

EEE MAGAZINE

Power is Knowledge...Knowledge is Power.

VISION

To be a best institution imparting quality engineering education to deal with community needs through learning and performance

MISSION

- ❖ To implement path breaking students centric education methods
- ❖ To augment talent, nurture team work to transform to develop individual as responsible citizen
- ❖ To educate the students and faculties about entrepreneurship to meet vibrant requirements of the society
- ❖ To strengthen industry -institute interaction for knowledge sharing

Statement Of PEO's

Graduate Engineers will be able to:

PEO 1:Apply scientific, Mathematics and Engineering fundamentals gained to comprehend,analyse,design and create products and solutions for real life problems

PEO2:Contribute to industrial services and government organisations by applying their skills gained through formal education.

PEO3:Work on emerging technologies with professional communities,higher education ever developing careers to strengthen human values and social responsibilities to contribute towards society.

PEO4:Adopt professional and ethical attitude for effectively resolving societal problems through multidisciplinary approach

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Assistant Professors:

Prof.Preetha NP

Student Coordinator:

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The "EEE MAGAZINE" is providing great space for the faculty and students to pen down their innovative ideas, imagination and perceptions to show case their creativity. So, I take the opportunity to congratulate the department of EEE and its editorial team to successful release of this issue. I am sure that students and faculty will find the content of this edition very interesting and educating.



Executive Director: Sri G. D Manoj

I am indeed happy to know that the department of EEE has taken initiative in realizing its "EEE MAGAZINE" and urge faculties and students to make use of the platform to share and educate among themselves in publishing article pertaining to the emerging domain and articles of interesting. I congratulate the team of editorial community and department of EEE



Principal's Message- Dr. H Ramakrishna

It gives me immense pleasure to note that, SCE has been publishing bi- annual newsletter and I am sure, this will provide an opportunity for the faculty and students to share their knowledge and beacon the information about various issues and activities that are being taking place in the department. I look forward for more activities and achievements for the department to march towards excellence in the future. I would like to thank all teaching, supporting staff and our beloved students for their active participation in publishing this magazine. My special compliments and congratulation to the editorial team of the department for their consistent effort in publishing this newsletter.



HOD's MESSAGE: Dr. Rekha SN

I am happy to note that the Department of Electrical and Electronics Engineering is releasing its Newsletter for enumerating the various activities and achievements of our faculty and students. The department endeavors to produce confident professionals tuned to real time working environment. The department offers excellent academic environment with a team of highly



qualified faculty members to inspire the students to develop their technical skills and inculcate the spirit of team work in them. The Department seeks to combine excellence in education with service to the industry. Our vision is to be recognized as innovative and leading Information Technology Department. Our goal is to provide students with a balance of intellectual and practical experiences that enable them to serve a variety of societal needs. In our department students are nurtured to become best software professionals as Project Managers, System Analysts or Team leaders in Industry or become Entrepreneurs in their own innovative way. I am confident that the students of the department would justify the credibility of the department by showing a high level of professional competence in their respective field.

BOOK PUBLICATION

Name of the Teacher (s)	Title of Book	Publication citation	Month and year	Vol/Issue	Remarks
Mr. Raghavendra G	“Battery Management system for Future Electric vehicles”	Scientific International Publishing House(SIPH)	2022	First Edition	ISSN NO:978-93-5625603-3
Mr. Raghavendra G	“Solar energy, Green Energy and Renewable Energy Challenges for sustainable Environment”	Scientific International Publishing House(SIPH)	2022	First Edition	ISSN NO:978-93-5625-576-0

PAPER PUBLICATION

Mr. Raghavendra G	“A Survey on Control strategies of DC Micro grid Cluster”	GRADIVA Review journal	Jan - 2023	Volume-9, Issue 1	ISS N-0363 - 8058 7
Mr. Raghavendra G	“A Review on Phasor measurement unit for secured operation of power system network “	IJARESM	Feb 2023	Volume-11, Issue 2	ISS N-2455 - 6211
Mr. Raghavendra G	“Modelling and Analysis of Field oriented CBPM synchronous motor “	IJECE	Dec 2022	Volume-12, No 6	ISS N-2088 - 8708

