

JAN'23- MAR'23

NEWSLETTER

SARDAR VALLABHBHAI
NATIONAL INSTITUTE
OF TECHNOLOGY SURAT

DEPARTMENT OF ELECTRICAL ENGINEERING

The Department of Electrical Engineering is one of the oldest departments at Sardar Vallabhbhai National Institute of Technology. The department actively conducts various academic and research activities throughout the year. This newsletter presents a brief about various activities from January 2023 to March 2023.



📌 HIGHLIGHTS

- Research Publications
 - Journals -09
 - Conferences - 03
 - Book publications - 01

Department Vision

To be the leading department disseminating globally acceptable education, effective industrial consultancy and relevant research output.

Department Mission

To be a global centre of excellence in technical education and innovation producing competent professionals with integrity.

Programme Educational Objectives

- Graduates will be able to solve engineering / industrial problems by employing various learning resources and modern tools.
- Graduates will be able to design products to meet social, economic and environmental demand by innovative ideas.
- Graduates will be able to investigate complex problems and take up research and development work in the allied fields.
- Graduates will be able to communicate effectively through oral and written presentation of technical reports, adopting lifelong learning with integrity and ethics; and they will have interpersonal skills required to lead and nurture diverse teams.



PROF. A.K.PANCHAL

Head, DoEE
SVNIT, Surat

Welcome to the Department of Electrical Engineering at SVNIT! Our department is well-known for the student-focused teaching-learning, engineering and technology practice-oriented research and education. Nearly 40 faculties and staffs are dedicated to impart their high-quality education and research experiences to our students and scholars to become leaders of the next generation of technocrats with the highest professional achievements. The curricula and well-equipped laboratories are designed for preparing the workforce to overcome the present and emerging technological challenges of the century.

As a research-oriented department, our research activities are extended to the major areas of Electrical Engineering, including power and renewable energy systems, power electronics and drives, instrumentation and control. Our faculty research is funded by several national and state agencies (SERB-DST, MeitY, CSIR, INAE, MHRD, GUJCOST, etc.). Our research in cutting edge of technology is published in the national and international referred journals with the IEEE, IET, Taylor & Francis, Elsevier, Springer and other reputed publishers. Our department offers testing and consultancy services to the nearby industrial belt HAZIRA, Surat Municipal Corporation, power distribution companies, etc.

