



# PRELUDE

IN-HOUSE NEWS LETTER  
FROM THE DEPARTMENT OF  
ELECTRONICS & COMMUNICATION ENGINEERING



**JIS COLLEGE OF ENGINEERING**

**(An Autonomous Institute)**

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## Editors

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**March-June,2024**

## **Event organized by the ECE department between April and June 2024.**

### **1) Seminar on VLSI in Electronic Industry**

The significance of VLSI in the electronics industry is widely recognized. In line with this, the Electronics and Communication Engineering Department of JIS College of Engineering organized a seminar on VLSI for its ECE students on June 3rd, 2024. The event was coordinated by Dr. Moumita Pal, Mr. Sourish Halder, Mr. Aniruddha Ghosh, Mr. Surojit Bhowmik, and Mr. Nirmal Biswas, and took place at the B.C. Roy auditorium of JISCE. Dr. Sumit Saha from Intel Corporation, India, was the keynote speaker, providing valuable insights into various aspects of the VLSI industry. His talk covered topics such as:

1. The process of designing integrated circuits (ICs) by incorporating thousands to billions of transistors onto a single chip.
2. PLA Unit.
3. Industrial applications of VLSI technology.
4. The future prospects of the VLSI industry, including growth and career opportunities.

A total of 77 ECE students attended the seminar, significantly enhancing their understanding of VLSI technology.



### **2) Report of Workshop on 'Introduction to Microcontrollers, Arduino, Robotics, IoT with Practical Projects for industrial purpose'**

A two-day workshop titled "Introduction to Microcontrollers, Arduino, Robotics, and IoT with Practical Projects for Industrial Applications" was organized by the Electronics & Communication Engineering Department of JIS College of Engineering on April 4th and 5th, 2024 which was sponsored by JIS College of Engineering. The event was coordinated by Mr. Anirban Ghosal and Dr. Anirban Patra (Assistant Professors in the ECE department) and conducted by FITAS Technologies Pvt Ltd (CIN No: U72900AS2018PTC018448).

A total of 45 second-year ECE students participated in the workshop, successfully completing hands-on projects. The workshop was inaugurated by the esteemed Principal of JISCE, Dr. Partha Sarkar, and the Head of the Department, Dr. Moumita Pal.

The sessions were led by Mr. Fitass Sarkar, founder of FITAS Technologies Pvt Ltd, and covered the following topics:

1. Introduction to 8085 microprocessors.
2. Overview of the ATmega328P microcontroller.
3. Basics of Arduino and its applications.

4. The role of robotics in daily life and industrial use.
5. Programming the Arduino UNO.
6. Sensor interfacing with components such as HCSR04 and DHT11.
7. Connecting modules like the 7-segment display and relay.
8. Introduction to IoT and working with the NodeMCU 8266 microcontroller.
9. Designing small projects, including an automatic hand sanitizer and remote-controlled lights.
10. Basics of RFID technology.

### **Workshop Outcome:**

- i) Second-year ECE students gained familiarity with microcontrollers.
- ii) They developed an understanding of IoT technology.
- iii) Students successfully created basic projects using microcontrollers and IoT.



### **3) Internship on VLSI**

The ECE department of JIS College of Engineering organized a VLSI internship for second-year ECE students, coordinated by Mr. Anirban Ghosal, Assistant Professor of ECE. The internship was conducted by ARDENT COMPUTECH PVT LTD, a leading academic institute in India. This 40-hour training provided a thorough understanding of the fundamentals, methodologies, and tools involved in designing and implementing integrated circuits. A total of 37 second-year ECE students participated and successfully completed the program, which included topics such as VLSI design concepts, simulation techniques, and practical hands-on exercises. The internship ran from April 8 to April 26, 2024, on the following dates: April 8, 9, 10, 15, 16, 17, 18, 19, 22, 23, 24, 25, and 26, with sessions held from 2 PM to 5 PM at the VLSI lab of the ECE department. The program was inaugurated with speeches by the Principal of JISCE, Dr. Partha Sarkar, and the Head of the ECE Department, Dr. Moumita Pal, who highlighted the importance of VLSI and extended their best wishes to the students for the internship.

