



A T M E
College of Engineering



ANNUAL MAGAZINE

2024-25

Volume-2

TECHNO VISION



**Electrical and Electronics Engineering
Department**

ATME College of Engineering

13th km, Mysore – Kanakapura – Bangalore Road, Mysore – 570 028, Karnataka

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VISION OF THE DEPARTMENT

To create Electrical and Electronics Engineers who excel to be technically competent and fulfil the cultural and social aspirations of the society.

MISSION OF THE DEPARTMENT

- To provide knowledge to students that builds a strong foundation in the basic principles of electrical engineering, problem solving abilities, analytical skills, soft skills and communication skills for their overall development.
- To offer outcome based technical education.
- To encourage faculty in training & development and to offer consultancy through research & industry interaction.

PROGRAM SPECIFIC OUTCOMES (PSO'S)

- PSO1: Apply the concepts of Electrical & Electronics Engineering to evaluate the performance of power systems and also to control industrial drives using power electronics.
- PSO2: Demonstrate the concepts of process control for Industrial Automation, design models for environmental and social concerns and also exhibit continuous self- learning.

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CHIEF PATRONS



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Treasurer, ATMECE



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Batch 2022-26

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UJWAL V
Batch:2023-27



LAKSHMISHA M
Batch:2023-27



B BHUVANA
Batch:2023-27



DEEKSHITH U
Batch:2023-27

EDITORIAL NOTE

We are delighted to present this edition of “**Techno vision**”, the annual magazine of the Department of Electrical and Electronics Engineering. This issue brings together the collective spirit, accomplishments, and creativity of our vibrant department.

In this edition, we have captured a wide spectrum of content including **student achievements, faculty achievements, and various academic and co-curricular activities** conducted throughout the year. From workshops and seminars to competitions and outreach programs, the magazine reflects the active involvement of both students and faculty in enriching the academic environment.

The **articles section** offers insightful perspectives on emerging technologies, while the **art gallery showcases paintings, photography, and other creative expressions** by our talented students. We have also acknowledged the dedicated efforts of our **teaching and non-teaching staff**, whose support forms the backbone of our department.

This magazine also outlines the **vision and mission of the department**, along with contributions that align with our goals of academic excellence, innovation, and holistic development.

We sincerely thank everyone who contributed to this edition and hope it serves as a source of inspiration, knowledge, and pride for all readers.

ABOUT THE DEPARTMENT

The Department of Electrical & Electronics Engineering believes in imparting holistic education, where the student community is the focal point of the learning process. We offer a motivating environment for knowledge assimilation with a sense of social responsibility and human values. The department Undergraduate Program is Accredited by National Board of Accreditation (for second time up-to 2024-2025) and has well qualified and experienced faculty members with specialization in Power systems, Power Electronics, Energy Systems & Management, Computer Applications in Industrial Drives, Bio-Medical Signal Processing & Instrumentation and VLSI Design & Embedded systems. All the laboratories relevant to the program are established as per Visevesvaraya Technological requirement and the department is highly committed to bring-in the state of art laboratories to provide quality education for present challenging societal and industrial needs. We update and associate with training institutes to ensure that our students gain technical, interpersonal and communication skills.

To prepare our students for Industry-ready, the Department has MoU with Vidyut Automation, Innovaskill Technologies, Xponential orbit shifters, which provide Domain Specific Training in the area of Industrial Automation, Embedded system design, Cyber security in Power systems. This enables the students to exhibit their technical skills in the field of Automation, Embedded system design and Cyber security.

Affiliation



Accreditation



KEY MILESTONES

- Ms. Safeena Shazia Secured **8th Rank** in University with an average score of 84.55%
- **NAAC A+** grade Accreditation in the first cycle.
- **National Board of Accreditation** (Term-1: 2019-2022; Term-II: 2022-2025)
- **AICTE-MODROB Funding** for Cyber Security in Power Systems
- **Funding from KTECH-NAIN** for Project Portable Baby Incubator with Sleep Apnea Monitoring for Premature Infants
- **Best Student Project** under Karnataka State Council for Science and Technology (KSCST) for 3 Consecutive Years
- Financial Assistance for student Projects by VTU and KSCST.
- 98% and above Results in previous Six Graduating batches.
- **Inter Institute Project Winners**, Toycathon Semi-finalists, IIC-MHRD proposal, IICDC-DST participation etc.
- University level sports representation with **gold medal**.
- **Average Placement:** 70 % and above
- **Our Alumni are entrepreneurs** owning companies like FLARE LED, Madhu Electricals, Eagle Electricals, Manswi Infotech, nclues etc
- Alumni are working in premier MNCs like **Oracle, IBM, Infosys, L&T, SIEMENS, JP Morgan, Skit.ai, J K Maini Aerospace, FCI OEN Connectors Limited, Carelon global, Kirsloskar** etc and in government sector as Junior Engineers.

