

ECE DEPARTMENT PRESENT'S

# THE FLIP FLOPS

A QUATERLY NEWSLETTER

**JUNE ~ SEPT `23**

**ILLUMINATING | INVIGORATING | INSPIRING**

VOLUME 2 ISSUE 2, OCTOBER 2023



**DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING**

SCHOOL OF STUDIES IN ENGINEERING AND TECHNOLOGY  
GURU GHASIDAS VISHWAVIDYALAYA, BILASPUR ( C.G )

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## FROM THE DESK OF HON'BLE VICE CHANCELLOR

**"LIFE IS LIKE RIDING A BICYCLE. TO KEEP YOUR BALANCE, YOU MUST KEEP MOVING."**

I take great pride in the remarkable accomplishments and unwavering dedication exhibited by the students, faculty, and staff of our Electronics and Communication Engineering department.

Your relentless pursuit of excellence and drive for innovation continue to drive us forward. Together, let's embrace challenges, explore uncharted territories, and leave a lasting imprint in the realm of technology. By pushing boundaries, nurturing curiosity, and maintaining a perpetual thirst for knowledge, we hold the key to a promising future. I am confident that your exceptional

skills and unyielding determination will help shape a brighter tomorrow. I'd like to express my sincere gratitude to the editorial team for their diligent efforts in curating this Newsletter. It beautifully highlights the extraordinary achievements of our department and serves as an inspiration for others to fearlessly follow their passions.



**Prof. Alok Kumar Chakrawal**  
Vice Chancellor  
Guru Ghasidas Vishwavidyalaya

## FROM THE DESK OF REGISTRAR

It gives me great pleasure to address the esteemed readers of "The Flip Flops," the newsletter of the Department of Electronics and Communication Engineering at Guru Ghasidas Vishwavidyalaya. Our university has always been at the forefront of academic excellence and innovation, and the Department of Electronics and Communication Engineering plays a vital role in upholding this tradition. Your dedication to fostering knowledge, conducting ground-breaking research, and nurturing the next generation of engineers is commendable. In the ever-evolving field of electronics and communication, staying updated with the latest trends and technologies is crucial. I encourage you all to continue your pursuit of knowledge and encourage your students to do the same. Collaborate, explore, and push the boundaries of what is possible in this field.

"The Flip Flops" serves as a platform to showcase the department's achievements, share research findings, and celebrate the accomplishments of our faculty and students. I urge you to actively contribute to this valuable publication, sharing your insights, experiences, and success stories. Let us continue to work together to uphold the standards of excellence that Guru Ghasidas Vishwavidyalaya is known for. I wish the Department of Electronics and Communication Engineering continued success in all its endeavors.

Thank you for your dedication and hard work.



**Prof. Manish Shrivastava**  
Registrar  
Guru Ghasidas Vishwavidyalaya

## FROM THE DESK OF DEAN

I welcome you all to the 'Flip Flops,' a newsletter dedicated to UG, PG, Phds aspiring branch: Electronics and Communications Engineering. Here, we share tech insights and honor trailblazers shaping future engineers. Recent events, including our tech fest, enriched students' skills and teamwork. These experiences aid their journey as future engineers and individuals. IEEE student branch at GGV, ECE student club 'SILICON', ECE expert lecture series also provide valuable real-world problem-solving skills. Best wishes to all involved in this endeavor. Good luck!



**Prof. Sharad Chandra Srivastava**

Dean

School of Studies of Engineering and  
Technology, GGV

## AMBITION OF THE H.O.D



**Dr. Soma Das**

Professor and head  
Department of Electronics and  
Communication Engineering

I'm thrilled to connect through our quarterly magazine as the Head of Electronics and Communication Engineering. Witnessing our department's growth and achievements brings immense joy. Our faculty shapes students' futures with unwavering commitment to excellence in education and research. Students consistently excel, securing accolades, internships, and placements. This edition showcases innovative projects, breakthroughs, and faculty-student achievements, serving as a platform for celebration and inspiration.

Huge thanks to the editorial team for their efforts and to students and faculty for their invaluable contributions.

## TEACHERS ARTICLE

### **COMMUNICATION STANDARDS: IMPACT ON COMMUNICATION ENGINEERS' JOB MARKET.**

Hello budding engineers, You guys belong to Generation Z, while most of us faculty members are millennials. This essentially means that we (millennials) have more or less seen the evolution up close and have witnessed the changes in the way information floats from point X to point Y. Being in this younger generation presents you guys with tremendous opportunities as well as many more challenges that are ahead of us. As a communication engineering student, you are in a unique position to capitalise on the dynamic changes in communication standards and harness the opportunities they bring to the job market.



