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Bapuji Institute of Engineering and Technology  
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# BIETECH VOICE

## Department of ECE

A HALF YEARLY NEWSLETTER OF  
ELECTRONICS & COMMUNICATION ENGG.

Volume - 5, Issue - 2 January – June 2022

**Vision:** To be in the forefront in providing quality technical education and research in Electronics & Communication Engineering to produce skilled professionals to cater to the challenges of the society.

### News Letter Committee

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**BAPUJI INSTITUTE OF ENGINEERING & TECHNOLOGY**  
DAVANGERE-577004  
AICTE-ISTE Sponsored  
One Week Online Faculty Development Programme  
on  
**ELECTRONIC ASSISTIVE DEVICES**  
7<sup>th</sup> - 13<sup>th</sup> January 2022  
Organized by  
Department of Electronics & Communication Engineering  
Internal Quality Assurance Cell, BIET, Davangere

**19th to 24th April 2022**  
(Blended Mode)  
Bapuji Educational Association®  
Bapuji Institute of Engineering and Technology,  
Davangere-577004  
(Accredited by NAAC with 'A' Grade)  
Department of Electronics & Communication Engineering  
(Accredited by NBA)  
In association with  
FOSS Group, Visvesvaraya Technological University, Belagavi  
Organizes  
One Week Faculty Development Program  
on  
Embarking on Open Source Software in an Engineering & Research Journey  
Coordinator  
Dr. G. S. Sunitha  
Professor & Head

### Inside the Issue

- Departmental Activities
- Student Achievements /Activities
- Faculty Achievements /Activities
- Articles
- Literary Contribution
- Alumni Corner

### Quote Corner

*“Two rules for a peaceful life:  
Depression in failure should  
never go to heart, and ego in  
success should never go to the  
brain.”*

**Chairman/ Editor**  
Dept. of Electronics & Communication Engineering  
P. O. Box No. 325, Shamanur Road, Davangere.  
[www.bietecwordpress.com](http://www.bietecwordpress.com), [ecvoice2017@gmail.com](mailto:ecvoice2017@gmail.com)

## Mission:

- M1. To facilitate the students with profound technical knowledge through effective teaching learning process for a successful career.
- M2. To impart quality education to strengthen students to meet the industry standards and face confidently the challenges in the program.
- M3. To develop the essence of innovation and research among students and faculty by providing infrastructure and a conducive environment.
- M4. To inculcate the student community with ethical values, communication skills, leadership qualities, entrepreneurial skills and lifelong learning to meet the societal needs.

## Scientific Foundations of Health

### Good Health and It's balance for positive mindset

Physical fitness is not the sole basis of being healthy; being healthy means being mentally and emotionally fit. Being healthy should be part of overall lifestyle. Living a healthy lifestyle can help prevent chronic diseases and long-term illnesses. Feeling good about ourself and taking care of health are important for self-esteem and self-image. Maintain a healthy lifestyle by doing what is right for the body.

**“One small positive thought can change the whole day”- Zig Ziglar.**

### Developing Healthy Diet for Good Health

Prepare most of meals at home using whole or minimally processed foods. Choose from a variety of different proteins to keep things interesting. Make an eating plan each week. Choose recipes with plenty of vegetables and fruit. The goal is to fill half plate with vegetables and fruit at every meal. Choose brightly colored fruits and vegetables each day, especially orange and dark green vegetables. Avoid sugary drinks and instead drink water. Lower-fat, unsweetened milk is also a good way to stay hydrated. Eat smaller meals more often. Eat at least three meals a day with snacks in between. When we wait too long to eat there are more likely to make unhealthy food choices.

### Why communication is key to healthy relationships

- **Communication** is important in any relationship, as it allows to effectively share feelings, opinions and expectations.

### From HOD's Desk



I am happy that we are bringing out the second issue of volume 5.

I am glad to share that department has a credit of organizing two FDPs- one week AICTE-ISTE sponsored Induction/Refresher Programme (online) on **Electronic Assistive Devices** for faculty and one week FDP on **Embarking on Open Source Software in an Engineering & Research Journey** in association with FOSS group, VTU, Belagavi.

Under Gnana Vrudhi lecture series, faculty delivered talks on Embedded and VLSI domain.

Skill development program is initiated in the department for I year students on **Simple Electronic Circuits and their Applications**.

Congratulate Mrs. Savithri G R for receiving Best Paper Award for the paper titled Design of Four Port Router for Network on Chip.

Online paper presentation Papyrus – 2K22 and Cognition was successfully organized with active participation of the students.

Congratulate the research scholar Mr. Prakash K M for completion of Ph.D. degree.

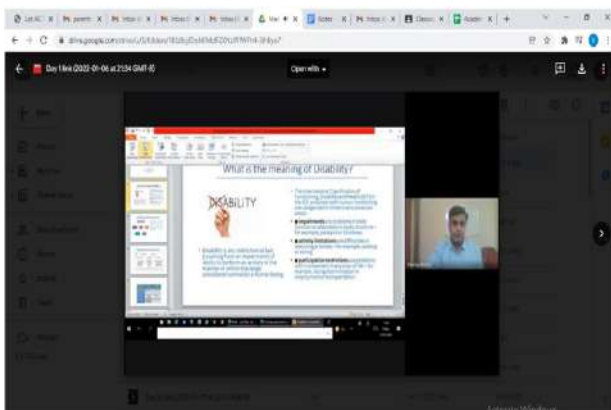
- **Get to Know Each Other:** The key to determining whether we're compatible with another person is to communicate with them from the offset.
- **Avoid Misunderstanding:** Another reason to communicate effectively is to avoid any misunderstandings, which can lead to a breakdown of communication or the relationship as a whole.

## DEPARTMENTAL ACTIVITIES

- Organized one week AICTE-ISTE sponsored Induction/Refresher Programme (online) on **Electronic Assistive Devices** for faculty of technical institution, medical, industry professionals and researchers from 7<sup>th</sup> to 13<sup>th</sup> January 2022 in association with Dr. Gnanavel, Director of CRC and faculty of CRC Davangere. The program was coordinated by Dr. B M Jayadevappa, Dr. G H Leela, Mr. Kiran Kumar G H, Mrs. Savithri G R and Mrs. Shwetha S, under the guidance of Dr. G S Sunitha Prof. and Head, Department of E&CE.



