



**S. B. JAIN INSTITUTE OF TECHNOLOGY,
MANAGEMENT AND RESEARCH**
DEPARTMENT OF ELECTRICAL ENGINEERING



AN AUTONOMOUS INSTITUTE AFFILIATED TO R. T. M NAGPUR UNIVERSITY

TRANSFORM KNOWLEDGE SEEKERS TO GLOBALLY COMPETENT PROFESSIONALS IN ELECTRICAL ENGINEERING



DEPARTMENT OF ELECTRICAL ENGINEERING

MAGAZINE 2021-22

S.B. Jain | **SIR SHANTILAL BADJATE
CHARITABLE TRUST**

APPROVED BY AICTE, NEW DELHI AND GOVT. OF MAHARASHTRA |

An ISO 9001:2015 Certified Institution

FORUM IN- CHARGE

Prof. Nighar Sheikh | PROF. SAURABH SINGH

PRESIDENT: | CHIEF EDITOR:
MANDAR PAL | SUBHASH PATHAK

ELECTROTECH

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INSTITUTE VISION & MISSION

»»» Vision

- **Emerge as a leading institute for developing competent and creative professionals.**

»»» Mission

- **Providing quality infrastructure and experienced faculty for academic excellence.**
- **Inculcating skills, knowledge and opportunities for competency and creativity.**
- **Aligning with industries for knowledge sharing, research and development.**

MESSAGE FROM THE HEAD OF THE DEPARTMENT



As we anticipate the release of ELECTROTECH, I would like to acknowledge the dedication and hard work of the entire team involved in its production. This magazine serves as a testament to the collaborative spirit within the Department of Electrical Engineering. We are committed to providing a holistic learning experience for our students, combining theoretical knowledge with practical applications.

I extend my gratitude to the Electrical League of Ampere Nexus (ELAN) for their invaluable contributions to the success of our department. Their continued support and partnership enhance the opportunities for our students to thrive in the ever-evolving field of electrical engineering.

As we look forward to the academic year ahead, I am confident that ELECTROTECH will continue to be a source of inspiration and knowledge for our students. I wish everyone involved, including faculty, students and our esteemed partners, continued success in their respective endeavors. Together, we will continue to shape the future of electrical engineering education and innovation.

WITH REGARDS
DR. PANKAJ B. THOTE
DEAN ACADEMICS,
HEAD, ELECTRICAL DEPARTMENT

DEPARTMENT VISION & MISSION

>>> Vision

- Transform knowledge seekers to globally competent professionals in Electrical Engineering.

>>> Mission

- To provide the highest quality education through qualified and dedicated faculties in electrical and allied engineering.
- To develop technical and professional skills along with work ethics.
- To understand and fulfill the needs of industry and society.

About the Department

Department of Electrical Engineering

“I was originally supposed to become an engineer but the thought of having to expend my creative energy on things that make practical everyday life even more refined, with a loathsome capital gain as the goal, was unbearable to me.”

- Albert Einstein



The Electrical Department stands as a pinnacle of technological excellence, offering a comprehensive curriculum covering power systems, electronics, communication and renewable energy. Guided by expert faculty, students gain hands-on experience in state-of-the-art laboratories, applying theoretical concepts to real-world scenarios. Collaborative projects and industry partnerships enhance the learning journey, fostering innovation and practical problem-solving skills. Graduates emerge not only with a profound understanding of electrical systems but also the capability to revolutionize industries, poised to shape the evolving landscape of technology.

ELAN

"ELAN, the Electrical League of Ampere Nexus, is not just a club—it's a transformation. Students become better versions of themselves, infused with creativity and powered by newfound leadership skills. ELAN encourages self-discovery and challenges, offering a platform where limits are pushed and potentials uncovered.

Team spirit and sportsmanship drive ELAN's collaborative efforts, making it more than just a technical forum. Members engage in various activities, developing versatile skills crucial for personal and professional growth. From day one, ELAN has been a hub of energy, with dedicated members putting their hearts into their work. ELAN understands that the journey matters as much as the destination; it's not just about outputs but about the impactful outcomes.

