SINCE 2007

ACADEMIC LIVE PROJECTS 2025 - 2026

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2025 – 2026 EEE POWER SYSTEMS IEEE TITLES

TITLE ID	TITLE	DOMAIN
TEMAPS972, TEPGPS961, TEMAED282, TEPGED278	**Improved Efficiency and Reliability of a Single-Stage Solar Water Pumping System** **Objective:** The main objective of this project is to improve the efficiency and reliability of a single-stage solar water pumping system.	Solar Power Generations
TEMAPS961, TEPGPS951, TEMAPS962, TEPGPS952	**Enhanced Power Quality Control in Grid Tied PVG-UAPF Systems Using a Modified Second Order Generalized Integrator and Notch Filter** **Objective:** The main objective of this project is to enhance power quality in grid-tied PVG-UAPF (Photovoltaic Generation–Unified Active Power Filter) systems by implementing a Modified Second-Order Generalized Integrator (SOGI) along with a Notch Filter, aiming to achieve effective harmonic suppression, reactive power compensation, and improved voltage and current waveform quality under dynamic operating conditions."	Solar Power Generations
TEMACS907, TEPGCS154, TEMAPS967, TEPGPS956	**Design and Implementation of Solar Grid-Connected Inverter with the Approach of Maximum Power Injection and THD Reduction in Partial Shading Conditions Using Cascaded Repetitive Controller** **Objective:** The objective of this project is to design a solar grid-connected inverter that maximizes power delivery and minimizes harmonic distortion using a novel cascaded repetitive controller (CRC), capable of operating effectively under variable grid frequencies and	Solar Power Generations

	partial shading conditions.	
TEMAPS970, TEPGPS959, TEMAPE393, TEPGPE360, TEMAPE394, TEPGPE361	**Research on Hybrid Voltage-Power Switching Control Strategy of Grid-Connected Two-Stage Photovoltaic System for Low Voltage Ride Through Faults** **Objective:** The main objective of this paper is improving the Low Voltage Ride Through (LVRT) performance of a grid-connected two-stage PV system. It uses a hybrid control strategy that combines voltage and power control. This helps to keep the system stable and balanced during faults. It also ensures better fault handling and meets standards of the grid.	**Solar Power Generations**
TEMAPS969, TEPGPS958, TEMAPE392, TEPGPE359	**Operation of a Grid-Forming Converter Controlled by the Flux Vector** **Objective:** The main objective of the project is to develop a novel grid-forming converter control scheme that uses the converter's flux vector as its central state variable to emulate the inertia and damping characteristics of a synchronous machine, while incorporating active and reactive current limiting through flux-based control loops.	Solar Power Generations
TEMAPS968, TEPGPS957, TEMACS908, TEPGCS155	**Enhanced MPP Tracking in Partial Shading Conditions for Solar PV Systems: A Metaheuristic Approach Utilizing Projectile Search Algorithm** **Objective:** The main objective of this project is to develop and validate a Projectile Search Algorithm (PSA)-based MPPT technique that enables efficient power extraction from solar PV systems under partial shading conditions, while maintaining low computational complexity.	Solar Power Generations

TEPGPE353, TEMAPE386, TEPGPS949, TEMAPS959	**An Enhanced Fractional Open Circuit Voltage MPPT Method for Rapid and Precise MPP Tracking in Standalone Photovoltaic Systems** **Objective:** The main objective of the project is to develop a novel approach called musical chairs algorithm-enhanced fractional open circuit voltage (MCA-FOCV) designed to effectively track the MPP of solar PV systems in changing environmental conditions. By implementing this hybrid MPPT approach it simplifies the process and reduces the time needed to reach optimal performance.	Solar Power Generations
TEMAPS956, TEPGPS946, TEMACS902, TEPGCS149	**Enhanced Harmony Search Algorithm for Maximum Power Point Tracking Under Partial Shading in PV Systems** **Objective:** The main objective of this project is to implement an Enhanced Harmony Search Algorithm (EHSA) for Maximum Power Point Tracking (MPPT) in Photovoltaic (PV) systems under partial shading conditions, with the goal of accurately locating the Global Maximum Power Point (GMPP) and enhancing overall energy efficiency compared to traditional MPPT method.	Solar Power Generations
TEMAPE383, TEPGPE350, TEMAPS954, TEPGPS944, TEMAED275, TEPGED271	**Novel Modular Buck-Boost Based Multiport Bidirectional DC–DC Converter (MPBC) for Hybrid Electric Vehicle Application** **Objective:** The main objective of this project is to design Multiport Bidirectional DC–DC Converter (MPBC) for HEV Applications. This novel converter aims to seamlessly integrate	Solar Power Generations

