

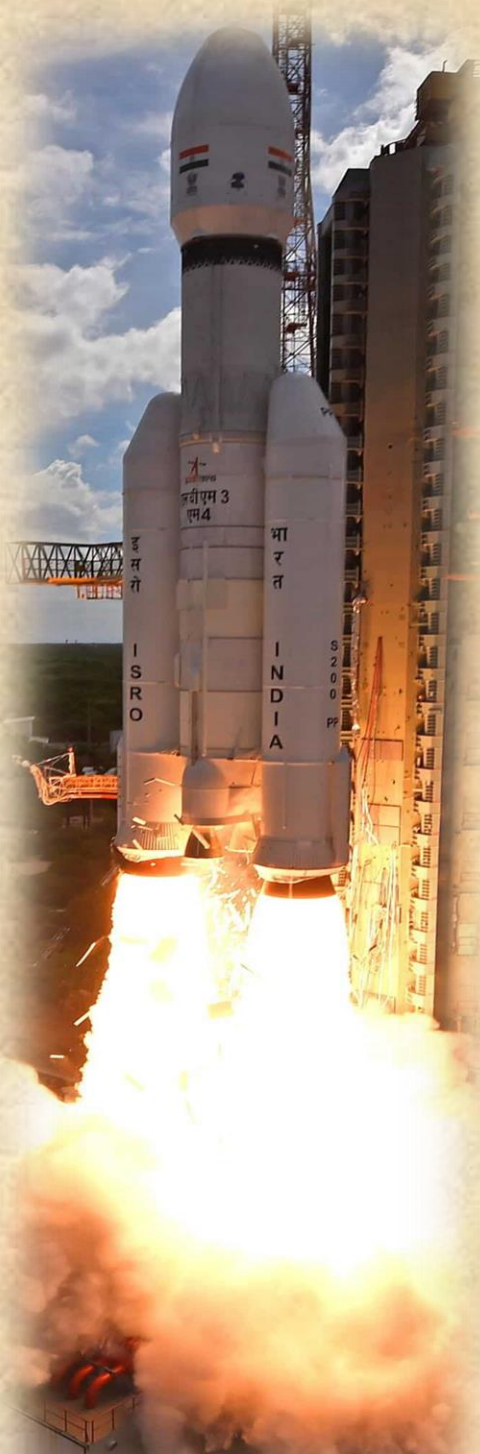


# Spandhan



**The Official Newsletter of the Department of  
Electronics and Communication Engineering**

**DECEMBER 2023  
ISSUE**



**Department of ECE salutes ISRO  
scientists for their remarkable  
achievement !**

**As we celebrate 25 glories  
years of service to the  
nation, we remain ever  
committed to our Vision  
for excelling In Technical  
Education and to provide  
a valuable resource to the  
Electronics Industry and Society.**



# Message from the Head of the Department

Electronics and Communication Engineering



Dear Students, Alumni's, Faculty members and well-wishers,

It gives me immense pleasure to inform you that this year we are celebrating 25 years of excellence of our Maharaja Agrasen Technical Education Society. We started with our humble attempt in 1999 and have now come thus far in all glory and with an unending list of accomplishments.

Over the years, we have nurtured our students and made them ready to face the world. We are proud to see that our students are contributing to nation building and are working in institutes of immense national importance such as ISRO, DRDO, INDIAN ARMY to name a few. Not only that but the presence of our students is seen in administration as well in the form of IAS and IES officers. Our students contribute globally as well by working for multinational companies such as Amazon, Microsoft, Facebook etc.

This has been made possible only due to the efforts of the management, staff members and tireless endeavors of our students.

## Spandhan

The official newsletter of the Department of ECE



We are continuously trying to surpass the standards that we define for ourselves each year and this requires constant updating of skills and technical knowledge. The department, in order to achieve this end, continuously organizes various seminars, workshops, industrial visits, FDPs, expert talks etc and this newsletter will reflect all such activities for the year 2023 which also saw the successful soft landing on the moon by Chandrayaan 3. One of our students, a pass out from MAE department, was also a part of this ISRO mission.

I am hopeful that the readers will find this newsletter insightful and full of resourceful content.

Happy Reading !

Dr. Sunil Kumar

HoD, ECE Dept.

# IN THIS ISSUE

## FDPs and Workshops

- Two days workshop on "Impact of AI and ML in Global Education and Learning", 23-24 March 2023
- Technical session on "Artificial Intelligence with MATLAB", 1 May 2023
- Online webinar on Artificial Intelligence, 1 May 2023
- Expert Talk on India's Semiconductor Mission, 4 May 2023
- World Telecom Day Conference at Dr. Ambedkar International Centre, New Delhi.
- Workshop series at IIT Delhi, 23 and 25 Aug 2023 and 25,26,27 Sept. 2023
- Two day workshop on "IoT and Wireless Sensors", 21 and 22 Sept 2023
- One day workshop on FPGA Based Systems, 20 Nov 2023
- 6 Days AICTE sponsored Faculty Development Program on "Semiconductor Materials, Devices, Design and Applications", from 18th to 23rd Dec 2023

## Industrial Visits

- SCL, Chandigarh, 4-5 Jan 2023
- BES EXPO, Pragati Maidan, New Delhi, 16-18 Feb 2023
- UTL Solar, Greater Noida, 14 April 2023
- Yakult Danone India Pvt. Ltd., Kundali, Sonipat, Haryana
- World Space Week celebrations at the Regional Remote Sensing Centre - North (ISRO), New Delhi, 10 Oct 2023
- Honda Cars India Ltd., Alwar, 19 Oct 2023
- India Mobile Congress, Pragati Maidan, New Delhi, 27-28 Oct 2023
- ST Microelectronics, Greater Noida, 23 Nov 2023

## Updates and Achievements

- ATOM, the Robotics Society of ECE Department
- PhD completions
- Faculty Achievements
- Students Achievements
- Remarkable Placement Offers Secured by ECE Students

# ISTE FACULTY CONVENTION (DELHI SECTION) ON Impact of AI and ML in Global Education and Learning 23 and 24 March 2023

On March 23 and 24, 2023, the Department of Electronics and Communication Engineering at MAIT hosted a two-day workshop on the "Impact of AI and ML in Global Education and Learning" in Maharaja Agrasen Auditorium. Several professional speakers from reputable government agencies and institutes were invited. Research Scholars, Students from the B.Tech. Fourth and sixth semesters of ECE, as well as faculty members, attended the session.



The first session on 23 March 2023 was taken by Mr. Ashcharya Bansal on the topic, "Impact of Learning on Future". On behalf of MadeEasy, he explained to the student the various options available for them after B.Tech. and especially his main focus was on GATE examination. Students were amazed to know about so many wonderful opportunities that they can pursue and thus achieve success in their professional careers. After this session, all the respected dignitaries were welcomed and lamp lighting was done in front of Mother Saraswati. Amongst the dignitaries were Shri Mohan Garg Ji, General Secretary, MATES; Prof. Neelam Sharma, Director, MAIT; Prof. S.S. Deswal, Dean (Academics), MAIT. Prof. Sunil Kumar, HOD ECE & Workshop Chairperson, introduced to the audience about the workshop in brief. Dr. Nitin Sharma, Assistant Professor and Workshop Coordinator proposed a vote of thanks on behalf of ECE Department. Dr. (Prof.) Neelam Sharma spoke words of encouragement and congratulated ECE department for organizing the workshop. The second session of the day was delivered by Mr. Rajesh Kumar Tiwari, Scientist E (INMAS, DRDO), who talked about Human Machine Teaming, Applications of AI/ML.



