

2023 IEEE Silchar Subsection Conference (SILCON-2023)

**Schedule at a Glance (Indian Standard Time GMT+5:30)**

Timing/ Day	09:30 AM- 10:30 AM	10:40 AM- 12:30 PM	Lunch 12:30 PM-1:30 PM	02:00 PM- 03:00 PM	03:10 PM- 5:20 PM		7:00 PM- 9:00 PM
Day 1 03-Nov- 2023	<b>Inaugural Ceremony</b>	<b>Keynote 1</b>		<b>Keynote 2</b>	<b>T4.1, T5.1, T7.1, T8.1</b>		<b>IEEE YP Event</b>
Day 2 04-Nov- 2023		<b>T1.1, T3.1, T4.2, T5.2, T7.2</b>		<b>Keynote 4</b>	<b>T5.3, T7.3, T9.1, T10.1</b>		<b>Technical Talk (MathWorks)</b>
Day 3 05-Nov- 2023	<b>Keynote 3</b> <b>Keynote 5</b>	<b>T2.1, T3.2, T5.4, T6.1, T8.2</b>		<b>Keynote 6</b>	<b>Demonstration</b>	<b>Closing Ceremony</b>	

**Keynote Schedule\*\***

Keynote	Date	Time	Speaker
Inaugural Ceremony	03-Nov-2023	09:30 AM- 10:30 AM	Chief Guest : Shri. Sushanta Roy, <i>G.M. (E), ONGC</i> Guest of Honor : Dr. Ranjan Kumar Behra, <i>IIT Patna</i>
Keynote 1(A) Keynote 1(B)	03-Nov-2023	10:40 AM- 11:30 AM 11:30 AM- 12:10 PM	Shri. Sushanta Roy, <i>G.M. (E), ONGC</i> Dr. Ranjan Kumar Behra, <i>IIT Patna</i>
Keynote 2	03-Nov-2023	02:00 PM- 03:00 PM	Prof. Ghanshyam Singh <i>MNIT Jaipur</i>
Keynote 3	05-Nov-2023	9:30 AM- 10:30 AM	Prof. David Eduardo Pinto Avendano <i>University City Puebla, Pue., Mexico</i>
Keynote 4	04-Nov-2023	02:00 PM- 03:00 PM	Prof. B. L. Narasimharaju <i>NIT Warangal</i>
Keynote 5	05-Nov-2023	9:30 AM- 10:30 AM	Prof. Ramesh T Subramaniam <i>Universiti Malaya (UM), Malaysia</i>
Keynote 6	05-Nov-2023	02:00 PM- 03:00 PM	Prof. Srinivasa Rao Satti <i>NTNU, Trondheim, Norway</i>
Demonstration	05-Nov-2023	3:10 PM- 4:40 PM	MathWorks

**\*\* Venue for Inaugural Ceremony & Keynote Sessions (1, 2, 4, 5, 6) : Dr. Bhupen Hazarika Auditorium, Central Library Building**

**Keynote Session (3) : Class Room 1, ECE Annexe Building, Dept. of ECE**

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**IEEE YP Event**

IEEE YP Event	Date	Time	Speakers
Panel Discussion	03-Nov-2023	07:00 PM - 08:00 PM	<b>Topic : Role of Young Professionals in IEEE</b> Dr. Taimoor Khan, <i>Past Chair, IEEE Silchar Subsection</i> Dr. T. R. Lenka, <i>Chair- IEEE Nanotech. Council Ch. (IEEE Silchar Subsection)</i> Dr. Koushik Guha, <i>Vice Chair- IEEE Nanotech. Council Ch. (IEEE Silchar Subsection)</i>
Technical Talk	03-Nov-2023	08:00 PM - 09:00 PM	Dr. Biju K., <i>Assistant Director, APJ Abdul Kalam Technological University, Kerala &amp; Secretary, IEEE Kerala Section</i>

**Technical Talk (MathWorks)**

IEEE WIE Event	Date	Time	Speakers
Technical Talk	04-Nov-2023	07:00 PM - 09:00 PM	<b>Topic : AI for Engineering Applications</b> Dr. Monalisa Pal, <i>Senior Engineer- Education at MathWorks India</i>