	renewable energy sources the motor and auxiliary loads of an electric vehicle. By enabling both step-up (boost) and step-down (buck) voltage conversion, as well as bidirectional power flow, the MPBC not only caters to the different DC voltage requirements across the vehicle components but also facilitates regenerative braking.	
TEMAPS955, TEPGPS945, TEMACS900, TEPGCS147	**A Hybrid P&O-Fuzzy-Based Maximum Power Point Tracking (MPPT) Algorithm for Photovoltaic Systems Under Partial Shading Conditions** **Objective:** The main objective of this project is to develop and implement an enhanced Maximum Power Point Tracking (MPPT) using hybrid P&O-Fuzzy and Particle Swarm Optimization (PSO) technique in Solar PV related applications under partial shading conditions.	Solar Power Generations
TEMAPS950, TEPGPS940, TEMACS894, TEPGCS141	**A Hybrid Single-Phase Transformer-less Solar Photovoltaic Grid-Connected Inverter with Reactive Power Capability and Reduced Leakage Current** **Objective:** The main objective of this project is to develop a novel hybrid topology combining mid-point clamping and decoupling techniques to reduce leakage current and maintain Reactive Power flow. The design incorporates model predictive control (MPC) to dynamically manage inverter output.	Solar Power Generations
TEMAPS951, TEPGPS941, TEMAPE381, TEPGPE348, TEMACS896,	**An Enhanced Active Disturbance Rejection Control Scheme for DC Voltage Regulation in Photovoltaic Grid-Connected Four-Leg Inverter Using a Sliding Mode Observer**	Solar Power Generations

TEPGCS143	**Objective:** The objective of this study is to develop and validate a robust control strategy based on an Enhanced Active Disturbance Rejection Control (EADRC) using a Super-Twisting Sliding Mode Observer (STSMO) to improve DC-bus voltage regulation in a PV grid-connected four-leg inverter system under various disturbances and uncertainties.	
TEMAPS949, TEPGPS939, TEMAPE380, TEPGPE347	**A Novel High Boost Five-Level Inverter With Wide Range of Input Voltage Variations for Photovoltaic Applications** **Objective:** The primary objective of this research is to design, model, and analyze a novel high-boost five-level inverter capable of operating efficiently under a wide range of input voltage variations in photovoltaic (PV) applications. The goal is to achieve high voltage gain without using magnetic components, minimize voltage stress on power switches, and enhance overall system efficiency.	Solar Power Generations
TEMAPS944, TEPGPS934, TEMAPS945, TEPGPS935	**A Multi-Functional Grid-Tied PV System Using a Split Source Inverter with Energy Management and Power Quality Improvement Features** **Objective:** The main objective of this project is to design, implement, and analyze a multi-functional grid-tied photovoltaic (PV) system incorporating a Split-Source Inverter (SSI) architecture. The system aims to enhance overall energy management and improve power quality by integrating advanced control strategies. This includes effective maximum power point tracking (MPPT), grid synchronization, reactive power compensation, and harmonic mitigation	Solar Power Generations
TEPGPS938, TEMAPS948, TEMACS892,	**Investigating the Potential of an ANFIS-Based Maximum Power Point Tracking Controller for Solar Photovoltaic Systems**	Solar Power Generations

TEMACS893, TEPGCS140	**Objective:** The main objective of this project is to develop and evaluate an Adaptive Neuro-Fuzzy Inference System-based Maximum Power Point Tracking controller for solar photovoltaic systems, aiming to enhance the efficiency of power extraction under varying environmental conditions by comparing its performance against conventional MPPT techniques.	
TEMAPS960, TEPGPS950, TEMACS905, TEPGCS152	**Enhanced FCS-MPC for DFIG Under Non-Ideal Grid Conditions** **Objective:** The main objective of the paper is to an enhanced Model Predictive Control - Finite Control Set (MPC-FCS) strategy for Doubly-Fed Induction Generators (DFIGs) operating under distorted grid voltage conditions. The enhancement integrates a Decoupled Double Synchronous Reference Frame Phase-Locked Loop (DDSRF-PLL) to improve synchronization and control performance.	Wind Power Generation
TEMAPS942, TEPGPS932, TEMAPS943, TEPGPS933	**A Multifunctional Wind Power Conversion System With Sensorless Operation and Power Quality Improvement Feature** **Objective:** The main objective of this project is to develop a sensorless wind power system with improved power quality, ensuring efficient energy conversion and grid code compliance.	Wind Power Generation
TEMAPS952, TEPGPS942, TEMAPE382, TEPGPE349	**A Three-Level Inverter-Based Model Predictive Control Design for Optimal Wind Energy Systems** **Objective:** The main objective of this project is to propose an innovative control strategy for a grid-connected wind energy system using a three-level inverter.	Wind Power Generation

TEMAPS974, TEPGPS963, TEMAED283 TEPGED279	**An Enhanced Grid-Tied Off-Board Electric Vehicle Charger With Improved Power Quality Using Unified Control Approach** **Objective:** The main objective of this project is to design a multifunctional, grid-tied electric vehicle charger using adaptive and modified predictive control strategies to improve power quality, ensure efficient bidirectional power flow, and support G2V, V2G, and V2L operations.	Power Quality
TEMAPS973, TEPGPS962, TEMAPE399, TEPGPE366	**Extendable Multi-Input High Step-Up DC–DC Converter for Multisource Energy Systems** **Objective:** The main objective of this project is to propose an extendable Multi-Input High Step-Up DC–DC Converter for Multisource Energy Systems.	Power Quality
TEMAPS963, TEPGPS953, TEMAED280, TEPGED276	**Harmonic Current Suppression for Open-Ending Winding PMSM Based on Voltage Injection** **Objective:** This paper aims to improve the output current quality and reduce the negative impact of harmonic currents in OEW-PMSMs by developing a voltage injection strategy.	Power Quality
TEMAPS961, TEPGPS951, TEMAPS962, TEPGPS952	**Enhanced Power Quality Control in Grid Tied PVG-UAPF Systems Using a Modified Second Order Generalized Integrator and Notch Filter** **Objective:** The main objective of this project is to enhance power quality in grid-tied PVG-UAPF (Photovoltaic Generation–Unified Active Power Filter) systems by implementing a Modified Second-Order Generalized Integrator (SOGI) along with a Notch Filter, aiming to achieve effective harmonic suppression, reactive power compensation, and improved voltage and current waveform quality under	Power Quality