Latitude: 14.448855  
Longitude: 75.901452  
Elevation: 587.86±1 m  
Accuracy: 3.57 m  
Time: 07-01-2022 09:54  
Refer: Electronic Assistive Devices - IISTE



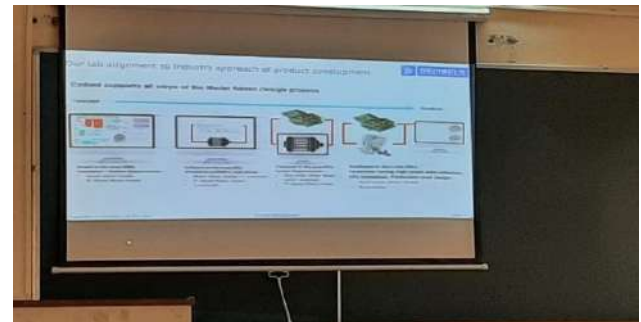
**Electronic Assistive Devices from 7<sup>th</sup> to 13<sup>th</sup> January 2022**

- Webinar on **Universal Human Values and Social Responsibilities among youth** by Sri. Kailash Satyarthi, Nobel Peace Laureate, organized by VTU, Belagavi on 11<sup>th</sup> January 2022.



**UHV by Sri. Kailash Satyarthi**

- Mr. Suraj, Co-Founder and CEO, Decibels Labs Pvt. Ltd. delivered a presentation on **Electrical Vehicle** in the Department of E&CE on 27<sup>th</sup> January 2022.



**Presentation on Electrical Vehicle Lab setup**

- Celebrated **National Voters Day -2022** on 25<sup>th</sup> January 2022.



**Voters Day Pledge delivering by Principal and Director**

- Organized a motivational talk to carry out **Social Concern Related Activities** by Shankar Pednekar, Alumni 1993 batch on 22<sup>nd</sup> January 2022.
- Conducted Two day workshop on **Electronic Circuit Prototyping and Application Development** in association with **Altilogic Technologies** for III Semester students on 7<sup>th</sup> & 8<sup>th</sup> February 2022.



**Discussion with Principal and Director**

- The Department has been **accredited by NBA for 3 years**, from 2021 to 2024 for the academic year 2021-22, 2022-23, and 2023-24, Dr. Vineeth Sahula, Professor in E&CE from Malaviya National Institute of Technology, Jaipur was the expert for E&CE Department..
- Conducted skill development program for I year students of the institute on **Simple Electronic Circuits and their Applications** from 14<sup>th</sup> to 22<sup>nd</sup> March 2022.



**Skill development program on Simple Electronic Circuits and their Applications**

- Conducted Two day workshop for III sem students on **PCB Design and Testing** on 24<sup>th</sup> and 25<sup>th</sup> March 2022.



**Workshop for III sem students on PCB Design and Testing**

- Conducted one week FDP on **Embarking on Open Source Software in an Engineering & Research Journey** in association with FOSS group, VTU, Belagavi from 19<sup>th</sup> to 24<sup>th</sup> April 2022. **Dr. G S Sunitha Prof & HOD.**



**FDP on Embarking on Open Source Software in an Engineering & Research Journey**

- Mr. Honnappa M, alumni, 2015 **Deputy Superintendent of Police in CISF** at Ministry of Home Affairs, Government of India, alumni of E&CE addressed VI sem students on **Awareness towards UPSC and other Government opportunities for Engineering graduates** on 11<sup>th</sup> May 2022.



**Awareness towards UPSC and other Government opportunities for Engineering graduates**

- To get practical exposure about technology implementation, department had organized

Industrial visit to Tessolve Semiconductors Pvt. Ltd., A Venture of Hero Electronix, Bangalore on 11<sup>th</sup> June 2022. A team of 30 students and 3 faculty visited.



#### Visit to Tessolve Semiconductor Pvt. Ltd., Bengaluru

- Department organized an EC fest eUtsav on 14<sup>th</sup> and 15<sup>th</sup> June 2022 in association with ISTE Students Chapter, BIET Davangere and IETE Students Forum.
- **PAPYRUS 2k22**- State level Technical Paper Presentation and State level Project Exhibition **COGNITION** for UG students was organized under EC Forum in association with ISTE Students chapter & IETE Students on 27<sup>th</sup> June 2022. Under the Guidance of Dr. G S Sunitha, Prof & HOD, the event was coordinated by Mrs. Bhagya ShanthaKumar. The judges were Mrs. Savithri G R, Asst. Prof, E&CE, BIET and Mrs. Jyothi G C, Asst. Prof, IS&E, BIET.



#### PAPYRUS 2k22

##### Gnanavrudhi Lecture Series

- An overview on **PCB Design** using **Eagle Software** was conducted for department faculty by Mr. Lingaraj on 22<sup>nd</sup> February 2022.



#### PCB Design using Eagle Software

- Hands on session on **PRAYOGeeK Board** was Conducted by Mr. Ranjith Patil N on 5<sup>th</sup> March 2022.



#### Hands on session on PRAYOGeeK Board

- Mrs. Savithri G. R. conducted a hands - on session on **Introduction to Cadence tool** on 17<sup>th</sup> June 2022.



#### Introduction to Cadence tool

### STUDENT ACHIEVEMENTS AND ACTIVITIES

- Ms. Sanmathi Sathbai and Ms. SMounika of V sem have participated in **PCB Design** organized by JIT Davangere on 15<sup>th</sup> and 16<sup>th</sup> January 2022.
- Mr. Rishikethu Chand of VI sem has qualified NPTEL course on **Programming, Data Structures and Algorithms using Python**.

- Ms. Rajeshwari and Ms. Sanjana of VII sem have participated in **Ikebana** event organized on the eve of Women's day celebration by CSE, BIET, Davangere on 7<sup>th</sup> March 2022.
- A stall was set up at **Krushi Mela-2022** in Davangere by III sem students under the guidance of Mr. Ganesh K to showcase agriculture project titled **Animal Intrusion Detection and Alerting System for Farm Protection**.



