

**SPIRO PROJECTS**



**SPIRO**

**Solutions Pvt. Ltd**



**Research & Development Program (RDP)**

**Final Year Academic Project (FAP) in Software and Embedded Technologies**

**Application Development Program (ADP)**

**[www.spiroprojects.com](http://www.spiroprojects.com)**

**IEEE  
PROJECT TITLES GUIDE**

**2015-2016**



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## About Spiro

**Spiro Group of Companies South India's leading Research & Development Organization.** Over a decade, we are furnishing individuals in all technologies and domains by fulfilling their desires in Research & Development sector through efficient training methodologies. All our efforts are focused on students to meet industry requirements.

The global presence and reach attained by Spiro is not only substantiated by its presence, but also by the environment provided for the students. Since our environment is encapsulated with doctorates, professionals and other experts. Accordingly, we created a setting which enables student to recover from the existing learning processes and making them to be an intellect.

In our increasing globalization, Spiro moves forward to unite the desires of students and challenges of the future in R & D sector by improving the agility and enabling students to achieve sustainable growth over their rivalry. For future enhancement, industry based knowledge's are provided for students in various levels. To sum up, we are filling student necessities in all possible ways to make career brighter in their desired field.

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# NETWORK SIMULATOR (NS2/NS3)

## WIRED NETWORK

S.NO	PROJECT CODE	PROJECT TITLES	SIMULATOR	YEAR
1	ITNWN01	COCOWA: A Collaborative Contact-Based Watchdog For Detecting Selfish Nodes	NS2	2015
2	ITNWN02	Service Composition In Opportunistic Networks: A Load And Mobility Aware Solution		2015
3	ITNWN03	Modeling And Solving TCP INCAST Problem In Data Center Networks		2015
4	ITNWN04	Reputation Aggregation In Peer-To-Peer Network Using Differential Gossip Algorithm	NS3	2015
5	ITNWN05	An Efficient And Trustworthy P2p And Social Network Integrated File Sharing System		2015

## MANET

S.NO	PROJECT CODE	PROJECT TITLES	SIMULATOR	YEAR
1	ITNMN01	A Secure Addressing Scheme For Large-Scale Managed Manets	NS2	2015
2	ITNMN02	MAC-layer Selfish Misbehavior in IEEE 802.11 ad hoc networks: detection and defense		2015
3	ITNMN03	Interference-Based Topology Control Algorithm For Delay-Constrained Mobile Ad Hoc Networks		2015

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4	ITNMN04	Interference Prediction In Mobile Ad Hoc Networks With A General Mobility Model	NS3	2015
5	ITNMN05	Mobile-Projected Trajectory Algorithm With Velocity-Change Detection For Predicting Residual Link Lifetime In Manet	NS3	2015

## VANET

S.NO	PROJECT CODE	PROJECT TITLES	SIMULATOR	YEAR
1	ITNVN01	Reducing Interferences In VANETS	NS2	2015
2	ITNVN02	ROFF: Robust And Fast Forwarding In Vehicular Ad-Hoc Networks		2015
3	ITNVN03	Securing warning message dissemination in VANETS using cooperative neighbor position verification		2015
4	ITNVN04	Secure And Privacy Preserving Protocol For Cloud-Based Vehicular Dtns	NS3	2015
5	ITNVN05	Message Authentication Using Proxy Vehicles In Vehicular Ad Hoc Networks		2015

## COGNITIVE RADIO NETWORK

S.NO	PROJECT CODE	PROJECT TITLES	SIMULATOR	YEAR
1	ITNCN01	BRACER: A Distributed broadcast protocol in multi-hop cognitive radio ad hoc networks with collision avoidance	NS2	2015
2	ITNCN02	Cognitive radio-aware transport protocol for mobile ad hoc networks		2015
3	ITNCN03	Optimal Resource Allocation In Random Access Cooperative Cognitive Radio Networks		2015
4	ITNCN04	Privacy-Preserving Collaborative Spectrum Sensing With Multiple Service Providers		2015

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5	ITNCN05	An Order Optimal Policy For Exploiting Idle Spectrum In Cognitive Radio Networks	NS3	2015
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## NETWORK SECURITY

S.NO	PROJECT CODE	PROJECT TITLES	SIMULATOR	YEAR
1	ITNNS01	Dynamic routing for data integrity and delay differentiated services In wireless sensor networks	NS2	2015
2	ITNNS02	Trust Management For Defending On-Off Attacks		2015
3	ITNNS03	Privacy-preserving and truthful detection of packet dropping attacks in wireless ad hoc networks		2015
4	ITNNS04	A Distributed Multi-Channel Mac Protocol For Ad Hoc Wireless Networks	NS3	2015
5	ITNNS05	Beyond Scaling Laws: On The Rate Performance Of Dense Device-To-Device Wireless Networks		2015

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# MATLAB

## IMAGE PROCESSING

S.NO	PROJECT CODE	PROJECT TITLES	YEAR
1	ITIMP01	Remote Authentication via Biometrics: A Robust Video-Object Steganographic Mechanism Over Wireless Networks	2015
2	ITIMP02	Compressed-Domain Ship Detection on Spaceborne Optical Image Using Deep Neural Network and Extreme Learning Machine	2015
3	ITIMP03	Elaboration of Novel Image Processing Algorithm for Arcing Discharges Recognition on HV Polluted Insulator Model	2015
4	ITIMP04	Face Recognition Across Non-Uniform Motion Blur, Illumination, and Pose	2015
5	ITIMP05	A Novel Active Learning Method in Relevance Feedback for Content-Based Remote Sensing Image Retrieval	2015
6	ITIMP06	Deep Representations for Iris, Face, and Fingerprint Spoofing Detection	2015
7	ITIMP07	Fast and Adaptive Detection of Pulmonary Nodules in Thoracic CT Images Using a Hierarchical Vector Quantization Scheme	2015
8	ITIMP08	Automated Vessel Segmentation Using Infinite Perimeter Active Contour Model with Hybrid Region Information with Application to Retinal Images	2015
9	ITIMP09	Four-Class Classification of Skin Lesions With Task Decomposition Strategy	2015
10	ITIMP10	Automatic Classification of Intracardiac Tumor and Thrombi in Echocardiography Based on Sparse Representation	2015
11	ITIMP11	Adaptive Co-Segmentation of Pheochromocytomas in CECT Images Using Localized Level Set Models	2015