	dynamic operating conditions."	
TEPGPE352, TEMAPE385, TEPGPS947, TEMAPS957	**Enhanced Stability and Power Quality Control of LCL-GCI Under Weak Grid Conditions Using THQVC** **Objective:** The main objective of this paper is to develop and implement LCL filtered grid-connected inverters (LCL-GCI), third harmonic quadrature voltage control (THQVC), non-linear behavior of the phase-locked loop (PLL), distorted voltage , at the point of common coupling (PCC), and affects the overall system performance. To mitigate these challenges, the THQVC controller was designed to regulate the q-axis voltage at the PCC, ensuring that the voltage remains sinusoidal.	Power Quality
TEMAPS944, TEPGPS934, TEMAPS945, TEPGPS935	**A Multi-Functional Grid-Tied PV System Using a Split Source Inverter with Energy Management and Power Quality Improvement Features** **Objective:** The main objective of this project is to design, implement, and analyze a multi-functional grid-tied photovoltaic (PV) system incorporating a Split-Source Inverter (SSI) architecture. The system aims to enhance overall energy management and improve power quality by integrating advanced control strategies. This includes effective maximum power point tracking (MPPT), grid synchronization, reactive power compensation, and harmonic mitigation	Power Quality

TEMAPS942, TEPGPS932, TEMAPS943, TEPGPS933	**A Multifunctional Wind Power Conversion System With Sensorless Operation and Power Quality Improvement Feature** **Objective:** The main objective of this project is to develop a sensorless wind power system with improved power quality, ensuring efficient energy conversion and grid code compliance.	Power Quality
TEMAPS964, TEMAPS965, TEMAPS966, TEPGPS954, TEPGPS955	**State-of-Charge-Based Energy Management Strategy for Hybrid Energy Storage System in DC Microgrid** **Objective:** The main objective of this project is to design a SoC-based energy management strategy for HESS in a DC microgrid to enhance voltage stability, battery life, and transient performance.	Hybrid Systems
TEMAPS946, TEPGPS936, TEMACS890, TEPGCS138	**An Effective AFNIS-MPPT-Based Method for Optimizing Hybrid Energy Harvesting Systems** **Objective:** The main objective of this project is to develop and implement an AFNIS-MPPT-based optimization method for hybrid energy harvesting systems, integrating solar and wind energy sources to achieve maximum power extraction under dynamic environmental conditions.	Hybrid Systems
TEMAPS953, TEPGPS943, TEMACS897, TEPGCS144	**Performance Improvement of Grid-Connected PV-Wind Hybrid Systems Using Adaptive Neuro-Fuzzy Inference System and Fuzzy FOPID Advanced Control With OPAL-RT** **Objective:** The main objective of this project is to improve the performance of grid-connected PV-wind Hybrid systems using adaptive neuro-	Hybrid Systems

	fuzzy inference system advanced control.	
TEMAPS971, TEPGPS960, TEMACS909, TEPGCS156	**Hybrid Impedance-Based Controller Design of Grid-Connected Converter for Whole-System Stabilization of Grid-Connected DC Microgrids** **Objective:** The main objective of this project is to design and implement a hybrid impedance-based controller for a grid-connected converter to stabilize DC microgrids by managing dynamic interactions, minimizing impedance mismatches, and improving voltage stability, robustness, and transient response under varying loads.	Microgrid
TEMAPS958, TEPGPS948, TEPGED273, TEMAED277	**An Improved Control Strategy for Managing Reactive Power and Reducing Capacity of Interlinking Converters by Participating of Electric Vehicles in Hybrid AC/DC Microgrids** **Objective:** The main objective of this project is to develop an improved control strategy for effective reactive power management and for reducing the required capacity of interlinking converters by utilizing the active participation of electric vehicles (EVs) in hybrid AC/DC microgrids. This approach aims to enhance power balance, improve voltage stability, and increase the overall efficiency and flexibility of the system under dynamic operating conditions.	Microgrid
TEMAPS964, TEMAPS965, TEMAPS966, TEPGPS954, TEPGPS955	**State-of-Charge-Based Energy Management Strategy for Hybrid Energy Storage System in DC Microgrid** **Objective:** The main objective of this project is to design a SoC-based energy management	Microgrid

	strategy for HESS in a DC microgrid to enhance voltage stability, battery life, and transient performance.	
TEMAPS947, TEPGPS937, TEMAPE379, TEPGPE346	**Coordinated Control of Flywheel and Battery Energy Storage Systems for Frequency Regulation in Diesel Generator-Based Microgrid** **Objective:** The main objective of this project is to develop coordinated control of flywheel and battery storage for enhanced frequency regulation in diesel generator-based microgrids under dynamic conditions.	Microgrid

