JANUARY'22 - MARCH'22

NEWSLETTER

SARDAR VALLABHBHAI NATIONAL INSTITUTE OF TECHNOLOGY

DEPARTMENT OF ELECTRICAL ENGINEERING

Department of Electrical Engineering is one of the oldest departments in Sardar Vallabhbhai National Institute of Technology. The department actively conducts various academic and research activities throughout the year. This newsletter presents the brief about various activities carried out from January 2022 to March 2022.

HIGHLIGHTS

- Funded Projects - 07
- Research Publication - 09
- B. Tech Placements - 81%
- M. Tech Placements - 64%
- Internships No. - 14

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.

RESEARCH PROJECTS & CONSULTANCY

Dr. Mahmadasraf A. Mulla

A project titled, "**Design and Development of Soft Controller for PV Integrated MPPT based Multilevel Inverter Systems**", Collaborative Research Project under Technical Education-STEM, Education Department Government of Gujarat India.
Funding amount : 2,00,000 INR
Duration : 2 Years

Dr. Venkataramanaiah

A SERB-EEQ project entitled "**Hardware implementation of 3SS converter configuration in solar tied-system for effective energy utilization using wide gap switches**" (File Number: EEQ/2021/000839) has been sanctioned.
Funding amount : 46,31,264 INR
Duration : 3 Years

Dr. Sukant Haldar

A SERB-EEQ project entitled "**Wide bandgap device based next-generation intelligent electric traction drive system for electric vehicle applications**" (File Number: EEQ/2021/001008) has been sanctioned.
Funding amount : 30,91,061 INR
Duration : 3 Years

Dr. Prashanta Kundu

Dr. Prashanta Kundu, Dr. Sabha Raj Arya and Dr. Aeidapu Mahesh have completed a consultancy project: **Energy Audit of VNSGU Surat**.
Funding amount : 7,08,000/-

RESEARCH PROJECTS

Dr. Sukant Haldar

The project entitled "**Machine Learning-Based ETDS for Electric Vehicle Application**" from SVNIT Surat.
Funding amount : 10,00,000 INR
Duration : 2 Years

Dr. Suresh Lakhimsetty

The project entitled "**Implementation of Efficient Switching Algorithms for Open-End Winding Induction Motor Drive for PV Powered Electric Vehicles**" from SVNIT Surat.
Funding amount : 10,00,000 INR
Duration : 2 Years

Dr. Akanksha Shukla

The project entitled "**Development of impact assessment and voltage regulation approach for active distribution system embedded with EV fast-charging station**" from SVNIT Surat.
Funding amount : 10,00,000 INR
Duration : 2 Years

WORKSHOPS & EXPERT TALKS

- A workshop on "Control & Automation: Recent Trends & Future" was organized as part of the Institute Diamond Jubilee celebrations from 12th February 2022 to 13th February 2022 by **Dr. Shambhu Nath Sharma, Dr. Hiren G. Patel, Dr. Rahul Radhakrishnan, Dr. Gangireddy Sushnigdha**

- **Dr. K. V. Praveen Kumar** delivered an expert talk on PMSM for EVs and its control in one week's online FDP on "Trends in Electric Vehicle Design" organized by Narayana Engineering College, Gudur.

- **Dr. Suresh Lakhimsetty** delivered an Expert Talk in an online FDP on "Application of Power Electronics in Electric Vehicles and Energy Storage" from 14th – 22nd February 2022, organized by NIT Warangal and NIT Karnataka, in Association with Electronics & ICT Academy, NIT Warangal.

- **Dr. Suresh Lakhimsetty** delivered an Expert Talk in online FDP on "Power Electronics for Electric Vehicles and Renewable Energy Systems" from 16th – 24rd March 2022 Organized by E & ICT Academy & Department of Electrical Engineering, NIT Warangal in Association with Gokaraju Rangaraju Institute of Engineering and Technology, Hyderabad.

AWARDS AND ACHIEVEMENTS

- **Dr. Mahmadasraf A. Mulla**, appointed as Chapter Vice-Chair - IEEE Gujarat Section Joint Chapter, IE13/IA34/PEL35 (CH10148) for 2022.

