# IEEE North-East India International Energy Conversion Conference and Exhibition (NE-IECCE) 2025

## *July 4-6, 2025*

### 1st Flagship Conference of IEEE IAS Joint Chapter of IEEE Silchar Subsection | @ National Institute of Technology Silchar, Assam | India



## IEEE IAS NE-IECCE Students Symposium
## (Poster Presentation Schedule)

## DAY 1: 4th JULY 2025

### IEEE IAS NE-IECCE Students Symposium
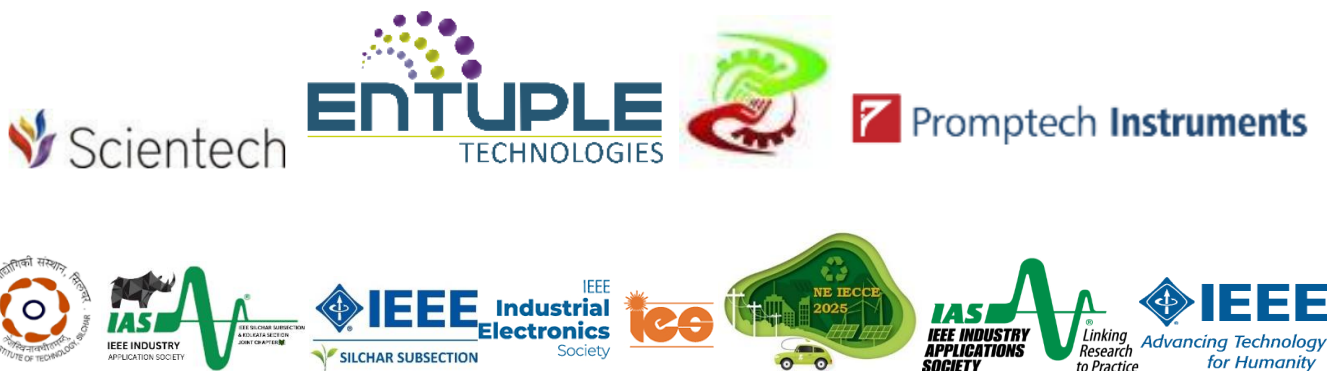*(Poster Presentation Session 1)*
**Venue: SAC Building** (Near Central Library, NIT Silchar)
**Time: 04.30 PM - 05.30 PM**
### Session Chairs: Dr. Hieu P. Nguyen, Texas Tech University; Prof. L. C. Saikia, NIT Silchar; Dr. Tarkeshwar Mahto, SRM University AP; Dr. M. Senthil Kumar, NIT Patna

| Paper Ids | Paper Title |
|-----------|-------------|
| 878 | An eSO-CCF Based Fundamental Component Extraction for Three/Single-Phase System |
| 663 | Cost of Charging in a Solar Modules Integrated Electric Vehicles |
| 460 | State-of-Charge Estimation of Lithium-ion Capacitors Combining Impedance data and Deep Neural Network |
| 396 | A Modified Current Reference Generation Method for Minimizing Active Power Oscillations During Asymmetrical Low-Voltage Ride-Through (ALVRT) in Grid-Tied PV-Fuel Cell Systems |

| 433 | ANN Based Sampling Time Selection Criterion for Model Predictive Controlled Multilevel Converter |
|------|---------------------------------------------------------------------------------------------------|
| 557 | Design and Modeling of Inductorless Symmetric 9-Level Switched Capacitor Multilevel Inverter |
| 853 | A Method for Detecting and Mitigating Steady-State DC Bias Current in Dual Active Bridge Converter |
| 888 | Design and Analysis of Multi-Input SEPIC DC-DC Converter for UAVs Charging Applications |
| 892 | An Improved Methodology to Minimize Transient DC Bias Current in Dual Active Bridge Converter |
| 893 | Development and Simulation of a Dynamic Dual-Chamber Microbial Fuel Cell Model for Bioelectrochemical Energy Generation |
| 894 | Onboard EV Charger Using Totem-Pole PFC and Isolated DC/DC Converter for Enhanced Power Quality |
| 688 | Rotor Flux Model Reference Adaptive System based Speed Estimation for Field-Oriented Control of Induction Motor Drives |
| 382 | Peukert's Law Based Adaptive Control Strategy for EVs in VPP Based Energy Market |
| 890 | Dual-Polarised Broadband Antenna for RF Energy Harvesting in 5G Applications |
| 513 | Comparative Study of 6-sector and 9-sector DTC for Direct Drive-Wind Energy Conversion System |
| 600 | Comparative Performance of PI and ANN Controllers for DTC of a PMSG-based Direct-Drive Wind Energy Conversion System |
| 742 | Solar Array-Energized, Battery-Interfaced Sensored PMBLDC Motor-Propelled Water Pump Utilizing an Enhanced Landsman DC-DC Converter |
| 887 | Power Control of Offshore Grid by Frequency Matching for a DFIG Wind Power Farm Connected HVDC System under Voltage Fluctuatations |
| 904 | Strengthening GMPP in Off-Grid BIPV Systems with Array Interconnections Coupled DC-DC Boost Converters Under Partial Shading |
| 631 | Integration of Pico Hydro Power System with PV based DC Microgrid |
| 365 | Estimation of Oil- Paper Insulation of Transformer using Optical Coherence Tomography: An Image Texture Feature- Based Analysis |
| 581 | Generative pretraining transformer based false data injection attack detection framework for DC Microgrid under uncertain operating condition |
| 750 | A Cost-Effective Driver Drowsiness Detection Using Embedded Vision Systems using Raspberry Pi for Enhanced Road Safety |
| 329 | Decentralized Load Frequency Control of a Multi-Area Cyber-Physical Power System |
| 570 | Robust fault tolerant control based on adaptive backstepping terminal sliding mode |
| 586 | Advance Technology based Circuit Breaker acknowledge through PZEM-004T Module |
| 619 | Comparative Analysis of Control methods for Enhancing the Performance of the Bidirectional DC-DC Buck-Boost Converter |
| 745 | Fixed-Time Super Twisting Sliding Mode Average Consensus of Perturbed Multi-agent Systems |
| 784 | Development and Execution of a Model Predictive Control Technique for Hybrid Microgrid |
| 453 | Voltage Boosting Interleaved DC to DC Converter |