In its simplicity, ELAN leaves a lasting mark, shaping vibrant individuals and contributing to a landscape of talent and innovation."



Elan Electrical Departmental Forum 2021 - 2022



CORE COMMITTEE

Sr.No	Name	Designation
1	MANDAR PAL	PRESIDENT
2	SHUBHAM SAKHARE	VICE PRESIDENT
3	PUNAM BHAGAT	SECRETARY
4	MINAL BHIVGADE	JOINT SECRETARY
5	NILESH PANCHBHAI	TREASURER
6	PRAJWAL DAMBHARE	JOINT TREASURER
7	RAVIKANT TARARE	FORUM CLASS REPRESENTATIVE (BOYS)
8	SUBHASH PATHAK	JR. FORUM CLASS REPRESENTATIVE (BOYS)
9	SHWETA DAHAKE	FORUM CLASS REPRESENTATIVE (GIRLS)
10	NISARGA KANADE	JR. FORUM CLASS REPRESENTATIVE (GIRLS)



Elan Electrical Departmental Forum 2021 - 2022



HEAD COMMITTEE

Sr.No	Name	Designation
1	PRITI CHAKOLE	HEAD EVENT COMMITTEE
2	PIYUSH TEMBHEKAR	CO-HEAD EVENT COMMITTEE
3	MANVI PANDE	HEAD PUBLICITY COMMITTEE
4	YOGESH HIRPURKAR	CO-HEAD PUBLICITY COMMITTEE
5	SHREYASH BANSOD	HEAD SPORTS COMMITTEE
6	YASHOWARDHAN THEKEDAR	CO-HEAD SPORTS COMMITTEE
7	DIPENDRA KHOBRADE	HEAD DISCIPLINE COMMITTEE
8	VAIBHAV BURKUL	CO-HEAD DISCIPLINE COMMITTEE
9	ASHWINI BAREKAR	HEAD DECORATION COMMITTEE
10	AMISHA BORKAR	HEAD EVENT COMMITTEE
11	TEJANSH DIXIT	HEAD SOCIAL EVENT COMMITTEE
12	ULHAS MUNNE	CO-HEAD SOCIAL EVENT COMMITTEE

ELAN FORUM ACTIVITY

SOCIAL EVENTS



SEMINAR ON GENDER EQUALITY

The ELAN Electrical Departmental Forum and the Women Redressal Cell SBJITMR held a webinar on "Gender Equality" on International Women's Day. RJ Nisha, a renowned speaker on the topic, discussed the significance of gender equality in various aspects of life, emphasizing the need for equal opportunities and rights for both men and women. She also discussed practical steps individuals and society can take to promote gender equality and create a more inclusive environment. Nisha emphasized the importance of breaking stereotypes and challenging societal norms that perpetuate gender inequality. She encouraged participants to actively engage in discussions and support initiatives aiming to bridge the gender gap.



WEBINAR ON YOGA DAY

A webinar on the importance of Yoga was held on January 26, 2022, by ELAN Electrical Departmental Forum. In this webinar, respected Ms. Urmila Juwarkar Mam instructed us about yoga and inspired us about our healthy lives. A webinar on the importance of Yoga was held on January 26, 2022, by the ELAN Electrical Departmental Forum. In this webinar, respected Ms. Urmila Juwarkar Mam instructed us about yoga and inspired us to live healthy lives by incorporating yoga into our daily routines. She emphasized the numerous benefits of yoga, such as improving flexibility, reducing stress and enhancing overall well-being. Ms. Urmila Juwarkar Mam also shared practical tips and techniques for beginners to start their yoga journey and encouraged us to make it a lifelong practice for a healthier and happier lifestyle.



Cloth Donation Drive

Rotaract Club of Nagpur in collaboration with the Department of Electrical Engineering E.L.A.N organized a "Cloth Donation Drive". In this event, we donated old clothes to the needy people.