- **Dr. Mahmadasraf A. Mulla**, appointed as Chapter Vice-Chair (Educational Activity) - IEEE Gujarat Section Sensors Chapter, SEN39 (CH10790) for 2022.

- **Dr. Sushnigdha G.** received Best Presenter Award for presenting a paper titled "Spacecraft Reentry Trajectory Optimization using Search Space Reduction Technique" at the 7th IFAC Advances in Control & Optimization of Dynamical Systems conference (ACODS 2022), held on 23rd to 25th February, organized by NIT Silchar jointly with IIT Guwahati.

- **Dr. Suresh Lakhimsetty** acted as Technical Session Chair for the track Power Electronics and Electrical Transportation Systems at IEEE Second International Conference on Power, Control and Computing Technologies (ICPC2T- 2022), organized by the Department of Electrical Engineering, NITRaipur, INDIA, held from 1st – 3rd March 2022.

- Rajesh Malik, Md. Ataur Rehman, Kheelesh D. (M. Tech II) project titled "Photovoltaic EV-battery charging system for public parking: PV to EV" has been selected by Techgium LTT Scheme.

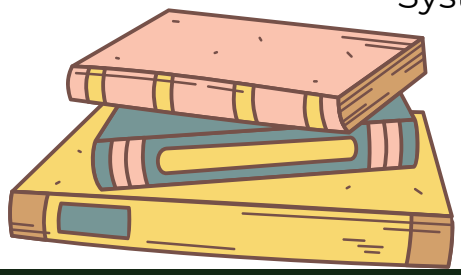
RESEARCH PUBLICATIONS

Journals

- Payal Patel and **Mahmadasraf A. Mulla**, “Reduced Switching Losses in the Indirect Matrix Converter using Single Ramp Carrier-based PWM Scheme,” International Journal of Power and Energy Systems (2022), ACTA press publishing. (selected)

- Rajan V. Vamja and **Mahmadasraf A. Mulla**, “Reduced DC Sensor-based Grid-interactive Operation of Single-stage Solar Photovoltaic Water Pumping System,” Energy Sources, Part A: Recovery, Utilization, and Environmental Effects (2022). Published online: 16 Jan 2022, DOI: 10.1080/15567036.2021.2017520.

- A.K. Singh, S. Kumar, N. Kumar, and **R. Radhakrishnan**, "Bayesian Approximation Filtering with False Data Attack on Network", IEEE Transactions on Aerospace and Electronic Systems, Early Access, 2021.

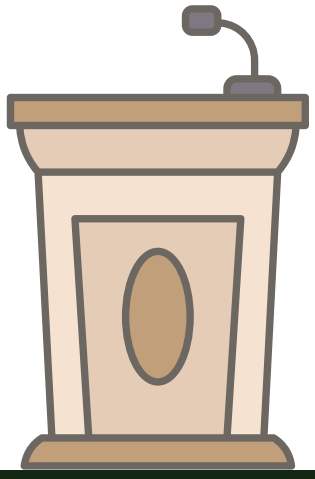


RESEARCH PUBLICATIONS

Conferences

- Aastha Dak and **Rahul Radhakrishnan,** "Tracking and Interception of a Spiralling Ballistic Target on Reentry", Proc. of the 7th International Conference on Advances in Control & Optimization of Dynamical Systems, 2022.

- Ravi Khandelwal, Urooj Asfia, and **Rahul Radhakrishnan**, "Parameterised State Estimation Approach for 2-Dimensional Underwater Bearings Only Target Tracking", Proc. of the 7th International Conference on Advances in Control & Optimization of Dynamical Systems, 2022.



- **Rahul Radhakrishnan**, Urooj Asfia, and **Shambhu N. Sharma**, "Gaussian Sum State Estimators for Three Dimensional Angles-Only Underwater Target Tracking Problems", Proc. of the 7th International Conference on Advances in Control & Optimization of Dynamical Systems, 2022.