**November 03, 2023**

Technical Sessions		
Start	End	
		<b>T4.1: Micro/Nanoelectronics Devices and Circuits</b> <i>Session Chairs: Dr. Kavicharan M, (NIT Silchar), Prof. R. S. Gupta, (Delhi University)</i> <i>Venue : Dr. Bhupen Hazarika Auditorium, Central Library Building</i>
3:10 PM	3:25 PM	An 8-bit 100 kS/s Low Power SAR ADC with Modified EPC for Bio-Medical Applications.
3:25 PM	3:40 PM	<b>Study of parametric variations on Heterojunction Dual Gate Vertical TFET for performance Enhancement (Offline)/Online</b>
3:40 PM	3:55 PM	A comparative study of an Exponential Window function for Linear Drift Memristor Model
3:55 PM	4:10 PM	A Junctionless Tri-Gate SOI FinFET 8T-SRAM Cell with improved Noise Margin
4:10 PM	4:25 PM	Design Evaluation and Performance Prediction of Different SRAM Cell Topologies through Inverter Optimization for the 5nm Technology Node using GAA CNTFETs
4:25 PM	4:40 PM	<b>Electrothermal modeling of Phase change memory with interfacial oxide layer during RESET operation (Offline)</b>
4:40 PM	4:55 PM	Investigating the Impact of Intermediate Modulation Layer in RRAM on Multilevel Perceptron Performance
4:55 PM	5:10 PM	Methodology for Timing Closure in VLSI Physical Design containing high clock to Q Memory Delay
Parallel Session		
Start	End	
		<b>T5.1: Artificial Intelligence, Data Science and Computing</b> <i>Session Chairs: Dr. Malaya Dutta Borah (NIT Silchar), Dr. E. Ramanujam (NIT Silchar)</i> <i>Venue : Seminar Hall, Dept. of Physics (EI Building)</i>

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3:10 PM	3:25 PM	Plexus Search – A Search Enumeration
3:25 PM	3:40 PM	Enhancing Seizure Detection from EEG Signals- Optimization Driven Feature Selection and Classification using Artificial Neural Networks
3:40 PM	3:55 PM	AI Sovereignty in Autonomous Driving: Exploring Needs and Possibilities for Overcoming Challenges
3:55 PM	4:10 PM	A Transfer Learning based GUI for Skin Cancer Diagnosis and Classification using Dermoscopic Images
4:10 PM	4:25 PM	Artificial Intelligence Innovations: Inception of new horizons in food processing sector
4:25 PM	4:40 PM	Beyond Words: Harnessing GPT-2 to Continue Stories with Imagination
<b>Parallel Session</b>		
<b>Start</b>	<b>End</b>	<b>T7.1: Power System and Smart Grid</b> <i>Session Chairs: Prof. A. K. Goswami (NIT Silchar), Dr. Arvind Kumar Jain (NIT Agartala), Dr. Raja Ram Kumar (GKCIET, West Bengal)</i> <i>Venue : Seminar Hall, Dept. of EE</i>
3:10 PM	3:25 PM	<i>Optimal siting, sizing and scheduling of battery energy storage systems in power distribution networks (Offline)</i>
3:25 PM	3:40 PM	<i>Improved Variable Step Size P&amp;O MPPT for Wind Energy Conversion Systems (Offline)</i>
3:40 PM	3:55 PM	A New Approach for Placement of Shunt Active Filter in Distribution System
3:55 PM	4:10 PM	Experimental Studies with Real-Time Hardware-in-Loop Microgrid Structure and its Components
4:10 PM	4:25 PM	Solar PV based Hybrid AC/DC Microgrid Design and Transient Analysis for a University Campus
4:25 PM	4:40 PM	AGC performance improvement of two-area hybrid power systems using PID $\mu$ F controller
4:40 PM	4:55 PM	Tie Line Fault Detection and Classification in Power System Based on Discrete Wavelet Transform and Total Harmonic Distortion Using Machine Learning
<b>Parallel Session</b>		
<b>Start</b>	<b>End</b>	<b>T8.1: Power Electronics and Drives</b> <i>Session Chairs: Dr. Jiwanjot Singh (NIT Silchar), Dr. Anagha Bhattacharya (NIT Mizoram), Dr. Amritesh Kumar (NIT Silchar)</i> <i>Venue : Control System Discussion Room, Dept. of EE</i>
3:10 PM	3:25 PM	<i>Implementation of Solar PV-Battery Based Electric Vehicle Charging Station (Offline)</i>
3:25 PM	3:40 PM	<i>PV Connected High-frequency Transformer Based Nine Level Multilevel Converter with Model Predictive Control (Offline)</i>
3:40 PM	3:55 PM	Control of Dual Motor Test Bench for Performance Testing of PMSM for Traction Application
3:55 PM	4:10 PM	Development of Real-Time Data Acquisition System for Phase Shift Full Bridge Converter
4:10 PM	4:25 PM	A 23-Level Hybrid Inverter with HFL
4:25 PM	4:40 PM	A Triple Gain Five-Level Single-Phase Transformerless Inverter using Switched Capacitor for Renewable Power Applications
4:40 PM	4:55 PM	<i>Solar Powered Battery Assisted Water Pumping System with UHGQB converter (Offline)</i>