HOD Message



'Emitting Elite Energy'

The Department of Electrical & Electronics Engineering believes in imparting holistic education, where the student community is the focal point of the learning process. We offer a motivating environment for knowledge assimilation with a sense of social responsibility and human values. The prime attention is on Outcome Based Education (OBE) and Experiential Learning. The focus is on the activities to deliver outstanding theoretical knowledge base and in the development of technical and soft skills. We constantly assess our set-up for societal / industrial demand of skill sets for the students. We update and associate with training institutes to ensure that our students gain technical skills, thinking skills, analytical frameworks, interpersonal and communication skills.

Ms. Safeena Shazia (2011-2015) of our department has secured 8th rank in VTU. The VTU has recognized the department as a research centre to carry on research and masters programs. The experienced and qualified faculties are involved in the research activities in the following areas:

- ❖ EMI & EMC.
- ❖ Power Systems

TEACHING STAFF



Dr. Parthasarathy L
Professor and Head of
Department



Mr. Raghavendra L
Associate Professor



Dr. Shakunthala C
Associate Professor



Dr. Sathish K R
Assistant Professor



Dr. Praveen Kumar P
Assistant Professor



Mr. Shreeshayana R
Assistant Professor

TEACHING STAFF



Ms. Swapna H
Assistant Professor



Ms. Maria Sushma S
Assistant Professor



Mrs. Sowmyashree K S
Assistant Professor



Mrs. Swathi C A
Assistant Professor



Mrs. Kavyashree S
Assistant Professor

TECHNICAL STAFF



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Foreman



Mr. Kushal R
Instructor



Mr. M U Giridarshan
Instructor


SUPPORTING STAFF



Mr. Swamy T
Attender



Mr. Shashikumar C
Attender



FACULTY
CORNER

ODD
SEMESTER

Department Activities

A. Faculty Activities

A.1 Faculty Development Programme, AY 2024-25

SL. No.	Name of the Faculty	Title	Date	Organized by
1	Dr. Sathish K R	Innovation in Renewable Energy and its Application	9 th Sep to 12 th Sep 2024	SJCE, Mysuru
2	Mr. Raghavendra L			
3	Dr. Shakunthala C	6 days AICTE-ATAL FDP on Hands on approach for design and implement of Power Converters for Electric Vehicle Application	2 nd Sep to 7 th Sep 2024	NIE, Mysuru
4	Ms. Maria Sushma S			
5	Dr. Praveen Kumar M	FDP on Advanced Power System Analysis using ETAP	30 th Sep to 05 th Oct 2024	PESCE, Mandya
6	Mr. Shreeshayana R	Power Electronics Applications in Micro Grid using AI	9 th Dec to 14 th Dec 2024	Jain (Deemed-to-be) University, Bengaluru
		Data Analytic and Visualization with Power BI and Tableau	9 th Sep to 13 th Sep 2024	CMRIT, Bengaluru
8	Mrs. Swathi C A	FDP on Research Pathway in EV Technology and Power System	26 th Aug to 31 st Aug 2024	SJBIT, Bengaluru
9	Mrs. Kavyashree S			

A.2 Workshop, AY 2024-25

SL. No.	Name of the Faculty	Title	Date	Organized by
1	Mrs. Sowmyashree K S	Two-Day Hands-on Workshop on Microsoft Excel with AI and ChatGPT	29 th Nov to 30 th Nov 2024	Scroll-well
2	Ms. Swathi C A			

A.3 MOOC Certifications

SL. No.	Faculty Member	Course Title	Platform	Duration
1	Dr. Shakunthala C	Swayam -Introduction to Industry 4.0 and Industrial Internet of Things	NPTEL	12 Weeks Jul-Oct 2024
2	Ms. Maria Sushma S			
3	Mrs. Swathi C A			
4	Mrs. Kavyashree S			

A.4 Industrial Training:

SL. No.	Faculty Member	Training Division	Company	Duration
1	Mr. Shreeshayana R	Product Design, Embedded System Design, IC Design.	Qualcomm, Bengaluru	29 th Sep 2024

A.5 Publications Details: Scopus Indexed/Google Scholar Journals

Sl. No.	Author	Paper Title	Conference/Journal Details	Indexing
1	Dr. Shakunthala C	Voltage regulation and reactive power compensation in EV-PV Grid environment	15 th International Conference on Advances in Computing Control and Telecommunication Technologies, pp. 5969-5975	Scopus
2	Mr. Raghavendra L and Dr. Parthasarathy L	Analysis of Power Quality in Micro grid Systems with Renewable Energy Integration Utilizing Multi-Signal Discrete Wavelet Transform	International Journal of Renewable Energy Research, Vol.14, No.4, December 2024	Scopus
		Enhancing Power Quality in Microgrids with Integrated Distributed Energy Resources: A Comprehensive Analysis	Journal of Electrical Systems, Vol. 20 No. 3, 2024	Scopus