#### Demonstration of Project at Krushi Mela-2022

- Students of IV and VI semester participated in demonstration of mini projects as part of **Cognition 2022**.



#### Cognition 2022

- Mr. Rishikethu Chand, Shrilaxmi P Shettar and Bhumika N from E&CE and two from CS&E and one from IS&E team is selected to **Smart India Hackathon - SIH 2022**.
- Mr. Rishikethu Chand has submitted proposal for **Smart City Mission** titled **Need for Better Traffic Management** on 29<sup>th</sup> June 2022.
- Throw Ball Tournament organized by E&CE department.
  - Winner- E&CE Dept

- Runner Up - E&CE Dept



- NB Cup cricket tournament organized by E&CE department.
  - Winner – IS&E Dept
  - Runner up - E&CE Dept
- Students achievements in Davana events organized from 23<sup>rd</sup>, 24<sup>th</sup> and 25<sup>th</sup> June 2022
  - 1st Place in Ramp walk

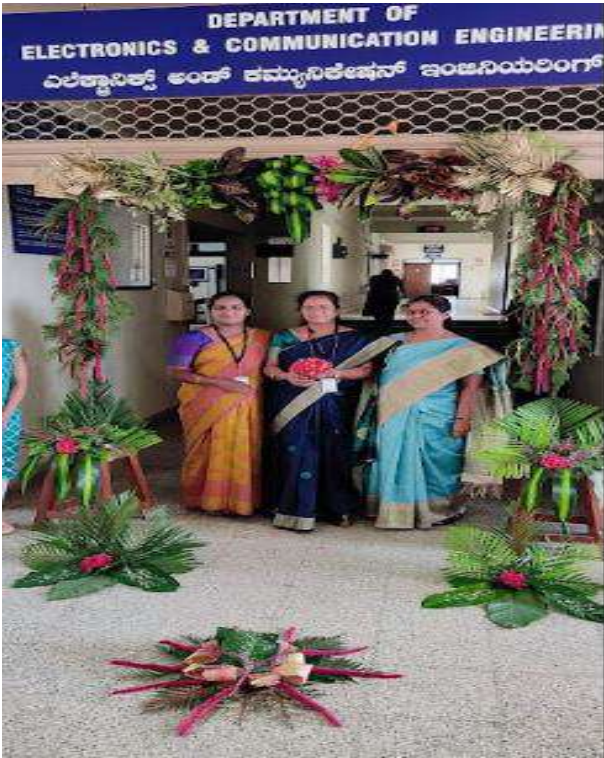


- 2nd place in Photography (Jhansi PM and Piyush H D)



2<sup>nd</sup> Place in Photography, Photo of Shiv Mandir, BIET Campus

- 2<sup>nd</sup> place in Arch Making and Photo Corner



Arch Making



Photo Corner

## PLACEMENT ACTIVITIES

- Campus Recruitment of 2020-21 batch Students

Sl. No.	Name of the company	No. of students Placed
1	inube	01
2	Ernst & Young	18
3	Schneider Electric	01
4	Anora Semiconductors	03
5	Wipro Elite	09
6	Cleo Software	05
7	Work Force software	01
8	Dish Network	02
9	Q SPIDERS	08
10	PENTAGON SPACE	03
11	Brigisha Technologies	04
<b>Total</b>		<b>55</b>

## FACULTY ACHIEVEMENTS AND ACTIVITIES

- Mr. Ganesh K was resource person for five days Workshop on **Digital Literacy for Librarians of Grampanchayat** of Gadag District organized by Karnataka State Rural Development and Panchyat Raj University' Gadag from 21-02-2022 to 25-02-2022.
- Dr. G H Leela and Dr. Nirmala S O has qualified NPTEL course on **Effective Teaching in Engineering Practices** during Jan-Feb 2022.
- Mr. Ganesh K has published an article in Janathavani Newspaper about **Solid Waste Management and Conversion into Fertilizers** on 17<sup>th</sup> March 2022.



- Mrs. Savithri G. R and Dr. G. S. Sunitha presented a paper **Design of Four Port Router for Network on Chip** in International Conference on Engineering Innovation organized by JIT, Davanagere on 03<sup>rd</sup> June 2022 is awarded with **Best Paper Award**.
- Mr. Kantaraj S. P., Dr. G. S. Sunitha, Dr. G. H. Leela and Dr. Nirmala S. O. published a paper **Design of Decimation Filter Structure for Wireless LAN Application** in International Journal of Electronics and Communication System, Vol 2, Issue 1.
- Mr. Ganesh K has attended **Data Science: Machine Learning** organized by EDX-Harvard Data science Professional Certificate Program from 15<sup>th</sup> April to 10<sup>th</sup> June 2022.
- Dr. G S Sunitha, Dr. Jayadevappa B M, Dr G H Leela, Dr. Nirmala S O, Mrs. Radhika Priya Y R, Mr. Ranjith Patil N and Mrs. Vanihree H V have attended a talk on **Innovate for India** organized by IS&E BIET Davangere in association with NAIN on 20<sup>th</sup> May 2022.

#### RESEARCHACTIVITIES

- Dr. K M Prakash is awarded with Ph.D.
- Mr. Kiran Kumar G H completed the Ph.D. final defence on 17<sup>th</sup> June 2022.

#### WORKSHOPS/FDP ATTENDED

- Dr. Nirmala S O, Mrs. Banumathi K L and Mrs. Sucharitha S D have attended **Awareness program on Intellectual Property Rights (IPR)** organized by IQAC Cell, BIET, Davangere on 28<sup>th</sup> January 2022.
- Dr. Avinash K G and Mr. Kiran Kumar G H have attended AICTE sponsored FDP on **Design Thinking** organized by VVCE, Mysore from 7<sup>th</sup> to 12<sup>th</sup> March 2022.
- All faculty members of E&CE department have attended 6 days FDP on **Embarking on Open Source Software in an Engineering and Research Journey**, organized by E&CE Department, BIET Davangere in association with VTU FOSS group, from 19<sup>th</sup> to 24<sup>th</sup> April 2022.
- Mr. Ganesh K has attended IEEE Conference Organizers Education Workshop **COEW 2022** organized by IEEE Bengaluru section, IEEE Mysuru Subsection, IEEE Mangaluru Subsection and IEEE North Karnataka Subsection on 10<sup>th</sup> April 2022.
- Mr. Ali I K, Mr. Mahendrachari, Mrs. Suman B S, Mr. Yogesh K O and Mrs. Vanishree H V have attended and obtained **UHV-1 Course Certification**.
- Mr. Kantharaj S P and Mrs. Sucharitha S D have completed **5 days Faculty Enrichment Program** conducted by **Infosys Springboard on AI** from 6<sup>th</sup> to 10<sup>th</sup> June 2022.



