-Mode-Voltage-Cancellation PWM Strategies with Consideration of Commutation Residues due to Double-Switching Waveforms
- Identification of the Temporal Source of Frequency Domain Characteristics of SiC MOSFET Based Power Converter Waveforms
- Resonance Phenomenon Influencing the Conducted-Mode Emission Test
- Modeling, Analysis and Design of Differential Mode Active EMI Filters with Feedforward and Feedback Configurations for AC-DC Converters
- Compensation for Inverter Nonlinearity Considering Voltage Drops and Switching Delays of Each Leg's Switches
- Small-signal Terminal-Characteristics Modeling of Three-Phase Droop-Controlled Inverters
- Enhancement of Current and Voltage Controllers Performance by Means of Lead Compensation and Anti-Windup for Islanded Microgrids
- DC-Link Current Ripple Component RMS Value Estimation Considering Anti-Parallel Diode Reverse Recovery in Voltage Source Inverters
- Digital Dead-Beat and Repetitive Combined Control for Stand-Alone Four-Leg VSI
- Modeling, Analysis, and Impedance Design of Battery Energy Stored Single-Phase Quasi-Z-Source Photovoltaic Inverter System
- High Torque Density Induction Motor with Integrated Magnetic Gear
- Accurate Determination of Induction Machine Torque and Current versus Speed Characteristics
- The Novel SLIM Method for the Determination of the Iron Core Saturation Level in Induction Motors
- Rotor Design to Reduce Secondary Winding Harmonic Loss for Induction Motor in Hybrid Electric Vehicle Application
- A Novel In Situ Efficiency Estimation Algorithm for Three-Phase Induction Motors Operating with Distorted Unbalanced Voltages
- Development and Efficiency estimation of a Regenerative Test Rig for Induction Motor Testing

- A Voltage Based Approach for Fault Detection and Separation in Permanent Magnet Synchronous Machines
- Permanent Magnet Generator Turn Fault detection Using Kalman Filter Technique
- Influence of Blade Pass Frequency Vibrations on MCSA-based Rotor Fault Detection of Induction Motors
- Stator Insulation Quality Assurance Testing for Appliance Motors with Aluminum Windings
- Robust detection of rotor winding asymmetries in wound rotor induction motors via integral current analysis
- Asynchronous Motors Fault Detection Using ANN and Fuzzy Logic Methods
- Minimizing Torque Ripple of Highly Saturated Salient Pole Synchronous Machines by Applying DB-DTFC
- Using Volt-sec. Sensing to Directly Improve Torque Accuracy and Self-Sensing at Very Low Speeds
- Torque Ripple Reduction for 6-stator/4-rotor-pole Variable Flux Reluctance Machines by Using Harmonic Field Current Injection
- Novel On-Line Optimal Bandwidth Search and Auto Tuning Techniques for Servo Motor Drives
- Open-loop Control for Permanent Magnet Synchronous Motor Driven by Square-wave Voltage and Stabilization Control
- A Robust Current Control Based on Proportional-Integral Observers for Permanent Magnet Synchronous Machines
- A Pumpback Test Bench for IGCT-based 11MW/595Hz Variable-Frequency-Drives with 1.25MW Grid Capability
- Grounding Concept and Common-Mode Filter Design Methodology for Transformerless MV Drives
- Utilisation of Series Connected Transformers for Multiple Active Rectifier Units
- Common-Mode Voltage Limits for the Transformerless Design of MV Drives to Prevent Bearing Current Issues
- A Robust Sensorless Start-up Method using Four Step Sequence for LCI system
- Virtual Voltage Source Control for 2x27 MVA Machine Test Bench
- Performance Comparison of 10 kV-15 kV High Voltage SiC Modules and High Voltage Switch using Series Connected LV SiC MOSFET devices
- Development of an Ultra-high Density Power Chip on Bus (PCoB) Module
- Optimized Power Modules for Silicon Carbide MOSFET
- An Improved Wire-bonded Power Module with Double-End Sourced Structure
- An Initial Consideration of Silicon Carbide Devices in Pressure-Packages
- Effect of Junction Temperature Swing Durations on a Lifetime of a Transfer Molded IGBT Module
- An Inductive and Capacitive Integrated Coupler and Its LCL Compensation Circuit Design for Wireless Power Transfer
- Design Procedure of Optimum Self-Inductances of Magnetic Pads in Inductive Power Transfer (IPT) for Electric Vehicles
- Design high power and high efficiency inverter operating at 13.56MHz for wireless power transfer systems
- Improved Design Optimization Approach for High Efficiency Matching Networks
- Efficiency Optimization Method of Wireless Power Transfer System with Multiple Transmitters and Single Receiver
- Maximum Efficiency Tracking in Wireless Power Transfer for Battery Charger: Phase Shift and Frequency Control

## Monday, September 19, 5:30PM-7:00PM

- Modeling, Parameterization, and Benchmarking of a Lithium Ion Electric Bicycle Battery
- Performance evaluation of a hybrid thermal-photovoltaic panel
- On-line Wind Speed Estimation in IM Wind Generation Systems by Using Adaptive Direct and Inverse Modelling of the Wind Turbine
- Passivity-Based and Standard PI Controls Application To Wind Energy Conversion System
- Evaluation of Circulating Current Suppression Methods for Parallel Interleaved Inverters
- A Fast Dynamic Unipolar Switching Control Scheme for Single Phase Inverters in DC Microgrids
- A Novel Method of Optimizing Efficiency in Hybrid Photovoltaic-Grid Power System
- A Novel Autonomous Control Scheme for Parallel, LCL-Based UPS Systems

- Harmonic Components Based Protection Strategy for Inverter-Interfaced AC Microgrid
- Adaptive Virtual Inertia Control of Distributed Generator for Dynamic Frequency Support in Microgrid
- Interleaved Hybrid Boost Converter with Simultaneous AC and DC Outputs for Microsource Applications
- Robust Inverter Control Design in Islanded Microgrids Using  $\mu$ -Synthesis
- Economic Analysis of a Regional Coordinated Microgrids System Considering Optimal PEVs Allocation
- Design of a Cooperative Voltage Harmonic Compensation Strategy for Islanded Microgrids Combining Virtual Admittances and Repetitive Controllers
- EMI Reduction Technology in 85 kHz Band 44 kW Wireless Power Transfer System for Rapid Contactless Charging of Electric Bus
- Design and Characterization of a Meander Type Dynamic Inductively Coupled Power Transfer Coil
- Design of S/P Compensated IPT System Considering Parameter Variations in Consideration of ZVS Achievement
- Coasting Control of EV Motor Considering Cross Coupling Inductance
- Analysis and Comparison of Single Inverter Driven Series Hybrid System
- Control Strategy for a Modified Cascade Multilevel Inverter with Dual DC Source for Enhanced Drivetrain Operation
- An Investigation of DC-Link Voltage and Temperature Variations on EV Traction System Design
- Compact and High Power Inverter for the Cadillac CT6 Rear Wheel Drive PHEV
- Quadratic Boost A-Source Impedance Network
- Analysis and Design of a Switched-Capacitor Step-Up Converter for Renewable Energy Applications
- Non-Isolated High-Step-Up Resonant DC/DC Converter
- Three Level DC-DC Converter Based on Cascaded Dual Half-Bridge Converter for Circulating Loss Reduction
- Current-fed Converters with Switching cells
- Analysis of LCLC Resonant Converters for High-voltage High-frequency Applications
- A Novel Constant Voltage Primary-side Regulator Topology to Eliminate Auxiliary Winding
- Single-Phase/-Switch Voltage-Doubler DCM SEPIC Rectifier with High Power Factor and Reduced Voltage Stress on the Semiconductors
- Z-Source Resonant Converter with Power Factor Correction for Wireless Power Transfer Applications
- A High-Power-Density Single-Phase Inverter with Pulse Current Injection Power Decoupling Method
- Hybrid Multilevel Converter based on Flying Capacitor and Extended Commutation Cell
- A Novel Hybrid Five-Level Voltage Source Converter Based on T-Type Topology for High-Efficiency Applications
- Flying-Capacitor-Clamped Five-Level Inverter Based on Switched-Capacitor Topology
- Cascaded Three-phase Quasi-Z Source Photovoltaic Inverter
- Hybrid Three-Phase Four-Wire Inverters Based on Modular Multilevel Cascade Converter
- Hybrid Nine-Level Single-Phase Inverter Based on Modular Multilevel Cascade Converter
- Multilevel Converter Based on Cascaded Three-Leg Converters With Reduced Voltage and Current
- Operation of modular matrix converter with hierarchical control system under cell failure condition
- The Delta-Connected Cascaded H-Bridge Converter Application in Distributed Energy Resources and Fault Ride Through Capability Analysis
- Dual Sequence Current Control Scheme Implemented in DSRF with Decoupling Terms Based on Reference Current Feed-Forward
- Injecting 3rd Harmonic into the Input Current to Improve the Power Factor of DCM Buck PFC Converter
- Investigation of Reducing the Influence of Digital Control Delay to LCL-Type Grid-Connected Inverter
- Repetitive Control for Grid Connected Inverters with LCL Filter under Stationary Frame
- Direct Instantaneous Ripple Power Predictive Control for Active Ripple Decoupling of Single-Phase Inverter
- Input-Output Feedback Linearization Based Control for Quasi-Z-Source Inverter in Photovoltaic Application