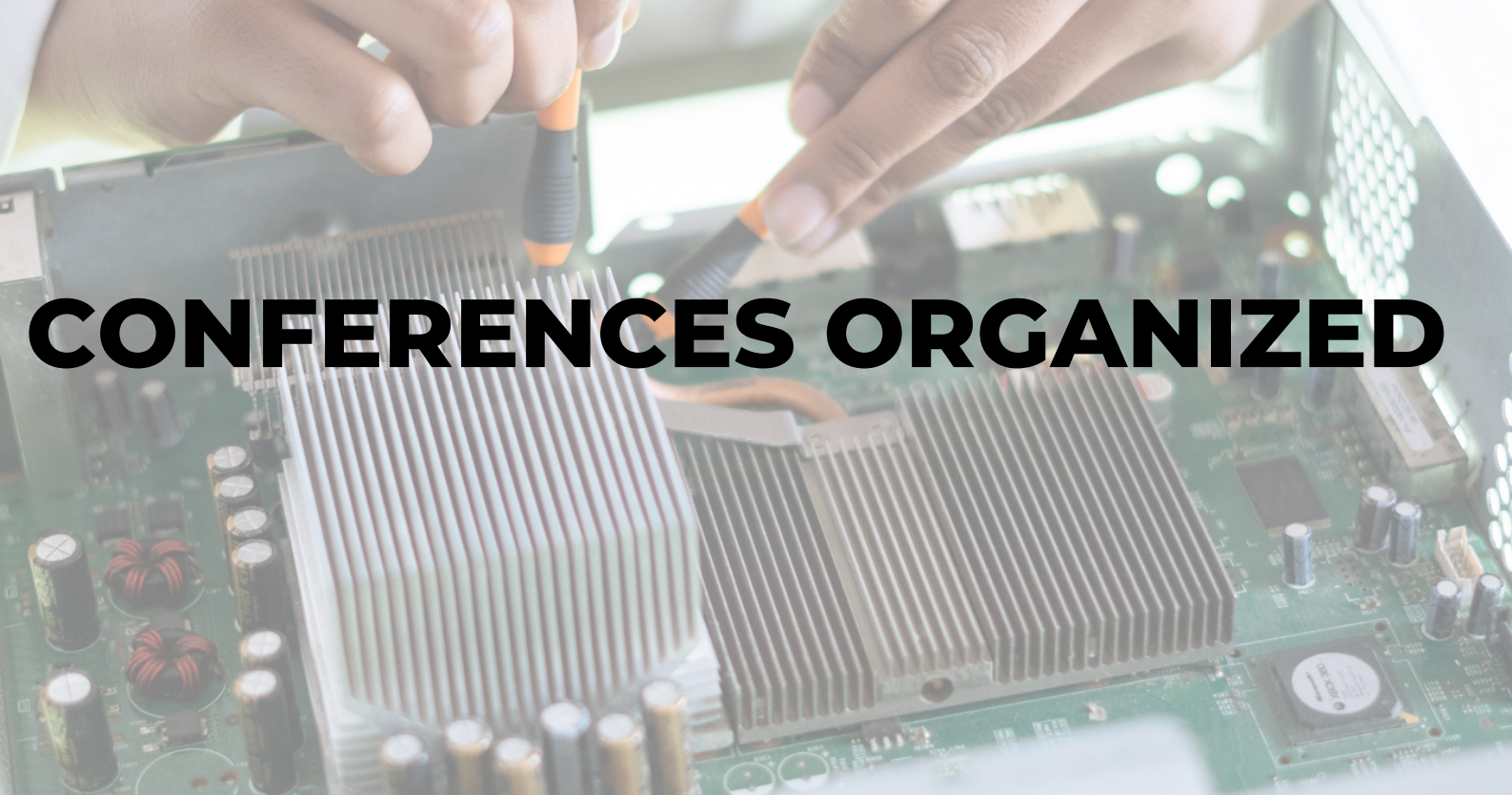
With nearly 500 UG, 150 PG and 100 PhD scholars, we are one of the largest and most prestigious departments within the Gujarat state. Our graduates place themselves in prestigious positions in the corporate, government and educational institutions. Many fresh B. Tech. and M. Tech. graduates opt for higher education in the reputed international and national institutions (IISc, IITs, IIMs and others). We are dedicated to bring our education and research programmes to higher recognition in national and international level. I invite you to visit our website for exploring the department faculties, research activities and exciting opportunities that await you here at DoEE.

I am happy to present the 11th issue of the Department quarterly newsletter. The major parts of this collection include, short term training programmes organised (in the virtual mode), activities of Electrical Engineering Society, research publications and projects. I acknowledge the efforts of the committee members Dr. J. Venkataramanaiah, Dr. G. Sushnigdha and Dr. Suresh Lakhimsetty in the editing this issue. I also thank Mr. Jaydev Kamani, Ms. Devanshee Tanti, Mr. Raghav Nuwal and Ms. Dhruva Wankhade for assisting the committee members.

“Quality means doing things right and in time when no one is looking at you.” Henry Ford said for the successful business, and we do believe and follow it.

FAREWELL TO PROF. M. N. BHUSAVALWALA





CONFERENCES ORGANIZED

- 2nd International Conference on "Sustainable Technology & Advanced Computing in Electrical Engineering."

Dated: 19 and 20 January-2023.

Coordinators:- Dr. Vasundhara Mahajan and Dr. Anandita Chowdhury



WORKSHOPS ORGANIZED

- One Day Training of Diploma Students of Tapi Diploma Engineering College, Surat on Testing of Electrical Instrumentation on 31/01/2023 was conducted by Dr. H.R.Jariwala and Mr. G.S.Shah



- One-Week Short Term Training Course(Online) On "Power & Control Strategy for Net-Zero Emissions (PCSN-2023)"
Dated:-20th Feb-24th Feb 2023.
Coordinator:- Dr. Sukanta Haldar, Dr. Rakesh Maurya, Dr. S.R.Arya and Dr S.N.Sharma
- A Short-term Course on "EV Charging Technology and Infrastructure Development(EVCTID-2023)."
Dated:- 30th March-3rd April 2023
Course Coordinators:- Dr. Chandani P. Gor, Dr. Sukanta Halder, Dr. K.V. Praveen Kumar and Dr. Varsha A. Shah