## ARTICLE

How much oxygen comes from the ocean?  
At least **half** of Earth's oxygen comes from the **ocean**.



*The surface layer of the ocean is teeming with photosynthetic plankton. Though they're invisible to the naked eye, they produce more oxygen than the largest redwoods.*

Scientists estimate that 50-80% of the oxygen production on Earth comes from the ocean. The majority of this production is from oceanic plankton — drifting plants, algae, and some bacteria that can photosynthesize. One particular species, *Prochlorococcus*, is the smallest photosynthetic organism on Earth. But this little bacteria produces up to 20% of the oxygen in our entire biosphere. That's a higher percentage than all of the tropical rainforests on land combined.

Calculating the exact percentage of oxygen produced in the ocean is difficult because the amounts are constantly changing. Scientists can use satellite imagery to track photosynthesizing plankton and estimate the amount of photosynthesis occurring in the ocean, but satellite imagery cannot tell the whole story. The amount of plankton changes seasonally and in response to changes in the water's nutrient load, temperature, and other factors. Studies have shown that the amount of oxygen in specific locations varies with time of day and with the tides.

It's important to remember that although the ocean produces at least 50% of the oxygen on Earth, roughly the same amount is consumed by marine life. Like animals on land, marine animals use oxygen to breathe, and both plants and animals use oxygen for cellular respiration. Oxygen is also consumed when dead plants and animals decay in the ocean.

This is particularly problematic when algal blooms die and the decomposition process uses oxygen faster than it can be replenished. This can create areas of extremely low oxygen concentrations, or hypoxia. These areas are often called dead zones, because the oxygen levels are too low to support most marine life. NOAA's National Centers for Coastal Ocean Science conducts extensive research and forecasting on algal blooms and hypoxia to lessen the harm done to the ocean ecosystem and human environment.

### What are plankton?

Plankton are **marine drifters organisms** carried along by **tides and currents**.



*Phytoplankton blooms in the Barents Sea, shown in natural color from NASA's Aqua satellite on July 10, 2014. The solid white area in the top right corner is cloud cover. Credit: NASA's Earth Observatory.*

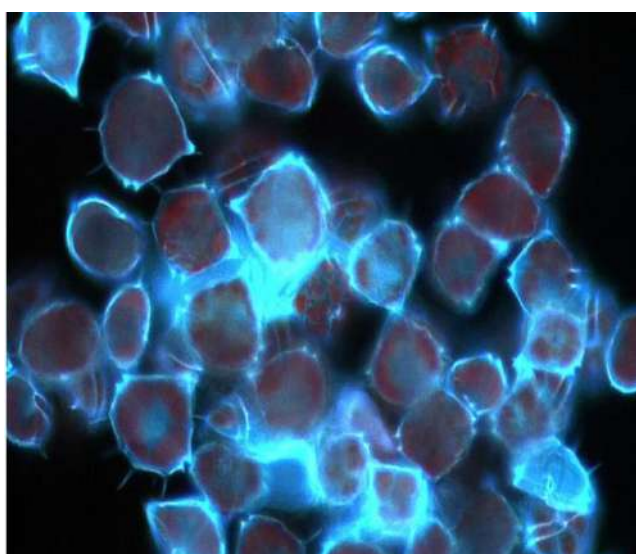
The word “plankton” comes from the Greek for “drifter” or “wanderer.” An organism is considered plankton if it is carried by tides and currents, and cannot swim well enough to move

against these forces. Some plankton drift this way for their entire life cycle. Others are only classified as plankton when they are young, but they eventually grow large enough to swim against the currents. Plankton are usually microscopic, often less than one inch in length, but they also include larger species like some crustaceans and jellyfish.

Scientists classify plankton in several ways, including by size, type, and how long they spend drifting. But the most basic categories divide plankton into two groups: phytoplankton (plants) and zooplankton (animals).



*A copepod (shown here) is a type of zooplankton, a planktonic crustacean distantly related to shrimp and crabs. Copepods are one of the most common and easily recognized types of zooplankton, found in almost every ocean, sea, and freshwater habitat, even in underground caverns. Image credit: NASA*



*A microscopy image of *Protoperidinium quinquecorne* enhanced with a fluorescent dye. The chlorophyll pigment is shown in red. This is one example of thousands of types of phytoplankton.*

*Phytoplankton* are microscopic plants, but they play a huge role in the marine food web. Like plants on land, phytoplankton perform photosynthesis to convert the sun's rays into energy to support them, and they take in carbon dioxide and produce oxygen. Because they need the sun's energy, phytoplankton are found near the water's surface.

Plankton are incredibly important to the ocean ecosystem, and very sensitive to changes in their environment, including in the temperature, salinity, pH level, and nutrient concentration of the water. When there are too many of certain nutrients in the water, for instance, harmful algal blooms like red tides are the result. Because many zooplankton species eat phytoplankton, shifts in timing or abundance of phytoplankton can quickly affect zooplankton populations, which then affects species along the food chain. Researchers are studying how climate change affects plankton, from the timing of population changes to the hardening of copepod shells, and how those effects ripple through ecosystems.

## LITERARY CONTRIBUTION

ಎಡವಿದರೇನುನೂರುಭಾರಿ  
ಮತ್ತೇಳುವುದರಲೇನಿನ್ನಗೆಲುವು  
ಸೋತರೇನಂತೆಸಾವಿರಭಾರಿ  
ಸಾವಿಲ್ಲಪ್ರಯತ್ನಗಳಿಗೆ !!!!