2025 – 2026 EEE Control Systems IEEE TITLES

TITLE ID	TITLE	DOMAIN
TEMACS910, TEPGCS157, TEMAED281, TEPGED277	**Analysis and Design of ADRC for the LCC-LCC WPT System** **Objective:** The main objective of this project is to analyse the dynamic characteristics of LCC-LCC wireless power transfer systems. To develop a small-signal model and study transient behavior. To implement ADRC based on primary-side current for voltage control. To validate improved voltage stability and response time.	Control Systems

TEPGPE352, TEMAPE385, TEPGPS947, TEMAPS957	**Enhanced Stability and Power Quality Control of LCL-GCI Under Weak Grid Conditions Using THQVC** **Objective:** The main objective of this paper is to develop and implement LCL filtered grid-connected inverters (LCL-GCI), third harmonic quadrature voltage control (THQVC), non-linear behavior of the phase-locked loop (PLL), distorted voltage, at the point of common coupling (PCC), and affects the overall system performance. To mitigate these challenges, the THQVC controller was designed to regulate the q-axis voltage at the PCC, ensuring that the voltage remains sinusoidal.	Control Systems
TEMAPS971, TEPGPS960, TEMACS909, TEPGCS156	**Hybrid Impedance-Based Controller Design of Grid-Connected Converter for Whole-System Stabilization of Grid-Connected DC Microgrids** **Objective:** The main objective of this project is to design and implement a hybrid impedance-based controller for a grid-connected converter to stabilize DC microgrids by managing dynamic interactions, minimizing impedance mismatches, and improving voltage stability, robustness, and transient response under varying loads.	Control Systems
TEMAPS960, TEPGPS950, TEMACS905, TEPGCS152	**Enhanced FCS-MPC for DFIG Under Non-Ideal Grid Conditions** **Objective:** The main objective of the paper is to an enhanced Model Predictive Control - Finite Control Set (MPC-FCS) strategy for Doubly-Fed Induction Generators (DFIGs) operating under distorted grid voltage conditions. The enhancement integrates a Decoupled Double Synchronous Reference	Control Systems

	Frame Phase-Locked Loop (DDSRF-PLL) to improve synchronization and control performance.	
TEMAPS968, TEPGPS957, TEMACS908, TEPGCS155	**Enhanced MPP Tracking in Partial Shading Conditions for Solar PV Systems: A Metaheuristic Approach Utilizing Projectile Search Algorithm** **Objective:** The main objective of this project is to develop and validate a Projectile Search Algorithm (PSA)-based MPPT technique that enables efficient power extraction from solar PV systems under partial shading conditions, while maintaining low computational complexity.	Control Systems
TEMACS904, TEPGCS151, TEMAED278, TEPGED274	**Extended State Observer-Based Robust Model Predictive Velocity Control for Permanent Magnet Synchronous Motor** **Objective:** The main objective of this project is to propose an extended state observer based robust model predictive controller for controlling the velocity of permanent magnet synchronous motor.	Control Systems
TEMACS907, TEPGCS154, TEMAPS967, TEPGPS956	**Design and Implementation of Solar Grid-Connected Inverter with the Approach of Maximum Power Injection and THD Reduction in Partial Shading Conditions Using Cascaded Repetitive Controller** **Objective:** The objective of this project is to design a solar grid-connected inverter that maximizes power delivery and minimizes harmonic distortion using a novel cascaded repetitive controller (CRC), capable of operating effectively under variable grid frequencies and partial shading conditions.	Control Systems

TEMAPS956, TEPGPS946, TEMACS902, TEPGCS149	**Enhanced Harmony Search Algorithm for Maximum Power Point Tracking Under Partial Shading in PV Systems** **Objective:** The main objective of this project is to implement an Enhanced Harmony Search Algorithm (EHSA) for Maximum Power Point Tracking (MPPT) in Photovoltaic (PV) systems under partial shading conditions, with the goal of accurately locating the Global Maximum Power Point (GMPP) and enhancing overall energy efficiency compared to traditional MPPT method.	Control Systems
TEMAPE384, TEPGPE351, TEMACS903, TEPGCS150	**A Second-Order Sliding Mode Control Scheme With Fuzzy Logic-Based Online Sliding Surface Adjustment for Buck Converters** **Objective:** The main objective of this project is to propose a second-order sliding mode control scheme with fuzzy logic based online sliding surface adjustment for buck converters.	Control Systems
TEMACS901, TEPGCS148, TEMAED276, TEPGED272	**Optimized ANFIS-Based Robust Nonlinear Control of a Solar Off-Grid Charging Station for Electric Vehicles** **Objective:** The main objective of this project is to improve the performance of an off-grid electric vehicle charging station powered by photovoltaic panels and batteries. It integrates an advanced maximum power point tracking (MPPT) method - implemented through an Adaptive Neuro-Fuzzy Inference System (ANFIS) - with a robust nonlinear control strategy that regulates the system's currents and voltages.	Control Systems