We cannot deny the fact that lifestyle changes, work pressure, pollution, health problems, etc continue to impact us negatively in our lives. The immediate byproduct that comes out of this is stress and anxiety. It doesn't matter who you are, what designation you hold, how much money you have. Stress has entered the lives of each one of us in some form or the other. Therefore, we must learn to deal with it. The third session of the day was on "Stress Management" which was taken by His Holiness Badrinarayana Swami Maharaj Ji. He was born in the year 1952 in the United States of America. He met Srila Prabhupada in 1969 and in the year 1971, he became his formally initiated disciple. He accepted sannyasa in 2014 and became an ISKCON Diksha Guru in 2020. His talk on stress management revolved around the theme that we are not this bodies made up of chemicals but we are eternal spirit souls who are somehow caught up in this material world and thus undergoing the hard struggle for existence. This struggle inevitably brings with itself stress, among other things, and therefore, the permanent solution to stress is to mold our lives in such a way that we go back to the spiritual world where there is no anxiety, no stress and no hankering. Post lunch, the fourth session of the day was taken by Dr. Prerana Mukherjee (School of Engineering, JNU) on the topic "Transformer Networks and its applications using PYTHON". She taught on a basic level how transformers work and related it to the chatbots that are trained to give automated replies. Dr. Prateek Gupta, Data Scientist, took the last and fifth session of the day on the topic, "Data Visualisation using POWER BI".

The learnings of the workshop continued into the next day, 24 March 2023, with the first session of the day delivered by Mr. Ravikant, Data Scientist and Co Founder, BMPL, on the topic "Practical Approach towards ML". He taught the PYTHON language from the basics and gradually took the participants toward the higher concepts such as Image Processing using PYTHON. His session continued after lunch as well. Then the last and the third session of the workshop was taken by Mr. Nitin Arvind Shelke, Computer Science Engineering, Bennett University, Greater Noida, topic, "Deep CNN for Image Recognition".

The Department of ECE whole heartedly thanks Dr. Nand Kishore Garg, Founder Chairman and Chief Advisor, MATES; Shri Mohan Garg Ji, General Secretary, MATES; for their complete support behind organizing this workshop. The program was conducted under the guidance of Prof. Neelam Sharma, Director MAIT; Prof. S.S. Deswal, Dean Academics; Sh. J. R. Mani Tripathi, CFO, MATES and Dr. Sunil Kumar Mathur, HoD ECE, MAIT.

Dr. Nitin Sharma served as the main coordinator of this workshop and he was assisted by Mr. Vaibhav Nijhawan and Mr. Rohit Lakhane, who served as Co coordinators of the workshop. Special thanks to Mrs. Sumedha Gupta, Mrs. Swati Sharma and Mrs. Vatsala Khanna Arya, all from ECE department, for their anchoring in the event.



## Technical Session on Artificial Intelligence With MATLAB

The Department of Electronics and Communication Engineering at MAIT conducted a technical session on Artificial Intelligence with MATLAB on May 1, 2023 at 2 pm in Seminar room, 401B. The faculty members from ECE and other departments along with the students of MAIT attended the session. The faculty coordinator for this event was Dr. Rajni Gulati.



Mr. Manoj Kumar, Sr. Application Engineer at DesignTech Systems Pvt. Ltd. @New Delhi office) was the keynote speaker for the day. The session started with the introduction of basic features and

progressed to the advanced features of MATLAB. He threw light on the various toolboxes of MATLAB like AI, Signal Processing, Deep learning, Communication, etc. and their usage in the current research areas. The deployment of AI models in MATLAB on embedded devices or boards, edge devices in the field, enterprise systems, or the cloud was also discussed. He further explained how GPU Coder™ in deep learning models, can be used to generate and deploy NVIDIA® CUDA® GPUs. At last, the generation of C code with MATLAB Coder™ and Simulink Coder™ for deployment on Intel® and Arm® boards was demonstrated.

## Webinar on Artificial Intelligence (for internship and placement opportunities)



This webinar relates to the Artificial Intelligence & Its Applications that took place on May 1, 2023 at 6:30 p.m. The information gathered from the various courses that the Machit company offers is covered in this webinar. Additionally, they were providing internship possibilities to those who would perform extraordinarily well.

The introduction of their company, as well as the work they undertake to assist students in realizing their ambitions, comes first in the course of the discussion. Many students start interacting with



them after the introduction about the many components of what they do and the prospects they can acquire learning from them. Many future-oriented courses, such as those on artificial intelligence, were available to students who wanted to broaden and improve their knowledge of the field. Later, Mr. Naveen, one of the experts, began discussing the uses of artificial intelligence with us. How it will influence our future and how it might help people succeed more in life. In conclusion, the event was exciting as 73 ECE department students engaged in conversation with company executives and learned about artificial intelligence. It was one of the bigger gatherings coordinated by Dr. Nitin Sharma that benefits students as well.

The Department of ECE whole heartedly thanks Dr. Nand Kishore Garg, Founder Chairman and Chief Advisor, MATES; Shri Mohan Garg Ji, General Secretary, MATES; for their complete support behind organizing this workshop. The program was conducted under the guidance & approval of Prof. Neelam Sharma, Director MAIT; Prof. S.S. Deswal, Dean Academics; Sh. J. R. Mani Tripathi, CFO, MATES and Dr. Sunil Kumar Mathur, HoD ECE, MAIT.

## Expert Talk on India's Semiconductor Mission



**MAHARAJA AGRASEN INSTITUTE OF TECHNOLOGY**  
DEPARTMENT OF ELECTRONICS AND COMMUNICATION  
ENGINEERING

**An Expert talk on**  
**India's Semiconductor Mission**

**4<sup>th</sup> May, 2023**  
**Venue: Mini Auditorium**  
**Time: 11:30 AM onwards**

**Speaker:**  
**ETB Samuel Jigme Harrison**  
Semiconductor Professional  
(Senior Member - IEEE) Singapore

**Faculty Coordinators:**  
**Dr. Anamika Jain**  
**Ms. Sumedha Gupta**

**Dr. Nand Kishore Garg**  
Founder and Chief Advisor, MATES

**Sh. Vineet Kumar Lohia**  
Chairman, MATES

**Prof(Dr.) Neelam Sharma**  
Director, MAIT

**Prof(Dr.) S S Deswal**  
Dean Academics, MAIT

**Prof(Dr.) Sunil Kr. Mathur**  
HOD (ECE), MAIT

The Department of Electronics and Communication Engineering, Maharaja Agrasen Institute of Technology, organized an Expert talk on “India’s Semiconductor Mission”, sponsored by HFA Pharma Ethics on 4<sup>th</sup> May’ 2023. The talk was delivered by Mr. Samuel Jigme Harrison, Semiconductor Professional (Senior Member-IEEE) Singapore. Dr. Anamika Jain and Ms. Sumedha Gupta, ECE department were the faculty coordinators of this event. This event took place in the Seminar Hall of the ECE Department. It was arranged for the students of 3<sup>rd</sup> year of ECE branch, out of which more than 80

students attended this event and it turned out to be an informative and interactive session.