The primary objectives of the internship were to:

- Introduce participants to the basics of VLSI design and its importance in modern electronics.
- Familiarize participants with the tools and techniques used in VLSI design.
- Provide hands-on experience in designing and simulating basic VLSI circuits.
- Discuss advanced topics in VLSI design, such as low-power design, ASICs, and FPGA-based design.

The 40-hour training on VLSI provided participants with a solid foundation in VLSI design principles and techniques. The hands-on exercises and practical examples helped reinforce the theoretical concepts discussed during the training. Participants were able to apply their newfound knowledge to design and simulate basic VLSI circuits, preparing them for more advanced studies or careers in the field of VLSI design. After end of Internship,

students completed projects in groups. Titles of few good projects are i) 4 bit ALU design ii) BCD to 7 segment display iii) Multi parameter calculator. List of students and attendance were given below.



### Industrial Visit for 2nd Year ECE Students

On 03/04/2024, 35 second-year ECE students from JIS College of Engineering, accompanied by Mr. Anirban Ghosal and Dr. Moumita Paul, visited Ardent Computech Pvt Ltd as part of an industrial tour organized by the ECE department of JISCE. The college provided transportation for both students and faculty to the location. The visit aimed to give students practical exposure to the IT industry, helping them connect theoretical knowledge with real-world applications. Ardent Computech Pvt Ltd, founded in 2002, is a leading IT company known for its expertise in learning and software development. The company has a strong presence in both national and international markets and is renowned for its innovative solutions and cutting-edge IT technologies.

The industrial visit to the IT company was arranged to give our students hands-on exposure to the IT industry. The objective was to broaden their knowledge of current technologies, software development practices, and the professional work environment in the IT sector. Additionally, the visit sought to introduce students to various career paths available in the field of Information Technology.



### Paper Publication of ECE faculty in between April to June, 2024

Name of the Author	Title of the Paper	Journal/Conference	Date of Publication
Dr.Anirban Patra	Secured communication of multiple compressed infrared images using 6D hyper-chaotic encryption	Journal of Optics	07 /04/ 2024
Dr.Ashim Kumar Biswas	Compact body-worn MIMO antenna with high port isolation for UWB applications	International Journal of Communication Systems	15/04/2024
Dr.Anirban Patra	Second level storage space optimization for lossless image compression using diffraction grating	Journal of Optics	27/06/2024
Dr.Moumita Pal	A Machine Learning Approach for the Analysis of Human Emotions	Journal of Chemical Health Risks	28/06/2024



### PATENT Publication of ECE department in between April to June, 2024

Sl. No.	Patent Application No.	Status of Patent (Published / Granted)	Inventor/s Name	Title of the Patent	Patent Filed Date (DD/MM/YYYY)	Patent Published Date / Granted Date (DD/MM/YYYY)	Patent Publication Number / Patent Granted Number
1	202431029541	Published	Dr. Partha Sarkar, Anirban Ghosal, Anirban Patra, Robin Mahanta, Afrin Begum, Amrita Das Adhikari, Swarnali Saha, Sambhavi Kumari, Ragati Mishra, Ronit Biswas, Siddharth Chakraverty	AI Enabled IoT Driven Automated Aquarium Ecosystem Administrator	12/04/2024	26/04/2024	The Patent Office Journal No. 17/2024 Dated 26/04/2024 39692
2	202431030944	Published	Dr. Partha Sarkar, Anirban Ghosal, Anirban Patra, Saptarshi Mondal, Anindita Sarkar, Nilimesh Pal, Payal Roy, Sayani Pal, Priyanshu Bhattacharjee, Sabbir Ali	SIGHT SENSE: A Comprehensive Assistive Device for Visually Impaired Navigation	17/04/2024	26/04/2024	The Patent Office Journal No. 17/2024 Dated 26/04/2024 39722
3	202431029542	Published	Dr. Partha Sarkar, Anirban Ghosal, Anirban Patra, Debopriya Das, Arijit Das, Gourab Nandi, Nilimesh Pal, Mrinal Kanti Mondal, Sayan Mondal, Swarnali Saha, Prathama Chakraborty, Samrat Dutta	IOT Based Smart and Secure Banking Locker System for banking purpose with instant access notification to user	12/04/2024	26/04/2024	The Patent Office Journal No. 17/2024 Dated 26/04/2024 39693
4	202431030639	Published	Anirban Ghosal, Ashim Kumar Biswas, Amrita Das Adhikari, Debopriya Das, Robin Mahanta,	AI Driven Wine/ Soda Peg Making Device	16/04/2024	26/04/2024	The Patent Office Journal No. 17/2024 Dated

