



# CritacInfotech

**R&D Projects | Certification Courses | Training**

## **IEEE PROJECT TITLES 2019-20**

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SL.NO.	TITLES
	<b>SOLAR ENERGY</b>
001	Unit-Minimum Least Power Point Tracking for the Optimization of Photovoltaic Differential Power Processing Systems.
002	A High-Efficiency Single-Phase T-Type BCM Micro inverter.
003	High-Efficiency and High-Density Single-Phase Dual-Mode Cascaded Buck–Boost Multilevel Transformer less PV Inverter.
004	DC Decoupling-Based Three-Phase Three Level Transformer less PV Inverter Topology for Minimization of Leakage Current.
005	Photovoltaic Fly back Micro inverter With Tertiary Winding Current Sensing.
006	A Novel Three-Phase Transformer less H-8 Topology With Reduced Leakage Current for Grid-Tied Solar PV Applications.
007	High Step-Up Transformer less Inverter for AC Module Applications With Active Power Decoupling.
008	Transformer less Z-Source Four-Leg PV Inverter With Leakage Current Reduction.
009	Common Mode Voltage Reduction in a Single-Phase Quasi Z-Source Inverter for Transformer less Grid-Connected Solar PV Applications.
010	Half-Bridge Voltage Swing Inverter With Active Power Decoupling for Single Phase PV Systems Supporting Wide Power Factor Range.
011	An Improved H5 Topology With Low Common Mode Current for Transformer less PV Grid-Connected Inverter.
012	Hybrid UP-PWM Scheme for HERIC Inverter to Improve Power Quality and Efficiency.
013	Three-Phase ZVR Topology and Modulation Strategy for Transformer less PV System.
014	Voltage-Sensor-Based MPPT for Stand-Alone PV Systems Through Voltage Reference Control.
015	Transformer less Hybrid Converter With AC and DC Outputs and Reduced Leakage Current.

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016	Leakage Current Reduction of Three-Phase Z-Source Three-Level Four Leg Inverter for Transformer less PV System.
017	Common-Mode Current Suppression of Transformer less Nested Five Level Converter With Zero Common-Mode Vectors.
018	Single-Phase Transformer less Photovoltaic Inverter With Suppressing Resonance in Improved H6.
019	Photovoltaic AC Module Based on a Cuk Converter With a Switched-Inductor Structure.
020	Quasi-Resonant Voltage Doubler With Snubber Capacitor for Boost Half-Bridge DC–DC Converter in Photovoltaic Micro-Inverter.
021	Hybrid Control Scheme for Photovoltaic Micro inverter With Adaptive Inductor.
022	Simultaneous Common-Mode Resonance Circulating Current and Leakage Current Suppression for Transformer less Three-Level T-Type PV Inverter System.
023	An Integrated Step-Up Inverter With out Transformer and Leakage Current for Grid-Connected Photovoltaic System.
024	A Soft-Switched Power Module with Integrated Battery Interface for Photovoltaic-Battery Power Architecture.
	<b>WIND ENERGY</b>
025	A Multiple-Input Cascaded DC–DC Converter for Very Small Wind Turbines.
026	Analysis and Control of the Inductor less Boost Rectifier for Small-Power Wind-Energy Converters.
027	Parallel Operation of Unity Power Factor Rectifier for PMSG Wind Turbine System.
028	Design of a High-Power Resonant Converter for DC Wind Turbines.
029	Modular Step-Up Converter With Soft-Switched Module Having 1:1 Turns Ratio Multiphase Transformer for Wind Systems.
030	Highly Reliable Back-to-Back Power Converter With out Redundant Bridge Arm for Doubly Fed Induction Generator-Based Wind Turbine.
031	Dynamic Capabilities of an Energy Storage-Embedded DFIG System.