India’s Semiconductor Mission aims to build a vibrant semiconductor and display ecosystem to enable India’s emergence as a global hub for electronics manufacturing and design. Therefore, the aim of this

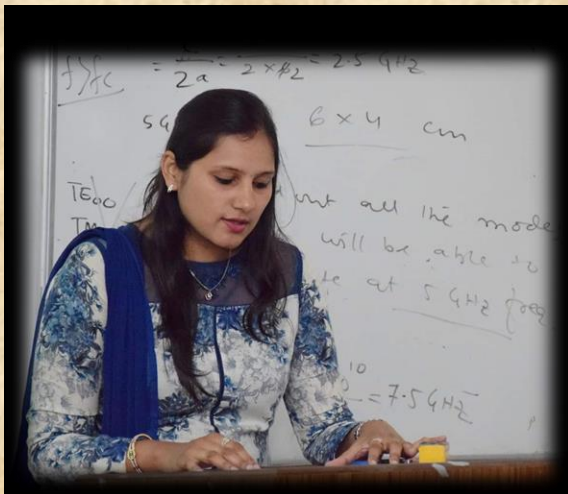
talk was to impart superior knowledge regarding the future prospects and also to furnish with skills in the area of VLSI. Reputed speaker Mr. Samuel Jigme Harrison presented his thoughts and innovative ideas on this subject. He talked about the history of the semiconductor, various VLSI circuits and their applications. Then, he explained about the India's Semiconductor Mission along with various startup programs and also described

various EDA tools.

He also provided the knowledge about the various VLSI Technical societies and the various certified post- graduation

courses available for the students, which in turn will help them with their job recruitments in this field. He also briefed about the IOT and importance of VLSI circuit design in IOT products.

Students also asked many queries and overall it was a nice and an interactive session.



# World Telecommunication and Information Society Day (WTISD)



The point to celebrate World Telecommunication and Information Society Day (WTISD) is to help out and lift consciousness of the potential that the application of the Internet and data with Technology can bring about economical and societal up-gradation in terms of digital world.

17 May in each year is marked as the anniversary of the signing of the first International Telegraph Convention and the creation of the International Telecommunication Union (ITU).

World Telecom Day Conference was inaugurated by Union Minister of State for Communications Shri Devusinh Chauhan to commemorate the observance of World Telecommunication and Information Society Day

on May 17, 2023 at Dr Ambedkar International Centre in New Delhi.

We, Dr. S K Kundu and Dr. Nitin Sharma attended this conference at 10:15 am.

The CDoT has developed innovators, startups, MSMEs and other stakeholder's to test the ORAN technology<sup>[1]</sup>. This shall lead to involvements in innovation in the zone of Open RAN (Radio Access Network) by extending testing capability for proliferation of Open RAN ecosystem in India <sup>[1]</sup>.

A number of innovator's startups showcased their works. We also interacted with them in terms of any startups/internship/ training/PPO etc. They promised to help our students.



CDoT, ELENA Geo System, R2E Technologies, AHEESA digital Innovation, CIENTRA Tech Solution, RESONOUS Technology, LEKHA Wireless, SOOKTHA, SIGNALTRON System, BIGCAT Wireless, GIGAYASA Wireless, NIMBLIVISION, CHIPSPIRIT Technologies, CALLIGO Technologies, DIRGADHI Technology, PRAYOGIK Technologies, NUMAN Technologies were among those who presented and showcased their works on 5G and 6G Technology in this one day conference.



Reference:

[1] Department of Telecommunications celebrates World Telecom Day India has emerged as Global Telecom Power- internet.  
<https://pib.gov.in/PressReleaseIframePage.aspx?PRID=1924962#:~:text=India%20has%20emerged%20as%20Global%20Telecom%20Power&text=Union%20Minister%20of%20State%20for,International%20Centre%20in%20New%20Delhi.>



# Training Workshop at IIT Delhi 5G Testbed

August and September 2023



Final year students of Electronics and Communication Engineering department participated in training workshop at IIT Delhi, aimed at providing a comprehensive knowledge through lectures and hands-on activities. The workshop

sessions on IoT and Li-Fi was attended by 10 students on 23<sup>rd</sup> and 25<sup>th</sup> Aug, respectively. Certificates from IIT Delhi were awarded to attendees, recognizing their commitment to emerging technologies. The visit's success was ensured by the coordination efforts of Mr. Ajay Kumar Gupta, Dr. Rajni, and Ms. Kanika Agarwal, of ECE Department, MAIT.



The students of Electronics and Communication Engineering department participated in training workshop at IIT Delhi, aimed at providing a comprehensive knowledge through lectures and hands-on activities. The workshop sessions on 5G PHY Layer, IoT Setup, and 5G Network security was

attended by 20 students on 25<sup>th</sup>, 26<sup>th</sup>, and 27<sup>th</sup> September, respectively. Certificates from IIT Delhi were awarded to attendees, recognizing their commitment to emerging technologies. The visit's success was ensured by the coordination efforts of Mr. Ajay Kumar Gupta, Dr. Rajni, and Ms. Kanika Agarwal, of ECE Department, MAIT.



## TWO DAYS WORKSHOP ON IoT & WIRELESS SENSORS

Department of Electronics & Communication Engineering Maharaja Agrasen Institute of Technology organized a two-day workshop on "IoT

& Wireless Sensors" in collaboration with ISTE Student Chapter MAIT & Eigen Technologies from September 21st to 22nd, 2023 for the 2nd & 3rd year students. The program sought to empower participants to work effectively with embedded devices, sensors, wireless communication, and IoT technologies by providing them with both theoretical knowledge and hands-on experience.

The first day began with a ceremony that included introductory remarks by Prof. Sunil Kumar, HOD Department of ECE, MAIT, the inaugural address by Prof. Neelam Sharma, Director MAIT, and a vote of thanks by Dr. Nitin Sharma, Program Coordinator. This was followed by technical sessions.



### Day 1

#### Session 1: Overview of Embedded Systems

- The first session began by Mr. Aniket & Ms. Pragya from Eigen Technologies with a foundational overview of embedded systems, elucidating their multifaceted applications. A significant focus was placed on introducing SENSEnuts microcontroller as a prominent embedded device in the context of the workshop. Hands-On: Practical

application was immediately integrated into the learning process as participants delved into controlling the external environment using microcontrollers.



### Session 2: Ports and Interfaces

Session two delved deeper into the core of embedded systems, comprehensively exploring ports and interfaces. Participants were introduced to an array of sensors and were taught the intricacies of interfacing with these sensors. Furthermore, they learned to effectively read and visualize sensor values through I2C and UART communication protocols. Participants learned

a lot by interfacing temperature & humidity sensor and light sensor. Hands-On: The hands-on segment featured participants working directly with a Passive Infrared (PIR) motion sensor, temperature & humidity sensor and light sensor for practical experience in intrusion detection.

### Session 3: Introduction to Wireless Communication

- Content: The third session navigated the intricacies of wireless communication, elucidating the landscape of wireless communication standards with an emphasis on IEEE 802.15.4.

### Session 4: Broadcasting Sensor Data

- Hands-On: Participants engaged in immersive hands-on activities, involving the broadcasting of sensor data and its reception. Moreover, they implemented a simplified "If This Then That" (IFTTT) scenario, showcasing how sensor data can trigger specific actions.