- A Novel Neutral Point Potential Control for the Three-Level Neutral-Point-Clamped Converter
- Phase Leading Input Current Compensation for CRM Boost PFC Converter
- Paralleled Inverters with Zero Common-mode Voltage
- A Voltage Clamp Circuit for the Real-Time Measurement of the On-State Voltage of Power Transistors
- Error-Voltage Based Open-Switch Fault Diagnosis Strategy for Matrix Converters with Model Predictive Control Method
- Instrumented Diode Dedicated to Semiconductor Temperature Measurement in Power Electronic Converters
- Reliability Odometer of Power Semiconductor Device Used for high performance high power amplifiers
- Energy and Computational Efficient Estimation of Battery Intrinsic Parameters
- Snubber Capacitors Optimization for Super-Junction MOSFET in the ZVS Full-Bridge Inverter
- A Computational Technique for Iron Losses in Electrical Machines
- Saliency Harmonic Induction Motor Speed Estimation Using Artificial Neural Networks
- Reclosing Transients in Standard and Premium Efficiency Induction Machines in the Presence of Voltage Unbalance
- Parameter sensitivity of large electric machines
- Optimal Winding Arrangement of a Surface-Mounted Permanent Magnet Motor for Torque Ripple Reduction
- Numerical Study of Convective Heat Transfer in the End Region of A Totally Enclosed Permanent Magnet Synchronous Machine
- Torque Improvement of Wound Field Synchronous Motor for Electric Vehicle by PM-assist
- Torque Ripple Reduction of a Variable Flux Motor
- An Analytical Model for a Spoke Type Variable Flux Permanent Magnet Motor on No-load Condition
- Sensitivity of Manufacturing Tolerances on Cogging Torque in Interior Permanent Magnet Machines with Different Slot/Pole Number
- Cogging Torque Minimization in Flux-Switching Permanent Magnet Machines by Tooth Chamfering
- Experimental research on the oil cooling of the end winding of the motor
- A Computationally Efficient Method for Calculation of Strand Eddy Current Losses in Electric Machines
- Core Loss Estimation in Electric Machines with Flux Controlled Core Loss Tester
- Thermal Analysis of a Three-Phase 24/16 Switched Reluctance Machine Used in HEVs
- Pre-Drive Test of an Implemented Novel Radial-Gap Helical ROTLIN Machine
- Hybrid Excitation Topologies of Synchronous Generator for Direct Drive Wind Turbine
- Resonant Based Backstepping Direct Power Control Strategy for DFIG Under Both Balanced and Unbalanced Grid Conditions
- Design and Analysis of a New Five-Phase Brushless Hybrid-Excitation Fault-Tolerant Motor for Electric Vehicles
- Multi-objective Design Optimisation and Pareto Front Visualisation of Radial-flux Eddy Current Coupler for Wind Generator Drive Train
- Reducing Estimated Parameters of a Synchronous Generator for Microgrid Applications
- Brushless Dual-Electrical-Port, Dual Mechanical Port Machines Based on the Flux Modulation Principle
- An Equivalent Dual Three-phase SVPWM Realization of the Modified 24-Sector SVPWM Strategy for Asymmetrical Dual Stator Induction Machine
- A Speed estimation method for free-running induction motor with high inertia load in the low speed range
- Design Optimization and Performance Investigation of Novel Linear Switched Flux PM Machines
- A Coordinated SVPWM without sector identification for Dual inverter fed Open Winding IPMSM System
- Finite-Control-Set Model Predictive Current Control for PMSM Using Grey Prediction
- The Impact of Triangular Defects on Electrical Characteristics and Switching Performance of 4H-SiC PiN Diodes
- Performance Evaluation of Series Connected 15 kV SiC IGBT Devices for MV Power Conversion Systems
- Comparative Performance Evaluation of Series Connected 15 kV SiC IGBT Devices and 15 kV SiC MOSFET Devices for MV Power Conversion Systems

- Equivalent Circuit Models and Model Validation of SiC MOSFET Oscillation Phenomenon
- Enabling DC Microgrids with MV DAB Converter based on 15 kV SiC IGBT and 15 kV SiC MOSFET
- An LC Compensated Electric Field Repeater for Long Distance Capacitive Power Transfer
- A Selection Method of Mutual Inductance Identification Models Based on Sensitivity Analysis for Wireless Electric Vehicle Charging
- Short-Circuit Protection of Power Converters Using SiC Current Limiters
- Impedance Measurement of Three-Phase Grid-Connected Systems in DQ-Domain: Applying MIMO-Identification Techniques
- A New Design Methodology for a 1-Meter Distance, 6.78MHz Wireless Power Supply System for Telemetries
- Modeling and Investigation of 4-Coil Wireless Power Transfer System with Varying Spatial Scales
- Vehicular Integration of Wireless Power Transfer Systems and Hardware Interoperability Case Studies

## **Tuesday, September 20, 8:30AM-11:00AM**

- Low Power Factor Operation of the PV Inverter with Power Decoupling Function
- Stand-Alone Photovoltaic Asymmetrical Cascade Converter
- Ground Leakage Current Suppression in a 50 kW 5-level T-type Transformerless PV Inverter
- A High Performance T-type Single Phase Double Grounded Transformer-less Photovoltaic Inverter with Active Power Decoupling
- Low Leakage Current Transformerless Three-Phase Photovoltaic Inverter
- Operation of Dual-Input Central Capacitor Photovoltaic Inverter under Unbalanced Grid Voltage Condition
- Impact on Small-Signal dynamics of Using Circulating Currents Instead of AC-Currents to Control the DC Voltage in MMC HVDC Terminals
- Control of VSC-HVDC with Electromechanical Characteristics and Unified Primary Strategy
- A Novel Interline DC Power Flow Controller for Meshed HVDC Grids
- Impedance-based and Eigenvalue based Stability Assessment Compared in VSC-HVDC System
- Performance Analysis of a Triple-Active Bridge Converter for Interconnection of Future DC-Grids
- Dc Fault Protection of Multi-Terminal VSC-HVDC System with Hybrid Dc Circuit Breaker
- Partial Power DC-DC Converter for Photovoltaic String Inverters
- On Reactive Power Injection Control of Distributed Grid-tied AC-stacked PV Inverter Architecture
- A Cost-Effective Power Ramp-Rate Control Strategy for Single-Phase Two-Stage Grid-Connected Photovoltaic Systems
- Delta Power Control Strategy for Multi-String Grid-Connected PV Inverters
- Battery Storage Sizing for a Grid Tied PV System Based on Operating Cost Minimization
- Dynamic Braking System of a Tidal Generator
- Multi-frequency Power Routing for Cascaded H-Bridge Inverters in Smart Transformer Application
- A High Power Medium Voltage Resonant Dual Active Bridge for DC Distribution Networks
- Mu synthesized robust controller for multi-SST islanded smart grid
- Cascaded Open-End Winding Transformer based DVR
- Modeling and Control of Gan Based Multiport Power Converter
- Economic Feasibility Analysis and Operational Testing of a Community Energy Storage System
- Electrical machine acoustic noise reduction based on rotor surface modifications
- Integrated Control of an IPM Motor Drive and Hybrid Energy Storage System for Electric Vehicles
- Investigation and Analysis of Temperature Effects on Interior Permanent Magnet Machines
- A Novel Flux-Switching Permanent Magnet Motor-Compressor with Integrated Airfoil-Shaped Rotor Design
- Novel 6-Slot 4-Pole Dual-Stator Flux-Switching Permanent Magnet Machine Comparison Studies for High-Speed Applications

- High-Specific-Power Electric Machines for Electrified Transportation Applications - Technology Options
- A Fully FPGA-Based Real-time Simulator for the Cascaded STATCOM
- A Broad Range of Speed Control of a Permanent Magnet Synchronous Motor Driven by a Modular Multilevel TSBC Converter
- Comparison of SiC and GaN Devices for Front-End Isolation of Quasi-Z-Source Cascaded Multilevel Photovoltaic Inverter
- Which is more suitable to a Modular Multilevel SDBC Inverter for Utility-Scale PV Applications, Phase-Shifted PWM or Level-Shifted PWM?
- A Symmetrical Hybrid Nine-Level Inverter for High Speed Open-Winding Motor Drive System
- Control of Neutral-Point Voltage in Three-Phase Four-Wire Three-Level NPC Inverter Based on the Disassembly of Zero Level
- Observer-based Nonlinear Control for Frequency Modulated Dual-Active-Bridge Converter
- Novel Control Architecture for Dual Output DC-DC Converter Driving DC-AC Inversion System
- Dynamic Bus Voltage Control for Light Load Efficiency Improvement of Two-stage Voltage Regulator
- A Novel Large-Signal Stability Analysis Approach Based on Semi-Tensor Product of Matrices With Lyapunov Stability Theorem Using for DC-DC Converters
- A Study on the Control Loop Design of Non-Isolated Configurations for Hybrid Storage Systems
- Effects of Non-Ideal Compensators for the High-Bandwidth Low-Standby-Power Computer V-Core Converter Applications
- A Unified SVM Algorithm for Lifetime Prolongation of Thermally-Overheated Power Devices in Multi-Level Inverters
- Pulse-Width Modulation Strategy in Double-Delta Sourced Windings
- A Quasi-Periodic Modulation Strategy to Mitigate EMI for a GaN-based Quasi-Z-Source DC-DC Converter
- A General Space Vector PWM Scheme for Multilevel Inverters
- Suppression of Common Mode Circulating Current for Modular Paralleled Three-phase Converters based on Interleaved Carrier Phase-shift PWM
- Modulation Strategies for Three-Phase AC-DC Matrix Converters: a Comparison
- Constrained Long-Horizon Direct Model Predictive Control for Power Electronics
- Thermal-based Finite Control Set Model Predictive Control for IGBT Power Electronic Converters
- Modulated Model Predictive Control for Active Split DC-bus 4-leg Inverters
- Computationally Efficient Sphere Decoding for Long-Horizon Direct Model Predictive Control
- Fixed Frequency Finite-State Model Predictive Control for Indirect Matrix Converters with Optimal Switching Pattern
- Improved Steady State Behavior of Finite Control Set Model Predictive Control applied to a Flying Capacitor Converter
- A new application and experimental validation of moulding technology for Ferrite Magnet Assisted Synchronous Reluctance Machine
- Magnetic Field Analytical Computation in Synchronous Reluctance Machines Considering the Iron Saturation
- Performance Comparison of Short Pitched and Full Pitched Switched Reluctance Machines for Off-Road Vehicle Applications
- A Fault Tolerant Machine Drive based on Permanent Magnet Assisted Synchronous Reluctance Machine
- A General Approach for the Analysis and Comparison of Hybrid Synchronous Machines With Single-Axis or Bi-Axial Excitation
- Flux Modulation Principles of DC-Biased Sinusoidal Current Vernier Reluctance Machines
- Stator Lamination Geometry Influence on the Building Factor of Synchronous Reluctance Motor Cores
- Influence of PM Coating on PM Magnetization State Estimation Methods Based on Magneto-resistance Effect
- Investigation of the Impact of Production Processes on Iron Losses of Laminated Stator Cores for Electric Machines
- Influence of Manufacturing Tolerances on Cogging Torque in Interior Permanent Magnet Machines with Eccentric and Sinusoidal Rotor Contours
- A Practical Approach of Electromagnetic Analysis with the Effect of the Residual Strain due to Manufacturing Processes
- Investigation of Emerging Magnetic Materials for Application in Axial-Flux PM Machines
- A Compact Active Filter to Eliminate Common-Mode Voltage in a SiC-based Motor Drive

