

SRI VENKATESWARA COLLEGE OF ENGINEERING

VIDYUT

NEWSLETTER

JUNE 2024

Volume II - Issue 6

**DEPARTMENT OF
ELECTRICAL AND ELECTRONICS ENGINEERING**



NEWSLETTER EDITORIAL TEAM

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING



Dr. KR. Santha
Professor & Head



Dr. Sudhakar K Bharatan
Professor



Dr. R. Karthikeyan
Professor



Ms.S.Sinthamani
Assistant Professor



Ms.K.S.Pavithra
Assistant Professor

NEWSLETTER EDITORIAL TEAM



Ms. T. Kavinaya Sree
IV Year



Ms. G.T.Kanishkha
IV Year



Ms. B. Pavithra
III Year



Mr. L. Hritish Calvin
III Year



Mr. W. Sherwin Bino
III Year

TABLE OF CONTENTS

Page No.

1.	ABOUT THE DEPARTMENT.....	4
2.	VISION AND MISSION.....	5
3.	PROGRAM EDUCATIONAL OBJECTIVES AND PROGRAM OUTCOMES.....	6
4.	DEPARTMENT ACTIVITY.....	9
5.	SUMMER INTERNSHIP 2024 Interdisciplinary Nano Research Centre(iNRC).....	10
6.	EXPOSURE VISIT.....	15
7.	PALS.....	16
8.	FACULTY PARTICIPATION.....	18
9.	FACULTY ACHIEVEMENTS.....	22
10.	JOURNAL PUBLICATION.....	23
11.	PROJECT FUNDING RECEIVED.....	25
12.	PLACEMENT DETAILS.....	26

ABOUT THE DEPARTMENT

Welcome to the Department of Electrical & Electronics

Engineering (EEE) at Sri Venkateswara College of Engineering (SVCE) in Sriperumbudur.

Established in 1985, the department was created to address the curriculum requirements of Electrical engineering subjects within Electronics and Communication Engineering, Mechanical Engineering, and Computer Science Engineering. Initially admitting 60 students, the department now accommodates 120 students, reflecting the growing demand for its programs.

The department holds permanent affiliation with Anna University and has been accredited by the National Board of Accreditation (NBA) for five consecutive years. Additionally, it offers a postgraduate program (M.E) in Power Electronics and Drives since 2002, with an intake capacity of 6 students.

Equipped with state-of-the-art laboratories, the department is recognized as a nodal research center by Anna University. Its faculty and staff members are highly qualified and experienced, possessing proven abilities and skills.

Graduates of the department have been successfully placed in renowned companies, while a significant number pursue advanced studies abroad.

The Department goes beyond the curriculum to nurture young minds by fostering technical clubs that promote technical events, community development, societal impact, and programs on universal values and ethics.

In line with this commitment, the Department of Electrical & Electronics Engineering has established the Institute of Electrical and Electronics Engineers (IEEE) and the Association of Electrical and Electronics Engineers (AEEE) to support students' innovations.

EEE – WE LIGHT THE WORLD



VIDYUT – June 2024

VISION AND MISSION OF THE INSTITUTION AND DEPARTMENT

Vision of the Institution

To gain acclaim as an institution of eminence on a national and global scale, through the contributions and accomplishments of the individuals, nurtured by the facilities and support.

Mission of the Institution

M1. To establish a motivational framework through provision of infrastructure and resources that actively engages the individuals in core activities of learning, education, research and innovation

M2. To advance the competency of the individuals to comprehend the requirements of the society and fulfill them, through honing of their skills and virtues.

M3. To leverage institutional experiential learning to address engineering and technological challenges on national and global scales.

Vision of the Department

To become a premier Department in Electrical and Electronics Engineering through quality education, research and innovation, to address contemporary societal challenges with cutting-edge technologies.

Mission of the Department

M1: To periodically upgrade the facilities and resources such that the students excel in Electrical and Electronics Engineering education.

M2: To equip students with a well-defined domain specific curriculum thereby achieve industry standards and sustainable development of the society.