TEMAPS951, TEPGPS941, TEMAPE381, TEPGPE348, TEMACS896, TEPGCS143	**An Enhanced Active Disturbance Rejection Control Scheme for DC Voltage Regulation in Photovoltaic Grid-Connected Four-Leg Inverter Using a Sliding Mode Observer** **Objective:** The objective of this study is to develop and validate a robust control strategy based on an Enhanced Active Disturbance Rejection Control (EADRC) using a Super-Twisting Sliding Mode Observer (STSMO) to improve DC-bus voltage regulation in a PV grid-connected four-leg inverter system under various disturbances and uncertainties.	Control Systems
TEMAPS955, TEPGPS945, TEMACS900, TEPGCS147	**A Hybrid P&O-Fuzzy-Based Maximum Power Point Tracking (MPPT) Algorithm for Photovoltaic Systems Under Partial Shading Conditions** **Objective:** The main objective of this project is to develop and implement an enhanced Maximum Power Point Tracking (MPPT) using hybrid P&O-Fuzzy and Particle Swarm Optimization (PSO) technique in Solar PV related applications under partial shading conditions.	Control Systems
TEMAED270, TEPGED264, TEMACS891, TEPGCS139	**Improved Sliding Mode Control of Wheel PMSM Under Bounded Disturbance Rate of Change Conditions** **Objective:** The main objective of this project is to develop an Improved Sliding Mode Control (SMC) strategy for a Wheel-mounted Permanent Magnet Synchronous Motor (PMSM), capable of	Control Systems

	operating reliably under bounded disturbance rate of change conditions. In real-world electric vehicle (EV) applications, motors are frequently exposed to unpredictable load variations, friction changes, and road conditions, which manifest as disturbances	
TEMAPE389, TEPGPE356, TEMACS906, TEPGCS153	**Lower Energy Storage-Based 9L- Switched Capacitor ANPC Inverter Topology With Voltage Boosting Features** **Objective:** The main objective of this project is to develop and analyze a 9-level Asymmetrical Neutral Point Clamped (ANPC) inverter topology integrated with a switched-capacitor structure that achieves voltage boosting with reduced energy storage requirements.	Control Systems
TEMACS898, TEPGCS145, TEMAED272, TEPGED266, TEPGED267, TEPGED268	**A Novel LQI-Based Speed Control of Switched Reluctance Motors for High Performance Applications** **Objective:** The main objective of this project is to control the speed of switched reluctance motors for high performance applications using a novel LQI-based technique.	Control Systems
TEMAPS946, TEPGPS936, TEMACS890, TEPGCS138	**An Effective AFNIS-MPPT-Based Method for Optimizing Hybrid Energy Harvesting Systems** **Objective:** The main objective of this project is to develop and implement an AFNIS-MPPT-based optimization method for hybrid energy harvesting systems, integrating solar and wind energy sources to achieve maximum power extraction under dynamic environmental conditions.	Control Systems

TEMAPS950, TEPGPS940, TEMACS894, TEPGCS141	**A Hybrid Single-Phase Transformer-less Solar Photovoltaic Grid-Connected Inverter with Reactive Power Capability and Reduced Leakage Current** **Objective:** The main objective of this project is to develop a novel hybrid topology combining mid-point clamping and decoupling techniques to reduce leakage current and maintain Reactive Power flow. The design incorporates model predictive control (MPC) to dynamically manage inverter output.	Control Systems
TEMACS895, TEPGCS142, TEMAED271, TEPGED265	**Conditioned Adaptive Barrier Function Based Integral Super-Twisting Sliding Mode Control for Electric Vehicles With Hybrid Energy Storage System** **Objective:** The main objective of this project is to propose a conditioned adaptive barrier function based integral super twisting sliding mode control for electric vehicles with hybrid energy storage systems.	Control Systems
TEPGPS938, TEMAPS948, TEMACS892, TEMACS893, TEPGCS140	**Investigating the Potential of an ANFIS-Based Maximum Power Point Tracking Controller for Solar Photovoltaic Systems** **Objective:** The main objective of this project is to develop and evaluate an Adaptive Neuro-Fuzzy Inference System-based Maximum Power Point Tracking controller for solar photovoltaic systems, aiming to enhance the efficiency of power extraction under varying environmental conditions by comparing its performance against conventional MPPT techniques.	Control Systems
TEMAPS953, TEPGPS943, TEMACS897,	**Performance Improvement of Grid-Connected PV-Wind Hybrid Systems Using Adaptive Neuro-Fuzzy Inference System and Fuzzy**	Control Systems

TEPGCS144	**FOPID Advanced Control With OPAL-RT** **Objective:** The main objective of this project is to improve the performance of grid-connected PV-wind Hybrid systems using adaptive neuro-fuzzy inference system advanced control.	

2025 – 2026 EEE POWER ELECTRONICS IEEE TITLES

TITLE ID	TITLE	DOMAIN
TEMAPS973, TEPGPS962, TEMAPE399, TEPGPE366	**Extendable Multi-Input High Step-Up DC–DC Converter for Multisource Energy Systems** **Objective:** The main objective of this project is to propose an extendable Multi-Input High Step-Up DC–DC Converter for Multisource Energy Systems.	DC-DC Converters
TEMAPE396, TEPGPE363	**High Isolation Auxiliary Power Source for HighVoltage Converters Employing Wireless Inductive Power Transfer**	DC-DC Converters

