

B. TECH MATLAB/SIMULATION PROJECT LIST

S.NO	PROJECT TITLE
1.	A Boost Type Nine-Level Switched Capacitor Inverter
2.	A Generalized Carrier-Overlapped PWM Method for Neutral-Point Clamped Multilevel Converters
3.	A Generalized Multilevel Inverter Topology with Reduction of Total Standing Voltage
4.	A Generalized Switched Inductor Cell Modular Multilevel Inverter
5.	A High Power Interleaved Parallel Topology Full-Bridge LLC Converter for Off-Board Charger
6.	A Low-harmonic Control Method of Bi-directional Three-phase Z-source Converters for Vehicle-to-Grid Applications
7.	A Microgrid Based on Wind Driven DFIG, DG and Solar PV Array for Optimal Fuel Consumption
8.	A New Asymmetric Multilevel Inverter with Reduced Number of Components
9.	A New Multilevel Inverter Topology With Reduce Switch Count
10.	A new proposal for the design of hybrid AC/DC microgrids toward high power quality
11.	A New Step-Up Switched-Capacitor Voltage Balancing Converter for NPC Multilevel Inverter-Based Solar PV System
12.	A New Topology of Asymmetrical Multilevel Inverter with Reduced Switch Count for Electric Drive Applications
13.	A Novel Control Scheme for Wind Turbine Driven DFIG Interfaced to Utility Grid
14.	A Novel Controlled Frequency Band Impedance Measurement Approach for Single-Phase Railway Traction Power System
15.	A Novel Fault Ride Through Scheme for Hybrid Wind/PV Power Generation Systems
16.	A Novel High-Gain DC-DC Converter Applied in Fuel Cell Vehicles
17.	A Power Electronic Traction Transformer Configuration with Low-Voltage IGBTs for Onboard Traction Application
18.	A Single Input Variable FLC for DFIG Based WPGS in Standalone Mode
19.	A Step-up Multilevel Inverter Topology using Novel Switched

	Capacitor Converters with Reduced Components
20.	A switch-source cell-based cascaded multilevel inverter topology with minimum number of power electronics components
21.	A New Wave Energy Converter for Marine Data Buoy
22.	A Power Control Scheme for UPQC for Power Quality Improvement
23.	Adaptive Control of Voltage Source Converter Based Scheme for Power Quality Improved Grid-Interactive Solar PV- Battery System
24.	Advanced Control Strategy of DFIG based Wind Turbine using combined Artificial Neural Network and PSO Algorithm
25.	An Efficient Design of Adaptive Model Predictive Controller for Load Frequency Control in Hybrid Power System
26.	An Efficient Inductive Power Transfer Topology for Electric Vehicle Battery Charging
27.	An Experimental Estimation of Hybrid ANFIS–PSO-Based MPPT for PV Grid Integration Under Fluctuating Sun Irradiance
28.	An Adaptive D-FACTS for Power Quality Enhancement in an Isolated Microgrid
29.	Application of UPFC to mitigate SSR in series compensated wind farms
30.	Asymmetrical Triangular Current Mode (ATCM) for Bidirectional High Step Ratio Modular Multilevel Dc–Dc Converter
31.	Automatic Generation Control of Multi-area Interconnected Power Systems Using ANN Controller
32.	Automatic generation control of multi-area power systems with diverse energy sources using Teaching Learning Based Optimization algorithm
33.	Auto-Tuning Proportional-Type Synchronization Algorithm for DC Motor Speed Control Applications
34.	Bidirectional Buck-Boost Current-Fed Isolated DC-DC Converter and Its Modulation
35.	Carrier-Based Digital PWM and Multirate Technique of a Cascaded H-Bridge Converter for Power Electronic Traction Transformers
36.	Cascaded Multilevel Inverter Based Power and Signal Multiplex Transmission for Electric Vehicles
37.	Cascaded Multilevel PV Inverter with Improved Harmonic Performance During Power Imbalance Between Power Cells
38.	Combining Electric Vehicle Battery Charging and Battery Cell Equalization in One Circuit