Sl. No.	Author	Paper Title	Conference/Journal Details	Indexing
3	Dr. Sathish KR	A Smart Fire Rescue Bot Using Sensors and Arduino IDE	4th International Conference on Sustainable Expert Systems, ICSES 2024 - Proceedingspp. 33-37	Scopus
		Harmonics and Voltage flicker investigation of different Electric Arc Furnace models on Power Systems	2024 International Conference on Electrical, Electronics and Computing Technologies, ICEECT 2024	Scopus
		Power Quality Evaluation and Improvement in Electric Arc Furnace using UPQC	International Conference on Intelligent Algorithms for Computational Intelligence Systems, IACIS 2024	Scopus
4	Ms. Swapna H	The impact of immunotherapy on cancer treatment outcomes: Mechanisms, efficacy, and future directions	Oncology and Radiotherapy	Scopus
5	Mr. Shreeshayana R	Analysis on density of states and ION/IOFF ratio of GaN/GaN-graphene nanoribbon tunnel FET for enhanced bio-sensing applications	PhysicaScripta, 2024, DOI: 10.1088/1402-4896/ad8c01, Impact Factor: 2.93, SJR: 0.441, H-index: 91	Scopus
		Utilizing Deep Learning for the Early Detection of Pneumonia in Chest X-Ray Images	Frontiers in Health Informatics, 2024, ISSN: 2676-7104, H-index: 7	UGC Care

Sl. No.	Author	Paper Title	Conference/Journal Details	Indexing
5	Mr. Shreeshayana R	Ergonomic Tremor Control Spoon for Parkinson's Disorder	ICCCNT, 2024, DOI: 10.1109/ICCCNT61001.2024.10726044	Scopus
6	Ms. Maria Sushma S	Impacts of Distributed Photovoltaic Units on Distribution System Power Quality	IJCRT Volume 12, Issue 9 th Sep 2024 ISSN: 2320-2882	Google Scholar
7	Ms. Kavyashree S	Equivalent Static and Response Spectrum Analysis for Plain Irregular and Composite structures using ETABS	Foundry Journal ISSN: 1001-4977 Volume 27 Issue 8	UGC Care

A.6 Industrial Consultancy Services

Department of Electrical and Electronics Engineering is offering consultancy services to Government and industry, private organizations and other external institutions/sources for providing solutions to challenging problems and the amount generated is as follows.

Sl. No.	Name of the Consultant	Name of Consultancy Project	Consulting/Sponsoring Agency	Revenue Generated (INR In Lakhs)	YEAR
1	Dr. Parthasarathy L Dr. Shakunthala C	1. 66kV Line Bay 2. 66kV Transformer Bay 3. 66/11kV 8MVA Transformer 4. 11kV Incomer 5. 11kV Feeders 6. Capacitor Bank 7. 66k V Potential Transformer & its Isolator 8. Earth Integrity & Stability 9. Station Auxiliary Transformer 10. ACBD, DCDB, Battery Charger etc	ELECTRO TECH, Mysuru	Rs.2,12,400/-	Aug-2024

A.7 Research Centre Details

The program has a Research Centre, to pursue Ph.D. The program has registered supervisors under VTU. Research supervisors are responsible for guiding and monitoring the progress of research scholars pursuing Ph.D. or Integrated Ph.D. programs.

Research Centre	Research Supervisor Name
Electrical and Electronics Engineering	Dr. Parthasarathy L
	Dr. Shakunthala C
	Dr. Sathish K R

A.8 Faculty Achievements AY 2024-25

Sl. No.	Year	Activities	Name of the faculty
1	Sep-23	BoE. Member, PESCE Mandya	Dr. Parthasarathy L
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4	Sep-24	Published a textbook titled "Fundamentals of Smart Grid Technologies and its Applications" by Scientific International Publishing House with ISBN No: 978-93-6674-735-4.	Mr. Raghavendra L, Dr. Sathish K R and Ms. Swapna H
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EVEN
SEMESTER

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STUDENT CORNER

Brain-Computer Interfaces: Controlling Machines with the Mind

Brain-Computer Interfaces (BCIs) are systems that enable direct communication between the human brain and external devices—without physical movement. Once confined to science fiction, BCIs are now helping paralyzed individuals control robotic arms, allowing thoughts to type text, and even enabling gaming with the mind. This article explores the science behind BCIs, their applications, and the remarkable future they are shaping.