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033	A Decentralized Control Architecture Applied to DC Nano grid Clusters for Rural Electrification in Developing Regions.
034	A Bidirectional High-Efficiency Transformer less Converter With Common-Mode Decoupling for the Interconnection of AC and DC Grids.
035	Power-Based Droop Control in DC Micro grids Enabling Seamless Disconnection From Upstream Grids.
036	Development of a Fuzzy-Logic-Based Energy Management System for a Multiport Multi operation Mode Residential Smart Micro grid.
037	High-Efficiency Bidirectional Buck–Boost Converter for Photovoltaic and Energy Storage Systems in a Smart Grid.
038	Enhanced Frequency Regulation Using Multilevel Energy Storage in Remote Area Power Supply Systems.
039	A Composite Sliding Mode Controller for Wind Power Extraction in Remotely Located Solar PV–Wind Hybrid System.
040	Model Predictive Control of Bidirectional DC-DC Converters and AC/DC Interlinking Converters – A New Control Method for PV-Wind-Battery Micro grids.
041	Adaptive Active Power Sharing Techniques for DC and AC Voltage Control in a Hybrid DC/AC Micro grid.
042	Control of Energy Storage System Integrating Electrochemical Batteries and Super capacitors for Grid-Connected Applications.
043	A High-Efficiency Active-Boost-Rectifier-Based Converter With a Novel Double-Pulse Duty Cycle Modulation for PV to DC Micro grid Applications.
044	Three-Step Switching Frequency Selection Criteria for Symmetrical CLLC-Type DC Transformer in Hybrid AC/DC Micro grid.
045	Hardware Decoupling and Autonomous Control of Series-Resonance-Based Three-Port Converters in DC Micro grids.
046	Disturbance Rejection through Adaptive Frequency Estimation Observer for

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	Wind-Solar Integrated AC Micro grid.
047	A Hybrid Photovoltaic-Fuel Cell for Grid Integration With Jaya Based Maximum Power Point Tracking.
048	Techno-Economic Feasibility Analysis of Grid-Tied PV-Wind Hybrid System to Meet a Typical Household Demand.
<b>WIRELESS POWER TRANSFER</b>	
049	Modeling and Analysis of Series-None Compensation for Wireless Power Transfer Systems With a Strong Coupling.
050	Design and Control of Inductive Power Transfer System for Electric Vehicles Considering Wide Variation of Output Voltage and Coupling Coefficient.
051	Frequency Optimization of a Loosely Coupled Underwater Wireless Power Transfer System Considering Eddy Current Loss.
052	Reconfigurable Intermediate Resonant Circuit Based WPT System With Load-Independent Constant Output Current and Voltage for Charging Battery.
053	An Inductive-Power-Transfer Converter With High Efficiency Throughout Battery-Charging Process.
054	Cost-Effective and Compact Multi string LED Driver Based on a Three-Coil Wireless Power Transfer System.
<b>ELECTRIC VEHICLE APPLICATIONS</b>	
055	Integrated PV Charging of EV Fleet Based on Energy Prices, V2G, and Offer of Reserves.
056	Cost Reduction for an EV Charging Station Integrated With Battery Energy Storage and PV Generation.
057	High-Efficiency Bridgeless Single-Power-Conversion Battery Charger for Light Electric Vehicles.
058	Decentralized EV-Based Charging Optimization With Building Integrated Wind Energy.

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059	Imbalanced Load Regulation Based on Virtual Resistance of A Three-Phase Four-Wire Inverter for EV Vehicle-to-Home Applications.
060	A Five-Switch Bridge Based Reconfigurable <i>LLC</i> Converter for Deeply Depleted PEV Charging Applications.
061	Multi-Objective Reconfigurable Three-Phase Off-Board Charger for EV.
062	Single-Stage Isolated Electrolytic Capacitor-Less EV On board Charger With Power Decoupling.
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063	Selective Harmonic Mitigation Based Self-Elimination of Triplen Harmonics for Single-Phase Five-Level Inverters.
064	Grid-Current Control of a Differential Boost Inverter With Hidden LCL Filters.
065	A Family of PWM Control Strategies for Single-Phase Quasi-Switched-Boost Inverter.
066	A Sinusoidal Pulse width Modulation (SPWM) Technique for Capacitor Voltage Balancing of a Nested T-Type Four-Level Inverter.
067	Analysis and Design of a High Power Density Flying-Capacitor Multilevel Boost Converter for High Step-Up Conversion.
068	Family of Multiport Switched-Capacitor Multilevel Inverters for High-Frequency AC Power Distribution.
069	Advanced Single-Phase Nine-Level Converter for the Integration of Multi terminal DC Supplies.
070	Compact Switched Capacitor Multilevel Inverter (CSCMLI) with Self-Voltage Balancing and Boosting Ability.
071	A Novel Nine-Level Quadruple Boost Inverter With Inductive-Load Ability.
072	A New Non isolated Quasi-Z-Source Inverter With High Voltage Gain.

