

**2024 International Conference on
Innovations in Science, Engineering and Technology
ICISSET 2024**

Programs at a glance:

Day 1, Saturday, 26 October 2024		
Time	Program	Venue
08:00 – 09:00	Conference Kit Collection	Central Library
09:00 – 10:30	Inaugural Ceremony	IIUC Auditorium
10:30 – 11:00	Refreshment	IIUC Auditorium
11:00 – 13:00	Plenary Session 1	IIUC Auditorium
13:00 – 14:00	Prayer and Lunch Break	Central Mosque Central Cafeteria
14:00 – 15:30	TS-1A: Power and Green Energy System – 1	CSE Main Building SE LAB_C201 Academic Building-6
14:00 – 15:30	TS-1B: Electronics, Materials Science, VLSI and Real Time Systems-1	FSE Building Computer Lab R323 EEE Department
14:00 – 15:30	TS-1C: Artificial Intelligence and Intelligent Computing-1	CSE Main Building AI LAB_C101 Academic Building-6
14:00 – 15:30	TS-1D: Data Science and Big Data Analytics-1	CSE Main Building PLAB #1_C301 Academic Building-6
14:00 – 15:30	TS-1E: IOT and Signal Processing-1	Room No.-306 AI & Machine Learning Lab Dept. of CCE Academic Building -05
14:00 – 15:30	TS-1F: Communication and Computer Networks-1	FSE Building R421 ETE Department
14:00 – 15:30	TS-1G: Pharmacy and Biological Science-1	Seminar Hall Auditorium Building

14:30 – 16:15	Industry University Collaboration program	IIUC Auditorium
15:30 – 16:15	Prayer and Refreshment	Central Mosque TS Venues
16:15 – 17:45	Plenary Session 2	IIUC Auditorium
17:45 – 18:15	Prayer and Refreshment	Central Mosque IIUC Auditorium
18:15 – 19:45	TS–2A: Power and Green Energy System– 2	CSE Main Building SE LAB_C201 Academic Building-6
18:15 – 19:45	TS–2AP: Power and Green Energy System– 3	Seminar Hall Auditorium Building
18:15 – 19:45	TS–2B: Electronics, Materials Science, VLSI and Real Time Systems– 2	FSE Building Computer Lab R323 EEE Department
18:15 – 19:45	TS–2C: Artificial Intelligence and Intelligent Computing-2	CSE Main Building AI LAB_C101 Academic Building-6
18:15 – 19:45	TS–2D: Data Science and Big Data Analytics-2	CSE Main Building PLAB #1_C301 Academic Building-6
18:15 – 19:45	TS–2E: IOT and Signal Processing-2	Room No.-306 AI & Machine Learning Lab Dept. of CCE Academic Building -05
18:15 – 19:45	TS–2F: Communication and Computer Networks – 2	FSE Building R421 ETE Department

Day 2, Sunday, 27 October 2024		
Time	Program	Venue
08:30 – 09:00	Conference Kit Collection	Central Library
09:00 – 11:00	Plenary Session 3	IIUC Auditorium
11:00 – 11:30	Refreshment	IIUC Auditorium

11:30 – 13:00	TS-3A: Power and Green Energy System- 4	CSE Main Building SE LAB_C201 Academic Building-6
11:30 – 13:00	TS-3B: Electronics, Materials Science, VLSI and Real Time Systems – 3	FSE Building Computer Lab R323 EEE Department
11:30 – 13:00	TS-3C: Artificial Intelligence and Intelligent Computing-3	CSE Main Building AI LAB_C101 Academic Building-6
11:30 – 13:00	TS-3CP: Artificial Intelligence and Intelligent Computing-4	CSE Main Building CN LAB_C401 Academic Building-6
11:30 – 13:00	TS-3D: Data Science and Big Data Analytics-3	CSE Main Building PLAB #1_C301 Academic Building-6
11:30 – 13:00	TS-3E: IOT and Signal Processing-3	Room No.-306 AI & Machine Learning Lab Dept. of CCE Academic Building -05
11:30 – 13:00	TS-3F: Communication and Computer Networks – 3 (Antennas and Propagation: Special Session by IEEE AP-S MGA, Bangladesh)	FSE Building R421 ETE Department
11:30 – 13:00	TS-2G: Pharmacy and Biological Science-2	Seminar Hall Auditorium Building
13:00 – 14:00	Prayer and Lunch	Central Mosque Central Cafeteria
14:00 – 15:45	Plenary Session 4	IIUC Auditorium
15:45 – 16:15	Prayer and Refreshment	IIUC Auditorium
16:15 – 17:45	TS-4A: Power and Green Energy System- 5	CSE Main Building SE LAB_C201 Academic Building-6
16:15 – 17:45	TS-4B: Electronics, Materials Science, VLSI and Real Time Systems- 4	FSE Building Computer Lab R323 EEE Department

16:15 – 17:45	TS-4C: Artificial Intelligence and Intelligent Computing-5	CSE Main Building AI LAB_C101 Academic Building-6
16:15 – 17:45	TS-4CP: Artificial Intelligence and Intelligent Computing-6	CSE Main Building PLAB #1_C301 Academic Building-6
16:15 – 17:45	TS-4E: IOT and Signal Processing-4	Room No.-306 AI & Machine Learning Lab, Dept. of CCE Academic Building -05
16:15 – 17:45	TS-4F: Communication and Computer Networks – 4	FSE Building R421 ETE Department
16:15 – 17:45	TS-4S: Special Session	Seminar Hall Auditorium Building
17:45 – 18:15	Prayer	Central Mosque
18.30– 20.00	Closing Ceremony	The Copper Chimney Restaurant, GEC (Besides Sanmar)
20.00 – 21.00	Conference Dinner	The Copper Chimney Restaurant, GEC (Besides Sanmar)

Detail Technical Program

Technical Sessions: Day 1, Saturday, 26 October 2024

Plenary Session 1: Day 1, Saturday, 26 October 2024	
Venue: IIUC Auditorium	Time: 11:00 – 13:00
Session Chairs: Dr. Md. Saidur Rahman, Department of Computer Science and Engineering, BUET, BD Professor Dr. Ryo Maezono , Japan Advanced Institute of Science and Technology (JAIST), Japan.	
Moderators: Mr. Md. Abu Sayeed, Associate Professor, Pharmacy, IIUC Mrs. Taniya Sultana, Lecturer, CSE, IIUC	
Name of Keynote Speaker	Topic of Speech