INDUSTRIAL VISITS

- Industrial Visit to **WAREE ENERGIES PVT. LTD Sachin, Swat** by M.Tech I (Power System and Power Electronics and Electrical Drives)
Dated:- 17th Feb 2023
Coordinators: Dr. A.K. Panchal, Dr. P.B.Darji and Dr. Sanjay Tolani



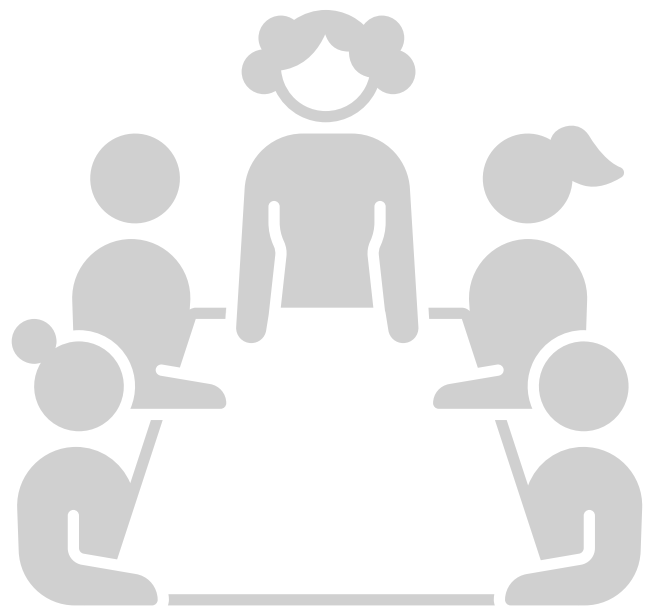
RESEARCH PUBLICATIONS

Conferences

1. D. Patel and R. Chudamani, "Optimal Torque Angle Tracking of Interior Permanent Magnet Synchronous Machine Drive using Estimated Flux Linkage," 2022 IEEE 19th India Council International Conference (INDICON), Kochi, India, 2022, pp. 1-6, doi: 10.1109/INDICON56171.2022.10040052.

2. Urooj Asfia, Rahul Radhakrishnan, "Range parameterised maximum correntropy unscented Kalman filter for two dimensional angles-only target tracking problems", presented in 22nd IFAC Symposium on Automatic Control in Aerospace, IIT Bombay, 21-25 November, 2022.

3. Urooj Asfia, Rahul Radhakrishnan, Shambhu N. Sharma, "Speed and Range Parameterised State Estimators for 3D underwater angles-only target tracking problem", accepted in 22nd IFAC World Congress, Yokohama, Japan, 9-14, July 2023.





RESEARCH PUBLICATIONS

Journals

- Sabha Raj Arya, Khyati D. Mistry and Prashant Kumar, "Least Mean Mixed Norm Square/Fourth Adaptive Algorithm with Optimized FOPID Gains for Voltage Power Quality Mitigation", Accepted for Publication IEEE Journal of Emerging and Selected Topics in Power Electronics, pp. 1-9, January 2023 (doi: 10.1109/JESTPE.2023.3240712).
- Prashant Kumar, Sabha Raj Arya and Khyati D Mistry, "TSKARNA-Norm Adaption Based NLMS with Optimized Fractional Order PID Controller Gains for Voltage Power Quality", Accepted for Publication IEEE Chinese Journal of Electrical Engineering, pp. 1-15, March 2023.
- Mahesh Pudari, Sabha Raj Arya, Rajeev Kumar Arya, "An improved Sliding Mode Observer for parameter estimation in induction motor drive with optimised gains", Australian Journal of Electrical and Electronics Engineering, pp. 1-16, Feb 2023.
- Prashant Kumar, Sabha Raj Arya, Khyati D Mistry, B Chitti Babu, "Performance evaluation of GRNN and ANFIS controlled DVR using machine learning in distribution network", Journal of Optimal Control Applications and Methods, vol. 44, no. 2, pp. 987-1005, March 2023.
- Sabha Raj Arya, Rakesh Maurya, Jayadeep Srikakolapu, "DSTATCOM using Model Predictive Control Associated with LMS Control, Accepted for publication International Journal of Electronics", Jan 2023. <https://doi.org/10.1080/00207217.2022.2164067>.