M3: To promote a culture of research, innovation, and entrepreneurship through collaborative learning in the thrust and allied areas of Electrical and Electronics Engineering.

M4: To inculcate soft skills, foster ethical values and shape the total personality of the students.

PROGRAM EDUCATIONAL OBJECTIVES AND

PROGRAM OUTCOMES – UG(EEE)

Program Educational Objectives (PEOs) UG-EEE

PEO1: Graduates will serve as engineering contributors in the emerging fields of Electrical, Electronics and Computer Engineering.

PEO2: Graduates will become entrepreneurs through human centered design thinking and innovation.

PEO3: Graduates will be successful in pursuing higher studies in engineering or management.

PEO4: Graduates will be effective and ethical team player in the field of green energy management and sustainability.

Program Outcomes (POs) for UG-EEE

1. Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

2. Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

3. Design/development of solutions: Design solutions for complex engineering problems and design system components processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

4. Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

5. Modern tool usage: Create, select and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations

PROGRAM OUTCOMES AND PROGRAM SPECIFIC OUTCOMES – UG(EEE)

6. The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

7. Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

8. Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

9. Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

10. Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

11. Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and lead.

12. Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Program Specific Outcomes (PSOs)

PSO1: The ability to build, implement, test and maintain analog and/or digital systems and implement electronic control of Drives for Industrial automation and Electric Vehicle.

PSO2: The ability to analyze Power System network encompassing stability, control and protection and interconnection of Renewable Energy Sources with Micro and smart grid.

PROGRAM EDUCATIONAL OBJECTIVES AND PROGRAM OUTCOMES – PG(EEE)

Program Educational Objectives for PG Program (PEOs)

- I. Contribute professionally in fields of Power Electronic and related domains.
- II. Manage and execute research and development projects leading to technological solutions that address industries and society.
- III. Succeed in pursuing higher studies in engineering domains.

Program Outcomes (POs) for PG-PED

PO1: An ability to independently carry out research/investigation and development work to solve practical problems.

PO2: An ability to write and present a substantial technical report/document.

PO3: Students should be able to demonstrate a degree of mastery over the area as per the specialization of the program. The mastery should be at a level higher than the requirements in the appropriate bachelor program.

Program Specific Outcomes (PSOs) for PG-PED

PSO1: The ability to design and analyze Power Electronic converters and control of Electric drives for Industrial applications.

PSO2: The ability to apply Power Electronic Circuits in Transmission and distribution network of Power System and interconnection of Renewable Energy.

DEPARTMENT ACTIVITY

11th - 15th JUNE 2024



Core placement training conducted

Core placement training for the **Final year students (2021-25 Batch)** intended for the campus recruitment was conducted. The training was scheduled from 11.06.2024 to 15.06.2024 in the domains of Circuit Theory, Analog and Digital Electronics, Power Electronics, Electrical Machines, Power System etc...

SUMMER INTERNSHIP 2024 - iNRC

Interdisciplinary Nano Research Centre

2 WEEK SUMMER INTERNSHIP -2024

18th – 28th June



Two Weeks Summer Internship program 2024 phase -1 on Semiconductor Technology from 18.06.204 -28.06.204 was organized by the Department of Electrical and Electronics Engineering under DST- FIST sponsored Interdisciplinary Nano Research Centre.

This internship is intended to cater to the students from SVCE and other institutions, and who have the desire to get trained in the state-of-the-art Semiconductor technology and manufacturing. As an outcome of this Internship, the students will become industry-ready (fab-ready) and contribute to the growth of the semiconductor ecosystem in India.

The Internship program was inaugurated by the chief guest **Prof. Parasuraman Swaminathan**, Electronic Materials and Thin Films Lab, Dept. of Metallurgical and Materials Engineering, Indian Institute of Technology Madras on 18.06.2024, in the Library Seminar Hall, SVCE, from 10:30AM onwards. **Dr.M.Sivanandham**, Secretary, SVEHT, and **Dr.KR Santha**, Vice Principal, Professor and Head of dept EEE presided over the function. Around 30 Participants from UG&PG from different parts of Tamil Nadu attended the program.