Imagine typing a message, controlling a drone, or turning on lights—just by thinking. Brain-Computer Interfaces make this possible. BCIs decode brain signals and convert them into commands for machines. This revolutionary field merges neuroscience, machine learning, and signal processing, opening doors to assistive technology, enhanced human abilities, and even brain-to-brain communication.

2. How BCIs Work: A BCI captures brain activity, interprets it using AI algorithms, and sends commands to a connected device.

- **Sensors/Electrodes:** EEG (non-invasive) or implants (invasive) that capture brain signals
- **Signal Processing Unit:** Filters noise and amplifies brain signals
- **Machine Learning Models:** Decode patterns and translate them into actions
- **Output Device:** Wheelchair, robotic arm, computer, or game controller

BCIs allow people with spinal injuries or ALS to control computers, speak through text-to-speech systems, or move robotic limbs.

BCI-enabled gaming lets players control characters with their mind, creating immersive and hands-free experiences.

Mr. GANAPATHI S P
Batch 2022-26



BCIs are being explored to enhance decision-making and enable silent communication between soldiers in high-risk zones.

3.4 Brain-to-Brain Communication:

Recent research has enabled direct neural communication between two individuals, hinting at a future where thought sharing could be real.

- Brain signals are weak and noisy
- Mind-reading raises questions about privacy
- Surgical implants can be risky and expensive
- Brain data must be protected from misuse.

Companies like **Neuralink**, **Kernel**, and **NextMind** are pushing the boundaries of BCIs. In the future, BCIs could enhance memory, enable telepathy, control smart homes, or even help humans interact with AI systems at the speed of thought. The merging of humans and machines is no longer a question of “if” but “when.”

Brain-Computer Interfaces represent the next frontier of human-machine interaction. They break barriers for the disabled, redefine gaming, and challenge what it means to communicate. As the technology matures, BCIs could revolutionize not just how we use machines—but how we use our minds.

- [1] Neuralink, “Progress on Brain-Machine Interfaces,” 2024
- [2] Nature Neuroscience, “Non-Invasive Brain-Computer Interface Systems,” 2023
- [3] MIT Technology Review, “Brain-to-Brain Communication Is Real,” 2025

Smart Grids with AI-Driven Energy Management

Abstract: Smart grids integrate advanced digital communication, automation, and AI algorithms to optimize energy generation, distribution, and consumption. By leveraging real-time data from sensors, smart meters, and distributed energy resources, AI-driven energy management enhances grid reliability, reduces losses, and supports renewable energy integration. This article explores the working principles, applications, challenges, and future prospects of AI-powered smart grids.

Traditional electrical grids are evolving into smart grids capable of two-way communication between utilities and consumers. Artificial Intelligence (AI) enables predictive analysis, fault detection, and adaptive load management, making power systems more efficient and sustainable. With the growing share of renewable energy, AI ensures smooth balancing between supply and demand.

Smart grids use IoT-enabled devices and AI algorithms to monitor and control power flow in real-time.

- **Smart Meters:** Measure real-time electricity usage.
- **Sensors & IoT Devices:** Detect faults, voltage fluctuations, and grid conditions.
- **AI Algorithms:** Analyze historical and real-time data to optimize operations.
- **Distributed Energy Resources (DERs):** Solar panels, wind turbines, and storage systems integrated with the grid.

Adjusting consumer load during peak hours to prevent blackouts.

AISHWARYA N R

4AD22EE003



AI predicts transformer failures before they occur.

3.3 Renewable Integration: AI balances variable wind and solar power with storage systems.

3.4 Energy Theft Detection: Identifying unusual usage patterns to detect theft.

- High initial investment for infrastructure upgrades.
- Cybersecurity threats targeting connected devices.
- Data privacy concerns from smart meter readings.
- Need for skilled workforce in AI and power systems.
-

Future smart grids will integrate **digital twins** for real-time simulation, blockchain for secure energy transactions, and AI-driven microgrids capable of autonomous operation. This will enable resilient, self-healing grids even during disasters.

AI-powered smart grids represent the future of energy management, ensuring efficiency, reliability, and sustainability. As renewable energy adoption grows, AI will be key to achieving a greener and more resilient power system.

- [1] IEEE Smart Grid Initiative, 2024
- [2] Nature Energy, "AI in Power Systems," 2025
- [3] Schneider Electric White Paper on DERMS, 2024

Wireless Power Transfer for Electric Vehicles (EVs)

GAGAN KIRTHI P N
Batch 2022-26



Abstract: Wireless Power Transfer (WPT) for Electric Vehicles (EVs) enables charging without physical connectors by using electromagnetic fields to transmit energy between a charging pad and a receiver coil. This technology offers convenience, safety, and the potential for dynamic charging while vehicles are in motion. This article explores the working principles, applications, limitations, and future trends of WPT in EVs.

