

ELECTRICAL PROJECTS USING MATLAB/SIMULINK

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ACADEMIC MATLAB SIMULATION 2014/15/16/17 PROJECTS FOR

- **ELECTRICAL AND ELECTRONICS ENGINEERING [EEE]**
- **POWER ELECTRONICS AND DRIVES [PED]**
- **POWER SYSTEMS [PS]....**

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S NO	CODE	PROJECT TITLE	YEAR	JOURNAL
1	AT17-01	A Comparative Study of Different Multilevel Converter Topologies for Battery Energy Storage Application	2017	IEEE
2	AT17-02	A Low Cost Speed Estimation Technique for Closed Loop Control of BLDC Motor Drive	2017	IEEE
3	AT17-03	A Synchronous Generator Based Diesel-PV Hybrid Micro-grid with Power Quality Controller	2017	IEEE
4	AT17-04	A Synchronous Generator Based Diesel-PV Hybrid Micro-grid with Power Quality Controller	2017	IEEE
5	AT17-05	An Intelligent Fuzzy Sliding Mode Controller for a BLDC Motor	2017	IEEE
6	AT17-06	Analysis Of Solar Energy Embedded To Distribution Grid For Active & Reactive Power Supply To Grid	2017	IEEE
7	AT17-07	Cascaded Multilevel Inverter Based Electric Spring for Smart Grid Applications	2017	IEEE
8	AT17-08	Comparative Simulation Results of DVR and D-STATCOM to Improve Voltage Quality in Distributed Power System	2017	IEEE

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S NO	CODE	PROJECT TITLE	YEAR	JOURNAL
9	AT17-09	Design and Evaluation of a Mini-Size SMES Magnet for Hybrid Energy Storage Application in a kW-Class Dynamic Voltage Restorer	2017	IEEE
10	AT17-10	Design of PID-Fuzzy for Speed Control of Brushless DC Motor in Dynamic Electric Vehicle to Improve Steady-State Performance	2017	IEEE
11	AT17-11	Direct Torque Control of PM BLDC Motor Using Fuzzy Controllers	2017	IEEE
12	AT17-12	Double Closed Loop Control for BLDC based on whole Fuzzy Controller	2014	IEEE
13	AT17-13	Dual-Bridge LLC Resonant Converter With Fixed-Frequency PWM Control for Wide Input Applications	2017	IEEE
14	AT17-14	Ensuring Power Quality and Stability in Industrial and Medium Voltage Public Grids	2017	IEEE
15	AT17-15	High Performance Non-Salient Sensorless BLDC Motor Control Strategy from Standstill to High Speed	2017	IEEE
16	AT17-16	Indirect Speed Estimation of High Speed Brushless DC Motor Drive Using Fuzzy Logic Current Compensator	2017	IEEE

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S NO	CODE	PROJECT TITLE	YEAR	JOURNAL
17	AT17-17	Modeling and Simulation of Closed Loop Speed Control for BLDC Motor	2017	IEEE
18	AT17-18	Nine-level Asymmetrical Single Phase Multilevel Inverter Topology with Low switching frequency and Reduce device counts	2017	IEEE
19	AT17-19	Novel Approach Employing Buck-Boost Converter as DC-Link Modulator and Inverter as AC-Chopper for Induction Motor Drive Applications: An Alternative to Conventional AC-DC-AC Scheme	2017	IEEE
20	AT17-20	PWAM Controlled Quasi-Z Source Motor Drive	2017	IEEE
21	AT17-21	Simulation and Control of Solar Wind Hybrid Renewable Power System	2017	IEEE

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S NO	CODE	PROJECT TITLE	YEAR	JOURNAL
1	AT16-01	A Generation of Higher Number of Voltage Levels by stacking inverters of lower multilevel structure with low voltage devices for drives	2016	IEEE
2	AT16-02	A Novel Multilevel Multi-Output Bidirectional Active Buck PFC Rectifier	2016	IEEE
3	AT16-03	Optimal Pulse width Modulation of Medium-Voltage Modular Multilevel Converter	2016	IEEE
4	AT16-04	Novel Family of Single-Phase Modified Impedance-Source Buck-Boost Multilevel Inverters with Reduced Switch Count	2016	IEEE
5	AT16-05	Adaptive Neuro Fuzzy Inference System Least Mean Square Based Control Algorithm for DSTATCOM	2016	IEEE
6	AT16-06	An Islanding Detection Method for Inverter-Based Distributed Generators Based on the Reactive Power Disturbance	2016	IEEE
7	AT16-07	Quasi-Z-Source Inverter With a T-Type Converter in Normal and Failure Mode	2016	IEEE
8	AT16-08	Real-Time Implementation of Model Predictive Control on 7-Level Packed U-Cell Inverter	2016	IEEE
9	AT16-09	High frequency inverter topologies integrated with the coupled inductor bridge arm	2016	IET