RESEARCH PUBLICATIONS

- **Sushnigdha G.** "Spacecraft Reentry Trajectory Optimization using Search Space Reduction Technique", 7th IFAC Advances in Control & Optimization of Dynamical Systems conference (ACODS 2022), held from 23rd to 25th February, organized by NIT Silchar jointly with IIT Guwahati.

- K. Bharath Kumar and **Kunisetti Venkata Praveen Kumar**, "An Effective Predictive Torque Control Technique for Open-End Winding Permanent Magnet Synchronous Motor Drives with reduced Ripples for EVs", 2nd International Conference on Power, Control and Computing Technologies (ICPC2T), organized by NIT Raipur, India held from 1st to 3rd March 2022. (Accepted to publish in IEEE Xplore).

- Sushmita Tejrao Ramsham, **Suresh Lakhimsetty** "Fuzzy-Logic Speed Controller for 3-Level Open-End Winding Induction Motor Drive with Predictive Torque Control Technique" in IEEE Second International Conference on Power, Control and Computing Technologies (ICPC2T-2022), organized by NIT-Raipur (Accepted to publish in IEEE Xplore).

INSTITUTE LEVEL FACULTY RESPONSIBILITY

Dr. A. K. Panchal,
Professor

has taken over charge of Head of DoEE from 16/12/2021 for two years.

H.R.Jariwala,
Associate Professor

appointed as Nodal Officer for Ministry of Education's AISHE Survey on Feb 18, 2022 for two years.

Dr. Jammala Venkataramanaiah,
Assistant Professor

appointed as Additional Nodal Officer for Ministry of Education's AISHE Survey on Feb 18, 2022 for two years and also appointed as Additional Faculty Incharge Central Store for a period of two years from January 07, 2022.

Dr. Sabha Raj Arya,
Associate Professor

appointed as Faculty Incharge Electrical & Communication system w.e.f 11/02/2022 for a period of 2 years.

Ph.D. Awardee

D14EL007 — **LAKUM ASHOKKUMAR CHAMANLAL**
29-3-2022

"A NOVEL APPROACH FOR OPTIMAL PLACEMENT AND SIZING OF ACTIVE POWER FILTERS USING GREY WOLF OPTIMIZER AND ITS VARIANTS"

SUPERVISOR - DR.VASUNDHARA MAHAJAN

DS15EL001 — **PATEL BHAVINA JAMNADAS**
25-11-2020

"INVESTIGATION OF CONTROL STRATEGIES FOR INTRAVENOUS ANESTHESIA AUTOMATION"

SUPERVISOR - DR. HIRENKUMAR G. PATEL

Academic Achievers M.Tech.

1st Year

SPECIALLIZATION	ROLL NO.	NAME	CGPA
POWER ELECTRONICS & ELECTRICAL DRIVES	P21EL002	PATEL YAGNESHKUMAR VASNTBHAI	8.6
POWER SYSTEMS	P21PS004	PATEL KEVIN HARESHKUMAR	9.25
INSTRUMENTATION AND CONTROL	P21IC007	ANUPAMA C S	9.8

2nd Year

SPECIALLIZATION	ROLL NO.	NAME	CGPA
POWER ELECTRONICS & ELECTRICAL DRIVES	P20EL019	FIRAKE DINANATH MOHAN	8.76
POWER SYSTEMS	P20PS019	MORE SHREYASH DINKAR	9.12
INSTRUMENTATION AND CONTROL	P20IC001	AASTHA DAK	9.5

B.Tech.