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12	ITIMP12	Segmentation-Based Image Copy Move Forgery Detection Scheme	2015
13	ITIMP13	High Capacity Reversible Data Hiding in Encrypted Images by Patch-Level Sparse Representation	2015
14	ITIMP14	Unsupervised Detection of Earthquake-Triggered Roof-Holes From UAV Images Using Joint Color and Shape Features	2015
15	ITIMP15	Traffic Sign Detection via Graph-Based Ranking and Segmentation Algorithms	2015
16	ITIMP16	Localization of license plate number using Dynamic image processing techniques and Genetic algorithms	2014
17	ITIMP17	A Novel Joint Data-Hiding and Compression Scheme Based on SMVQ and Image Inpainting	2014
18	ITIMP18	Tampering Detection in Compressed Digital Video Using Watermarking	2014
19	ITIMP19	Image Quality Assessment for Fake Biometric Detection: Application to Iris, Fingerprint and Face Recognition	2014
20	ITIMP20	Multimodal Medical Volumetric Data Fusion Using 3-D Discrete Shearlet Transform and Global-to-Local Rule	2014
21	ITIMP21	Lung Nodule Classification With Multilevel Patch-Based Context Analysis	2014
22	ITIMP22	An Automatic Graph-Based Approach for Artery/Vein Classification in Retinal Images	2014
23	ITIMP23	On Scanning Linear Barcodes From Out-of-Focus Blurred Images: A Spatial Domain Dynamic Template Matching Approach	2014
24	ITIMP24	Remote Sensing Image Segmentation by Combining Spectral and Texture Features	2014
25	ITIMP25	Object-Oriented Shadow Detection and Removal From Urban High-Resolution Remote Sensing Images	2014
26	ITIMP26	Fuzzy Clustering With a Modified MRF Energy Function for Change Detection in Synthetic Aperture Radar Images	2014

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27	ITIMP27	Measures of Effective Video Tracking	2014
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# MATLAB COMMUNICATION

S.NO	PROJECT CODE	PROJECT TITLES	YEAR
1	ITCM01	On The Sum-Rate Of The Gaussian MIMO Z Channel And The Gaussian MIMO X Channel	2015
2	ITCM02	Improving Physical Layer Security For Crns Using SINR-Based Cooperative Beamforming	2015
3	ITCM03	Relay-Selection Improves The Security-Reliability Trade-Off In Cognitive Radio Systems	2015
4	ITCM04	Effect Of Mutual Coupling On The Channel Capacity Of MIMO Systems	2015
5	ITCM05	Performance Of Reconfigurable Antennas In A Below-Decks Environment	2015
6	ITCM06	Generalization Of Orthogonal Frequency Division Multiplexing With Index Modulation	2015
7	ITCM07	Spectral Efficiency Of OFDM Systems With Random Residual CFO	2015
8	ITCM08	Sum Rate Maximization Of An MIMO Two-Way Relay System Using MSE Duality	2015
9	ITCM09	PAPR Analysis Of Class-III SLM Scheme Based On Variance Of Correlation Of Alternative OFDM Signal Sequences	2015
10	ITCM10	Outage Probability Of Energy Harvesting Relay-Aided Cooperative Networks Over Rayleigh Fading Channel	2015
11	ITCM11	Space Shift Keying For LOS Communication At mmWave Frequencies	2015

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12	ITCM12	Linear Precoding For Mimo With Ldpc Coding And Reduced Complexity	2015
13	ITCM13	Performance Evaluation Of Mimo Ofdm Systems In On-Ship Below-Deck Environments	2014
14	ITCM14	To Cooperate Or Not To Cooperate: An Outage Analysis Of Interference-Limited Wireless Networks.	2014
15	ITCM15	Power Control And Asymptotic Throughput Analysis For The Distributed Cognitive Uplink	2014
16	ITCM16	Channel Model For Satellite Communication Links Above 10ghz Based On Weibull Distribution	2014
17	ITCM17	On The Outage Performance Of Selection Amplify-And-Forward Relaying Scheme	2014
18	ITCM18	Dynamic Subcarrier Coordinate Interleaving For Eavesdropping Prevention In Ofdm Systems	2014
18	ITCM19	Analysis Of The Power Amplifier Nonlinearity On The Power Allocation In Cognitive Radio Networks	2014
20	ITCM20	On Signal Detection In The Presence Of Weakly Correlated Noise Over Fading Channels	2014

## DIGITAL SIGNAL PROCESSING

16	ITDSP01	Fairness For Non-Orthogonal Multiple Access In 5g Systems	2015
17	ITDSP02	Sum-Rate Optimal Network Beamforming And Subcarrier Power Allocation For Multi-Carrier Synchronous Two-Way Relay Networks	2015
18	ITDSP03	Mimo-Oth Radar: Signal Model For Arbitrary Placement And Signals With Non-Point Targets	2015

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19	ITDSP04	Low Cost Pre-Coder Design For Mimo Af Two-Way Relay Channel	2015
20	ITDSP05	Transceiver Design For Hybrid One-Way And Two-Way Relay Networks	2014
21	ITDSP06	Mimo Systems With Quantized Covariance Feedback	2014
22	ITDSP07	Interference Alignment With Partial Csi Feedback In Mimo Cellular Networks	2014
23	ITDSP08	Rank-Two Beamformed Secure Multicasting For Wireless Information And Power Transfer	2014