Electric vehicles are key to reducing carbon emissions, but charging infrastructure remains a challenge. WPT offers a contactless, automated, and efficient solution, eliminating the need for cables and allowing charging while driving on specially equipped roads. With advancements in coil design, power electronics, and alignment systems, WPT is moving toward large-scale adoption.

WPT uses magnetic resonance or inductive coupling to transfer energy wirelessly.

- **Transmitter Coil:** Embedded in the charging pad or road surface, connected to the power source.
- **Receiver Coil:** Installed under the EV to capture energy.
- **Power Electronics:** Convert AC to high-frequency signals and manage energy transfer.
- **Alignment System:** Ensures proper coil positioning for maximum efficiency.

EVs charge when parked over a pad (e.g., taxis at stands).

Roads embedded with coils allow continuous charging while driving.

Electric buses use WPT at bus stops for quick top-up charging.

Logistics companies charge delivery vans wirelessly for uninterrupted service.

- Misalignment reduces charging efficiency.
- Infrastructure cost for road-embedded coils is high.
- Electromagnetic interference concerns in dense urban areas.
- Efficiency is still lower than wired charging methods.

Future advancements include AI-based alignment systems, integration with Vehicle-to-Grid (V2G) technology, and standardization across EV manufacturers. Dynamic charging highways are being tested in the US, Europe, and Asia, aiming for large-scale adoption by 2035.

Wireless Power Transfer offers a revolutionary way to charge EVs, reducing range anxiety and enabling more flexible charging solutions. As efficiency and infrastructure improve, WPT could become a mainstream charging method worldwide.

- [1] SAE International J2954 Standard, 2024
- [2] Nature Electronics, "Wireless EV Charging Systems," 2025
- [3] IEEE Transactions on Transportation Electrification, 2024

Solid-State Transformers in Future Power Systems

Abstract: Solid-State Transformers (SSTs) are advanced power electronic devices that replace conventional transformers with semiconductor-based technology. They offer higher efficiency, voltage regulation, bidirectional power flow, and compatibility with renewable energy sources. This article examines their working, applications, challenges, and future role in smart grids.

Traditional transformers are robust but limited in control and adaptability. SSTs, built using high-frequency converters and advanced control algorithms, allow real-time voltage regulation, power quality improvement, and integration with distributed energy resources (DERs). They are a key enabler of next-generation smart grids.

SSTs use power electronics instead of magnetic cores for voltage conversion.

- **AC/DC Converter:** Converts incoming AC to DC.
- **High-Frequency Transformer:** Provides galvanic isolation at high efficiency.
- **DC/AC Converter:** Converts DC back to AC for the load.
- **Control System:** Manages voltage, frequency, and power flow.

3.1 Renewable Energy Integration: Enables smooth connection of solar and wind farms.

3.2 Electric Vehicle Fast Charging: Supports high-voltage DC charging directly.

3.3 Microgrids: Provides efficient voltage and frequency control in isolated grids.

DEEKSHITH U
Batch:2023-27



Adapts multiple voltage levels for trains.

- High manufacturing costs due to advanced components.
- Complex design and cooling requirements.
- Limited field deployment compared to conventional transformers.

Advancements in wide-bandgap semiconductors like SiC and GaN are improving SST efficiency and reliability. Future SSTs will be more compact, cost-effective, and fully integrated with AI-based grid management systems.

Solid-State Transformers will play a critical role in future smart grids, enabling flexible, efficient, and renewable-friendly power distribution.

[1] IEEE Power Electronics Society, 2025
[2] Nature Energy, "Solid-State Transformer Technologies," 2024
[3] CIGRÉ Technical Report, 2024

IoT-Enabled Predictive Maintenance in Electrical Machines

Abstract: IoT-enabled predictive maintenance uses connected sensors, data analytics, and machine learning to monitor the health of electrical machines in real time. By predicting failures before they occur, this technology reduces downtime, extends equipment life, and lowers maintenance costs. This article explores the working principles, applications, challenges, and future potential of predictive maintenance for electrical systems.

In industries, unexpected machine failures can cause costly production halts. Traditional maintenance is either reactive (fix after failure) or preventive (scheduled servicing). Predictive maintenance, powered by the Internet of Things (IoT), offers a smarter approach—continuously monitoring machine performance and predicting faults before they happen.

IoT sensors capture operational data from machines and transmit it for analysis.

- **Sensors:** Measure vibration, temperature, current, and acoustic signals.
- **IoT Gateway:** Collects and sends data to the cloud or edge processing unit.
- **Data Analytics & AI Models:** Detect anomalies and predict potential faults.
- **User Interface:** Displays health status and alerts operators.