On Day 1, the Rotaract Club of Nagpur members exchanged letterheads and donated clothes to needy people in Bada Taj Bagh. On Day 2, they met Rotaractors from the Rotaract Club of Sishu Mandir in Guru Govind Singh College's library. They met two cyclists from Bangalore and donated clothes to an orphanage near the college. The clothes were washed to prevent the Coronavirus. Students and donors received certificates for their participation.



ELAN FORUM ACTIVITY

SOCIAL AND SPORTS EVENT

FEB
14

TRIBUTE 14TH FEBRUARY

The ELAN Electrical Departmental Forum hosted a sympathy program on February 14, 2022, to honor the martyrs who died in the Pulwama incident. All staff and students observed a minute of silence and lit lights in their honor to remember the nation's true heroes. The program also featured comments from guest speakers who underlined the martyrs' bravery and sacrifice, motivating everyone in attendance to stand united against terrorism. The guest speakers also related stories of the martyrs' bravery and sacrifice, which left an indelible impression on the audience. The condolence event served as a reminder of the importance of remembering and honoring those who have made the ultimate sacrifice for our country's safety and security.



KABADDI

Yashowardhan Thekedar, Prajwal Rudrakar and other students also took part in the ELAN Electrical Departmental Forum, which organized Kabaddi for students to give them a lively environment and to strengthen their inner qualities with pleasure. Second-year Electrical Department students take part in and enjoy the event to the utmost. The atmosphere was charged with excitement and competitive spirit as the students demonstrated their talents and teamwork on the Kabaddi field. The event not only provided a respite from academics but also built a sense of camaraderie among the participants, producing lasting memories for everyone involved. Throughout the contests, the students demonstrated excellent sportsmanship and supported each other. The Kabaddi tournament was a huge success and everyone is looking forward to future events organized by the ELAN Electrical Departmental Forum.



ELAN FORUM ACTIVITY



BOX CRICKET

The ELAN Electrical Departmental Forum hosted a sympathy program on February 14, 2022, to honor the martyrs who died in the Pulwama incident. All staff and students observed a minute of silence and lit lights in their honor to remember the nation's true heroes. The program also featured comments from guest speakers who underlined the martyrs' bravery and sacrifice, motivating everyone in attendance to stand united against terrorism. The guest speakers also related stories of the martyrs' bravery and sacrifice, which left an indelible impression on the audience. The condolence event served as a reminder of the importance of remembering and honoring those who have made the ultimate sacrifice for our country's safety and security.



TREASURE HUNT

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ELAN FORUM ACTIVITY



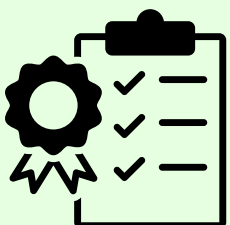
SEMINAR ON CAT BY CALIBERS NOVA

Mandar Pal, Punam Bhagat, Shubham Shakhare and other students have participated in ISC 2023 at R.T.M. Nagpur University, Nagpur. ELAN Electrical Departmental Forum organized a seminar on CAT for students to gain detailed knowledge about CAT and know how to crack that exam. The speaker of that seminar was Mr. Ashish Gaidhane Sir. ELAN Electrical Departmental Forum organized a seminar on CAT for students to gain detailed knowledge about CAT and know how to crack that exam. The speaker of that seminar was Mr. Ashish Gaidhane Sir. During the seminar, Mr. Ashish Gaidhane shared valuable insights and strategies on how to approach different sections of the CAT exam. His expertise and experience in the field provided students with a comprehensive understanding of the exam's intricacies and boosted their confidence in tackling it successfully.



SEMINAR ON SOFT SKILL

The ELAN Electrical Departmental Forum organized a seminar on soft skills and personality development. The seminar focused on improving interpersonal skills, teamwork and leadership through interactive sessions and expert presentations. Participants gained insights on problem-solving, time management and building positive relationships. The seminar also provided practical tips and techniques for effective communication, conflict resolution and decision-making. Additionally, participants had the opportunity to engage in group activities and role-playing exercises to enhance their problem-solving and teamwork abilities.