ಕಷ್ಟಗಳೆದುರುಕಲ್ಲಾಗು,  
ನೋವುಗಳಿಗೆನಗುವಾಗು  
ಮುನ್ನುಗ್ಗುನಿನ್ನಗುರಿಯ  
ದಾರಿಯಲಿ,  
ಸಾಧಿಸುವೆನೆಂಬನಂಬಿಕೆಯಲಿ...

ಕುಗ್ಗದಿರಲಿಆತ್ಮಬಲ  
ಬದುಕಿನಬವಣೆಗಳಿಗೆ....  
ಮೆಟ್ಟಿಲಾಗಿ ಸಿಕೊಳ್ಳಬದುಕ  
ತೊಡರುಗಳ, ನಿನ್ನ  
ಯಶಸ್ಸಿನಶಿಖರಕೆ.....!!!!  
ಸುಚರಿತ S D  
ಸಹಾಯಕಪ್ರಾಧ್ಯಾಪಕಿ  
E & CE ವಿಭಾಗ

## PAINTINGS



Spoorthi G N  
4BD18EC104  
VII 'A'



Anushree B N  
4BD19EC014  
V 'A'

## MOBILE PHOTOGRAPHY



Jhansi P M  
4BD18EC046  
VII 'A'



Jhansi P M  
4BD18EC046  
VII 'A'

## ALUMNI CORNER



Nagaraj G K  
Techno Program Manager  
Tata Communications Ltd, Bengaluru

### About

A dynamic and passionate professional, with 18 years of diverse global IT experience. Proficient in Agile projects practices for more than 5 years. Delivered series of Agile Awareness Class room and Virtual sessions. Proven expertise in Project management, product development life cycle, client presentation for new bids. Experience in managing multi- skilled teams.

### Education

Bachelor of Engineering: Electronics and Communication, 2010 – 2014  
BIET Davangere

### Employment Summary

Sl. No	Name of the organization	Designation
1	Tata Consultancy Services	Consultant/ Project manager
2	Celstream Technologies	Technical Manager
3	Wipro Technologies	Systems Manager
4	C.G Smith Software Ltd.	Member of Technical Staff
5	Process Care Systems Private Ltd.	R & D Engineer
6	Bharath Electronics Ltd.	Graduate Trainee



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Madhu M Jadhav	V Sem
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Varshitha M K	III Sem

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INTERNAL QUALITY ASSURANCE CELL (IQAC)  
**National Level One Week Online Faculty Development Program on  
Introduction to Microchip FPGA  
19<sup>th</sup> to 23<sup>rd</sup> July 2021**  
Organized by  
Department of Electronics & Communication Engineering

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Dr. Nirmala S O,  
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### Inside the Issue

- Departmental Activities
- Student Achievements /Activities
- Faculty Achievements /Activities
- Articles
- Literary Contribution
- Alumni Corner

### Quote Corner

*"The future depends on  
what we do in the present"*

**Chairman/ Editor**  
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## Mission:

- M1. To facilitate the students with profound technical knowledge through effective teaching learning process for a successful career.
- M2. To impart quality education to strengthen students to meet the industry standards and face confidently the challenges in the program.
- M3. To develop the essence of innovation and research among students and faculty by providing infrastructure and a conducive environment.
- M4. To inculcate the student community with ethical values, communication skills, leadership qualities, entrepreneurial skills and lifelong learning to meet the societal needs.

## Innovation and Design Thinking

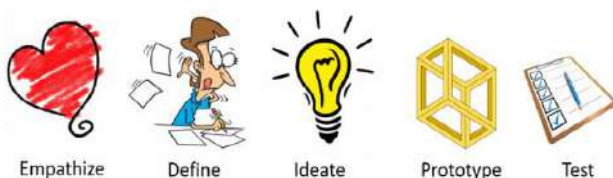
Innovation is the process of generating new and unique ideas or solutions and applying them to create value for the service.

Design thinking is a term used to denote a set of strategic, conceptual, and practical processes in which design concepts are developed (product proposals, structures, equipment, communications, etc.).

Any individual who has the following traits can be design thinker in the organizations, namely

1. Individual who has the concern for the individuals and who know the working challenges in at workplace
2. Knowledge of multi -functionality of the organization
3. Vision for developing right process in the organization
4. Capability to understand the problems on the job and ability to work on the problems related to the jobs of the organization.

There are five stages to the design thinking process



### Benefits of Design Thinking

1. It helps to overcome creative challenges: Design Thought gives the freedom to look at problems in many ways. It involves a lot of brains to come up with the best ideas, which helps to improve students' knowledge.

### From HOD's Desk

I am happy that we are bringing out the first issue of volume 5. I would like to congratulate our alumni Mr. Harsha Manjunath for being a resource person during FDP on Introduction to Microchip FPGA.



Under the Gnana Vrudhi lecture series, faculty delivered talk on Image processing domain.

Best research paper award was received for the paper entitled Design and verification of CMOS LDO regulator, carried out by final year students.

Also I would like to share that webinars were conducted for the VI sem students to create awareness and guide students to select their Internship domain.

Congratulate the VTU rank holders Darshan A Hadadi & Aishwarya K M for the year 2019 & 2020 respectively.

2. Helps to meet customer requirements effectively: design thinking involves developing prototypes when testing and using customer feedback repeatedly to ensure quality assurance. By following a successful design idea, the product will eventually meet the needs of customers.
3. It helps us to increase the knowledge of Design Thinking: will do a lot of experiments in the design thinking process. We will always try to improve the model by using customer feedback to ensure customer satisfaction.

## DEPARTMENTAL ACTIVITIES

### Gnana Vrudhi- Lecture Series

- Ganesh K has delivered a lecture on **Challenges in Video Quality Assessment** on 23<sup>rd</sup> August 2021.