# POWER ELECTRONICS

## AC TO DC CONVERTERS (RECTIFIERS)

S.NO	PROJECT CODE	PROJECT TITLES	YEAR
1	ITPW01	An Integrated High-Power-Factor Converter With Zvs Transition	2015
2	ITPW02	High-Frequency-Fed Unity Power-Factor Ac–Dc Power Converter With One Switching Per Cycle	2015
3	ITPW03	High-Power-Factor Rectifier Using The Modified Sepic Converter Operating In Discontinuous Conduction Mode	2015
4	ITPW04	Improved-Power-Quality Bridgeless-Converter-Based Multiple-Output SmPs	2015
5	ITPW05	Power Factor Corrected Zeta Converter Based Improved Power Quality Switched Mode Power Supply	2015
6	ITPW06	Single-Inductor Dual-Output Buck–Boost Power Factor Correction Converter	2015

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7	ITPW07	A Novel Three-Phase Buck–Boost Ac–Dc Converter	2014
<b>DC TO DC CONVERTERS (CHOPPERS)</b>			
8	ITPW08	A Fast-Converging MPPT Technique For Photovoltaic System Under Fast-Varying Solar Irradiation And Load Resistance	2015
9	ITPW09	Inductors A High Gain Input-Parallel Output-Series Dc/Dc Converter With Dual Coupled	2015
10	ITPW10	High Gain Zero Voltage Switching Bidirectional Converter With Reduced Number Of Switches	2015
11	ITPW11	Hybrid Transformer Zvs/Zcs Dc–Dc Converter With Optimized Magnetics And Improved Power Devices Utilization For Photovoltaic Module Applications	2015
12	ITPW12	Isolated Ac/Dc Offline High Power Factor Single-Switch Led Drivers Without Electrolytic Capacitors	2015
13	ITPW13	Non-Isolated High Step-Up Dc–Dc Converters Adopting Switched-Capacitor Cell	2015
14	ITPW14	Performance Of Medium-Voltage Dc-Bus Pv System Architecture Utilizing High-Gain Dc–Dc Converter	2015
15	ITPW15	Soft Switching Dc-Dc Converter For Distributed Energy Sources With High Step Up Voltage Capability	2015
16	ITPW16	A High Voltage Gain Dc–Dc Converter Integrating Coupled-Inductor And Diode–Capacitor Techniques	2014
17	ITPW17	Soft-Switching Current-Fed Push–Pull Converter For 250-W Ac Module Applications	2014
<b>DC TO AC CONVERTERS (INVERTERS)</b>			
18	ITPW18	A New Common-Mode Transformer Less Photovoltaic Inverter	2015
19	ITPW19	A Quasi-Unipolar Spwm Full-Bridge Transformerless Pv Grid-Connected	2015

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		Inverter With Constant Common-Mode Voltage.	
20	ITPW20	A Single-Phase Cascaded Multilevel Inverter Based On A New Basic Unit With Reduced Number Of Power Switches	2015
21	ITPW21	An Interleaved High-Power Flyback Inverter For Photovoltaic Applications	2015
22	ITPW22	Hybrid Multicarrier Modulation To Reduce Leakage Current In A Transformerless Cascaded Multilevel Inverter For Photovoltaic Systems	2015
23	ITPW23	Hybrid Switched-Inductor Converters For High Step-Up Conversion	2015
24	ITPW24	Optimum Structures Of Proposed New Cascaded Multilevel Inverter With Reduced Number Of Components	2015
25	ITPW25	Zero-Crossing Disturbance Elimination And Spectrum Analysis Of Single-Carrier Seven-Level Spwm	2015
26	ITPW26	A Step-Up Switched-Capacitormultilevel Inverter With Self Voltage Balancing	2014
<b>AC TO AC (CYCLOCONVERTER)</b>			
27	ITPW27	A Bridgeless Bhb Zvs-Pwm Ac-Ac Converter For High-Frequency Induction Heating Applications	2015
28	ITPW28	A Dimming Method For Hot Cathode Fluorescent Lamp Using A Resonant Inverter Operating At Fixed Switching Frequency	2015
<b>MOTOR APPLICATIONS</b>			
29	ITPW29	Pfc Cuk Converter-Fed Bldc Motor Drive	2015
30	ITPW30	A Bi-Csc Converter-Fed Bldc Motor Drive With Power Factor Correction	2015
31	ITPW31	Power Factor Correction In Bridgeless-Luo Converter-Fed Bldc Motor Drive	2015
32	ITPW32	Deployment Of An Adaptable Sensorless Commutation Technique On Bldc Motor Drives Exploiting Zero Sequence Voltage	2015

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33	ITPW33	A Unity Power Factor Bridgeless Isolated Cuk Converter-Fed Brushless Dc Motor Drive	2015
<b>ELECTRICAL VEHICLE APPLICATIONS</b>			
34	ITPW34	Performance Analysis Of Bi-Directional Dc-Dc Converters For Electric Vehicles	2015
35	ITPW35	A Nonisolated Multiinput Multioutput Dc–Dc Boost Converter For Electric Vehicle Applications	2015
<b>POWER SYSTEMS</b>			
36	ITPS01	MPPT With Single Dc-Dc Converter And Inverter For Grid Connected Hybrid Wind-Driven Pmsg-Pv System	2015
37	ITPS02	A High Step-Up Dc To Dc Converter Under Alternating Phase Shift Control For Fuel Cell Power System	2015
38	ITPS03	Doubly Fed Induction Generator For Wind Energy Conversion Systems With Integrated Active Filter Capabilities	2015
39	ITPS04	A Maximum Power Tracking Technique For Grid-Connected Dfig-Based Wind Turbines	2015
40	ITPS05	Power Balance Of Cascaded H-Bridge Multilevel Converters For Large-Scale Photovoltaic Integration	2015
41	ITPS06	Current-Fed Soft-Switching Push-Pull Front-End Converter Based Bidirectional Inverter For Residential Photovoltaic Power System	2014
<b>POWER QUALITY IMPROVEMENT</b>			
42	ITPS07	High-Gain Resonant Switched-Capacitor Cell-Based Dc/Dc Converter For Offshore Wind Energy Systems	2015
43	ITPS08	An Improved Iupqc Controller To Provide Additional Grid-Voltage Regulation As A Statcom	2015

