



SPIRO
SOLUTIONS PVT LTD

**POWER
ELECTRONICS
PROJECT TITLE
2017 - 2018**



POWER ELECTRONICS

1. RENEWABLE ENERGY

S.NO	PROJECT CODE	PROJECT TITLES	YEAR
I. SOLAR ENERGY			
1	ITPW01	Photovoltaic Module Integrated Standalone Single Stage Switched Capacitor Inverter with Maximum Power Point Tracking	2017
2	ITPW02	High-Performance Quasi-Z-Source Series Resonant DC-DC Converter for Photovoltaic Module Level Power Electronics Applications	2017
3	ITPW03	MPPT in Dynamic Condition of Partially Shaded PV System by using WODE Technique	2017
4	ITPW04	Analysis of Modulation Strategy for the Minimization of Leakage Current in the PV Grid Connected Cascaded Multi-Level Inverter	2017
5	ITPW05	Non-linear PWM Controlled Single-phase Boost Mode Grid-Connected Photovoltaic Inverter with Limited Storage Inductance Current	2017
6	ITPW06	4-Switch Single-Stage Single-Phase Buck-Boost Inverter	2017
7	ITPW07	A High-Efficiency Hybrid Resonant Converter with Wide-Input Regulation for Photovoltaic Applications	2017
8	ITPW08	A Family of Neutral –Point –Clamped Circuits of Single – phase PV Inverters: Generalized Principle and Implementation	2017
9	ITPW09	A Three Phase Hybrid Cascaded Modular Multilevel Inverter For Renewable Energy Environment	2016



10	ITPW10	High-Gain Single-Stage Boosting Inverter For Photovoltaic Applications	2016
11	ITPW11	Soft Switching Non Isolated Current Fed Inverter For PV/Fuel Cell Application	2016
12	ITPW12	Design And Analysis Of A High Efficiency DC-DC Converter With Soft Switching Capability For Renewable Energy Application Requiring High Voltage Gain	2016
II. WINDENERGY			
13	ITPW13	Fault Ride Through and Grid Support Topology for the VSC-HVDC Connected Offshore Wind Farms	2017
14	ITPW14	A Resonant ZVZCS DC-DC Converter with Two Uneven Transformers for MVDC Collection System of Offshore Wind Farms	2017
15	ITPW15	A Step-up Transformer-less, ZV-ZCS High-Gain DC/DC Converter with Output Voltage Regulation Using Modular Step-up Resonant Cells for DC Grid in Wind Systems	2017
16	ITPW16	Control & Operation Of A Dc Grid Based Wind Power Generation System In A Micro grid	2016
III. HYBRID SYSTEMS			
17	ITPW17	Multi-Objective Control Algorithm for Small Hydro and SPV Generation Based Dual Mode Reconfigurable System	2017
18	ITPW18	DC Grid Voltage Regulation Using New HESS Control Strategy	2017



19	ITPW19	A Supervisory Power Management System for a Hybrid Micro grid with HESS	2017
20	ITPW20	Grid Connected PV-Wind –Battery Based Multi Input Transformer Coupled Bi Directional DC-DC Converter For Household Application	2016
21	ITPW21	A Modified Reference Of An Intermediate Bus Capacitor Voltage Based Second Harmonic Current Reduction Method For A Standalone Photovoltaic Power System	2016
IV. ENERGY STORAGE SYSTEM			
22	ITPW22	Fixed-Frequency PWM-Controlled Bidirectional Current-Fed Soft-Switching Series-Resonant Converter for Energy Storage Applications	2017
23	ITPW23	Robust Nonlinear Controller Design for On-grid/Off-grid Wind Energy Battery-Storage System	2017
24	ITPW24	A Primary Full-Integrated Active Filter Auxiliary Power Module in Electrified Vehicles with Single-Phase Onboard Chargers	2017
25	ITPW25	High Step Up /Step Down Soft Switching Bidirectional DC-DC converter with coupled inductor and voltage matching control for energy storage systems	2016
2.POWER ELECTRONICS			
I. AC TO DC CONVERSIONS			
26	ITPW26	Improved Power Quality Bridgeless Converter Based SMPS for Arc Welding	2017



27	ITPW27	An Electrolytic capacitor less High Power factor LED Driver Based on a “one- and- a- half stage” forward- flyback topology	2017
28	ITPW28	An Output-Current-Dependent DC-link Energy Regulation Scheme for A Family of Soft-switched AC/DC Offline LED Drivers without Electrolytic Capacitors	2017
29	ITPW29	Flexible Mode Bridgeless Boost PFC Rectifier with High Efficiency over a Wide Range of Input Voltage	2017
30	ITPW30	A Family of Single-Phase Voltage- Doubler High-Power-Factor SEPIC Rectifiers Operating in DCM	2017
31	ITPW31	Power Factor Corrected Welding Power Supply Using Modified Zeta Converter	2016
32	ITPW32	Power Quality Improved Bridgeless Converter Based Computer Power Supply	2016
33	ITPW33	Soft Switching Two Switch Resonant AC-DC Converter With High Power Factor	2016
34	ITPW34	A Novel Multilevel Multi Output Bidirectional Active Buck PFC Rectifier	2016
35	ITPW35	Interleaved SEPIC Power Factor Pre Regulator Using Coupled Inductors In Discontinuous Conduction Mode With Wide Output Voltage	2016