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Technical Sessions		
<b>Start</b>	<b>End</b>	<b>T1.1: Communications and Networking</b> <i>Session Chairs: Dr. Manish Mandloi (PDEU Gandhinagar), Dr. Prabina Pattanayak (NIT Silchar)</i> <i>Venue : Class Room 1, ECE Annexe Building, Dept. of ECE</i>
10:40	10:55	Exploration of Different Combination of Antenna Diversity Techniques for MIMO-PD-NOMA with Experimental Validation
10:55	11:10	<i>Classification of Temperature-Strain Effects on Apodized Fiber Bragg Grating Sensor using Artificial Neural Network (Offline)</i>
11:10	11:25	A Novel Relay Selection Strategy for RF Energy Harvested Communication Network
11:25	11:40	Profiling the Causes of Vehicle Accidents to Prevent its Occurrence
11:40	11:55	Secured IoT Framework For Soil Moisture Detection
11:55	12:10	<i>Multi-Relay Multi-User Asymmetric Two-Way Relaying Over Fading Channels: A Unified Outage Analysis and Location Optimization Study (Offline)</i>
12:10	12:25	<i>AI-Driven Approach for QoS Estimation Using LCR in 5G Network with <math>\alpha</math>-<math>\eta</math>-<math>\mu</math> Fading and CCI Environment (Offline)</i>
Parallel Session		
<b>Start</b>	<b>End</b>	<b>T3.1: RF, Microwave and mmWave</b> <i>Session Chair: Prof. MerihPalandoken, Izmir KatipCeleby Univ. Turkey, Dr. G. S. Baghel (NIT Silchar)</i> <i>Venue : Dr. Bhupen Hazarika Auditorium, Central Library Building</i>
10:40	10:55	A CPW Fed Circular Patch Antenna Loaded With Metamaterial For Gain Enhancement
10:55	11:10	Non-invasive adulteration sensing in milk with graphene nanomaterial sputtering
11:10	11:25	Design of a Linearly Polarized Slotted-Square Patch antenna for RFID Reader Applications
11:25	11:40	A Wideband Millimeter-wave MIMO Antenna for Application in 5G Using n260 Frequency Band
11:40	11:55	Miniaturized CPW MIMO Antenna with Enhanced Isolation for 5G Application
11:55	12:10	Compact Gap-coupled Multi-Slotted Patch Antenna for Sub-6 GHz Communications
12:10	12:25	Advancing 5G Connectivity: Design and Analysis of a 4 x 4 Butler Matrix Integrated MM-wave Beam-steerable Antenna Array
Parallel Session		
<b>Start</b>	<b>End</b>	<b>T4.2: Micro/Nanoelectronics Devices and Circuits</b> <i>Session Chairs: Dr. Koushik Guha (NIT Silchar), Dr. T. R. Lenka (NIT Silchar), Dr. Arun Kumar (NIT Silchar)</i> <i>Venue : Seminar Hall, Dept. of Physics (EI Building)</i>
10:40	10:55	<i>Impact of oxygen flow rate and annealing on the structural and optical properties of HfO<sub>2</sub> thin films (Offline)</i>
10:55	11:10	<i>ASIC and FPGA Implementation of Radix-2<sup>2</sup> 32-point MDC-FFT Architecture (Offline)</i>
11:10	11:25	<i>A Serial-Parallel-Based 4-Bit Novel Multiplier: Design, Implementation, and Performance Analysis (Offline)</i>
11:25	11:40	<i>A High Speed 32-bit Approximate Adder with Improved Accuracy (Offline)</i>
11:40	11:55	<i>A Survey on Way-Based Cache Partitioning (Offline)</i>
11:55	12:10	<i>Performance engineering of SnO<sub>2</sub>-based dye- sensitized solar cells through optimization of dye loading and film thickness (Offline)</i>
12:10	12:25	<i>Role of titania photoanode phase on the performance of the Dye Sensitized Solar Cell (Offline)</i>
12:25	12:40	Design of a Self-reconfigurable Incrementer for Fault Tolerant VLSI Architecture

