

# ENGINEERING PROJECTS (2016-2017)



Office : 0424 2265418  
E-mail : caeltechnosoft@gmail.com

Cell : 99421 30500  
78455 30500  
94862 54194



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## Contact

- Er.Sathiskumar** -  99421 30500
- Mr.Mohan** -  94862 54194
- Office** -  78455 30500
- Email Id** - [caeltechnosoft@gmail.com](mailto:caeltechnosoft@gmail.com)
- Facebook Id** - <https://www.facebook.com/caeltech>
- Location** - <https://goo.gl/RXmNQE>

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## Embedded Systems

| No.     | Title   | Year |
|---------|---|------|
| CTEM001 | A Compact Portable Microwave Life-Detection Device for Finding Survivors  | 2016 |
| CTEM002 | A Computationally Low Cost Vision Based Tracking Algorithm for Human Following Robot  | 2016 |
| CTEM003 | A Fuzzy-Based Building Automation Control System  | 2016 |
| CTEM004 | A Lightweight Robotic Arm With Pneumatic Muscles For Robot Learning   | 2016 |
| CTEM005 | A Low Cost Smart Irrigation Control System  | 2016 |
| CTEM006 | A Mobile Robot Which Can Follow And Lead Human By Detecting User Location And Behavior With Wearable Devices                                | 2016 |
| CTEM007 | A mobile ZigBee module in a traffic control system  | 2016 |
| CTEM008 | A neural network and IoT based scheme for performance assessment in Internet of Robotic Things  | 2016 |
| CTEM009 | A New XOR-Free Approach for Implementation of Convolutional Encoder   | 2016 |
| CTEM010 | A Novel Wireless Multifunctional Electronic Current Transformer Based On Zigbee-Based Communication   | 2016 |
| CTEM011 | A Perspective On The Use of High-frequency Stimulation In Deep Brain Stimulation For Parkinson's Disease                                    | 2016 |
| CTEM012 | A proposal of interaction system between visitor and collection in museum hall by iBeacon   | 2016 |
| CTEM013 | A PULSE MEASUREMENT AND DATA MANAGEMENT SYSTEM BASED ON ARDUINO PLATFORM AND ANDROID DEVICE   | 2016 |
| CTEM014 | A Real-time Electrically Controlled Active Matching Circuit Utilizing Genetic Algorithms for Wireless Power Transfer to Biomedical Implants | 2016 |
| CTEM015 | A Real-Time Embedded System for Monitoring of Cargo Vehicles Using Controller Area Network (CAN)  | 2016 |
| CTEM016 | A Remote Lab for Teaching Mechanics   | 2016 |

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|         |  |      |
|---------|--|------|
| CTEM017 | A Smart Helmet for Air Quality and Hazardous Event Detection for the Mining Industry                                 | 2016 |
| CTEM018 | A Smart Wearable System for Sudden Infant Death Syndrome Monitoring  | 2016 |
| CTEM019 | A Two-Fingered Underactuated Anthropomorphic Manipulator Based On Human Precision Manipulation Motions               | 2016 |
| CTEM020 | A VISION-BASED TELEOPERATION METHOD FOR A ROBOTIC ARM WITH 4 DEGREES OF FREEDOM                                      | 2016 |
| CTEM021 | A WIRELESS SENSOR INTERFACE FOR THE QUANTIFICATION OF TREMOR USING OFF THE SHELF COMPONENTS                          | 2016 |
| CTEM022 | Abnormal Moving Vehicle Detection For Driver Assistance System In Nighttime Driving                                  | 2016 |
| CTEM023 | Accurate Wireless Sensor Localization Technique based on Hybrid SOANN Algorithm for Indoor and Outdoor Track Cycling | 2016 |
| CTEM024 | Adaptive Energy-Oriented Multitask Allocation in Smart Camera Networks   | 2016 |
| CTEM025 | AGRISYS: A SMART AND UBIQUITOUS CONTROLLED-ENVIRONMENT AGRICULTURE SYSTEM  | 2016 |
| CTEM026 | An Experimental Study on the PID and Fuzzy-PID Controllers on a Designed Two-Wheeled Self-Balancing Autonomous Robot | 2016 |
| CTEM027 | An Integrated Cloud-Based Smart Home Management System with Community Hierarchy                                      | 2016 |
| CTEM028 | An IoT-based Scheme for Real Time Indoor Personal Exposure Assessment  | 2016 |
| CTEM029 | An IoT-Based System for Collision Detection on Guardrails  | 2016 |
| CTEM030 | An open NFC-based platform for vital signs monitoring  | 2016 |
| CTEM031 | An Open-Source Wireless Mesh Networking Module for Environmental Monitoring  | 2016 |
| CTEM032 | Analysis Of Influence On Driver Behaviour While Using In-Vehicle Traffic Lights With Application Of Head-Up Display  | 2016 |
| CTEM033 | Analyzing the Efficiency of Biased-Fault Based Attacks   | 2016 |

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|---------|---|------|
| CTEM034 | Android4auto: A Proposal For Integration Of Android In Vehicle Infotainment Systems   | 2016 |
| CTEM035 | ANT3D: Simultaneous Partitioning and Placement for 3-D FPGAs based on Ant Colony Optimization                               | 2016 |
| CTEM036 | AnyClimb: A New Wall-Climbing Robotic Platform for Various Curvatures   | 2016 |
| CTEM037 | Application of Distributed Wireless Chloride Sensors to Environmental Monitoring: Initial Results                           | 2016 |
| CTEM038 | Auto Calibrated Head Orientation Controller for Robotic-Wheelchair Using MEMS Sensors and Embedded Technologies             | 2016 |
| CTEM039 | Automatic Oil Tank Truck Alarm System From Illegal Fuel Hoarding With Microcontroller And GSM Module Based System           | 2016 |
| CTEM040 | Automatic Toll E-Ticketing System for Transportation Systems Using Deep Learning  | 2016 |
| CTEM041 | Battery Currents Fluctuations Removal in Hybrid Energy Storage System Based on Optimized Control of Super-Capacitor Voltage | 2016 |
| CTEM042 | Benefits of using a voice and EMG-driven actuated glove to support occupational therapy for stroke survivors                | 2016 |
| CTEM043 | Blind User Wearable Audio As Distance For Indoor Navigation Based On Visual Markers And Ultrasonic Obstacle Detection       | 2016 |
| CTEM044 | Bringing Hardware Multithreading to the Real-Time Domain  | 2016 |
| CTEM045 | Building Smart Cities Applications Using Iot And Cloud-Based Architectures  | 2016 |
| CTEM046 | Coexistence Of Wifi And Lifi Toward 5g: Concepts, Opportunities, And Challenges   | 2016 |
| CTEM047 | Coexistence Of Zigbee-Based Wban And Wi-Fi For Health Telemonitoring Systems  | 2016 |
| CTEM048 | Configurable ZigBee-based Control System for People with Multiple Disabilities in Smart Homes                               | 2016 |

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|         |  |      |
|---------|--|------|
| CTEM049 | CONTROLLER AREA NETWORK ASSISTED GRID SYNCHRONIZATION OF A MICROGRID WITH RENEWABLE ENERGY SOURCES AND STORAGE | 2016 |
| CTEM050 | Cost Effective Digital Signage System using Low Cost Information Device  | 2016 |
| CTEM051 | Deflection Routing in Hierarchical Mesh NoCs   | 2016 |
| CTEM052 | DESIGN AND IMPLEMENTATION OF A HOME AUTOMATION SYSTEM FOR SMART GRID APPLICATIONS                              | 2016 |
| CTEM053 | Design and Implementation of a System Access Control by RFID   | 2016 |
| CTEM054 | Design And Implementation Of Interoperable Iot Healthcare System Based On International Standards              | 2016 |
| CTEM055 | DESIGN AND IMPLEMENTATION OF LOW-COST SMS BASED MONITORING SYSTEM OF DISTRIBUTION TRANSFORMERS                 | 2016 |
| CTEM056 | Design And Manufacture Of Bio-Mimic Robotic Fish   | 2016 |
| CTEM057 | Developing An Open Access Monitoring Device For Off-Grid Renewables  | 2016 |
| CTEM058 | Development of a Brain-Computer Interface Based on Visual Stimuli for the Movement of a Robot Joints           | 2016 |
| CTEM059 | Development of a distributed disaster data and human life sign probe system                                    | 2016 |
| CTEM060 | Development of a Highly Accurate and Low Cost Measurement Device for Field Operational Tests                   | 2016 |
| CTEM061 | Development of a Portable Near Infrared Camera for Early Detection of Diabetic Ulcers                          | 2016 |
| CTEM062 | Development of a Tracked Mobile Robot Equipped with Two Arms   | 2016 |
| CTEM063 | DEVELOPMENT OF THE MOBILE ROBOT WITH A ROBOT ARM   | 2016 |
| CTEM064 | Development of Traffic Light Control Algorithm in Smart Municipal Network                                      | 2016 |
| CTEM065 | distratto Impaired Driving Detection Using Textile Sensors   | 2016 |
| CTEM066 | Effective Ways To Use Internet Of Things In The Field Of Medical And Smart Health Care                         | 2016 |

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|---------|--|------|
| CTEM067 | Embedded control system for smart walking assistance device  | 2016 |
| CTEM068 | Embedded System Design Of A Real-Time Parking Guidance System  | 2016 |
| CTEM069 | Energy Efficient Outdoor Light Monitoring and Control Architecture Using Embedded System   | 2016 |
| CTEM070 | Energy-Efficient Intelligent Street Lighting System Using Traffic-Adaptive Control   | 2016 |
| CTEM071 | ENERGY-EFFICIENT INTELLIGENT STREET LIGHTING SYSTEM USING TRAFFIC-ADAPTIVE CONTROL   | 2016 |
| CTEM072 | Enhancing Human-Robot Interaction by Interpreting Uncertain Information in Navigational Commands Based on Experience and Environment | 2016 |
| CTEM073 | EXOSKELETON ROBOTS FOR UPPER-LIMB REHABILITATION   | 2016 |
| CTEM074 | Experimental Validation of High-Voltage-Ratio Low Input- Current-Ripple DC-DC Converters for Fuel Cell Applications                  | 2016 |
| CTEM075 | Extending Amdahl's Law for Heterogeneous Multicore Processor with Consideration of the Overhead of Data Preparation                  | 2016 |
| CTEM076 | Fall Detection And Prevention Control Using Walking-Aid Cane Robot   | 2016 |
| CTEM077 | FPGA-Based Architecture for a Multisensory Barrier to Enhance Railway Safety   | 2016 |
| CTEM078 | Gait Generation with Smooth Transition Using CPG-Based Locomotion Control for Hexapod Walking Robot                                  | 2016 |
| CTEM079 | GESTURE CONTROL OF DRONE USING A MOTION CONTROLLER   | 2016 |
| CTEM080 | GPS Based Autonomous Vehicle Navigation And Control System   | 2016 |
| CTEM081 | HOME OUTLET AND LED ARRAY LAMP CONTROLLED BY A SMARTPHONE WITH A HAND GESTURE RECOGNITION  | 2016 |
| CTEM082 | Impact of VLC on Light Emission Quality of White LEDs  | 2016 |