			Payel Roy, Sayani Pal, Joy Singha Roy, Prathama Chakraborty, Anindita Sarkar				26/04/2024 39716
5	2024310315 11	Published	Anirban Ghosal, Moumita Pal, Sumanta Chatterjee, Swarnali Saha, Riyanka Ghosh, Moumita Paul, Mousumi Roy, Joy Singha Roy, Debopriya Das, Annu Kumari, Chandralekha Gorai	IOT based heart monitoring system	19/04/2024	26/04/2024	The Patent Office Journal No. 17/2024 Dated 26/04/2024 39730
6	2024310350 02	Published	Anirban Ghosal, Moumita Pal, Indranath Sarkar, Saptarshi Mondal, Ronit Biswas, Sabbir Ali, Rohit Rajak, Priyanshu Bhattacharjee, Moumita Paul, Sabuj Mallick, Adarshabrata Chowdhury, Sahitya Hira	IOT based Space rover and lander gate	02/05/2024	10/05/2024	The Patent Office Journal No. 19/2024 Dated 10/05/2024 45334
7	2024310353 09	Published	Dr. Partha Sarkar, Anirban Ghosal, Indranath Sarkar, Debarati Dey Roy, Spandan Bera, Upasana Paul, Suman Ghosh, Dipam Pal, Sattwick Adhikary	Automatic Vehicle Accident Detection and Alert System using IoT	03/05/2024	10/05/2024	The Patent Office Journal No. 19/2024 Dated 10/05/2024 45342

## Journal Publication of Final Year Student Projects

Sl no	Title of the paper	Authors name	Journal name	Date of Publication	ISSN
1	Novel Platform For New-Age Skill Based Financial Crowdfunding Applications	Mr. Anirban Ghosal, Dr. Bikramjit Sarkar, Dr. Indranath Sarkar, Ujjwal Kumar, Zia Tasneem, Sachin Kumar Dhuriya, Ankur Sarkar, Raj Shaw, Vimal Anand,	Industrial Engineering Journal	May, 2024,  Volume : 53, Issue 5, No.2	0970-2555
2	Novel Biometric Cloud-Based Attendance System	, Mr. Anirban Ghosal, Dr. Ashim Kumar Biswas, Dr. Indranath Sarkar, Bhabana Roy, Tanmoy Bera, Liton Dutta, Arnab Adhikary, Debarjun Debnath, Samir Das	Industrial Engineering Journal	May, 2024,  Volume : 53, Issue 5, No.14	0970-2555
3	Estimation Of Specific Rain Attenuation From Rain Rate Using Trmm Data For Different Regions Of India	Anirban Ghosal, Dr. Madhura Chakraborty, Ranjana Ray, Anushree Bhakat	Industrial Engineering Journal	June, 2024  Volume : 53, Issue 6, No.4,	0970-2555
4	“Aquaticai”: Intelligent Iot Framework For Enhanced River Health Monitoring	Anirban Ghosal, Sumanta Chatterjee, Priyanshu Nayan, Koushik Majumder, Ronit Pal, Anwita Ghosh,	Industrial Engineering Journal	June : 2024 Volume : 53, Issue 6, No.4,	0970-2555
5	A Machine Learning-Based Model for Predicting Laptop Prices across Various Brands	Anirban Ghosal, Ranjana Ray , Dr. Madhura Chakraborty , Soutik Bera , Soumik Sarkar , Soumadip Ghosh, Oishi Bose	International Journal of All Research Education and Scientific Methods	Volume 12, Issue 6, June-2024	ISSN: 2455-6211
6	A Streamlined Study to Create Cost-Effective Basic Digital Modulation Experiment Kits	Anirban Ghosal , Dr. Moumita Pal , Tanutra Jana , Sagar Das , Papia Paul , Ritesh Sarkar , Anwesha Biswas , Arnab Majumdar , Abhishek Shau	International Journal of All Research Education and Scientific Methods	Volume 12, Issue 6, June-2024	ISSN: 2455-6211
7	An Experimental Study To Implement Ofdm And Analyze The Characteristics Of OFDM Signal Transmission And Reception In An Awgn Channel	Mr. Anirban Ghosal, Dr. Moumita Pal, Dr. Indranath Sarkar, Rohan Chowdhury, Riya Karmakar, Shraya Kundu, Swarnavo Chatterjee, Srijoy Bhattacharya, Rohan Debnath, Aditi Chowdhury	Industrial Engineering Journal	Volume : 53, Issue 6, No.3, June : 2024	ISSN: 0970-2555
8	A Stable Flight Intelligence Technology	Mr. Anirban Ghosal, Mr. Sumanta Chatterjee, Dr.	Industrial Engineering	Volume : 53, Issue 6, No.3,	ISSN: 0970-2555