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Parallel Session		
Start	End	<b>T5.2: Artificial Intelligence, Data Science and Computing</b> <i>Session Chairs: Dr. Partha Pakray (NIT Silchar), Dr. Ripon Patgiri (NIT Silchar)</i> <i>Venue : Class Room 2, ECE Annexe Building, Dept. of ECE</i>
10:40	10:55	Prediction of Stress Levels using Low-Cost IoT-Based Health Parameters Measuring System
10:55	11:10	IOT based smart system for garbage detection and segregation
11:10	11:25	Generation of Deep Learning Models and Structural Alerts for Accurate Prediction of Eye Irritants
11:25	11:40	<i>Low-cost Robot for smart healthcare services in Hospital (Offline)</i>
11:40	11:55	Predicting Cardiovascular Disease using Machine Learning Techniques
11:55	12:10	Towards Full-page Offline Bangla Handwritten Text Recognition using Image-to-Sequence Architecture
12:10	12:25	A Survey on Extraction of Relations using Knowledge Graphs in Various Applications
12:25	12:40	<i>WOA-FNN: An innovative hybrid optimization technique for effective detection of shot boundaries (Offline)</i>
Parallel Session		
Start	End	<b>T7.2: Power System and Smart Grid</b> <i>Session Chairs: Dr. Sunanda Sinha (MNIT Jaipur), Dr. M. Chakkarapani (Assam Energy Institute, Assam), Dr. Kundan Kumar (NIT Manipur)</i> <i>Venue : Seminar Hall, Dept. of EE</i>
10:40	10:55	AGC of two-area deregulated power systems using PSO optimized MFOPIDD controller
10:55	11:10	<i>Application of a Artificial Hummingbird Algorithm Optimized Tilted Integral Double Derivative Controller for a Multi-Area Thermal Power System (Offline)</i>
11:10	11:25	<i>Detection and Classification of Faults in An Islanded Microgrid Using LSTM Model and its Real Time Validation (Offline)</i>
11:25	11:40	Design and Development of Composite AC/DC Distribution Architecture for Emerging Hybrid Power Grid
11:40	11:55	A Control Scheme for Grid Connected Solar Powered EV Charging Station With Hybrid Energy Storage System
11:55	12:10	<i>A Systematic Review of Islanding Detection Approaches in Microgrids (Offline)</i>
Break		
Start	End	<b>T5.3: Artificial Intelligence, Data Science and Computing</b> <i>Session Chairs: Prof. Nidul Sinha (NIT Silchar), Dr. Chuku Chunka (NIT Silchar)</i> <i>Venue : Class Room 1, ECE Annexe Building, Dept. of ECE</i>
3:10 PM	3:25 PM	Assessing Human Activity Recognition Performances of Different Machine Learning Algorithms Using Sensor Data
3:25 PM	3:40 PM	Text-Conditioned Image Synthesis - A Review
3:40 PM	3:55 PM	A Novel Deep Learning-Based Approach for Hypertension Level Detection Using PPG
3:55 PM	4:10 PM	Comparative Analysis of Machine Learning Techniques for Resonant Frequency Prediction for Printed Microstrip Antennas
4:10 PM	4:25 PM	Evaluation of Machine Learning Models for Intrusion Detection with the UNSW-NB15 Dataset
4:25 PM	4:40 PM	Portfolio adjusting model using uncertainty theory: an application to real finance market
4:40 PM	4:55 PM	Machine Learning Approach for Soil Nutrient Prediction
Parallel Session		