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44	ITPS09	Front-End Converter With Integrated Pfc And Dc–Dc Functions For A Fuel Cell Ups With Dsp-Based Control	2015
45	ITPS10	An Enhanced Voltage Sag Compensation Scheme For Dvr	2015
46	ITPS11	Predictive Voltage Control Of Transformerless Dvr	2015
47	ITPS12	Integrated Photovoltaic And Dynamic Voltage Restorer System Configuration	2015
48	ITPS13	An Integrated Dynamic Voltage Restorer-Ultracapacitor Design For Improving Power Quality Of The Distribution Grid	2015
49	ITPS14	Operation And Control Of An Improved Performance Interactive Dstatcom	2015
50	ITPS15	LCL Filter Design And Performance Analysis For Grid Interconnected Systems	2014

## VLSI

### AREA EFFICIENT

S.NO	PROJECT CODE	PROJECT TITLES	YEAR
1	ITVL01	High-Speed and Energy-Efficient Carry Skip Adder Operating Under a Wide Range of Supply Voltage Levels	2015
2	ITVL02	An Efficient Constant Multiplier Architecture Based on Vertical-Horizontal Binary Common Sub-expression Elimination Algorithm for Reconfigurable FIR Filter Synthesis	2015
3	ITVL03	Trade-offs for Threshold Implementations Illustrated on AES	2015
4	ITVL04	A Modified Partial Product Generator for Redundant Binary Multipliers	2015
5	ITVL05	Reviewing High-Radix Signed-Digit Adders	2015
6	ITVL06	Critical-Path Analysis and Low-Complexity Implementation of the LMS Adaptive Algorithm	2014

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<b>LOW POWER</b>			
7	ITVL07	Implementation of Sub threshold Adiabatic Logic for Ultralow-Power Application	2015
8	ITVL08	Aging-Aware Reliable Multiplier Design With Adaptive Hold Logic	2015
9	ITVL09	Exact and Approximate Algorithms for the Filter Design Optimization Problem	2015
10	ITVL10	Ultralow-Energy Variation-Aware Design: Adder Architecture Study	2015
11	ITVL11	Fault Tolerant Parallel Filters Based on Error Correction Codes	2015
12	ITVL12	Area-Delay-Power Efficient Carry-Select Adder	2014
<b>HIGH SPEED</b>			
13	ITVL13	Variable Latency Speculative Han-Carlson Adder	2015
14	ITVL14	A High-Performance FIR Filter Architecture for Fixed and Reconfigurable Applications	2015
15	ITVL15	Fast Sign Detection Algorithm for the RNS Moduli Set $\{2^{n+1} - 1, 2^n - 1, 2^n\}$	2015
16	ITVL16	Energy-Efficient Approximate Multiplication for Digital Signal Processing and Classification Applications	2015
17	ITVL17	An Optimized Modified Booth Recoder for Efficient Design of the Add-Multiply Operator.	2014
18	ITVL18	Low-Latency Successive-Cancellation Polar Decoder Architectures Using 2-Bit Decoding.	2014
<b>QCA TECHNOLOGY</b>			
19	ITVL19	Coplanar Full Adder in Quantum-Dot Cellular Automata via Clock-Zone-Based Crossover	2015

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20	ITVL20	Synthesis of Majority/Minority Logic Networks	2015
21	ITVL21	Design and simulation of Turbo encoder in quantum-dot cellular automata	2015
22	ITVL22	Design of Efficient Binary Comparators in Quantum-Dot Cellular Automata.	2014
23	ITVL23	Area-Delay Efficient Binary Adders in QCA.	2014

### DESIGN WITH TEST BENCH

24	ITVL24	Reverse Converter Design via Parallel-Prefix Adders: Novel Components, Methodology, and Implementations	2015
25	ITVL25	ERSFQ 8-Bit Parallel Adders as a Process Benchmark	2015
26	ITVL26	$(4 + 2 \log n)$ G Parallel Prefix Modulo- $(2^n - 3)$ Adder via Double Representation of Residues in $[0, 2]$	2015

### EDA TOOL (TANNER TOOL)

27	ITVL27	Energy and Area Efficient Three-Input XOR/XNORs With Systematic Cell Design Methodology	2015
28	ITVL28	Single-Supply 3T Gain-Cell for Low-Voltage Low-Power Applications	2015
29	ITVL29	Recursive Approach to the Design of a Parallel Self-Timed Adder	2015
30	ITVL30	Low-Power Variation-Tolerant Nonvolatile Lookup Table Design	2015
31	ITVL31	Finite State Machines With Input Multiplexing: A Performance Study	2015
32	ITVL32	Analysis and Design of a Low-Voltage Low-Power Double-Tail Comparator	2014
33	ITVL33	Universal Set of CMOS Gates for the Synthesis of Multiple Valued Logic Digital Circuits	2014

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<b>VLSI WITH MATLAB</b>			
34	ITVL34	A Generalized Algorithm and Reconfigurable Architecture for Efficient and Scalable Orthogonal Approximation of DCT	2015
35	ITVL35	Design and Analysis of Approximate Compressors for Multiplication	2015
36	ITVL36	An Analytical Framework for Evaluating the Error Characteristics of Approximate Adders	2015
37	ITVL37	Efficient coding scheme for fault Tolerant parallel filter	2015
38	ITVL38	Input-Based Dynamic Reconfiguration of Approximate Arithmetic Units for Video Encoding	2015
39	ITVL39	Improved 8-Point Approximate DCT for Image and Video Compression Requiring Only 14 Additions	2014
40	ITVL40	High-Throughput Multi standard Transform Core Supporting MPEG /H.264/VC-1 Using CSDA	2014