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S NO	CODE	PROJECT TITLE	YEAR	JOURNAL
10	AT16-10	Dynamic voltage restorer employing multilevel cascaded H-bridge inverter	2016	IET
11	AT16-11	Active power compensation method for single-phase current source rectifier without extra active switches	2016	IET
12	AT16-12	Cascaded multilevel inverter using series connection of novel capacitor-based units with minimum switch count	2016	IET
13	AT16-13	Design and Implementation of a Novel Multilevel DC-AC Inverter	2016	IEEE
14	AT16-14	A New Cascaded Switched-Capacitor Multilevel Inverter Based on Improved Series-Parallel Conversion with Less Number of Components	2016	IEEE
15	AT16-15	Circulating current derivation and comprehensive compensation of cascaded STATCOM under asymmetrical voltage conditions	2016	IET
16	AT16-16	Design and implementation of a novel three-phase cascaded half-bridge inverter	2016	IET
17	AT16-17	Grid connected three-phase multiple-pole multilevel unity power factor rectifier with reduce components count	2016	IET
18	AT16-18	Control of Ripple Eliminators to Improve the Power Quality of DC Systems and Reduce the Usage of Electrolytic Capacitors	2016	IEEE

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19	AT16-19	Design of External Inductor for Improving Performance of Voltage Controlled DSTATCOM	2016	IEEE
20	AT16-20	An Enhanced Single Phase Step-Up Five-Level Inverter	2016	IEEE
21	AT16-21	A Hybrid-STATCOM with Wide Compensation Range and Low DC-Link Voltage	2016	IEEE
22	AT16-22	A Capacitor Voltage-Balancing Method for Nested Neutral Point Clamped (NNPC) Inverter	2016	IEEE
23	AT16-23	T-type direct AC/AC converter structure	2016	IET
24	AT16-24	Modular Multilevel Converter Circulating Current Reduction Using Model Predictive Control	2016	IEEE
25	AT16-25	Parallel inductor multilevel current source inverter with energy - recovery scheme for inductor currents balancing	2016	IET
26	AT16-26	Open-Circuit Fault-Tolerant Control for OuterSwitches of Three-Level Rectifiers in Wind Turbine Systems	2016	IEEE
27	AT16-27	Enhancing DFIG wind turbine during three phase fault using parallel interleaved converters and dynamic resistor	2016	IET

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28	AT16-28	Load Model for Medium Voltage Cascaded H-Bridge Multi-Level Inverter Drive Systems	2016	IEEE
29	AT16-29	Development and Comparison of an Improved Incremental Conductance Algorithm for Tracking the MPP of a Solar PV Panel	2016	IEEE
30	AT16-30	Impact of Switching Harmonics on Capacitor Cells Balancing in Phase-Shifted PWM Based Cascaded H-Bridge STATCOM	2016	IEEE
31	AT16-31	Effect of circulating current on input line current of 12-pulse rectifier with active inter-phase reactor	2016	IET
32	AT16-32	Modular Multilevel Converter-Based Bipolar High-Voltage Pulse Generator With Sensorless Capacitor Voltage Balancing Technique	2016	IEEE
33	AT16-33	Power-Electronics-Based Energy Management System With Storage	2016	IEEE
34	AT16-34	Modulation and Control of Transformerless UPFC	2016	IEEE
35	AT16-35	A Hybrid Simulation Model for VSC HVDC	2016	IEEE
36	AT16-36	Switching Control of Buck Converter Based on Energy Conservation Principle	2016	IEEE

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S NO	CODE	PROJECT TITLE	YEAR	JOURNAL
37	AT16-37	A Three-Phase Multilevel HybridSwitched-Capacitor PWM PFC Rectifier for High-Voltage-Gain Applications	2016	IET
38	AT16-38	A dc-Side Sensorless Cascaded H-Bridge Multilevel Converter Based PhotovoltaicSystem	2016	IEEE
39	AT16-39	Phase angle calculation dynamics of type-4wind turbines in rms simulations during severe voltage dips	2016	IET
40	AT16-40	A Multi-Level Converter with a Floating Bridge for Open-Ended Winding Motor Drive Applications	2016	IEEE
41	AT16-41	Model Predictive Control of Quasi-Z-SourceFour-Leg Inverter	2016	IEEE
42	AT16-42	Using Multiple Reference Frame Theory for Considering Harmonics in Average-Value Modeling of Diode Rectifiers	2016	IEEE
43	AT16-43	Cascaded Dual Model Predictive Control of an Active Front-End Rectifier	2016	IEEE
44	AT16-44	Simple Time Averaging Current Quality Evaluation of a Single-Phase Multilevel PWM Inverter	2016	IEEE
45	AT16-45	Nonlinear Control of Single-PhasePWM Rectifiers With InherentCurrent-Limiting Capability	2016	IET