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| CTEM083 | Implementation Of Zigbee-Vlc System To Support Light Control Network Configuration  | 2016 |
| CTEM084 | Implementing Intelligent Traffic Control System for Congestion Control, Ambulance Clearance, and Stolen Vehicle Detection                               | 2016 |
| CTEM085 | Improving The Security Of Wireless Sensor Networks In An Iot Environmental Monitoring System  | 2016 |
| CTEM086 | INNOVATION IN UNDERWATER ROBOTS: BIOLOGICALLY INSPIRED SWIMMING SNAKE ROBOTS  | 2016 |
| CTEM087 | In-Situ Requirements Monitoring of Embedded Systems   | 2016 |
| CTEM088 | Integration Of Structural Health Monitoring And Intelligent Transportation Systems For Bridge Condition Assessment: Current Status And Future Direction | 2016 |
| CTEM089 | Inter-Building Plc-Vlc Integration Based On Psk And Csk Techniques  | 2016 |
| CTEM090 | INTERFERENCE-MITIGATED ZIGBEE-BASED ADVANCED METERING INFRASTRUCTURE  | 2016 |
| CTEM091 | Interoperability of IoT Wireless Technologies in Ambient Assisted Living Environments   | 2016 |
| CTEM092 | Intuitive Iot-Based H2u Healthcare System For Elderly People  | 2016 |
| CTEM093 | IoT Healthcare Analytics: The Importance of Anomaly Detection   | 2016 |
| CTEM094 | IoT+Small Data Transforming In-Store Shopping Analytics & Services  | 2016 |
| CTEM095 | Lightweight Mashup Middleware for Coal Mine Safety Monitoring and Control Automation  | 2016 |
| CTEM096 | Likelihood-Field-Model-Based Dynamic Vehicle Detection And Tracking For Self-Driving  | 2016 |
| CTEM097 | Line Detecting And Tracking Of A Mobile Robot With Multiple Rgb-D Cameras   | 2016 |
| CTEM098 | Long range VLC temperature monitoring system using CMOS of mobile device camera   | 2016 |
| CTEM099 | Low-power wearable ECG monitoring system for multiple-patient remote monitoring   | 2016 |

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| CTEM100 | Methodology Of Embedded System Design For Underwater Vehicle  | 2016 |
| CTEM101 | MICROGRID DEMONSTRATION GATEWAY FOR PLAYERS COMMUNICATION AND LOAD MONITORING AND MANAGEMENT                          | 2016 |
| CTEM102 | Milk Products Monitoring System with ARM Processor for Early Detection of Microbial Activity                          | 2016 |
| CTEM103 | Mixed Integer Programming-Based Semiautonomous Step Climbing of a Snake Robot Considering Sensing Strategy            | 2016 |
| CTEM104 | Mobile Robot For Retail Inventory Using Rfid  | 2016 |
| CTEM105 | Model for Personalization of mHealth Systems for Monitoring Patients with Chronic Diseases                            | 2016 |
| CTEM106 | Navigating The Challenges Of Internet Of Things (Iot) For Power And Energy Systems                                    | 2016 |
| CTEM107 | New Applications of an Automated System for High-Power LEDs   | 2016 |
| CTEM108 | Non-invasive measurement of stress levels in knee implants using a magnetic- ased detection method                    | 2016 |
| CTEM109 | Open-Source Smart Home Modules  | 2016 |
| CTEM110 | Optimized Assistive Human-Robot Interaction Using Reinforcement Learning  | 2016 |
| CTEM111 | Planar Path Following Of Underwater Snake Robots In The Presence Of Ocean Currents                                    | 2016 |
| CTEM112 | Point-N-Press: An Intelligent Universal Remote Control System For Home Appliances                                     | 2016 |
| CTEM113 | Preprocessing Design in Pyroelectric Infrared Sensor-Based Human-Tracking System: On Sensor Selection and Calibration | 2016 |
| CTEM114 | Quick Find: Fast and Contact-free Object Detection Using a Depth Sensor   | 2016 |
| CTEM115 | Rapid Prototyping of a Smart Device-based Wireless Reflectance Photoplethysmograph                                    | 2016 |
| CTEM116 | REAL-TIME DRIVING MONITOR SYSTEM: COMBINED CLOUD DATABASE WITH GPS  | 2016 |

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| CTEM117 | Real-Time Patient Health Monitoring and Alarming Using Wireless-Sensor-Network   | 2016 |
| CTEM118 | REMOTE CONTROL AND INSTRUMENTATION OF ANDROID DEVICES  | 2016 |
| CTEM119 | Research on Parallel Control Mechanism and Its Implementation in ATP   | 2016 |
| CTEM120 | Road Sign Recognition System on Raspberry Pi   | 2016 |
| CTEM121 | Robust Multirate On-Road Vehicle Localization For Autonomous Highway Driving Vehicles                                  | 2016 |
| CTEM122 | Secure Data Analytics for Cloud- Integrated Internet of Things Applications  | 2016 |
| CTEM123 | Simple ambulatory gait monitoring system using a single IMU for various daily-life gait activities                     | 2016 |
| CTEM124 | Smart Belt A wearable device for managing abdominal obesity  | 2016 |
| CTEM125 | Smart Lighting: Developing A Smarter Control Mechanism For Park Trail Lighting   | 2016 |
| CTEM126 | Smart Parking System For Internet Of Things  | 2016 |
| CTEM127 | Smart Real-Time Healthcare Monitoring and Tracking System using GSM/GPS Technologies                                   | 2016 |
| CTEM128 | Smart Traffic Light Control System   | 2016 |
| CTEM129 | Smart Vehicle security system for Defending Against Collaborative Attacks by Malware                                   | 2016 |
| CTEM130 | Smartphone: The Key To Your Connected Smart Home   | 2016 |
| CTEM131 | Stereo Audio Streaming Via Visible Light   | 2016 |
| CTEM132 | The Design Of Building Fire Monitoring System Based On Zigbee-Wifi Networks  | 2016 |
| CTEM133 | The Future of Ultra-Wideband Localization in RFID  | 2016 |
| CTEM134 | The Soft-SixthFinger: a Wearable EMG Controlled Robotic Extra-Finger for Grasp Compensation in Chronic Stroke Patients | 2016 |

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|---------|--|------|
| CTEM135 | Towards the Trustworthy Development of Active Medical Devices: A Hemodialysis Case Study                                     | 2016 |
| CTEM136 | Train Ticket Gate System Employing Optical Wireless Communications   | 2016 |
| CTEM137 | Turning the internet of (my) things into a remote controlled laboratory  | 2016 |
| CTEM138 | Uncoordinated Multiple Access Scheme For Vlc Systems With Positioning Capability   | 2016 |
| CTEM139 | UR-SolarCap: An Open Source Intelligent Auto-Wakeup Solar Energy Harvesting System for Supercapacitor-Based Energy Buffering | 2016 |
| CTEM140 | Using off-the-shelf medical devices for biomedical signal monitoring in a telemedicine system for emergency medical services | 2016 |
| CTEM141 | VISUAL SURVEILLANCE USING ABSOLUTE DIFFERENCE MOTION DETECTION SYSTEM  | 2016 |
| CTEM142 | Voice-Activity Home Care System  | 2016 |
| CTEM143 | Water Level Meter For Alerting Population About Floods   | 2016 |
| CTEM144 | Wearable Camera- and Accelerometer-Based Fall Detection on Portable Devices  | 2016 |
| CTEM145 | Wearable Noncontact Armband for Mobile ECG Monitoring System   | 2016 |
| CTEM146 | WIFACT — WIRELESS FINGERPRINTING AUTOMATED CONTINUOUS TRAINING   | 2016 |
| CTEM147 | WIRELESS BIOSENSING NETWORK FOR DRIVERS' HEALTH MONITORING   | 2016 |
| CTEM148 | Wireless Gas Leak Detection And Localization   | 2016 |
| CTEM149 | Wireless Power Transmission For Multiple Devices   | 2016 |
| CTEM150 | Wirelessly Controlled Mines Detection Robot  | 2016 |
| CTEM151 | Zigbee Network System For Observing Operating Activities Of Work Vehicles  | 2016 |

## Power Electronics

| No.     | Title   | Year |
|---------|---|------|
| CTPE001 | A bidirectional single-stage three-phase Rectifier with high-frequency Isolation and power factor Correction                                  | 2016 |
| CTPE002 | A Bidirectional Three-Level <i>LLC</i> Resonant Converter With PWAM Control   | 2016 |
| CTPE003 | A Bridgeless Totem-pole Interleaved PFC Converter for Plug-In Electric Vehicles   | 2016 |
| CTPE004 | A CLCL Resonant DC/DC Converter for Two-Stage LED Driver System   | 2016 |
| CTPE005 | A Coupled Inductor Based High Boost Inverter with Sub-Unity Turns-Ratio Range   | 2016 |
| CTPE006 | A DC-DC Converter With High Voltage Gain and Two Input Boost Stages   | 2016 |
| CTPE007 | A Family of Five-Level Dual-Buck Full-Bridge Inverters for Grid-Tied Applications   | 2016 |
| CTPE008 | A Family of Isolated Buck-Boost Converters Based on Semi-active Rectifiers for High Output Voltage Applications                               | 2016 |
| CTPE009 | A Family of Quasi-Switched-Capacitor Circuit Based Dual-Input DCDC Converters for Photovoltaic Systems Integrated with Battery Energy Storage | 2016 |
| CTPE010 | A Gate Driver with Integrated Dead-Time Controller  | 2016 |
| CTPE011 | A High Efficiency Current Mode Buck Converter with a Power-Loss-Aware   | 2016 |
| CTPE012 | A High Power Density Single-Phase Inverter Using Stacked Switched Capacitor Energy Buffer   | 2016 |
| CTPE013 | A High-Efficiency Flyback Micro-inverter With a New Adaptive Snubber for Photovoltaic Applications  | 2016 |

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|---------|---|------|
| CTPE014 | A Low-Power High-Stability Flexible Scan Driver Integrated by IZO TFTs  | 2016 |
| CTPE015 | A Low-Volume Hybrid Step-Down Dc-Dc Converter Based on the Dual Use of Flying Capacitor   | 2016 |
| CTPE016 | A Medium Frequency Transformer-Based Wind Energy Conversion System Used for Current Source Converter Based Offshore Wind Farm                               | 2016 |
| CTPE017 | A Module-Integrated Distributed Battery Energy Storage and Management System  | 2016 |
| CTPE018 | A New Cascaded Switched-Capacitor Multilevel Inverter Based on Improved Series-Parallel Conversion With Less Number of Components                           | 2016 |
| CTPE019 | A New Compact and High Efficiency Resonant Converter  | 2016 |
| CTPE020 | A New Family of Zero-Voltage-Transition Non-isolated Bidirectional Converters With Simple Auxiliary Circuit   | 2016 |
| CTPE021 | A Novel LED Drive System Based on Matrix Rectifier  | 2016 |
| CTPE022 | A Novel Multiple-Frequency Resonant Inverter for Induction Heating Applications   | 2016 |
| CTPE023 | A Novel Multiple-Frequency Resonant Inverter for Induction Heating Applications   | 2016 |
| CTPE024 | A Novel Nine-Level Inverter Employing One Voltage Source and Reduced Components as High Frequency AC Power Source   | 2016 |
| CTPE025 | A Novel Transformer-less Interleaved Four-Phase Step-Down DC Converter With Low Switch Voltage Stress and Automatic Uniform Current-Sharing Characteristics | 2016 |
| CTPE026 | A Performance Investigation of a Four-Switch Three-Phase Inverter-Fed IM Drives at Low Speeds Using Fuzzy Logic and PI Controllers                          | 2016 |
| CTPE027 | A Power Quality Improved Bridgeless Converter Based Computer Power Supply   | 2016 |
| CTPE028 | A Pulse-width Modulation Technique for High-Voltage Gain Operation of Three-Phase Z-Source Inverters  | 2016 |