2nd Year (till semester 3)

SERIAL NO	ROLL NO.	NAME	CGPA
1	U20EE018	ARUN CHAUDHARY	9.43
2	U20EE059	SINGHI DHRUV BITTAL	9.39
3	U20EE058	NISHANT KUMAR SINGH	9.35
4	U20EE054	PATEL KUNJAN KANTILAL	9.26
5	U20EE087	TARUN KUMAR KHARE	9.21

3rd Year (till semester 5)

SERIAL NO	ROLL NO.	NAME	CGPA
1	U19EE039	MUDIT BAJAJ	9.74
2	U19EE067	VATSAL CHOUDHARY	9.33
3	U19EE006	KAMANI JAYDEV MINESHBHAI	9.21
4	U19EE035	NISHI SHARMA	9.21
5	U19EE060	SINHA DEEPAM RAVIKANTKUMAR	9.14
6	U19EE032	SITANSHU YADAV	9.1

4th Year (till semester 7)

SERIAL NO	ROLL NO.	NAME	CGPA
1	U18EE011	PANCHAL NANDINI VASANTKUMAR	9.34
2	U18EE066	AYUSH PRATYUSH	9.22
3	U18EE002	BHAVNA DILIP MATWANI	9.14
4	U18EE046	MANSURI MOHAMMED IMRAN	8.98
5	U18EE077	DHADVI RAKESHBHAI BABUBHAI	8.9

STUDENT ACHIEVEMENT

ROLL NO.	NAME	ACHIEVEMENTS
U18EE001	HEEMIN K. SHAH	STUDENT GENERAL SECRETARY OF SVNIT FOR A.Y. 2021-22
U18EE002	BHAVNA MATWAI	ACADEMIC AFFAIRS SECRETARY OF SVNIT FOR A.Y. 2021-22, HEAD OF KIRDAAR , CONVEY IN DRISHTI
U18EE011	NANDINI PANCHAL	PART OF NATIONAL WINNER TEAM OF 'STORM'- TECHNICAL CASE STUDY CHALLENGE BY THERMAX LTD
U18EE016	ANGAD SAWADH	1. GITHUB INDIA EXTERNSHIP - WINTER COHORT AT WINKJS 2. SELECTED FOR ROUND 2 (TOP 100) OF THE LOREAL SUSTAINABILITY CHALLENGE 2021
U18EE019	PULKIT JAIN	1. WINNER OF TEAM DRAMATICS EVENT SWAANG ORGANISED BY KIRDAAR CHRD HELD IN MAR-APRIL 2021. 2. PUBLICITY COMMITTEE HEAD OF ELECTRICAL ENGINEERING SOCIETY FOR SESSION 2020-21. 3. SECURED 3RD POSITION IN QUIZIYAAPA ORGANISED BY EES SVNIT IN FEBRUARY 2020
U18EE023	KUSHAL BORANA	TNP CO-ORDINATOR OF ELECTRICAL DEPARTMENT
U18EE024	SHREETTAM PRADHAN	TNP CO-ORDINATOR OF ELECTRICAL DEPARTMENT
U18EE038	VINAY SENWAR	1ST PRIZE IN FSAE GO-KART TEAM 2020
U18EE058	SUDHANSHU KUMAR MALL	POSITIONED 'ENVIRONMENT SECRETARY' OF BHABHA BHAVAN DURING THE 2019-20 TENURE

STUDENT ACHIEVEMENT

ROLL NO.	NAME	ACHIEVMENTS
U18EE061	GAGAN PUNGLIYA	HEAD OF KIRDAAR
U18EE066	AYUSH PRATYUSH	OPJEMS SCHOLARSHIP FOR THE YEAR 2020 & 2021
U18EE073	NIKHIL PANDEY	TNP CO-ORDINATOR OF ELECTRICAL DEPARTMENT
U18EE085	B.MONIKA	I AM AN INTER NIT KHO KHO PLAYER
U18EE087	AANAY	NDA-124 RANK SELECTED FOR IAF-NDA
U18EE090	UTKARSH RAGHUVANSHI	GATE RANK - 282 HEAD OF CREATIVE TEAM OF EES 2021
U18EE091	HARSHIT PADIA	PUBLISHED AUTHOR AT THE PRINT UNDER THEIR CAMPUS VOICE INITIATIVE
U19EE039	MUDIT BAJAJ	OPJEM SCHOLARSHIP FOR THE YEAR 2021
U19EE067	VATSAL CHOUDHARY	ELECTRICAL BRANCH COUNCILLOR
U19EE109	DEEP RODGE	SECURED 3RD PLACE IN PYTORCH ANNUAL HACKATHON 2021 (WORLDWIDE) AMONGST 1900 PARTICIPANTS ALONG WITH A CASH PRIZE OF $2000

INDUSTRIAL VISIT

GETCO substation, GOTRI visit by M.Tech students in DEC 2021. Photos of Gotri Visit by M.Tech. (PS) with **Dr. Pranav Darji** and **Dr. H. R. Jariwala**.