	Of Multipurpose Autonomous Aerial Navigator For Flower Showering / Displaying Flag & Programme Banners	Indranath Sarkar, Krishnendu Mondal, Sneha Singh, Heena Patel, Akash Biswas, Avirup Chakraborty, Ishpita Roy,	Journal	June : 2024	
9	An Intellectual Method for Designing an Economical Programmed Addressing Maneuver	Anirban Ghosal , Dr. Moumita Pal , Tanmoy Ghosh , Priya Paul , Arka Chakraborty , Sriparna Chowdhury	International Journal of All Research Education and Scientific Methods	Volume 12, Issue 6, June-2024	ISSN: 2455-6211
10	Development of an IoT-Enabled System for Observing Blood Oxygen Levels and Heart Rate	Anirban Ghosal , Dr. Moumita Pal , Anirban Biswas	International Journal of All Research Education and Scientific Methods	Volume 12, Issue 6, June-2024	ISSN: 2455-6211
11	Integration Of Sensors And The Internet Of Things (Iot) To Develop A Secure Personal Banking Locker That Provides Instant Status Updates.	Mr. Anirban Ghosal, Mr. Sumanta Chatterjee, Dr. Partha Sarkar, Mrinal Kanti Mondal, Sayan Mondal, Tapas Mandal, Samrat Dutta, Rakesh De	Industrial Engineering Journal	Volume : 53, Issue 6, No.3, June : 2024	ISSN: 0970-2555
12	A Study to Develop an IoT driven Infirmary Supervision Scheme to Boost the Excellence of Health Facilities	Anirban Ghosal , Sabbir Ali , Ronit Biswas, Prathama Chakraborty , Rohit Rajak , Priyanshu Bhattacharjee , Dr. Moumita Pal	International Journal of All Research Education and Scientific Methods	Volume 12, Issue 6, June-2024	ISSN: 2455-6211
13	Advanced Dermatological Diagnosis System Using Machine Intelligence	Anirban Ghosal, Sumanta Chatterjee, Rahul Jash, Raj Verma, Rajesh Bhadra,	Industrial Engineering Journal	Volume : 53, Issue 6, No.2, June : 2024	ISSN: 0970-2555
14	Design of compact and multiple resonant Frequency Selective Surface	Anirban Ghosal, Ranjana Ray, Moumita Pal, Sahil Dwary	International Journal of All Research Education and Scientific Methods	Volume 12, Issue 6, June-2024	ISSN: 2455-6211
15	Management of Firefighting Manoeuvres Using Computerized Self-Protecting Machines	Anirban Ghosal, Sabbir Ali , Joy Singha Roy, Sayani Pal, Payal Roy	International Journal of All Research Education and Scientific Methods	Volume 12, Issue 6, June-2024	ISSN: 2455-6211



**Students secured placements in MNCs between April and June 2024.**

Sl No	Name of Student	Name of MNC	Date of placement
1	Ankur Sarkar	Curateit	15/04/2024
2	Anwesha Biswas	Ericsson	13/04/24
3	Sagar Das	MY Job Grow	27/04/24
4	Shraya Kundu	IDFC First Bank	02/05/24
5	Bhabana Roy	Edvedha Edutech	30/05/24
6	Bhabana Roy	MY Job Grow	27/04/24
7	PRIYA PAUL	Edvedha Edutech	30/05/24
8	Sagar Das	Liberating Solution	04/06/24
9	Tapas Mandal	MY Job Grow	27/04/24