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|---------|--|------|
| CTPE029 | A PWM Plus Phase-Shift Controlled Interleaved Isolated Boost Converter Based on Semi-active Quadrupler Rectifier for High Step-Up Applications | 2016 |
| CTPE030 | A Sensitivity-Improved PFM LLC Resonant Full-Bridge DC-DC Converter with LC Anti-Resonant Circuitry  | 2016 |
| CTPE031 | A Single DC Source Cascaded Seven-Level Inverter Integrating Switched Capacitor Techniques   | 2016 |
| CTPE032 | A Single-Phase PV Quasi-Z-Source Inverter With Reduced Capacitance Using Modified Modulation and Double-Frequency Ripple Suppression Control   | 2016 |
| CTPE033 | A Three Phase Hybrid Cascaded Modular Multilevel Inverter for Renewable Energy Environment   | 2016 |
| CTPE034 | A Three-Phase Bidirectional ACDC Converter with Y- $\Delta$ Connected Transformers   | 2016 |
| CTPE035 | A Three-State Switching Boost Converter Mixed With Magnetic Coupling and Voltage Multiplier Techniques for High Gain Conversion                | 2016 |
| CTPE036 | A Triple Active Bridge DC-DC Converter Capable of Achieving Full-Range ZVS   | 2016 |
| CTPE037 | A Virtual RLC Damper to Stabilize DCDC Converters Having an LC Input Filter while Improving the Filter Performance                             | 2016 |
| CTPE038 | A Wide Load Range ZVS Push-Pull DC/DC Converter with Active-Clamped  | 2016 |
| CTPE039 | A ZVS Grid-Connected Full-Bridge Inverter With a Novel ZVS SPWM Scheme   | 2016 |
| CTPE040 | A ZVS Pulsewidth Modulation Full-Bridge Converter With a Low-RMS-Current Resonant Auxiliary Circuit  | 2016 |
| CTPE041 | A ZV-ZCS Electrolytic Capacitor Less AC/DC Isolated LED Driver with Continuous Energy Regulation   | 2016 |
| CTPE042 | Adapted NSPWM for Single DC-Link Dual-Inverter Fed Open-End Motor with Negligible Low-Order Harmonics and Efficiency Enhancement               | 2016 |

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| CTPE043 | All-Digital Low-Dropout Regulator with Adaptive Control and Reduced Dynamic Stability for Digital Load Circuits                                     | 2016 |
| CTPE044 | An Adaptive Current Injection Scheme for Resonant Capacitor of LLC Resonant Converters with Suppressed Frequency Variation                          | 2016 |
| CTPE045 | An Enhanced Single Phase Step-Up Five-Level Inverter  | 2016 |
| CTPE046 | An Improved Phase-Shifted Carrier Modulation for Modular Multilevel Converter to Suppress the Influence of Fluctuation of Capacitor Voltage         | 2016 |
| CTPE047 | An Interleaved Half-Bridge Three-Port Converter With Enhanced Power Transfer Capability Using Three-Leg Rectifier for Renewable Energy Applications | 2016 |
| CTPE048 | An Offshore Wind Generation Scheme With a High-Voltage Hybrid Generator, HVDC Interconnections, and Transmission                                    | 2016 |
| CTPE049 | An Optimal Method to Design a Trap-CL Filter for a PV AC-Module Based on Flyback Inverter   | 2016 |
| CTPE050 | Analysis and Control of M3C based UPQC for Power Quality Improvement in MediumHigh Voltage Power Grid   | 2016 |
| CTPE051 | Analysis and Design of Modified Half-Bridge Series-Resonant Inverter With DC-Link Neutral-Point-Clamped Cell  | 2016 |
| CTPE052 | Analysis, Design, Modeling and Control of an Interleaved-Boost Full-Bridge Three Port Converter for Hybrid Renewable Energy Sy                      | 2016 |
| CTPE053 | Artificial Noise Aided Secrecy Information and  | 2016 |
| CTPE054 | Bidirectional Resonant DC-DC Step-Up Converters for Driving High-Voltage Actuators in Mobile Microrobots  | 2016 |
| CTPE055 | Bidirectional Single Power Conversion DC-AC Converter with Non-Complementary Active-Clamp Circuits  | 2016 |
| CTPE056 | BLDC Motor Driven Solar PV Array Fed Water Pumping System Employing Zeta Converter  | 2016 |
| CTPE057 | Bridgeless SEPIC PFC Converter for Low Total Harmonic Distortion and High Power Factor  | 2016 |



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| CTPE058 | Bumpless Control for Reduced THD in Power Factor Correction Circuits  | 2016 |
| CTPE059 | Bus Voltage Control With Zero Distortion and High Bandwidth for Single-Phase Solar Inverters  | 2016 |
| CTPE060 | Combined Phase Shift and Frequency Modulation of a Dual Active Bridge AC-DC Converter with PFC  | 2016 |
| CTPE061 | Common-mode Voltage Reduction for Matrix Converters Using All Valid Switch States   | 2016 |
| CTPE062 | Commutation Torque Ripple Reduction Strategy of Z-Source Inverter Fed Brushless DC Motor  | 2016 |
| CTPE063 | Control and Implementation of a Standalone Solar Photo-Voltaic Hybrid System  | 2016 |
| CTPE064 | Control and Operation of a DC Grid-Based Wind Power Generation System in a Microgrid  | 2016 |
| CTPE065 | Control of a Single-Stage Three-Phase Boost Power Factor Correction Rectifier   | 2016 |
| CTPE066 | Control of a Small Wind Turbine in the High Wind Speed Region   | 2016 |
| CTPE067 | DCDC Converter Development for Battery Energy Storage Supporting Railway DC Feeder System   | 2016 |
| CTPE068 | Design and Analysis of a High Efficiency DC-DC Converter With Soft Switching Capability for Renewable Energy Applications Requiring High Voltage Gain | 2016 |
| CTPE069 | Design and Implementation of a High Efficiency Multiple Output Charger based on the Time Division Multiple Control Technique                          | 2016 |
| CTPE070 | Design and Implementation of a Novel Multilevel DC-AC Inverter  | 2016 |
| CTPE071 | Design and Real-Time Controller Implementation for a Battery-Ultra-capacitor Hybrid Energy Storage System   | 2016 |
| CTPE072 | Design of Maximum Efficiency Tracking Control Scheme for Closed Loop Wireless Power Charging System Employing Series Resonant Tank                    | 2016 |

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|---------|---|------|
| CTPE073 | Development of DC/DC Converter for Battery Energy Storage Supporting Railway DC Feeder Systems  | 2016 |
| CTPE074 | Dual Buck Inverter with Series Connected Diodes and Single Inductor   | 2016 |
| CTPE075 | Dual-Space Vector Control of Open-End Winding Permanent Magnet Synchronous Motor Drive Fed by Dual Inverter                                       | 2016 |
| CTPE076 | Efficient Single Phase Transformerless Inverter for Grid-Tied PVG System With Reactive Power Control  | 2016 |
| CTPE077 | Efficient Transformerless MOSFET Inverter for Grid-Tied Photovoltaic System   | 2016 |
| CTPE078 | Enhanced Frequency-Locked Loop with a Comb Filter under Adverse Grid Conditions   | 2016 |
| CTPE079 | Flying-Capacitor-Based Hybrid LLC Converters With Input Voltage Auto-balance Ability for High Voltage Applications                                | 2016 |
| CTPE080 | Front-End Isolated Quasi-Z-Source DC-DC Converter Modules in Series for Photovoltaic High-Voltage DC Applications                                 | 2016 |
| CTPE081 | Full-Range Soft-Switching-Isolated Buck-Boost Converters With Integrated Interleaved Boost Converter and Phase-Shifted Control                    | 2016 |
| CTPE082 | Grid-Connected PV-Wind-Battery based Multi-Input Transformer Coupled Bidirectional DC-DC Converter for household Applications                     | 2016 |
| CTPE083 | High Efficiency Bi-Directional Converter for Flywheel Energy Storage Application  | 2016 |
| CTPE084 | High Gain DC-DC Converter Based on the Cockcroft-Walton Multiplier  | 2016 |
| CTPE085 | High Step-Up/Step-Down Soft-Switching Bidirectional DC-DC Converter With Coupled-Inductor and Voltage Matching Control for Energy Storage Systems | 2016 |
| CTPE086 | High-Efficiency Bidirectional DAB Inverter Using a Novel Hybrid Modulation for Stand-Alone Power Generating System With Low Input Voltage         | 2016 |

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| CTPE087 | High-Efficiency Coupled-Inductor-Based Step-Down Converter   | 2016 |
| CTPE088 | High-Efficiency <i>LLC</i> Resonant Converter With High Voltage Gain Using an Auxiliary <i>LC</i> Resonant Circuit               | 2016 |
| CTPE089 | High-Gain Single-Stage Boosting Inverter for Photovoltaic Applications   | 2016 |
| CTPE090 | Highly Efficient Asymmetrical PWM Full-Bridge Converter for Renewable Energy Sources   | 2016 |
| CTPE091 | Highly Reliable Transformerless Photovoltaic Inverters With Leakage Current and Pulsating Power Elimination                      | 2016 |
| CTPE092 | Hybrid Bridgeless DCM SEPIC Rectifier Integrated with a Modified Switched Capacitor Cell   | 2016 |
| CTPE093 | Hybrid Modulation Scheme for a High-Frequency AC-Link Inverter   | 2016 |
| CTPE094 | Improved Adaptive-Series-Virtual-Impedance Control Incorporating Minimum Ripple Point Tracking for Load Converters in DC Systems | 2016 |
| CTPE095 | Improving Loading and Unloading Transient Response of a Voltage Regulator Module Using a Load-Side Auxiliary Gyrator Circuit     | 2016 |
| CTPE096 | Inductive Charger for Electric Vehicle Advanced Modeling and Interoperability Analysis   | 2016 |
| CTPE097 | Interleaved Boundary Conduction Mode vs Continuous Conduction Mode Magnetic Volume Comparison in Power Converters                | 2016 |
| CTPE098 | Interleaved Digital Power Factor Correction Based on the Sliding-Mode Approach   | 2016 |
| CTPE099 | Interleaved SEPIC Power Factor Pre-Regulator Using Coupled Inductors in Discontinuous Conduction Mode with Wide Output Voltage   | 2016 |
| CTPE100 | Isolated Double Step-down DC-DC Converter with Improved ZVS Range and No Transformer Saturation Problem                          | 2016 |
| CTPE101 | <i>LCL</i> Filter Design for Three-phase Two-level Power Factor Correction using Line Impedance Stabilization Network            | 2016 |
| CTPE102 | Model Predictive Based Maximum Power Point Tracking for Grid-tied Photovoltaic Applications Using a Z-Source Inverter            | 2016 |

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|         |  |      |
|---------|--|------|
| CTPE103 | Modeling and Control of a Resonant Dual Active Bridge with a Tuned CLLC Network  | 2016 |
| CTPE104 | Modeling the Output Impedance of a T-Type Power Converter  | 2016 |
| CTPE105 | Morphing Switched-Capacitor Step-Down DC-DC Converters with Variable Conversion Ratio  | 2016 |
| CTPE106 | Multi-input Step-Up Converters Based on the Switched-Diode-Capacitor Voltage Accumulator   | 2016 |
| CTPE107 | New AC-DC Power Factor Correction Architecture Suitable for High-Frequency Operation   | 2016 |
| CTPE108 | Non-Isolated Two-Channel LED Driver with Automatic Current Balance and Zero Voltage Switching  | 2016 |
| CTPE109 | Novel Three Phase Multi-Level Inverter Topology with Symmetrical DC-Voltage Sources  | 2016 |
| CTPE110 | Position Sensorless Control Without Phase Shifter for High-Speed BLDC Motors With Low Inductance and Nonideal Back EMF   | 2016 |
| CTPE111 | Reduced Current Stress Bridgeless Cuk PFC Converter with New Voltage Multiplier Circuit  | 2016 |
| CTPE112 | Secondary-Side-Regulated Soft-Switching Full-Bridge Three-Port Converter Based on Bridgeless Boost Rectifier and Bidirectional Converter for Multiple Energy Interface | 2016 |
| CTPE113 | Series-Parallel Connection of Low-Voltage Sources for Integration of Galvanically Isolated Energy Storage Systems  | 2016 |
| CTPE114 | Simplified Space Vector Modulation Techniques for Multilevel Inverters   | 2016 |
| CTPE115 | Single Phase Cascaded H5 Inverter with Leakage Current Elimination for Transformerless Photovoltaic System   | 2016 |
| CTPE116 | Single-Phase Grid Connected Motor Drive System with DC-link Shunt Compensator and Small DC-link Capacitor  | 2016 |
| CTPE117 | Single-Phase Input Variable-Speed AC Motor System Based on an Electrolytic Capacitor-Less Single-Stage Boost Three-Phase Inverter                                      | 2016 |