WAAREE Energies Pvt Limited Sachin, Industrial visit by M.Tech. (PS and PEED) students on 25.03.2022. with **Prof. A.K.Panchal**, **Prof. A. Chowdhury**, and **Dr. Sanjay Tolani**.

ALUMNI SECTION

1. How is Covid-19 treating you, and how has it influenced your life?

The unprecedented covid time was a difficult phase for all of us as many lost their near and dear ones but on the flip side, it has changed the way we used to do things. I completed my whole MBA in online mode and it was an altogether new learning experience as classes, group meetings, and college activities were conducted in virtual mode. Initially, it was difficult to adapt to the new normal for me but I had to quickly adapt to the new things to cope in an academically rigorous fast paced MBA program. Covid has not affected me much as I was immersed in case studies and assignments during the covid time. Covid has taught me the importance of human connections as I feel that people behave way different in person as compared to the online mode.

2. Any tips for freshies for surviving and going big in this cut throat competition in the industry?

Competition is always high in most of the fields in our country because of the high population. Being from a college like NIT, students of SVNIT already have an edge over the students from lower ranking engineering colleges because of the pedagogy and exposure they get at our department. Contrary to this, students from our college lag far behind from IITians as our curriculum need to be updated according to the new technologies coming into the industry. We need to introduce projects in each subject with some real-life case studies to make our students stand out from the crowd. Moreover, from the student side, they can take part in case competitions and hackathons to prepare themselves for the industry. Lastly, one should have great zeal and hunger to learn new things to survive anywhere.

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

SVNIT is always close to my heart. I have spent one of the best days of my life at the lush green SVNIT campus. I made my friends for a lifetime when I was on campus and I fondly remember the rush we had for attending the 8:30 am classes of Dr. A.K. Panchal sir and his way of taking attendance by calling students' roll numbers directly. I love spending time in labs and we had a great time working on experiments in the machine lab, and electronics lab where we had to work in groups. It was a pleasure to learn from extinguished professors like stochastic models by Prof SN Sharma Sir, Machine design from Prof Anandita Mam, circuit theory from Prof Darji Sir, control system from HGP Sir, Electrical Machines from Panchal Sir and many more. I am very grateful that the Electrical Department helped me to pursue my passion for sustainability by providing an opportunity to work on an interdepartmental project and publish a conference paper on solar photovoltaic materials under the guidance of Dr. AK Panchal Sir and Dr. Vipul Kheraj Sir from Applied Physics department. I still have the nostalgia of memories like celebrating traditional day, dancing during departmental day, organizing departmental dinner, and roaming with classmates in other departments when denied late entry into the class.

VINAY GAHLOT
MBA student (2020-22)
IIM AHMEDABAD

ALUMNI SECTION

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

I always cherish great memories of my Engineering tenure (1998 to 2002) at our esteemed Institute. Professors taught the subjects in an interactive manner and always encouraged us to ask questions without any hesitation, which helped to improve my overall persona - both Technical and Managerial.

This course equipped us with a sharp analytical and practical skills & taught us to pay attention to minute details. It helped in different avenues in our work life. I have made my career in “Renewable “ space. I have put the learnings to use & enjoyed every bit of my job with confidence knowing what is required and how it is to be done. The course has ensured that my fundamentals are well placed. I would like to take this opportunity to thank my Professors for their support and guidance in my overall development.

2. What would be your current profession, if you weren't an Electrical Engineer?

Coming from education background, I may have pursued Higher Studies in “Mathematics” and made my career in academics by joining National / Regional Universities.