## Day 2

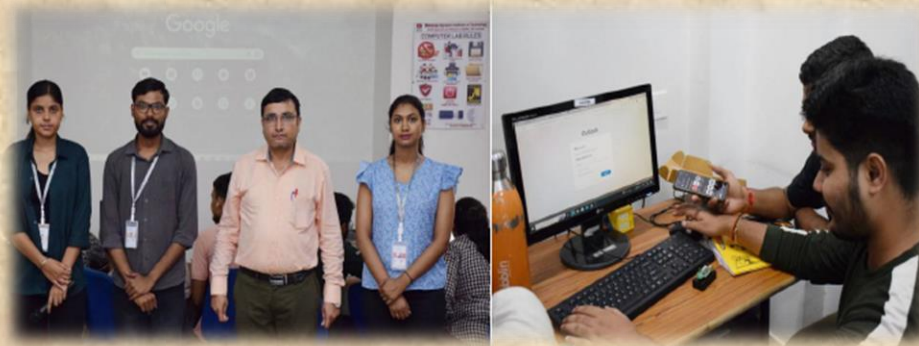
### Session 1: Introduction to Wireless Networks

Day 2 commenced with a holistic exploration of wireless networks, ad hoc networks, and the various challenges that underlie wireless communication in complex environments.

## Session 2: Introduction to Routing Protocols

- Attendees were introduced to the intricate world of routing protocols, which play a pivotal role in data transmission in wireless networks. Different types of routing algorithms were elucidated, and participants gained the knowledge required to select the most suitable routing algorithm for a given context. Practicality took precedence as participants applied their newly acquired knowledge to implement a routing algorithm, reinforcing their understanding through practical exercises.

**Session 3: Wireless Sensor Networks and IoT-** Session three ventured into the realm of Wireless Sensor Networks (WSN) and their real-world applications. The transition from WSN to the broader domain of IoT was thoroughly explored. Attendees gained insights into the significance of IoT, computational challenges, and the vital role of distributed computing in this paradigm. Participants used the ThingsSpeak tool to connect the microcontroller to the cloud and tested by reading and writing to the cloud.



## Session 4: Bringing It All Together

The culminating session of the workshop artfully wove together all the previously acquired knowledge and skills. Participants embarked on a journey to create an embedded system capable of controlling an end device, establish seamless wireless

communication for data transmission, and effectively analyze the transmitted data. Additionally, participants explored methods for sending data to a central gateway. In a highly practical hands-on component, attendees learned how to push sensor data to cloud-based platforms, enabling real-time data access and analysis. They further honed their skills in transferring data from a node to the cloud and controlling remote devices through cloud-based interfaces.

## Workshop Outcomes

The IoT & Wireless Sensors Workshop culminated in several notable outcomes:

1. **In-Depth Knowledge:** Participants departed with a profound understanding of embedded systems, wireless communication, IoT, and their interconnectedness.

2. **Practical Proficiency:** Through a series of hands-on activities and exercises, attendees honed their practical skills, enabling them to confidently work with microcontrollers, sensors, routing algorithms, and cloud-based IoT platforms.

3. **Problem-Solving Acumen:** The workshop empowered participants with the capacity to apply their newfound knowledge to real-world challenges, from data sensing to efficient data communication and analysis.




4. Networking and Collaboration: The workshop fostered a conducive environment for networking, encouraging participants to connect with peers and the facilitator. This interaction facilitated the exchange of ideas and experiences, enriching the learning journey. The Embedded Systems and IoT Workshop surpassed expectations by providing participants with a profound and practical education in the realms of embedded systems, wireless communication, and IoT technologies. The incorporation of hands-on experiences ensured that attendees could seamlessly apply their knowledge to tangible scenarios, greatly enhancing their problem-solving capabilities. The resounding success of the workshop is a testament to the thirst for knowledge in these rapidly evolving fields.



Pertaining to the above fact, Dr. Nitin Sharma, Ms. Swati Sharma & Ms. Preeti Goyal , Assistant Professor from the Department of the ECE, MAIT meticulously planned out the two days workshop on “IoT & Wireless Sensors” under the supervision of Prof. Neelam Sharma, Prof. S.S. Deswal & Prof. Sunil Kumar. All the aspects of the Workshop were carried out with immaculate management and patience.



**MAIT**  
मानव के विचारों  
का विकास है अमोघशक्ति



Pantech e Learning  
DIGITAL LEARNING SIMPLIFIED

WORKSHOP ON

## FPGA BASED SYSTEMS

**MAHARAJA AGRASEN INSTITUTE OF TECHNOLOGY**  
**DEPARTMENT OF ECE**

 20.11.2023

 10:00-11:00am


**MODE : ONLINE**

**VENUE: LAB NO - 422 & 423**


**CONVENER : DR. ANAMIKA JAIN**

**COORDINATORS: MS. PREETI GOYAL**  
**MS. SWATI SHARMA**

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



[SCAN HERE](#)



# WORKSHOP ON FPGA BASED SYSTEMS

The ECE Department, in partnership with Pantech E-Learning, recently organized a one-day workshop on FPGA Based Systems as part of its Technology Breakthrough Webinar/Workshop Series. The convener of the program was Dr.

Anamika Jain and coordinated by Ms. Swati Sharma and Ms. Preeti Goyal. The event took place on November 20, 2023, from 10:00 am to 11:00 am, in lab no 422 and 423 with the participation of 73 students.

During the workshop, participants learned about the basics of FPGA-based systems and supported languages. The focus was on understanding fundamentals, exploring applications, and staying updated on recent developments in the FPGA domain. Attendees received domain-specific knowledge, a participation certificate, and access to downloadable presentations. This session aimed to equip students with valuable skills in FPGA technology for a rewarding learning experience.

# ATAL FDP on Semiconductor Materials, Devices, Design and Applications



Semiconductor Materials, Devices, Design and Applications, 6-Days AICTE sponsored Faculty Development Program was conducted from 18<sup>th</sup> to 23<sup>rd</sup> December 2023 in which, around 54 participants from different parts of the country participated. The speakers for the 6-day FDP on "Semiconductor Materials, Devices, Design and Applications" were as mentioned in this FDP schedule.



The Inauguration of the ATAL-AICTE sponsored 6-Day FDP on "Semiconductor Materials, Devices, Design and Applications" took place on December 18, 2023, at 10:00 AM, marking the commencement of a significant event. Dr. Subodh Jindal graced the occasion as the Chief Guest, adding prestige to the program. The function, under the guidance of Dr. Nand Kishore Garg, the

Founder and Chief Advisor of MATES, saw the luminous presence of distinguished individuals. Mr. S. P. Agarwal, the Executive Chairman of MATES, and Shri Vineet Kumar Lohia, Chairman of MATES, along with key figures such as Prof. Neelam Sharma (Director, MAIT), Prof. S. S. Deswal (Dean Academics, MAIT), Prof. Sachin Gupta (Dean Research and Innovation, MAIT), and all Heads of Departments (HODs) were instrumental in making the event a success. Additionally, the participants who played a pivotal role in making this FDP a grand success were present in substantial numbers. Statistically,



there were 54 participants, including 19 internal participants from the host institute and the remaining participants from various parts of the country. The coordination of the function was skillfully managed by Prof. Sunil Kumar, with co-coordination provided by Dr.