ELAN FORUM ACTIVITY

INDUSTRY VISIT



INDUSTRIAL VISIT AT KJV ALLOY PVT. LTD. (JDS GROUP OF COMPANIES), NAGPUR

The Electrical Engineering Department in collaboration with the III cell, organized an industrial visit for sixth-semester students on April 17 2022, as part of the IVR course. The visit aimed to provide students with hands-on exposure to the practical aspects of electrical and mechanical operations in industries. By exploring modern tools and applications used in real-world settings students gained a deeper understanding of industry practices and the application of theoretical knowledge. This initiative aimed to equip students with the necessary insights and experience to thrive in their future engineering careers.

Industrial Visit at Beacon Engineers, Hingna MIDC, Nagpur

On July 10 2022, the Electrical Engineering Department in collaboration with the III cell and ELAN Forum conducted an industrial visit for fourth-semester students. The purpose was to familiarize students with the practical aspects of electrical and mechanical operations in industries. The visit also aimed to introduce students to contemporary tools and applications used in real-world industrial settings. By providing this first-hand experience the initiative sought to bridge the gap between theoretical knowledge and its practical application in industry contexts offering valuable insights for student's future professional growth in engineering.





The Institute of Electrical and Electronic Engineers (IEEE) is a global association and organization of professionals working towards the development, implementation and maintenance of technology-centered products and services. On 1st Jan in 1963, AIEE (American Institute of Electrical Engineering) and IRE (Institute of Radio Engineering) merged to form the IEEE (Institute of Electrical and Electronics Engineering). It works solely towards innovating, educating and standardizing the electrical and electronic development industry. It is best known for its development of standards such as IEEE 802.11.

IEEE primarily innovates new electronics products and services, designs the standards that govern them and imparts, publishes and promotes industry knowledge through publications, conferences and partnering with academic institutes. The prime areas of focus for IEEE are Electrical, Electronics, Computer Engineering, Computer Science, information technology and most of their related disciplines. IEEE and its members inspire a global community to innovate for a better tomorrow through its more than 423,000 members in over 160 countries and its highly cited publications, conference, technology standards, professional and educational activities. IEEE is the trusted “voice” for engineering, computing and technology information around the globe.

GALLERY

IEEE 2021



PARTICIPANTS OF LUMINO 3.0



**INAUGURAL
FUNCTION**



**LUMINO 3.0 DECORATION
TEAM**



LIMITED EDITION | IEEE, 2021

Industrial Automation



What is Industrial Automation?

Industrial automation involves the use of control systems, sensors and robotics to streamline and optimize industrial processes, minimizing human intervention. Key components include sensors for data collection, actuators for executing actions and control systems like PLCs to interpret data and make decisions. Human-Machine Interfaces (HMIs) enable operator interaction, while communication networks facilitate data exchange among components. Robotics plays a crucial role, automating tasks traditionally performed by humans. Supervisory Control and Data Acquisition (SCADA) systems monitor and manage processes, providing real-time data analysis. Industrial automation enhances efficiency, quality and safety across various industries by reducing labor costs and errors while increasing productivity and precision in tasks like manufacturing, energy production and chemical processing.



Type of Automation

• FIXED AUTOMATED SYSTEM!

Fixed Automations Systems operate at the same rate all day long with no change from one shift to another. These systems are typically found in manufacturing or food service industries, where high-volume production is key to success and productivity.

• PROGRAMMABLE AUTOMATION SYSTEM!

In a Programmable Automation System, the sequence of operations, as well as the configuration of the machinery, can be changed using electronic controls. This system typically takes significant time and effort to reprogram the machines and is most often used in batch process production to improve productivity.

Industrial Automation



Type of Automation

- **FLEXIBLE AUTOMATION SOLUTIONS!**

A Flexible Automation System is usually always controlled by computers and is often implemented where the product varies frequently. Based on the code given by an operator to a computer, it acquires the necessary tools or equipment needed to produce different effects- just like how there could be countless versions of one car model depending on its year or trim level. CNC machines are one of the best examples of this system.