Dr Ruchi Tripathi  
Asst. Prof (E.C.E  
Department)

With the rise of new communication technologies, such as virtual reality and artificial intelligence, communication engineers must adapt their skills to meet the demands of these emerging platforms. This requires a deep understanding of the underlying technology as well as the ability to effectively communicate complex concepts to a variety of audiences.

Advancements in communication technology have not only evolved but have also redefined the benchmarks for effective communication, resulting in a notable transformation in the job landscape for communication engineers.

Each generation must bring something new and different to the table, and in the case of 6G, holographic communication and digital replicas take center stage. With improved high-resolution rendering and wearable or flexible displays, devices will be able to render media for 3D hologram displays. However, to provide real time services with hologram displays,

an extremely high data rate of transmission will be necessary, which will require new data encoding techniques. To achieve new use cases, it will be essential to embed "intelligence" throughout the network stack. Artificial intelligence, which encompasses reasoning, knowledge representation, learning, and perception, relies heavily on quality data. The more data that is available, the better it can be analysed in context. The 6G architecture should natively support ubiquitous computing to enable true intelligence. In 6G, computing and intelligence services will become crucial parts of the network and network automation. "Intelligence engines" are better able to arrive at inferences through "specialization," which is an analysis of data from a small or hyper-local context, rather than "generalization", which extrapolates to a larger context.

Overall, evolving communication standards create opportunities for adaptable communication engineers. Staying current with tech and techniques is key in a high-demand job market, with millennials ready to assist.



STUDENT ARTICLE

**Title: Industry 5.0 - The Next Frontier of Industrial Transformation**

Utsav Kumar (4th Yr ECE)

Introduction:

The concept of Industry 5.0 envisions the next phase of industrial evolution beyond Industry 4.0, which is the current era of the Fourth Industrial Revolution (4IR). Building on the digitalization and automation of Industry 4.0, Industry 5.0 is expected to further blur the lines between the physical and digital worlds, ushering in a new era of innovation, productivity, and sustainability.

Key Characteristics of Industry 5.0:



Utsav kumar  
(Final Year E.C.E)

1.Human-Centric Approach: While Industry 4.0 focused on increasing automation and efficiency through smart technologies, Industry 5.0 is expected to reintegrate the human element.

2.Advanced Automation: Industry 5.0 will witness a significant advancement in automation technologies, driven by the seamless interaction between humans and machines. The integration of artificial intelligence, machine learning, and advanced robotics will lead to more adaptive and agile manufacturing processes.

3.Cyber-Physical Systems: Industry 5.0 will bring forth an era of highly interconnected cyber-physical systems, where machines, devices, sensors, and humans communicate and collaborate in real-time.

4.Sustainable Manufacturing: With growing environmental concerns, Industry 5.0 is expected to prioritize sustainability and green practices. The integration of renewable energy sources, circular economy principles, and eco-friendly materials will pave the way for more sustainable manufacturing processes and reduced carbon footprints.

5.Cutting-Edge Technologies: Industry 5.0 will embrace and leverage emerging technologies such as nanotechnology, quantum computing, biotechnology, and advanced materials. These technologies will revolutionize production techniques, materials design, and product performance, opening new possibilities for various industries.

Conclusion: Industry 5.0 merges human innovation and technology for global progress. While we await the materialization of Industry 5.0, it is crucial for stakeholders, policymakers, and industries to collaborate in shaping a future that balances economic progress, social responsibility, and environmental sustainability.

**TITLE: 5G TECHNOLOGY AND ITS IMPLICATIONS: UNLEASHING THE POWER OF CONNECTIVITY**



**Preety Kumari**  
3rd Year

The advent of 5G technology is poised to redefine the way we connect, communicate, and innovate. This fifth-generation wireless network promises an unprecedented leap in speed, latency, and capacity, opening doors to a multitude of possibilities across various sectors.

5G's implications in healthcare are profound. Remote surgeries, real-time patient monitoring, and telemedicine will become more efficient and accessible, potentially saving lives in critical situations. In transportation, autonomous vehicles will benefit from near-instantaneous data transmission, enhancing safety and navigation.

Smart cities will harness 5G's capabilities to manage traffic, optimise energy consumption, and improve public services. Entertainment and gaming experiences will reach new heights with seamless augmented reality and virtual reality applications. Nonetheless, as 5G proliferates, concerns about data security and privacy loom large. Safeguarding sensitive information and ensuring network integrity will be paramount. In conclusion, 5G technology promises a future of unparalleled connectivity and innovation. Embracing it responsibly, with an eye on security, will be key to unlocking its full potential. As 5G networks roll out worldwide, we stand on the brink of a new era of connectivity and possibility.