Journals

- Sreelekha Venugopal, Prince Asok, Sabha Raj Arya, "WAMS-based Hierarchical Active Power Differential Signal Algorithm for Backup Protection of a FACTS Compensated Transmission Network", Advances in Electrical and Electronic Engineering, vol. 20, no. 4, pp. 390-404, Feb 2023.
- Krunal Shah, and Rakesh Maurya, "A Modified Space Vector Modulation Based Rotor Flux Oriented Control of Six-Phase Asymmetrical Induction Motor Drive", Turkish Journal of Electrical Engineering and Computer Sciences, vol.31, no.2, pp.481-497, 2023.
- Karri V.V. Satyanarayana, and Rakesh Maurya, "Single switch high voltage gain DC-DC converter for renewable energy applications", Int. J. Power Electronics, March 2023 (Accepted).
- Arvind Pratap, Prabhakar Tiwari, Rakesh Maurya, and Bindeshwar Singh, "A Novel Hybrid Optimization Approach for Optimal Allocation of Distribution Generation and Distribution Static Compensator with Network Reconfiguration in Consideration of Electrical Vehicle Charging Stations", Electric Power Components and Systems, March 23, 2023 (Accepted).



BOOK PUBLICATIONS

Book Publication 2021-2023 on "Power Quality: Infrastructures and Control",

Publisher: Springer Publication (Publication under progress)

Professors: 1. Ashutosh K Giri, Government Engineering College, Bharuch
2. Sabha Raj Arya, Sardar Vallabhbhai National Institute of Technology, Surat
3. Josep M Guerrero, Aalborg University, Denmark
4. Shailendra Kumar Dwivedi, M.A.N.I.T Bhopal (Jan 2023)



INSTITUTE LEVEL FACULTY RESPONSIBILITY



Dr. H. R. Jariwala,
Associate Professor

appointed as Associate Dean on 18/01/2023



Dr. Varsha A Shah,
Professor

appointed as a Presiding Officer for the Institute level Complaints Committee (ICC) on 31/01/2023



Dr. Mahesh Aeidapu,
Assistant Professor

appointed as warden to Swami Vivekananda Bhavan on 13/03/2023



Dr. Chandani P Gour,
Assistant Professor

appointed as a Presiding Officer for the Institute level Complaints Committee (ICC) on 31/01/2023



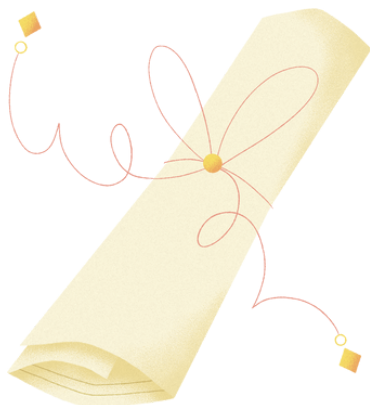
FACULTY ACHIEVEMENTS

- Dr. Ashish K Panchal, Professor & Head DoEE, was elevated to IEEE Senior Member from 25/02/2023



STUDENTS ACHIEVEMENTS

- Dr. Vamja Rajan Vinodray has received the Vikram Sarabhai Best PhD Thesis Award by Vigyan Gurjari, Gujarat, on 28.02.2023. The PhD thesis title is "Induction Motor driven solar photovoltaic water pumping systems- a topological investigation", and the thesis was supervised by Dr. M. A Mulla, Asso. Prof., Department of Electrical Engineering.



PH.D. AWARDEE

DS15EL003

03/02/23

DUBE DEEPALI YOGENDRA

"ANALYSIS AND CONTROL OF AERIAL SYSTEMS"

**SUPERVISORS - PROF. SHAMBHU NATH SHARMA
DR. HIREN G. PATEL**

D17EL005

15/02/23

RAMANJANEYULU ALLA

**"NOVEL HIGH VOLTAGE GAIN IMPEDANCE SOURCE
CONVERTERS FOR STANDALONE AND GRID CONNECTED
PHOTOVOLTIC APPLICATIONS"**

SUPERVISORS - PROF. ANANDITA CHOWDHURY

DS14EL002

23/02/23

CHAUDHARI MANDAR KADU

**"DESIGN AND PERFORMANCE ANALYSIS OF LOW
POWER LINE START SINGLE-PHASE AND THREE-PHASE
SYNCHRONOUS RELUCTANCE MOTORS DERIVED FROM
INDUCTION MOTORS"**