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|---------|---|------|
| CTPE118 | Single-Stage AC/DC Single-Inductor Multiple-Output LED Drivers  | 2016 |
| CTPE119 | Single-Stage Bridgeless AC-DC PFC Converter Using a Lossless Passive Snubber and Valley- Switching                  | 2016 |
| CTPE120 | Single-stage Three-phase Differential-mode Buck-Boost Inverters with Continuous Input Current for PV Applications   | 2016 |
| CTPE121 | Sliding Mode Control of PMSG Wind Turbine Based on Enhanced Exponential Reaching Law                                | 2016 |
| CTPE122 | Space Vector PWM With Common-Mode Voltage Elimination for Multiphase Drives   | 2016 |
| CTPE123 | Split-Phase Control: Achieving Complete Soft-Charging Operation of a Dickson Switched-Capacitor Converter           | 2016 |
| CTPE124 | Switched-Coupled-Inductor Quasi-Z-Source Inverter   | 2016 |
| CTPE125 | Switching-Gain Adaptation Current Control for Brushless DC Motors   | 2016 |
| CTPE126 | Three phase converter with galvanic isolation based on loss-free resistors for HB-LED lighting applications         | 2016 |
| CTPE127 | Three-Phase Split-Source Inverter (SSI): Analysis and Modulation  | 2016 |
| CTPE128 | Transformerless Photovoltaic Inverter Based on Interleaving High-Frequency Legs Having Bidirectional Capability     | 2016 |
| CTPE129 | Ultra-capacitor-Battery Hybrid Energy Storage System Based on the Asymmetric Bidirectional Z-Source Topology for EV | 2016 |
| CTPE130 | Unified Digital Current Mode Control Tuning with Near Optimal Recovery in a CCM Buck Converter                      | 2016 |
| CTPE131 | Wide ZVS Range Asymmetric Half-Bridge Converter With Clamp Switch and Diode for High Conversion Efficiency          | 2016 |
| CTPE132 | ZVS of Power MOSFETs Revisited  | 2016 |
| CTPE133 | ZVS-ZCS High Voltage Gain Integrated Boost Converter For DC Microgrid   | 2016 |

## Power Systems

| No.     | Title   | Year |
|---------|---|------|
| CTPS001 | A Hybrid-STATCOM With Wide Compensation Range and Low DC-Link Voltage   | 2016 |
| CTPS002 | A 10 nW–1 $\mu$ W Power Management IC With Integrated Battery Management and Self-Startup for Energy Harvesting Applications                                | 2016 |
| CTPS003 | A Comparative Study on Probabilistic Optimization Methods for Electromagnetic Design  | 2016 |
| CTPS004 | A HYBRID-STATCOM WITH WIDE COMPENSATION RANGE AND LOW DC-LINK VOLTAGE   | 2016 |
| CTPS005 | A LOW CAPACITANCE CASCADED H-BRIDGE MULTI-LEVEL STATCOM   | 2016 |
| CTPS006 | A Novel Multiphase Brushless Power-Split Transmission System for Wind Power Generation  | 2016 |
| CTPS007 | A Novel Proposal to Improve Reliability of Spoke-Type BLDC Motor using Ferrite Permanent Magnet   | 2016 |
| CTPS008 | A Novel Technique for Two-Phase BLDC Motor to Avoid Demagnetization   | 2016 |
| CTPS009 | A Novel Transformer-less Interleaved Four-Phase Step-Down DC Converter With Low Switch Voltage Stress and Automatic Uniform Current-Sharing Characteristics | 2016 |
| CTPS010 | A Peak-Capacitor-Current Pulse-Train-Controlled Buck Converter With Fast Transient Response and a Wide Load Range   | 2016 |
| CTPS011 | A Versatile Unified Power Quality Conditioner Applied to Three-Phase Four-Wire Distribution Systems Using a Dual Control Strategy                           | 2016 |
| CTPS012 | Active Power Control Strategies For Transient Stability Enhancement Of Ac/Dc Grids With Vsc-Hvdc Multi-Terminal Systems                                     | 2016 |
| CTPS013 | ADAPTIVE DC STABILIZER WITH REDUCED DC FAULT CURRENT FOR ACTIVE DISTRIBUTION POWER SYSTEM APPLICATION   | 2016 |

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|         |   |      |
|---------|---|------|
| CTPS014 | Adaptive Neuro fuzzy inference system least mean square based control algorithm for Dstatcom  | 2016 |
| CTPS015 | An enhanced dc voltage droop-control for the VSC-HVDC grid  | 2016 |
| CTPS016 | An Improved Phase-Shifted Carrier Modulation for Modular Multilevel Converter to Suppress the Influence of Fluctuation of Capacitor Voltage | 2016 |
| CTPS017 | An Isolated Topology for Reactive Power Compensation With a Modularized Dynamic-Current Building-Block                                      | 2016 |
| CTPS018 | Analysis And Performance Enhancement Of Vector-Controlled Vsc In Hvdc Links Connected To Very Weak Grids                                    | 2016 |
| CTPS019 | Analysis of Dynamic Unbalanced Magnetic Pull in Induction Motor With Dynamic Eccentricity During Starting Period                            | 2016 |
| CTPS020 | Analytical Solution of the Magnetic Field and EMF Calculation in IronlessBLDC Motor   | 2016 |
| CTPS021 | Applying Model Predictive Control to SMES System in Microgrids for Eddy Current Losses Reduction  | 2016 |
| CTPS022 | Armature Reaction Field and Inductance Calculation of Ironless BLDCMotor  | 2016 |
| CTPS023 | Bidirectional Resonant DC-DC Step-Up Converters for Driving High-Voltage Actuators in Mobile Microrobots                                    | 2016 |
| CTPS024 | Biodegradable Junctionless Transistors With Extremely Simple Structure  | 2016 |
| CTPS025 | Bridge-Type Solid-State Fault Current Limiter Based on AC/DC Reactor  | 2016 |
| CTPS026 | Canonical Model and Design Methodology for LLC DC/DC Converter With Constant Current Operation Capability Under Shorted Load                | 2016 |
| CTPS027 | Closed-Loop Distribution Network by a Midvoltage Flexible HTS DCSystem  | 2016 |
| CTPS028 | COMBINED LMS-LMF BASED CONTROL ALGORITHM OF DSTATCOM FOR POWER QUALITY ENHANCEMENT IN DISTRIBUTION SYSTEM                                   | 2016 |

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|---------|---|------|
| CTPS029 | Connection of Converters to a Low and Medium Power DC Network Using an Inductor Circuit   | 2016 |
| CTPS030 | CONTROL AND ANALYSIS OF THE MODULAR MULTILEVEL DC DE-ICER WITH STATCOM FUNCTIONALITY  | 2016 |
| CTPS031 | CONTROL OF DFIG WIND POWER GENERATORS IN UNBALANCED MICROGRIDS BASED ON INSTANTANEOUS POWER THEORY                                  | 2016 |
| CTPS032 | Control Strategies of Three-Phase Distributed Generation Inverters for Grid Unbalanced Voltage Compensation                         | 2016 |
| CTPS033 | Control Strategy to Maximize the Power Capability of PV Three-Phase Inverters During Voltage Sags                                   | 2016 |
| CTPS034 | COOPERATIVE PLANNING OF RENEWABLE GENERATIONS FOR INTERCONNECTED MICRO GRIDS  | 2016 |
| CTPS035 | Delay-Dependent Stability of Single-Loop Controlled Grid-Connected Inverters with <i>LCL</i> Filters                                | 2016 |
| CTPS036 | Design and Development of an Efficient Multilevel DC/AC Traction Inverter for Railway Transportation Electrification                | 2016 |
| CTPS037 | Design of Dynamic Voltage Restorer and Active Power Filter for Wind Power Systems Subject to Unbalanced and Harmonic Distorted Grid | 2016 |
| CTPS038 | DESIGN OF EXTERNAL INDUCTOR FOR IMPROVING PERFORMANCE OF VOLTAGE CONTROLLED DSTATCOM  | 2016 |
| CTPS039 | Detection of Inter-Turn and Dynamic Eccentricity Faults Using Stator Current Frequency Pattern in IPM-Type BLDC Motors              | 2016 |
| CTPS040 | Development of BLDC Motor-Based Elevator System Suitable for DC Microgrid   | 2016 |
| CTPS041 | DISTRIBUTED NOISE-RESILIENT NETWORKED SYNCHRONY OF ACTIVE DISTRIBUTION SYSTEMS  | 2016 |
| CTPS042 | DROOP-BASED DISTRIBUTED COOPERATIVE CONTROL FOR MICRO GRIDS WITH TIME-VARYING DELAYS  | 2016 |
| CTPS043 | Dual Flying Capacitor Active-Neutral-Point-Clamped Multilevel Converter   | 2016 |



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| CTPS044 | EFFICIENT SINGLE PHASE TRANSFORMER LESS INVERTER FOR GRID-TIED PVG SYSTEM WITH REACTIVE POWER CONTROL                  | 2016 |
| CTPS045 | Experimental Investigation On A Hybrid Series Active Power Compensator To Improve Power Quality Of Typical Households  | 2016 |
| CTPS046 | Fast Model Predictive Control For Multilevel Cascaded H-Bridge Statcom With Polynomial Computation Time                | 2016 |
| CTPS047 | Fast Steady-State Field-Circuit Model for SMPM-BLdc Motors Driven From 120° and 180° Quasi-Square Wave Inverters       | 2016 |
| CTPS048 | Fault-Tolerant Control of Dual Three-Phase Permanent-Magnet Synchronous Machine Drives under Open Phase Faults         | 2016 |
| CTPS049 | Fault-tolerant Inverter for High-speed Low-inductance BLDC Drives in Aerospace Applications                            | 2016 |
| CTPS050 | Frequency-dependent cable modelling for small-signal stability analysis of VSC-HVDC systems                            | 2016 |
| CTPS051 | Full-Bridge Reactive Power Compensator With Minimized-Equipped Capacitor and Its Application to Static Var Compensator | 2016 |
| CTPS052 | Grid-Current-Feedback Active Damping for <i>LCL</i> Resonance in Grid Connected Voltage-Source Converters              | 2016 |
| CTPS053 | Hall-Effect Sensor Fault Detection, Identification, and Compensation in Brushless DC Drives                            | 2016 |
| CTPS054 | Harmonic Profile Injection-Based Hybrid Active Islanding Detection Technique For PV-VSC-Based Microgrid System         | 2016 |
| CTPS055 | HIGH FREQUENCY RESONANCE DAMPING OF DFIG BASED WIND POWER SYSTEM UNDER WEAK NETWORK                                    | 2016 |
| CTPS056 | High-Performance Constant Power Generation in Grid-Connected PV Systems  | 2016 |
| CTPS057 | IMPACT OF SWITCHING HARMONICS ON CAPACITOR CELLS BALANCING IN PHASE-SHIFTED PWM BASED CASCADED H-BRIDGE STATCOM        | 2016 |