Anubha Goel. Dr. Anubha Goel, Ms. Shalu, and Ms. Neeraj handled the stage, while the screen was efficiently organized and managed by Mr. Parveen Saini. The lamp lighting ceremony, a symbol of auspicious beginnings, was organized by Dr. Rajni and Dr. Anamika Jain. The meticulous organization extended to the registration desk, where Ms. Swati Sharma and Ms. Preeti Goyal managed the registration process and distributed registration kits to all participants. The function commenced with the national anthem, celebrating the pride of the country. The lamp lighting ceremony featured distinguished speakers, including Dr. Umakant Goyal and Dr. Ashish Jindal from SSPL, DRDO. Prof. Sunil Kumar, as the coordinator of the FDP, delivered the welcome address, setting the tone for the event. The Chief Guest, Dr. Subodh Jindal, shared valuable insights on the significance of VLSI and job opportunities, motivating and praising the staff and participants. Prof. Neelam Sharma contributed to the vibrancy of the event with her motivational thoughts. The vote of thanks, expressing gratitude for the collective effort, was delivered by Co-Coordinator FDP, Dr. Anubha Goel. Following this, the participants enjoyed a tea break. All the guests of honor and the speakers had been presented with a sapling as a mark of gratitude. Also, at the end of the speakers talk, they were presented with a memento as a token of gratitude.

Day 1: Monday 18-Dec-23	Day 2: Tuesday 19-Dec-2023	Day 3: Wednesday 20-Dec-23	Day 4: Thursday 21-Dec-23	Day 5: Friday 22-Dec-23	Day 6: Saturday 23-Dec-23
9:30 - 10:00	9:30 - 10:00	9:00 - 11:30	9:30 - 10:00	9:30 - 10:00	9:30 - 10:00
<b>Inauguration</b>	MCQs/Feedback	<b>SESSION 5</b>	MCQs/Feedback	MCQs/Feedback	MCQs/Feedback
10:00 - 12:30	10:00 - 12:30	11:30 - 1:00	10:00 - 12:30	10:00 - 12:30	10:00 - 12:30
<b>SESSION 1</b> Dr. Umakant Goyal	<b>SESSION 3</b> Dr. S K Tomar	<b>SESSION 6</b> Dr. Sudhir Kumar	<b>SESSION 7</b>	<b>SESSION 8</b> Dr. Janesh Kaushik	<b>SESSION 9</b> Prof. Sajad A Loan
12:30 - 1:00	12:30 - 1:00		12:30 - 1:00	12:30 - 1:00	12:30 - 1:00
Article Discussion/Doubt Session	Article Discussion/Doubt Session		Article Discussion/Doubt Session	Article Discussion/Doubt Session	Reflective Journal
1:00 - 2:00	1:00 - 2:00	1:00 - 2:00	1:00 - 2:00	1:00 - 2:00	1:00 - 2:00
Lunch	Lunch	Lunch	Lunch	Lunch	Lunch
2:00 - 4:30	2:00 - 4:30	2:00 - 3:00	2:00 - 4:30	2:00 - 5:30	2:00 - 4:30
<b>SESSION 2</b>	<b>SESSION 4</b>	<b>SESSION 6 (CONT.)</b>	<b>Practical Session/Lab</b>	<b>Industrial Visit</b>	<b>SESSION 10</b>
Dr. Ashish Jindal	Dr. Kapil Narang	3:00 - 4:30 <b>Practical Session/Lab</b>			Dr. Meena Mishra
4:30 - 4:45	4:30 - 4:45	4:30 - 4:45	4:30 - 4:45		4:30 - 4:45
Tea	Tea	Tea	Tea		Tea
4:45 - 5:30	4:45 - 5:30	4:45 - 5:30	4:45 - 5:00		4:45 - 5:00
Article Discussion/Doubt Session	Article Discussion/Doubt Session/MCQs		Article Discussion/Doubt Session		<b>Valedictory Session</b>



The knowledge-sharing sessions commenced with Dr. Umakant Goyal delivering a prestigious talk on the Basics of RF and Microwave, focusing on the design perspective and elaborating on the design steps involved. It was then followed by a well-deserved lunch, fostering networking and further exchange of ideas among the participants. Later in the afternoon, Dr. Ashish Jindal followed with a

session on Power Amplifier and MMIC Design for Radar Applications. After each session, participants were engaged with a questionnaire Google form to enhance interactive participation. The event not only provided valuable insights but also created a platform for collaboration and knowledge dissemination in the field of VLSI.

It was a great initiative by ATAL Academy, and I am sincerely thankful to AICTE for providing me with the opportunity to conduct Faculty Development Program (FDP) for the faculty members of Technical institutes in India, free of cost. The response for registration was overwhelming, and I received numerous compliments for the seamless arrangement of the FDP, the quality of content, and the hands-on experiences provided.



The participants not only appreciated the knowledge-filled industrial visit to SSPL, DRDO but also thoroughly enjoyed the lab sessions, which included hands-on practice using the real Silvaco ATLAS simulator. I extend my gratitude to the

management of MAIT, ATAL-AICTE, and all the participants for their continuous support throughout the FDP, which played a pivotal role in making it a tremendous success.



# INDUSTRIAL VISITS ORGANISED BY ECE DEPARTMENT

## SCL Chandigarh

4-5 January 2023

Nitin Sharma, & Ms. Abhilasha Gokhale, got an opportunity to visit Semi-Conductor Laboratory (SCL) Chandigarh; an autonomous body under Ministry of Electronics & Information Technology (MeitY), Government of India; engaged in Research & Development in the area of Microelectronics to meet the strategic needs of the country, on 4th January, 2023.

A group of 34 Students of B.Tech. (3<sup>rd</sup> and 5<sup>th</sup> Semester, ECE) under the guidance and mentorship of Dr Sunil Mathur, Dr. Sumanta Kumar Kundu, Dr.



Our institute was invited to participate in 27<sup>th</sup> International conference & Exhibition on Broadcast & Media Technology, organized by Department of Broadcast Engineering Society (India) from 16-02-23 to 18-02-23, at Pragati Maidan, New Delhi. Prof. Neelam Sharma, Director, MAIT, deputed two

faculties Dr. R. K. Choudhury, Dr. Nitin Sharma Assistant Professor Department of ECE with 34 first year students to visit the venue. During these three days we visited all telecommunication stalls and attended an international conference on Artificial Intelligence. The speakers from various industries gave lecture which was commendable. Students gathered some knowledge about AI, 4G and 5G technology. The three day industrial visit ended up with a fresh technology in mind which will be helpful to teachers and students. With everyone's cooperation the three day tour was successfully completed.

BES EXPO

16-18 Feb 2023



UTL Solar, Greater Noida

14 April 2023

A group of 56 Students of B.Tech. (4th and 6th Semester, B Tech ECE) under the guidance and mentorship of Director Prof. Neelam Sharma, Dr Sunil Mathur HOD ECE, Dr. Sumanta Kumar Kundu, Dr Javed Ahmed got an opportunity to visit UTL Solar, Greater Noida; a renowned name in the field of renewable energy/Power Electronics, on 14<sup>th</sup> April, 2023. Today, UTL Solar stand as a recognized name offering outstanding R & D and high-quality products.