## Departmental Activities

### ECE Lecture Series

**Greetings,**

**On 12th July, 2023 another wonderful session of ECE Lecture series was jointly conducted by IEEE(Student Chapter) and the Silicon Club.**



**SHRESTHA GUPTA**  
**GRAPHICS HARDWARE ENGINEER**  
**INTEL COPORATION**

The guest of honor as well as the speaker of the day was an alumni of IT-GGV, Miss Shreshtha Gupta (2017-2021). She qualified the GATE examination in the year (2021) and completed her master's in Electrical Engineering from one of the prestigious institutes of the nation, IIT Kanpur in 2023. She has recently joined Intel Corporation as a Graphics Hardware Engineer. Her presence truly boosted the spirits of all the students present in the session. She also talked about her student life journey during bachelor's as well as the master's, mentioning the difference in the culture of IIT and GGV. She shared her preparation experience talking about the importance of syllabus from various years, significant topics to look into, and the most important thing that is the correct time to begin the preparation. Furthermore she explained the way she managed her time and what all strategies she followed. She also advised the students to join offline coaching centres for preparation as it was way better and effective from her experience.

She specifically mentioned the mistakes that students usually make and also suggested various ways to prevent them.

Finally the session ended with Prof. Jitendra Bharadwaj sir's short speech talking about how he remembers teaching Ms. Shrestha batch and encouraging all to gear up themselves for the future.





**ECE Lecture Series****Greetings,**

**We are pleased to share the highlights from the recent session of our ECE Lecture Series held on 11th August 2023.**



**KAUTUK GHOSLE**  
**AIRPORT AUTHORITY OF INDIA**

During the session, we had the privilege of hosting one of our esteemed alumni, Mr. Kautuk Ghosle who had completed his graduation in Electronics and Communication Engineering from Guru Ghasidas University in 2017. He was a student of the 2013-2017 batch. Presently serving as a Junior Executive in Communication Navigation and Surveillance at the Airport Authority of India, Kautuk sir shared valuable insights that we are excited to recount. The focus of his presentation was his journey to success particularly in the context of cracking the GATE examination and subsequently was the securing admission at IIT Kanpur for his MTech. His trajectory further led him to a fulfilling career within the Aviation Industry. He adeptly guided us through his experience in Aviation Industry(AI), elucidating the myriad opportunities that abound in the dynamic field and the pathways to entry. Notably, he also discussed the common pitfalls students often encounter when preparing for competitive exams like GATE and PSU examinations. His discourse extended to proposing effective strategies to mitigate these challenges, providing our students with invaluable tools for success. This session proved to be immensely informative, offering attendees a comprehensive understanding of prevailing trends and emerging prospects. The adage that practical insights enhance learning was exemplified in the rich content shared by him. We extend our sincerest appreciation to him for generously sparing time from his demanding schedule to engage with our students.

In conclusion, the session was a resounding success, enlightening our audience about the realities of the professional landscape.



### Plantation Drive:

On the 29th of July, an inspiring plantation drive was organized as a departmental activity by the ECE department under the auspices of NSS-GGV. This eco-conscious endeavor witnessed the active participation of first-year ECE students, who wholeheartedly planted more than 150 trees. The chosen location for this noble cause was near the Kali Mandir, adding a spiritual dimension to the environmental initiative. What made this event truly remarkable was the diverse sapling species which were planted, including guava, Neem, Mango, and many more, each contributing to the ecosystem in its unique way.

Guiding and mentoring of the volunteers was done by Sudhakar sir, who made all the required equipments available and also guided us throughout the drive. Beyond the numbers and varieties of trees, this plantation drive afforded volunteers a priceless opportunity to forge a deeper connection with nature, leaving them with cherished memories of a day well spent nurturing the environment.