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| CTPS058 | Impedance networks and its Application in Power for Electric Traction Systems  | 2016 |
| CTPS059 | Individual Phase Current Control Based on Optimal Zero-Sequence Current Separation for a Star-Connected Cascade STATCOM Under Unbalanced Conditions  | 2016 |
| CTPS060 | Investigation of Forces and Secondary Losses in Linear Induction Motor with the Solid and Laminated Back Iron Secondary for Metro                    | 2016 |
| CTPS061 | Investigation on Dynamic Voltage Restorers With Two DC Links and Series Converters for Three-Phase Four-Wire Systems                                 | 2016 |
| CTPS062 | Limited angle BLDC for scan mirror application in space satellite system   | 2016 |
| CTPS063 | Load Test Analysis of High-Temperature Superconducting Synchronous Motors  | 2016 |
| CTPS064 | Motor Design and Characteristics Comparison of Outer-Rotor-Type BLDC Motor and BLAC Motor Based on Numerical Analysis                                | 2016 |
| CTPS065 | MPC-SVM Method for Vienna Rectifier with PMSG used in Wind Turbine Systems   | 2016 |
| CTPS066 | New Equivalent Circuit of the IPM-type BLDC Motor for Calculation of Shaft Voltage by Considering Electric and Magnetic Fields                       | 2016 |
| CTPS067 | New Topology for DC-DC Converters Used in Fuel Cell-Electric Double Layer Capacitor Hybrid Power Source Systems for Mobile Devices                   | 2016 |
| CTPS068 | OFFSET-FREE DIRECT POWER CONTROL OF DFIG UNDER CONTINUOUS-TIME MODEL PREDICTIVE CONTROL  | 2016 |
| CTPS069 | Online Fault Diagnosis of Motor Bearing via Stochastic-Resonance-Based Adaptive Filter in an Embedded System   | 2016 |
| CTPS070 | On-the-Fly Topology-Morphing Control—Efficiency Optimization Method for LLC Resonant Converters Operating in Wide Input- and/or Output-Voltage Range | 2016 |
| CTPS071 | Optimal Design of a New Interior Permanent Magnet Motor Using a Flared-Shape Arrangement of Ferrite Magnets  | 2016 |

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| CTPS072 | OPTIMAL PLACEMENT OF ENERGY STORAGE DEVICES IN MICROGRIDS VIA STRUCTURE PRESERVING ENERGY FUNCTION                                      | 2016 |
| CTPS073 | Power converters and its application in electric traction systems. Analysis Present and Future Technologies                             | 2016 |
| CTPS074 | Reactive Power and AC Voltage Control of LCC HVDC System with Controllable Capacitors   | 2016 |
| CTPS075 | Real-time Optimization of Automatic Control Systems with Application to BLDC Motor Testrig  | 2016 |
| CTPS076 | RESOLVING POWER QUALITY ISSUES RAISED BY AERODYNAMIC ASPECTS OF WIND TURBINE IN ISOLATED MICROGRIDS USING FUEL CELL/ELECTROLYZER SYSTEM | 2016 |
| CTPS077 | REVIEW OF ACTIVE AND REACTIVE POWER SHARING STRATEGIES IN HIERARCHICAL CONTROLLED MICRO GRIDS   | 2016 |
| CTPS078 | Selective Harmonic Elimination With Groebner Bases and Symmetric Polynomials  | 2016 |
| CTPS079 | Shunt Active Power Filter Based on Cascaded Transformers Coupled with Three-Phase Bridge Converters                                     | 2016 |
| CTPS080 | STATCOM Operation Scheme of the CDSM-MMC During a Pole-to-Pole DC Fault   | 2016 |
| CTPS081 | SYNCHRONOUS POWER CONTROLLER WITH FLEXIBLE DROOP CHARACTERISTICS FOR RENEWABLE POWER GENERATION SYSTEMS                                 | 2016 |
| CTPS082 | Teaching Power Electronics With a Design-Oriented, Project-Based Learning Method at the Technical University of Denmark                 | 2016 |

## Bio Medical

| No.     | Title  | Year |
|---------|--|------|
| CTBM001 | A Circuit Model Of Real Time Human Body Hydration  | 2016 |
| CTBM002 | A Mechanism To Access The Medical Information And A Modeling Approach For Medical Hazards                            | 2016 |
| CTBM003 | A Multi-Signal Acquisition System For Preventive Cardiology With Cuff-Less Bp Measurement Capability                 | 2016 |
| CTBM004 | A Novel Approach for Communication among Blind, Deaf and Dumb People   | 2016 |
| CTBM005 | A Vision-Based Respiration Monitoring System for Passive Airway Resistance Estimation                                | 2016 |
| CTBM006 | A Wearable Device for Monitoring Sweat Rates via Image Analysis  | 2016 |
| CTBM007 | A Wireless Sensor for Real-Time Monitoring of Tensile Force on Sutured Wound Sites                                   | 2016 |
| CTBM008 | Admission Control over Internet of Vehicles attached with Medical sensors for Ubiquitous Healthcare Applications     | 2016 |
| CTBM009 | An Energy Efficient Sensor For Thyroid Monitoring Through The Iot  | 2016 |
| CTBM010 | Autodietary: A Wearable Acoustic Sensor System For Food Intake Recognition In Daily Life                             | 2016 |
| CTBM011 | Automating vector autoregression on electronic patient diary data  | 2016 |
| CTBM012 | Blind User Wearable Audio Assistance for Indoor Navigation Based on Visual Markers and Ultrasonic Obstacle Detection | 2016 |
| CTBM013 | Brain Computer Interface And Arduino microcontroller Family Software Interconnection Solution                        | 2016 |
| CTBM014 | Bsn-Care: A Secure Iot-Based Modern Healthcare System Using Body Sensor Network                                      | 2016 |
| CTBM015 | Detecting Elementary Arm Movements by Tracking Upper Limb Joint Angles with MARG Sensors                             | 2016 |

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|---------|--|------|
| CTBM016 | Detecting Elementary Arm Movements by Tracking Upper Limb Joint Angles with MARG Sensors                                     | 2016 |
| CTBM017 | Development Of A Brain-Computer Interface Based On Visual Stimuli For The Movement Of A Robot Joints                         | 2016 |
| CTBM018 | Estimation Of Circadian Body Temperature Rhythm Based On Heart Rate In Healthy, Ambulatory Subjects                          | 2016 |
| CTBM019 | Low-power wearable ECG monitoring system for multiple-patient remote monitoring  | 2016 |
| CTBM020 | MS-QI: A Modulation Spectrum-Based ECG Quality Index for Telehealth Applications   | 2016 |
| CTBM021 | Real-time Classification of Hand Motions using Ultrasound Imaging of Forearm Muscles   | 2016 |
| CTBM022 | Real-Time Patient Health Monitoring And Alarming Using Wireless-Sensor-Network   | 2016 |
| CTBM023 | Robotic Automated External Defibrillator Ambulance For Emergency Medical Service In Smart Cities                             | 2016 |
| CTBM024 | Secure Management Of Low Power Fitness Trackers  | 2016 |
| CTBM025 | Sensing Method Of Patient's Body Movement Without Attaching Sensors On The Patient's Body                                    | 2016 |
| CTBM026 | Simple ambulatory gait monitoring system using a single IMU for various daily-life gait activities                           | 2016 |
| CTBM027 | Skin Temperature Prediction In Lower Limb Prostheses   | 2016 |
| CTBM028 | Smart Belt A wearable device for managing abdominal obesity  | 2016 |
| CTBM029 | Smart Brief Monitoring System For Assisted Living  | 2016 |
| CTBM030 | Smart Real-Time Healthcare Monitoring and Tracking System using GSMGPS Technologies  | 2016 |
| CTBM031 | Using off-the-shelf medical devices for biomedical signal monitoring in a telemedicine system for emergency medical services | 2016 |
| CTBM032 | Wearable Camera- and Accelerometer-based Fall Detection on Portable Devices  | 2016 |

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|--------------------------------|---|------|
| CTBM033                        | Wearable Noncontact Armband for Mobile ECG Monitoring System  | 2016 |
| <b>BIOMEDICAL USING MATLAB</b> |   |      |
| CTBM034                        | A 3-D Riesz-Covariance Texture Model for Prediction of Nodule Recurrence in Lung CT   | 2016 |
| CTBM035                        | Active Learning Methods for Efficient Hybrid Biophysical Variable Retrieval   | 2016 |
| CTBM036                        | Automated Diagnosis of Glaucoma Using Empirical Wavelet Transform and Correntropy Features Extracted from Fundus Images               | 2016 |
| CTBM037                        | Brain Tumor Segmentation Using Convolutional Neural Networks in MRI Images  | 2016 |
| CTBM038                        | Carotid Artery Wall Segmentation in Multispectral MRI by Coupled Optimal Surface Graph Cuts.  | 2016 |
| CTBM039                        | Combining Generative and Discriminative Representation Learning for Lung CT Analysis With Convolutional Restricted Boltzmann Machines | 2016 |
| CTBM040                        | Compressive Deconvolution in Medical Ultrasound Imaging   | 2016 |
| CTBM041                        | Computer-Assisted Screw Size and Insertion Trajectory Planning for Pedicle Screw Placement Surgery                                    | 2016 |
| CTBM042                        | Confident Care: A Clinical Decision Support System for Personalized Breast Cancer Screening   | 2016 |
| CTBM043                        | Deformable Registration of Biomedical Images using 2D Hidden Markov Models  | 2016 |
| CTBM044                        | Fast Automatic Segmentation of Kidney Based on Modified AAM and Random Forest   | 2016 |
| CTBM045                        | First Robotic SPECT for Minimally Invasive Sentinel Lymph Node Mapping  | 2016 |
| CTBM046                        | Fusion of Quantitative Image and Genomic Biomarkers to Improve Prognosis Assessment of Early Stage Lung Cancer Patients               | 2016 |

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|---------|--|------|
| CTBM047 | Histopathological Image Classification Using Discriminative Feature-Oriented Dictionary Learning   | 2016 |
| CTBM048 | Improved patch based automated liver lesion classification by separate analysis of the interior and boundary regions                     | 2016 |
| CTBM049 | Improving Computer-Aided Detection Using Convolutional Neural Networks and Random View Aggregation                                       | 2016 |
| CTBM050 | Interactive Cell Segmentation Based on Active and Semi-Supervised Learning   | 2016 |
| CTBM051 | Kernel Bundle Diffeomorphic Image Registration Using Stationary Velocity Fields and Wendland Basis Functions                             | 2016 |
| CTBM052 | Locality Sensitive Deep Learning for Detection and Classification of Nuclei in Routine Colon Cancer Histology Images                     | 2016 |
| CTBM053 | Metaheuristics for specialization of a segmentation algorithm for ultrasound images  | 2016 |
| CTBM054 | MRI Based Bayesian Personalization of a Tumor Growth Model   | 2016 |
| CTBM055 | Myocardial Infarct Segmentation From Magnetic Resonance Images for Personalized Modeling of Cardiac Electrophysiology                    | 2016 |
| CTBM056 | Optic Disc Boundary and Vessel Origin Segmentation of Fundus Images  | 2016 |
| CTBM057 | Real-Time Automatic Artery Segmentation, Reconstruction and Registration for Ultrasound-Guided Regional Anaesthesia of the Femoral Nerve | 2016 |
| CTBM058 | Red Lesion Detection Using Dynamic Shape Features for Diabetic Retinopathy Screening   | 2016 |
| CTBM059 | Robust Edge-Stop Functions for Edge-Based Active Contour Models in Medical Image Segmentation  | 2016 |

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| CTBM060 | Robust Sclera Recognition System With Novel Sclera Segmentation and Validation Techniques                | 2016 |
| CTBM061 | Visualization of Tumor Response to Neoadjuvant Therapy for Rectal Carcinoma by Nonlinear Optical Imaging | 2016 |