- **INTEGRATED AUTOMATION SYSTEM!**

An Integrated Automation System is a set of independent equipment, processes and data, all working synchronously under the command of control systems to implement an automation system for production. In other words, it is when you use CAD software or computer-controlled equipment such as robots or computers to do your work instead of relying on people.



Scope for Electrical Engineers in Industrial Automation

Automation is a field that is relevant to all streams of Engineering. However, It is closely related to the discipline of Electrical Engineering because the logic achieved by programmable Logic Controller(PLC) programming today was first done using Electrical Wiring. If one knows how to get a particular result by wiring the inputs/outputs, he can easily pick up automation and make a rewarding career.

Automation is to control the industrial machinery and process with PLC and SCADA (Supervisory Control and Data Acquisition). It helps reduce the need for human intervention. It plays an increasingly vital role in the global economy and daily experiences. Automation and control systems enable safe and efficient operation of Industrial plants by minimizing risks.



Internet of Things (IoT)



What is the internet of things (IoT)?

The Internet of Things, or IoT, is a network of interrelated devices that connect and exchange data with other IoT devices and the cloud. IoT devices are typically embedded with technology such as sensors and software and can include mechanical and digital machines and consumer objects.

Increasingly, organizations in a variety of industries are using IoT to operate more efficiently, deliver enhanced customer service, improve decision-making and increase the value of the business.

With IoT, data is transferable over a network without requiring human-to-human or human-to-computer interactions.

A thing in the Internet of Things can be a person with a heart monitor implant, a farm animal with a biochip transponder, an automobile that has built-in sensors to alert the driver when tire pressure is low, or any other natural or man-made object that can be assigned an Internet Protocol address and can transfer data over a network.



Applications of IoT

- **Smart Agriculture:** Utilizing IoT, SunCulture's initiative by Microsoft AI for Earth optimizes farming practices by collecting data on soil quality, sunlight and weather, using machine learning to provide custom recommendations. This enhances crop yield, addressing world hunger.
- **Smart Vehicles:** IoT is crucial in self-driving cars like Tesla's, where sensors, navigation and controls must communicate rapidly. Tesla Motors integrates IoT and AI, making their self-driving cars precise and popular, with the Tesla Model 3 leading U.S. plug-in electric car sales in 2018.
- **Smart Home:** IoT transforms homes with devices like Google Home and Amazon Echo, allowing control via smartphones. Popular IoT inventions include Nest Smoke Alarm, Philips Hue Lighting and August Smart Lock, contributing to the surge of connected devices.



Internet of Things (IoT)

- **Smart Pollution Control:** IoT combats pollution by collecting data on emissions, airflow and traffic. Projects like IBM's Green Horizons forecast pollution, enabling proactive city interventions to improve air quality.
- **Smart Healthcare:** IoT applications in healthcare include remote patient monitoring and surgical robots. Robots, like disinfectant robots using ultraviolet light, enhance efficiency and safety, especially in managing infectious diseases like COVID-19.
- **Smart Cities:** Cities optimize resources using IoT sensors for traffic, waste management and energy efficiency. Smart Nation Sensor Platform in Singapore integrates IoT for urban planning, transportation and public safety, setting an example for smart cities.
- **Smart Retail:** IoT enhances retail operations, as seen in Amazon Go stores. IoT manages inventory, improves store efficiency and provides seamless shopping experiences, exemplifying how technology can transform the retail industry.



Role of IoT in Electrical Engineering

In electrical engineering, the Internet of Things (IoT) brings transformative advancements. Smart grids use IoT for efficient electricity distribution, while real-time condition monitoring and predictive maintenance enhance equipment reliability. Energy management benefits from smart home solutions, optimizing consumption. Industrial automation leverages IoT for process monitoring and control, boosting efficiency. Asset tracking, safety systems and security measures benefit from real-time monitoring in electrical systems. In power electronics, IoT enhances control and efficiency. Additionally, data analytics extracts valuable insights from the data generated by electrical systems. IoT's integration in electrical engineering contributes to reliability, efficiency and safety across residential, industrial and grid-scale applications.