Prof. Dr. A.K.M. Azharul Islam , FInstP. C.Phys, FBAS Professor Emeritus and former Vice-Chancellor of International Islamic University Chittagong, Bangladesh.	MXene based Nanotech Wonders: `Science Fiction` or Emerging Reality.
Professor Dr. A B M Shawkat Ali , SMIEEE Vice- Chancellor, Bangladesh University of Business and Technology (BUBT), Bangladesh. Former Professor of Data Science, the Fiji University, Fiji	Securing Landownership Through BlockchainDApp for Fraud Prevention in Real Estate Transactions
Dr. M. Rezwan Khan , FBAS, SMIEEE Professor Emeritus, Dept. of EEE, United International University	Solar PV in Bangladesh: A Plan to Convert the Consumers to Prosumers for Clean and Cost-Effective Power Generation

TS-1A: Power and Green Energy System-1	
Venue: SE LAB_C201, CSE Main Building	Time: 14.00 – 15:30, Saturday
Session Chairs: Prof. Dr. Muhammad Asad Rahman, , EEE, CUET Dr. Md. Aasim Ullah , Assistant Professor, EEE, IIUC	
Moderators: Mr. Md. Sazidul Haque, Lecturer, EEE, IIUC Mr. Md. Lokman Hossain, Lecturer, EEE, IIUC	
Paper ID	Title of the Paper
137	An Energy-Efficient Design of a Grid-tied PV System Wielding the Roof Area of a University in Dhaka with Net Metering Scheme
172	Evaluation of the Performance of Natural Dye-Sensitized Solar Cells Using Red Spinach and Henna: Combining Fabrication Insights with ML-Based Efficiency Predictions
184	Design and Analysis of a DC-DC fast EV charger for a Renewable energy-based EV Charging Station
202	Impacts on Distribution Network due to Coordinated Electric Ferry Charging
321	IoT-enabled Automatic Underground Cable Fault Detection and Monitoring System
441	Advanced Estimation of SoC&SoH for Li-Ion EV Batteries Using Soft Computing Techniques

TS-1B: Electronics, Materials Science, VLSI and Real Time Systems-1	
Venue: Computer Lab R323, EEE Department, FSE Building	Time: 14.00 – 15:30, Saturday
Session Chairs: Prof Dr. Quazi Delwar Hossain, CUET Dr. Md Ismail Haque, Associate Professor, EEE, IIUC	

Moderators: Md. Rasheduzzaman, Assistant Professor, EEE, IIUC Mr. Raihan Chowdhury, Lecturer, EEE, IIUC	
Invited Talk	Electrical and Structural Properties of superconducting materials of Ba-Pb-Bi-O Dr. AgungImaduddin, Senior Researcher, Research Center for Advanced Materials (PRMM), National Research and Innovation Agency (BRIN), Indonesia .
Paper ID	Title of the Paper
71	Design of an Analog Content Addressable Memory with Memristor
76	Comparative Analysis of p-type Graded vs Uniform Channel Double Gate Junctionless FETs
86	STDP Learning Implementation with CMOS LIF Neuron and Twin-Memristor Synapse
95	Design and Evaluation of a Controllable Heat Therapy Device with Dynamic Monitoring and Feedback System
182	Comparative Analysis of Performance Factors of an 8-bit SIPO Shift Register using JK Flip-Flop with a Very Low Dynamic Power and High Noise Margin

TS-1C: Artificial Intelligence and Intelligent Computing-1	
Venue: AI LAB_C101, CSE Main Building	Time: 14.00 – 15:30, Saturday
Session Chairs: Dr. Mohammad Jahirul Islam, Professor, SUST Dr. Kaushik Deb, Professor, CSE, CUET	
Moderators: Mr. Abdullahil Kafi, Assistant Professor, CSE, IIUC Mr. G.M. Al Arafat Shaown, Assistant Lecturer, CSE, IIUC	
Paper ID	Title of the Paper
87	Insights into Zooplankton Abundance Dynamics in Tropical Temporary Ponds using Machine Learning and Explainable AI
93	Autonomous Pollination System for Tomato Plants in Greenhouses: Integrating Deep Learning and Robotic Hardware Manipulation on Edge Device.
170	Broken Stitch Detection Method for Sewing Operation using Deep Learning
191	Forecasting Geomagnetic Storms for Earth Using LSTM with Solar Wind and IMF Features
246	Enhancing Parkinson's Diagnosis: Unleashing the Potential of Machine Learning via Vocal Features Fusion
250	Enhancing Prediction Accuracy using Ensemble Deep Learning Methods on Time Series Data

TS-1D: Data Science and Big Data Analytics-1	
Venue: PLAB #1_C301, CSE Main Building	Time: 14.00 – 15:30, Saturday
Session Chairs: Dr. Mohammad Shamsul Arefin, Professor, Dean, Faculty of Electrical & Computer Engineering, CUET Dr. Mohammad Aman Ullah, Associate Professor & Chairman, Dept. of CSE, IIUC	
Moderators: Mrs. Subrina Akter, Assistant Professor, CSE, IIUC Mrs. Farzana Tasnim, Lecturer, CSE, IIUC	
Invited Talk Video	Enhancing Assisted Living with Privacy-Preserving and Trustworthy Machine Learning Applications Dr. Md Zia Uddin, SMIEEE , Senior Research Scientist, Sustainable Communication Technologies Department SINTEF Digital, Oslo, Norway
Paper ID	Title of the Paper
27	Enhancing Job Matching Through Natural Language Processing: A BERT-Based Approach
43	Unveiling Bangladesh's Climate Tapestry: A Quantitative Exploration of Change
130	Consistency of Contextual Embedding in Literary Texts
138	Exploring Machine Learning Approaches for Stress Detection in Reddit Content: An Evaluation of Performance and Effectiveness
154	Cyberbullying Detection from Bangla Text Using Cascaded Deep Hybrid Network