FACULTY PARTICIPATION

1. **Dr. Rekha S N** Professor and Head from Dept. of EEE attended 5-days Faculty development program on “Electric Vehicle Technologies A Future Transportation Tool” organized by Bangalore Institute of Technology Bangalore from 28/11/2022 to 2/12/ 2022.
2. **Dr. Raghavendra G** Associate professor from Dept. Of EEE Resource person for 5-days Faculty development program on “Electric Vehicle Technologies A Future Transportation Tool” organized by Bangalore Institute of Technology Bangalore from 28/11/2022 to 2/12/ 2022.
3. **Dr. Vidya M** Associate professor from Dept. Of EEE Resource person for 1-week national level online Faculty development program on “Recent trends in artificial intelligence and cyber security” department of CSE at Shri Vishnu Engineering College for Women (A), Bhimavaram. from 01/11/2022 to 05/11/ 2022.
4. **Dr. Vidya M** Associate professor from Dept. Of EEE attended 5-day Faculty development program on the “Electric Vehicle Technologies A Future Transportation Tool” organized by Bangalore Institute of Technology Bangalore from 28/11/2022 to 2/12/ 2022.

5. Ms. Ramya M Assistant professor from Dept.of EEE attended 5-days Faculty development program on the “Electric Vehicle Technologies A Future Transportation Tool” organized by Bangalore Institute of Technology Bangalore from 28/11/2022 to 2/12/ 2022.

6. Ms. Preetha NP Assistant professor from Dept.of EEE attended 5-days Faculty development program on the “Electric Vehicle Technologies A Future Transportation Tool” organized by Bangalore Institute of Technology Bangalore from 28/11/2022 to 2/12/ 2022.

7. Ms. Malashree G Assistant professor from Dept.of EEE attended 5-days Faculty development program on the “Electric Vehicle Technologies A Future Transportation Tool” organized by Bangalore Institute of Technology Bangalore from 28/11/2022 to 2/12/ 2022.

8. Ms. Ashwini AV Assistant professor from Dept.of EEE attended 5-days Faculty development program on the “Electric Vehicle Technologies A Future Transportation Tool” organized by Bangalore Institute of Technology Bangalore from 28/11/2022 to 2/12/ 2022.

9. Ms. Ashwini C Assistant professor from Dept.of EEE attended 5-days Faculty development program on the “Electric Vehicle Technologies A Future Transportation Tool” organized by Bangalore Institute of Technology Bangalore from 28/11/2022 to 2/12/ 2022.

10. Ms. Swetha G G Assistant professor from Dept.of EEE attended 5-days Faculty development program on the “Electric Vehicle Technologies A Future Transportation Tool” organized by Bangalore Institute of Technology Bangalore from 28/11/2022 to 2/12/ 2022.

11. Ms. Malashree G Assistant professor from Dept.of EEE attended International Conference on Energy Control Computing and Electronic Systems Paper titled “Monitoring Techniques for DPFC in Multi bus systems using five level MLI with RES” organized by ICECCES2022 Conference Team. On 15/12/2022

12. Mr Gopinath K. Assistant professor from Dept.of EEE attended 5-days Faculty development program on the “Electric Vehicle Technologies A Future Transportation Tool” organized by Bangalore Institute of Technology Bangalore from 28/11/2022 to 2/12/ 2022.

13. Ms. Malashree G Assistant professor from Dept.of EEE attended 6-days workshop on the “Ability Enhancement and IPCC Laboratory” organized by Department of EEE SJBIT Bangalore from 26/10/2022 to 1/10/ 2022.