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46	AT16-46	Impact of SFCL on the Four Types of HVDC Circuit Breakers by Simulation	2016	IEEE
47	AT16-47	An Adaptive SPWM Technique for Cascaded Multilevel Converters with Time-Variant DC Sources	2016	IEEE
48	AT16-48	Model-Based Control for a Three-Phase ShuntActive Power Filter	2016	IEEE
49	AT16-49	Design of a multi-level inverter with reactive power control ability for connecting PV cells to the grid	2016	IEEE
50	AT16-50	DSTATCOM supported induction generator for improving power quality	2016	IET
51	AT16-51	Improved equal current approach for reference current generation in shunt applications underunbalanced and distorted source and load conditions	2016	IET
52	AT16-52	A Hybrid-STATCOM With Wide Compensation Range and Low DC-Link Voltage	2016	IEEE
53	AT16-53	Design of External Inductor for Improving Performance of Voltage-Controlled DSTATCOM	2016	IEEE
54	AT16-54	Full-Bridge Reactive Power Compensator With Minimized-Equipped Capacitor and Its Application to Static Var Compensator	2016	IEEE

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55	AT16-55	A New Cascaded Switched-Capacitor Multilevel Inverter Based on Improved Series-Parallel Conversion With Less Number of Components	2016	IEEE
56	AT16-56	Efficient Implicit Model Predictive Control of Three Phase Inverter with an Output LC Filter	2016	IEEE
57	AT16-57	Single-stage Three-phase Differential-mode Buck-Boost Inverters with Continuous Input Current for PV Applications	2016	IEEE
58	AT16-58	Soft-start control strategy for the three-phase grid-connected inverter with LCL filter	2016	IEEE
59	AT16-59	High-Gain Single-Stage Boosting Inverter For Photovoltaic Applications	2016	IET
60	AT16-60	Multilevel Inverter Topologies With Reduced Device Count: A Review	2016	IEEE
61	AT16-61	Real time implementation of unity power factor correction converter based on fuzzy logic	2016	IEEE
62	AT16-62	Power Factor Correction in BLDC motor Drives Using DC-DC Converters	2016	IEEE
63	AT16-63	Transformerless Single-Phase Universal Active Filter With UPS Features and Reduced Number of Electronic Power Switches	2016	IEEE

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1	AT15-01	A High Gain Input-Parallel Output-Series DC/DC Converter with Dual Coupled Inductors	2015	IEEE
2	AT15-02	A High Step-Up Converter with Voltage-Multiplier Modules for Sustainable Energy Applications	2015	IEEE
3	AT15-03	A High Step-Up DC to DC Converter Under Alternating Phase Shift Control for Fuel Cell Power System	2015	IEEE
4	AT15-04	High-Efficiency MOSFET Transformerless Inverter for Non-isolated Microinverter Applications	2015	IEEE
5	AT15-05	A Multi-Input Bridgeless Resonant AC-DC Converter for Electromagnetic Energy Harvesting	2015	IEEE
6	AT15-06	A Novel Control Method for Transformerless H-Bridge Cascaded STATCOM with Star Configuration	2015	IEEE
7	AT15-07	A Novel High Step-up DC/DC Converter Based on Integrating Coupled Inductor and Switched-Capacitor Techniques for Renewable Energy Applications	2015	IEEE

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8	AT15-08	A Function Based Maximum Power Point Tracking Method for Photovoltaic Systems	2015	IEEE
9	AT15-09	A Three-Phase Grid Tied SPV System With Adaptive DC Link Voltage for CPI Voltage Variations	2015	IEEE
10	AT15-10	Design of External Inductor for Improving Performance of Voltage Controlled DSTATCOM	2015	IEEE
11	AT15-11	Grid-Connected PV Array with Supercapacitor Energy Storage System for Fault Ride Through	2015	IEEE
12	AT15-12	Grid-Connected PV-Wind-Battery based Multi-Input Transformer Coupled Bidirectional DC-DC Converter for household Applications	2015	IEEE
13	AT15-13	MPPT with Single DC-DC Converter and Inverter for Grid Connected Hybrid Wind-Driven PMSG-PV System	2015	IEEE

