

# The Spintronics NEWS LETTER

## J. B. Institute of Engineering & Technology

December 2024

Volume 1, Issue02



### Department of ECE

#### Vision:

To be a guiding force enabling multifarious applications in Electronics and Communications Engineering, promote innovative research in the latest technologies to meet societal needs.

#### Mission:

- To provide and strengthen core competencies among the students through expert training and industry interaction.
- To promote advanced designing and modeling skills to sustain technical development and lifelong learning.

#### INSIDE HIGHLIGHTS:

HOD'S MESSAGE

EVENTS

STUDENTS ACHIEVEMENTS

ARTICLES



**Dr. Towheed Sultana**

### **From the Head of Department's Desk**

It gives me immense pleasure to present this edition of the Department of Electronics and Communication Engineering (ECE) newsletter. At J. B. Institute of Engineering & Technology, we take pride in nurturing young minds and shaping them into competent engineers and innovators.

This Semester has been truly rewarding, marked by the commendable efforts of our faculty, the enthusiasm of our students, and the continued support from our management and alumni. Our department has seen significant progress — from impactful student projects, research publications, and industry collaborations, to the successful organization of seminars, workshops, and technical events. These milestones are a testament to our commitment to academic excellence and holistic development.

Looking ahead, our focus remains on enhancing research initiatives, promoting industry interaction, and fostering entrepreneurial spirit among students. With emerging technologies like AI, IoT, and 5G reshaping the ECE landscape, we are continuously evolving our curriculum and practices to keep pace with global advancements.

Let us continue to work together — faculty, students, alumni, and industry partners — to take our department to even greater heights.

Warm regards,

**Dr. Towheed Sultana**

Head of the Department

### **Events Conducted:**

- 5 Days Hands on Workshop on Internet of Things with Arduino 9th -13th September, 2024
- Five Day Printed Circuit Board Workshop from 5-10-2024 To 29-10-24
- International Conference on Devices, Intelligent Systems & Communications (DISC) 2024. November 08th - 09th, 2024.

## Department Highlights

1. Accreditations, Recognitions, and Rankings

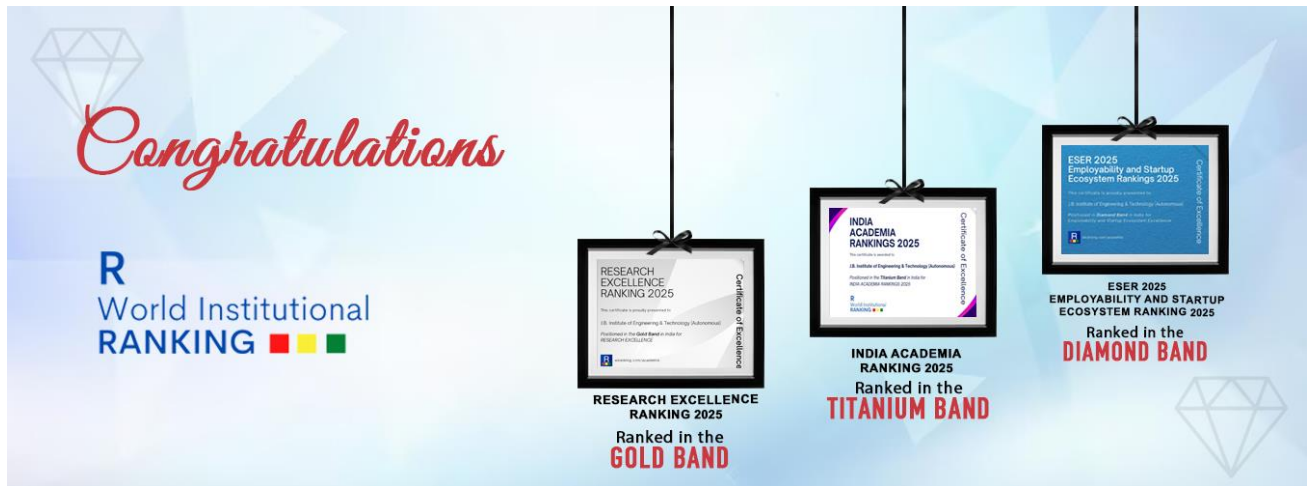
The banner features a background image of the institute's building. On the left, the text "J.B. INSTITUTE OF ENGINEERING & TECHNOLOGY" is prominently displayed. On the right, there is a "Certificate of Accreditation" from the National Assessment and Accreditation Council (NAAC). Below the main text, there are logos for the institute, NAAC, and a circular seal. To the right of the logos, the text reads "ACCREDITED BY NAAC - GRADE 'A' WITH HIGH SCORE 3.23". On the far right, there is a gold seal with the letter 'A' and the text "ACCREDITED WITH GRADE NAAC".