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# EMBEDDED

## MECHANISM

S.NO	PROJECT CODE	PROJECT TITLES	YEAR
1	ITEM01	Three Way Conveyers For Cool Drinks Industry	2015
2	ITEM02	The Amphibious Vehicle For Sea And Seashore Monitoring	2015
3	ITEM03	Automatic Control Of Voice Gear Mechanism	2015
4	ITEM04	Automatic Glass Cleaning Robot Servent For Software Company	2015
5	ITEM05	Automatic Car Parking In Shopping Mall	2015
6	ITEM06	Automatic Alcohol Detection System In Vehicles	2015
7	ITEM07	Coconut Climbing Robot	2015
8	ITEM08	Automatic Shoe Polishing Machine	2015
9	ITEM09	Hand-Motion Crane Control Using Radio Frequency Real-Time Location Systems	2015
10	ITEM10	Automatic Oil Dissipation System	2015
11	ITEM11	Hover Craft In Army	2015
12	ITEM12	Grass Cutter Robot	2015
13	ITEM13	Automatic Multilevel Car Parking System	2015
14	ITEM14	Automatic Wall Painting Robot	2015
15	ITIMP15	Diffraction-Compensating Coded Aperture For Inspection In Manufacturing	

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		(Pipe Crawling)	2015
16	ITIMP 16	Row Guidance Agriculture Robot	2014
17	ITEM17	Vehicle Side Stand Alert System	2014
18	ITEM18	Machine Vision Technique For Find Out Defect In Orange	2014
19	ITEM19	Control Of A Snake Robot For Ascending And Descending Steps	2014
20	ITEM20	Power Generation For Street Light Using Speed Breaker	2014
21	ITEM21	Vehicle Traffic Control By A Traffic Robot	2014
22	ITEM22	Two Way Convayor Machine	2014
23	ITEM23	Intelligent Uंबरlla For Future Hotels	2014
24	ITEM24	Online High-Precision Probabilistic Localization Robotic Fish Using Visual And Inertial Cues	2014
25	ITEM25	Automatic Welding Mechanism System	2014
26	ITEM26	Energy Exchange Between Electric Vehicle Load And Wind Generating Utilities	2014
27	ITEM27	Advanced Power Window Motor Using Permanent Magnet Dc Motor	2014
28	ITEM28	Wall Climbing Robot For Rescue	2015
29	ITEM29	Automated Anesthesia Analyzing System Based On Microcontroller	2015
30	ITEM30	Heat Exchanger Mechanism	2015

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## INTERNET OF THINGS (IOT)

S.NO	PROJECT CODE	PROJECT TITLES	YEAR
1.	ITIOT1	Alternation usage and predication of power by Embedded in an Internet-of-Things Platform	2015
2.	ITIOT2	Iot Platform Based On Integration Of patient Body Health Sensing And Tele Medicine System	2015
3.	ITIOT3	An Analysis of patients RFID Authentication Schemes for Internet of Things in Healthcare Environment	2015
4.	ITIOT4	A complete Enriched Clinical hygienic Enabling Deployment in Heterogeneous Healthcare Environments using IOT	2015
5.	ITIOT5	A Novel Method for Fault Detection of Three Phase Transmission Lines by Wide-Area Voltage Measurements in IOT	2015
6.	ITIOT6	Behavior Rule Specification-Safety Based on patient and instrument Systems in IOT	2015
7.	ITIOT7	Implementation of a Wireless Health Acquisition System for IEEE 802.15.4 (ZigBee) Applications based on IOT	2015
8.	ITIOT8	RFID based Advanced Technology for security in smart homes using IOT	2015
9.	ITIOT9	Monitoring Of Human Health Condition With Less Power Smart Transmission Mechanism Based On IOT	2015
10.	ITIOT10	An Anonymous Authentication Scheme for theft vehicles and easy Plug in charging for Electric Vehicles	2015
11.	ITIOT11	Reliable measurement for Analog Metering system Using Image Processing Technic	2015
12.	ITIOT12	Optimization of Renewable Energy Sources and Energy Storage Systems in Islanded Micro grids with IOT	2015
13.	ITIOT13	The implementation of Nonintrusive Power Supply Design for Self-Powered Sensor Networks in the Smart Grid to detect fault from AC Power Line	2015
14.	ITIOT14	Implementation of Smart Sensor Interface for water quality monitoring in industry using IOT	2014

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15.	ITIOT15	Implementation of Smart Sensor Interface for water quality monitoring in industry using IOT	2014
16.	ITIOT16	IOT based vehicle license plate recognition system	2014
17.	ITIOT17	Internet Controlled Oil Reservoirs	2014
18.	ITIOT18	Iot Based Weather Report	2014
19.	ITIOT19	Patient Health Management System with IOT	2014