Detecting bearing wear or insulation degradation.

UJWAL V
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Monitoring oil temperature and dissolved gas for early fault detection.
Predicting gearbox or pump failures in manufacturing.

Avoiding unexpected outages in utility networks.

- Initial cost of sensor deployment and IoT infrastructure.
- Data management complexity with large sensor networks.
- Cybersecurity risks from connected devices.
- Need for skilled data analysts and AI specialists.

The future will see **AI-powered edge computing** for faster fault detection, **digital twins** for real-time simulation, and full integration with **Industry 5.0** systems where humans and AI collaborate for maintenance decisions.

IoT-enabled predictive maintenance is transforming industrial operations, reducing unplanned downtime, and improving asset reliability. As costs drop and AI models improve, it will become a standard practice across electrical and manufacturing industries.

- [1] IEEE Internet of Things Journal, 2025
- [2] McKinsey & Company, "Predictive Maintenance in Industry 4.0," 2024
- [3] Siemens White Paper, 2024

HVDC Supergrids for Renewable Energy Transmission

Abstract: High-Voltage Direct Current (HVDC) supergrids are large-scale transmission networks designed to transfer electricity over thousands of kilometers with minimal losses. They are ideal for integrating remote renewable energy sources into urban demand centers. This article examines their working principles, applications, limitations, and future role in sustainable energy systems.

As the world shifts toward renewable energy, efficient long-distance transmission becomes essential. HVDC technology, with its lower line losses and better stability over long distances, is the backbone of future supergrids capable of interconnecting countries and continents.

HVDC systems convert alternating current (AC) to direct current (DC) for transmission, then back to AC at the receiving end.

- **Converter Stations:** Convert AC to DC (rectifier) and DC to AC (inverter).
- **Overhead Lines or Subsea Cables:** Carry high-voltage DC over long distances.
- **Control Systems:** Manage power flow and grid stability.

3.1 Offshore Wind Integration: Connecting large offshore farms to mainland grids.

3.2 Cross-Border Power Trading: Enabling electricity exchange between countries.

3.3 Remote Solar Farms: Delivering desert-generated solar power to cities.

3.4 Grid Stability: Supporting frequency regulation in interconnected networks.

- High cost of converter stations and infrastructure.
- Complex maintenance for underwater cables.

Political and regulatory challenges for multi-country grids

IMPANA K P

4AD23EE011



Future HVDC supergrids will integrate **multi-terminal systems**, enabling flexible routing of power across multiple regions. Combined with AI forecasting and storage technologies, they will form a global renewable energy network.

HVDC supergrids are a critical enabler for large-scale renewable energy adoption, ensuring efficient and stable transmission over vast distances. As technology advances and political cooperation grows, these supergrids could redefine global electricity distribution.

[1] CIGRÉ Technical Brochure on HVDC, 2025
[2] ABB Grid Systems Report, 2024
[3] Nature Energy, "HVDC for Renewable Integration," 2025