Creativity

CORNER

“Creativity is just connecting things. When you ask creative people how they did something, they feel a little guilty because they didn’t really do it, they just saw something. It seemed obvious to them after a while.”

—Steve Jobs



"मैं अकेला नहीं, मेरी स्क्वाड मेरे साथ है।"

मैं अकेला नहीं, मेरी स्क्वाड मेरे साथ है,
दोस्ती की राहों में, सबका साथ है।



जीवन की राहों में, मेरे साथी हैं सभी,
चरणशील यात्रा में, हर कदम साथी।

जो चुनौतियों को हम मिलकर करें पार,
मेरे साथी, मेरी टीम हमेशा तैयार।



हंसी में हम साथ हैं, दुखों में हम साथ हैं,
सफलता की ऊँचाईयों में, हमेशा मेरे साथ हैं।

जीवन की कहानी में, मेरे साथी हैं मेरे साथ,
मैं अकेला नहीं, मेरी स्क्वाड मेरे साथ है।



सुभाष पाठक....



ONE DAY AT MUMBAI



In Mumbai's heart, where dreams take flight,
Beneath the sun's warm and bustling light,
A city alive with fervent might,
I pen a tale of one enchanting night.

The Arabian Sea whispers tales,
As city lights in the night sky trails,
Mumbai, a symphony of endless trails,
Where hopes and dreams set their sails.

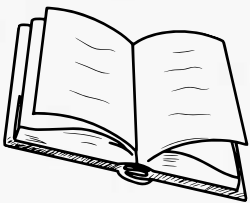
Along the shore, the Gateway stands tall,
A silent witness to the city's call,
In Colaba's lanes, echoes of history enthrall,
A dance of contrasts, both grand and small.

Dabbawalas weave through crowded streets,
In local trains, a rhythmic heartbeat,
Bazaars alive with vendors' feats,
A myriad of faces on diverse beats.

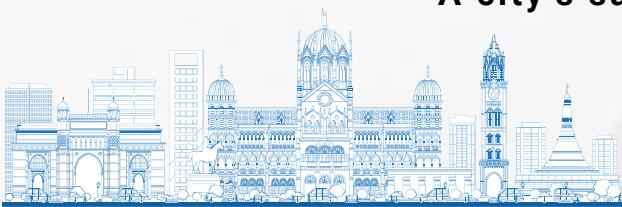
From Marine Drive to Chhatrapati Shivaji Terminus,
Each moment a page, each story a genesis,
In the city of dreams, where life's not a sinus,
Mumbai, a canvas, an artist's apparatus.

Bollywood's glamour, a starry night,
In Bandra's charm, where dreams alight,
Mumbai's rhythm, a pulsating light,
A kaleidoscope of colors in the night.

One day in Mumbai, a tale untold,
In its bustling streets, stories unfold,
Of resilience, warmth and hearts of gold,
A city's saga, timeless and bold.



—SHUBHAM SAKHARE



I'M STILL ALONE

**In the silence of the night, where shadows roam,
A solitary soul, whispering, "I'm still alone."
Beneath the moon's soft, melancholic tone,
The heart echoes a solitude of its own.**

**Through the corridors of time, I tread,
In the tapestry of memories, where I'm led.
The stars above, witness to the words unsaid,
"I'm still alone," a refrain in my head.**

**Yet in solitude, a quiet strength I find,
A journey of self, of the introspective kind.
Through valleys of solitude, the soul is refined,
"I'm still alone," but not in a bind.**