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073	A Boost-Type Nine-Level Switched Capacitor Inverter.
074	Single-Stage Variable-Turns-Ratio High-Frequency Link Grid-Connected Inverter.
075	A Self-Balancing Five-Level Boosting Inverter With Reduced Components.
076	A Hybrid 7-Level Inverter Using Low-Voltage Devices and Operation With Single DC-Link.
077	Cross-Switched Multilevel Inverter Using Novel Switched Capacitor Converters.
078	Dual-T-Type Seven-Level Boost Active-Neutral-Point-Clamped Inverter.
079	Switched-Capacitor-Based Quadruple-Boost Nine-Level Inverter.
080	Seven-level inverter with switched capacitors.
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081	A Single-Stage Sensor less Control of a PV-Based Bore-Well Submersible BLDC Motor.
082	Advanced Speed Control for a Five-Leg Inverter Driving a Dual-Induction Motor System.
083	A Commutation Torque Ripple Suppression Strategy for Brushless DC Motor Based on Diode-Assisted Buck–Boost Inverter.
084	Reduced-Sensor-Based PV Array-Fed Direct Torque Control Induction Motor Drive for Water Pumping.
085	Single-Current-Sensor Control for PMSM Driven by Quasi-Z-Source Inverter.
086	Design of Speed Control and Reduction of Torque Ripple Factor in BLDC Motor Using Spider Based Controller.
087	A Novel Hybrid Control Method for Single-Phase-Input Variable Frequency Speed Control System With a Small DC-Link Capacitor.

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088	A Standalone BLDC Based Solar Air Cooler with MPP Tracking for Improved Efficiency.
089	Performance-Based Design of Induction Motor Drive for Single-Stage PV Array Fed Water Pumping.
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090	AC–DC LED Driver With an Additional Active Rectifier and a Unidirectional Auxiliary Circuit for AC Power Ripple Isolation.
091	A PFC Single-Coupled-Inductor Multiple-Output LED Driver Without Electrolytic Capacitor.
092	A Bridgeless Electrolytic Capacitor-Free LED Driver Based on Series Resonant Converter With Constant Frequency Control.
093	Flicker-Free Single-Switch Quadratic Boost LED Driver Compatible With Electronic Transformers.
094	An Interleaved Fly back-Typed LED Driver With ZVS and Energy Recovery of Leakage Inductance.
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095	A Novel Soft-Switching Secondary-Side Modulated Multi output DC–DC Converter With Extended ZVS Range.
096	Design Considerations for Current-Regulated Series-Resonant Converters With a Constant Input Current.
097	A Soft-Switching Step-Down PFC Converter With Output Voltage Doubler and High Power Factor Stability and Small-Signal Analyses of the Dual Series Resonant DC–DC Converter.
098	Non isolated High-Step-up DC–DC Converter With Minimum Switch Voltage Stress.
099	Diode Reverse Recovery Process and Reduction of a Half-Wave Series Cockcroft–Walton Voltage Multiplier for High-Frequency High-Voltage



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	Generator Applications.
100	Quadratic Boost DC–DC Converter With High Voltage Gain and Reduced Voltage Stresses.
101	Analysis and Design of High-Efficiency Hybrid High Step-Up DC–DC Converter for Distributed PV Generation Systems.
102	Multitrack Power Factor Correction Architecture.
103	A Modified SEPIC-Based High Step-Up DC–DC Converter With Quasi-Resonant Operation for Renewable Energy Applications.
104	Low Common Mode Noise Half-Bridge <i>LLC</i> DC–DC Converter With an Asymmetric Center Tapped Rectifier.
105	DC–DC Boost Converter With a Wide Input Range and High Voltage Gain for Fuel Cell Vehicles.
106	High-Voltage Gain Quasi-SEPIC DC–DC Converter Large Step Ratio Input-Series–Output-Parallel Chain-Link DC–DC Converter.
107	Switched Tank Converters.
108	A Negative-Output High Quadratic Conversion Ratio DC–DC Converter With Dual Working Modes.
109	Fly back PFC With a Series-Pass Module in Cascode Structure for Input Current Shaping.
110	An Isolated Power Factor Corrected Power Supply Utilizing the Transformer Leakage Inductance.
111	Interleaved High Step-Up Converter With Coupled Inductors.
112	Interleaved High Step-Up Converter Integrating Coupled Inductor and Switched Capacitor for Distributed Generation Systems.
113	A Novel High Voltage Gain Non coupled Inductor SEPIC Converter.
114	Active-Clamp Forward Converter With Lossless-Snubber on Secondary-Side.