CREATIVE CORNER

PHOTOGRAPHY CORNER



ULHAS JOSHI

4AD23EE413

3rd Year



Image 1: Heritage of Karnataka

Place: Sri Sharadha Peetha, Shringeri, Karnataka

Device used: Samsung S21 fe ISO 20 42.0 25mm

Editing software used: Adobe Photoshop Lightroom



Image 2: Torch light Parade

Place: Mysore

Device used: Samsung S21 fe ISO 1600 F4.2 43mm

Editing software used: Adobe Photoshop Lightroom



Image 3: Stones That Speaks

Place: HAMPI, KARNATAKA

Device used: Samsung S21 fe ISO 32 F2.2 13mm 1/380s shutter speed

Editing software used: Adobe Photoshop Lightroom

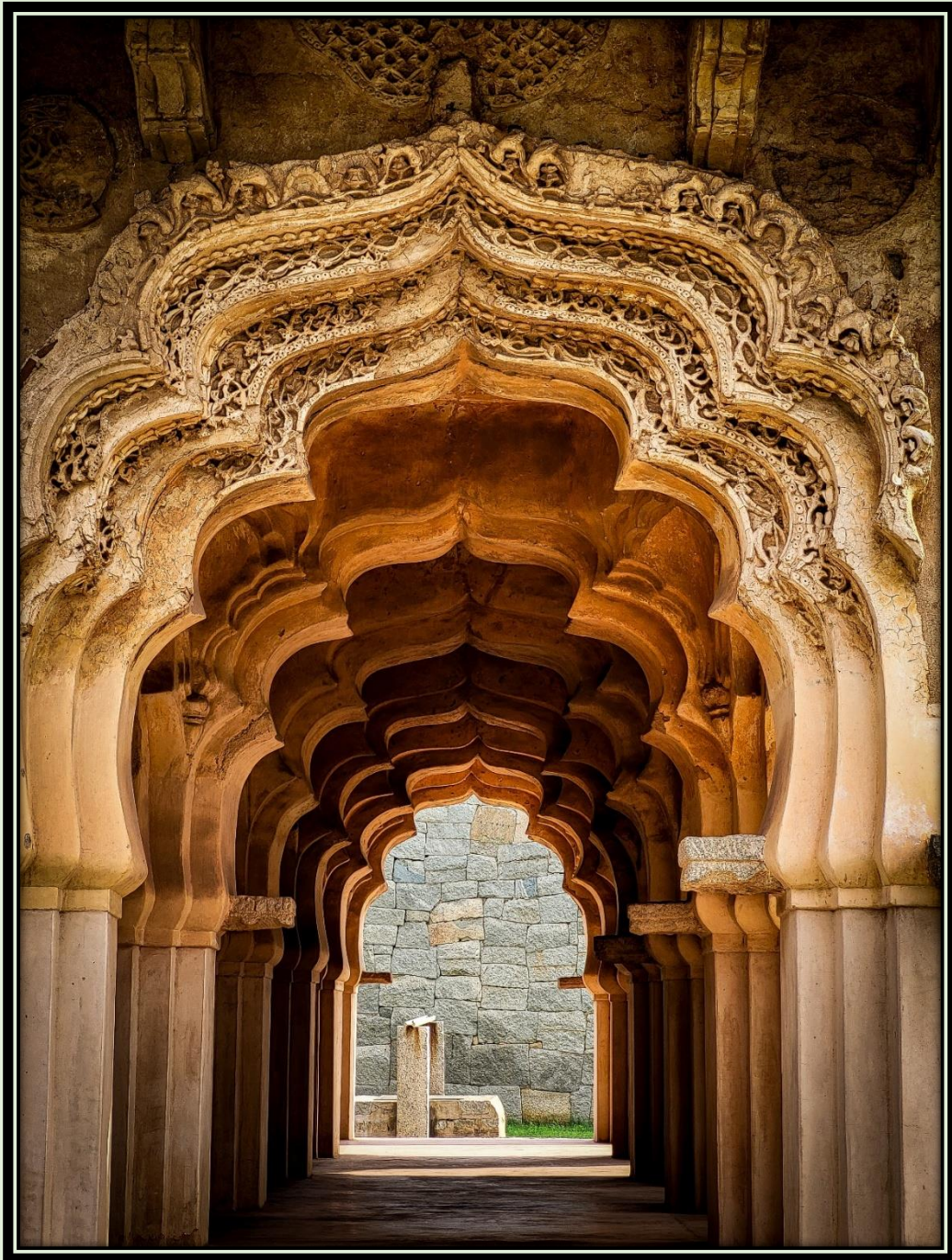


Image 3: ECHOS OF LEGACY

Place: LOTUS MAHAL, HAMPI

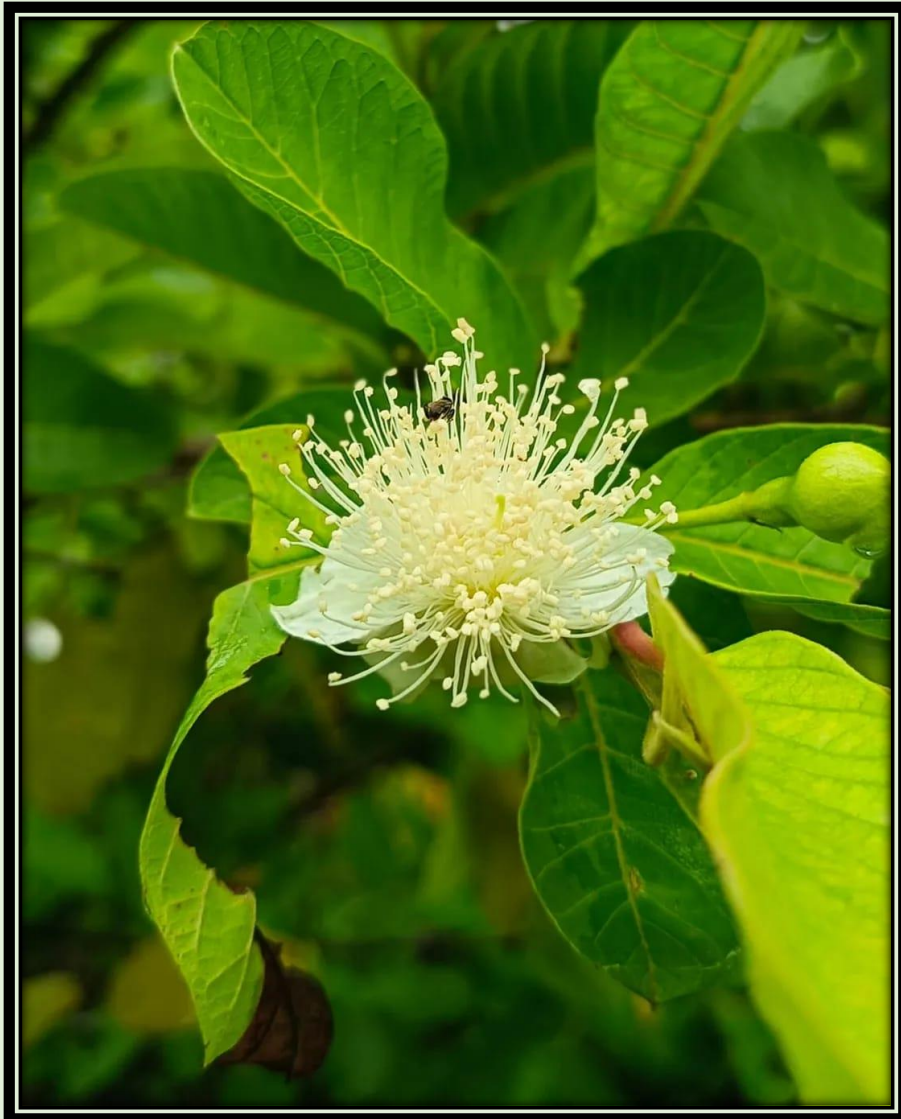
Device used: Samsung S21 fe ISO 25 F4.2 76mm

Editing software used: Adobe Photoshop Lightroom

DHRUVA TEJ

4AD24EE405

2nd Year



Type: Nature Photography (Close-up / Macro)

Medium: Digital Photography

Message: Showcases the delicate beauty of a guava flower, symbolizing purity, freshness, and the hidden wonders of nature.

LAKSHIMISHA M

4AD24EE408

2nd Year



Type: Architectural / Travel Photography

Device: iPhone 7 (Edited with Adobe Lightroom)

Place: Mysore Palace, Karnataka

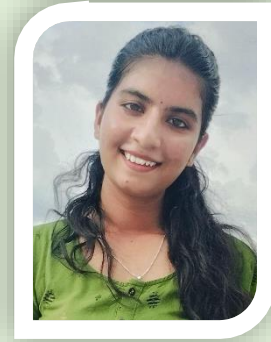
Message: Capturing the royal silhouette of Mysore Palace against a vibrant sunset sky, this image reflects heritage, timeless beauty, and cultural pride.

ARTIST CORNER

SUMA S ROLLI

4AD23EE042

2nd Year



Type: Portrait Sketch (Traditional Folk Art Inspired)

Medium: Pencil on Paper

Message: Captures the spirit and intensity of Kantara-inspired folk traditions, reflecting raw human emotion and deep cultural roots.

ALUMNI VOICE

Department of EEE

VARSHA H N

Greetings to all.