## **FACULTY ACHIVEMENT**

- The paper title Polarization Insensitive Multiband Metamaterial absorber authored by Laxmikant Dewangan, Nipun Kumar Mishra, and Shrey Ananat Sandiman of Paper ID 0078 is selected as best paper for the International Conference on Electrical, Electronics and Telecommunication Engineering in 8th International Conference "Shaastrarth-2023" on Advances and Applications of Artificial intelligence, Machine Learning and Data Science on 23 & 24 June 2023, organized by Rungta College of Engineering and Technology, Bhilai.
- Regarding talks on 2 platforms by Anita Khana
  1. Professional Training Program "Professional Training in allied tools and techniques", Dated 05-06-2023 to 16-06-2023 (Two week Schedule), Talk on "Deep Learning" on 13-06-2023
  2. Faculty Development Program " Trends in Technological Intelligence 2023", dated 21-08-2023 to 25-08-2023 (One week). Talk on 22nd Aug 2023 on "Introduction to Deep Learning and Image Segmentation using RESUNET Architecture
- Dr. Nipun Kumar Mishra of Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.) delivered a "Expert talk" on Sensors for Biomedical Applications (topic) during Two Weeks Online Professional Training in "Allied Tools and Techniques under Interdisciplinary Engineering Fields for Learning Sustainability", organized by the Department of Industrial and Production Engineering, School of Studies, Engineering and Technology, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.)
- Dr Anil Kumar Soni is nominated as member of IAAB(Industry Alumni Advisory Board) in Department of ECE, MITS Madanapalle
- Dr Nipun Kumar Mishra was invited as a resource person for delivering a lecture in the Short Term Course on Professional Development for Non-Teaching Staff-II, regarding.

- **PROJECT SUBMITTED BY SUDAKAR SINGH CHAUHAN**

(1) Research proposal entitled “Investigation of III-V Compound Semiconductor for achieving Suitable Drive Current of TFET for Low Power Applications” Council of science & Technology submitted on 20 June 2023.

(2) Research proposal entitled “Multiple Sensor Integration for Landslide Detection and Monitoring using Machine Learning Techniques” Council of Science & Technology submitted on 20 June 2023.

- **BOOK CHAPTER**

Sudakar Singh Chauhan and Seema, “Performance Analysis of Hetero-Dielectric Buried Oxide Double Gate Vertical TFET”, Springer Lecture Notes in Networks and Systems, vol. 685, pp. 19-28, 2023. ISBN: 978-981-99-1911-6, July 2023.

- Dr Sudakar Singh Chauhan served as a Technical Program Committee member of 2nd International Conference on "Advances in Data Computing, Communication and Security (I3CS 2023)" held on NIT Kurukshetra, Haryana from June 01-03, 2023.
- Dr. Pankaj Shankar Shrivastava from Department of Electronics & Communication Engineering, SOS (E&T), Guru Ghasidas Central University, Bilaspur (C.G.), India has participated and presented a paper on "Analysis of Channel Capacity for 5G Cellular System With mm-wave." in the 4th Online/Offline International Conference on "Continuity, Consistency and Innovation in Applied Sciences and Humanities" (ICCIASH-2023) organized by Department of Science and Humanities of St. Martin's Engineering College, Dhulapally, Secunderabad, T.S, India on 18th & 19th August 2023.



RESEARCH PAPER

FACULTY	Publishing Date	TOPIC
DR NIPUN KUMAR MISHRA & Laxmikant Dewangan	16th July 2023	Journal on Broadband metamaterial absorber for stealth application at K-band
DR NIPUN KUMAR MISHRA & Laxmikant Dewangan	06th May 2023	Journal on Multiband polarization insensitive metamaterial absorber for radar cross-section reduction
PRAVEENA RAJPUT	05th May 2023	Impact of scaling of dielectric thickness on subthreshold slope in top-contact pentacene organic thin film transistors
DR SOMA DAS & SUMIT KUMAR GUPTA	16th August 2023	Two elements orthogonally placed UWB-MIMO for RADAR, Satellite and Terrestrial Communication
DR SOMA DAS, SUMIT KUMAR GUPTA & BHAWANA SHUKLA	12th June 2023	Resistance Loaded UWB MIMO with Enhanced Isolation for S and C Band Applications

## STUDENT ACHIEVEMENT



- **Sanjeev**, student of ECE dept 2009-13 batch was also the part of ISRO's Chandrayan -3. He contributed in propulsion and Transponder system of Chandrayan's 3 mission.
- The research paper "Resistance Loaded UWB MIMO with Enhanced Isolation for S and C Band Applications" by **ADITI SHARMA** was published in Progress in Electromagnetics Research [ JPIER ]
- The research paper "A STUDY ON BIOCHEMISTRY ANALYZER USING FPGA EVALUATION BOARD" by **RISHABH UPADHYAY, ANKIT KUMAR, and AMRIT RAJ** was published in the Chhattisgarh Journal of Science and Technology.
- **Ashutosh Pandey**, Phd scholar has done Analysis of channel capacity for 5g cellular system.
- Taniya singh, Maradna Harika, Srijani Som, Khusbu, Komal, Nishant Govindrao Wankhede - Space Science Technology & AwaReness Training (START) Programme - 2023, ISRO, department of science, Govt. Of India Ankit Singh, Navneet Kumar and Janumala Akhilendra- Smart City internship
- Final Year Students **Utsav Kumar & Shivam Srivas** have been appointed as New chairperson of IEEE GGV STUDENT BRANCH [June 2023] & New Student Lead of Silicon Society GGV Branch [August 2023]
- The Research paper "Two elements orthogonally placed UWB-MIMO for RADAR, Satellite and Terrestrial Communication" by **Manish Deshmukh & Abhijeet Agrawal**