## Image Processing

| No.     | Title  | Year |
|---------|--|------|
| CTIP001 | 2D Orthogonal Locality Preserving Projection for Image Denoising   | 2016 |
| CTIP002 | 2D Segmentation Using a Robust Active Shape Model With the EM Algorithm  | 2016 |
| CTIP003 | A Completely Blind Video Integrity Oracle  | 2016 |
| CTIP004 | A Compressive Multi-Frequency Linear Sampling Method for Underwater Acoustic Imaging                               | 2016 |
| CTIP005 | A DCT-based Total JND Profile for Spatio-Temporal and Foveated Masking Effects                                     | 2016 |
| CTIP006 | A Decomposition Framework for Image Denoising Algorithms   | 2016 |
| CTIP007 | A Feature Learning and Object Recognition Framework for Underwater Fish Images                                     | 2016 |
| CTIP008 | A Hands-on Application-Based Tool for STEM Students to Understand Differentiation                                  | 2016 |
| CTIP009 | A Hybrid of Local and Global Saliencies for Detecting Image Salient Region and Appearance                          | 2016 |
| CTIP010 | A Manifold Alignment Approach for Hyperspectral Image Visualization With Natural Color                             | 2016 |
| CTIP011 | A Novel Vision-Based Adaptive Scanning for the Compression of Remote Sensing Images                                | 2016 |
| CTIP012 | A Security-Enhanced Alignment-Free Fuzzy Vault-Based Fingerprint Cryptosystem Using Pair-Polar Minutiae Structures | 2016 |
| CTIP013 | A Signal Decomposition Model-Based Bayesian Framework for ECG Components Separation                                | 2016 |
| CTIP014 | ACE–An Effective Anti-forensic Contrast Enhancement Technique  | 2016 |
| CTIP015 | Adaptive Pairing Reversible Watermarking   | 2016 |
| CTIP016 | Adaptive Part-Level Model Knowledge Transfer for Gender  | 2016 |

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|---------|---|------|
| CTIP017 | Adaptive Steganalysis Based on Embedding Probabilities of Pixels  | 2016 |
| CTIP018 | Aging Face Recognition: A Hierarchical Learning Model Based on Local Patterns Selection                       | 2016 |
| CTIP019 | Analyzing the Effect of JPEG Compression on Local Variance of Image Intensity                                 | 2016 |
| CTIP020 | Antipodally Invariant Metrics for Fast Regression-Based Super-Resolution                                      | 2016 |
| CTIP021 | Architecture-Driven Level Set Optimization: From Clustering to Subpixel Image Segmentation                    | 2016 |
| CTIP022 | BIT: Biologically Inspired Tracker  | 2016 |
| CTIP023 | Blind Quality Assessment of Tone-Mapped Images Via Analysis of Information, Naturalness, and Structure        | 2016 |
| CTIP024 | CASAIR: Content and Shape-Aware Image Retargeting and Its Applications  | 2016 |
| CTIP025 | CCR: Clustering and Collaborative Representation for Fast Single Image Super-Resolution                       | 2016 |
| CTIP026 | Class-wise Sparse and Collaborative Patch Representation for Face Recognition                                 | 2016 |
| CTIP027 | Cloud Belief Rule Base Model for Network Security Situation Prediction  | 2016 |
| CTIP028 | Color Image Denoising via Discriminatively Learned Iterative Shrinkage  | 2016 |
| CTIP029 | Complementary Cohort Strategy for Multimodal Face Pair Matching   | 2016 |
| CTIP030 | Comprehensive and Practical Vision System for Self-Driving Vehicle Lane-Level Localization                    | 2016 |
| CTIP031 | Compression of 3D Point Clouds Using a Region-Adaptive Hierarchical Transform                                 | 2016 |
| CTIP032 | Compressive Sensing Image Restoration using Adaptive Curvelet Thresholding and Nonlocal Sparse Regularization | 2016 |
| CTIP033 | Consistent Coding Scheme for Single-Image Super-Resolution Via Independent Dictionaries                       | 2016 |
| CTIP034 | Content-Adaptive Steganography by Minimizing Statistical Detectability  | 2016 |

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|---------|---|------|
| CTIP035 | Contrast Driven Elastica for Image Segmentation   | 2016 |
| CTIP036 | Contrast Enhancement by Nonlinear Diffusion Filtering   | 2016 |
| CTIP037 | Cross-View Action Recognition via Transferable Dictionary Learning  | 2016 |
| CTIP038 | DCT Inspired Feature Transform for Image Retrieval and Reconstruction   | 2016 |
| CTIP039 | Deep Ranking for Person Re-Identification via Joint Representation Learning   | 2016 |
| CTIP040 | Dense and Sparse Reconstruction Error Based Saliency Descriptor   | 2016 |
| CTIP041 | Depth Estimation Using a Sliding Camera   | 2016 |
| CTIP042 | Detection of Moving Objects Using Fuzzy Color Difference Histogram Based Background Subtraction                         | 2016 |
| CTIP043 | Dimension Reduction With Extreme Learning Machine   | 2016 |
| CTIP044 | Discriminant Incoherent Component Analysis  | 2016 |
| CTIP045 | Discriminative Semantic Subspace Analysis for Relevance Feedback  | 2016 |
| CTIP046 | Dynamic Facial Expression Recognition with Atlas Construction and Sparse Representation                                 | 2016 |
| CTIP047 | Effective Active Skeleton Representation for Low Latency Human Action Recognition                                       | 2016 |
| CTIP048 | Efficient Vessel Feature Detection for Endoscopic Image Analysis  | 2016 |
| CTIP049 | Electrocardiogram signal denoising using non-local wavelet transform domain filtering                                   | 2016 |
| CTIP050 | Enhancing Sketch-Based Image Retrieval by Re-ranking and Relevance Feedback   | 2016 |
| CTIP051 | Face Aging Effect Simulation Using Hidden Factor Analysis Joint Sparse Representation                                   | 2016 |
| CTIP052 | Facial Sketch Synthesis Using Two-dimensional Direct Combined Model-based Face-Specific Markov Network                  | 2016 |
| CTIP053 | Fast and Accurate Target Detection Based on Multiscale Saliency and Active Contour Model for High-Resolution SAR Images | 2016 |

CAEL TECHNOSOFT - AN INDUSTRIAL PROJECT CENTER

|         |   |      |
|---------|---|------|
| CTIP054 | Fast and Provably Accurate Bilateral Filtering  | 2016 |
| CTIP055 | Fast Translation Invariant Multiscale Image Denoising   | 2016 |
| CTIP056 | Feature and Region Selection for Visual Learning  | 2016 |
| CTIP057 | Fingerprint Liveness Detection From Single Image Using Low Level Features and Shape Analysis                    | 2016 |
| CTIP058 | FRESH—FRI-Based Single-Image Super-Resolution Algorithm   | 2016 |
| CTIP059 | Game Theory and Adaptive Steganography  | 2016 |
| CTIP060 | Guided Image Contrast Enhancement Based on Retrieved Images in Cloud  | 2016 |
| CTIP061 | HD Qatari ANPR System   | 2016 |
| CTIP062 | Holons Visual Representation for Image Retrieval  | 2016 |
| CTIP063 | Human Visual System-Based Saliency Detection for High Dynamic Range Content                                     | 2016 |
| CTIP064 | Hyperspectral Image Classification via JCR and SVM Models With Decision Fusion                                  | 2016 |
| CTIP065 | Illuminant-Based Transformed Spaces for Image Forensics   | 2016 |
| CTIP066 | Image Deblurring via Enhanced Low Rank Prior  | 2016 |
| CTIP067 | Image registration based on autocorrelation of local structure  | 2016 |
| CTIP068 | Image Segmentation Using Parametric Contours With Free Endpoints  | 2016 |
| CTIP069 | Interactive Image Segmentation Using Adaptive Constraint Propagation  | 2016 |
| CTIP070 | Iris Recognition Based on Human-Interpretable Features  | 2016 |
| CTIP071 | Joint Low-Rank and Sparse Principal Feature Coding for Enhanced Robust Representation and Visual Classification | 2016 |
| CTIP072 | Layer-Based Approach for Image Pair Fusion  | 2016 |
| CTIP073 | Learn Sparse Dictionaries for Edit Propagation  | 2016 |
| CTIP074 | Learning of Multimodal Representations With Random Walks on the Click Graph                                     | 2016 |

CAEL TECHNOSOFT - AN INDUSTRIAL PROJECT CENTER

|         |   |      |
|---------|---|------|
| CTIP075 | Local Spectral Component Decomposition for Multi-Channel Image Denoising  | 2016 |
| CTIP076 | Local-Gravity-Face ( <i>LG-face</i> ) for Illumination-Invariant and Heterogeneous Face Recognition   | 2016 |
| CTIP077 | Lossless Compression of JPEG Coded Photo Collections  | 2016 |
| CTIP078 | Low-Delay Rate Control for Consistent Quality Using Distortion-Based Lagrange Multiplier  | 2016 |
| CTIP079 | Microwave Unmixing With Video Segmentation for Inferring Broadleaf and Needleleaf Brightness Temperatures and Abundances From Mixed Forest Observations | 2016 |
| CTIP080 | Misaligned Image Integration With Local Linear Model  | 2016 |
| CTIP081 | Multiscale Edge Detection Using a Finite Element Framework for Hexagonal Pixel-Based Images   | 2016 |
| CTIP082 | Multivideo Object Cosegmentation for Irrelevant Frames Involved Videos  | 2016 |
| CTIP083 | Multi-View Object Extraction With Fractional Boundaries   | 2016 |
| CTIP084 | Multi-Viewpoint Panorama Construction with Wide-Baseline Images   | 2016 |
| CTIP085 | Noise Power Spectrum Measurements in Digital Imaging With Gain Nonuniformity Correction   | 2016 |
| CTIP086 | Nonconvex Nonsmooth Low Rank Minimization via Iteratively Reweighted Nuclear Norm   | 2016 |
| CTIP087 | Non-Local Auto-Encoder With Collaborative Stabilization for Image Restoration   | 2016 |
| CTIP088 | OCR Based Feature Extraction and Template Matching Algorithms for Qatari Number Plate   | 2016 |
| CTIP089 | One-Class Writer-Independent Offline Signature Verification Using Feature Dissimilarity Thresholding  | 2016 |
| CTIP090 | Optimization and Analysis of MPI Collective Communication on Fat-Tree Networks  | 2016 |
| CTIP091 | Patch-Based Video Denoising With Optical Flow Estimation  | 2016 |
| CTIP092 | Perceptual Visual Security Index Based on Edge and Texture Similarities   | 2016 |

CAEL TECHNOSOFT - AN INDUSTRIAL PROJECT CENTER

|         |  |      |
|---------|--|------|
| CTIP093 | PiCode: a New Picture-Embedding 2D Barcode   | 2016 |
| CTIP094 | Post processing of Compressed Images via Sequential Denoising  | 2016 |
| CTIP095 | Reversible Data Hiding in Encrypted Image with Distributed Source Encoding                           | 2016 |
| CTIP096 | Robust Blur Kernel Estimation for License Plate Images From Fast Moving Vehicles                     | 2016 |
| CTIP097 | Robust Edge-Stop Functions for Edge-Based Active Contour Models in Medical Image Segmentation        | 2016 |
| CTIP098 | Robust Image Hashing With Ring Partition and Invariant Vector Distance                               | 2016 |
| CTIP099 | Robust Iris Segmentation Method Based on a New Active Contour Force With a Noncircular Normalization | 2016 |
| CTIP100 | Robust multi-focus image fusion using multi-task sparse representation and spatial context           | 2016 |
| CTIP101 | Robust Point Set Matching for Partial Face Recognition   | 2016 |
| CTIP102 | Rotation Invariant Texture Description Using Symmetric Dense Microblock Difference                   | 2016 |
| CTIP103 | Salient Region Detection via High-Dimensional Color Transform and Local Spatial Support              | 2016 |
| CTIP104 | Secure magnetic resonance image transmission and tumor detection techniques                          | 2016 |
| CTIP105 | Secure Reversible Image Data Hiding over Encrypted Domain via Key Modulation                         | 2016 |
| CTIP106 | Single image dehazing via multi-scale gradient domain contrast enhancement                           | 2016 |
| CTIP107 | Single-Image Super-Resolution by Subdictionary Coding and Kernel Regression                          | 2016 |
| CTIP108 | Spatial-Spectral Hyperspectral Image Classification Using Random Multiscale Representation           | 2016 |
| CTIP109 | Supervised Matrix Factorization Hashing for Cross-Modal Retrieval                                    | 2016 |