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115	A Single-Switched High-Switching-Frequency Quasi-Resonant Fly back Converter.
116	High-Voltage-Gain DC–DC Step-Up Converter With Bifold Dickson Voltage Multiplier Cells.
117	A Family of Cuk, Zeta, and SEPIC Based Soft-Switching DC–DC Converters.
118	A Power Quality Improved EV Charger with Bridgeless Cuk Converter.
119	A Cuk Dual Resonance Core Based Dickson Resonant Switched-Capacitor Converter with Wide Conversion Ratio Range.
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120	Operation of a Bidirectional Series-Resonant Converter With Minimized Tank Current and Wide ZVS Range.
121	Novel Modulation of Isolated Bidirectional DC–DC Converter for Energy Storage Systems.
122	Hybrid Switched-Capacitor/Switched-Quasi-Z-Source Bidirectional DC–DC Converter With a Wide Voltage Gain Range for Hybrid Energy Sources EVs.
123	Bidirectional Series Resonant DC/AC Converter for Energy Storage Systems.
124	Design and Implementation of a New Transformer less Bidirectional DC–DC Converter With Wide Conversion Ratios.
<b>POWER SYSTEM</b>	
125	Smart Loads for Improving the Fault-Ride-Through Capability of Fixed-Speed Wind Generators in Micro grids.
126	A Control Strategy for Voltage Unbalance Mitigation in an Islanded Micro grid Considering Demand Side Management Capability.
127	Multi objective Predictability-Based Optimal Placement and Parameters Setting of UPFC in Wind Power Included Power Systems.

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128	A Multiple Improved Notch Filter-Based Control for a Single-Stage PV System Tied to a Weak Grid.
129	Neutral-Point Voltage Analysis and Suppression for NPC Three-Level Photovoltaic Converter in LVRT Operation Under Imbalanced Grid Faults With Selective Hybrid SVPWM Strategy
130	Active Cross-Correlation Anti-Islanding Scheme for PV Module-Integrated Converters in the Prospect of High Penetration Levels and Weak Grid Conditions.
131	Multifunctional Hybrid Structure of SVC and Capacitive Grid-Connected Inverter (SVC//CGCI) for Active Power Injection and Non active Power Compensation.
132	Power Quality Improvement and PV Power Injection by DSTATCOM With Variable DC Link Voltage Control from RSC-MLC.
133	Enhancement of Solar Farm Connectivity With Smart PV Inverter PV-STATCOM.
134	GI-Based Control Scheme for Single-Stage Grid Interfaced SECS for Power Quality Improvement.
135	Stability Analysis for the Grid-Connected Single-Phase Asymmetrical Cascaded Multilevel Inverter With SRF-PI Current Control Under Weak Grid Conditions.
136	Protection of Sensitive Loads Using Sliding Mode Controlled Three-Phase DVR With Adaptive Notch Filter.
137	Power Flow and Stability Analyses of a Multifunctional Distributed Generation System Integrating a Photovoltaic System With Unified Power Quality Conditioner.
138	Compensation of Power Quality Problems in Wind-Based Renewable Energy System for Small Consumer as Isolated Loads.

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139	Robust Repetitive Control Design for a Three-Phase Four Wire Shunt Active Power Filter.
140	Battery Energy Storage System to Stabilize Transient Voltage and Frequency and Enhance Power Export Capability.
141	A Novel Dual-DC-Port Dynamic Voltage Restorer With Reduced-Rating Integrated DC–DC Converter for Wide-Range Voltage Sag Compensation.
142	An Overview of Assessment Methods for Synchronization Stability of Grid-Connected Converters Under Severe Symmetrical Grid Faults.
143	Power Flow Control of Interconnected AC-DC Micro grids in Grid-Connected Hybrid Micro grids Using Modified UIPC.
144	Coordination control of positive and negative sequence voltages of cascaded H-bridge STATCOM operating under imbalanced grid Voltage.
145	An assessment of a Square-Wave Series Voltage Compensator increasing Power Quality on industrial electronic loads compensating voltage sag and swell.
146	Applying Reactive Power Compensators to Large Wind Farms to Improve the Stability of Isolated Power Systems.