UTL Solar deals a widespread range of products comprising Online UPS, Offline UPS, Inverters, Battery Chargers, SMU (Solar Management Unit), Solar Charge Controllers, Batteries; While performing remarkably in the past years, UTL has had the prospects to serve several India's prominent companies and agencies. Specifically, Air India, Indian Army, Indian Railways, State Bank of Saurashtra, Delhi University, AIIMS and others.





On the crisp morning of September 22, 2023, a group of enthusiastic B.Tech students from the Electronics & Communication Engineering department, embarking on their 5th semester journey, found themselves at the gates of the Yakult Plant in Kundali, Sonipat. Accompanied by their dedicated faculties, Ms. Neeraj, Ms. Shalu Garg, and Dr. Anubha Goel, 80 students hailing from 5E456 and 5E789 were about to embark on an enlightening industrial visit.

Yakult Danone India Pvt Ltd

Kundali, Sonipat,

22 Sept. 2023

Yakult, the iconic probiotic drink, made its foray into the Indian market back in 2007. Since then, it has been the sole player in the probiotic drink segment, promoting digestive health across the nation.

The industrial visit to the Yakult Plant in Kundali, Sonipat, was an eye-opening and educational experience for the 5th-semester B.Tech students. They not only gained insights into the fascinating journey of Yakult but also witnessed firsthand the cutting-edge manufacturing processes and quality control measures that make Yakult a trusted brand in the market. This visit was not just an excursion but a lesson in excellence and innovation in the field of manufacturing, leaving a lasting impression on the students' minds.



## Indian Space Research

Organization, 10 Oct 2023

The World Space Week celebration on October 10, 2023 at the Regional Remote Sensing Centre - North (ISRO), New Delhi was graced by the active participation of both students and faculty members from the Electronics and Communication Engineering

department, MAIT. As per request of ISRO Delhi centre, we were able to accommodate only 10 students of 5th semester, ECE as several other students from various colleges were also visiting the ISRO centre on the same day. The event featured captivating lectures and exhibitions showcasing Indian space programs and their significant achievements in the context of global space endeavours. Attendees were honoured with certificates and mementos, acknowledging their unwavering dedication and passion for the ever-evolving space programs and technologies. The smooth execution of the visit was made possible due to the collaborative efforts of ECE Department faculty members, namely Dr. Rajni, Mr. Ajay Kumar Gupta, and Ms. Kanika Agarwal.



In an exciting one-day industrial visit to Honda Cars India Limited, located in Alwar, Rajasthan, about 50 students from the 5th semester, Department of Electronics and Communication Engineering, at MAIT, embarked on a captivating journey into the world of automobile manufacturing. Guided by the diligent efforts of faculty coordinators, Dr. Rajni, Ms. Kanika Agarwal, and Mr. Ajay Kumar Gupta, our eager students had the privilege to explore the integrated assembly plant, where various Honda car models come to life, under the expert guidance of the company's professionals. The visit was not just about witnessing innovation but also understanding the intricate ecosystem that powers Honda's success, complemented by a motivational talk that left the students inspired. The day was made even more memorable as Honda Cars India Limited generously provided a delicious lunch, fostering camaraderie and conversation among the students and professionals. The event was commemorated in celebration of 25 glorious years of excellence and success of MATES society.

Honda Cars, Alwar

19 Oct 2023





## India Mobile Congress

27 and 28 Oct 2023

On 27th & 28th October 2023, Maharaja Agrasen Institute of Technology organized a visit to India Mobile Congress (IMC) 2023 being held at Pragati Maidan, Delhi with the theme of IMC 2023 'Global Digital Innovation'. A total of 237 students joined this

visit, out of which 150 were ECE students. The visit was coordinated by the two faculty members, Dr. Nitin Sharma and Dr. Vinay Kumar Saini, with other faculty members Dr. Neeraj Garg, Mr. Ajay Garg, Mr. Varun Goel, Bhaskar Kapoor & Mr. Akshay Mool from different Department of the MAIT.

The IMC 2023 intends to increase India's status as a significant cutting-edge technology innovator, manufacturer, and exporter. The Prime Minister of India, Shri Narendra Modi Ji, presented 100 '5G Use Case Labs' to educational institutions across the country during the program. The event will act as a platform to highlight India's incredible advancements in telecommunications and technology, bring forth significant announcements and provide an opportunity for start-ups to display their innovative products and solutions.



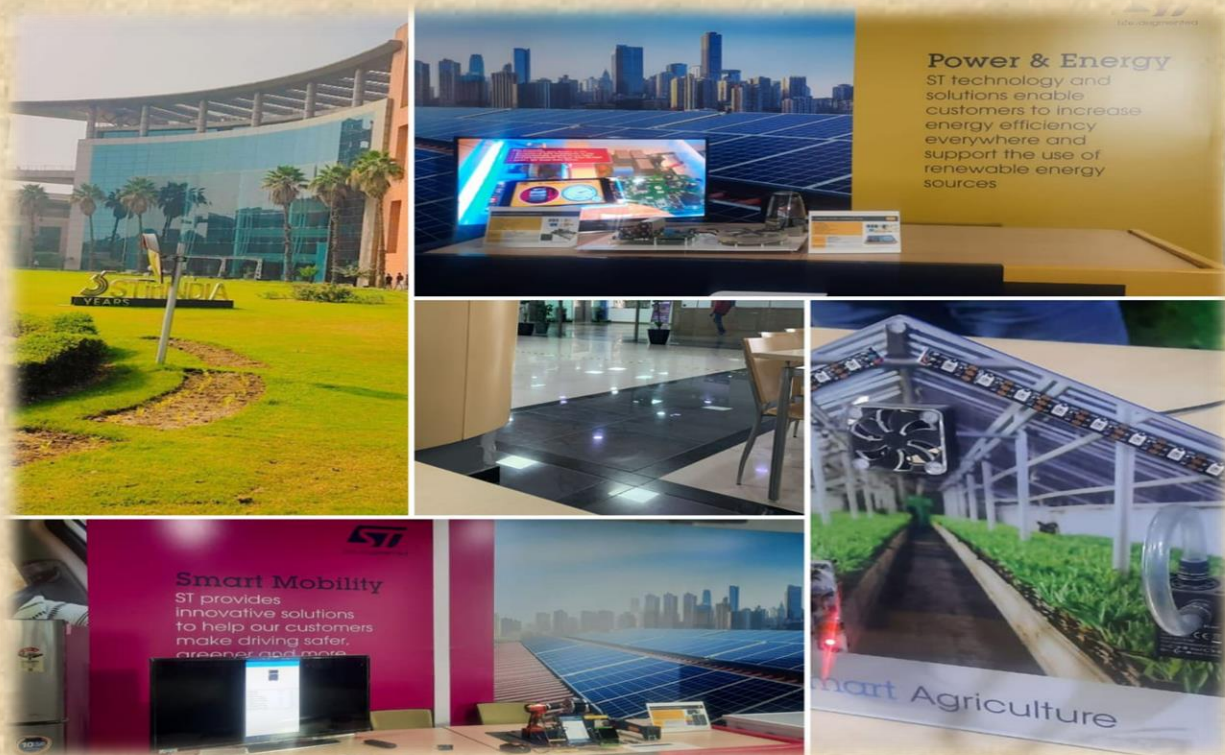
The industrial visit to ST Microelectronics was strategically designed to acquaint students with the cutting-edge advancements in the VLSI and IoT sectors. Dr. Anamika Jain, Assistant Professor ECE department, organised the visit, with the able coordination of Ms. Swati Sharma and Ms. Preeti Goyal.