TS-1E: IOT and Signal Processing-1	
Venue: Room No.-306, AI & Machine Learning Lab, Dept. of CCE	Time: 14.00 – 15:30, Saturday
Session Chairs: Dr. Md. Saiful Islam, Associate Professor, Dept. of ETE, CUET Dr. Yasir Arafat, Associate Professor and chairman, Dept. of EEE, IIUC	
Moderators: Mr. Md. Humayun Kabir, Lecturer, Dept. of CCE, IIUC Mr. Mohammad Nadib Hasan, Lecturer, Dept. of CCE, IIUC	
Invited Talk Video	Partial Discharge Detection and Recognition using Multi cylindrical Slots Patch Antenna for Power Transformer. Prof. Dr. Muzamir Isa. SMIEEE , School of Electrical System Engineering, Universiti Malaysia Perlis (UniMAP), Malaysia.
Paper ID	Title of the Paper
75	Real-Time Bangla Sign Language Recognition Using Transfer Learning Model

96	Automated Grading and Classification of Hand-Drawn Sketches Using Deep Learning
117	TraceChainBD: Securing Supply Chains from Counterfeiting in Bangladesh with Blockchain and IoT Integration
128	A Wrist-Mounted IoT Accessory for People with Auditory Disabilities: A Smart Communication and Safety Solution
485	Enhancing Home Automation and Security with IoT-based Solutions.

TS-1F: Communication and Computer Networks- 1	
Venue: Room 421, ETE Dept, FSE Building	Time: 14.00 – 15:30, Saturday
Session Chairs: Dr. Mohammad Jakir Hossain, Dhaka University of Engineering & Technology Dr. Sikder Sunbeam Islam, Associate Professor, Dept. of EEE, IIUC	
Moderators: Mr. Syed Zahidur Rashid, Assistant Professor, Dept. of ETE, IIUC Mr. Mohammad Woli Ullah, Assistant Professor, Dept. of ETE, IIUC	
Paper ID	Title of the Paper
155	Tetrahedral Molecular Shaped Metamaterial Absorber for Ku and K Band Applications
156	Design and Characterization of a Nonlinear Graphene Metasurface for Enhanced Third Harmonic Generation in the Terahertz Spectrum
193	S-Shape Polarization Insensitive Metamaterial Absorber for SAR Reduction at 3.5 GHz
196	Quadruple X Shaped Rotational Symmetric Metamaterial Absorber for C and X Band Applications
295	Back to Back C Shaped Rotational Symmetric Metamaterial Absorber for Triple Band Application
314	Middle F shape Split-Ring Resonator Metamaterial Absorber for Wireless Technology

TS-1G: Pharmacy and Biological Science-1	
Venue: Seminar: Seminar Hall, Auditorium Building	Time: 14.00 – 15:30, Saturday
Session Chairs: Professor Dr. M. Abdur Rashid PhD FRSC , Dept of Pharmaceutical Chemistry, DU Professor Dr. Pharkphoom Panichayupakaranant , Faculty of Pharmaceutical Sciences, Prince of Songkhla University, Songkhla, Thailand	
Moderators: Mr. Mohammed Abu Sayeed, Associate Professor, IIUC Mr. Md. Nazmul Islam, Assistant Professor, IIUC	

Invited Talk	Developing Novel Therapies for Cancer Chemoprevention and Treatment Dr. A.R.M. Ruhul Amin , Associate Professor ,Department of Pharmaceutical Sciences, Marshall University School of Pharmacy, Huntington, WV 25755, USA .
Invited Talk Invited Talk Video	Molecular Modelling Studies of Quinazoline and Pyrimidine Compounds as Potential Antibacterial Compounds. Dr. Imtiaz Khalid Mohammad , Associate Professor, Head of Pharmaceutical Chemistry, University of Cyberjaya, Malaysia .
Paper ID	Title of the Paper
298	MODELING AND ANALYSIS OF VASCULAR STENOSIS IN MICROCHANNEL
386	Phytochemical Screening, In-vitro Thrombolytic, In-vivo Antidepressant and Anxiolytic evaluation of Methanol extract of Persicaria chinensis L.H. Gross Leaves
450	Antioxidant, Cytotoxic, and Neurobehavioral Properties of Lepidagathis incurva
469	In-vivo Neuropharmacological Studies on Methanol Extracts of Bruguiasexangula Leaves

Plenary Session 2: Day 1, Saturday, 26 October 2024

Venue: IIUC Auditorium	Time: 16:15 – 17:45, Saturday
Session Chairs: Dr. Mohammad Jahirul Islam, Professor, SUST Prof. Dr. Engr. Muhammad Abu Yusuf, P. Eng, Chairman, CE, IIUC	
Moderators: Sayed Mohammad Allamah Iqbal, Associate Professor, EEE, IIUC Dr. Md. Shafiqul Islam Aziz, Assistant Professor, CE, IIUC	
Name of Keynote Speaker	Topic
Prof. Dr. Abdullah Al-Mamun C.Eng, P.Eng, FIEB .Department of Civil Engineering Kulliyah of Engineering, International Islamic University Malaysia (IIUM)	Sustainable Drainage and Storm water Management for Bangladesh.
Prof. Dr. Mohammed Moshikul Hoque, SMIEEE Chair, IEEEBDS. Department of Computer Science and Engineering Chittagong, University of Engineering and Technology Chittagong. Bangladesh.	Multimodal Aggressive Memes Classification in Low-resources Languages.
Professor Dr. Ryo Maezono School of Information Science, Japan Advanced Institute of Science and Technology (JAIST), Japan.	Computational Materials Science in JAIST