CAEL TECHNOSOFT - AN INDUSTRIAL PROJECT CENTER

|         |  |      |
|---------|--|------|
| CTIP110 | Supervised Variational Model With Statistical Inference and Its Application in Medical Image Segmentation        | 2016 |
| CTIP111 | Surveillance Video Synopsis via Scaling Down Objects   | 2016 |
| CTIP112 | Suspecting Less and Doing Better: New Insights on Palmprint Identification for Faster and More Accurate Matching | 2016 |
| CTIP113 | Tasking on Natural Statistics of Infrared Images   | 2016 |
| CTIP114 | Texture-Independent Long-Term Tracking Using Virtual Corners   | 2016 |
| CTIP115 | The application of NDT algorithm in sonar image processing   | 2016 |
| CTIP116 | Unsupervised Visual Hashing with Semantic Assistant for Content-based Image Retrieval                            | 2016 |
| CTIP117 | Weakly Supervised Fine-Grained Categorization With Part-Based Image Representation                               | 2016 |

**VLSI**

| No.   | Title  | Year |
|-------|--|------|
| CTV01 | A 0.1–3.5-GHz Duty-Cycle Measurement and Correction Technique in 130-nm CMOS   | 2016 |
| CTV02 | A 3-D CPU-FPGA-DRAM Hybrid Architecture for Low-Power Computation  | 2016 |
| CTV03 | A 520k (18 900, 17 010) Array Dispersion LDPC Decoder Architectures for NAND-Flash Memory  | 2016 |
| CTV04 | A Cellular Network Architecture With Polynomial Weight Functions   | 2016 |
| CTV05 | A Configurable Parallel Hardware Architecture for Efficient Integral Histogram Image Computing                                       | 2016 |
| CTV06 | A Dynamically Reconfigurable Multi-ASIP Architecture for Multi-standard and Multimode Turbo Decoding                                 | 2016 |
| CTV07 | A Fast Fault-Tolerant Architecture for Sauvola Local Image Thresholding Algorithm Using Stochastic Computing                         | 2016 |
| CTV08 | A Fast-Acquisition All-Digital Delay-Locked Loop Using a Starting-Bit Prediction Algorithm for the Successive-Approximation Register | 2016 |
| CTV09 | A Fast-Transient Wide-Voltage-Range Digital-Controlled Buck Converter With Cycle-Controlled DPWM                                     | 2016 |
| CTV10 | A Fully Digital Front-End Architecture for ECG Acquisition System With 0.5 V Supply  | 2016 |
| CTV11 | A High Throughput List Decoder Architecture for Polar Codes  | 2016 |
| CTV12 | A High-Performance FIR Filter Architecture for Fixed and Reconfigurable Applications   | 2016 |
| CTV13 | A High-Speed FPGA Implementation of an RSD-Based ECC Processor   | 2016 |
| CTV14 | A High-Throughput Hardware Design of a One-Dimensional SPIHT Algorithm   | 2016 |
| CTV15 | A Low-Power Broad-Bandwidth Noise Cancellation VLSI Circuit Design for In-Ear Headphones   | 2016 |



CAEL TECHNOSOFT - AN INDUSTRIAL PROJECT CENTER

|       |   |      |
|-------|---|------|
| CTV16 | A Low-Power Robust Easily Cascaded PentaMTJ-Based Combinational and Sequential Circuits   | 2016 |
| CTV17 | A Mixed-Decimation MDF Architecture for Radix-2K Parallel FFT   | 2016 |
| CTV18 | A New Binary-Halved Clustering Method and ERT Processor for ASSR System   | 2016 |
| CTV19 | A New CDMA Encoding/Decoding Method for on-Chip Communication Network   | 2016 |
| CTV20 | A New Optimal Algorithm for Energy Saving in Embedded System With Multiple Sleep Modes  | 2016 |
| CTV21 | A New Parallel VLSI Architecture for Real-Time Electrical Capacitance Tomography  | 2016 |
| CTV22 | A Normal I/O Order Radix-2 FFT Architecture to Process Twin Data Streams for MIMO   | 2016 |
| CTV23 | A Novel Quantum-Dot Cellular Automata X-bit $\times$ 32-bit SRAM  | 2016 |
| CTV24 | A Performance Degradation Tolerable Cache Design by Exploiting Memory Hierarchies   | 2016 |
| CTV25 | A Real-Time Network-on-Chip Architecture With an Efficient GALS Implementation  | 2016 |
| CTV26 | A Robust Energy/Area-Efficient Forwarded-Clock Receiver With All-Digital Clock and Data Recovery in 28-nm CMOS for High-Density Interconnects | 2016 |
| CTV27 | A Single-Ended With Dynamic Feedback Control 8T Subthreshold SRAM Cell  | 2016 |
| CTV28 | A Single-Stage Low-Dropout Regulator With a Wide Dynamic Range for Generic Applications   | 2016 |
| CTV29 | A Systematic Design Methodology of Asynchronous SAR AD  | 2016 |
| CTV30 | Algorithm and Architecture of Configurable Joint Detection and Decoding for MIMO Wireless Communications With Convolution Codes               | 2016 |
| CTV31 | An Add-On Type Real-Time Jitter Tolerance Enhancer for Digital Communication Receivers  | 2016 |

CAEL TECHNOFT - AN INDUSTRIAL PROJECT CENTER

|       |   |      |
|-------|---|------|
| CTV32 | An All-Digital Approach to Supply Noise Cancellation in Digital Phase-Locked Loop   | 2016 |
| CTV33 | An Efficient Single and Double-Adjacent Error Correcting Parallel Decoder for the (24,12) Extended Golay Code   | 2016 |
| CTV34 | Area-Aware Cache Update Trackers for Post silicon Validation  | 2016 |
| CTV35 | Code Compression for Embedded Systems Using Separated Dictionaries  | 2016 |
| CTV36 | Concept, Design, and Implementation of Reconfigurable CORDIC  | 2016 |
| CTV37 | Design and FPGA Implementation of a Reconfigurable 1024-Channel Channelization Architecture for SDR Application   | 2016 |
| CTV38 | Design and Implementation of High-Speed All-Pass Transformation-Based Variable Digital Filters by Breaking the Dependence of Operating Frequency on Filter Order        | 2016 |
| CTV39 | Design of a CMOS System-on-Chip for Passive, Near-Field Ultrasonic Energy Harvesting and Back-Telemetry   | 2016 |
| CTV40 | Design of a Network of Digital Sensor Macros for Extracting Power Supply Noise Profile in SoCs  | 2016 |
| CTV41 | Design of Modified Second-Order Frequency Transformations Based Variable Digital Filters With Large Cutoff Frequency Range and Improved Transition Band Characteristics | 2016 |
| CTV42 | Design of Silicon Photonic Interconnect ICs in 65-nm CMOS Technology  | 2016 |
| CTV43 | Designing Tunable Subthreshold Logic Circuits Using Adaptive Feedback Equalization  | 2016 |
| CTV44 | Dual-Calibration Technique for Improving Static Linearity of Thermometer DACs for I/O   | 2016 |
| CTV45 | Efficiency Enablers of Lightweight SDR for MIMO Baseband Processing   | 2016 |
| CTV46 | Efficient Dynamic Virtual Channel Organization and Architecture for NoC Systems   | 2016 |
| CTV47 | Efficient Synchronization for Distributed Embedded Multiprocessors  | 2016 |

CAEL TECHNOOSOFT - AN INDUSTRIAL PROJECT CENTER

|       |   |      |
|-------|---|------|
| CTV48 | EMDBAM: A Low-Power Dual Bit Associative Memory with Match Error and Mask Control   | 2016 |
| CTV49 | Energy-Efficient Floating-Point MFCC Extraction Architecture for Speech Recognition Systems                                       | 2016 |
| CTV50 | Enhanced Wear-Rate Leveling for PRAM Lifetime Improvement Considering Process Variation   | 2016 |
| CTV51 | Error Resilient and Energy Efficient MRF Message-Passing-Based Stereo Matching  | 2016 |
| CTV52 | Exploiting Intracell Bit-Error Characteristics to Improve Min-Sum LDPC Decoding for MLC NAND Flash-Based Storage in Mobile Device | 2016 |
| CTV53 | Fault Tolerant Parallel FFTs Using Error Correction Codes and Parseval Checks   | 2016 |
| CTV54 | FCUDA-NoC : A Scalable and Efficient Network-on-Chip Implementation for the CUDA-to-FPGA Flow                                     | 2016 |
| CTV55 | Fixed-Point Computing Element Design for Transcendental Functions and Primary Operations in Speech Processing                     | 2016 |
| CTV56 | Flexible DSP Accelerator Architecture Exploiting Carry-Save Arithmetic  | 2016 |
| CTV57 | Flexible ECC Management for Low-Cost Transient Error Protection of Last-Level Caches  | 2016 |
| CTV58 | Floating-Point Butterfly Architecture Based on Binary Signed-Digit Representation   | 2016 |
| CTV59 | Frequency-Boost Jitter Reduction for Voltage-Controlled Ring Oscillators  | 2016 |
| CTV60 | Full-Swing Local Bitline SRAM Architecture Based on the 22-nm FinFET Technology for Low-Voltage Operation                         | 2016 |
| CTV61 | Glitch Energy Reduction and SFDR Enhancement Techniques for Low-Power Binary-Weighted Current-Steering DAC                        | 2016 |
| CTV62 | GPU-Accelerated Parallel Sparse LU Factorization Method for Fast Circuit Analysis   | 2016 |
| CTV63 | Graph-Based Transistor Network Generation Method for Supergate Design   | 2016 |

CAEL TECHNOOSOFT - AN INDUSTRIAL PROJECT CENTER

|       |   |      |
|-------|---|------|
| CTV64 | Hardware and Energy-Efficient Stochastic LU Decomposition Scheme for MIMO Receivers                             | 2016 |
| CTV65 | High-Performance NB-LDPC Decoder With Reduction of Message Exchange   | 2016 |
| CTV66 | High-Performance Pipelined Architecture of Elliptic Curve Scalar Multiplication Over GF(2 <sup>m</sup> )        | 2016 |
| CTV67 | High-Speed and Energy-Efficient Carry Skip Adder Operating Under a Wide Range of Supply Voltage Levels          | 2016 |
| CTV68 | High-Speed, Low-Power, and Highly Reliable Frequency Multiplier for DLL-Based Clock Generator                   | 2016 |
| CTV69 | Hybrid LUT/Multiplexer FPGA Logic Architectures   | 2016 |
| CTV70 | Implementing Minimum-Energy-Point Systems With Adaptive Logic   | 2016 |
| CTV71 | Incorporating Process Variations Into SRAM Electromigration Reliability Assessment Using Atomic Flux Divergence | 2016 |
| CTV72 | In-Field Test for Permanent Faults in FIFO Buffers of NoC Routers   | 2016 |
| CTV73 | Input-Based Dynamic Reconfiguration of Approximate Arithmetic Units for Video Encoding                          | 2016 |
| CTV74 | Integrated Floating-Gate Programming Environment for System-Level ICs   | 2016 |
| CTV75 | Knowledge-Based Neural Network Model for FPGA Logical Architecture Development                                  | 2016 |
| CTV76 | Low-Cost High-Performance VLSI Architecture for Montgomery Modular Multiplication                               | 2016 |
| CTV77 | Low-Energy Power-ON-Reset Circuit for Dual Supply SRAM  | 2016 |
| CTV78 | Low-Power ECG-Based Processor for Predicting Ventricular Arrhythmia   | 2016 |
| CTV79 | Low-Power FPGA Design Using Memoization-Based Approximate Computing   | 2016 |
| CTV80 | Low-Power Split-Radix FFT Processors Using Radix-2 Butterfly Units  | 2016 |
| CTV81 | Low-Power System for Detection of Symptomatic Patterns in Audio Biological Signals                              | 2016 |