14. Mr. Shivaraj A Assistant professor from Dept.of EEE attended 6-days workshop on the “Ability Enhancement and IPCC Laboratoryl” organized by Department of EEE SJBIT Bangalore from 26/10/2022 to 1/10/ 2022.

15. Ms. Supriya Sajjan Assistant professor from Dept.of EEE attended 5-days Faculty development program on the “Electric Vehicle Technologies A Future Transpotation Tool” organized by Bangalore Institute of Technology Bangalore from 28/11/2022 to 2/12/ 2022.

16. Ms. Mamatha Instructor from Dept.of EEE attended 6-days workshop on the “Ability Enhancement and IPCC Laboratoryl” organized by Department of EEE SJBIT Bangalore from 26/10/2022 to 1/10/ 2022.

17. Dr. Rekha S N Professor and Head, Ashwini AV Assistant professor, Ramya M Assistant professor, A Dhamodaran Assistant professor and Preetha NP Assistant professor from Dept. of EEE has filed and published a Patent titled “An Intelligenrt water heating system for Households with integrated communication and defogging modules” on 16/12/2022 ISSUE NO:50/2022

EVENTS CONDUCTED

“NAVARATHRI CELEBRATION”

Event has started with the decoration of Saraswathi idol followed by that students have made rangoli. Students are performed cultural activities. The platform has provided for encouraging their team works on 28-09-2022.





Navarathri Celebration

SKILL DEVELOPMENT PROGRAMME

The programme organized in the EEE department for improving the skill of the students on 16/10/2022 to 17/10/2022. The resource persons of the programme Ms. Agalya S. ECE, Ms. Manasa ISE. JAVA programming and VLSI basics were taught in the programme. It was very much required for the students to face the present technical world. The programme was really benefited to students and the fear of facing programming language is also reduced.

UPCOMING TECHNOLOGIES IN ELECTRIC FIELD

The EEE department has organized programme for creating awareness about the upcoming technology to students on 21-10-2022. The resource person was Kiran D, Capgemini Engineering Professional, VLSI INTEL INDIA. Kiran D is an alumni of EEE department. In his talk he has given the experience in the college and how much it helped him to face the technology in outside. And also he expressed to the students about the importance certain subjects. In his talk, he has given an idea about VLSI. Very large-scale integration is a process of embedding or integrating hundreds of thousands of transistors onto a singular silicon semiconductor microchip. VLSI technology's conception dates back to the late 1970s when advanced level processor (computer) microchips were also in their development stages. Two of the most common VLSI devices are microcontroller. It was a wonderful talk and students are very much happy.

“If four things are followed – having a great aim, acquiring knowledge, hard work, and perseverance – then anything can be achieved.”

— Dr. A.P.J. Abdul Kalam



“MENTORING CONNECTING WITH STUDENTS”

The EEE department has organized programme for **Mentoring connecting with students on 26-11-2022**. The resource person was Dr H S Ganesha Bhatta, Former Principle M.E.S Teachers college. In his talk he conveyed Mentorship is a huge part of education. It goes further than teachers mentoring their students, though. Peer-to-peer mentoring schemes can provide students with extra support from people who've been in their situation. This can help to boost their confidence, improve their grades, and even help with their career prospects. After all, many great job opportunities come from networking.



“INDUSTRIAL AWARENESS PROGRAM”

The EEE department has organized programme for creating awareness about the Industries to students on 01/12/2022. The resource person Mr. Anand T Visionary Founder and CEO of Swifterz Creative Services and President of ASSET Society. In his talk he has given the overview of automation and its importance to the students and provide them with a platform to work on in the near future.

the knowledge of the role of instrumentation in an industry, how to join/apply for job in industry, importance of GATE, NET etc. in various fields, and opportunities for instrumentation engineers in and outside the state/country to the students. Industry awareness events include a chance to learn more about the industry, speak directly with employers and register for the Build Force programme which could lead to placement or even to full time employment.