SUPERVISORS - PROF. ANANDITA CHOWDHURY

PH.D. AWARDEE

DS17EL003

15/03/23

JAYADEEP SRIKAKOLAPU

**"CONTROL ALGORITHMS FOR DSTATCOM AND ITS
APPLICATION IN DISTRIBUTED POWER GENERATION"**

**SUPERVISORS - DR. SABHA RAJ ARYA
DR. RAKESH MAURYA**

DS17EL001

23/03/23

JYOTI GUPTA

**"ON-BOARD ELECTRIC VEHICLE BATTERY WITH
ENHANCED POWER CONDITIONING FEATURES"**

**SUPERVISORS - DR. RAKESH MAURYA
DR. SABHA RAJ ARYA**



ACADEMIC TOPPERS

M.TECH.

SPECIALIZATION	NAME
INSTRUMENTATION AND CONTROL	ASTHA DAK
POWER SYSTEMS	SHREYAS DINKAR MORE
POWER ELECTRONICS & ELECTRICAL DRIVES	CHHAVI MITTAL

B. TECH.

	NAME
A.Y. 2020-2021	ANSHUMA JHALA
A.Y. 2021-2022	NANDINI PANCHAL

ACADEMIC ACHIEVERS

B.TECH.

4th Year(Till 7th Semester)

SR. NO.	ROLL NO.	NAME	CGPA
1	U19EE039	MUDIT BAJAJ	9.75
2	U19EE035	NISHI SHARMA	9.12
3	U19EE032	SITANSHU YADAV	9.09
4	U19EE067	VATSAL CHOUDHARY	9.06
5	U19EE060	DEEPAM SINHA	9.01

3rd Year(Till 5th Semester)

SR. NO.	ROLL NO.	NAME	CGPA
1	U20EE054	KUNJAN PATEL	9.13
2	U20EE059	DHRUV SINGHI	9.07
3	U20EE079	HARSH KUMAR	9.03
4	U20EE071	ADARSH KAUSHAL	8.98
5	U20EE058	NISHANT SINGH	8.88

2nd Year(Till 3rd Semester)

SR. NO.	ROLL NO.	NAME	CGPA
1	U21EE081	ADITI TAPARIYA	9.39
2	U21EE001	ARYAN S KUMAR	9.14
3	U21EE051	POOJA AGARWAL	9.13
4	U21EE055	ARPITA KALDA	8.85
5	U21EE043	RIYA GUPTA	8.82

ALUMNI SECTION



GANTA BHANU GANESH RESEARCH SCHOLAR IIT HYDERABAD

1. What are the things you fondly remember about our department?

A. Although I joined M.tech in Power Systems specialization in the Electrical Engineering department, everyone is supportive irrespective of the branch, grade, hometown which made me feel like being with a family. The well-equipped laboratories that provided hands-on learning opportunities. The friendly and collaborative atmosphere among faculty and students made learning more enjoyable and memorable.

2. WHAT IS YOUR CURRENT POSITION AND HOW DID OUR COLLEGE PREPARE YOU FOR YOUR CAREER?

A. CURRENTLY I AM PURSUING MY PHD AT IIT HYDERABAD IN THE DEPARTMENT OF ELECTRICAL ENGINEERING. IN MY M.TECH 1ST YEAR, THE CLASSROOM INTERACTION MADE THE CONCEPTS INTERESTING AND THE STRONG ACADEMIC FOUNDATION IS EXTREMELY HELPFUL FOR UNDERSTANDING ADVANCED CONCEPTS. THE EXPOSURE TO THE LABORATORY IS INVALUABLE WHICH GIVES THE FLAVOR OF WHAT RESEARCH WORK ENTAILS. CRITICAL THINKING ENCOURAGED BY FACULTY AND DISCUSSION WITH MY GUIDE DR. MAHESH AEIDAPU ON INNOVATIVE RESEARCH IDEAS AIDED ME FOR MY PHD INTERVIEWS. I WOULD LIKE TO EXPRESS MY SINCERE GRATITUDE TO MY GUIDE FOR HIS ENCOURAGEMENT ON INNOVATIONS AND DISCOVERY INCREASING MY PASSION FOR RESEARCH.