- Stator Inter-Turn Fault Detection for Seamless Fault-Tolerant Operation of Five-Phase Induction Motors
- Rotor Temperature Estimation in Doubly-Fed Induction Machines Using Rotating High Frequency Signal Injection
- Maximum Torque Output for Volts/Hz Controlled Induction Machines in Flux-weakening Region
- Performance Investigation of Selected Prediction Vectors Based FS-PTC for 3L-NPC Inverter Fed Motor Drive
- Inverter-fed Drive Stator Insulation Monitoring based on Reflection Phenomena Stimulated by Voltage Step Excitation
- Maximum torque per ampere control in stator flux linkage synchronous frame for DTC-based PMSM drives without using q-axis inductance
- A Novel Direct Torque Control Strategy for Interior Permanent Magnet Synchronous Motors Driven by a Three-level Simplified Neutral Point Clamped Inverter
- Fault Tolerant Capability of Deadbeat - Direct Torque and Flux Control for Three-Phase PMSM Drives
- Online MTPA Control for Salient-Pole PMSMs Using Square-Wave Current Injection
- Automatic MTPA Tracking in IPMSM Drives: Loop Dynamics, Design and Auto-Tuning
- Reduction of Unbalanced Axial Magnetic Force in Post-fault Operation of a Novel Six-phase Double-stator Axial Flux PM Machine Using Model Predictive Control
- Comparative Evaluation of 15 kV SiC IGBT and 15 kV SiC MOSFET for 3- Phase Medium Voltage High Power Grid Connected Converter Applications
- Comparison between SiC and GaN devices in 6.78 MHz 2.2 kW resonant inverters for wireless power transfer
- Comparison of GaN FET and Si MOSFET Based Vienna Rectifiers
- Comparison of GaN and SiC Power Devices in Application to MW-scale Quasi-Z-Source Cascaded Multilevel Inverters
- Comparison of deadtime effects on the performance of dc-dc converters with GaN FETs and Silicon MOSFETs
- Characterization and Comparison of Latest Generation 900-V and 1.2-kV SiC MOSFETs
- High Speed Optical Gate Driver for Wide Band Gap Power Transistors
- Reduction of oscillations in a GaN bridge leg using active gate driving with sub-ns resolution, arbitrary gate-impedance patterns
- Design Considerations and Comparison of High-speed Gate Drivers for Si IGBT and SiC MOSFET Modules
- Active Gate Driving Technique for a 1200 V SiC MOSFET to Minimize Detrimental Effects of Parasitic Inductance in the Converter Layout
- Comprehensive Evaluation of Gate Boost Driver for SiC-MOSFETs
- Gate Driver for the Active Thermal Control of a DCDC GaN based Converter
- A Mistuning-Tolerant and Controllable Power Supply for Roadway Wireless Power Systems
- Power Converter with Novel Transformer Structure for Wireless Power Transfer Using a DD2Q Power Receiver Coil Set
- A Wireless Power Transfer System with a Double Current Rectifier for EVs
- Hybrid Control of Inductive Power Transfer Charger for Electric Vehicles using LCCL-S Resonant Network in Limited Operating Frequency Range
- Research on Seamless Transfer from CC to CV Modes for IPT EV Charging System Based on Double-sided LCC Compensation Network
- Closed-Loop Control Design for WPT System Using Power and Data Frequency Division Multiplexing Technique

## Tuesday, September 20, 11:00AM-12:30PM

- Power Balance Control and Circulating Current Suppression for MMC based EV Integration System Considering Users Requirement
- Optimal Sizing of Energy Storage for PV Power Ramp Rate Regulation
- Model-Based Adaptive Control of a Hydraulic Wind Power System
- Sensorless speed control of a small wind turbine using the rectifier voltage ripple
- Maximum Power Point Tracking (MPPT) of Sensorless PMSG Wind Power System



- Current/Voltage Sensor Fault Detection and Isolation in Wind Energy Conversion Systems Based on Power Balance
- Quasi-Z-Source-Based Multilevel Inverter for Single-Phase Photo Voltaic Applications
- Dual Buck Based Power Decoupling Circuit for Single Phase Inverter/Rectifier
- Design and Development of a True Decentralized Control Architecture for Microgrid
- Modeling and Control of a Synchronous Generator in an AC Microgrid Environment
- State Estimation of Power Systems with Interphase Power Controllers Using the WLS Algorithm
- A Novel T-Type Half-Bridge Cell for Modular Multilevel Converter with DC Fault Blocking Capability
- A Distributed Control Method for Power Module Voltage Balancing of Modular Multilevel Converters
- Control Method of Single-phase Inverter Based Grounding System in Distribution Networks
- A Novel Energy Balanced Variable Frequency Control for Input-Series-Output-Parallel Modular EV Fast Charging Stations
- An Adaptive Charging Control Strategy For Ultracapacitor Light Rail Vehicles
- A High Power Density Drivetrain-Integrated Electric Vehicle Charger
- Railway Power Conditioner Based on Delta-connected Modular Multilevel Converter
- Dynamic Study of Electromechanical Interaction in Marine Propulsion
- Model-based Control Design for a Battery/Ultracapacitor DC-DC Converter System
- Sliding Model Control Based On Estimation Of Optimal Slip Ratio For Railway Wheel Slide Protection Using Extremum Seeking
- Evaluation of Negative-Sequence-Current Compensators for High-Speed Electric Railways
- A ZVS Integrated Single-Input-Dual-Output DC/DC Converter for High Step-up Applications
- A Survey on Voltage Boosting Techniques for Step-Up DC-DC Converters
- Analysis and Design of a Current fed Non-isolated Buck-Boost DC-DC Converter
- Impulse Commutated Current-fed Three-phase Modular DC/DC Converter for Low Voltage High Current Applications
- Comparative evaluation of capacitor-coupled and transformer-coupled dual active bridge converters
- Planar Transformer Winding Technique for Reduced Capacitance in LLC Power Converters
- Topology and Controller of an Isolated Bi-Directional AC-DC Converter for Electric Vehicle
- High Efficiency LLC DCX Battery Chargers with Sinusoidal Power Decoupling Control
- PWM Strategies with Duality between Current and Voltage Source AC/DC Converters for Suppressing AC Harmonics or DC Ripples
- Analytical Expression for Harmonic Spectrum of Regular Sampled Space Vector Modulated Rectifier Connected to IPM Generator
- A Systematic Topology Generation Method for Dual-Buck Inverters
- Analysis and Control of Decentralized PV Cascaded Multilevel Modular Integrated Converters
- Experimental Study of a SiC MOSFET based Single Phase Inverter in UPS Applications
- Performance Analysis of a flexible multi-level converter for high voltage photovoltaic grid-connected power system
- Circulating Current Control for Carrier-Based Discontinuous Modulation in Inverters with Parallel Legs
- A Phase-Shift PWM-Controlled ZVS Boost Full-Bridge AC-AC Converter for High-Frequency Induction Heating Applications
- Control Approach for a Class of Modular Multilevel Converter Topologies
- Digital Autotuning Controller for Point-of-Load Converter Based on Non-Intrusive Start-up Transient Observer
- Control of D-STATCOM During Unbalanced Grid Faults Based on DC Voltage Oscillation and Peak Current Limitations
- Staircase Modulation of Modular Multilevel Converters with Minimal Total Harmonic Distortion and Maximal Number of Output Voltage Levels
- FPGA Implementation of Model Predictive Direct Current Control
- Active Damping of LC Resonance for Paralleled Indirect Matrix Converter Based on Cascaded Control
- Virtual Circuit Design of Grid-Connected Half-Bridge Converters with Higher-Order Filters
- Commutation Technique for High Frequency Link Inverter without Operational Limitations and Dead Time

- Research on the Current Control method of N-paralleled Converter System for the High-Power Inductor Tester
- Modeling and Bifurcation Analysis of Converters with Power Semiconductor Filter
- Suppression of Circulating Current in Paralleled Inverters with Isolated DC-link
- Small-Signal Model for the ISOP DC-DC Converters in the 5-Level T-Rectifier
- DC Bus Splitting Voltage Feedforward Injection Method for Virtually-Grounded Three-Phase Inverter
- High Performance SiC Power Block for Industry Applications
- Switching Angles Generation for Selective Harmonic Elimination by Using Artificial Neural Networks and Quasi-Newton Algorithm
- Minimum RMS Current Operation of the Dual-Active Half-Bridge Converter using Three Degree of Freedom Control
- Comparison of Torque Characteristics in Permanent Magnet Synchronous Machine with Conventional and Herringbone Rotor Step Skewing Techniques
- Six-Leg Dc-Link Rectifier/Inverter for Two-Phase Machines
- RSM-DE-ANN Method for Sensitivity Analysis of Active Material Cost in PM Motors
- Modeling, simulation and performance evaluation of caged permanent magnet motors fed by variable speed drives (VSDs)
- An Improved Conformal Mapping Aided Field Reconstruction Method for Modeling of Interior Permanent Magnet Synchronous Machines
- Hybrid Excited Vernier PM Machines with Novel DC-Biased Sinusoidal Armature Current
- Calculating the Electromagnetic Field and Losses in the End Region of Large Synchronous Generators under Different Operating Conditions with Three-Dimensional Transient Finite Element Analysis
- Electrical Propulsion System Design of Chevrolet Bolt Battery Electric Vehicle
- Optimizing PM Coverage Ratio in Flux Concentrating Axial Flux Machine
- Detailed Analytical Modelling of Fractional-Slot Concentrated-Wound Interior Permanent Magnet Machines for Prediction of Torque Ripple
- A compact and light-weight generator for backpack energy harvesting
- Suspension Loss Measurement and its Reduction in Single-Drive Bearingless Motor
- A Compact Single-Phase Adjustable-Voltage-Ratio Magnetolectric Transformer
- Analysis of Common Mode Circuit of BDFG-Based Ship Shaft Power Generation System
- Replacing SPM by PMARel machines in low-speed high-torque applications
- Rotor Eddy-Current Loss Minimization in High-Speed PMSMs
- Design and Analysis of Rotating Diode Rectifier for Wound-Rotor Synchronous Starter/Generator
- Stator Tooth and Rotor Pole Shaping for Low Pole Flux Switching Permanent Magnet Machines to Reduce Even Order Harmonics in Flux linkage
- Optimization of PM Volume in a PM-assisted Claw-Pole Motor for ISG Applications
- Improved Model Predictive Current Control of Permanent Magnet Synchronous Machines with Fuzzy Based Duty Cycle Control
- A Universal Restart Strategy for Induction Machines
- Active Disturbance Rejection Control of Linear Induction Motor
- Super-Twisting Algorithm Based Sliding-Mode Observer with Online Parameter Estimation for Sensorless Control of Permanent Magnet Synchronous Machine
- High Dynamic Sensorless Control for PMSMs Based on Decoupling Adaptive Observer
- Position Sensorless Control of Switched Reluctance Motor Based on a Numerical Method
- Operating-Envelop-Expandable Control Strategy for Switched Flux Hybrid Magnet Memory Machine
- Modelling the closely coupled cascode switching process
- A 700-V Class Reverse-Blocking IGBT for Large Capacity Power Supply Applications
- Efficiency and Electromagnetic Interference Analysis of Wireless Power Transfer for High Voltage Gate Driver Application

- Single Chip Enabled High Frequency Link based Isolated Bias Supply for Silicon Carbide MOSFET Six-Pack Power Module Gate Drives
- Reliability Assessment of SiC Power MOSFETs From The End Users Perspective
- Investigation of Collector Emitter Voltage Characteristics in Thermally Stressed Discrete IGBT Devices
- Transmission Characteristics Analysis of a Three-Phase Magnetically Coupled Resonant Wireless Power Transfer System
- Synthesis of Buck Converter Based Current Sources
- A Model for Coupling Under Coil Misalignment for DD Pads and Circular Pads of WPT Systems
- Comprehensive Dynamic Modeling of a Solid-state Transformer Based Power Distribution System
- Capability, Compatibility, and Usability Evaluation of Hardware-in-the-Loop Platforms for DC-DC Converter
- A Single Stage AC/DC Converter for Low Voltage Energy Harvesting