**DAY 2: 5th JULY 2025**
**IEEE IAS NE-IECCE Students Symposium**
*(Poster Presentation Session 2)*
**Venue: SAC Building** (Near Central Library, NIT Silchar)
**Time: 09.30 AM - 10.30 AM**
**Session Chairs: Dr. Krishanu Nath, NIT Jalandhar; Dr. Avadh Pati, NIT Silchar; Dr. Kumari Sarita, Government Engineering College Aurangabad, Bihar**

| Paper Ids | Paper Title |
|-----------|-------------|
| 774 | Artificial Neural Network Based Fault Detection and Classification in Power System |
| 776 | Assessment of optimum operating state of HVDC converters under uncertain operating condition of hybrid AC-DC power system through a stochastic optimization based approach |
| 780 | Techno Economic Assessment and Sizing Analysis of PV, Fuel cell and battery Microgrid using HOMER Pro |
| 803 | Hybrid Energy Management System Employing Hysteresis Control for DC Microgrid |
| 808 | A Novel Three Phase Seventeen Level Inverter for Grid Tied PV Applications |
| 810 | User Need Based Charging Strategies for Electric Vehicle |
| 813 | Resonance Stability Analysis of Hydropower Plant Using Modified RH Criteria in Consideration of Sub-Synchronous Oscillation |
| 401 | Reconfigurable Ultra-High Gain DC-DC Converter for Renewable Energy Sources |
| 411 | Equilibrium Analysis and Linearization of an Oscillating Water Column Energy System for Stability and Control |
| 437 | Multi-Input Single-Output Topology with BWO MPPT for Efficient Solar-Powered BLDC Motor Drives in SCVs |
| 455 | Analysis and Control of SIDO Boosting Gain Converter |
| 494 | Analysis and QFT based Controller for Buck and Boost Based Double Input DC-DC Converter |
| 598 | Comprehensive Analysis and Simulation of a Grid Integrated Bidirectional PV System with Battery |
| 610 | Simple and Unified Voltage Mode Control Strategy for DC-DC Boost Converters |
| 612 | Enhancing Nine-level Quadruple Boost Inverter Operation with Reduced Output Distortions |
| 616 | Slime Mould Optimization-Based Integral-LQR Control for Grid Following Inverters |
| 620 | Zero-voltage Transition of Dual-switch Based PWM Boost Converter |
| 625 | Possibility of Distributed Generation Integration Through Composite AC-DC scheme |
| 781 | DCM Analysis of a Two-Switch, Fifth-Order Buck-Boost Converter under Unequal Duty Ratios Scheme |

| 821 | SOGI based Three Phase G2V, V2G Technology |
|------|---------------------------------------------|
| 823 | Enhancing Distribution System Performance with Concurrent Planning of DG and SOP |
| 835 | Optimal Allocation of DG to Enhance System Reliability, Resiliency and Power Quality using Optimization |
| 839 | Investigating the Potential of Lead-Free Perovskite/Kesterite Dual Absorber Architectures with Varied Transport Layer Materials for Optimizing Tandem Solar Cell performance |
| 840 | An Improved Switched Inductor Switched Capacitor based High Gain Converter for EV Application |
| 877 | Bidirectional Power Flow Control in Triple Active Bridge Converters with Sensitivity Analysis |