3. WHAT SKILLS OR KNOWLEDGE DID YOU LEARN THROUGHOUT THE PROGRAM THAT YOU FOUND MOST USEFUL IN YOUR CAREER?

A. THE WAY OF TEACHING BY FACULTY HAS MOTIVATED ME TO THINK MORE LOGICALLY AND OUT OF THE BOX. THE DESIGN OF A POWER SYSTEM USING MATHEMATICAL MODELS, SIMULATIONS AND SOFTWARE-HARDWARE INTEGRATION ALLEVIATED INNOVATIVE SOLUTIONS FOR REAL-WORLD PROBLEMS. THE CONSTANT SUPPORT AND GUIDANCE GIVEN BY MY GUIDE TRIGGERED MY INTEREST IN TRENDING RESEARCH AREAS AND TO UPDATE ON RECENT ADVANCES IN THE FIELD OF ELECTRICAL ENGINEERING. THE NOVELTY INCLUSION AND MANUSCRIPT WRITING OF RESEARCH JOURNALS HELPED DURING INTERVIEWS FOR THE PHD PROGRAM.

4. WHAT ARE YOU MOST PROUD OF FROM YOUR COLLEGE EXPERIENCE?

A. PROUD OF MY BATCH MATES WHO ARE SUPPORTIVE OF EACH OTHER ALL THE TIME. GOING TO A MOVIE WITH MY SVNIT COLLEAGUES IN A THEATER EXCLUSIVELY RESERVED FOR US WAS ONE OF THE MOST UNFORGETTABLE MOMENTS OF MY LIFE WHICH DEEPENED OUR UNDERSTANDING AND CONNECTION AMONG US. FROM ATTENDING LECTURES TO GOING ON TRIPS, PARTIES OR EVEN JUST HANGING OUT THERE IS AN INCREDIBLE BOND AMONG COLLEAGUES WITHIN A VERY SHORT TIMESPAN. FINALLY, I AM REALLY PROUD OF THE CONSTANT SUPPORT BY DR. MAHESH AEIDAPU AND DR. GANGIREDDY SUSHNIGDHA DURING TOUGH COVID TIMES.

ALUMNI SECTION



**SHOMI MAHATHA
ENGINEER AT QUALCOMM,
HYDERABAD**

1. What are the things you fondly remember about our department?

a. I fondly remember the zeal with which the professors taught us, as if it wasn't our first time attending Masters but theirs too at teaching, because they didn't miss out any technical detail just because they taught it many times. I also respect the discipline that's been maintained in the department that not only prepares us to go through hurdles in college but also pulls us out of the crowd to shine and rise in any career path we chose further in future. I thoroughly enjoyed the 2 years of M.Tech journey with the friends I made at SVNIT, in a very collaborative environment created by professors for us, and will always be indebted to them for their invaluable teaching and blessing.

2. What is your current position and how did our college prepare you for your career?

I work as an Engineer at Qualcomm, Hyderabad in the Software field. Although I was always interested in coding, but owing to the nature of talent in peers and teachers in this much coveted college, the growth in learning was generally exponential which helped me upgrade my skillset and land a job that any electrical engineer with the love of coding can dream of.

3. What skills or knowledge did you learn throughout the program that you found most useful in your career?

First and foremost I would like to mention about my guide and mentor, Dr. Aeidapu Mahesh under whose guidance I could successfully complete my M.Tech thesis. It seems little out of context but each and every skillset that I learnt while studying technical courses or during my research work is helping me today in my work. Be it "coding" or be it "the art of researching on a certain topic". My work at Qualcomm requires coding on daily basis and also demands remaining up to date with the tech areas. Qualcomm dealing with cutting edge technologies in day to day life also welcomes any new enhancement and ideas that we can bring to the table, in that sense also I try to make myself useful, in which my researching skill helps me which I could never foresee while I was learning it.