II. DC TO AC CONVERSION

36	ITPW36	Current- Sensorless Power-Decoupling Phase-Shift Dual-Half-Bridge Converter for DC-AC Power Conversion Systems without Electrolytic Capacitor	2017
----	--------	---	------



37	ITPW37	A Highly Reliable and High Efficiency Quasi Single-Stage Buck-Boost Inverter	2017
38	ITPW38	One-Cycle Control for Electrolytic Capacitor-Less Second Harmonic Current Compensator	2017
39	ITPW39	Modulation Technique for Single-Phase Transformerless Photovoltaic Inverters with Reactive Power Capability	2017
40	ITPW40	Efficient Transformerless MOSFET Inverter Grid Tied Photovoltaic System	2016
41	ITPW41	A Novel Zero-Voltage-Switching Push-Pull High-Frequency-Link (PPHFL) Single-Phase Inverter	2016
42	ITPW42	Bi Directional Single Power Conversion DC-AC Converter With Non Complementary Active Clamp Circuits	2016
43	ITPW43	A Coupled Inductor Based High Boost Inverter With Sub Unity Turns-Ratio Rating	2016
III. MULTILEVEL INVERTER			
44	ITPW44	Novel Cascaded Switched-diode Multilevel Inverter for Renewable Energy Integration	2017
45	ITPW45	Quasi Cascaded H-Bridge Five-Level Boost Inverter	2017
46	ITPW46	A New Reduced-Component Hybrid Flying Capacitor Multi cell Converter	2017
47	ITPW47	A Novel Nine-Level Inverter Employing One Voltage Source and Reduced Components as High Frequency AC Power Source	2017



48	ITPW48	A Self balanced Step-up Multilevel Inverter based on switched capacitor structure	2017
49	ITPW49	A New Cascaded Switched-Capacitor Multilevel Inverter Based On Improved Series-Parallel Conversion With Less Number Of Components	2016
50	ITPW50	Design And Implementation Of A Novel Multilevel DC-AC Inverter	2016
IV. DC TO DC CONVERSIONS			
51	ITPW51	Design and Analysis of a High Voltage-Gain Step-up Resonant DC-DC Converter for Transportation Applications	2017
52	ITPW52	A High Efficiency Asymmetrical Half-Bridge Converter With Integrated Boost Converter in Secondary Rectifier	2017
53	ITPW53	Cascaded Dual-Buck Inverter With Reduced Number of Inductors	2017
54	ITPW54	A New ZVT Snubber Cell for PWM-PFC Boost Converter	2017
55	ITPW55	A Control Method for the Sheppard - Taylor PFC Rectifier to Reduce Capacitance Requirements	2017
56	ITPW56	Extended Switched-Boost DC-DC Converters Adopting Switched-Capacitor/Switched- Inductor Cells for High Step-up Conversion	2016
57	ITPW57	A New Transformerless Buck Boost Converter With Positive Output Voltage	2016
58	ITPW58	Z-Source Resonant Converter With Power Factor Correction For Wireless Power Transfer Applications	2016
59	ITPW59	Highly efficient asymmetrical pwm full converter for renewable energy sources	2016



V. AC TO AC (CYCLOCONVERTER)

60	ITPW60	ZVS Phase Shift PWM-Controlled Single-Stage Boost Full Bridge AC-AC Converter for High Frequency Induction Heating Applications	2017
61	ITPW61	A New Class of Single-Phase High-Frequency Isolated Z-Source AC-AC Converters with Reduced Passive Components	2017
62	ITPW62	Unified Non-Inverting and Inverting PWM AC-AC Converter with Versatile Modes of Operation	2017
63	ITPW63	A Single Stage High Frequency Resonant Ac/Ac Converter	2016
64	ITPW64	High Efficiency Single Phase Ac –Ac Converters Without Commutation Problem	2016

3.AC & DC DRIVES APPLICATIONS

65	ITPW65	A Novel Method of Reducing Commutation Torque Ripple for Brushless DC Motor Based on Cuk Converter	2017
66	ITPW66	Quasi-Z-Source Indirect Matrix Converter Fed Induction Motor Drive for Flow Control of Dye in Paper Mill	2017
67	ITPW67	Inverter Power Control Based on DC-link Voltage Regulation for IPMSM Drives without Electrolytic Capacitors	2017
68	ITPW68	Single Stage Solar PV Fed Brushless DC Motor Driven Water Pump	2017
69	ITPW69	Single Phase Grid Connected Motor Drive System Dc Link Shunt Compensator & Small Dc Link Capacitor	2016



70	ITPW70	Sensorless Control For High Speed Brushless Dc Motor Based On Line To Line Back Emf	2016
71	ITPW71	Bldc motor driven solar pv array –fed water pumping system employing zeta converter	2016