3. How is Covid-19 treating you, and how has it influenced your life?

Covid is now a part of our lives. It taught us to sustain during difficult circumstances and has not affected our work. I think these are challenges we have to work around, this should not be our excuse.

4. Any tips for freshies for surviving and going big in this cut throat competition in the industry?

My key tips to my every juniors and subordinates is to “Keep learning in the life and never give-up”. This will help to take challenges head-on and succeed in a highly competitive market.

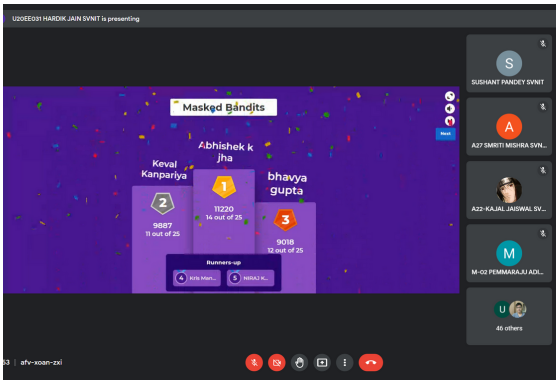
EE Fresher’s , should do take their course seriously , because EE opens up avenues in every area , especially RE , Electric Vehicles, Energy Domain . Enjoy every moment of your leaning days and you will enjoy what you do when you step out into the corporate world. All the best

ASHISH UPADHYAY
Chief Operating Officer
Belectric Photovoltaic India

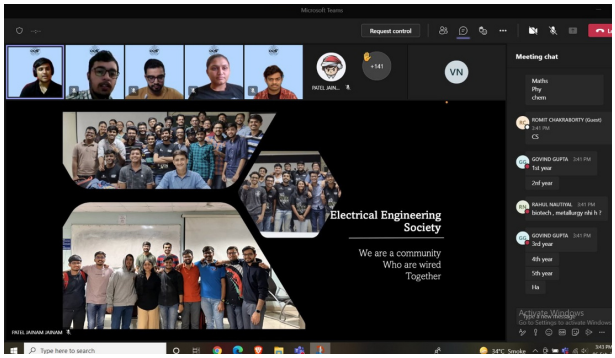
ELECTRICAL ENGINEERING SOCIETY (EES)

MASKED BANDITS

08/01/2022 (84 Teams)



It was the second time that we organized an online treasure hunt event for our institute. The primary objective of the event was to comfort the incoming first-year batch in the new college atmosphere. The participants were given a set of hints and a start point. Through tactful and observation skills, they were expected to reach the final question list before others for proceeding to the next round. A total of two rounds were organized; round-1 on Kahoot as a general quiz about our institute and round-2 as a level-wise round, each round will have a new pdf that the participant will have to solve to get the passcode for the net pdf. Each level had increasing difficulty and new elements of twists to make the event more interesting. The whole event was organized and conducted by the executive committee of EES.



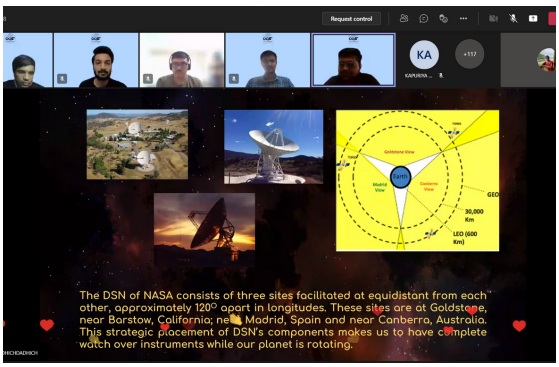
DISCHARGE

06/02/2022 (261 Participants)

Discharge is the annual orientation of our student chapter. The orientation is focused to enlighten the first-year students about the activities which are conducted by EES and what benefits they can get by getting involved in them. It is organized by the core committee of EES.