Ganesh K

- Webinar was organized for IV sem students on **Android Application Development** on 3<sup>rd</sup> August 2021. The resource person was Mr. Rishi kethu Chand IV sem student of the department. The event was coordinated by **Dr. G S Sunitha Prof & HOD**.
- Webinar on **Mentor Graphics VLSI Tool** was delivered by Bharath Kumar B Y, Sharan and Bhanu Prakash of Core EL Technologies. The event was coordinated by **Dr. G S Sunitha Prof & HOD** on 4<sup>th</sup> August 2021.
- **NBA online evaluation process** completed on 8<sup>th</sup> to 10<sup>th</sup> October 2021. Dr. **Vineeth Sahula, Professor in E&CE** from **Malaviya National Institute of Technology, Jaipur** was the expert for E&CE Department.
- Webinar on **Introduction to MEMS Sensors** was delivered by Dr. Nithin S Kale, Cofounder and Chief Technology Officer, Nano Swift Technologies Pvt. Ltd. The event was coordinated by **Dr. G S Sunitha Prof & HOD** on 29<sup>th</sup> October 2021.

**EC Forum Inauguration, welcome to III & V semester students and felicitation to VTU rank holders** Darshan A Hadadi & Aishwarya K M for the year 2019 & 2020 respectively. was organized under EC forum on 20<sup>th</sup> November 2021.



**Inauguration of ECForum**

**Guest:**

**Mr. Waseem Akram B**  
**Mrs. Ashwini P.A**



**Aishwarya K M & Darshan A Hadadi**

**Felicitation to VTU Rank Holders**

- Mirza Quadir Baig, Alumnus 2016, Area officer, Krishnapatnam port, Indian Railway traffic service, Ministry of Railways, Govt. of India, presented an **Awareness Session on Competitive Exams** to V sem students on 02<sup>nd</sup> November 2021.



**Awareness session on Competitive Exams by Mirza Quadir Baig, alumnus 2016**

- Siddanagowda G N, Alumnus-2015, Manager, Western Digital, Bangalore, conducted training session for V sem students on **Embedded System** from 27<sup>th</sup> November 2021, every Saturday for a duration of four weeks.



### Training session on Embedded System by Siddanagowda G N, Alumnus-2015

- Students of V and VII semester along with faculty visited the **BEL Bengaluru** on 17th December 2021, on the occasion of 75 years of independence.



### Industrial Visit to BEL Bengaluru

## FDP/WORKSHOP ORGANIZED

- National Level One Week Online Faculty Development Program on **Introduction to Microchip FPGA** from 19<sup>th</sup> to 23<sup>rd</sup> July 2021 was organized by ECE Research Centre, Department of Electronics & Communication Engineering in association with ISTE, Faculty Chapter BIET, IETE Shivamogga Center & Tecnomics Components Pvt. Ltd., Bengaluru. The resource person was Mr. Harsha Manjunath, Senior Field Application Engineer, Tecnomics Components Pvt. Ltd., Bangalore. Under the guidance of Dr. G S Sunitha, the program was coordinated by **Dr. Leela G H, Dr. Nirmala S O and Savithri G R.**
- Two Days Workshop in blended mode on **Implementation of NEP 2020** on 10<sup>th</sup> & 11<sup>th</sup> Dec 2021 was organized by BIET in association with VTU, Belgavi. The program

was coordinated by Dr. G P Desai, **Dr. G S Sunitha** and Dr. Vinutha H P



### FDP on Introduction to Microchip FPGA

## STUDENT ACHIEVEMENTS AND ACTIVITIES

- Students of VI sem attended BootCamp organized by BIET in association with Startup Karnataka and NAIN on 5<sup>th</sup> June 2021.
- Ashwini V Jayashetty and Chinmayraj of V sem have qualified **NPTEL online certification** for the course on **Introduction to Internet of Things** during July – October 2021.
- Bhoomika H and Manoj Nagaraj Kasal of V sem have qualified **NPTEL online certification** for the course on **Digital Circuits** during July – October 2021.
- Chandan, Suhas and Om Praveen Panade were part of the football team from BIET and are winners in **VTU Center Zone Football Match against MCE Hassan** held on 28<sup>th</sup> December 2021.



### VTU Center Zone Football Match Winners



## PLACEMENT ACTIVITIES

- Campus Recruitment of 2020-21 batch Students.

Sl.No.	Name of the company	No. of students Placed
1	SLK	04
2	TCS DIGITAL	02
3	MAPLELABS	01
4	WIPRO	10
5	TCS NINJA	07
6	KPMG	10
7	ROBOSOFT	01
8	SILVER PEAK	04
9	HERIN ELECTRONICS	08
10	Altimetrix	02
11	Gigsky	01
12	Zensar	02
13	Quest Global	10
14	Capgemini	03
15	KnodTec	01
16	Sonata Software	06
17	FAI	01
18	Infosys(off Campus)	13
<b>Total</b>		<b>86</b>

## Co-Curricular Activities

- Final year project batch students Shreevatsa N S, Veeresh Banakar and Shravya N presented a paper **Design and verification of CMOS LDO regulator at 2<sup>nd</sup> International Virtual Conference on Emerging Trends in Science, Engineering and Management-2021** on 15<sup>th</sup> and 16<sup>th</sup> July 2021 and received the **Best Research Paper Award**.
- Final year project batch students Shreesha N S, Adithya Bangur, Swathi K S and Srujana Kandagal presented a paper on **Design and**

**Implementation of BiCMOS based band gap reference circuit at 2<sup>nd</sup> International Virtual Conference on Emerging Trends in Science, Engineering and Management-2021** on 15<sup>th</sup> and 16<sup>th</sup> July 2021.

- Final year students Madhu NP, Mamatha Sarathi P, T Srinivas Koushik, Praveen KR have participated in **National Project Exhibition SKIT EXPO - 2021**, organized by R & D Cell of SKIT Bangalore on 04<sup>th</sup> August 2021.
- 9 Project batch students participated in **NIRMANA 1.0** project exhibition held on 13<sup>th</sup> August 2021. Sri Nagaraja G K, Alumnus of the institute from batch 1994 presently working as Techno Programmer, Tata Communications Ltd, Bangalore was the Expert member. The project entitled **IoT Based Real time System to Monitor Quality of Milk** carried out by Karthik Dhulashetty, Praveen N, Prerana R S and Pooja A R, under the guidance of Dr. G S Sunitha Prof. & Head was selected as **Best Project**.
- Eight projects have been exhibited in Open house project Exhibition **Technovation-21** on 04<sup>th</sup> September 2021.