ST Microelectronics

23 Nov 2023

On 23rd of November 2023, seventeen ECE students, accompanied by faculty members, explored the ST Microelectronics campus. The visit commenced with a concise yet comprehensive technical presentation by the company, shedding light on their involvement in diverse technologies and domains.

Subsequently, the students had the opportunity to explore the Da Vinci Innovation Studio, where an array of working models showcasing the latest technologies were on display. Notably, the exhibit included a prototype of a smart city. The sessions throughout the day were characterized by interactivity and a wealth of information. The industrial visit concluded on a high note, leaving an indelible mark on all participants. In summary, the experience proved to be both amazing and enriching for everyone involved.





# ATOM, the Robotics Society of ECE Department

A.T.O.M. is the student-run robotics society of MAIT's ECE department, dedicated to fostering a community for learning and practical engineering skills through project-based initiatives.

At the heart of our journey are the remarkable projects undertaken by our members, each a testament to the limitless potential of robotics. From autonomous drones revolutionising agricultural practices to AGV robots aiding in healthcare, our projects span a spectrum of industries, making tangible impacts on the world around us. The Robotic Society takes pride in its commitment to excellence, and our members' achievements, be it in international competitions or hosting valuable sessions, speak volumes about the dedication and innovation that define our community.

## Unlocking the Power of Intelligence: Introduction to Machine Learning #1 & #2 by ATOM x GDSC

- Dive into the captivating world of artificial intelligence as A.T.O.M. joins forces with GDSC (Google Developer Student Clubs) to present "Introduction to Machine Learning #1 & #2." This eagerly anticipated event promises to be a transformative journey into the heart of machine learning, offering participants a unique opportunity to unravel the mysteries of algorithms, data patterns, and the profound impact of this cutting-edge technology.

## Acceleration Robotics Hosts ROS Delhi Meetup: Fostering Collaboration and Innovation

- Acceleration Robotics proudly hosted the ROS (Robot Operating System) Delhi Meetup, in collaboration with Peer Robotics, a dynamic gathering that celebrated the intersection of robotics and innovation. This eagerly anticipated event brought together enthusiasts, professionals, and industry leaders under one roof, fostering a vibrant ecosystem of collaboration and knowledge exchange.
- A highlight of the event was the presence of esteemed speakers from the ATOM Society, who shared their expertise and experiences in leveraging ROS for cutting-edge projects. Their engaging presentations sparked lively discussions and inspired attendees to explore new horizons in robotics and artificial intelligence.

## Linux Install Fest - 5th October 2023 CAD seminar- 9th October 2023

- The Linux Installation fest and the CAD seminar hosted by the society was a transformative experience and resounding success. The enthusiastic participants gathered to install Linux OS and learn more about it. The participants were engaged in practical exercises alongside the presentation to help refine their skills and expand their knowledge base alongside building their interest in the field.
- We shared tips and troubleshooting techniques along the way. It was an informative event where our experienced members thoroughly guided newcomers through the process. These interactive events boosted the sense of community between the society and the tech-enthusiast participants.

### India STEM Innovation Challenge 2023

- Science, Technology, Engineering and Maths (STEM) are crucial for keeping the world functioning. Keeping this vision in mind, India Stem Mission organised the India STEM Innovation Challenge 2023 on 16th October 2023.
- Conducted at Dr Ambedkar International Centre, New Delhi, the chief guest of the event was Shri Nitin Gadkari (Minister of Road Transport and Highways of India). Celebrating the success of Chandrayaan 3 mission, all the women scientists from ISRO joined the event and inspired us to pursue our dreams and work on innovative fields to take the nation forward.
- A.T.O.M had a chance to showcase its flagship projects at the event. There we showcased our in-house CNC machine prototype and Mr Robot. One of them, a CNC machine, came into the spotlight and was highly appreciated by all the esteemed guests. Overall it was a wonderful experience for A.T.O.M

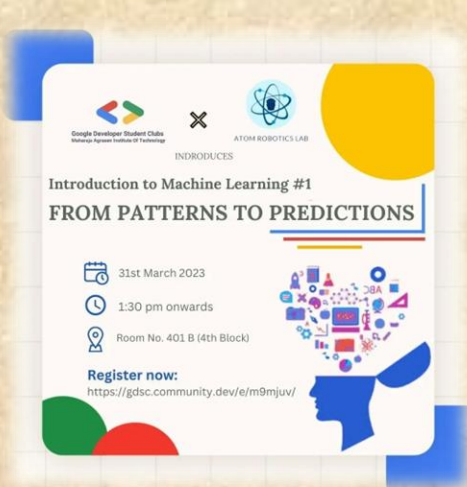
### Flipkart GRID 5.0

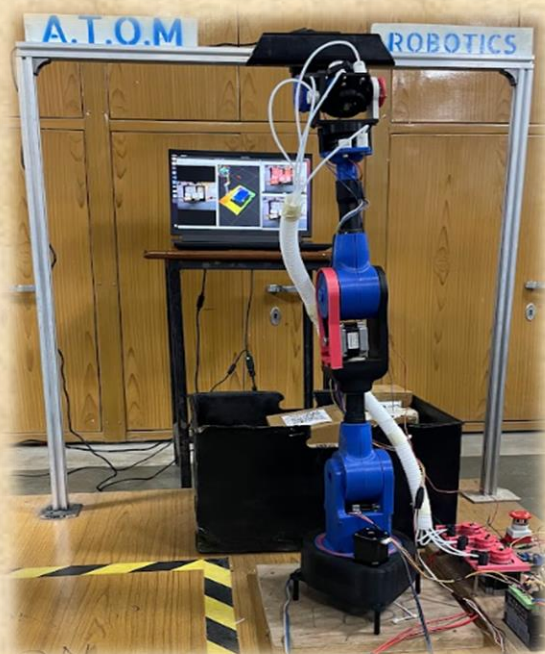
- Flipkart GRID (Graduate Rotational Internship Program Development) is a comprehensive internship program offered by Flipkart, one of India's leading e-commerce platforms. It is Flipkart's Flagship Engineering Campus Challenge which provides students with the opportunity to apply their technical knowledge and skills, to compete and complete key challenges and work their way to solve a real world problem
- Our 6 Degrees of Freedom (6DOF) robotic arm with a modular end effector, designed for precision and versatility across various applications secured a position in finals of the competition. Key features include triple disk cycloidal gearboxes (28:1 reduction ratio) for shoulder and elbow joints, an eccentric cycloid gearbox (30:1 reduction ratio) for the base joint, and an integrated actuator for external control of the wrist joint's three axes. This design ensures the arm's ability to emulate the dexterity and range of motion of the human arm, making it adaptable for a broad spectrum of tasks.

### Hack With MAIT - October 2023

### Code4Cause - October 2023

- In October 2023, at MAIT our team HAcK, secured the 1st position in the Hack with Mait competition. They were able to bag a winning amount of Rs 10,000.
- In October 2023, at Code4Cause, our team secured the prestigious 1st position in the Edtech theme and Open Innovation category of MSIT. Their exceptional achievement marked a significant win. Congratulations to the team!