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Start	End	<b>T7.3: Power System and Smart Grid</b> <i>Session Chairs: Prof. L. C. Saikia (NIT Silchar), Dr. D. C. Das (NIT Silchar), Dr. Biswanath Dekaraja (Assam Engg. College)</i> <i>Venue : Seminar Hall, Dept. of EE</i>
3:10 PM	3:25 PM	Impact of Electric Vehicles on Load Frequency Control in an Interconnected Two-Area Restructured Power System
3:25 PM	3:40 PM	A Case study on OMC Power's Rooftop solar plant
3:40 PM	3:55 PM	Frequency Regulation in Low-Inertia Microgrid
<b>Parallel Session</b>		
Start	End	<b>T9.1: Control and Instrumentation</b> <i>Session Chairs: Prof. B. K. Roy (NIT Silchar), Dr. Vinay Pratap Singh (MNIT Jaipur)</i> <i>Venue : Control System Discussion Room, Dept. of EE</i>
3:10 PM	3:25 PM	Data Acquisition of Battery Variables and Estimation of Battery State of Health
3:25 PM	3:40 PM	MRAS Speed estimator based Sensorless Direct Torque Control of Induction Motor
3:40 PM	3:55 PM	PSO Based Design of PID Controller for Speed Control of BLDC Motor for Robotic Applications
3:55 PM	4:10 PM	Enhancing Performance and Dependability in E-Drive Testing: A Comprehensive Approach for Communication Reliability and Test Bench Operation Safety
4:10 PM	4:25 PM	Reinforcement Learning Tuned PI Controller for Two Tank Interacting Hybrid System
<b>Parallel Session</b>		
Start	End	<b>T10.1: Humanitarian Technology &amp; Engineering Education</b> <i>Session Chairs: Dr. R.G. Nair (NIT Silchar), Dr. Kedar Nath Das (NIT Silchar)</i> <i>Venue : Seminar Hall, Dept. of Physics (EI Building)</i>
3:10 PM	3:25 PM	Total Quality Management (TQM) for clean, affordable and reliable energy in research and development lab - A case-study from north east India
3:25 PM	3:40 PM	<i>Smart Wireless Irrigation System-A Prototype (Offline)</i>
3:40 PM	3:55 PM	MLCNN-CDSE: A Multi-Label Convolutional Neural Network Model for Predicting COVID Drug Side Effects from Images of Stick Structure-Based Chemical Conformers

November 05, 2023

Technical Sessions		
Start	End	<b>T2.1: Signal Processing</b> <i>Session Chairs: Dr. R Murugan (NIT Silchar), Dr Ram Kumar Karsh (NIT Silchar)</i> <i>Venue : Class Room 1, ECE Annexe Building, Dept. of ECE</i>
10:40	10:55	Deep Learning based Spoof Detection: An Experimental Study
10:55	11:10	Detection and Classification of Disturbances in DG Based Power System using Time-Frequency-Scale Transform
11:10	11:25	<i>Secure Image Encryption Algorithm based on Two-Level Diffusion and Hybrid Chaotic Maps (Offline)</i>
11:25	11:40	Schizophrenia and Bipolar Psychosis Classification with rsfMRI Functional Connectivity Feature Fusion technique using Super Learner
11:40	11:55	Entropy based EEG irregularity quantification in Single-Channel SSVEP-based BCIs
11:55	12:10	Disjunctive Edge Map based Image Sterilization for Destruction of Steganograms in Spatial Domain
<b>Parallel Session</b>		
Start	End	<b>T3.2: RF, Microwave and mmWave</b> <i>Session Chairs: Dr. T Khan (NIT Silchar), Dr. Jagannath Mallick (IIT Patna)</i>