**Technovation-21**

## FACULTY ACHIEVEMENTS AND ACTIVITIES

- Ganesh K was the resource person for invited talk on **Internet of Things - Futuristic Perspective** organized by Dept of E&CE, Brindavan College of Engineering, Bengaluru on 25<sup>th</sup> November 2021.

## Research Activities

- Prof. Banumathi K L completed Ph.D. **Open Seminar-1** on 19<sup>th</sup> July 2021.
- Prof. Kiran Kumar G H completed Ph.D. **Pre-submission Colloquium** on 11<sup>th</sup> August 2021.
- Under the guidance of Dr. G S Sunitha Prof. & HOD, Prof. Prakash K M has completed **Ph.D. Pre-submission Colloquium** on 04<sup>th</sup> December 2021.
- Prof. Banumathi K L and Prof. Ganesh K submitted **Ph.D. Thesis** on 22<sup>nd</sup> December 2021.
- Prof. Kiran Kumar G H has submitted **Ph.D. Thesis** on 28<sup>th</sup> December 2021.
- Under the guidance of Dr. G S Sunitha Prof. & HOD, Prof. Prakash K M has submitted **Ph.D. Thesis** on 31<sup>st</sup> December 2021.

## Workshops/FDP Attended

- Mr. Kantharaj S P has attended a webinar on **Effective utilization of VTU Consortium E-Resources using RRCE** on 2<sup>nd</sup> July 2021.
- Mrs. Bhagya Shanthakumar has attended Xilinx webinar on **Pynq - Python productivity for Zynq SoC and Zynq Ultrascale+ MPSoC** in association with CoreEL Technologies and Xilinx on 09<sup>th</sup> July 2021.
- Mr. Ali I K has attended **Universal Human Values in Technical Education** organized by AICTE from 12<sup>th</sup> to 16<sup>th</sup> July 2021.
- Dr. Sunitha G S, Dr. Leela G H, Mr. Prakash K M and Mr. Lingraj have participated in Mentor Graphics webinar on **Full Custom and Semi-custom Design Flow** in association with CoreEL Technologies and

Mentor Graphics organized by CoreEL Technologies on 15<sup>th</sup> July 2021.

- Dr. Leela G H, Dr. Nirmala S O, Mr. Prakash K M, Mr. Kiran Kumar G H, Mrs. Banumathi K L, Mrs. Radhika Priya Y R, Mr. Lingraj and Mr. Yogesh K O have attended AICTE Training and Learning (ATAL) Academy Online Elementary FDP on **VLSI -IP DESIGN Approach to SRAM Compiler Design** organized by GM Institute of Technology, from 16<sup>th</sup> to 20<sup>th</sup> August 2021.
- Mrs. Bhagya Shanthakumar has attended 5 Day National Level Online Faculty Development Programme on **Current Research Trends in VLSI Design and Device Modelling** organized by Department E&CE, Atria Institute of Technology, Bangalore from 24<sup>th</sup> to 28<sup>th</sup> August 2021.
- Mr. Kantharaj S P has attended a webinar on **Artifact Innovation and Development using Additive Manufacturing and IoT** organized by Manipal University on 23<sup>rd</sup> August 2021.
- Mrs. Nirmala Gand Mrs. Suman B S have attended a FDP on **Digital VLSI Design and Verification** organized by Bangalore Institute of Technology, Bangalore from 23<sup>rd</sup> to 27<sup>th</sup> August 2021.
- Mrs. Vanishree H V has attended a FDP on **Recent Trends in Control System Engineering** organized by Chatrapathi Shivaji Institute of Technology, Chhattisgarh from 23<sup>rd</sup> to 27<sup>th</sup> August 2021.
- Dr. Sunitha G S and Dr. Jayadevappa B M have attended a **Student Empowerment Program** CSR Initiative organized by Honeywell and ICT on 6<sup>th</sup> September 2021.
- Mrs. Poornima G N has participated in AICTE Training and Learning (ATAL) Academy Online Elementary FDP on **Internet of Things in 5G Wireless Communication** from 06<sup>th</sup> to 10<sup>th</sup> September 2021, organized by North Eastern Regional Institute of Science and Technology (NERIST) Nirjuli, Arunachal Pradesh.

- Mrs. Banumathi K L has participated in five days Faculty Development Program on **Developing Leadership Skills for Enhancing Personal and Organizational Outcome** conducted by Department of E&CE, VVCE, Mysore from 13<sup>th</sup> to 17<sup>th</sup> September 2021.
- All faculty members of E&CE department attended a Webinar on **Introduction to MEMS Sensors**, organized by department of E&CE BIET, Davangere on 29<sup>th</sup> October 2021.
- Mrs. Sucharitha S D has attended a FDP on **Recent Trends in Machine Learning and Pattern Recognition** organized by GMIT, Davangere from 6<sup>th</sup> to 11<sup>th</sup> December 2021.
- All faculty members of E&CE department attended Two Day Workshop on **Implementation of National Education Policy-2020**, organized by BIET Davangere on 10<sup>th</sup> and 11<sup>th</sup> December 2021.
- Dr. G S Sunitha, Dr. Nirmala S O, Mr. Prakash K M, Mrs. Suma K G, Mrs. Radhika Priya Y R, Mrs. Banumathi K L and Mrs. Bhagya Shanthakumar have attended **An Overview of Teaching Techniques in Basic Electronics and Communication Engineering** organized by AICTE-VTU, Muddenahalli, from 13<sup>th</sup> to 17<sup>th</sup> December 2021.
- Mrs. Banumathi K L has attended a FDP on **Recent Trends in Machine Learning and Pattern Recognition** organized by GMIT, Davangere from 6<sup>th</sup> to 11<sup>th</sup> December 2021.
- Mr. Mahendrachari, Mr. Ranjith Patil N and Mrs. Vanishree H V have attended two days workshop on **Universal Human Values and Professional Ethics** organized by department of Civil Engineering BIET Davangere on 29<sup>th</sup> and 30<sup>th</sup> of November 2021.

## ARTICLE

- Shreevatsa N S, Veeresh Banakar and Shravya N, Dr. G S Sunitha presented a paper **Design and verification of CMOS LDO regulator at 2<sup>nd</sup> International Virtual Conference on Emerging Trends in Science, Engineering and Management-2021** on 15<sup>th</sup> and 16<sup>th</sup> July 2021 and received the **Best Research Paper Award**.