39.	Control Algorithm based on Limit Cycle Oscillator-FLL for UPQC-S with Optimized PI Gains
40.	Coordination control of positive and negative sequence voltages of cascaded H-bridge STATCOM operating under imbalanced grid Voltage
41.	Cost-efficient Strategy for high Renewable Energy penetration in Isolated Power Systems
42.	Coupled Wireless Charging system for Electric Vehicles
43.	Delta-Bar-Delta Neural Network (NN) Based Control Approach for Power Quality Improvement of Solar PV Interfaced Distribution System
44.	Design and Analysis of MultiLevel Charging for electric vehicles
45.	Design and Control of Three-Phase Power System with Wind Power Using Unified Power Quality Conditioner
46.	Design and Implementation of Multilevel Inverters for Electric Vehicles
47.	Development of an adaptive neuro-fuzzy inference system–based equivalent consumption minimisation strategy to improve fuel economy in hybrid electric vehicles
48.	Distance Protection Scheme for DC Distribution Systems Based on the High Frequency Characteristics of Faults
49.	Distributed Sliding Mode Fault-Tolerant LFC for Multiarea Interconnected Power Systems under Sensor Fault
50.	Dual-T-Type Five-Level Cascaded Multilevel Inverter With Double Voltage Boosting Gain
51.	Dynamic current sharing, voltage and SOC regulation for HESS based DC microgrid using CPISM technique
52.	Dynamic Voltage Support for Low-Voltage Ride-Through Operation in Single-Phase Grid-Connected Photovoltaic Systems
53.	Energy efficiency enhancement in full-bridge PV inverters with advanced modulations
54.	Enhanced DVR Control System based on the Harris Hawks Optimization Algorithm
55.	Five-level one-capacitor boost multilevel inverter
56.	Fuel cell integrated unified power quality conditioner for voltage and current reparation in four-wire distribution grid
57.	Generalized Phase-Shift PWM for Active-Neutral-Point-Clamped Multilevel Converter
58.	Grid-Connected Wind-Photovoltaic Cogeneration Using Back-to-Back Voltage Source Converters
59.	High Performance Frequency Converter Controlled Variable-

	Speed Wind Generator Using Linear-Quadratic Regulator Controller PV applications
60.	Hybrid cuckoo search algorithm and grey wolf optimiser-based optimal control strategy for performance enhancement of HVDC-based offshore wind farms
61.	Implementation of Solar PV- Battery and Diesel Generator Based Electric Vehicle Charging Station
62.	Improved Power Quality in a Solar PV Plant Integrated Utility Grid by Employing a Novel Adaptive Current Regulator
63.	Improving Microgrid Low-Voltage Ride-Through Capacity Using Neural Control
64.	Incremental Passivity Control in Multilevel Cascaded H-Bridge Converters
65.	Integration of solar PV into grid using a new UPQC with differential inverter control
66.	Load Frequency Control for Power Systems with Actuator Faults within a Finite-Time Interval
67.	Load Frequency Control of Multi-Area Interconnected System Comprising DFIG-Based Wind Turbine Equipped with Coordinated Control
68.	Load Frequency Control of Multi-Region Interconnected Power Systems with Wind Power and Electric Vehicles Based on Sliding Mode Control
69.	Local Fault Location in Meshed DC Microgrids Based On Parameter Estimation Technique
70.	Mitigation of transient over voltages in microgrid including PV arrays
71.	Model Predictive Control for Load Frequency Control with Wind Turbines
72.	Multilevel Converters with Symmetrical Half-Bridge Submodules and Sensorless Voltage Balance
73.	Multilevel Single-Phase Converter with Two DC Links
74.	Nonisolated DC-DC Converters with Wide Conversion Range for High-Power Applications
75.	Off-board electric vehicle battery charger using PV array
76.	Optimal design of Fractional order PID controller based Automatic voltage regulator system using gradient-based optimization algorithm
77.	Optimal Design of Fuzzy-AGC Based on PSO & RCGA to Improve Dynamic Stability of Interconnected Multi-area Power Systems