SUMMER INTERNSHIP 2024 - iNRC
Interdisciplinary Nano Research Centre
BEST RESEARCHER AWARD



During the inauguration, among the passing out students those who carried out the project in iNRC were identified as best researcher and best project awards were distributed by the chief guest. The best researcher awards went to **Mr.Narendran K**, IV year student of B.E Electrical and Electronics Engineering, for his outstanding overall performance in executing the final year project for the academic year 2023-24. He conceptualized and designed a project titled “**Simulation and Fabrication of β - Ga₂O₃ Solar Blind Schottky Photo Diode**”, guided by **Dr.Sudhakar Bharatan**.

The Best Researcher in iNRC for the AY 2023-24 is awarded to **Ms. HARINI N**, IV year student of B.E Electrical and Electronics Engineering, for her outstanding overall performance in executing the final year project for the academic year 2023-24. She conceptualized and designed a project titled “**Sensory Detector of Hazardous Gases**”, guided by **Dr.Sudhakar Bharatan**.

The Best Researcher in iNRC for the AY 2023-24 is awarded to **Mr. YOKESH KUMAR**, IV year student of B.E Electrical and Electronics Engineering, for his outstanding overall performance in executing the final year project for the academic year 2023-24. He conceptualized and designed a project titled “**Simulation and Fabrication of β - Ga₂O₃ Solar Blind Schottky Photo Diode**”, guided by **Dr.Sudhakar Bharatan**.

SUMMER INTERNSHIP 2024 - iNRC
Interdisciplinary Nano Research Centre

BEST PROJECT AWARD



The Best Project Award in iNRC for AY 2023-24 was awarded to **Mr. RAMANA R P and Mr. Sriram Kailash** IV year student of B.E Electrical and Electronics Engineering, guided by **Mrs. S.Sinthamani**, for their outstanding overall performance in executing the final year project for the academic year 2023-24. They conceptualized and designed a project titled “**Simulation and Fabrication of Hetero Junction Based Thin film Solarcell**”.



SUMMER INTERNSHIP 2024 - iNRC

Interdisciplinary Nano Research Centre

Industrial visit to SPEL SEMICONDUCTOR LIMITED



In As a part of summer internship industrial visit was arranged to SPEL Semiconductor Limited Maraimalai Nagar, Chennai.

SPEL Semiconductor Limited is India's first & only Semiconductor IC Assembly & Test facility. SPEL pioneered the Outsourced Semiconductor Assembly & Test Services (OSAT) market in India and continues to steadily do so. SPEL is a trusted & strategic contract manufacturing partner for many of the world's leading Semiconductor companies. SPEL also offers value added services such as Package Design, Failure Analysis and Full Reliability Test, Test Program Development & Product Characterization. We sincerely thank SPEL Semiconductors for the detailed plant tour given to the members of SVCE faculty and internship students. The feedback given by the students who visited the plant were positive and beneficial.

Hands on Lithography at iNRC, SVCE on 25.06.2024



SUMMER INTERNSHIP 2024 - iNRC

Interdisciplinary Nano Research Centre

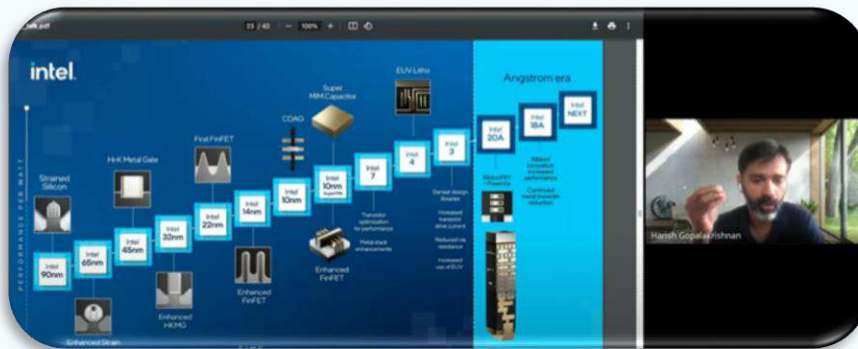
Industry Expert Invited Talk from INTEL, Bengaluru

Mr. Harish Gopalakrishnan, SoC Power Lead, Intel Bangalore, delivered technical talk on “VLSI design - Present and Future scope” on 28-6-24 (Friday).