## PHD COMPLETED IN ECE DEPARTMENT FOR THE PERIOD JANUARY 2023 TO DECEMBER 2023

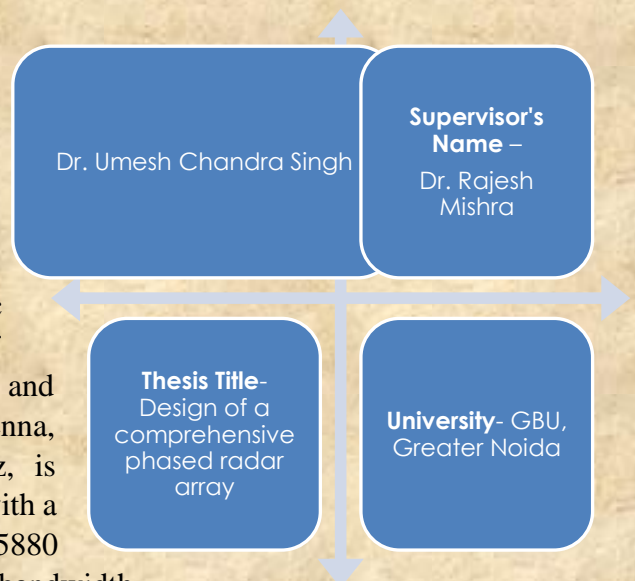


In his research, Dr. Sudarshan Kumar has investigated the potential of SIW technology to advance wireless communication systems. The research primarily focuses on designing, simulating, and experimentally verifying various SIW filters. Additionally, he has delved into the study and design of leaky wave antennas and half-mode SIW filters. Furthermore, he has dedicated considerable effort to

exploring the transitions between SIW and other planar transmission lines in his prototypes. This exploration has allowed him to investigate the seamless integration of SIW technology with existing transmission line technologies. Additionally, he has explored the tunability aspect in filtering, identifying and manipulating physical parameters to achieve the desired filtering characteristics.

The research contributions of Dr. Umesh Chandra Singh encompass the design of a comprehensive phased radar array, featuring a dual-band planner on a single-layer substrate with a metal ground and a slot section procedure. The SIW-based dual-band antenna, fed through an inset feed that transforms microstrip TEM mode to SIW TE<sub>10</sub>, undergoes unit cell and parametric analyses. Additionally, the study includes the analysis of  $1 \times 2$  and  $1 \times 4$  SIW antenna arrays to enhance gain and directivity. Furthermore, a compact leaky wave antenna, specifically tailored for 5G applications at 38 GHz, is developed using substrate integrated waveguide (SIW) with a slot section technique. Printed on a Rogers's RT5880 substrate, the antenna exhibits an impressive impedance bandwidth

of 230 MHz, 82.7% radiation, and a directive gain of 6.68 dBi at 38 GHz. Another facet of the research introduces a small SIW slot antenna for 5G communication at 28 and 38 GHz, featuring horizontal and vertical vias, a central circular ring, and cut slots for capacitive loading. This antenna showcases impedance bandwidths, peak gains, and half-power beam-widths suitable for millimeter-wave 5G applications.



# FACULTY ACHIEVEMENTS

S.No	Faculty name	Name of the course	Duration of Course	Remarks	FDP Certificate
1.	Dr. Rajni	An Introduction to AI	12 Weeks	Top 5% (Elite)	Yes
		Introduction to Machine Learning	12 Weeks	Top 2% (Elite + Silver)	Yes
		Deep Learning	12 Weeks	Top 1% (Elite + Gold)	Yes
		Python for Data science	4 Weeks	Elite	Yes
		Data Science for Engineers	4 Weeks	Elite+Silver	Yes
		Computer Vision	8 weeks	Elite+ Gold	Yes
2.	Mr. Ajay Kumar Gupta	Introduction to Machine Learning	12 Weeks	Top 1% (Elite + Silver)	Yes
		Deep Learning	12 Weeks	Top 2% (Elite + Silver)	Yes
		Python for Data Science	4 Weeks	Top 2% (Elite + Silver)	Yes
3.	Ms. Kanika Agarwal	Deep Learning	12 Weeks	Top 1% (Elite + Gold)	Yes
		Introduction to Machine Learning	12 Weeks	Elite	Yes
		Python for Data Science	4 Weeks	Elite	Yes

4.	Dr. Divya Goyal	An Introduction to AI	12 Weeks		Yes
		Introduction to Machine Learning	12 Weeks		Yes
		Data Science for Engineers	4 Weeks		Yes
		Computer Vision	8 weeks		Yes
5.	Mr. Amit Saxena	Blockchain and its application	12 Weeks	Elite	Yes
6.	Mr. Umesh Singh	Python for Data science	4 Weeks		Yes
7.	Ms. Sumedha Gupta	Introduction to Machine Learning	12 Weeks	Elite	Yes

# STUDENTS ACHIEVEMENTS

S.No.	Name of Student	Achievement
1.	Arjun	NPTEL certification in Introduction to Embedded System Design
2.	Arjun	NPTEL certification in Analog Electronic Circuits
4.	Kartik Mishra	Winner in Intercollege Poster Making Competition
5.	Utkarsh Gupta	Winner of UNESCO India Africa Hackathon 2022
6.	Keshav Nalwa	NPTEL certification in Programming in Java
7.	Anandita	Winner in Ideathon, MAIT
8.	Anandita	Runner up in MakeITHappen Hackathon
9.	Anandita	Second Runner-up in Erudite Ideathon
10.	Anandita	Runner up in Anugoonj (GGSIPU) rangoli making competition
11.	Ishaan	Winner of WWDC Swift Student Challenge
12.	Preet Yadav	1st Position at Vihaan 6.0 at DTU and winning cash prize of Rs. 40000 in Asia's Largest Hackathon

# REMARKABLE PLACEMENT OFFERS SECURED BY ECE STUDENTS



## Maharaja Agrasen Institute of Technology

AICTE approved and affiliated to GGSIPU

Department of Electronics and Communication Engineering  
(NBA Accredited)

Batch  
(2020-2024)

*Congratulates*

ECE Students

For securing placement in ZS Associates on a package of 13.65 LPA



Manav Kaushal  
(8414802820)



Aaditya Bansal  
(214802820)



Kanushi Baweja  
(7514802820)



Divyansh Sharma  
(5714802820)



Raj Priya Harsh  
(11514802820)



Anurag Agarwal  
(20714802820)



Shubhi Agrawal  
(35614802820)



## Maharaja Agrasen Institute of Technology

AICTE approved and affiliated to GGSIPU

Department of Electronics and Communication Engineering (NBA Accredited)

*Congratulates*

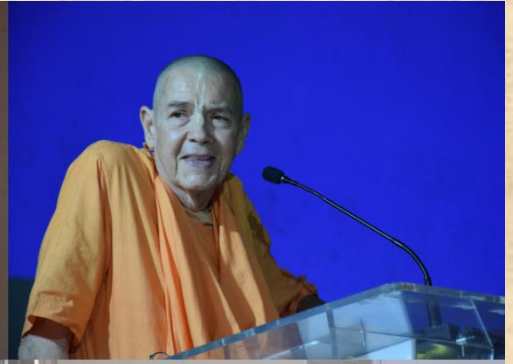
Ishita Singh

Batch  
(2020-2024)

For securing placement in Microsoft with a package of 50 LPA



Ishita Singh  
(6914802820)



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