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<b>ROBOTICS</b>			
<b>S.NO</b>	<b>PROJECT CODE</b>	<b>PROJECT TITLES</b>	<b>YEAR</b>
1	ITROB01	Online High-Precision Probabilistic Localization of Robotic Fish Using Visual and Inertial Cues	2015
2	ITROB02	A Sensor-Based Dual-Arm Tele-Robotic System	2015
3	ITROB03	High-Speed Automated Manipulation of Micro objects Using a Two-Fingered Micro hand	2015
4	ITROB04	Control of a Snake Robot for Ascending and Descending Steps	2015
5	ITROB05	Occlusion-Based Cooperative Transport with a Swarm of Miniature Mobile Robots	2015
6	ITROB06	Towards a New Modality-Independent Interface For a Robotic Wheelchair	2015
7	ITROB07	Human-Like Motion Generation and Control for Humanoid's Dual Arm Object Manipulation	2015
8	ITROB08	Robot Guided Crowd Evacuation	2015
9	ITROB09	Bio-inspired Group Modeling and Analysis for Intruder Detection in Mobile Sensor/Robotic Networks	2015
10	ITROB10	Efficient Road Detection and Tracking for Unmanned Aerial Vehicle	2015
11	ITROB11	A Robust Real-Time Vision System for Autonomous Cargo Transfer by an Unmanned Helicopter	2015
12	ITROB12	An Ultrasonic and Vision-Based Relative Positioning Sensor for Multi robot Localization	2015
13	ITROB13	Artificial Co-Drivers as a Universal Enabling Technology for Future Intelligent Vehicles and Transportation Systems	2015
14	ITROB14	Robust Control of a Miniature Ducted-Fan Aerial Robot for Blind Navigation in Unknown Populated Environments	2015
15	ITROB15	Effects of Vibrotactile Feedback on Human Learning of Arm Motions	2015
16	ITROB16	Wireless Underwater Mobile Robot System Based on Zigbee	2014
17	ITROB17	A Compact and Compliant External Pipe-Crawling Robot	2014

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18	ITROB18	An Online Stair-Climbing Control Method for a Transformable Tracked Robot	2014
19	ITROB19	Probability-Based Location Aware Design and On-Demand Robotic Intrusion Detection System	2014
20	ITROB20	Towards a New Modality-Independent Interface For a Robotic Wheelchair	2014
21	ITROB21	A Study on Sinus-Lifting Motion of a Snake Robot With Sequential Optimization of a Hybrid System	2014
22	ITROB22	Mobile Robot Localization Using the Phase Of Passive UHF RFID Signals	2014
23	ITROB23	Vision-Based Robust Path Reconstruction For Robot Control	2014
24	ITROB24	Automatic lighting system using multiple Robotic lamps	2014

## ANDROID

S.NO	PROJECT CODE	PROJECT TITLES	YEAR
25	ITANR01	Smart Diary: A Smartphone-Based Framework for Sensing, Inferring, and Logging Users' Daily Life	2015
26	ITANR02	Smart PDR: Smartphone-Based Pedestrian Dead Reckoning for Indoor Localization	2015
27	ITANR03	Android Security: A Survey of Issues, Malware Penetration and Defenses	2015
28	ITANR04	A Software Based Sonar Ranging Sensor for Smart Phones	2015
29	ITANR05	Wearable system for monitoring of oxygen Concentration in breath based On optical sensor	2015
30	ITANR06	Automated Health Alerts Using In-Home Sensor Data for Embedded Health Assessment	2015
31	ITANR07	Novel Sampling Algorithm for Human Mobility-Based Mobile Phone Sensing	2015
32	ITANR08	Estimating Users' Home and Work Locations Leveraging Large-Scale Crowd-Sourced Smartphone Data	2015

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33	ITANR09	Estimation of Respiratory Rate from Photoplethysmographic Imaging Videos Compared to Pulse Oximetry	2015
34	ITANR10	Acquisition and Elaboration of Cardiac Signal in Android Smartphone Devices	2014
35	ITANR11	A Novel Electric Vehicle for Smart Indoor Mobility	2014
36	ITANR12	Unobtrusive Sensing and Wearable Devices For Health Informatics	2014

## AUTOMATION

S.NO	PROJECT CODE	PROJECT TITLES	YEAR
37	ITAM01	Primary-Side Power Flow Control of Wireless Power Transfer for Electric Vehicle Charging	2015
38	ITAM02	On Curve Negotiation: From Driver Support to Automation	2015
39	ITAM03	Energy Exchange Between Electric Vehicle Load and Wind Generating Utilities	2015
40	ITAM04	Multi objective Vehicle Routing Problems With Simultaneous Delivery and Pickup	2015
41	ITAM05	Diffraction-Compensating Coded Aperture for Inspection in Manufacturing (PIPE CRAWLING)	2015
42	ITAM06	Energy-Efficient Control Strategies for Machine Tools With Stochastic Arrivals	2015
43	ITAM07	An Automated Test Generation Technique for Software Quality Assurance	2015
44	ITAM08	Path-Constrained Motion Analysis: An Algorithm to Understand Human Performance on Hydraulic Manipulators	2015
45	ITAM09	A Practical Wireless Attack on the Connected Car and Security Protocol for In-Vehicle CAN	2015
46	ITAM10	Central Electric-Motoring-Assisted Handling Control System for Electrified Vehicles	2015

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47	ITAM11	Detection of U.S. Traffic Signs	2015
48	ITAM12	Designing Steering Feel for Steer-by-Wire Vehicles Using Objective Measures	2015
49	ITAM13	Wireless Sensor Networks for Condition Monitoring in the Railway Industry: A Survey	2015
50	ITAM14	Integrated Indoor Navigation System for Ground Vehicles With Automatic 3-D Alignment and Position Initialization	2015
51	ITAM15	Constrained Global Path Optimization for Articulated Steering Vehicles	2015
52	ITAM16	Automatic Detection of Squats in Railway Infrastructure	2014
53	ITAM17	Receiver Autonomous Integrity Monitoring of GNSS Signals for Electronic Toll Collection	2014
54	ITAM18	Guest Editorial Special Section on Building Automation, Smart Industry Robot	2014
55	ITAM19	Text Detection and Recognition on Traffic Panels From Street-Level Imagery Using Visual Appearance	2014
56	ITAM20	An Industrial Perspective on Wireless Sensor Networks - A Survey of Requirements, Protocols, and Challenges	2014
57	ITAM21	Implementation of CAN bus in an autonomous All-Terrain Vehicle	2014
58	ITAM22	Hand-Motion Crane Control Using Radio Frequency real-Time Location Systems	2014
59	ITAM23	An Iranian License Plate Recognition System Based on Color Features	2014
60	ITAM24	Portable Roadside Sensors for Vehicle Counting, Classification, and Speed Measurement	2014