“GLOBAL EDUCATION AWARENESS PROGRAM”

The program started by welcoming the guest. Prof. Dhamodhar Sir addressed the students and explained regarding importance of global education on 07-12-2022. The Session started at 11:00am by Harish Kumar, Quant Trainer, Bangalore. The session was very interactive and students asked many queries regarding pursuing higher education in foreign countries.





“SYNCHRON”

DAY-1:The program started by welcoming the guest and dignitaries on the Dias. The Event started with inauguration at 11:00am on 09-12-2022 by Dr. K. N Ravi, Rtd Joint Director CPRI, Bangalore. Principal addressed the students and encouraged them to participate in all the Technical events. Inauguration was followed by Debate, treasure hunt and quiz. 15 teams participated in debate, 101 teams participated in treasure hunt and 31 teams participated in quiz.

DAY-2:The program started by welcoming the guest and dignitaries on the Dias. The Event started with second day inauguration at 9.00 am on 10-12-2022 by Dr. Prabhu T Research Scientist, Raman Research institute, Bangalore. Principal addressed the students and encouraged them to participate in all the Technical events. Inauguration was followed by Circuit Building, Technical Talk and Exhibition. 40 teams participated in Circuit building, 16 teams participated in technical talk and 5 teams participated in exhibition. Valedictory function was arranged after completion of all the events and prize distribution was done by principal for the winners.





Inauguration of “Synchron” 2021-22



Felicitating the Guest Dr K N Ravi



Felicitating the Principal Dr H Ramakrishna

“SUCCESSFUL CAREER PLANNING AND TECHNICAL PROFILE BUILDING”

Career Guidance talk “Successful Career Planning, Technical Profile Building” was organized on 24/12/2022 for 7th semester students of EEE, Room no.406, Academic block, Sapthagiri College of Engineering of SCE, Bengaluru. Mr. Pavan kumar, Samsung was the speaker. He explained about the importance of Successful Career Planning, Technical Profile Building as future mobility and created awareness among the students about it. Career planning is an ongoing process through which an individual sets career goals and identifies the means to achieve them. The process by which individuals plan their life's work is referred to as career planning. Career anchors denote the basic drives that create the urge to take up a certain type of a career.



“APPLICATION OF SCILAB/WX-MAXIMA IN ENGINEERING MATHEMATICS”

Faculty development program was organized at SCE, by Department of Mathematics in association of department of Electrical and Electronics Engineering from 26th December, 2022 to 30th December, 2022 on “Application of Scilab/wx-Maxima in Engineering mathematics”. Scilab/Maxima is mathematical and scientific calculation software, open source, very useful for all. To provide a platform to the participant to acquire knowledge about different tools like scilab/wx-Maxima. For creating the awareness about the use of tools for the research. Scilab includes optimization, statistics, maths and simulation, signal processing, application development, 2-D and 3-D visualization and the control system design and analysis. science and engineering researchs, teachers and students in academics particularly.



Inauguration of Faculty Development Program



Address by our beloved Principal to Faculty member

CAREER GUIDANCE PLANNING, HIGHER EDUCATION

Career Guidance talk “Career Guidance and Higher Education” was organized on 14/01/2023 for 5th semester students of EEE, Room no.406, Academic block, Sapthagiri College of Engineering of SCE, Bengaluru.

Dr. K N Ravi, Retired Joined Director of CPRI, Bengaluru and **Mr. Krishna Kriti**, Brose Bamberg was the speakers. They explained about the importance of Successful Career Planning, Higher Education & and created awareness among the students about it. They also emphasized about Higher Education and their advantages and disadvantages. In addition, Successful Career Planning are also explained.