Prof. Dr. Christophe Fumeaux , FIEEE President-Elect of IEEE AP Society School of Electrical Engineering and Computer Science The University of Queensland Brisbane, QLD, Australia ,	75 years of IEEE AP-S Research: Retrospective and Future Prospects for Antenna Technologies and Applications.
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TS-2A: Power and Green Energy System-2	
Venue: SE LAB_C201, CSE Main Building	Time: 18:15 – 19:45, Saturday
Session Chairs: Prof. Dr. Nur Mohammad, Head of EEE, CUET Dr. Yasir Arafat , Associate Professor & Chairman, Dept. of EEE, IIUC	
Moderators: Engr. Md. Nazmus Sakib, Lecturer, Dept. Of EEE, IIUC Mr. Raihan Chowdhury, Lecturer, EEE, IIUC	
Paper ID	Title of the Paper
205	Multi-Objective Optimization and Feasibility Study of Hybrid Energy System Considering Future Load of 2041 using Machine Learning
232	A Techno-Economic Analysis of an IEEE 39 Sustainable Grid Bus for DSM on Load Flexibility Options
262	Real-Time Power Monitoring and Fault Detection in Power Distribution System Using FPGA and cRIO 9039
302	Dual Feedstock Biodiesel Production: Using Sesame Seed Oil and Waste Cooking Oil with KOH Catalysis
308	Real Time Economic Dispatch Using Bat Algorithm Optimization Technique
310	Construction and Feasibility Investigation of a Small-Scale Single-Basin Solar Still for Remote Areas

TS-2AP: Power and Green Energy System- 3	
Venue: Seminar Hall, Auditorium Building	Time: 18:15 – 19:45, Saturday
Session Chair: Dr. M. Shafiul Alam, EEE, University of Asia Pacific Dr. Md. Aasim Ullah , Assistant Professor, EEE, IIUC	
Moderators: Mr. M. Tanvirul Hoque, Lecturer, EEE, IIUC Engr. Mohammad Jalal Uddin, Assistant Professor, EEE, IIUC	
Paper ID	Title of the Paper

502	Performance Enhancement of Single-Ended Primary-Inductor Converter for Low Power and Photovoltaic Applications.
516	Reduction of Total Harmonic Distortion (THD) in Source Current Using a Shunt Active Power Filter with P-Q Theory and PI Controller.
519	Performance Analysis of Ground-Mounted SPV Plant vs. Floating SPV Plant .
528	Development of a Rotational Freestanding TriboelectricNanogenerator Based Anemometer for Wind Vector Measurement for Wind Turbines.
547	Optimizing Electric Vehicle Efficiency with Advanced Climate Control System .
554	Optimization of Cost-based Dynamic Economic Dispatch Problem using Mathematical Programming.

TS-2B: Electronics, Materials Science, VLSI and Real Time Systems-2

Venue: Computer Lab R323, EEE Department, FSE Building		Time: 18:15 – 19:45, Saturday
Session Chair: Prof Dr. Muhibul Haque Bhuyan, AIUB Dr. Md. Shamimul Haque Choudhury, EEE, IIUC		
Moderators: Mr. Riazul Islam, Lecturer, EEE, IIUC Mr. MdLokman Hossain, Lecturer, EEE, IIUC		
Invited Talk	High-Performance P-Type TFTs Using SiC-Doped SnO Channels: Achieving Enhanced Mobility and Stability through Optimized Doping and Post-Deposition Annealing. Dr. Raiful Karim Khan, Assistant Professor , Department of Advanced Materials Science and Engineering, Faculty of Engineering Sciences, Kyushu University, Japan .	
Paper ID	Title of the Paper	
110	Highly Sensitive All Dielectric Fabry-Perot Etalon Based Perfect NIR Biosensor	
201	Biosynthesis and Characterization of TiO ₂ Nanoparticles Using Allium Sativum Peel Extract with Detailed Optical Properties	
221	Investigation of the Microstructural and Dielectric Properties of Strontium Doped Calcium Copper Titanate Electroceramics	
243	Direct growth and Characterization of Ca ₁₂ Al ₁₄ O ₃₃ Bulk Crystal Electride by Vertical Bridgman Technique	
440	Ultra-Fast Core Mode Prediction in Plasmonic Crystal Fiber Sensor: A Machine Learning Approach	

TS-2C: Artificial Intelligence and Intelligent Computing-2

Venue: AI LAB_C101, CSE Main Building	Time: 18:15 – 19:45, Saturday
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Session Chairs: Dr. Rashed Mustafa, Professor, CSE, CU Dr. Muhammed Jamshed Alam Patwary, Assistant Professor , IICT, CUET	
Moderators: Dr. Siddique Ahmed, Assistant Professor , CSE, IIUC Mr. A.B. M. Yasir Arafat, Assistant Professor , CSE, IIUC	
Paper ID	Title of the Paper
192	Enhanced Osteoarthritis Classification through Transfer Learning and Hyperparameter-Tuned Multi-Layer Ensemble Models
206	A Deep Learning and Machine Learning Approach to Crop Recommendation for Sustainable Farming in Bangladesh
214	Explainable Transfer Learning for Precise Alzheimer’s Disease Prediction from MRI data
218	Leukemia Disease Classification using Concatenated Convolutional Neural Network with Vision Transformer
225	A Deep Learning Approach to Forecast Electricity Demand in Sylhet of Bangladesh
244	YOLOv5-Driven Decision Fusion Approach for Aiding Automated Tomato Harvesting: Detection, Maturity Classification, Peduncle Estimation and Picking Point Determination

TS-2D: Data Science and Big Data Analytics-2	
Venue: PLAB #1_C301, CSE Main Building	Time: 18:15 – 19:45, Saturday
Session Chairs: Dr. Mohammad Aman Ullah, Associate Professor & Chairman, Dept. of CSE, IIUC Dr. Abu Nowshed Chy, Assistant Professor, Computer Science & Engineering, CU	
Moderators: Mrs. Sabrina Jahan Maisha, Lecturer, CSE, IIUC Mrs. Nuren Nafisa, Lecturer, CSE, IIUC	
Invited Talk	Research Leader Competency: Perspective of Human Resource. Prof. Dr. Zuraidah Mohd Sanusi , Director, Research and Innovation Accounting Research Institute, UniversitiTeknologiMARA , Selangor, Malaysia .
Paper ID	Title of the Paper
169	Multilabel Aggressive Comments Detection from Social Media using Deep Learning Techniques
190	DeepAD-Insight: A Benchmark Evaluation of Deep Learning Architectures for Multiclass Alzheimer’s Disease Classification and Staging from Brain MRI Data
219	Depression Detection from Social Media Comments Using Deep Learning with Interpretability

220	Automated Literature Review Using NLP Techniques and LLM-Based Retrieval-Augmented Generation
230	A comparison of Bangladeshi daily news portals' various clustering techniques for online revenue generation