## WIRELESS

S.NO	PROJECT CODE	PROJECT TITLES	YEAR
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61	ITWI01	Implementation of a Wireless ECG Acquisition SoCfor IEEE 802.15.4 (ZigBee) Applications	2015
62	ITWI02	A Zigbee-Based Animal Health Monitoring System	2015
63	ITWI03	Design and Application of a VOC-Monitoring System Based on a ZigBee Wireless Sensor Network	2015
64	ITWI04	Charging Time Characterization for Wireless RF Energy Transfer	2015
65	ITWI05	Real-time Fire Detection for Video Surveillance Applications using a Combination of Experts based on Color, Shape and Motion	2015
66	ITWI06	C-Band SAR Backscatter Evaluation of 2008 Gallipoli Forest Fire	2015
67	ITWI07	ZigBee-Based Communication System for Data Transfer Within Future Microgrids	2015
68	ITWI08	A Blind Zone Alert System Based on Intra-Vehicular Wireless Sensor Networks	2015
69	ITWI09	Wireless Power Transfer for Electric Vehicle Applications	2015
70	ITWI10	Investigating Wireless Charging and Mobility of Electric Vehicles on Electricity Market	2015
71	ITWI11	A Low Cost, Highly Scalable Wireless Sensor Network Solution to Achieve Smart LED Light Control for Green Buildings	2015
72	ITWI12	A Low-Power Wireless Sensor for Online Ambient Monitoring	2015
73	ITWI13	Passive and Semi-Passive Wireless Temperature and Humidity Sensors Based on EPC Generation-2 UHF Protocol	2015
74	ITWI14	An Approach of Reliable Data Transmission With Random Redundancy for Wireless Sensors in Structural Health Monitoring	2015
75	ITWI15	Wireless Resource Allocation in Next Generation Healthcare Facilities	2015
76	ITWI16	Channel and Energy Modeling for Self-Contained Wireless Sensor Networks in Oil Reservoirs	2014

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77	ITWI17	WSN-Based Smart Sensors and Actuator for Power Management in Intelligent Buildings	2014
78	ITWI18	Data Reduction and Energy Sustainance In Multi sensor Networks for Landslide Monitoring	2014
79	ITWI19	A Reconfigurable Smart Sensor Interface for Industrial WSN in IoT Environment	2014
80	ITWI20	A System for Automatic Notification and Severity Estimation of Automotive Accidents	2014
81	ITWI21	Wireless Sensor Network Based Smart Home: Sensor Selection, Deployment and Monitoring	2014

## GSM & GPS

S.NO	PROJECT CODE	PROJECT TITLES	YEAR
82	ITGP01	Understanding Taxi Service Strategies From Taxi GPS Traces	2015
83	ITGP02	Real-Time GPS Precise Point Positioning-Based Perceptible Water Vapor Estimation for Rainfall Monitoring and Forecasting	2015
84	ITGP03	Traffic Sensing Through MATLAB	2015
85	ITGP04	Implementing Intelligent Traffic Control System for Congestion Control, Ambulance Clearance, And Stolen Vehicle Detection	2015
86	ITGP05	Energy-Efficient Models of Sustainable Location for vehicle Inspection Station with Emission Constraints	2015
87	ITGP06	Energy-Efficient Real-Time Human Mobility State Classification Using Smart phones	2015
88	ITGP07	Sensed: Sensing Driving Conditions to Estimate Vehicle Speed in Urban Environments	2015
89	ITGP08	Automatic detection and notification of potholes and humps on roads to aid	2015

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		drivers	
90	ITGP09	A Smart Phone-Based Pocket Fall Accident Detection, Positioning, and Rescue System	2015
91	ITGP10	A Methodology for Denoising and Generating Bus Infrastructure Data	2015
92	ITGP11	Miniature Folded Patch GPS Antenna for Vehicle Communication Devices	2015
93	ITGP12	Road-Network Aware Trajectory Clustering: Integrating Locality, Flow, and Density	2015
94	ITGP13	A Compressive Sensing Approach to Describe Indoor Scenes for Blind People	2015
95	ITGP14	Indoor Tracking: Theory, Methods, and Technologies	2015
96	ITGP15	Fall Detection Based on Body Part Tracking	2015
97	ITGP16	A New Payment System for Enhancing Location Privacy of Electric Vehicles	2014
98	ITGP17	A System for Automatic Notification and Severity Estimation of Automotive Accidents	2014
99	ITGP18	Automated Irrigation System Using a Wireless Sensor Network and GPRS Module	2014
100	ITGP19	Rail Component Detection, Optimization, and Assessment for Automatic Rail Track Inspection	2014
101	ITGP20	Automatic ambulance rescue system	2014

## CONSUMER ELECTRONIC

S.NO	PROJECT CODE	PROJECT TITLE	YEAR
102	ITCE01	Synergistic Change Detection and Tracking	2015
103	ITCE02	Unknown Tag Identification in Large RFID Systems: An Efficient and Complete Solution	2015
104	ITCE03	Global Sensor Deployment and Local Coverage-Aware Recovery Schemes	2015

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		forSmart Environments	
105	ITCE04	Use of an Inertial/Magnetic Sensor Module forPedestrian Tracking During Normal Walking	2015
106	ITCE05	Integration of MEMS Inertial and Pressure Sensorsfor Vertical Trajectory Determination	2015
107	ITCE06	PRLS-INVES: A General Experimental InvestigationStrategy for High Accuracy and Precision inPassive RFID Location Systems	2015
108	ITCE07	Accurate and Efficient Object Tracking basedon Passive RFID	2015
109	ITCE08	Proximity Sensing Based on a Dynamic Vision Sensor for Mobile Devices	2015
110	ITCE09	A Rule-based Service Customization Strategy for Smart Home Context-aware Automation	2015
111	ITCE10	Exploiting Passive RFID Technology for Activity Recognition in Smart Homes	2015
112	ITCE11	A Health-IOT Platform based on the Integration of intelligent Packaging, Bio-Sensor and Intelligent Medicine Box	2014
113	ITCE12	Assistive clothing pattern recognition For visually impaired people	2014
114	ITCE13	Modeling and Detecting Aggressiveness From Driving Signals	2014
115	ITCE14	Prototype of a fingerprint based licensing system for driving	2014