- Sankarshan Mishra, Ishu Lal, Gaurav Kumar, Neha Sahu, Revathi Ramachandran P. and Sana Pavani,(1st Year) successfully completed FACT APP internship program as a Growth Intern  
8th June to 6th July 2023
- Sankarshan Mishra (1st Year) secured a stipend worth 1 Lac through FACT APP internship program.  
2 August 2023
- Gaurav Kumar (1st Year) secured a stipend worth 50 Thousands through FACT APP internship program.  
2 August 2023
- Sana Pavani (1st Year) secured a stipend worth 35 thousands through FACT APP internship program.  
2 August 2023
- A M SURYA(3rd Year)  
Secured Top 1% and Gold medal in Nptel course on Introduction to IoT.  
Secured Elite certificate in Nptel course on Evolution of Air Interface Towards 5g June 2023  
Backend development intern at Presears Pvt Ltd
- Gaurav Kumar ( 1st Year) created an online e-learning platform named EDUGLE in the year 2020 with a motive to provide quality and free education, and mentorship, guidance to JEEaspirants. This year the students of EDUGLE have performed exceptionally well as out of 20 students 2 of the students secured their seats in the IITs and 8 have grabbed seats at the NITs and 7 have grabbed seat at IIITs and Government Engineering College through JEE Mains and Advance 2023 examination. They showed their gratitude and love towards him and EDUGLE for all the help, guidance, mentorship, counseling help.



**SUMMER INTERNSHIP (MAY-JUNE)**

ORGANISATION	NO. OF STUDENTS	DURATION
 NTPC	9	4 WEEKS
 DRDO	5	8 WEEKS
 BHEL	4	4/6 WEEKS
 DVC(KTPS)	1	4 WEEKS
 INDIAN RAILWAY	9	8 WEEKS
 NSIC	11	4 WEEKS
 NOWPURCHASE	1	8 WEEKS
 MTE, DELHI	1	6 WEEKS
 NIELIT	1	6 WEEKS
 NTSL, DRDO	1	6 WEEKS
 NIT NAGPUR	1	6 WEEKS



ORGANISATION	NO. OF STUDENTS	DURATION
 <b>BRIMO</b> International SOFTWARE SOLUTIONS	1	5 WEEKS
 <b>RINL</b>	2	4 WEEKS
 <b>NSDC</b>	2	4 WEEKS
 <b>DOORDARSHAN,</b> LUCKNOW	1	4 WEEKS
 <b>SCIASTRA</b>	1	8 WEEKS
 <b>SUG CREATIVE</b>	1	7 WEEKS
 <b>HIXAA</b> TECHNOLOGIES NAGPUR	1	7 WEEKS
 <b>LEARN AND BUILD</b>	1	6 WEEKS
 <b>BHARAT DYNAMICS LIMITED</b>	1	4 WEEKS
 <b>AANCHALPORE APPAREL</b> PRIVATE LIMITED (BENGALURU)	1	8 WEEKS
 <b>ACHIVE SOFTWARE TRAINING</b> AND SKILL DEVELOPMENT CENTRE WEB DEVELOPMENT	1	4 WEEKS
 <b>OASIS</b> INFOBYTE	2	4 WEEKS

Thankyou for your patience while we have been working on the next edition of the Electronics and Communication Engineering Newsletter. We have finally finished it and we are happy to send it to you. The acknowledgement note that I would like to include in the next edition of the News-letter is attached. I would also like to include a few wishes for the future in the next edition.

## OUR TEAM



Dr. Soma Das  
H.O.D  
(E.C.E) Department



Kajal Kumari  
4th Year



Vikas Jonwal  
4th Year



Preety Kumari  
3rd Year



Ritik Kumar Arora  
1st Year



Tanisha Bhushan  
1st Year



Ishu Lal  
1st Year



Siama Naseem  
1st Year



Gaurav Kumar  
1st Year