DEXTRIX

20/02/2022 (238 Participants)

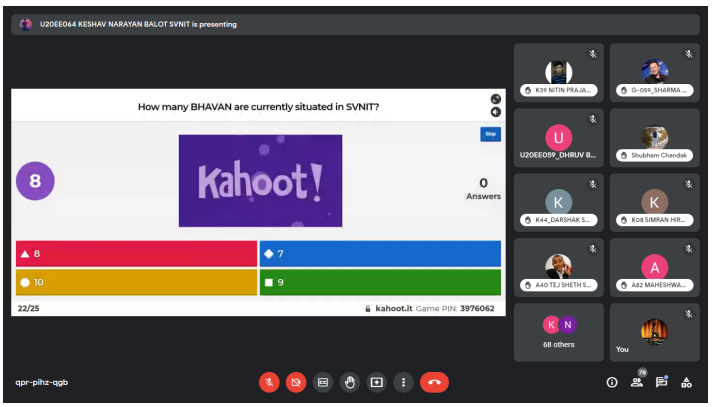


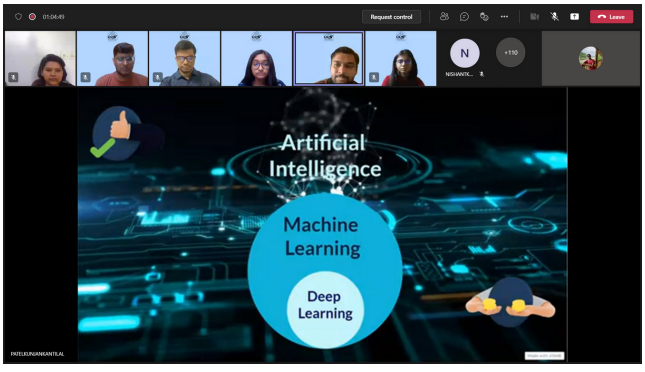
It is the flagship event of EES. It provides a chance for first-year students to explore new domains and find their interests in different fields of engineering. It focused on providing the freshers' batch an exhilarating ride in the world of electrical engineering, from complex topics like electrical machines and power systems to the use of engineering tools like MATLAB, trendy technologies like Electric Vehicles, and Machine Learning (ML). We come up with new topics every year to make sure we stay updated with all the new happenings in the world of electrical engineering. This year we involved topics such as:

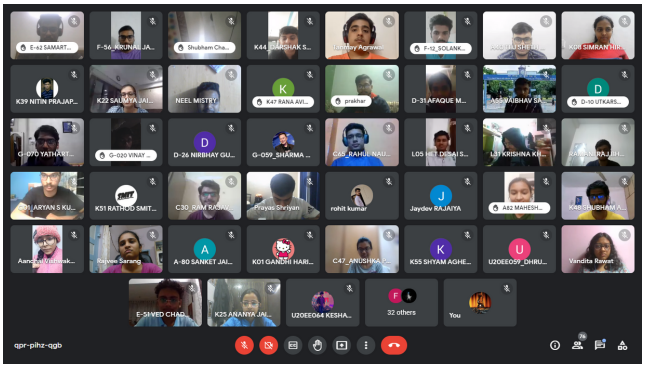
- Deep Space Communication
- MATLAB
- PLC – SCADA
- Electric Machines
- Wireless Energy Transfer
- Smart Grid
- AI – ML
- Blockchain
- 5G Technology
- Hyperloop & Maglev Train

PHOTO GALLERY

Ceremony of Prof. A.K. Panchal taking charge as the head of DoEE







Other student activities conducted by EES

TEAM

GANGIREDDY SUSHNIGDHA
ASSISTANT PROFESSOR
DOEE SVNIT SURAT

J.VENKATARAMANAIAH
ASSISTANT PROFESSOR
DOEE SVNIT SURAT

SURESH LAKHIMSETTY
ASSISTANT PROFESSOR
DOEE SVNIT SURAT

JAYDEV KAMANI
U19EE006
3RD YEAR B.TECH.

DEVANSHEE TANTI
U19EE047
3RD YEAR B.TECH.

RAGHAV NUWAL
U20EE107
2ND YEAR B,TECH

DHRUVA WANKHADE
U20EE012
2ND YEAR B.TECH.