4. ELECTRICAL VEHICLE APPLICATION

72	ITPW72	A Novel Step-up Multi-Input DC-DC Converter for Hybrid Electric Vehicles Application	2017
73	ITPW73	An Electrolytic Capacitor-less Bi-directional EV Charger for V2G and V2H Applications	2017
74	ITPW74	Inductive Power Transfer for Massive Electric Bicycles Charging Based on Hybrid Topology Switching with A Single Inverter	2017
75	ITPW75	Topology & Control Scheme Of OBC-LDC Integrated Power Unit For Electrical Vehicles	2016
76	ITPW76	Pulse Width Modulation Based Electromagnetic Interference Mitigation Of Bi Directional Grid Connected For Electrical Vehicles	2016

5.FUZZY CONTROL TECHNIQUES

77	ITPW77	A Performance Investigation of a Four-Switch Three-Phase Inverter-Fed IM Drives at Low Speeds Using Fuzzy Logic and PI Controllers	2017
78	ITPW78	Artificial Neural Network for Control and Grid Integration of Residential Solar Photovoltaic Systems	2017



79	ITPW79	Design and Hardware Implementation of FLMPPT Control of PV Systems Based on GA and Small-Signal Analysis	2017
80	ITPW80	Sensorless Fuzzy-Logic-Based Maximum Power Point Tracking Control For A Small-Scale Wind Power Generation Systems With A Switched Mode Rectifier	2016
81	ITPW81	Experimental Evaluation Of A Partially Shaded Photovoltaic System With A Fuzzy Logic-Based Peak Power Tracking Control Strategy	2016
6. MICROGRID APPLICATION			
82	ITPW82	Inverse Power factor Droop control for Decentralized power sharing in series connected micro converters based islanding Micro grids	2017
83	ITPW83	Peak Energy Management using Renewable Integrated DC Microgrid	2017
84	ITPW84	Naturally Clamped Snubberless Soft Switching Bidirectional Current Fed Three Phase Push Pull Dc- Dc Converter For Dc Microgrid Application	2016
85	ITPW85	Non Isolated Bidirectional Soft Switching Current Fed LCL Resonant Dc/Dc Converter To Interface Energy Storage In Dc Microgrid	2016

Education Partners:



Technologies and Domain used:

IEEE 2017, Java, J2ee, Android, Bigdata, Dot net, Arduino, Raspberry pi, IOT, Renewable, PHP, Embedded, Vlsi, Matlab, VB, Net working, Data Mining, Image Processing, Cloud Computing, Mobile Computing, Multimedia, Network Security, Soft Engg, Grid Computing, Automation, Robotics, Communication, RF, Zigbee, Blue tooth, GSM/GPS/GPRS, Power Electronics & Systems, Electrical, DSP, RTOS, Bio metrics, Civil, Analysis, Fabrication, Mechanical, CFD, FEA, etc.

Features

- Latest 2017 IEEE, Science Direct, ACM based project concept and solutions.
- State of the art infrastructure, Innovative Project training methods.
- All our efforts are focused on students to meet industry requirements.
- Our environment is encapsulated with doctorates, professionals and other experts.
- Excellent Placements through our **Spiro HR Management Consultants (SMC) Pvt Ltd.**

Branches:

VELLORE

#257, Sapthagiri Complex, 2nd Floor
Katpadi Main Road, Vellore - 632 007
(Opp. Reliance Pertol Bunk)
Mobile : 9176 620 620
Email : vellore@spioprojects.com

NAMAKKAL

No : 62/136, Thillaipuram Main Road,
Paramathi Road, Namakkal
Mobile : 9962 514 514
Email : nkl@spioprojects.com

TIRUNELVELI

991/1A3, 2nd Floor,
M.G.Raaj Trade Park, South bye bass road,
Nellai-627005. (Near New Bus Stand)
Mobile : 9176 617 617
Email : nellai@spioprojects.com

MADURAI

#178, 2nd Floor, Vakil New Street,
Simmakal, Madurai - 625 001
Mobile : 9176 419 419
Email : madurai@spioprojects.com

PONDICHERY

20, 1st Floor, 2nd Cross, Natesan Nagar,
Pondichery - 05. (Indra Gandhi Square)
Mobile : 9176 694 694.
Email : pondy@spioprojects.com

COIMBATORE

#93, 1st Floor, Nehru Street,
(Opp. to Senthil Kumaran Theaters)
Ram Nagar, Coimbatore- 641 009
Mobile : 9176 648 648
Email : cbe@spioprojects.com

Corporate Office: SPIRO Solutions Pvt. Ltd #78, 3rd Floor, Usman Road, T.Nagar, Chennai-17. (Upstair Hotel Saravana Bhavan)Tamilnadu, India.

For ECE, EEE, E&I, E&C, Mechanical, Civil, Bio-Medical:

Mobile : +91-9962 067 067, +91-9176 499 499
mail: info@spioprojects.com

For IT, CSE, MSC, MCA, BSC(CS), B.COM(cs):

Mobile: +91-9791 044 044, +91-9176 644 044
E-Mail: info1@spioprojects.com,

Website: www.spioprojects.com.