	Objective: The main objective of this project is to develop a high-isolation auxiliary power source tailored for high-voltage power electronic converters by employing wireless inductive power transfer (WIPT) technology. The focus is on eliminating the use of traditional low-frequency transformers or direct electrical connections, which are often bulky, lossy, and challenging to isolate in high-voltage environments.	
TEPGPE353, TEMAPE386, TEPGPS949, TEMAPS959	**An Enhanced Fractional Open Circuit Voltage MPPT Method for Rapid and Precise MPP Tracking in Standalone Photovoltaic Systems** **Objective:** The main objective of the project is to develop a novel approach called musical chairs algorithm-enhanced fractional open circuit voltage (MCA-FOCV) designed to effectively track the MPP of solar PV systems in changing environmental conditions. By implementing this hybrid MPPT approach it simplifies the process and reduces the time needed to reach optimal performance.	DC-DC Converters
TEMAPE390, TEPGPE357, TEMAPE391 , TEPGPE358	**1-ϕ Seven-Level Switched-Capacitor Boost Multilevel Inverter Topology With Optimized Number of Components** **Objective:** The main objective for this project is a novel seven-level switched-capacitor boost multilevel inverter topology that achieves voltage step-up and multiple output levels with a reduced number of components and no magnetic elements, targeting efficient and compact designs for renewable energy systems"	**DC-DC Converters**

TEMAPE388, TEPGPE355, TEMAED279, TEPGED275	**New SEPIC Derived Semi-Bridgeless PFC Converter for Battery Charging Application** **Objective:** The main objective of this project is to develop a novel AC–DC semi-bridgeless dual-switch SEPIC converter tailored for battery-charging applications that inherently corrects power factor to unity and minimizes total harmonic distortion in the input current.	DC-DC Converters
TEMAPS970, TEPGPS959, TEMAPE393, TEPGPE360, TEMAPE394, TEPGPE361	**Research on Hybrid Voltage-Power Switching Control Strategy of Grid-Connected Two-Stage Photovoltaic System for Low Voltage Ride Through Faults** **Objective:** The main objective of this paper is improving the Low Voltage Ride Through (LVRT) performance of a grid-connected two-stage PV system. It uses a hybrid control strategy that combines voltage and power control. This helps to keep the system stable and balanced during faults. It also ensures better fault handling and meets standards of the grid.	**DC-DC Converters**
TEMAPE383, TEPGPE350, TEMAPS954, TEPGPS944, TEMAED275, TEPGED271	**Novel Modular Buck-Boost Based Multiport Bidirectional DC–DC Converter (MPBC) for Hybrid Electric Vehicle Application** **Objective:** The main objective of this project is to design Multiport Bidirectional DC–DC Converter (MPBC) for HEV Applications. This novel converter aims to seamlessly integrate renewable energy sources the motor and auxiliary loads of an electric vehicle. By enabling both step-up (boost) and step-down (buck) voltage conversion, as well as bidirectional power flow, the MPBC not only caters to the different DC voltage requirements across the vehicle components	DC-DC Converters

	but also facilitates regenerative braking.	
TEMAPE384, TEPGPE351, TEMACS903, TEPGCS150	**A Second-Order Sliding Mode Control Scheme With Fuzzy Logic-Based Online Sliding Surface Adjustment for Buck Converters** **Objective:** The main objective of this project is to propose a second-order sliding mode control scheme with fuzzy logic based online sliding surface adjustment for buck converters.	DC-DC Converters
TEMAED269, TEPGED263, TEMAPE378, TEPGPE345	**Modeling and Control of a Three-Phase Interleaved Buck Converter as a Battery Charger** **Objective:** The main objective of the paper is to develop three-phase interleaved buck converter configured as a battery charger for electric vehicles. The controlling consists of multi-loop cascade configuration dedicated to implement democratic current sharing technique and seamless transition.	DC-DC Converters
TEPGPE365, TEMAPE398, TEPGPE364, TEMAPE397	**Isolated Grid-Forming Control of Wave Energy Converter for Island Electrification** **Objective:** The main objective of this project is to develop a grid-forming wave energy converter system for stable island electrification.	DC-AC Converters
TEMAPS951, TEPGPS941, TEMAPE381, TEPGPE348, TEMACS896, TEPGCS143	**An Enhanced Active Disturbance Rejection Control Scheme for DC Voltage Regulation in Photovoltaic Grid-Connected Four-Leg Inverter Using a Sliding Mode Observer** **Objective:** The objective of this study is to develop and validate a robust control strategy based on an Enhanced Active Disturbance	DC-AC Converters

	Rejection Control (EADRC) using a Super-Twisting Sliding Mode Observer (STSMO) to improve DC-bus voltage regulation in a PV grid-connected four-leg inverter system under various disturbances and uncertainties.	
TEMAPS947, TEPGPS937, TEMAPE379, TEPGPE346	**Coordinated Control of Flywheel and Battery Energy Storage Systems for Frequency Regulation in Diesel Generator-Based Microgrid** **Objective:** The main objective of this project is to develop coordinated control of flywheel and battery storage for enhanced frequency regulation in diesel generator-based microgrids under dynamic conditions.	DC-AC Converters
TEMAPS970, TEPGPS959, TEMAPE393, TEPGPE360, TEMAPE394, TEPGPE361	**Research on Hybrid Voltage-Power Switching Control Strategy of Grid-Connected Two-Stage Photovoltaic System for Low Voltage Ride Through Faults** **Objective:** The main objective of this paper is improving the Low Voltage Ride Through (LVRT) performance of a grid-connected two-stage PV system. It uses a hybrid control strategy that combines voltage and power control. This helps to keep the system stable and balanced during faults. It also ensures better fault handling and meets standards of the grid.	DC-AC Converters
TEMAPS969, TEPGPS958, TEMAPE392, TEPGPE359	**Operation of a Grid-Forming Converter Controlled by the Flux Vector** **Objective:** The main objective of the project is to develop a novel grid-forming converter control scheme that uses the converter's flux vector as its central state variable to emulate the inertia and damping characteristics of a synchronous machine, while incorporating active and reactive	DC-AC Converters