*Enumerated the mind blowing development in integration and miniaturization in semiconductor industry and developments in IC self-contained semiconductor die.

* Threw light on Multi chip modules, SoCs, High performance computing(HPC), Chiplets, System in Package(SIP) and AI specific processors by Intel, the new processor intended for AI application.

* Future of Semiconductor industry and the skill sets expected and internship opportunities.



Valedictory function of summer internship on 28.06.2024



Valedictory function of the Internship Program was held at library seminar hall on 28.06.2024 by 2:00 pm. **Dr.R.Muthukumaraswamy**, Dean Research ,SVCE, presided over the function.

EXPOSURE VISIT TO EXPLORE THE DEPT OF EEE

20th JUNE 2024

Exposure Visit to Explore the Electrical and Electronics Engineering



On 20th June 2024, 11th standard students from the Government School in Sriperumbudur participated in an exposure visit to explore the scope of the EEE department. They visited all the laboratories in the department and were escorted by **Dr. T. Annamalai** and **Dr. S. Kumaravel**.

PALS

21th JUNE 2024

CERTIFICATE OF EXCELLENCE



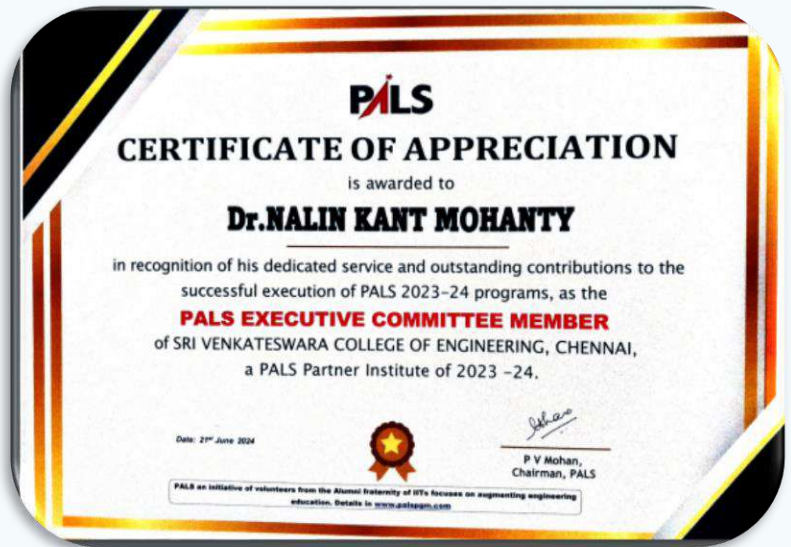
Pals certificate of excellence as partner institute for the year 2023-24 in recognition of their exemplary performance in all the programs conducted in the 2023-24 edition was received by our institution.

Faculty and Students commitment and outstanding performance in various programs has contributed to the institute winning the **EXCELLENCE IN PERFORMANCE AWARD.**

PALS



Dr. Nalin Kant Mohanty
Professor



PALS certificate of appreciation awarded to **Dr. Nalin Kant Mohanty** as **Executive Committee Member** for outstanding contribution and successful execution of PALS 2023-24 Program.



Dr. N. Shanmuga Vadivu
Associate Professor



PALS certificate of appreciation awarded to **Dr. N. Shanmuga Vadivu** in recognition of her effort in coordinating and mentoring the project "**Fire Fighting Drone**" in the LAB TO MARKET CONCLAVE MARKET PITCH of PALS 2023-24 Program.