## **Tuesday, September 20, 3:00PM-4:30PM**

- Dynamic Battery Operational Cost Modeling for Energy Dispatch
- A Low Voltage Ride Through Control Strategy for Energy Storage Systems
- Experimental Validation of the Solid State Substation with Embedded Energy Storage Concept
- Understanding Dynamic Model Validation of a Wind Turbine Generator and a Wind Power Plant
- A Brushless Doubly-fed Generator Based on Permanent Magnet Field Modulation for Wind Power Generation
- Robust Sliding Mode Control for Permanent Magnet Synchronous Generator-Based Wind Energy Conversion Systems
- A Partially-Rated Active Filter Enabled Power Architecture to Generate Oscillating Power From Wave Energy Converter
- Hybrid Energy Storage System Comprising of Battery and Ultra-capacitor For Smoothing of Oscillating Wave Energy
- A Series-LC-Filtered Active Trap Filter for High Power Voltage Source Inverter
- Constant DC-Capacitor Voltage-Control-Based Strategy for Harmonics Compensation of Smart Charger for Electric Vehicles in Single-Phase Three-Wire Distribution Feeders With Reactive Power Control
- A Series Active Damper with Closed-loop Control for Stabilizing Single-phase Power-Electronics-Based Power System
- A Grid-Interfaced Test System for Modeling of NiMH Batteries in a Battery-Buffered Smart Load Application
- Impedance-Based Stability Analysis of DFIG
- Online Variation of Wind Turbine Controller Parameters for Mitigation of SSR in DFIG based Wind Farms
- Three-Phase Single Stage Boost Inverter for Direct Drive Wind Turbines
- Secondary Side Modulation of a Single-stage Isolated High-frequency Link Microinverter with a Regenerative Flyback Snubber
- Frequency Characterization of Type-IV Wind Turbine Systems
- Reliability Assessment of Fuel Cell System - A Framework for Quantitative Approach
- New Soft-Switched Multi-Input Converters with Integrated Active Power Factor Correction for Hybrid Renewable Energy Applications
- FPGA Based Implementation of Control for Series Input Boost Pre-regulator Under Unequal Loading
- Separating Key Less Well-Known Properties of Drive Profiles that Affect Lithium-ion Battery Aging by Applying the Statistical Design of Experiments
- Performance Degradation of Thermal Parameters during Cycle Ageing of NMC-based Lithium Ion Battery Cells
- Investigation of Current Sharing and Heat Dissipation in Parallel-Connected Lithium-Ion Battery Packs
- A Cooperative Charging Strategy for Onboard Supercapacitors of Catenary-Free Trams
- A High Frequency Zero-Voltage-Transition (ZVT) Synchronous Buck Converter for Automotive Applications
- The Dual-Channel Magnetically Integrated Chargers for Plug-in Electric Vehicles
- Power-Line Impedance Modeling of Tractor-Trailer System
- An Interleaved 1-to-6 Step-Up Resonant Switched-Capacitor Converter Utilizing Split-Phase Control

- Boost Composite Converter Design Based On Drive Cycle Weighted Losses in Electric Vehicle Powertrain Applications
- Design of a Four-Phase Interleaved Boost Circuit with Closed-Coupled Inductors
- Hybrid DC-DC Buck Converter with Active Switched Capacitor Cell and Low Voltage Gain
- High Gain Resonant Boost Converter For PV Micro- Converter System
- Design of Two-Switch Flyback Power Supply Using 1.7 kV SiC Devices for Ultra-Wide Input-Voltage Range Applications
- A Single-Stage Interleaved LLC PFC Converter
- Medium Voltage AC-DC Rectifier for Solid State Transformer (SST) Based on an Improved Rectifier Topology
- Microcontroller-Based MHz Totem-Pole PFC with Critical Mode Control
- Three-Phase Isolated DCM SEPIC Converter for High Voltage Applications
- Single Phase Precharge Control Method for Active Front End Rectifier
- Adaptive Controlled-type Zero-voltage-switching Inverters with Bandwidth Limitation
- Half Bridge NPC Inverter and Its Three Phase Application with Constant Common Mode Voltage
- Interleaved Auxiliary Resonant Snubber for High-Power, High-Density Applications
- Three-Phase Four-Wire Inverters Based on Cascaded Three-Phase Converters with Four and Three Legs
- Optimal Switching Counts Modulation of H7 Current Source Inverter
- Cuk-Based Universal Converters in Discontinuous Conduction Mode of Operation
- Neutral Points Voltage Balancing Control of a Four-level pi-type Converter
- A Novel Three-Phase Multilevel Diode-Clamped Inverter Topology with Reduced Device Count
- Maximum Boost Space Vector Modulated Three-Phase Three-Level Neutral-Point-Clamped Quasi-Z-Source Inverter
- High Dynamic and Static Performance FCS-MPC Strategy for Static Power Converters
- New Logic-Form-Equation Based Active Voltage Control for Four-Level Flying Capacitor Multicell (FCM) Converter
- Experimental Evaluations of Thinned-Out and PDM Controlled Class-E Rectifier
- Variable Slope External Ramp to Improve the Transient Performance in Constant On-Time Current Mode Control
- PWM Methods for High Frequency Voltage Link Inverter Commutation
- Switching Pattern of a Modular Voltage Balancing Circuit for Battery Cells
- Steady State Impedance Estimation of a Weak Grid to Assist Optimal Current Injection for Minimal Power Losses
- A Single-phase Unified Power Quality Conditioner with An Enhanced Repetitive Controller
- Single-Phase Universal Active Power Filter Based on AC/AC Converters
- Circulating Resonant Current Between Integrated Half-Bridge Modules with Capacitor for Inverter Circuit Using SiC-MOSFET
- Computationally Efficient Event-Based Simulation of Switched Power Systems and AC Machinery
- Design Optimisation and Trade-offs in Multi-kW DC-DC Converters
- Switching frequency optimization for a Solid State Transformer with Energy Storage Capabilities
- Lag-Free Terminal Voltage Sensing in Low-Pass Filtered PWM Converters
- Cogging Torque Minimization with Rotor Tooth Shaping in Axial Flux-Switching Permanent Magnet Machine
- A 3D Printed Fluid Filled Variable Elastance Electrostatic Machine Optimized with Conformal Mapping
- Effects of External Field Orientation on Permanent Magnet Demagnetization
- Analytical Approach for Determining Inductance Matrix, Harmonic Voltage and Torque Ripple of Slotted PM Motors
- Cogging Torque Minimization in Transverse Flux Machines
- Torque Ripple Reduction in a Flux-Switching Permanent Magnet Machine Targeted at Elevator Door Applications by Minimizing Space Harmonics
- On Saliency Enhancement of Salient Pole Wound Field Synchronous Machines
- Fast and Accurate Analytical Calculation of the Unsaturated Phase Inductance Profile of 6/4 Switched Reluctance Machines

- An Analytical Approach for Determining Harmonic Cusps and Torque Dips in Line Start Synchronous Reluctance Motors
- Multi-Objective Design and Optimization of Generalized Switched Reluctance Machines with Particle Swarm Intelligence
- Design and Comparison of Concentrated and Distributed Winding Synchronous Reluctance Machines
- Reduction in Torque and Suspension Force Ripples of an Axial-Gap Single-Drive Bearingless Motor
- Advancements in High Power High Frequency Transformer Design for Resonant Converter Circuits
- Active Damping of Ultra-fast Mechanical Switches for Hybrid AC and DC Circuit Breakers
- A Diagnosis Procedure in Standalone Mode for Inter Turn Short Circuit Fault of PMSMs through Modified Self-Commissioning
- Improved Condition Monitoring of the Faulty Blower Wheel Driven by Brushless DC Motor in Air Handler Unit (AHU)
- Mitigation Method of the Shaft Voltage according to parasitic capacitances of the PMSM
- 3-D Equivalent Magnetic Circuit Network for Precise and Fast Analysis of PM-assisted Claw-Pole Synchronous Motor
- Superconducting and Conventional Electromagnetic Launch System for Civil Aircraft Assisted Take-off
- Design of Integrated Radial and Dual Axial-Flux Ferrite Magnet Synchronous Machine
- Comprehensive Evaluation of a Silicon-WBG Hybrid Switch
- Characterization of Power Capacitors on Practical Current Condition Using Capacitor Loss Analyzer
- A Practical Liquid-Cooling Design Method for Magnetic Components of EMI Filter in High Power Motor Drives
- Efficiency Modeling of Wireless Power Transfer ASICs Accounting for Layout Parasitics
- Direct Voltage Balancing for Series Connected IGBTs
- Mitigation of Harmonics in Drilling Rigs using Shunt Active Power Filters
- Variable Switching Frequency Algorithm for Optimal Tradeoff between Switching Losses and Total Demand Distortion in Grid-Tied Three-Phase Voltage-Source Inverters
- A Hybrid Model Predictive Charging Control Strategy for Ultracapacitors of Urban Rail Vehicles
- A Universal-Input Single-stage AC-DC Converter for Twin-Bus Type High-Power LED applications
- Control IC for TRIAC Dimming LED Driver with Quasi-Resonant Flyback Converter
- Mutual Inductance Measurement for Power Device Package Using Time Domain Reflectometry
- Synchronized triple bias-flip circuit for piezoelectric energy harvesting enhancement: operation principle and experimental validation
- Approaching Repetitive Short Circuit Tests on MW-Scale Power Modules by means of an Automatic Testing Setup
- Cascaded Operation of SiC JFETs in Medium Voltage Solid State Circuit Breakers
- Hybrid Algorithm for Fault Locating in Looped Microgrids

### Wednesday, September 21, 8:30AM-10:10AM

- A 50kW High Power Density Paralleled-five-level PV Converter based on SiC T-type MOSFET Modules
- PV Array Voltage Range Extension for Photovoltaic Inverters Using a Mini-Boost
- Submodule Integrated Boost DC-DC Converters with No External Input Capacitor or Input Inductor for Low Power Photovoltaic Applications
- Effective Control Approach for Multi-PVs Based Resonant Converter through Cross-switched Structure
- Control Scheme for the Wide Operation Range of Induction Generator with a Vienna Rectifier in Wind Turbine Systems
- GaN Based High Gain Non-Isolated DC-DC Stage of Microinverter with Extended-Duty-Ratio Boost
- High-Efficiency Three-Level SEPIC for Grid-Tied PV Systems
- A Novel Zero-voltage-switched Multi-resonant DC-DC Converter
- Seamless Transfer Strategy Considering Power Balance in Parallel Operation
- Robust Control for Parallel Operated L-Inverters with Uncertainty and Disturbance Estimator
- Active and Reactive Power Operational Region for Grid-Interactive Cascaded H-Bridge Multilevel Converters