4. WHAT ARE YOU MOST PROUD OF FROM YOUR COLLEGE EXPERIENCE?

I AM PROUD OF THE FACT THAT I COMPLETED MY M.TECH DEGREE FROM SVNIT THAT'S ONE OF THE MOST PREMIER INSTITUTIONS OF INDIA UNDER THE GUIDANCE OF SUCH TALENTED AND SUPPORTIVE PROFESSORS WHO THEMSELVES COME FROM SIMILAR BACKGROUND, WHICH MADE THE UNDERSTANDING AS COHERENT AS ONE CAN EXPECT. APART FROM THESE, I ALSO HAD THIS UNIQUE EXPERIENCE OF BEING A STUDENT COORDINATOR IN "TRAINING AND PLACEMENT CELL" OF OUR COLLEGE. IT INCULCATED THIS FEELING OF RESPONSIBILITY AND LEADERSHIP IN ME THAT IN RETURN BROUGHT TREMENDOUS JOY WHILST SEEING MY PEERS GETTING PLACED IN THE BEST MNCs OF INDIA/ABROAD. I AM ALSO HAPPY THAT I MADE LIFETIME FRIENDS WHICH WHOM I SHARED EVERYTHING FROM "EVENING GOSSIP TO MIDNIGHT WALKS" AND FROM "PREPARING FOR EXAMS TO DISCUSSING INTERVIEW TALKS".

INTRA-DEPARTMENT TOURNAMENT

Bhishma Sena (Ph.D.)
(Winners)



Power Crushers (4th Year)
(Runnner up)



ELECTRICAL ENGINEERING SOCIETY (EES)

MASKED BANDIT

This is the ultimate treasure hunt event for first-year students organized by EES, the Electrical Engineering Society. This event is specially designed to help new students relax, make friends, and have a great time. Masked Bandits is a thrilling treasure hunt adventure that takes you on a journey across campus to uncover hidden treasures and solve challenging puzzles. You and your team will have to work together to find clues, decode riddles, and overcome obstacles to reach the final destination. Masked Bandits is a perfect way to connect with other first-year students, make new friends and explore the campus. Participants will be working together towards a common goal, which is a great bonding experience.



DISCHARGE

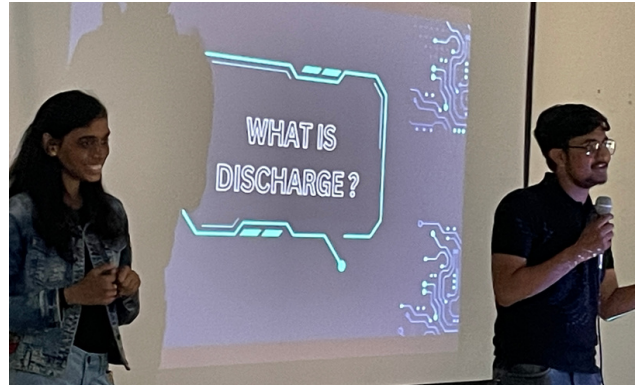
On 11th February 2023, The Electrical Engineering Society (EES) organized Discharge-2k23 for the first-year students. This orientation event provided a platform for students to learn about various events and opportunities provided by EES through informative talks, interactive workshops, and hands-on activities.



The event included presentations and fun talks by EES core team members and guidance from faculty members. The attendees also received a tour of the facility and learned about the EES's history, mission, and values. The objective of this orientation was to introduce first-year students to the members of EES and other students who share common interests. The event also provided an overview of events such as Dextrix and Masked Bandits, Aatish, and many more.

Overall, the EES's Discharge 2k23 aimed to provide attendees with a comprehensive understanding of the EES in the electrical engineering department. The faculty members played a crucial role in the success of the event by sharing their knowledge, experiences, and insights.

CAPTURED MOMENTS



Departmental days

TRADITIONAL DAY



Departmental days

FORMAL DAY



TEAM



GANGIREDDY SUSHNIGDHA
ASSISTANT PROFESSOR
DOEE SVNIT SURAT



J.VENKATARAMANAIAH
ASSISTANT PROFESSOR
DOEE SVNIT SURAT



SURESH LAKHIMSETTY
ASSISTANT PROFESSOR
DOEE SVNIT SURAT



RAGHAV NUWAL
U20EE107
3RD YEAR B,TECH



DHRUVA WANKHADE
U20EE012
3RD YEAR B.TECH.



AASTHA V. BASUNDE
U21EE006
2ND YEAR B,TECH



UTKARSH ADE
U21EE075
2ND YEAR B.TECH.