FACULTY PARTICIPATION

28th JUNE 2024

COMSOL DAY



Dr. Nalin Kant Mohanty
Professor



Dr. R. Karthikeyan
Professor



Dr. S. Arulmozhi
Associate Professor

N.K. Mohanty, Professor, **R. Karthikeyan**, Professor and **Dr. S. Arulmozhi**, Associate Professor, participated in the **one day program COMSOL DAY** held at Chennai on 28.06.2024. Department of EEE, iNRC are knowledge partners of COMSOL corporation.

FACULTY PARTICIPATION

Faculty Participation in FDP/ STTP/WORKSHOP



Dr.M.Sankar

Associate Professor



Mrs.S.Sinthamani

Assistant Professor



Mr.V.Karthikeyan

Assistant Professor

Mrs.S.Sinthamani , Assistant Professor, **Dr.M.Sankar**, Associate Professor , and **Mr.V.Karthikeyan**, Assistant Professor attended the “**Disaster Awareness and Management Training Programme**” given by Sri Sathya Sai Seva Organisation (SSSO), Disaster Management Team (Authorized by Government of Tamil Nadu) on 1st June ,2024, at Biotech Seminar Hall, SVCE.



Mrs.S.Sinthamani

Assistant Professor



Mrs.K.Suganthi

Assistant Professor



Mr.M.Ranjith kumar

Assistant Professor



Mrs.K.S.Pavithra

Assistant Professor

Ms.S.Sinthamani, **Ms.K.Suganthi** , **Mr.M.Ranjith kumar**, **Mrs.K.S.Pavithra**, Assistant Professors participated and received the certificate for Five Days **Online STTP on Embedded Systems, IoT and Security** conducted by Department of Electronics and Communication in association with IETE students forum, Sri Venkateswara college of Engineering from 10.06.2024 to 14.06.2024.

FACULTY PARTICIPATION

Participation in FDP/ STTP/WORKSHOP



Dr.C.Venkatesan

Associate Professor

Dr.C.Venkatesan, Associate Professor, successfully completed the online Faculty Development Program on “Electric Vehicle” Organized by Skill Dzire in collaboration with AICTE.



FACULTY PARTICIPATION

Participation in FDP/ STTP/WORKSHOP



Dr. R J Venkatesh
Assistant Professor

Dr. R J Venkatesh , Assistant Professor successfully completed the online **Faculty Development Program on “Embedded System”** Organized by Skill Dzure in collaboration with AICTE.



FACULTY ACHIEVEMENT



Dr. KR.Santha

Professor & Head

Dr.KR Santha , Vice Principal, Professor & Head EEE, has received the appreciation for her instrumental role as SPOC for the SWAYAM-NPTEL local chapter, SVCE rated as "A" based on the performance in NPTEL Online certificate courses for the period January - April ,2024.