Inauguration of the event



Participants in the event

Students' Toppers:VIIth Sem

Sl No	Name	USN	SGPA
1.	LIKHITHA H D	1SG19EE045	91.875
2.	ANUSHA R	1SG19EE006	87.75
3.	PUNITH KUMAR B	1SG19EE061	87

Students' Placement:

Name Of Student Placed	Enrolment Number	Name Of The Employer
PRIYA N	1SG18EE057	TNS India Foundation
LIKHITHA H D	1SG19EE045	SpiderTech Lab
M JAYASHRI	1SG19EE046	ExcelR Solutions
MANOJ K M	1SG19EE048	Hexaware Technologies
MONISHA Y	1SG19EE050	Creant Technologies Pvt. Ltd.
NANDINI S	1SG19EE052	Multi Axis Innovations
NAREN P VASIST	1SG19EE053	TAP Academy
NUTHAN S M	1SG19EE054	Pentagon Space Private Limited
PUNITH KUMAR B	1SG19EE061	Intellipaat
RANJITHA N	1SG19EE063	WEG Industries
RAVI KIRAN K	1SG19EE064	Cognizant GenCselect

Name Of Student Placed	Enrolment Number	Name Of The Employer
REVATHI S	1SG19EE066	IBM India Pvt. Ltd.
SNEHAS K T	1SG19EE071	FTD Automation
SONU KUMAR SHAH	1SG19EE072	ACE Micromatic Group, TNS India Foundation
TEJAS KN	1SG19EE076	TCS
VATHSALA R	1SG19EE077	Multi Axis Innovations
VEERESH S	1SG19EE078	QSpiders
VIGHNESH G	1SG19EE079	Destination Technologies
VIJAYALAKSHMI A BONGALE	1SG19EE080	ExcelR Solutions
VIMALA N	1SG19EE081	QSpiders
VINAYAKA V	1SG19EE082	ACE Micromatic Group
VINOD V	1SG19EE083	Multi Axis Innovations
VINUTHA HR	1SG19EE084	ExcelR Solutions
YUKTHI V	1SG19EE086	WEG Industries
CHANDAN KUMAR N	1SG19EE087	Cognizant GenCselect
DHANANJAYA B N	1SG20EE406	Multi Axis Innovations

Student's Participation:

1. **BHOOMIKA A** was certified by **NPTEL** for completing the course in **'Cryptography and Network Security'**
2. **DHARSHAN C S** was certified by **Cognizant** for participating in **'Agile Methodology Virtual Experience Program'**
3. **CHAITHRA B M** was certified by **GTTC** for completing the course in **'Basics of PLC AND SCADA'**
4. **DHARSHAN C S** was certified by **IBM SkillsBuild** for participating in **'Online Data Security'**
5. **HEMANTH P A** was certified by **GTTC** for completing the course in **'Basics of PLC AND SCADA'**
6. **BHOOMIKA A** was certified by **iStop** for participating in **'Cyber Security'**
7. **HARSHITH M K** was certified by **CMRIT UNIVERSITY** for winning the second prize in **'THROWBALL'**
8. **DHARSHAN C S** was certified by **IBM SkillsBuild** for participating in **'Cyber Security Fundamentals'**
9. **GURUNANDAN S** was certified by **GTTC** for completing the course in **'Basics of PLC AND SCADA'**
10. **AYYAPPA J** was certified by **GTTC** for completing the course in **'Basics of PLC AND SCADA'**
11. **SUMANTH Y** was certified by **CMRIT UNIVERSITY** for winning the second prize in **'THROWBALL'**
12. **KARUNA N** was certified by **GTTC** for completing the course in **'Basics of PLC AND SCADA'**
13. **ANUSHA R** was certified by **GTTC** for completing the course in **'Basics of PLC AND SCADA'**
14. **AKASH G J** was certified by **GTTC** for completing the course in **'Basics of PLC AND SCADA'**