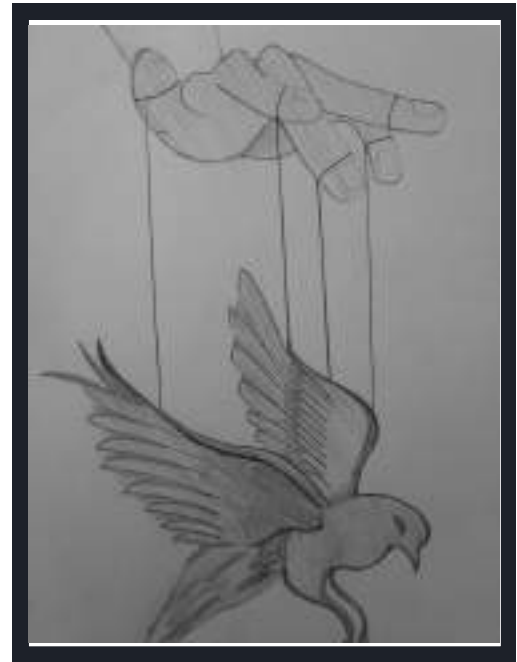
**In the vastness of solitude, a canvas wide,
Brushstrokes of resilience, on which I ride.
Alone, yet with dreams that in me reside,
"I'm still alone," with aspirations as my guide.**

**Loneliness may linger, a fleeting mist,
But within my heart, a resilience exists.
For in solitude, the soul persists,
"I'm still alone," but not desist.**

**Through the echo of silence, a voice is sown,
In the quietude, a strength is known.
"I'm still alone," but not overthrown,
For within myself, a universe is grown.**

-RAVIKANT TARARE

ARTS DONE BY STUDENT



Siya Meshram
(2nd Year)



Priti Chakole
(3rd Year)

ARTS DONE BY STUDENT

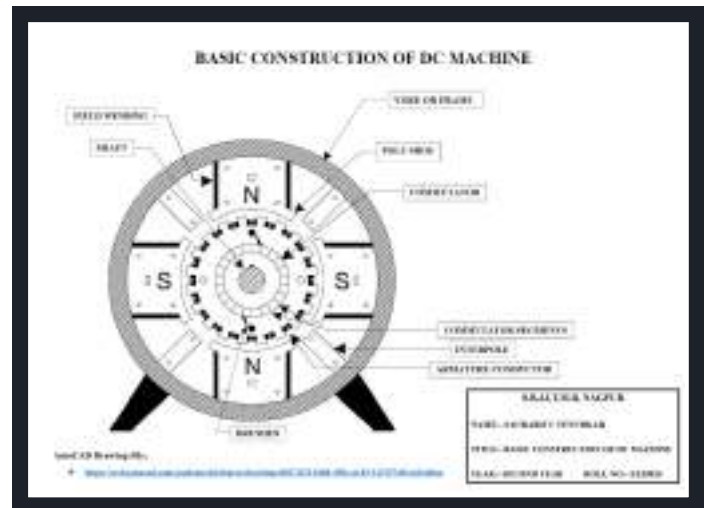


Shweta dahake
(3rd Year)



Nisarga kanade
(3rd Year)

TECHNICAL POSTER



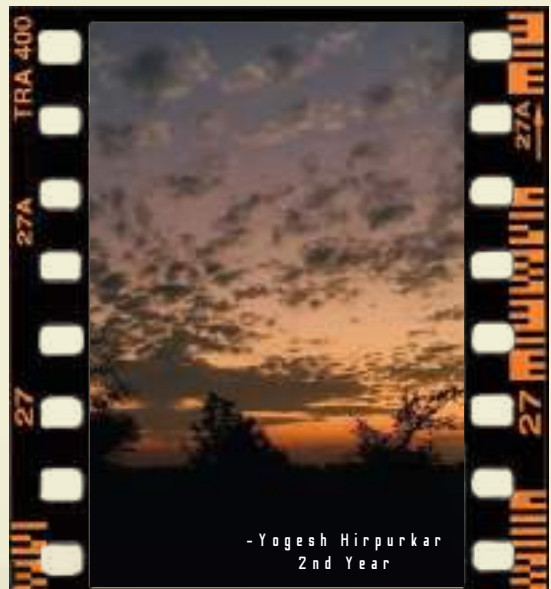
Saurabh Yenurkar
(2nd Year)



Piyush Tembhekar
(2nd Year)



Photography ✨ Corner ✨



-Yogesh Hirpurkar
2nd Year



- Piyush Tembhekar
2nd Year

ELECTROTECH



Visit our college website

<https://www.sbjit.edu.in/>