- Harmonic Stability Analysis and Controller Parameter Design of Three-Phase Inverter-Based Multi-Bus Ac Systems Based on Sequence Impedances
- Full-ZVS Modulation for All-SiC ISOP-Type Isolated Front End (IFE) Solid-State Transformer
- Stability issues in reverse power flow limitation in a Smart Transformer-fed distribution grid
- Smart Transformer-Based Hybrid Grid Loads Support in Partial Disconnection of MV/HV Power System
- Soft-Switching Solid State Transformer (S4T)
- Hierarchical Coordination of a Hybrid AC/DC SmartGrid with Central/Distributed Energy Storage
- Dynamic Optimal Power Flow for DC Microgrids with Distributed Battery Energy Storage Systems
- DC Electric Springs with Modified Droop Control for Storage Reduction in DC Microgrids
- Optimal Droop Surface Control of Dc Microgrids Based on Battery State of Charge
- A Modified Z-source Converter based Single Phase PV/Grid Inter-connected DC Charging Converter for Future Transportation Electrification
- Comprehensive design comparison of using different order harmonics as the power carrier in wireless power transfer for PHEV and EV Wireless Charging
- A New Inductive Wireless Power Transfer Topology Using Current-Fed Half-Bridge CLC Transmitter LC Receiver Configuration
- Reduction on Radiation Noise Level for Inductive Power Transfer Systems with Spread Spectrum focusing on Combined Impedance of Coils and Capacitors
- A New High-Frequency Simulation Model for Multi-Winding Transformers used in Switched-Mode Power Supplies
- Multi-Phase Sliding Mode Control for Chattering Suppression in a DC-DC Converter
- Gradient-reference-current Control of Tri-state Buck Converter to Improve Dynamic Response over Wide Load Range
- A Control Strategy for Paralleled Bi-Directional DC-DC Converters Used in Energy Storage Systems
- Steady-State Analysis of the Phase Shift Modulated LLC Resonant Converter
- Practical Implementation of Global Synchronous Pulse Width Modulation with Time Delay Compensation and Distributed Calculation Capabilities
- Research on Zero-Sequence Circulating Currents in Parallel Three-Level Grid-Tied Photovoltaic inverters
- Modified Pulse Energy Modulation Technique of a Three-Switch Buck-Boost Inverter
- MMC-HVDC: Simulation and Control Strategy
- Hybrid Railway Power Conditioner Based on Half-Bridge Modular Multilevel Converter
- A PWM Method Reducing Harmonics of Two Interleaved Converters
- DC Impedance Modeling and Stability Analysis of Modular Multilevel Converter for MVDC Application
- Segmented Rotor Design of Concentrated Wound Switched Reluctance Motor (SRM) for Torque Ripple Minimization
- Extending the Speed Range of A Switched Reluctance Motor using a Fast Demagnetizing Technique
- Development and Analysis of U-core Switched Reluctance Machine
- Torque Ripple and Acoustic Noise of Current Modulations of a Pseudo-Sinusoidal Switched Reluctance Motor
- Proposal of Electrically Reversal Magnetic Pole Type Variable Magnetic Flux PM Motor
- Torque and Core Loss Characterization of a Variable-Flux Permanent-Magnet Machine
- Examination to Enhance Efficiency of V-shaped IPMSM Using Concentrated Winding Structure at High Speed and High Torque Area
- Advanced High Torque Density Non-overlapping Winding PM Vernier Machines
- Synchronous Switching of Non-Line-Start Permanent Magnet Synchronous Machines between Inverter and Grid Drives
- Instability Detection and Protection Scheme for Efficiency Optimized V/f Driven Synchronous Reluctance Motors (SynRM)
- Power-Quality-Oriented Optimization in Multiple Three-Phase Adjustable Speed Drives
- A Four-Quadrant Permanent Magnet Synchronous Machine Drive with a Tiny DC Link Capacitor

- Effect of Position Sensor error on the Performance of IPMSM drives
- Signal-Injection-Aided Position and Speed Estimation for PMSM Drives with Low-Resolution Position Sensors
- Integrated Switch Current Sensor for Shortcircuit Protection and Current Control of 1.7-kV SiC MOSFET Modules
- Current Reconstruction Method for PMSM Drive System with a DC Link Shunt Resistor
- PSpice Modeling Platform for SiC Power MOSFET Modules with Extensive Experimental Validation
- Development of Simulink-Based SiC MOSFET Modeling Platform for Series Connected Devices
- An Accurate Subcircuit Model of SiC Half Bridge Module for Switching Loss Optimization
- Spatial Electro-Thermal Modeling and Simulation of Power Electronic Modules
- Automatic Optimization of IGBT Gate Driving Waveform Using Simulated Annealing for Programmable Gate Driver IC
- Active dv/dt Control of 600V GaN Transistors
- Commutation Strategies for Single-Chip Dual-Gate Bidirectional IGBTs in Matrix Converters
- Two Comparison-Alternative High Temperature PCB-Embedded Transformer Designs for a 2 W Gate Driver Power Supply
- Performance Analysis of Magnetic Power Pads for Inductive Power Transfer Systems with Ferrite Structure Variation
- Analysis of Mutually Decoupled Primary Coils for IPT Systems for EV Charging
- Dynamic Matching System for Radio-Frequency Plasma Generation
- A Loosely Coupled Capacitive Power Transfer System with LC Compensation Circuit Topology

### Wednesday, September 21, 10:30AM-12:10PM

- A Variable Step-Size MPPT for Sensorless Current Model Predictive Control for Photovoltaic Systems
- Study on the Unbalanced Current Injection Capability of Grid-Connected Photovoltaic Neutral-Point-Clamped Inverter
- Adaptive Dc Link Voltage Control Scheme for Single Phase Inverters with Dynamic Power Decoupling
- ZVS Analysis and Power Flow Control for Three Limb Transformer Enabled SiC Mosfet Based Three Port DAB Integrating PV and Energy Storage(ES)
- A Rapid I-V Curve Generation for PV Model-based Solar Array Simulators
- Photovoltaic Panel Simulation Based on Individual Cell Condition
- Development and implementation of a PV performance monitoring system based on inverter measurements
- Characterization of Silicon Based Photovoltaic Cells Using Broadband Impedance Spectroscopy
- DC Solid State Transformer Based on Input-Series-Output-Parallel Dual-Active-Bridge for MVDC Power Distribution
- Six-Leg Single-Phase to Three-Phase Converter
- Flexible Transformers for Distribution Grid Control
- Comparative Analysis of Modular Multiport Power Electronic Transformer Topologies
- Advanced Control of a High Power Converter Connected to Weak Grids
- A Power Density Optimization Method for a Power Pulsation Decoupling Buffer in Single-Phase DC-AC Converters
- Control Design in  $\mu$ -Synthesis Framework for Grid-Connected Inverters with Higher Order Filters
- Sensorless Current Model Predictive Control for Maximum Power Point Tracking of Single-Phase subMultilevel Inverter for Photovoltaic Systems
- An Adaptive Power Distributed Control Method to Ensure Proportional Load Power Sharing in DC Microgrid Considering Equivalent Line Impedances
- The Performance of Polytopic Models in Smart DC Microgrids
- Study on DC Arc Faults in Ring-Bus DC Microgrids with Constant Power Loads
- Stability Analysis and Improvement of a Dual Active Bridge (DAB) Converter Enabled DC Microgrid based on a Reduced-order Low Frequency Model
- Soft-Switching Operation of Edge-Resonant Output-Inductor-Less Full-Bridge Converter

- High Efficiency Two-Stage 48V VRM with PCB Winding Matrix Transformer
- Hierarchical Protection Architecture for 380V DC Data Center Application
- Device Loss Comparison of GaN Device Based LLC, Dual Active Bridge and Phase Shift Quasi Switched Capacitor Circuit
- Loss Optimizing Control of a Multiphase Interleaving DC-DC Converter for Use in a Hybrid Electric Vehicle Drivetrain
- Traction Inverter Evaluation Method Based on Driving Cycles for Electric and Hybrid Electric Vehicles
- Model Predictive Control based Field-weakening Strategy for Traction EV used Induction Motor
- Design Optimization and Development of Electric Traction Machines for Cadillac CT6 PHEV
- Active Virtual Ground - Bridgeless PFC Topology
- A 500 kHz, 3 kW power factor correction circuit with low loss auxiliary ZVT circuit
- A Two-Switch Buck-Boost PFC Rectifier With Automatic AC Power Decoupling Capability
- High Efficiency Bridgeless Power Factor Correction Buck Converter for High Frequency AC Systems
- An Improved Proportional Pulse Compensation Strategy for DC Voltage Balance of Cascaded H-Bridge Rectifier
- Cost effective Capacitor Voltage Balancing Control for Five-level Grid-tied Inverters
- A Single Phase T-type Inverter Operating in Boundary Conduction Mode
- Three-Phase Four-Wire AC-DC-AC Multilevel Topologies Obtained from an Interconnection of Three-leg Converters
- Extreme Start-Up Response of LLC Converters Using Average Geometric Control
- Optimized Resonant Pulsed Power Supplies with Deadbeat - Repetitive Regulation
- Control and Operation of Medium-voltage High-power Bi-directional Resonant DC-DC Converters in Shipboard DC Distribution Systems
- Inductance Cancellation in RF Resonant Power Converters
- Retrospective of Electric Machines for EV and HEV Traction Applications at General Motors
- High-Performance Partitioned-Stator Switched Flux Memory Machines with Hybrid Magnets on External Stator for Automotive Traction Applications
- Test Results for a High Temperature Non-Permanent Magnet Traction Motor
- Vehicular Suspension and Propulsion Using Double Sided Linear Induction Machines
- Experimental Verification of Rotor Demagnetization in a Fractional-Slot Concentrated-Winding PM Synchronous Machine under Drive Fault Conditions
- Influence of Stator Configuration on High Frequency Signal Injection Based Permanent Magnet Temperature Estimation in PMSMs
- Analysis and Design Guidelines to Mitigate Demagnetization Vulnerability in PM Synchronous Machines
- The Nature of the Torque Ripple in Fractional-slot Synchronous PMAREL Machines
- A Fault-Tolerant T-Type Multilevel Inverter Topology with Soft-Switching Capability Based on Si and SiC Hybrid Phase Legs
- An On-Line Diagnostic Method for Open-Circuit Switch Faults in NPC Multilevel Converters
- Analysis of Neutral Point Deviation in 3-level NPC Converter under Unbalanced 3-phase AC Grid
- A Modulation Technique of Neutral Point Clamped Converters with Common-Mode Voltage Reduction and Neutral-Point Potential Balance
- Magnet Temperature Effects on the Useful Properties of Variable Flux PM Synchronous Machines and a Mitigating Method for Magnetization Changes
- Nonintrusive Online Rotor Permanent Magnet Temperature Tracking for Permanent Magnet Synchronous Machine Based on Third Harmonic Voltage
- Permanent Magnet Temperature Estimation in PMSM Using Low Cost Hall Effect Sensors
- Analysis and Suppression of Zero Sequence Circulating Current in Open Winding Permanent Magnet Synchronous Machine Drives with Common DC Bus
- Compact 100-A, 850-V, Silicon Carbide Solid-State DC Circuit Breaker
- Matrix Converter with Sinusoidal Input-Output Filter and Filter Downsizing Using SiC Devices