## ELECTRICAL

S.NO	PROJECT CODE	PROJECT TITLE	YEAR
116	ITEEE01	Real-Time Energy Storage Management for Renewable Integration in Microgrid: An Off-Line Optimization	2015
117	ITEEE02	Data-Stream-Based Intrusion Detection System for Advanced Metering Infrastructure in Smart Grid: A Feasibility Study	2015
118	ITEEE03	WSN-Based Smart Sensors and Actuator for Power Management in Intelligent Buildings	2015

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119	ITEEE04	Distributed Smart-Home Decision-Making in a Hierarchical Interactive Smart Grid Architecture	2015
120	ITEEE05	Condition Monitoring of an Induction Motor Stator Windings Via Global Optimization Based on the Hyperbolic Cross Points	2015
121	ITEEE06	Last-Meter Smart Grid Embedded in an Internet-of-Things Platform	2015
122	ITEEE07	Energy Management in the Decentralized Generation Systems Based on Renewable Energy—Ultra capacitors and Battery to Compensate the Wind/Load Power Fluctuations	2015
123	ITEEE08	Real-Time Price Based Home Energy Management Scheduler	2015
124	ITEEE09	An Anonymous Authentication Scheme for Plugin Electric Vehicles Joining to Charging/Discharging Station in Vehicle-to-Grid (V2G) Networks	2015
125	ITEEE10	Extraction of Energy Information From Analog Meters Using Image Processing	2015
126	ITEEE11	A Control Architecture to Coordinate Renewable Energy Sources and Energy Storage Systems in Islanded Microgrids	2015
127	ITEEE12	A Nonintrusive Power Supply Design for Self-Powered Sensor Networks in the Smart Grid by Scavenging Energy From AC Power Line	2015
128	ITEEE13	Power Control in AC Isolated Microgrids With Renewable Energy Sources and Energy Storage Systems	2015
129	ITEEE14	A Novel Method for Fault Location of Transmission Lines by Wide-Area Voltage Measurements Considering Measurement Errors	2015
130	ITEEE15	A Constraint-Aware Heuristic Path Planner for Finding Energy-Efficient Paths on Uneven Terrains	2015
131	ITEEE16	Integrated Planning for Transition to Low-Carbon Distribution System With Renewable Energy Generation and Demand Response	2014
132	ITEEE17	Optimal Scheduling of Critical Peak Pricing Considering Wind Commitment	2014
133	ITEEE18	Adaptive Electricity Scheduling in Micro grids	2014

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134	ITEEE19	360° sun tracking with automated cleaning system for solar PV modules	2014
<b>BIOMEDICAL</b>			
S.NO	PROJECT CODE	PROJECT TITLE	YEAR
135	ITBIO01	PSMPA: Patient Self-Controllable and Multi-Level Privacy-Preserving Cooperative Authentication in Distributed m-Healthcare Cloud Computing System	2015
136	ITBIO02	An Implantable RFID Sensor Tag toward Continuous Glucose Monitoring	2015
137	ITBIO03	Self-Powered Monitoring of Repeated Head Impacts Using Time-Dilation Energy Measurement Circuit	2015
138	ITBIO04	Current and Future Challenges in Point-of-Care Technologies: A Paradigm-Shift in Affordable Global Healthcare With Personalized and Preventive Medicine	2015
139	ITBIO05	Intelligent Disease Self-Management with Mobile Technology	2015
140	ITBIO06	Smartphone-Centric Ambient Assisted Living Platform for Patients Suffering from Co-Morbidities Monitoring	2015
141	ITBIO07	An Analysis of RFID Authentication Schemes for Internet of Things in Healthcare Environment Using Elliptic Curve Cryptography	2015
142	ITBIO08	A Precise RFID Indoor Localization System with Sensor Network Assistance	2015
143	ITBIO09	Real-Time Closed-Loop Control of Human Heart Rate and Blood Pressure	2015
144	ITBIO10	Evaluation of Pressure Bed Sensor for Automatic SAHS Screening	2015
145	ITBIO11	The Development of a Blood Leakage Monitoring System for the Applications in Hemodialysis Therapy	2015
146	ITBIO12	System Architecture for Low-Power Ubiquitously Connected Remote Health Monitoring Applications With Smart Transmission Mechanism	2015
147	ITBIO13	Automated Detection of Sleep Apnea and Hypopnea Events Based on Robust Airflow Envelope Tracking in the Presence of Breathing Artifacts	2015

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148	ITBIO14	Behavior Rule Specification-Based Intrusion Detection for Safety Critical Medical Cyber Physical Systems	2015
149	ITBIO15	A Semantically Enriched Clinical Guideline Model Enabling Deployment in Heterogeneous Healthcare Environments	2015
150	ITBIO16	Integrated Circuits and Electrode Interfaces for Noninvasive Physiological Monitoring	2014
151	ITBIO17	A Survey on Wireless Body Area Networks: Technologies and Design Challenges	2014
152	ITBIO18	Potential for Health Screening Using Long-Term Cardiovascular Parameters Measured by Finger Volume-Oscillometry: Pilot Comparative Evaluation in Regular and Sleep-Deprived Activities	2014
153	ITBIO19	Patient Health Management System using e-Health Monitoring Architecture	2014

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## Education Partners:



## Technologies and Domain used:

IEEE 2014, Java, J2ee, Android, Dot net, 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, etc.

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- Excellent Placements through our **Spiro HR Management Consultants (SMC) Pvt Ltd.**

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