JOURNAL PUBLICATION



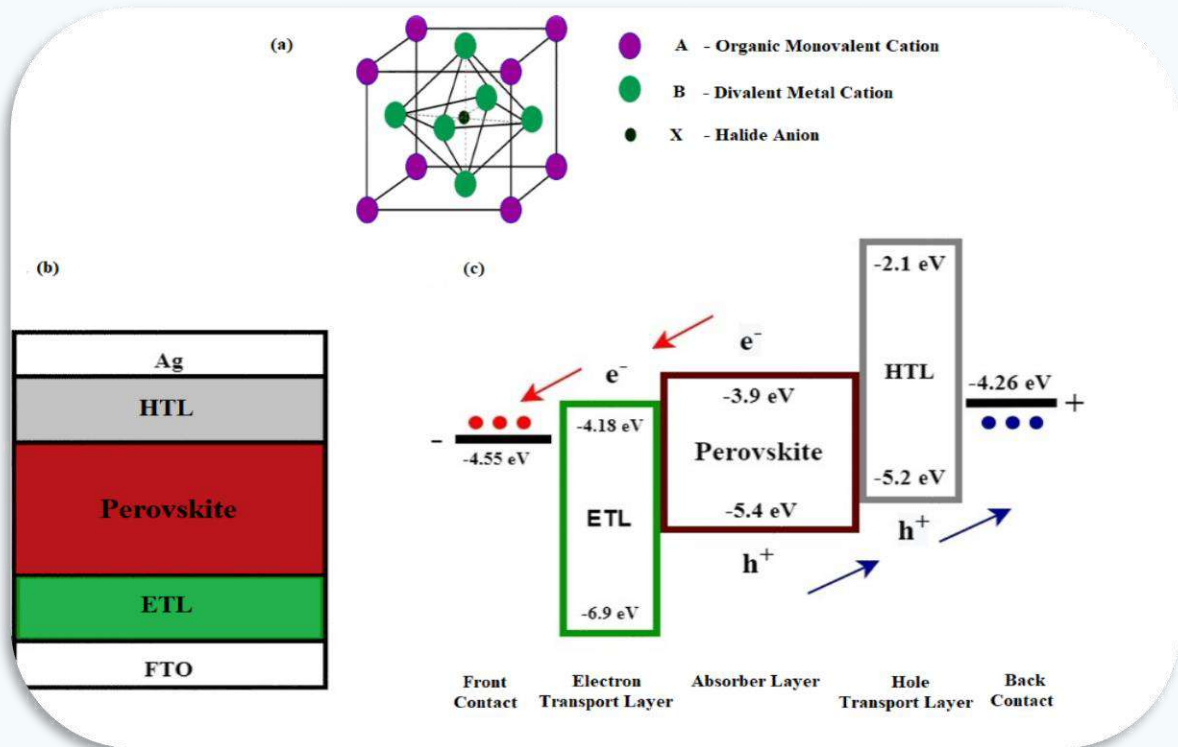
Dr.E.Naveen Kumar

Assistant Professor

Dr. E.Naveen kumar , Assistant Professor has published an article “ **The influence of methylammonium iodide concentration on the properties of perovskite solar cells**” in Energy Sci. Eng. 2024;12:2004–2016.

ABSTRACT:

This study focuses on improving the quality of MAPbI₃-based perovskite films by adjusting the concentration ratios of the methylammonium iodide (MAI) precursor using a two-step sequential deposition method. The primary objective is to explore how altering the MAI concentration influences the microstrain, dislocation density, perovskite film quality, and their subsequent impact on the performance of perovskite solar cells. The examined device configuration CdS/MAPbI₃/Spiro-OMeTAD demonstrates impressive power conversion efficiency of 12.05%, Voc of 1.02 V, Jsc of 16.2 mA cm⁻², and fill factor of 0.73. X-ray diffraction and scanning electron microscope analyses show improved crystal quality and surface characteristics with reduced microstrain, dislocation density, larger crystal grains, and minimized pin holes. The investigation of MAPbI₃ optical and electrical characteristics provides in-depth insights, facilitating the optimization of MAI precursor concentrations for improved perovskite film development and enhanced solar cell performance.



Structure and energy level diagram of perovskite solar cell.

PROJECT FUNDING RECEIVED

Naan Mudhalvan Program



Dr. KR. Santha



Mr. Sabari S

Professor & Head

The final presentation for the project submitted under the “Naan Mudhalvan” (NMNT389) program was held at Madras Institute of Technology, on 25.06.2024, **Mr. Sabari S**, final year student guided by **Dr. KR. Santha**, Professor and HOD, EEE, presented the project titled “**NEURON BASED CONTROL MECHANISM FOR ROBOTIC ARMS AND LEGS**”, which was approved under the program.



Dr. Sudhakar K Bharatan



Ms. Harini N

Professor

The final presentation for the project submitted under the “Naan Mudhalvan” program was held at Anna University, on 26.06.2024 given by **Ms. Harini N**, of final year student guided by **Dr. Sudhakar Bharatan**, Professor, EEE, presented their project titled “**Sensory detector of hazardous gases in poultry farm using H₂S/NH₃ sensor**”, which was approved under the program.

PLACEMENT DETAILS

The following Final year students were placed in the Campus drive during the month of June 2024.



Vishnu Kumar D



Jerin M



Mohamed harris



Sobitha B



Shyam A