TS-2E: IOT and Signal Processing-2	
Venue: Room No.-306, AI & Machine Learning Lab, Dept. of CCE	Time: 18:15 – 19:45, Saturday
Session Chairs: Prof. Dr. Mohammad Osiur Rahman, Professor, Dept. of CSE, CU Prof. Md. Razu Ahmed, Chairman, Dept. of CCE, IIUC	
Moderators: Mr. Md. Humayun Kabir, Lecturer, Dept. of CCE,IIUC Mr. Mohammad Nadib Hasan, Lecturer, Dept. of CCE,IIUC	
Invited Talk Video	Observation Impact on Numerical Weather Prediction: Global and Regional Scale Perspectives. Dr. Nahidul Hoque Samrat Research Scientist- Satellite Data Assimilation Bureau of Meteorology, Melbourne, Australia.
Paper ID	Title of the Paper
175	Head Motion Controlled Mouse With Home Appliance Control For Quadriplegic Patient
273	Design of a Cost Effective IoT Based Advance Aquaculture with Real Time Environment and Water Assessments
276	Photoplethysmogram-based Cerebrovascular Disease Detection: A Machine Learning Approach
281	IoT Based Smart Walking Stick for Enhanced Mobility of The Visually Impaired
296	Dopamiini: Real-Time Interaction to Combating Loneliness with Smart Wheelchair Integrated Chatbot Support Model

TS-2F: Communication and Computer Networks-2	
Venue: Room 421, ETE Dept, FSE Building	Time: 18:15 – 19:45, Saturday
Session Chairs: Dr. Foez Ahmed, Associate Professor, Dept. of ICE, University of Rajshahi Dr. Saif Hannan, Assistant Professor, Dept. of ETE, IIUC	
Moderators: Mr. Syed Zahidur Rashid, Assistant Professor, Dept. of ETE, IIUC Mr. Mohammad Woli Ullah, Assistant Professor, Dept. of ETE, IIUC	
Paper ID	Title of the Paper

180	Optimization and Performance Evaluation of Implantable Rectennas for Enhanced Wireless Power Transfer Efficiency for Medical Applications.
210	A Highly Efficient Microstrip Patch Antenna for 6G Applications with High Gain and Ultrawide Bandwidth.
211	A Highly Efficient Fractal Based Microstrip Patch Antenna for 5G Applications with High Gain.
242	Design and Performance Analysis of Trident-shaped Slot Microstrip Patch Antenna for 5G Applications.
289	A 2×2 MIMO Antenna for 28 GHz 5G Communication Applications with High Isolation.
399	Design and Analysis of a MIMO Antenna with DGS for Wireless Applications

Technical Sessions: Day 2, Sunday, 27 October 2024

Plenary Session 3: Day 2, Sunday, 27 October 2024	
Venue: IIUC Auditorium	Time: 09:00 – 11:00
Session Chairs: Prof. Mohammed Shamsul Alam, Dean, FSE. Dr. Md. Golam Rabiul Alam, Professor, Dept. of CSE, BRACU	
Moderators: Mr. Md Mostafa Amir Faisal, Assistant Professor, ETE, IIUC Engr. Sk. Md. Golam Mostafa, Associate Processor, EEE, IIUC	
Name of Keynote Speaker	Topic
Prof. Dr. Subarna Shakya, SMIEEE Director, IT Innovation Center, Institute of Engineering, Tribhuvan University, Nepal	Security Challenges in software as a service environment
Professor Dr. Pharkphoom Panichayupakaranant Department of Pharmacognosy and Pharmaceutical Botany, Faculty of Pharmaceutical Sciences, Prince of Songkhla University, Songkhla, Thailand	Natural Product Innovation Based on the Bio-Circular-Green (BCG) Economy Model.
Prof. Dr. Debatosh Guha, FIEEE Institute of radio physics and Electronics, University of Calcutta. 92, A P C Road, Kolkata 700 009, India	Role of Antenna in Magical Transformation of Engineering in the light of 75th Anniversary of IEEE AP Society.
Dr. Sanghamitra Bandyopadhyay, FIEEE Professor, Machine Intelligence Unit Director, Indian Statistical Institute 203 B. T. Road, Kolkata - 700 108, India	Applications of Artificial Intelligence Methods in Life Sciences

TS-3A: Power and Green Energy System - 4	
Venue: SE LAB_C201, CSE Main Building	Time: 11:30 – 13:00, Sunday
Session Chairs: Prof. Dr. Mohammad Rubaiyat Tanvir Hossain, EEE, CUET Dr. Yasir Arafat , Associate Professor & Chairman, Dept. of EEE, IIUC	
Moderators: Mr.Asifur Rahman, Lecturer, EEE, IIUC Mr. Md. Sazidul Haque, Lecturer ,EEE, IIUC	
Invited Talk	Safety Engineering: At Workplaces or at Home Engr. Mir Jahangir Md. SALIM , Head of HSE & Technical Integrity, Total Energies, Bangladesh , Premier LP Gas Limited
Paper ID	Title of the Paper
328	Numerical Simulation and Performance Optimization of All Inorganic CsPbI2Br Perovskite Solar cell Using SCAPS-1D.
365	Assessment of Solar Energy Potential in Bangladesh’s Central and Peripheral Regions
372	Study and Comparative Analysis on Fractional Order PID Controlled Buck Converter
379	Financial Analysis of a Grid-Tied Rooftop Solar PV System for University Campus: A Case Study
408	An Advanced Optimized Virtual Inertia Control Technique for Wind Energy Integrated AC Microgrids

TS-3B: Electronics, Materials Science, VLSI and Real Time Systems-3	
Venue: Computer Lab R323, EEE Department, FSE Building	Time: 11:30 – 13:00, Sunday
Session Chairs: Prof Dr. Muhibul Haque Bhuyan, AIUB Dr. Md. Shamimul Haque Choudhury, EEE, IIUC	
Moderators: Mr. M. Tanvirul Hoque, Lecturer, EEE, IIUC Engr. Mohammad Jalal Uddin, Assistant Professor, EEE, IIUC	
Invited Talk	Ab Initio Structural Search for High-pressured Solid Hydrogen over 0.5 TPa Dr. Tomohiro ICHIBA , Assistant Professor, Information Science, Sustainable Innovation, Research Center, for Exponential Biomedical DX, (Excellent Core), Japan Advanced Institute of Science and Technology (JAIST), Japan.
Paper ID	Title of the Paper