	current limiting through flux-based control loops.	
TEMAPS952, TEPGPS942, TEMAPE382, TEPGPE349	**A Three-Level Inverter-Based Model Predictive Control Design for Optimal Wind Energy Systems** **Objective:** The main objective of this project is to propose an innovative control strategy for a grid-connected wind energy system using a three-level inverter.	DC-AC Converters
TEPGPE365, TEMAPE398, TEPGPE364, TEMAPE397	**Isolated Grid-Forming Control of Wave Energy Converter for Island Electrification** **Objective:** The main objective of this project is to develop a grid-forming wave energy converter system for stable island electrification.	AC-DC Converters
TEMAPE395, TEPGPE362	**Hybrid PWM Technique and Capacitor Voltage Balancing Control for Four-Level Asymmetrical Flying Capacitor Inverter** **Objective:** The main objective of this paper is to propose a hybrid PWM technique for the four-level asymmetrical hybrid flying capacitor inverter to achieve natural flying capacitor voltage balancing. It also introduces a zero-sequence voltage injection method to actively balance the DC-link capacitor voltages without extra circuits.	**Multilevel Inverters**
TEMAPE390, TEPGPE357, TEMAPE391 , TEPGPE358	**1-ϕ Seven-Level Switched-Capacitor Boost Multilevel Inverter Topology With Optimized Number of Components** **Objective:** The main objective for this project is a novel seven-level switched-capacitor boost multilevel inverter topology that achieves voltage step-up and multiple output levels with a reduced number of components and no magnetic	**Multilevel Inverters**

	elements, targeting efficient and compact designs for renewable energy systems"	
TEMAPE387, TEPGPE354	**High-Efficiency Switched-Capacitor Multilevel Inverter Topology With Lower Number of Switching Components** **Objective:** The main objective is to develop a high-efficiency switched-capacitor multilevel inverter topology with a lower number of switching components, aimed at achieving high voltage gain and high-quality stepped AC output from low-voltage DC sources, while significantly reducing the number of power switches, gate drivers, and passive elements.	Multilevel Inverters
TEMAPE389, TEPGPE356, TEMACS906, TEPGCS153	**Lower Energy Storage-Based 9L- Switched Capacitor ANPC Inverter Topology With Voltage Boosting Features** **Objective:** The main objective of this project is to develop and analyze a 9-level Asymmetrical Neutral Point Clamped (ANPC) inverter topology integrated with a switched-capacitor structure that achieves voltage boosting with reduced energy storage requirements.	Multilevel Inverters
TEMAPS949, TEPGPS939, TEMAPE380, TEPGPE347	**A Novel High Boost Five-Level Inverter With Wide Range of Input Voltage Variations for Photovoltaic Applications** **Objective:** The primary objective of this research is to design, model, and analyze a novel high-boost five-level inverter capable of operating efficiently under a wide range of input voltage variations in photovoltaic (PV) applications. The goal is to achieve high voltage gain without using magnetic components, minimize voltage stress on power switches, and enhance overall system efficiency.	Multilevel Inverters

2025 – 2026 EEE ELECTRICAL DRIVES IEEE TITLES

Title ID	TITLE	DOMAIN

TEMAPS972, TEPGPS961, TEMAED282, TEPGED278	**Improved Efficiency and Reliability of a Single-Stage Solar Water Pumping System** **Objective:** The main objective of this project is to improve the efficiency and reliability of a single-stage solar water pumping system.	AC Drives
TEMAPS963, TEPGPS953, TEMAED280, TEPGED276	**Harmonic Current Suppression for Open-Ending Winding PMSM Based on Voltage Injection** **Objective:** This paper aims to improve the output current quality and reduce the negative impact of harmonic currents in OEW-PMSMs by developing a voltage injection strategy.	AC Drives
TEMAED270, TEPGED264, TEMACS891, TEPGCS139	**Improved Sliding Mode Control of Wheel PMSM Under Bounded Disturbance Rate of Change Conditions** **Objective:** The main objective of this project is to develop an Improved Sliding Mode Control (SMC) strategy for a Wheel-mounted Permanent Magnet Synchronous Motor (PMSM), capable of operating reliably under bounded disturbance rate of change conditions. In real-world electric vehicle (EV) applications, motors are frequently exposed to unpredictable load variations, friction changes, and road conditions, which manifest as disturbances	AC Drives
TEMACS904, TEPGCS151, TEMAED278, TEPGED274	**Extended State Observer-Based Robust Model Predictive Velocity Control for Permanent Magnet Synchronous Motor** **Objective:** The main objective of this project is to propose an extended state observer based robust model predictive controller for controlling the velocity of permanent magnet synchronous motor.	AC Drives
TEMACS898, TEPGCS145, TEMAED272, TEPGED266,	**A Novel LQI-Based Speed Control of Switched Reluctance Motors for High Performance Applications**	AC Drives