**J.B. INSTITUTE OF ENGINEERING & TECHNOLOGY**

**NAAC** NATIONAL ASSESSMENT AND ACCREDITATION COUNCIL

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**NAAC**



2. MoUs and Collaboration
  - MOU with Jadavpur University, Jadavpur, West bengal
  - MOU with Kalyan Industry, Hyderabad
3. New Labs and Infrastructure Upgrades: DST FIST LAB Established students are enrolled to PhD programs under the FIST LAB
4. Innovation in Teaching and Learning: **I2Hub – Inclusive Innovation Hub center is established**

## Workshop Schedule:

Day	Date	Topic
Day 1	9th Sept 2024	Introduction to IoT & Arduino, Installation of Arduino IDE, Basic I/O
Day 2	10th Sept 2024	Sensor Interfacing: Temperature, Humidity, and Motion Sensors
Day 3	11th Sept 2024	Wireless Communication: Wi-Fi Modules (ESP8266), Bluetooth, Data Logging
Day 4	12th Sept 2024	IoT Project Building – Real-time Monitoring System
Day 5	13th Sept 2024	Project Demonstration, Evaluation, Feedback Session, and Certificate Distribution



Lecture  
Session by  
the Experts



Hands on Sessions

**Organized by the Department of Electronics and Communication Engineering, JBIET**

**Date:** 9th – 13th September 2024

The Department of Electronics and Communication Engineering, J.B. Institute of Engineering and Technology (JBIET), successfully organized a **5-Day Hands-on Workshop on Internet of Things (IoT) with Arduino** from **9th to 13th September 2024**. This workshop aimed to provide students with practical exposure to modern IoT applications and hands-on experience with Arduino-based projects.

The workshop witnessed enthusiastic participation from **around 100's of students**, conducted under the guidance of **Dr. Towheed Sultana** from the Department of ECE. The sessions were led by expert trainers **Mrs. N. Soujanya** and **Mr. Ashok** from **Kalyan Industry**, who shared industry-relevant insights and conducted hands-on sessions on sensor integration, wireless communication, and IoT project development.

Throughout the workshop, participants engaged in building real-time projects and gained valuable experience in the use of Arduino boards, sensors, and IoT platforms. The interactive sessions helped bridge the gap between theoretical knowledge and practical implementation.

The event was highly appreciated by students and faculty alike for its practical relevance and industrial focus.



## Workshop Schedule – Five-Day PCB Design and Fabrication

**Duration:** 5th October – 29th October 2024

**Venue:** Department of ECE, JBIET

**Organizers:** Mrs. B. Supriya & Mrs. A. Jyothi

**Key Speakers:** Prof. V. V. V. S. Prasad & Dr. Towheed Sultana

Day	Date	Topic
Day 1	5th October 2024	Inauguration & Introduction to PCB Design – Importance, Applications, Tools Overview
Day 2	10th October 2024	Hands-on Session on Schematic Design using Eagle/KiCad – Basic Components & Netlists
Day 3	15th October 2024	PCB Layout Design – Routing Techniques, Design Rules, Error Checking
Day 4	22nd October 2024	PCB Fabrication Process – Etching, Drilling, Component Mounting, and Soldering
Day 5	29th October 2024	Final Project Work – PCB Assembly, Testing, Student Demonstrations & Valedictory

Lecture Session by  
Prof. VVV S Prasad



The Department of Electronics and Communication Engineering, **J. B. Institute of Engineering and Technology (JBIET)**, organized a **Five-Day Workshop on Printed Circuit Board (PCB) Design and Fabrication** from **5th October to 29th October 2024**. The workshop was coordinated by **Mrs. B. Supriya** and **Mrs. A. Jyothi**, with active involvement from both faculty and student participants.

The primary objective of the workshop was to equip students with hands-on experience in PCB design tools and fabrication processes. The sessions focused on:

- Introduction to PCB design software (Eagle, KiCad)
- Schematic design and layout techniques
- Simulation and error checking
- Single and double-layer PCB fabrication
- Etching, drilling, and soldering techniques

The workshop featured expert sessions by **Prof. V. V. V. S. Prasad** and **Dr. Towheed Sultana**, who guided students through real-time applications and industry practices in PCB manufacturing.