57	Study and analysis of structural, electrical, and optical properties of CaPSe3 for solar cell application
275	SiO2 Nanosphere for Reducing Reflection in Perovskite Solar Cell by Using AnsysLumerical
297	Enhancing Efficiency of CdS/CdTe Solar Cells with Double BSF Layer by Numerical Analysis
303	TMDC Material Integration as Buffer Layer for Cost-Effective and High Performance CIGS Solar Cell
439	Investigation of varied Doping of ZnO as an ETL for KSnI3 based Perovskite Solar Cell with ETL and Absorber Thickness Optimization

TS-3C: Artificial Intelligence and Intelligent Computing-3

Venue: AI LAB_C101, CSE Main Building

Time: 11:30 – 13:00, **Sunday**

Session Chairs:

Dr. Md. Golam Rabiul Alam, Professor, Dept. of CSE, BRACU

Dr. Shahid Md. Asif Iqbal, Professor & Chairman, Department of Computer Science and Engineering Premier University, Chattogram

Moderators:

Mr. Mohammad Zainal Abedin, Assistant Professor, CSE, IIUC

Mr. Mohammad Sazid Zaman Khan, Assistant Professor, CSE, IIUC

Paper ID	Title of the Paper
90	Exploring Augmentation Strategies for Balanced Skin Lesion Classification: An Explainable Lightly Tuned DenseNet 169 Architecture
256	Early Prediction of Crop Yield in Bangladesh Using Ensemble Learning
264	A Comprehensive Analysis of COVID-19 Detection Using Bangladeshi Data and Explainable AI
268	A Hybrid DCNN ECOC-SVM System for Detecting Semiconductor Wafer Defects Using Histogram Equalization
271	Survival Analysis of Heart Failure Patients through Logic Mining in Discrete Hopfield Neural Network
119	Attention Enhanced Inception-V3: A Multi-Scale Feature Fusion Network for Skin Lesion Detection with Explainable Artificial Intelligence

TS-3CP: Artificial Intelligence and Intelligent Computing-4

Venue: CN LAB_C401, CSE Main Building

Time: 11:30 – 13:00, **Sunday**

Session Chairs:

Dr. Mohammad Jahirul Islam, Professor, SUST

Dr. Taskeed Jabid, Professor, Department of Computer Science & Engineering, East West University

Moderators: Mrs. Sanjida Sharmin, Lecturer, CSE, IIUC Mrs. Taniya Sultana, Lecturer, CSE, IIUC	
Paper ID	Title of the Paper
279	Anemia Detection through Sclera and Vessel Analysis: A Machine Learning and Deep Learning Perspective
282	Brain Tumors classification of MRI Based Imaging using Deep Learning-based Approach
288	Fuzzy Based Intelligent Transportation Systems for Smart Cities to Mitigate Road Traffic Congestion
309	Health Trauma and Wellbeing Assistant for Bengali Seniors in Household: A Multimodal Approach
312	A Real-Time Application-Based Convolutional Neural Network Approach For Mango Leaf Disease Classification
323	A Multi-modal Approach of Sentiment Analysis on Samsung Cell Phone Review

TS-3D: Data Science and Big Data Analytics -3	
Venue: PLAB #1_C301, CSE Main Building	Time: 11:30 - 13:00, Sunday
Session Chairs: Dr. Engr. Abdul Kadar Muhammad Masum Professor, Department of Software Engineering, Daffodil International University Dr. Muhammed Jamshed Alam Patwary, Assistant Professor , IICT, CUET	
Moderators: Ms. Shafayetuz Zohra, Lecturer, CSE, IIUC Ms. Yamina Islam, Assistant Lecturer, CSE, IIUC	
Paper ID	Title of the Paper
339	Analyzing Public Sentiments from Bangladeshi Tour and Travel Vlog Video Comments Using Machine Learning
364	ACoD: Detecting Abusive Comments from Transliterated Bengali Text Using Deep Learning Techniques
395	Depression Detection from Social Media Posts using Ensemble Machine Learning
402	An AI-NLP based Interactive Chatbot Model for Patient Prescreening at Doctor's Consultancy
481	A Dynamic Resampling Method for Credit Card Fraud Detection in Imbalance Classification

TS-3E: IOT and Signal Processing -3	
Venue: Room No.-306, AI & Machine Learning Lab, Dept. of CCE	
Time: 11:30- 13:00, Sunday	
Session Chairs: Dr. Md. Sajjatul Islam, Associate Professor, Dept. of CSE, CIU Prof. Md. Razu Ahmed, Chairman, Dept. of CCE, IIUC	
Moderators: Mr. Amanul Hoque, Assistant Professor, Dept. of CCE, IIUC Mr. Hassan Jaki. Lecturer, Dept. of CCE, IIUC	
Paper ID	Title of the Paper
391	An Interpretable Skin Cancer Classification Using Optimized Deep Transfer Learning Method
394	Machine Learning Techniques for Brain Tumor Classification: A CNN-SVM Approach
397	Audio Signal Analysis and Recognition of Bengali Alphabets: A Comparative Study of Machine Learning Approaches
432	An IoT-based Smart Waste Management System for Efficient Waste Segregation and Collection
468	Enhancing Workplace Efficiency: An Intelligent Office Automation System Leveraging IoT
478	Optimizing Water Management: An IoT-Driven Approach to Smart Irrigation

TS-3F: Communication and Computer Networks – 3 (Antennas and Propagation: Special Session by IEEE AP-S MGA, Bangladesh)	
Venue: Room 421, ETE Department FSE Building	
Time: 11:30- 13:00, Sunday	
Session Chairs: Dr. Foez Ahmed, Associate Professor, Dept. of ICE, University of Rajshahi Dr. Saif Hannan, Assistant Professor, Dept. of ETE, IIUC	
Moderators: Mr. Md Mostafa Amir Faisal, Assistant Professor, Dept. of ETE, IIUC Mr. Ahmad, Lecturer, Dept. of ETE	
Invited Talk	IEEE AP-S Membership (The Organization, Its Mission and Benefits) Dr. Foez Ahmed, Associate Professor, Dept. of ICE, University of Rajshahi
Paper ID	Title of the Paper
261	Design of a unique H-L shape EBG Antenna for 5G Telecommunication Technology.
460	A Wrench Shaped MIMO Antenna with Enhanced Bandwidth and Isolation for 5G Applications.