**Abstract:** This paper presents a design of a low dropout regulator based on a 180 nm standard CMOS process. The LDO design has a dropout of 110 mV and produces a constant output of 1.5 V. The circuit makes use of a two-stage miller compensated error amplifier which is designed to have a gain of 60 dB and a phase margin of around 60°. PMOS pass element has been selected. The circuit exhibits a load regulation of 9.4527 mV/A (i.e., 0.031 %) with typical and maximum load currents being 25 mA and 50 mA respectively. The line regulation of the circuit is 912.7396 $\mu$ V/V for an input variation of 1.6V to 2 V. The designed circuit makes use of dominant pole compensation technique to make the whole system stable and has a maximum gain of 81 dB and phase margin of 72° while the circuit has a gain bandwidth of 117 kHz and has the worst-case power supply rejection ratio (PSRR) of [76 dB, 55.71 dB] @ [100 Hz, 251 kHz] in full load condition. The circuit dissipates a total power of 6.0081mW. The circuit grounds a quiescent current of 5  $\mu$ A.

- Shreeshha N S, Adithya Bangur, Swathi K S and Srujana Kandagal, Dr. Nirmala S O presented a paper on **Design and Implementation of BiCMOS based band gap reference circuit at 2<sup>nd</sup> International Virtual Conference on Emerging Trends in Science, Engineering and Management-2021** on 15<sup>th</sup> and 16<sup>th</sup> July 2021.

**Abstract:** All analog circuits use “golden reference”, which are extensively used for biasing. This paper presents a first-order Bandgap reference (BGR), realized in two different architectures – using Cascode Current Mirror and using two stage Op – Amp where the Op – Amp is miller compensated and produces a gain of 60 dB with phase margin of 60°. 180 nm

standard CMOS process is used to implement the circuit. The BGR produces a constant output reference voltage of 1.18 V when designed using Cascode Current Mirror architecture, while 1.10 V in Op – Amp based architecture. Cascode Current Mirror based BGR has a Temperature Coefficient of 21.83 ppm for a wide range of -20° to 100° and 50ppm for Op – Amp based BGR. The line regulation achieved with Cascode Current Mirror architecture is 4.932mV/V, while 5.77mV/V for Op –Amp Based architecture for an input variation of 2.6V to 3.6 V. The circuit has the PSRR of 80dB for Cascode Current Mirror architecture and 42.5dB for Op – Amp based BGR up to 110 Hz and 10 KHz respectively. The schematic entry and layouts of circuits were drawn using Cadence virtuoso 6.1.5 tool and assura verification tool was used for all verifications.

- The project entitled **IoT Based Real time System to Monitor Quality of Milk** carried out by Karthik Dhulashetty, Praveen N, Prerana R S and Pooja A R, under the guidance of Dr. G S Sunitha Prof. & Head was selected as **Best Project**.

**Abstract:** The milk is the dietary fluid secreted by mammary glands of mammals. The high-quality milk should have better density and should be free from the adulterants. Milk is most commercially sold commodity both by local vendors as well as supermarkets. However, in local areas, to increase the yield certain adulterants are added which may affect the nutritional quality of milk. Consumption of adulterated milk causes serious health problems and is of great concern to the food industry. So, it is necessary to ensure the quality of milk by measuring the vital parameters present in the milk and the adulterants that are added to the milk. Here we are measuring the different parameters of milk such as pH, odor, temperature using sensors. Also, with the help of IOT process the milk vendors should be able to send the real time reading information of milk to the industries so that it helps to maintain the transparency.

## LITERARY CONTRIBUTION

ಹೊರಡುಗುರಿಯೆಡೆಗೆ,ಹೋರಾಡು  
ಜೀವನದೆಡೆಗೆಮುಟ್ಟುರಾರುನಿನ್ನನು,  
ನಿನ್ನಗಟ್ಟಿತನವನು...  
ಬಿಡು, ಭಯಅಂಜಿಕೆಯನೆರಳನು  
ಸಾಧಿಸುವಫಲವಿರಲಿನ್ನದೇಹಾದಿಯಲಿ  
ನಿನಗೆನೀನೆಸಾಟಿನಿನಗೆನೀನೆಶಕ್ತಿ  
ಕಾಣಲಿಯಶೋಗಾಥೆಸಿಂಹಾವಲೋಕನದಲಿ...  
ನಿನ್ನಚರಿತ್ರೆಯಪುಟದಲಿ....

ಸುಚರಿತ S D

ಸಹಾಯಕಪ್ರಾಧ್ಯಾಪಕಿ

E & CE ವಿಭಾಗ

**PAINTINGS**



Spoorthi G N  
4BD18EC104  
VII 'A'

**MOBILEPHOTOGRAPHY**



Jhansi P M  
4BD18EC046  
VII 'A'



Manjunath G M  
4BD19EC055  
V 'B'



Jhansi P M  
4BD18EC046  
VII 'A'

## Alumni Corner



### **Harsha Manjunath**

**Senior FAE in Tecnomix Components Pvt. Ltd.**

#### **About**

Harsha Manjunath has a vast experience in FPGA Design and Verification. He is currently working as FAE in silicon Microsystems, Bangalore as VLSI front-end design and verification engineer. During his career Harsha Manjunath has been associated with organisations like HAL Bangalore, LRDE Bangalore, DARE Bangalore, BEL-CRL Bangalore, Bharat Dynamics Limited Hyderabad, Aeronautical Development Establishment (ADE)- Bangalore.

#### **Experience**

- Currently associated as a Senior FAE in Tecnomix Components PVT Ltd.
- Worked as FAE in Silicon Microsystems-Bangalore with 2.3-years of experience for VLSI front-end design and verification in FPGA, June 2004 to Oct 2006.
- Worked more than 10 years in FPGA Design and Verification.

## **Education**



- **MS in VLSI-CAD from Manipal University Mangalore, 2012**
- **Bachelor of Engineering: Electronics and Communications, 1998 – 2002, BIET, Vishveswariah Technological University Belgaum**
- **STJ PU College, Davanagere 1996 - 1998**