100s of students participated in the workshop, gaining valuable insights into electronic hardware development. The workshop culminated in a mini project presentation, where participants showcased the PCBs they had designed and fabricated during the sessions.





Glimpse of Workshop



Hands on sessions

The Department of Electronics and Communication Engineering at JBIET successfully organized the International Conference on Devices, Intelligent Systems & Communications (DISC) 2024 during November 8th–9th, 2024. The conference served as a dynamic platform for researchers, academicians, industry professionals, and students to share their innovative ideas and recent developments in the areas of intelligent systems, embedded technologies, communication systems, and electronic devices.

The event was spearheaded by Dr. Prasanta Kumar Pradhan, Dr. A. Jana, and Mr. Rajkumar Bhure, whose efforts ensured the smooth execution of the two-day conference. Distinguished keynote addresses were delivered by eminent experts Dr. Vijaya Agrawal and Dr. Towheed Sultana, who provided deep insights into emerging trends in smart communication technologies and device-level innovations.

**KEY SPEAKERS**



  
**Professor V. Ramgopal Rao**  
Former Director, IIT Delhi and Group  
Vice-Chancellor, BITS Pilani Campuses

  
**Professor Arun Kumar Pujari**  
HOD of AI & CSE,  
Advisor & Professor Emeritus  
Mahindra University

  
**Professor Sayan Chatterjee**  
Department of ETE,  
Jadavpur University

  
**J. B. INSTITUTE OF ENGINEERING & TECHNOLOGY**  
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**2ND INTERNATIONAL CONFERENCE  
ON DEVICES, INTELLIGENT  
SYSTEM AND COMMUNICATIONS**

 **8TH-9TH  
NOV, 2024**

 **J. B. INSTITUTE OF ENGINEERING  
AND TECHNOLOGY**

 [www.disccon.com](http://www.disccon.com)

# International Conference on Devices, Intelligent Systems & Communications (DISC) 2024.

## November 08th - 09th, 2024

As one of Telangana's top ten most preferred institutions, JBIET strives to impart very high technical engineering and professional education standards. JBIET aims to mould young learners into globally competitive professionals who are professionally deft, intellectually adept, and socially responsible. The expert faculty at JBIET inculcate the best values and principles, adhering to a modern curriculum; while the students imbibe pragmatic perception and a pro-active nature, which spurs them towards exploration and advanced inquiry, resulting in valuable insights. The placement record of JBIET over the years is proof of our right efforts in enabling the best in class engineering, technical, and professional education to aspirants.

### ABOUT CONFERENCE

DISC 2024 conference showcases cutting-edge research and innovations across a spectrum of disciplines. DISC 2024 brings together researchers, scholars, and practitioners from diverse fields including Electronics and Communication Engineering (ECE), Electrical and Electronics Engineering (EEE), Software and Computer Engineering (SCE), Artificial Intelligence and Machine Learning (AIML), Civil Engineering, Mechanical Engineering, Information Technology (IT), Electronic and Computer Management Engineering (ECM), and Management.

Submission Start : 01.07.2024  
Submission Deadline : 30.09.2024  
Acceptance Notification : 15.10.2024  
Camera Ready Submissions : 25.11.2024  
Registration Starts : 01.11.2024

### PROCEEDINGS PUBLICATION

All accepted and registered papers will be submitted for publication in AIP Conference Proceedings, Indexed in Scopus & WoS

### MODE OF CONFERENCE

Hybrid Mode

### REGISTRATION CHARGES

Students & Research Scholars : Rs. 10000/-  
Faculty and Academia : Rs. 11000/-  
Participants from Industry : Rs. 15000/-  
Participants without paper : Rs. 3000/-  
Authors (Foreign Origin) : USD 150

### FOR DETAILS VISIT

[www.disccon.com](http://www.disccon.com)



SCAN QR CODE FOR WEBSITE

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India, 500075

**AIP**  
WoS & Scopus Indexed

## 2nd International Conference on Devices, Intelligent Systems, and Communications (DISC 2024)

8th - 9th November, 2024



Organized by  
The Department of Electronics  
& Communication Engineering

### SCOPE

The topics include, but are not limited to:

- Low Power Devices
- Intelligent Systems
- Communications
- Micro Electro Mechanical Systems
- Renewable Energy
- Modern Structure & Machine
- Management Science
- Bioelectronics Sensors
- Internet-of-Things (IoT)
- Adhoc Sensor Networks
- Data and Network Security
- Distributed Computing
- High-Performance Computing
- Blockchain Technology
- AI, ANN, ML
- Deep Learning, Cloud Computing
- Big Data, Data Science
- Electric Vehicle Technology
- Renewable Energy Integration
- Power Quality Improvement
- Energy Storage Systems
- CAD Thermal Engineering
- Robotics
- Optimization Technologies
- Advanced deep learning applications in human life
- Sustainable Concrete Materials
- Earthquake Resistant Designs
- Geotechnical Investigations in Civil Engineering