# DAY 2: 5<sup>th</sup> JULY 2025
## IEEE IAS NE-IECCE Students Symposium
### (Poster Presentation Session 3)
### Venue: SAC Building (Near Central Library, NIT Silchar)
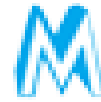### Time: 04.15 PM - 05.15 PM
## Session Chairs: Dr. Rajen Pudur, NIT Arunachal Pradesh; Prof. Kalpana Chaudhary, Indian Institute of Technology (BHU); Dr. Vipin Chandra Pal, NIT Silchar

| Paper Ids | Paper Title |
|-----------|-------------|
| 896 | Recent Advances, Challenges and Future Prospects of Electric Vehicle (EV) Charging: A Technical Review |
| 364 | A High Gain Bidirectional Interlink DC-DC Converter to Integrate Unipolar and Bipolar DC Microgrids |
| 366 | Real-time Health Monitoring Framework for Rooftop Solar Panels: Efficient, Reliable, & Cost-effective Solution |
| 431 | Energy Management System for DC Microgrid: Balancing Sustainability and Economics |
| 459 | A Novel Passive Islanding Detection Method Using DFIG Stator Flux |
| 461 | Stability Analysis of a Solar PV Connected IEEE 33-Bus ON and OFF Grid Distribution Network |
| 475 | A Radial Basis Function Neural Network-Based Fault Detection Scheme for a Microgrid System |
| 558 | Ultra-High Voltage Gain Transformerless DC-DC Converter for Enhanced Renewable Energy Systems |
| 567 | Comparison in enhancement of GMPPs and LMPPs for new Hybrid cross-tie BIPV arrays under Non-uniform Shading Patterns |
| 569 | A Comprehensive Design and Analysis of Solar PV Emulator |
| 584 | Resilient Power Synchronization in Tactical Military Bases using CARO tuned enhanced TID Controller |
| 593 | Four port Bidirectional Converter with Sliding Mode Control for Hybrid Renewable Systems |
| 617 | A Coordinated Energy Management Control Scheme for a Grid-Integrated PV Hybrid Storage System |
| 668 | DC Bus Voltage Control in P&O MPPT based Wind-PMSG System using a DC-DC Bidirectional Converter with Storage System |
| 673 | Demand Response based optimally modified fractional cascade controller in hybrid AGC incorporating EV. |
| 721 | Optimized Frequency-Modulated MPPT Strategy for Enhanced Performance of CL3C Resonant Converter in PV Systems |

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| 723 | Neural Network Based Wind Estimation and Predictive Control for Wind Energy Optimization |
| 726 | Efficient Solution of Multi-Period Three Phase OPF Problem Using Spatial Decomposition |
| 741 | A Design Oriented Dynamical Perspective on Proportional-Resonant Controller with 1-Φ Inverter |
| 765 | A Novel Resistance Switching Algorithm for Optimal Operation in Solar PV Systems |
| 778 | Robust Strategy for AGC and AVR in Isolated Hydropower Plants |
| 783 | Design and Implementation of Fuzzy Logic Control Strategy for PV-Battery Microgrid |
| 786 | Agro-Microgrid Frequency Stabilization Using Puma Optimizer Tuned Virtual Synchronous Systems |
| 792 | Design and Performance Comparison of Solar PV & PV/T Systems with Enhanced System Efficiency |
| 605 | Extended State Observer-based Controller for Cuk Converter |

**IEEE IAS NE-IECCE Students Symposium**
*(Poster Presentation Session 4)*
**Venue: SAC Building** (Near Central Library, NIT Silchar)
**Time: 11.00 AM - 12.00 PM**
**Session Chairs: Dr. Debayan Sarkar, NIT Silchar; Dr. Sudipto Chakraborty, NIT Silchar; Dr. Asadur Rahman, NIT Srinagar**

| Paper Ids | Paper Title |
|---|---|
| 285 | Load Frequency Control of Hydro Power Plant Microgrid Integrated with Solar Farms and BESS Using Genetic Algorithms for PID Controller |
| 300 | AI-Enhanced Framework for Predicting Shading and Soiling Impacts in Photovoltaic Systems |
| 311 | Novel Target Loop-Based IMC-PID Control Law for LF Regulation in Power Systems |
| 335 | Design & Development of StaLoi-Meter: IoT-based Standby Load monitoring & estimation system for household |
| 350 | Control Strategy for Grid Tied Hybrid System with Improved Power Quality, while Switching between GTM and IAM |
| 858 | Investigation on Different Magnet Geometries and Slot-Pole Combinations in Inner-Hollow Outer Rotor BLDC Motors for Yarn Feeding Textile Machinery |
| 866 | Performance Evaluation of Different Rotor Configurations in Brushless Permanent Magnet Motor for UAV Applications |
| 328 | Enhancing the frequency regulation in multi-area deregulated power system integrated with EV using modified LADRC controller |
| 400 | Target-loop based Cascaded Fractional-order Control for Non-integer Processes: Application on a PEM Fuel Cell |
| 482 | Enhancing the frequency regulation in hybrid deregulated AGC incorporating modified 2DOF cascaded controller. |