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1	AT14-01	A Modified Three-Phase Four-Wire UPQC Topology With Reduced DC-Link Voltage Rating	2013-14	IEEE
2	AT14-02	FPGA-Based Predictive Sliding Mode Controller of a Three-Phase Inverter	2013-14	IEEE
3	AT14-03	Pulsewidth Modulation of Z-Source Inverters With Minimum Inductor Current Ripple	2014-15	IEEE
4	AT14-04	Improving the Dynamics of Virtual-Flux-Based Control of Three-Phase Active Rectifiers	2014-15	IEEE
5	AT14-05	Sensorless Induction Motor Drive Using Indirect Vector Controller and Sliding-Mode Observer for Electric Vehicles	2013-14	IEEE
6	AT14-06	Back-Propagation Control Algorithm for Power Quality Improvement Using DSTATCOM	2014-15	IEEE
7	AT14-07	A Zero-Voltage Switching Three-Phase Inverter	2014-15	IEEE
8	AT14-08	Control of Reduced-Rating Dynamic Voltage Restorer With a Battery Energy Storage System	2014-15	IEEE
9	AT14-09	A Combination of Shunt Hybrid Power Filter and Thyristor-Controlled Reactor for Power Quality	2014-15	IEEE

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10	AT14-10	A Transformerless Grid-Connected Photovoltaic System Based on the Coupled Inductor Single-Stage Boost Three-Phase Inverter	2014-15	IEEE
11	AT14-11	LCL Filter Design and Performance Analysis for Grid-Interconnected Systems	2014-15	IEEE
12	AT14-12	An Inductively Active Filtering Method for Power-Quality Improvement of Distribution Networks With Nonlinear Loads	2013-14	IEEE
13	AT14-13	A Bidirectional-Switch-Based Wide-Input Range High-Efficiency Isolated Resonant Converter for Photovoltaic Applications	2014-15	IEEE
14	AT14-14	Analysis and Implementation of an Improved Flyback Inverter for Photovoltaic AC Module Applications	2014-15	IEEE
15	AT14-15	Speed Sensorless Vector Controlled Induction Motor Drive Using Single Current Sensor	2013-14	IEEE
16	AT14-16	A Novel Design and Optimization Method of an LCL Filter for a Shunt Active Power Filter	2014-15	IEEE
17	AT14-17	An Active Harmonic Filter Based on One-Cycle Control	2014-15	IEEE

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18	AT14-18	A Nine-Level Grid-Connected Converter Topology for Single-Phase Transformerless PV Systems	2014-15	IEEE
19	AT14-19	Modeling and Design of Voltage Support Control Schemes for Three-Phase Inverters Operating Under Unbalanced Grid Conditions	2014-15	IEEE
20	AT14-20	Cascaded Two-Level Inverter-Based Multilevel STATCOM for High-Power Applications	2014-15	IEEE
21	AT14-21	A Voltage-Controlled DSTATCOM for Power-Quality Improvement	2014-15	IEEE
22	AT14-22	Solar PV and Battery Storage Integration using a New Configuration of a Three-Level NPC Inverter With Advanced Control Strategy	2014-15	IEEE
23	AT14-23	A Current Control MPPT Method in High Power Solar Energy Conversion System	2014-15	IEEE
24	AT14-24	A Novel Five-Level Inverter for Solar System	2014-15	IEEE
25	AT14-25	A Single-Stage Three-Phase Grid-Connected Photo-Voltaic System With Fractional Order MPPT	2014-15	IEEE

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26	AT14-26	Design and Implementation of Sliding Mode and PI Controllersbased Control for Three Phase Shunt Active Power Filter	2014-15	IEEE
27	AT14-27	Implementation of Adaptive Filter in Distribution Static Compensator	2014-15	IEEE
28	AT14-28	A Comparison of Soft-Switched DC-to-DC Converters for Electrolyzer Application	2014-15	IEEE
29	AT14-29	Adaptive fuzzy controller based MPPT for photovoltaic systems	2014-15	IEEE
30	AT14-30	Design of Fuzzy Logic Based Maximum Power Point Tracking Controller for Solar Array for Cloudy Weather Conditions.	2014-15	IEEE
31	AT14-31	Dynamic Behavior of DFIG Wind Turbine Under Grid Fault Conditions	2014-15	IEEE
32	AT14-32	Fuzzy-Logic-Controller-Based SEPIC Converter for Maximum Power Point Tracking	2014-15	IEEE
33	AT14-33	Performance Improvement of Direct Power Control of PWM Rectifier With Simple Calculation	2014-15	IEEE

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34	AT14-34	FLC-Based DTC Scheme to Improve the Dynamic Performance of an IM Drive	2014-15	IEEE
35	AT14-35	Single Phase Grid-Connected Photovoltaic Inverter for Residential Application with Maximum Power Point Tracking	2014-15	IEEE
36	AT14-36	Improved Active Power Filter Performance for Renewable Power Generation Systems	2014-15	IEEE
37	AT14-37	Micro Wind Power Generator with Battery Energy Storage for Critical Load	2014-15	IEEE

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