TEPGED267, TEPGED268	**Objective:** The main objective of this project is to control the speed of switched reluctance motors for high performance applications using a novel LQI-based technique.	
TEMAPS974, TEPGPS963, TEMAED283 TEPGED279	**An Enhanced Grid-Tied Off-Board Electric Vehicle Charger With Improved Power Quality Using Unified Control Approach** **Objective:** The main objective of this project is to design a multifunctional, grid-tied electric vehicle charger using adaptive and modified predictive control strategies to improve power quality, ensure efficient bidirectional power flow, and support G2V, V2G, and V2L operations.	Electric Vehicles
TEMACS910, TEPGCS157, TEMAED281, TEPGED277	**Analysis and Design of ADRC for the LCC-LCC WPT System** **Objective:** The main objective of this project is to analyse the dynamic characteristics of LCC-LCC wireless power transfer systems. To develop a small-signal model and study transient behavior. To implement ADRC based on primary-side current for voltage control. To validate improved voltage stability and response time.	Electric Vehicles
TEMAPE388, TEPGPE355, TEMAED279, TEPGED275	**New SEPIC Derived Semi-Bridgeless PFC Converter for Battery Charging Application** **Objective:** The main objective of this project is to develop a novel AC–DC semi-bridgeless dual-switch SEPIC converter tailored for battery-charging applications that inherently corrects power factor to unity and minimizes total harmonic distortion in the input current.	Electric Vehicles
TEMAPS958, TEPGPS948, TEPGED273,	**An Improved Control Strategy for Managing Reactive Power and Reducing Capacity of Interlinking Converters by Participating of**	Electric Vehicles

TEMAED277	**Electric Vehicles in Hybrid AC/DC Microgrids** **Objective:** The main objective of this project is to develop an improved control strategy for effective reactive power management and for reducing the required capacity of interlinking converters by utilizing the active participation of electric vehicles (EVs) in hybrid AC/DC microgrids. This approach aims to enhance power balance, improve voltage stability, and increase the overall efficiency and flexibility of the system under dynamic operating conditions.	
TEMACS901, TEPGCS148, TEMAED276, TEPGED272	**Optimized ANFIS-Based Robust Nonlinear Control of a Solar Off-Grid Charging Station for Electric Vehicles** **Objective:** The main objective of this project is to improve the performance of an off-grid electric vehicle charging station powered by photovoltaic panels and batteries. It integrates an advanced maximum power point tracking (MPPT) method - implemented through an Adaptive Neuro-Fuzzy Inference System (ANFIS) - with a robust nonlinear control strategy that regulates the system's currents and voltages.	Electric Vehicles
TEMAED274, TEPGED270, TEMACS899, TEPGCS146	**Improved Sliding Mode Control for Performance Enhancement of PMD Battery Charger Using Fuzzy Logic Control** **Objective:** The main objective of this project is to improve the sliding mode control (SMC) for performance enhancement of personal mobility device (PMD) battery charger using fuzzy logic control.	Electric Vehicles
TEMAPE383, TEPGPE350, TEMAPS954, TEPGPS944, TEMAED275,	**Novel Modular Buck-Boost Based Multiport Bidirectional DC–DC Converter (MPBC) for Hybrid Electric Vehicle Application**	Electric Vehicles

TEPGED271	**Objective:** The main objective of this project is to design Multiport Bidirectional DC–DC Converter (MPBC) for HEV Applications. This novel converter aims to seamlessly integrate renewable energy sources the motor and auxiliary loads of an electric vehicle. By enabling both step-up (boost) and step-down (buck) voltage conversion, as well as bidirectional power flow, the MPBC not only caters to the different DC voltage requirements across the vehicle components but also facilitates regenerative braking.	
TEMAED269, TEPGED263, TEMAPE378, TEPGPE345	**Modeling and Control of a Three-Phase Interleaved Buck Converter as a Battery Charger** **Objective:** The main objective of the paper is to develop three-phase interleaved buck converter configured as a battery charger for electric vehicles. The controlling consists of multi-loop cascade configuration dedicated to implement democratic current sharing technique and seamless transition.	Electric Vehicles
TEMACS895, TEPGCS142, TEMAED271, TEPGED265	**Conditioned Adaptive Barrier Function Based Integral Super-Twisting Sliding Mode Control for Electric Vehicles With Hybrid Energy Storage System** **Objective:** The main objective of this project is to propose a conditioned adaptive barrier function based integral super twisting sliding mode control for electric vehicles with hybrid energy storage systems.	Electric Vehicles

PROJECT SUPPORTS FOR STUDENTS:

- PROJECT ABSTRACT
- PROJECT IEEE BASE PAPER/ REFERENCE PAPER
- PROJECT PRESENTATION IN PPT FORMAT
- PROJECT REVIEW ASSISTANCE FOR VIVA
- PROJECT DIAGRAMS
- PROJECT SOURCE CODE
- PROJECT REPORT
- PROJECT SCREEN SHOTS
- PROJECT DEMO
- PROJECT EXPLANATION
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