480	Graphene-integrated Patch Antenna with MIMO for IoT/6GTHz Applications.
487	A Novel Tri-band MIMO Antenna for 5GWirelessCommunication.

TS-2G: Pharmacy and Biological Science-2

Venue: Seminar Hall, Auditorium Building. **Time:** 11:30 – 13:00, **Sunday**

Session Chairs:

Professor Dr. Mohammad Ashik Mosaddik, Pro-Vice chancellor, East West University, BD
Dr. A.R.M. Ruhul Amin, Associate Professor, Department of Pharmaceutical Sciences,
Marshall University School of Pharmacy, USA

Moderators:

Mr. Mohammed Abu Sayeed, Associate Professor, Pharmacy, IIUC
Mr. Md. Ashraf Uddin Chowdhury, Lecturer, Pharmacy, IIUC

Invited Talk Video Harnessing AI for Transforma0ve Healthcare: From Drug Procurement to Patent Care.
Dr Yuslina Zakaria, Associate Professor. Department of Clinical Pharmacy, Faculty of Pharmacy , UniversitiTeknologi MARA (UiTM),PuncakAlam Campus,42300 Bdr Puncak Alam, Selangor, **Malaysia**

Paper ID Title of the Paper

483 Bioactivity Studies on N-Hexane and Aqueous Fractions of MerremiaVitifolia Stem by In Vitro Approach

490 Exploring the Pharmacological and Therapeutic Horizons of Methanolic Merremiavitifolia (Burm.f) Hallier f. Leaf Extract: Bridging In Vitro and In Vivo Pharmacological Insights

494 Investigation of in vitro Anthelmintic, Cytotoxic, and in vivo Anti-Diarrheal, Analgesic Activity of Ethanol Extract of Mussaendaglabra Leaves

497 Biological Efficacy of Thymoquinone (TQ) in Alzheimer’s Disease: Focus on the TQ-mediated Amelioration of Disease Pathology

Plenary Session 4: Day 2, Sunday, 27 October 2024	
Venue: IIUC Auditorium	Time: 14:00 – 15:45, Sunday
Session Chairs: Dr. A.R.M. Ruhul Amin , Associate Professor, Marshall University School of Pharmacy, Huntington, WV 25755, USA . Dr. Tomohiro ICHIBA , Assistant Professor, Information Science, Sustainable Innovation, Research Center, for Exponential Biomedical DX (Excellent Core), Japan Advanced Institute of Science and Technology (JAIST), Japan .	
Moderators: Md. Ashraf Uddin Chowdhury, Lecturer, Pharmacy, IIUC Mrs. Nuren Nafisa, Lecturer, CSE, IIUC	
Name of Keynote Speaker	Topic
Professor Dr. Mohammad Ashik Mosaddik Professor of Pharmacy. Pro-Vice chancellor, East West University, Bangladesh.	Nanomedicine- is a revolution in the Pharmaceutical Sciences.
Prof. Mohamed-Slim Alouini , FIEEE Distinguished Professor, Electrical and Computer Engineering King Abdullah University of Science and Technology', KSA .	Towards Connecting the Unconnected
Prof. Ujjwal Maulik, FIEEE Jadavpur University Department of Computer Science and Engineering, Kolkata,WB,700032, India	Machine Learning for Healthcare
Prof. Ir. Nofri Yenita Binti Dahlan Director, Solar Research Institute (SRI) UniversitiTeknologi MARA 40450 Shah Alam, Selangor, Malaysia.	Empowering Research and Innovations: Revolutionizing Campus Sustainability through Smart Microgrids.

TS-4A: Power and Green Energy System- 5	
Venue: SE LAB_C201, CSE Main Building	Time: 16:15 – 17:45, Sunday
Session Chairs: Dr. Shampad Ghosh, EEE, CUET Dr. Md. Aasim Ullah , Assistant Professor, EEE, IIUC	
Moderators: Mr. Asifur Rahman, Lecturer, EEE, IIUC Mr. Riazul Islam, Lecturer, EEE, IIUC	

Paper ID	Title of the Paper
212	Design and Feasibility Analysis of a 1 MWp Grid-Connected Floating Solar Photovoltaic Plant in Kaptai, Bangladesh
420	A Proposal on Self-Healing Control Strategy for Smart Grid Protection Using Auto-Recloser.
446	Enhancement of Aluminum Polytetrafluoroethylene Based Triboelectric Nanogenerator for High Temperature Environment.
455	Towards a Deeper Understanding of Transformer for Residential Non-intrusive Load Monitoring
479	Investigation into different types of uncertainties of power distribution system using Geographic Information System (GIS) Mapping.
484	Performance Analysis of A Modified Bridge Current Limiter in Mitigating Asymmetrical and Symmetrical Faults in Power Systems.

TS-4B: Electronics, Materials Science, VLSI and Real Time Systems- 4	
Venue: Computer Lab R323, EEE Department, FSE Building	Time: 16:15 – 17:45, Sunday
Session Chairs: Prof Dr. Muhibul Haque Bhuyan, AIUB Dr. Zahid Hasan, EEE, IIUC	
Moderators: Md. Sazidul Haque, Lecturer, EEE, IIUC Raihan Chowdhury, Lecturer, EEE, IIUC	
Paper ID	Title of the Paper
235	Topology Optimization of a 3D Printable Prosthetic Foot.
305	Exploring Age-Related Changes in Bioimpedance across Diverse Biological Samples.
307	Mathematical Models Development of Intracellular Fluid with Bioelectrical Impedance Analysis.
412	A Numerical Approach to Design and Optimization of Highly Efficient CuInS ₂ /CMTS Based Tandem Solar Cell for Sustainable Energy Solution.
428	Design & Optimization of a Lead Free High Performance Cs ₂ SnI ₆ -Based Inorganic Perovskite Solar Cell by SCAPS-1D
438	Design and Optimization of CH ₃ NH ₃ SnBr ₃ /CuInSe ₂ Monolithic Tandem Solar Cell with Enhanced Efficiency using SCAPS-1D.