- H-Bridge Building Block with SiC Power MOSFETs for Pulsed Power Application
- Three-phase active front-end rectifier efficiency improvement with silicon carbide power semiconductor devices
- Precise and Full-Range Dimming Control for An Off-Line Single-Inductor-Multiple-Output LED Driver
- Design and Implementation of a Retrofit LED Lamp for AC Mains and Ballasts
- A Current Compensator for Mitigating the Influence of Long Cable Inductance between the LED Driver and the Light Source
- Investigation into the Use of Single Inductor for Driving Multiple Series-Connected LED Channels

### Wednesday, September 21, 1:30PM-3:10PM

- Using Markov Switching Model for Solar Irradiance Forecasting in Remote Microgrids
- Determining Maximum MPP-Tracking Sampling Frequency for Input-Voltage-Controlled PV-Interfacing Converter
- Real-time Emulation of a Pressure Retarded Osmosis Power Generation System
- Efficient FCTV Provision considering DWT and DWPT-based Noise Suppression for Overcoming the Noise-Induced Voltage Loss in PEM Fuel Cell
- Field Test Results for a 12.47 kV 3-Phase 1 MVA Power Router
- DC Capacitor Voltage Balancing Control for Delta-Connected Cascaded H-Bridge STATCOM Considering the Unbalanced Grid and Load Conditions
- Advanced Grid Simulator for Multi-Megawatt Power Converter Testing and Certification
- Experimental Verification of Capacitance Reduction in MMC-Based STATCOM
- A Comparative Study of Methods for Estimating Virtual Flux at the Point of Common Coupling in Grid Connected Voltage Source Converters With LCL Filter
- A Novel Model Predictive Sliding Mode Control for AC/DC Converters with Output Voltage and Load Resistance Variations
- A Novel Virtual Synchronous Generator Control Strategy Based on Improved Swing Equation Emulating and Power Decoupling Method
- Virtual Impedance-Based Active Damping for LCL Resonance in Grid-Connected Voltage Source Inverters with Grid Current Feedback
- Component Design and Implementation of a 60 kW Full SiC Traction Inverter with Boost Converter
- Design Methodology for a Planarized High Power Density EV/HEV Traction Drive using SiC Power Modules
- A SiC-Based High-Performance Medium-Voltage Fast Charger for Plug-in Electric Vehicles
- An Integrated Onboard Charger and Accessory Power Converter for Traction Drive Systems with a Boost Converter
- Current-stress Reduction of the Neutral Inductor in a Rectifier with Two Outputs
- Single-stage AC/DC Dual Inductor BCM Current-Fed Push-Pull for HB-LED lighting applications
- Asymmetric Single-Phase Current Source Rectifiers
- A Bridgeless Controlled Rectifier for Single Split-Phase Systems
- Modulation Method for Single-Phase Six-Switch Five-Level ANPC Inverter
- Modified SVPWM to Eliminate Common-Mode Voltages for Five-Level ANPC Inverters
- THD and Efficiency improvement in Multi-Level Inverters through an Open End Winding Configuration
- A Source-Type Harmonic Energy Unbalance Suppression Method Based on Carrier Frequency Optimization for Cascaded Multilevel APF
- Small-Signal Model and Control of the Interleaved Two-Phase Coupled-Inductor Boost Converter
- A Robust Design Framework for Stable Digital Peak Current-Mode Control Under Uniform Sampling
- Modeling and Decoupled Control of a Non-isolated High Step-up/down Bidirectional DC-DC Converter
- Non-Isolated High-Gain Three-Port Converter for Hybrid Storage Systems
- System-level Reliability Assessment of Power Stage in Fuel Cell Application
- A Novel Online ESR and C Identification Method for Output Capacitor of Flyback Converter

- Fault Ride-Through Capability for Grid-Supporting Inverters
- Analysis of Hybrid Energy Storage Systems with DC Link Fault Ride-Through Capability
- Optimisation of the Torque Quality of a Combined Phase Transverse Flux Machine for Traction Applications
- An Examination for Improvement of Constant Output Characteristics at High-Speed Region in a Spoke-Type IPMSM using Ferrite Permanent Magnet by Changing the Shape of Rotor Surface
- Variable Flux Permanent Magnet Synchronous Machine (VF-PMSM) Design to Meet Electric Vehicle Traction Requirements with Reduced Losses
- Comparison of Traction Motors that Reduce or Eliminate Rare-Earth Materials
- Active Voltage Regulation of Partitioned Stator Switched Flux Permanent Magnet Generator Supplying Isolated Passive Load
- Coupled and Simplified Model of the Symmetrical and Asymmetrical Triple Star Nine-Phase Interior Permanent Magnet Machines
- Design and Analysis of a Novel Three-phase Flux Reversal Machine
- Design, Control and Implementation of a Non-Rare-Earth Flux Switching Permanent Magnet Machine
- A New Normal Mode dv/dt Filter With Resistor Failure Detection Circuit
- Simulation of Cable Charging Current and Its Effects on Operation of Low Power AC Drives
- Systematic Modeling for a Three Phase Inverter with Motor and Long Cable using Optimization Method
- Performance Evaluation of SiC MOSFETs with Long Power Cable and Induction Motor
- Design consideration of interior permanent magnet machine position sensorless drive using square-wave voltage injection
- A Synchro-Perspective-Based High-Frequency Signal Injection Method for Position-Sensorless Vector Control of Doubly-Fed Induction Machines
- Enhancing Estimation Accuracy by Applying Cross-Correlation Image Tracking to Self-Sensing Including Evaluation on a Low Saliency Ratio Machine
- The Crowded Axis of the Frequency: Optimal Pole/Zero Allocation for a Full Speed Sensorless Synchronous Motor Drives
- An IGBT Junction Temperature Measurement Method via Combined TSEPs For Eliminating Impact of Collector Current
- DeltaTj Control of Switching Power Devices at Thermal Boundaries via Physics-Based Loss Manipulation
- Online Junction Temperature Monitoring Using Turn-Off Delay Time for Silicon Carbide Power Devices
- Simple Analog Detection of Turn-off Delay Time for IGBT Junction Temperature Estimation
- Design of a 10 kW GaN-based High Power Density Three Phase Inverter
- High-frequency DC-DC Converter in Electric Vehicle Based on GaN Transistors
- A GaN-based Flying-Capacitor Multilevel Boost Converter for High Step-up Conversion
- A GaN based High Frequency Active-clamp Buck Converter for Automotive Applications
- Energy Storage Size and Fuel Consumption Reduction in a Microgrid Using Virtual Droop Control Framework
- Seamless Black Start and Reconnection of LCL-filtered Solid State Transformer Based On Droop Control
- A Circulating Current Suppression Method for Parallel Connected Voltage-Source-Inverters (VSI) with Common DC and AC Buses
- Decentralized Method for Load Sharing and Power Management in a Hybrid Single/Three-Phase Islanded Microgrid Consisting of Hybrid Source PV/Battery Units
- A New Secondary Control Approach for Voltage Regulation in DC Microgrids
- CERTS Microgrids with Photovoltaic Microsources and Feeder Flow Control
- Combined Optimization of SSCB Snubber and Freewheeling Path for Surgeless and Quick Bus Fault Interruption In Low-Voltage DC Microgrid
- Symmetric Droop Control for Improved Hybrid AC/DC Microgrid Transient Performance

## Wednesday, September 21, 3:30PM-5:10PM

- Small Scale Reluctance Synchronous Generator Wind-Turbine System with DC Transmission Linked Inverters
- Short-Term Forecasting of Inertial Response from a Wind Power Plant
- A 3.0MW Case Study of the Influence of PM Cost on Wind Turbine Cost of Energy
- Direct Power Control of a Doubly Fed Induction Generator Wind Power System in Stand-Alone and Grid-Connected Modes with Seamless Transition
- Temperature Dependence of Efficiency in Renewable Magneto-hydrodynamic Power Generation Systems
- Modeling, Analysis and Design of An Undersea Storage System
- The Joint Design of a Compressed Air and Wind Energy System for Mechanical Spillage Recovery
- Experimental Control of a Hydraulic Wind Power Transfer System under Wind and Load Disturbances
- Field Upgradeable Transformer: A Fractionally-Rated Voltage Regulator for the Distribution System
- New Configuration of Multi-Functional Grid-Connected Inverter to Improve Both Current-Based and Voltage-Based Power Quality
- Model Predictive Control of A Matrix-Converter Based Solid State Transformer for Utility Grid Interaction
- A Triple Port Active Bridge Converter based Power Electronic Transformer
- Evaluation of Active Islanding Detection Based Methods Under Non-Linear-loads Scenarios
- Decentralized Adaptive Control for Interconnected Boost Converters based on backstepping approach
- Impedance Synthesis by Inverter Control for Active Loads in Anti-Islanding Testbenches
- A Unified Impedance Model of Voltage-Source Converters with Phase-Locked Loop Effect
- An Induction Generator based Auxiliary Power Unit for Power Generation and Management System for More Electric Aircraft
- Design and Optimization of a High Performance Isolated Three Phase AC/DC Converter for Aircraft Applications
- Taking into account interactions between converters in the design of aircraft power networks
- Stability Assessment of A Droop-Controlled Multi-Generator System in the More Electric Aircraft Using Parameter Space Approach
- A GaN-Based Partial Power Converter with MHz Reconfigurable Switched-Capacitor and RF SEPIC
- Monolithic Multilevel GaN Converter for Envelope Tracking in RF Power Amplifiers
- An Improved PDM Control Method for a High Frequency Quasi-Resonant Converter
- Automotive LED Driver Based On High Frequency Zero Voltage Switching Integrated Magnetics Cuk Converter
- Dynamic Response Optimization for Three-phase VIENNA Rectifier with Load Feedforward Control
- A Compensation Scheme to Reduce Input Current Distortion in GaN Based 450 kHz Three-Phase Vienna Type PFC
- Modeling and Analysis for Input Characteristics of Line-Frequency Rectifiers
- Hybrid Damping for Active Front End Converter
- A Feed-forward Based Harmonic Compensation Approach for Low Switching Frequency Grid Interfacing VSI
- An Embedded Voltage Harmonic Compensation Strategy for Current-Controlled DG Interfacing Converters
- Analysis and Damping of harmonic propagation in DG-Penetrated distribution networks
- Voltage and Current Regulators Design of Power Converters in Islanded Microgrids based on State Feedback Decoupling
- Computation and Analysis of Dielectric Losses in MV Power Electronic Converter Insulation
- Computational Light Junction Temperature Estimator for Active Thermal Control
- Fast Fault Diagnosis and identification Method for Boost Converter Based on Inductor Current Emulator
- Modeling and Improvement of Thermal Cycling in Power Electronics for Motor Drive Applications
- Highly Reliable Transformerless Neutral Point Clamped Inverter with Separated Inductors
- Fault Detection and Tolerant Control of Open-circuit Failure in MMC with Full-bridge Sub-modules
- Control Strategy of Single Phase Back-to-back Converter for Medium Voltage Drive under Cell Fault Condition