78.	Power Factor Correction of Three-Phase PWM AC Chopper Fed Induction Motor Drive System Using HBCC Technique
79.	Power optimisation scheme of induction motor using FLC for electric vehicle
80.	Power Quality Improvement in Solar Fed Cascaded Multilevel Inverter with Output Voltage Regulation Techniques
81.	Power System Stabilizer Application for Load Frequency Control in Hydro-Electric Power Plant
82.	Power Quality Improvement Using Dynamic Voltage Restorer
83.	PSO optimized PIDF controller for Load-frequency control of A.C Multi-Islanded-Micro grid system
84.	Self-Adjustable Step-Based Control Algorithm for Grid-Interactive Multifunctional Single-Phase PV-Battery System Under Abnormal Grid Conditions
85.	Sensorless SynRG Based Variable Speed Wind Generator and Single-stage Solar PV Array Integrated Grid System with Maximum Power Extraction Capability
86.	Single-phase boost DC-link integrated cascaded multilevel inverter for PV applications
87.	Single-Phase Dual -Mode Interleaved Multi Multi-level Inverter (DM IMI) for PV Applications
88.	Single-Stage PV-Grid Interactive Induction Motor Drive with Improved Flux Estimation Technique for Water Pumping with Reduced Sensors
89.	Switch Ladder Modified H-Bridge Multilevel Inverter With Novel Pulse Width Modulation Technique
90.	Switched Capacitor Integrated (2n+1)-Level Step-up Single-Phase Inverter
91.	Switched-capacitor multilevel inverter with self-voltage-balancing for high-frequency power distribution system
92.	Trinary Hybrid Cascaded H-Bridge Multilevel Inverter-Based Grid-Connected Solar Power Transfer System Supporting Critical Load
93.	Unbiased Circular Leakage Centered Adaptive Filtering Control for Power Quality Improvement of Wind-Solar PV Energy Conversion System.
94.	Unified Control Scheme of Grid-Connected Inverters for Autonomous and Smooth Transfer to Stand-Alone Mode
95.	UPQC based Grid-Connected Photovoltaic System with Fuzzy Logic Controller
96.	Using Active Power Filters To Improve Power Quality

97.	Using Self-Synchronization Error Dynamics Formulation Based Controller for Maximum Photovoltaic Power Tracking in Micro-Grid Systems
98.	Operation Analysis and A Game Theoretic Approach to Dynamic Hybrid Compensator for the V/v Traction System
99.	Grid Synchronization of WEC-PV-BES Based Distributed Generation System using Robust Control Strategy
100.	Comparison of Different Control Methods for Maximum Power Point Tracking of Solar and Wind Energy
101.	Virtual Inertia Emulator-based Model Predictive Control for Grid Frequency Regulation Considering High Penetration of Inverter-based Energy Storage System
102.	Grid-tied single source quasi-Z-source cascaded multilevel inverter for PV applications
103.	Voltage Flicker Compensation using STATCOM to Improve Power Quality
104.	Voltage Sag Enhancement of Grid Connected Hybrid PV-Wind Power System Using Battery and SMES Based Dynamic Voltage Restorer
105.	ZPUC: A New Configuration of Single DC Source for Modular Multilevel Converter (MMC) Applications

Concepts:

- **MATLAB/SIMULINK**
- **POWER SYSTEMS**
 - PHOTO VOLT AIC CELLS
 - WIND POWER PLANTS(IG/DFIG)
 - ULTRA CAPACITORS
 - FUEL CELLS
 - HYBRID POWER PLANTS
 - SMART GRID
 - HVDC AND HVAC
 - CONCEPTS OF LOADS
 - POWER QUALITY
 - ETC....
- **POWER ELECTRONICS**
 - RECTIFIERS
 - INVERTERS
 - AC-AC CONVERTERS (CYCLO CONVERTER, MATRIX CONVERTERS)
 - DC-DC CONVERTERS (BUCK, BOOST, BUCKBOOST, SEPIC, FLYBACK,CUK)
 - MULTI LEVEL CONVERTERS (CHBMLC, FCMLC, DCMLC.HYBRIDMLC)
 - PWM (SPWM,SVPWM,CBPWM,MCPWM,SVM)
 - ETC....
- **MACHINES**
 - MODELLING AND DESIGNING OF INDUCTION MOTOR
 - MODELLNG AND DESIGNING OF DC MOTOR
 - MODELLING AND DESIGNING OF PMBLDCM
 - VECTORAND SCALER CONTROLLER
 - ETC....
- **CONTROL SYSTEMS**
 - PI CONTROLLER
 - FUZZY CONTROLLER
 - NEURAL NETWORKS, ARTIFICIAL NEURAL NETWORKS
 - NEURO FUZZY
 - ETC...
- **OPTIMIZATION CONCEPTS**
 - GENETIC ALGARITHM
 - PARTICAL SWARM OPTIMIZATION
 - BACTERIAL OPTIMIZATION
 - PLANT GROWTH OPTIMIZATION
 - ETC...
- **FACTS**
 - SHUNT CONVERTERS, SERIES CONVERTERS, SERIES SHUNT CONVERTESES, ETC.....