STUDENTS ARTICLE

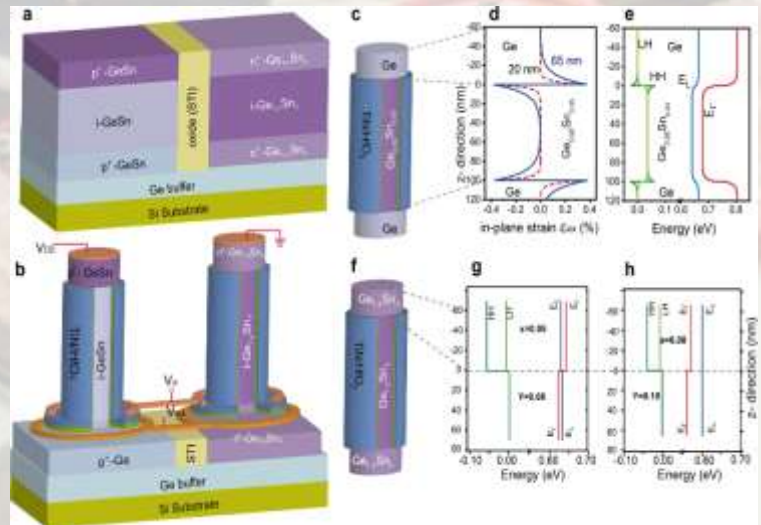
Vertical GeSn nanowire MOSFETs for CMOS beyond silicon

The continued downscaling of silicon CMOS technology presents challenges for achieving the required low power consumption. While high mobility channel materials hold promise for improved device performance at low power levels, a material system which enables both high mobility n-FETs and p-FETs, that is compatible with Si technology and can be readily integrated into existing fabrication lines is required. The past decades have witnessed an enormous increase in information processing and data transfer fueled by the extraordinary progress of micro- and nanoelectronics devices and circuits. However, the remarkably successful downscaling of conventional complementary metal oxide semiconductor (CMOS) technology on silicon is reaching physical and technological limitations

The CMOS concept discussed in this work is based on the use of different heterostructures designed to yield high-performance p- and n-type VFETs considering high mobility channels, highly doped source/drain regions, low contact resistance on top of the nanowires, and reduced gate induced drain leakage. First, a simple design like $p^+ \text{Ge}_{0.92}\text{Sn}_{0.08}/\text{Ge}$ is adopted for p-VFETs, where Ge that already provides high hole mobility is used as channel and the source is the smaller bandgap

$\text{Ge}_{0.92}\text{Sn}_{0.08}$ alloy in order to improve the carrier injection and reduce the large NW top contact resistance. The drain region is again Ge to reduce the gate-induced drain leakage by band-to-band tunneling which increases exponentially with the bandgap reduction. For n-VFETs, $n^+ \text{Ge}_{1-x}\text{Sn}_x/\text{i-Ge}_{1-y}\text{Sn}_y/n^+ \text{Ge}_{1-x}\text{Sn}_x$ ($x \leq y$) heterostructures are designed. Here, the $\text{Ge}_{1-y}\text{Sn}_y$ layer is used as the high electron mobility channel, and the relative larger bandgap $\text{Ge}_{1-x}\text{Sn}_x$ layer ($x < y$) forms the source/drain regions to reduce the gate-induced drain leakage.

For a systematic comparison Ge as source/drain regions for n-VFETs were firstly fabricated to underline the GeSn channel electron mobility improvements and to better compare with the later discussed all-GeSn-VFETs. There, the GeSn source/drain regions can have the additional advantage of allowing higher n-type doping thus much lower contact resistance in comparison with Ge source/drain.



Name of the Student: Anusha R

USN.: 1SG19EE006

8th Sem, Dept. of EEE

Students Art and Photography



Dharshan C S, VIII-Sem A-Sec



Dharshan C S, VIII-Sem A-Sec



Chaitra B M, VIII-Sem A-Sec



Chaitra B M, VIII-Sem A-Sec



Dharshan C S, VIII-Sem A-Sec



Dharshan C S, VIII-Sem A-Sec