- Fault Tolerance Analysis for the 5-Level Unidirectional T-Rectifier
- Design of a Wound Field Synchronous Machine for Electric Vehicle Traction with Brushless Capacitive Field Excitation
- Design and Development of a MLS Based Compact Active Suspension System, Featuring Air Spring and Energy Harvesting Capabilities
- A Simple Design Method for Surface-mounted PM machines for Traction Application
- Design Optimization of Spoke-Type PM Motors for Formula E Racing Cars
- Tolerance Study to Forecast Performances of Permanent Magnet Synchronous Machines Using Segmented Stator for Mass Production
- Permanent Magnet Material and Pulsating Torque Minimization in Spoke Type Interior PM Machines
- Mechanical Design Method for a High-Speed Surface Permanent Magnet Rotor
- Analysis and Design of Triple-Rotor Axial-Flux Spoke-Array Vernier Permanent Magnet Machines
- Electrical Loss Minimization Technique for Wind Generators based on a Comprehensive Dynamic Modelling of Induction Machines
- Maximum Efficiency Control Method in 7-phase BLDC Motor by Changing the Number of the Excited Phase Windings
- Control Strategy for Dual Three-Phase PMSMs With Minimum Losses in the Full Torque Operation Range Under Single Open-Phase Fault
- A Multi-Pulse Front-End Rectifier System with Electronic Phase-Shifting for Harmonic Mitigation in Motor Drive Applications
- A Robust Magnetic Polarity Self-Sensing Method for Start-Up of PM Synchronous Machine in Fan-Like System
- Universal Sensorless Vector Control Applicable to Line-Start Permanent Magnet Synchronous Motors with Damper Winding
- Improvement of Back-EMF Self-Sensing for Induction Machines when using Deadbeat-Direct Torque and Flux Control (DB-DTFC)
- Sensorless Position Control of PMSM Operating at Low Switching Frequency for High Efficiency Climate Control Systems
- SuperJunction Cascode, a Configuration to Break the Silicon Switching Frequency Limit
- Maximizing the Performance of 650 V p-GaN Gate HEMTs: Dynamic Ron Characterization and Gate-Drive Design Considerations
- 15kV/40A FREEDM Super-Cascode: A Cost Effective SiC High Voltage and High Frequency Power Switch
- A Study of Dynamic High Voltage Output Charge Measurement for 15 kV SiC MOSFET
- Unbalanced Voltage Compensation in LV Residential AC Grids
- The Hierarchical Energy Management Control for Residential Energy Harvesting System
- Reactive Power Distribution Strategy using Power Factor Correction Converters for Smart Home Application
- Active Voltage Balancing Control for Multi HV-IGBTs in Series Connection

## Thursday, September 22, 8:30AM-10:10AM

- The DOE Next-Generation Drivetrain for Wind Turbine Applications: Gearbox, Generator, and Advanced Si/SiC Hybrid Inverter System
- Inductorless Boost Rectifier for Small Power Wind Energy Converters
- High-frequency Isolated DC-DC Converter for Offshore Wind Energy Systems
- A New Three-phase AC/DC High Power Factor Soft-switched Step-up Converter with High Gain Rectifier Modules for Medium Voltage Grid in Wind Systems
- A Comparison of Broadband Impedance Measurement Techniques for Lithium-Ion Batteries
- Evaluation of Lithium-ion Battery Second Life Performance and Degradation
- A Distributed ESO based Cooperative Current-Sharing Strategy for Parallel Charging Systems Under Disturbances
- A Comprehensive Study on the Degradation of Lithium-Ion Batteries during Calendar Ageing: The Internal Resistance Increase
- Enhanced Power Quality and Minimized Peak Current Control in An Inverter based Microgrid under Unbalanced Grid Faults
- Parallel Interfacing Converters under Unbalanced Voltage: Active Power Oscillation Cancellation with Peak Current Sharing
- The Reverse Zero-Sequence Current Compensation Strategy for Back-to-Back Active Power Conditioners

- Harmonic Mitigation in Interphase Power Controllers Using Passive Filter-Based Phase Shifting Transformer
- Modeling and Stability Analysis of the Small-AC-Signal Droop Based Secondary Control for Islanded Microgrids
- A Small-AC-Signal Injection Based Harmonic Power Sharing Method for Islanded Microgrids
- Improvement of Transient Stability in Inverter-Based AC Microgrid via Adaptive Virtual Inertia
- Frequency Support Properties of the Synchronous Power Control for Grid-Connected Converters
- A Pack-to-Cell-to-Pack Battery Equalizer with Soft-Switching Based on Buck-Boost and Bidirectional LC Resonant Converters
- A New Perspective on Battery Cell Balancing: Thermal Balancing and Relative Temperature Control
- Advanced Cell-level Control for Extending Electric Vehicle Battery Pack Lifetime
- A Battery Cell Balancing Control Scheme with Minimum Charge Transfer
- Double Line Frequency Ripple Cancelling for Single-Phase Quasi-Z-Source Inverter
- Hybrid control scheme for the current loop of a grid connected inverter operating with highly distorted grid voltage
- Single-Phase LLCL-Filter-based Grid-Tied Inverter with Low-Pass Filter Based Capacitor Current Feedback Active damper
- A single-phase tri-state integrated Buck-Boost inverter suitable to operate in grid-connected and island modes
- DC Fault Ride Through of Multilevel Converters
- Reverse Blocking Sub-Module Based Modular Multilevel Converter with DC Fault Ride-Through Capability
- Closed-loop Control of the DC-DC Modular Multilevel Converter
- New MMC Capacitor Voltage Balancing using Sorting-less Strategy in Nearest Level Control
- A New Tightly Regulated Dual Output LLC Resonant Converter with PFM plus Phase-shift Control
- Analytical Model for LLC Resonant Converter With Variable Duty-Cycle Control
- Three-Phase LLC Resonant Converter with Integrated Magnetics
- Accurate ZVS Boundary in High Switching Frequency LLC Converter
- A Unified Control of Back-to-Back Converter
- Control of an Islanded Power-Electronic Converter as an Oscillator
- Power control for Grid-connected Converter to Comply with Safety Operation Limits during Grid Faults
- An online measurement method for common-mode impedance in three-phase grid-connected converters
- Remaining Useful Lifetime Estimation For Thermally Aged Power Mosfets With Ransac Denoising Algorithm
- An Analytical Model for False Turn-On Evaluation of GaN Transistor in Bridge-Leg Configuration
- Advanced Condition Monitoring System Based on On-Line Semiconductor Loss Measurements
- A Comprehensive Study on Variations of Discrete IGBT Characteristics Due to Package Degradation Triggered by Thermal Stress
- Experimental Calibration in Thermal Analysis of PM Electrical Machines
- Thermal Conductivity Evaluation of Fractional-Slot Concentrated-Winding Machines
- Thermal Performance Modeling of Foil Wound Concentrated Coils in Electric Machines
- Experimental Validation in Operative Conditions of Winding Thermal Model for Short-Time Transient
- A Hybrid-Excited Axial Transverse Flux Permanent Magnet Machine
- Reduction of Cogging Torque in Transverse Flux Machines by Stator and Rotor Pole Shaping
- Design Considerations of a Transverse Flux Machine for Direct Drive Wind Turbine Applications
- Analytical Model Based Design Optimization of a Transverse Flux Machine
- A Novel Six-Phase Inverter System for High-Power Synchronous Motor Drives
- State-Space Flux-Linkage Control of Bearingless Synchronous Reluctance Motors
- Current Harmonic Compensation for n-Phase Machines With Asymmetrical Winding Arrangement
- Post-fault operation strategy for single switch open circuit faults in electric drives

- A Quasi-online Method of Thermal Network Parameter Identification of IGBT Module
- Direct-cooled power module with a thick Cu heat spreader featuring a stress-suppressed structure for EV/HEV inverters
- Impact of Poly-Crystalline Diamond within Power Semiconductor Device Modules in a Converter
- A Novel 3D Structure for Synchronous Buck Converter Based on Nitride Gallium Transistors
- NiCuZn Ferrite Cores by Gelcasting: Processing and Properties
- Low-Capacitance Planar Spiral Windings Employing Inverse Track-Width-Ratio
- On-Chip Transformers with Shielding Structures for High dV/dt Immunity Isolated Gate Drive
- Additive Manufacturing of Toroid Inductor for Power Electronics Applications
- A New Phase-Locked Loop Method for Three-Phase System
- A New Second-Order Generalized Integrator Based Quadrature Signal Generator With Enhanced Performance
- A Modified SRF-PLL for Phase and Frequency Measurement of Single-Phase Systems
- Influence Of Double-Line Frequency Power Oscillation In Photovoltaic Generator Efficiency And H-Bridge VSI Performance

### Thursday, September 22, 10:30AM-12:10PM

- Comparison Analysis of PM Transverse Flux Outer Rotor Machines with and without Magnetic Shunts
- A Generator-Converter Design for Direct Drive Wind Turbines
- Gearbox Fault Diagnosis Using Vibration and Current Information Fusion
- Bearing Fault Diagnosis of Direct-Drive Wind Turbines Using Multiscale Filtering Spectrum
- Design Considerations of an Isolated GaN Bidirectional DC-DC Converter
- Flexbattery - Merging Multilevel Power Conversion and Energy Storage
- A Novel Modular Dual Active Bridge (DAB) DC-DC Converter with DC Fault Ride-Through Capability for Battery Energy Storage Systems
- A High Current Bidirectional DC-DC Converter for Concept Demonstration of Grid-Scale SMES Systems
- Harmonic power sharing with Voltage Distortion Compensation of Droop Controlled Islanded Microgrids
- Novel Active Synchronization Strategy for Multi-Bus Microgrid with Distributed Cooperation Control
- An Inverter-Current-Feedback based Reactive Power Sharing Method for Parallel Inverters in Microgrid
- Distributed Voltage Control and Load Sharing for Inverter-Interfaced Microgrid with Resistive Lines
- Accurate Battery Parameter Estimation with Improved Continuous Time System Identification Methods
- A Real World Technology Testbed for Electric Vehicle Smart Charging Systems and PEV-EVSE Interoperability Evaluation
- Modeling of Low-Temperature Operation of a Hybrid Energy Storage System with a Butler-Volmer Equation Based Battery Model
- Voltage and Current Signals De-noising with Wavelet Transform Matrix for Improved SOC Estimation of Lithium-ion Battery
- Improved r-Z-Source Inverter
- High-Frequency Six Pulse DC Link Based Bidirectional Three-Phase Inverter without Intermediate Decoupling Capacitor
- Closed-Form Equations for Analytical Exploration and Comparison of Switching Power Losses in Flying Capacitor Multicell and Active Neutral-Point-Clamped Multilevel Converters
- Advanced Three Level Active Neutral Point Converter with Fault Tolerant Capabilities
- A Novel Highly Reliable Three Phase Buck-Boost AC-AC Converter
- Hybrid Bidirectional AC/AC Multilevel Converter
- A Reliable Cascaded AC-AC Converter
- Parallel AC-AC Three-Phase with Shared-Leg Converters
- A Series HVDC Power Tapping Using Modular Multilevel Converters
- A Zero-sequence Voltage Injection Control Scheme for Modular Multilevel Converter Under Submodule Failure