TS-4C: Artificial Intelligence and Intelligent Computing-5	
Venue: AI LAB_C101, CSE Main Building	
Time: 16:15 – 17:45, Sunday	
Session Chairs: Dr. Engr. Abdul Kadar Muhammad Masum Professor, Department of Software Engineering, Daffodil International University Dr. Tasked Jabid, Professor, Department of Computer Science & Engineering, East West University	
Moderators: Mrs. Farzana Tasnim, Lecturer, CSE, IIUC Ms. Ashifatul Ferdousi, Assistant Lecturer, IIUC	
Paper ID	Title of the Paper
340	An experimental analysis on different pivot selection approaches for the quicksort algorithm.
346	BrainACGAN: Auxiliary Classifier Generative Adversarial Network for Brain Tumor Images.
347	ChestACGAN: Auxiliary Classifier Generative Adversarial Network for Chest X-ray Images.
358	X-LeafNet: A Modified Xception Model for Identifying Tea Leaf Diseases with Explainable Artificial Intelligence.
373	Developing a Loan Recommendation System using Genetic Algorithm.
376	Integrating XAI with Hybrid BiGRU-BiLSTM Model for Comprehensive Maternal-Fetal Health Risk Monitoring.

TS-4CP: Artificial Intelligence and Intelligent Computing-6	
Venue: PLAB#1_C301, CSE Main Building	
Time: 16:15 – 17:45, Sunday	
Session Chairs: Dr. Mohammad Jahirul Islam, Professor, SUST Dr. Shahid Md. Asif Iqbal, Professor & Chairman, Department of Computer Science and Engineering Premier University, Chattogram	
Moderators: Mrs. Sayma Hoque, Assistant Professor, CSE, IIUC Ms. Tanzim Mustary, Lecturer, EEE, IIUC	
Invited Talk Video	Computer as a technological backbone for an innovative learning environment in engineering. Dr. Amadi Oko Amadi , Senior Lecturer, Department of Computer Engineering Technology, Akanulbiam Federal Polytechnic, Unwana, Nigeria.

Paper ID	Title of the Paper
430	Traffic Sign Classification Using Generative Adversarial Network.
445	Enhancing Object Detection for Autonomous Vehicles Using YOLO-NAS on Bangladeshi Dataset.
503	Deep Web: A Web Application for Advanced Lung Cancer Identification using Novel CNN Model.
522	Integration of Deep Learning Based Image Analysis in Lung Cancer Pathology.
551	Load Balancing Algorithm: A Markov Chain Model Using Queuing Theory Approach.

TS-4E: IOT and Signal Processing-4	
Venue: Room No.-306, AI & Machine Learning Lab, Dept. of CCE	Time: 16:15 – 17:45, Sunday
Session Chairs: Dr. Md. Azad Hossain, Professor and Chairman, Dept. of ETE, CUET Dr. Mohammed Saifuddin, Assistant Professor, Dept. of CCE, IIUC	
Moderators: Mr. Hassan Jaki, Lecturer, Dept. of CCE, IIUC Mr. Amanul Hoque, Assistant Professor, Dept. of CCE, IIUC	
Paper ID	Title of the Paper
82	Enhanced Skin Lesion Detection Using Concatenated DenseNet and Multi-Attention Mechanisms
498	Enhancing Traffic Flow and Reducing Congestion: A Smart City Approach with an IoT-based Intelligent Traffic Management System.
512	Real-Time IoT-Based Toxic Gas Monitoring and Comparative Analysis of Machine Learning Techniques for Air Quality Index Prediction in Dhaka.
517	Perceptual Quality Restoration of Laparoscopic Videos via GAN-Based Smoke Elimination.
525	Visualizing Crop Disease Detection Exploring Deep Learning with Custom CNN Model and XAI for Enhanced Interpretability.
530	Hand Gesture Recognition based Speed and Direction Control of DC Motor Using CNN

TS-4F: Communication and Computer Networks-4	
Venue: Room 421, ETE Dept, FSE Building	Time: 16:15 – 17:45, Sunday
Session Chairs: Prof. Dr. Md. Sanaullah Chowdhury, Dean, FSE, University of Chittagong Dr. Abdul Gafur, Associate Professor, Dept. of ETE, IIUC	

Moderators: Mr. Md Mostafa Amir Faisal, Assistant Professor, Dept. of ETE, IIUC Mr. Ahmad, Lecturer, Dept. of ETE	
Paper ID	Title of the Paper
215	Design of Low Dispersion Silicon Nanowire Optical Rectangular Waveguide for Label-Free Biosensing Applications
252	Design of an Effective Multiband Linear and Circular Polarization Converter Using Reflective Metasurface.
401	Fan Grill Shaped Circular Split-ring Loaded Metamaterial Absorber For X, Ku & K Band Applications.
419	Analysis of Energy Consumption and Efficiency in the Two-tier Network for LoRa and LR-FHSS IoT Sensor Communication.
431	Suppressing Grating Lobes in Transmitting All-Metal Phase-Gradient Metasurface.

TS-4S: Special Session	
Venue: Seminar Hall, Auditorium Building	Time: 16:15 – 17:45, Sunday
Session Chairs: Dr. Muhammad Moazzam Hossen, Associate Professor, CSE, IIUC Dr. Muhammed Jamshed Alam Patwary, Assistant Professor, IICT, CUET	
Moderators: Mr. Sahariar Reza, Lecturer, CSE, IIUC Mr. Md. Taiseer Alam, Lecturer, CSE, IIUC	
Paper ID	Title of the Paper
167	IoT Based Smart Healthcare System for Real Time Monitoring and Diagnostics in Bangladesh
322	Tomato Shelf Life Prediction using IoT and Machine Learning
415	Optimization of Distribution Network Reconfiguration Using Various Algorithms for Power Loss Minimization
457	Design and Performance Comparison of Radiation-Tolerant and Conventional 8:1 Multiplexers in 90 nm Technology
496	Design and Simulation of a polarization insensitive Terahertz Metamaterial Absorber for Enhanced Refractive Index Sensing