### KEYNOTE SPEAKERS

- Prof. V. Ramgopal Rao, Former Director, IIT Delhi and Group Vice-Chancellor, BITS Pilani Campuses.
- Dr. Sarat Kumar Patra, Director NIT Agartala.
- Dr. Sayan Chatterjee, Professor, Department of ETE, Jadavpur University.
- Dr. Tahsin Samira, Pukyong National University, Korea (S).

### PATRONS

- Sri J.V. Krishna Rao, Secretary, JBES
- Dr. Ch. Sanjay, Director, JBES
- Dr. P.C. Krishnamachary, Principal, JBIET

### CONFERENCE CHAIR (S)

- Dr. Towheed Sultana, HOD-ECE
- Dr. L. Vaikunta Rao, Dean, R&D

### CONVENER (S)

- Dr. Anindya Jana, Professor
- Dr. Prasanta Kumar Pradhan, Professor

### COORDINATOR (S)

- Mr. Rajkumar D Bhure, Associate Professor
- Mrs. Kiran Pakmode, Assistant Professor

### EDITORIAL BOARD

- Dr. Himanshu Sharma, Associate Professor
- Dr. P Dural Pandey, HOD-EEE

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### TECHNICAL COMMITTEE

- Prof. V. Ramgopal Rao, Former Director, IIT Delhi and Group Vice-Chancellor, BITS Pilani Campuses.
- Dr. Sarat Kumar Patra, Director NIT Agartala.
- Dr. Sayan Chatterjee, Professor, Department of ETE, Jadavpur University.
- Dr. Jee-Youl Ryu, Department of Information and Communications Engineering, Pukyong National University.
- Dr. Sai Kumar Tara, Secretary, IEEE, Hyderabad Chapter.
- Dr. Badri Narayan Subudhi, Associate Professor, IIT Jammu.
- Dr. Pyari Mahan Pradhan, Associate Professor, IIT Roorkee.
- Dr. Priya Ranjan Modak, Assistant Professor, IIT BHU.
- Dr. Oliver Faut, Associate Professor, ARU, Cambridge.
- Dr. Satya Sai Jagannath Nanda, Associate Professor, MNIT Jaipur.
- Dr. Srishail Hiremath, Assistant Professor, NIT Rourkela.
- Dr. Sahyendra Singh Yadav, Assistant Professor, NIT Meghalaya.
- Dr. Rajamohamed C. Eng(UK), Fellow (Advance HE UK), Assistant Professor, University of Bahrain.
- Dr. D. Devaraj, Senior Member, IEEE, Senior Professor, Department of Electrical and Electronics Engineering, Kalasalingam Academy of Research and Education, Tamil Nadu.
- Dr. Sheikh Mohammed Sulthan, Deputy Director, Centre for Transport Research, Assistant Professor, Faculty of Engineering, Universiti Teknologi Brunei, Gadong A, Brunei Darussalam.
- Prof. D. Krishna Reddy, HOD, Electronics and Communication Engineering, Chaitanya Bharati Institute of Technology, Hyderabad.
- Prof. Y.Vijayalata Chair, IEEE Hyderabad Section, Dean, Computer Science, Vardhaman College of Engineering, Hyderabad.
- Dr. K. Naga Sujatha, Professor & HOD, Department of Electrical and Electronics Engineering, JNTUH, Telangana.
- Dr. G. Suresh Babu, Professor, Department of Electrical and Electronics Engineering, Chaitanya Bharati Institute of Technology, Hyderabad.
- Prof. Nitesh Purohit, HOD ECE, IIT, Allahabad.
- Dr. Prasuna Chakraborty, Director & Dean Research, SPSU, Udaipur.
- Prof. Subha Rao Y.V, Osmania University, Hyderabad.
- Prof. Atul Negi, Osmania University, Hyderabad.
- Mrs. Jyoti Pancholi, Senior Scientist, ECIL, Hyderabad.