CAEL TECHNOLOGIES - AN INDUSTRIAL PROJECT CENTER

|       |   |      |
|-------|---|------|
| CTV82 | Low-Power Variation-Tolerant Nonvolatile Lookup Table Design                              | 2016 |
| CTV83 | Low-Power/Cost RNS Comparison via Partitioning the Dynamic Range                          | 2016 |
| CTV84 | LUT Optimization for Distributed Arithmetic-Based Block Least Mean Square Adaptive Filter | 2016 |



## Data Mining

| No.    | Title   | Year |
|--------|---|------|
| CTDM01 | A Comprehensive Study on Willingness Maximization for Social Activity Planning with Quality Guarantee | 2016 |
| CTDM02 | A Reversible Data Hiding Scheme Based on Code Division Multiplexing                                   | 2016 |
| CTDM03 | A Survey on Trajectory Data Mining: Techniques and Applications                                       | 2016 |
| CTDM04 | Automatically Mining Facets for Queries from Their Search Results                                     | 2016 |
| CTDM05 | Automatically Mining Facets for Queries from Their Search Results                                     | 2016 |
| CTDM06 | Classification-based Mining of Reusable Components on Software Product Lines                          | 2016 |
| CTDM07 | Computing Tools and Techniques for Emergency Response   | 2016 |
| CTDM08 | Cross-Platform Identification of Anonymous Identical Users in Multiple Social Media Networks          | 2016 |
| CTDM09 | Cyberbullying Detection based on Semantic-Enhanced Marginalized Denoising Auto-Encoder                | 2016 |
| CTDM10 | DeyPoS: Deduplicatable Dynamic Proof of Storage for Multi-User Environment                            | 2016 |
| CTDM11 | Efficient Algorithms for Mining Top-K High Utility Itemsets   | 2016 |
| CTDM12 | Extracting Cross-Ontology Weighted Association Rules from Gene Ontology Annotations                   | 2016 |
| CTDM13 | Fault Diagnosis of Multimode Processes Based on Similarities  | 2016 |
| CTDM14 | Location Aware Keyword Query Suggestion Based on Document Proximity                                   | 2016 |
| CTDM15 | Mining Graphs for Understanding Time-Varying Volumetric Data  | 2016 |
| CTDM16 | Mining Health Examination Records — A Graph-based Approach  | 2016 |
| CTDM17 | Mining User-Aware Rare Sequential Topic Patterns in Document Streams                                  | 2016 |

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|        |   |      |
|--------|---|------|
| CTDM18 | Mining User-Aware Rare Sequential Topic Patterns in Document Streams                      | 2016 |
| CTDM19 | Model of human knowledge extraction for a KBS using reasoning cases                       | 2016 |
| CTDM20 | Object Discovery: Soft Attributed Graph Mining  | 2016 |
| CTDM21 | Online Ensemble Learning of Data Streams with Gradually Evolved Classes                   | 2016 |
| CTDM22 | Pattern Based Sequence Classification   | 2016 |
| CTDM23 | Pattern mining in linked data by edge-labeling  | 2016 |
| CTDM24 | Predicting Student Performance Using Personalized Analytics                               | 2016 |
| CTDM25 | Privacy-Preserving-Outsourced Association Rule Mining on Vertically Partitioned Databases | 2016 |
| CTDM26 | Rating Prediction based on Social Sentiment from Textual Reviews                          | 2016 |
| CTDM27 | Resolving Multi-Party Privacy Conflicts in Social Media                                   | 2016 |
| CTDM28 | Reversible Data Hiding in Encrypted Images With Distributed Source Encoding               | 2016 |
| CTDM29 | Scalable Semi-Supervised Learning by Efficient Anchor Graph Regularization                | 2016 |
| CTDM30 | Secure Reversible Image Data Hiding Over Encrypted Domain via Key Modulation              | 2016 |
| CTDM31 | Top-k Dominating Queries on Incomplete Data   | 2016 |
| CTDM32 | User Preference Learning for Online Social Recommendation                                 | 2016 |

## Cloud Computing

| No.    | Title   | Year |
|--------|---|------|
| CTCC06 | A Dynamical and Load-Balanced Flow Scheduling Approach for Big Data Centers in Clouds Systems                         | 2016 |
| CTCC07 | A Modified Hierarchical Attribute-Based Encryption Access Control Method for Mobile Cloud Computing                   | 2016 |
| CTCC05 | A Secure and Dynamic Multi-Keyword Ranked Search Scheme over Encrypted Cloud Data                                     | 2016 |
| CTCC04 | A Secure Anti-Collusion Data Sharing Scheme   | 2016 |
| CTCC08 | AMTS: Adaptive multi-objective task scheduling strategy in cloud computing  | 2016 |
| CTCC09 | An anomalous behavior detection model in cloud computing  | 2016 |
| CTCC10 | An Efficient File Hierarchy Attribute-Based Encryption Scheme in Cloud Computing                                      | 2016 |
| CTCC11 | An Efficient Privacy-Preserving Ranked Keyword Search Method  | 2016 |
| CTCC12 | Analysis of classical encryption techniques in cloud computing  | 2016 |
| CTCC13 | Attribute-Based Data Sharing Scheme Revisited in Cloud Computing  | 2016 |
| CTCC14 | CDA Generation and Integration for Health Information Exchange Based on Cloud   | 2016 |
| CTCC15 | CloudArmor: Supporting Reputation-Based Trust Management for Cloud Services   | 2016 |
| CTCC16 | Conditional Identity-Based Broadcast Proxy Re-Encryption and Its Application to Cloud Email                           | 2016 |
| CTCC03 | Conjunctive Keyword Search With Designated Tester and Timing Enabled Proxy Re-Encryption Function for E-Health Clouds | 2016 |
| CTCC02 | DeyPoS Deduplicatable Dynamic Proof of Storage for Multi-User Environments  | 2016 |



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|        |  |      |
|--------|--|------|
| CTCC01 | Dual-Server Public-Key Encryption With Keyword Search for Secure Cloud Storage   | 2016 |
| CTCC17 | Dynamic and Public Auditing with Fair Arbitration for Cloud Data   | 2016 |
| CTCC18 | Dynamic and Public Auditing with Fair Arbitration for Cloud Data   | 2016 |
| CTCC19 | Dynamic Operations of Cloud Radio Access Networks (C-RAN) for Mobile Cloud Computing   | 2016 |
| CTCC20 | Dynamic Resource Partitioning for Heterogeneous Multi-Core-Based Cloud Computing in Smart Cities                                   | 2016 |
| CTCC21 | Encrypted Data Management with Deduplication in Cloud Computing  | 2016 |
| CTCC22 | Energy-efficient Adaptive Resource Management for Real-time Vehicular Cloud Services   | 2016 |
| CTCC23 | Identity-Based Proxy-Oriented Data Uploading and Remote Data Integrity Checking in Public Cloud                                    | 2016 |
| CTCC24 | Model-Driven Development Patterns for Mobile Services in Cloud of Things   | 2016 |
| CTCC25 | Online Resource Scheduling Under Concave Pricing for Cloud Computing   | 2016 |
| CTCC26 | Online Resource Scheduling Under Concave Pricing for Cloud Computing   | 2016 |
| CTCC27 | Optimizing Cost for Online Social Networks on Geo-Distributed Clouds   | 2016 |
| CTCC30 | Protecting Your Right Verifiable Attribute-Based Keyword Owner-Enforced Search Authorization in the Cloud Search with Fine-Grained | 2016 |
| CTCC28 | Secure Data Sharing in Cloud Computing Using Revocable-Storage Identity-Based Encryption   | 2016 |
| CTCC29 | Security in Cloud-Computing-Based Mobile Health  | 2016 |

## Android

| No.    | Title  | Year |
|--------|--|------|
| CTAN01 | An Exploration of Geographic Authentication Schemes  | 2016 |
| CTAN02 | Analyzing Ad Library Updates in Android Apps   | 2016 |
| CTAN03 | Authentication of Smartphone Users Using Behavioral Biometrics   | 2016 |
| CTAN04 | Designing a Secure Exam Management System (SEMS) for M-Learning Environments                                   | 2016 |
| CTAN05 | EPLQ: Efficient Privacy-Preserving Location-based Query over Outsourced Encrypted Data                         | 2016 |
| CTAN06 | Examining the Relationship between FindBugs Warnings and End User Ratings: A Case Study On 10,000 Android Apps | 2016 |
| CTAN07 | Intelligent Hands Free Speech based SMS System on Android  | 2016 |
| CTAN08 | MADAM: Effective and Efficient Behavior-based Android Malware Detection and Prevention                         | 2016 |
| CTAN09 | PassBYOP: Bring Your Own Picture for Securing Graphical Passwords  | 2016 |
| CTAN10 | Privacy-Preserving Location Sharing Services for Social Networks   | 2016 |
| CTAN11 | Providing Privacy-Aware Incentives in Mobile Sensing Systems   | 2016 |
| CTAN12 | Read2Me: A Cloud- based Reading Aid for the Visually Impaired  | 2016 |
| CTAN13 | STAMP: Enabling Privacy-Preserving Location Proofs for Mobile Users  | 2016 |
| CTAN14 | Understanding Smartphone Sensor and App Data for Enhancing the Security of Secret Questions                    | 2016 |

## Mechanical

| No.                 | Title  |
|---------------------|--|
| <b>CFD Analysis</b> |  |
| CTME01              | A comparative study of finite journal bearing in laminar and turbulent regimes using CFD   |
| CTME02              | Analysis of Heat transfer through fins of an IC Engine using CFD                           |
| CTME03              | Analysis on Fluid Characteristics of Friction Plate in Wet Multiplate Clutch Based on CFD  |
| CTME04              | CFD Analysis of Double Pipe Heat Exchanger   |
| CTME05              | CFD analysis of radiator   |
| CTME06              | CFD analysis of tube in tube heat exchanger with fins                                      |
| CTME07              | CFD Analysis on Heating and Cooling using Earth Air Heat Exchanger (EAHE)                  |
| CTME08              | CFD Based Analysis of Solar Air Heater Having V-Shaped Perforated Blocks on Absorber Plate |
| CTME09              | CFD thermal analysis for the optimal design of a marine diesel engine piston head          |
| CTME10              | Computational analysis of notched fin array using natural convection                       |
| CTME11              | Design & CFD Analysis of Solar Flat Plate Collector  |
| CTME12              | Design and Analysis of Keyway Cutting Fixture for Gears by using CFD                       |
| CTME13              | Design and CFD Analysis of Centrifugal Pump  |
| CTME14              | Intercooler Heat Transfer Based on CFD   |
| CTME15              | Shell side flow behavior analysis with in shell and tube heat exchanger using CFD          |

# ROUTE MAP