- An Interconnected Observer for Modular Multilevel Converter
- DC Bus Balancing Control Techniques for the Cascaded Neutral Point Clamped Modular Converter
- Step-Down Impedance Control Network Resonant DC-DC Converter Utilizing an Enhanced Phase-Shift Control for Wide-Input-Range Operation
- Soft-Switching Push-Pull Converter with Parallel Resonant Link and Buck-Boost Capability
- Bidirectional Series-Resonant DC-DC Converter with Fault-Tolerance Capability for Smart Transformer
- Analysis and Design of Planar Inductor and Transformer for Resonant Converter
- Combined DC Voltage Control Scheme for Three-port Energy Router Based on Instantaneous Energy Balance
- Grid-Voltage Sensorless Control of a Converter Under Unbalanced Conditions: On the Design of a State Observer
- Current-Mode Boundary Controller with Reduced Number of Current Sensors for a Three-Phase Inverter
- Positive- and Negative-Sequence Current Controller for Grid-Tied Converters With LCL Filters
- Realization of Quadrature Signal Generator Using Accurate Magnitude Integrator
- A New Instantaneous Point on Wave Voltage Sag Detection Algorithm and Validation
- Voltage Quality Enhancement with Minimum Power Injection
- A Universal Variable On-time Compensation to Improve THD of High-Frequency CRM Boost PFC Converter
- On Impedance Modeling of Single-Phase Voltage Source Converters
- Design Consideration of Volt-VAR Controllers in Distribution Systems with Multiple PV Inverters
- Extended Stable Boundary of LCL-Filtered Grid-Connected Inverter Based on Grid-Voltage Feedforward Control
- Allowable Bus Impedance Region for MVDC Distribution Systems and Stabilizing Controller Design Using Positive Feed-Forward Control
- A Novel Stator-Consequent-Pole Memory Machine
- A Novel Variable Flux Memory Machine with Series Hybrid Magnets
- On the Feasibility of Carbon Nanotube Windings for Electrical Machines - Case Study for a Coreless Axial Flux Motor
- A Novel Simplified Structure for Single-Drive Bearingless Motor
- Stator Vibration and Acoustic Noise Analysis of FSPM for a Low-Noise Design
- Current Waveform for Noise Reduction of Switched Reluctance Motor in Magnetically Saturated Condition
- Torque Ripple Reduction Techniques for Stator DC Winding Excited Vernier Reluctance Machines
- On the cross coupling effects in structural response of Switched Reluctance Motor Drives
- Asymmetrical Twelve-Phase Induction Starter/Generator for More Electric Engine in Aircraft
- Axial Position Estimation of Conical Shaped Motor for Green Taxiing Application
- Closed-form approach for predicting overvoltage transients in cable-fed PWM motor drives for MEA
- An open problem for More Electrical Aircraft (MEA): how insulation systems of actuators can be qualified?
- High Power Density Impedance Control Network DC-DC Converter Utilizing an Integrated Magnetic Structure
- Time-Domain Homogenization of Litz-Wire Bundles in FE Calculations
- High Frequency Core Coefficient for Transformer Size Selection
- Very High Frequency Integrated Voltage Regulator for Small Portable Devices
- Robustness in Short-Circuit Mode: Benchmarking of 600V GaN HEMTs with Power Si and SiC MOSFETs
- Investigation on the Short Circuit Safe Operation Area of SiC MOSFET Power Modules
- Short-Circuit Protection of 1200V SiC MOSFET T-type Module in PV Inverter Application
- Prediction of Short-Circuit-Related Thermal Stress in Aged IGBT Modules

## Thursday, September 22, 2:00PM-3:40PM

- Flexible PCC Voltage Unbalance Compensation Strategy for Autonomous Operation of Parallel DFIGs
- Analysis and Comparison of Super- Synchronous Resonance in Small and Large Scale DFIG System
- A Super-synchronous Doubly Fed Induction Generator Option for Wind Turbine Applications
- Fault Diagnosis of Wind Turbine Gearbox Using DFIG Stator Current Analysis
- Controller for Combined Peak-Load Shaving and Capacity Firming Utilizing Multiple Energy Storage Units in a Microgrid
- Energy Storage Configuration Strategy for Virtual Synchronous Machine
- Control of Energy Storage System integrating electrochemical batteries and SC for grid-connected applications
- A Novel Approach towards Energy Storage System Sizing Considering Battery Degradation
- Robust Decentralized Voltage and Frequency Control of Generators in Islanded Microgrids Using  $\mu$ -Synthesis
- Thyristor Based Short Circuit Current Injection in Isolated Grids
- Optimized Energy Management System to Reduce Fuel Consumption in Remote Military Microgrids
- Analysis and Improvement of the Energy Management of an Isolated Microgrid in Lencois Island based on a Linear Optimization Approach
- A Primary Full-Integrated Active Filter Auxiliary Power Module in Electrified Vehicle Applications with Single-Phase Onboard Chargers
- Sensitivity Analysis of a Wireless Power Transfer (WPT) System for Electric Vehicle Application
- Design of a Dual-Loop Controller for In-motion Wireless Charging of an Electric Bus
- Design of CRM AC/DC Converter for Very High-Frequency High-Density WBG-Based 6.6kW Bidirectional On-Board Battery Charger
- SiC MOSFET Zero-Voltage-Switching SVM controlled Three-phase Grid Inverter
- A Novel Soft-switching Modulation Scheme for Isolated DC-to-three-phase-AC Matrix-based Converter Using SiC Device
- New PWM Technique for Grid-Tie Isolated Bidirectional DC-AC Inverter Based High Frequency Transformer
- Reduction of Input Current Harmonics based on Space Vector Modulation for Three-phase VSI with varied Power Factor
- A Comparison of Indirect Matrix Converter Based Open-End Winding Drives Against State-of-the-Art
- Common Mode Voltage Reduction in Open-End Multi-phase Load System fed Through Matrix Converter
- Experimental Comparison of Devices Thermal Cycling in Direct Matrix Converters (DMC) and Indirect Matrix Converters (IMC) using SiC MOSFETs
- A Carrier-based Modulation Strategy for Multi-modular Matrix Converters with Zero Common-mode Voltage
- Design and Implementation of Finite State Machine Decoders for Phase Disposition Pulse Width Modulation of Modular Multilevel Converters
- Control of the AC-AC Modular Multilevel Converter under Submodule Failure
- Control of a Modular Multilevel Converter with Pulsed DC Load
- Short circuit output protection of MMC in Voltage Source Control Mode
- An Isolated Three-Port DC-DC Converter with High Power Density in 10 cm X 5 cm X 0.8 cm Card Size for Flexible Automotive Systems
- Auxiliary power supply based on a modular ISOP Flyback configuration with very high input voltage
- Design Considerations for Series Resonant Converters with Constant Current Input
- Galvanically Isolated Switched-Boost-Based DC-DC Converter
- A Triangle Phase-Shift Control Strategy for Interleaved Critical-Mode Power Converters
- Seamless Transition Control between Motoring and Generating Modes of a Bidirectional Multi-Port Power Converter Used in Automotive SRM Drive
- Three-Phase Inverter Modeling using Multifrequency Averaging with Third Harmonic Injection



- Transformation Based Tracking Controller for a GaN Microinverter
- Source-side Series-virtual-impedance Control Strategy to Stabilize the Cascaded System with Improved Performance
- Bifurcation Analysis of Photovoltaic-Battery Hybrid Power System with Constant Power Load
- Measurement technique to determine the impedance of automotive energy nets for stability analysis purpose based on a floating capacitor H-bridge converter
- Harmonic Suppression and Stability Improvement for Aggregated Current-Controlled Inverters
- Efficiency-wise Optimal Design Methodology of LCLC Converter for Wide Input Voltage Range Applications
- Reliability-Oriented Design of LC Filter in Buck DC-DC Converter with Multi-Objective Optimization
- Optimal Design of Output LC Filter and Cooling for Three-Phase Voltage-Source Inverters Using Teaching-Learning-Based Optimization
- Using design by optimization for reducing the weight of a SiC switching cell
- Multilevel Nine-Leg Converter Universal Active Power Filter
- Central Control and Distributed Protection of the DSBC and DSCC Modular Multilevel Converters
- Mitigating the Effect of Series Capacitance Unbalance on the Voltage Reduction Capability of an Auxiliary CSI used as Switching Ripple Active Filter
- A New Control Method of Suppressing DC-Capacitor Voltage Ripples Caused by Third-Order Harmonic Compensation in Three-Phase Active Power Filters
- Design of Dual Purpose No Voltage Combined Windings for Bearingless Motors
- Synchronous Generator Field Excitation Via Capacitive Coupling Through a Journal Bearing
- Development of Stator-Magnetless Linear Synchronous Motor for Sensorless Control
- Ultralightweight Motor Design Using Electromagnetic Resonance Coupling
- A Novel Reluctance Magnetic Gear for High Speed Motor
- Analysis of a Magnetically Geared Lead Screw
- Design Comparison of NdFeB and Ferrite Radial Flux Magnetic Gears
- Power Transferring of Magnetic-Geared Permanent Magnet Machines
- Robust Control of an Open-Ended Induction Motor Drive With a Floating Capacitor Bridge over a Wide Speed Range
- High speed operation of permanent magnet machine position sensorless drive using discretized EMF estimator
- DC Voltage Regulated PWM Inverter for High-Speed Electrical Drives
- Variable Time Step Control with Synchronous PWM in Low Frequency Modulation Index for AC Machine Drive
- Implementation and Performance of a Current Sensor for Laminated Bus Bar
- Busbar Design for SiC-Based H-Bridge PEBB using 1.7 kV, 400 A SiC MOSFETs Operating at 100 kHz
- Ultra-low Inductance Design for a GaN HEMT Based 3L-ANPC Inverter
- Layout Study of Contactless Magnetoresistor Current Sensor for High Frequency Converters