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<b>Venue : Dr. Bhupen Hazarika Auditorium, Central Library Building</b>		
10:40	10:55	Design of a Hexagonal Patch, Defected Ground Antenna for Energy Harvesting Applications
10:55	11:10	An array of Slotted Concentric-ring shaped Printed Radiators for DSRC Applications
11:10	11:25	Design and Implementation of Wearable Antenna for WBAN Applications
11:25	11:40	Highly Stable Ultra-Thin Wearable Metasurface with Broadband Cross-Polarization Conversion
11:40	11:55	Open-Ended SIW Cavity Backed Wearable Antenna for WiMAX Applications
11:55	12:10	<b>Design and Study of a Highly Sensitive CSRR based Microwave Angular Displacement Sensor (Offline)</b>
12:10	12:25	A miniaturized UWB monopole antenna for sub-6 GHz 5G wireless applications
<b>Parallel Session</b>		
<b>Start</b>	<b>End</b>	<b>T5.4: Artificial Intelligence, Data Science and Computing</b> <b>Session Chairs: Dr. Pradipto Das (Assam University), Dr. Dalton (NIT Silchar)</b> <b>Venue : Seminar Hall, Dept. of Physics (EI Building)</b>
10:40	10:55	MOORA MCDM based optimal Machine Learning Regression Techniques for Breast Cancer Prediction
10:55	11:10	Predicting Drug Functions from Gene Ontology, Amino Acid Sequences, and Drug-Disease Associations through Multi-label Machine Learning with MLSMOTE
11:10	11:25	<b>Study of Linear Fractional Programming Problems By Using Ratio Ranking Method (Offline)</b>
11:25	11:40	A song emotion identification system from lyrics using heterogeneous ensemble learning
11:40	11:55	Cuisine Prediction from Ingredients using Hyper Parameter Tuning on Machine Learning Algorithms
11:55	12:10	Image Caption Generation using ResNET-50 and LSTM
12:10	12:25	Insect Classification Using Pretrained Deep Neural Networks and Transfer Learning
12:25	12:40	Quadratic Interpolation enhanced hybrid Grey Wolf Optimization and Moth Flame Optimization for global optimization
<b>Parallel Session</b>		
<b>Start</b>	<b>End</b>	<b>T6.1 Software Engineering and AI</b> <b>Session Chairs: Dr. E. Ramanujam (NIT Silchar), Dr. A. M. Abhirami (Thiagarajar College of Engineering)</b> <b>Venue : Class Room 2, ECE Annexe Building, Dept. of ECE</b>
10:40	10:55	An Efficient and Cost-Effective Approach for Targeted Influence Maximization
10:55	11:10	Smoke Testing of UML Activity Diagrams: An Approach for Ensuring System Reliability
11:10	11:25	Olive: An Instruction Following LLaMA Model for Odia Language
11:25	11:40	Deep Learning based Waste Material Classification
11:40	11:55	A Semi-Supervised Deep Learning Approach for Detection and Classification of Lung Diseases
<b>Parallel Session</b>		
<b>Start</b>	<b>End</b>	<b>T8.2: Power Electronics and Drives</b> <b>Session Chairs: Prof. Prakasah Chittora (DTU Delhi), Dr. Ashish Paramane (NIT Silchar)</b> <b>Venue : Seminar Hall, Dept. of EE</b>
10:40	10:55	<b>A High Gain DC-DC Converter based FC-Battery SC System for EV Application (Offline)</b>
10:55	11:10	An improved hybrid switched inductor and switched capacitor based DC-DC Converter to reduce the voltage stress across the switch
11:10	11:25	<b>A Real-time design and analysis of Dual Active Bridge DC-DC converter for EV applications (Offline)</b>

## Instructions to Presenters:

1. The author should present their work physically or virtually during the assigned schedule. They **must be present** during the entire session as per the schedule.
2. The pre-recorded video of the presenter will only be played by the host if there is any problem with the internet connection or as per the instruction of the Session Chair(s).
3. After the presentation, the presenter has to **respond to the queries** (if any) of Session Chair(s) and other participants.
4. The total time allotted to each presenter: **12 minutes** for pre-recorded video+ **03 minutes** for Q&A.
5. **If the presenter fails to be present during the allotted schedule**, the decision regarding inclusion of the paper in the conference proceedings (IEEE Xplore) will be subjected to the decision of the Session Chair and Organising Committee.
6. The E-Certificate of presentation will be provided and sent to the registered email ID of the corresponding author after 07 days from the completion of the conference.
7. The Scan copy of the Registration Fee Receipt will be sent to the registered email ID of the corresponding author immediately after completion of the conference.

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