<b>Paper ID</b>	<b>List of Papers accepted in the Conference-DISC 2024</b>
<b>3</b>	Transient Analysis Of Multiple Drivers Connected To Multiple Receivers Through Lossy Dispersive Coupled Interconnect Lines System For CMOS Digital Integrated Circuits
<b>5</b>	Biomimetic and Biological Sensing Technologies for the Assessment of Water Contaminants
<b>12</b>	Effective Error Reduction of OFDM Systems Using Optimal Preface Based Maximum Likelihood Based Channel Estimation
<b>16</b>	An Effective Real Time Sign Language Recognition Using Yolo Algorithm
<b>19</b>	NEURAL NETWORK BASED FAKE NEWS DETECTION USING NLP TECHNIQUE
<b>21</b>	Block chain-Integrated Spherical Convolutional Neural Network for IoT-Based Advanced Vehicle Pollution Monitoring and Node Authentication
<b>23</b>	A Novel Neural Network-Based Routing Algorithm with optimal resource management for VANET Architectures
<b>24</b>	Cryptographically Enforced De-Duplication with Multi-Layer Authentication for Cloud-Based Big Data Solutions
<b>25</b>	BUILDING A REAL AND FAKE HUMAN FACES DATASET FOR TRAINING AND EVALUATION OF DEEP LEARNING MODELS
<b>28</b>	A COMPREHENSIVE SURVEY ON DEEP LEARNING TECHNIQUES FOR HUMAN ACTIVITY RECOGNITION IN IOT-ENABLED SMART ENVIRONMENTS
<b>29</b>	EXPLORING RANDOM PROJECTION TECHNIQUES FOR FACE RECOGNITION: A SURVEY OF MACHINE LEARNING APPROACHES
<b>34</b>	Awareness level on technological innovations in banking sector- A study of select Banks
<b>44</b>	Classifying Social Media Posts using Machine Learning and Natural Language Processing
<b>46</b>	PRIORITIZING WEATHER AND NON-WEATHER FACTORS FOR IMPROVED FLIGHT DELAY PREDICTIONS
<b>47</b>	UCS: Unified Chatbot Solution for University Payments, Enrollment, Exam Schedules, and Results
<b>49</b>	BRAIN TUMOR DETECTION BASED ON DEEP FEATURES CONCATENATION AND MACHINE LEARNING CLASSIFIERS WITH GENETIC SOLUTION
<b>64</b>	Congenital Heart Disease through Different ML and Deep Learning Techniques
<b>69</b>	Designing a Microstrip Patch Antenna for Cognitive Radio Applications
<b>86</b>	mmWave MIMO Beamforming for Large Scale Antenna by Uniform Planar Array
<b>4</b>	Optimized Plant Leaf Disease Detection and Fertilization Recommendation System using Computer Vision and Convolutional Neural Networks
<b>11</b>	Improving Performance of RF IC Multilayer Spiral Inductor
<b>18</b>	VEHICLE ACCIDENT AVOIDANCE AND DETECTION SYSTEM IN IOT
<b>36</b>	IoT LoRa Network For Mobile Devices Based on Improved AMILCC Technique
<b>56</b>	IoT Based Module for Monitoring and Control of Various Agricultural Parameters
<b>71</b>	Chip Design Flow of 6T, 7T, 8T and 9T Static Random Access Memory Using VLSI Development Tool

<b>62</b>	Power Quality Improvement of a Proposed Single-Source Switched-Capacitor based 13-Level Boost Inverter during off-Grid and Grid Conditions
<b>63</b>	Design modeling and cost benefit analysis of a 74.1kw grid connected rooftop solar PV power system using PVsyst
<b>76</b>	User Perspectives on Sustainable Transportation: AHP Analysis of Public Bike Sharing System in Bengaluru
<b>78</b>	Sustainability in Public Transport: Assessing Customer Satisfaction for Feeder Bus and Metro Integration in Bengaluru
<b>26</b>	Investigating the Impact of Xanthan Gum on Properties of Artificial Micaceous Soils
<b>38</b>	Deep Learning-Based Tuberculosis Detection from Chest X-ray Images
<b>51</b>	Experimental Analysis of Thermal Treatment Temperatures Effect on Aspect Ratio of Alpha Particles in Micro-Structure of Ti6Al4VTitanium Alloy
<b>37</b>	Automatic Medicine Dispensers used in Primary hostpital in Online Doctor Medical Consultation using Machine Learning Technique
<b>77</b>	Exploring the Antibacterial Efficacy of SrTiO <sub>3</sub> and GO in the Absence of Light: Mechanisms, Synergies, and Applications
<b>80</b>	DEEP NEURAL NETWORK FOR BRAIN TUMOR DETECTION: A CNN AND RETINANET APPROACH