Our college provides excellent infrastructure and a vibrant learning atmosphere. The faculty members are highly supportive and take great initiative in nurturing both knowledge and skills among students. In addition to academics, the wide range of activities on campus helped me enhance my talents and achieve holistic development. Being part of ATME has truly been a valuable and enjoyable experience.

SANJANA S

Greetings to all.

I am deeply grateful to all the faculty members of the college for their constant efforts and unwavering support. Reflecting on my four years on campus, I realize that the experience not only shaped me into a better graduate but also prepared me in unexpected ways for my professional journey. Alongside excellent academics, I had the privilege of participating in various socio-cultural events, which instilled in me the importance of contributing to society with strong human values. I truly cherish every moment spent at the campus, and my graduation at ATMECE has been an enriching and memorable journey.

MOHAMMED IMADUDDIN

Greetings to all.

I truly believe that “Genesis” is the right word, and for me, ATMECE is where it all began. While graduation may be just a certificate, the journey that shaped us to go the extra mile cannot be captured in a few words. Beyond the lecture halls, labs, and world-class infrastructure, it was the guidance of our mentors and the college’s vision to equip students with industry-ready skills that made the real difference.

Having worked in the industry for a couple of years now, I realize how much knowledge, discipline, and professionalism ATMECE instilled in me. I remain deeply grateful to my alma mater and mentors for their unwavering dedication and selfless efforts.

SOUNDARYA B T

Greetings to all.

ATMECE has been an excellent platform that enabled me to study, grow, and excel. I carry fond and vivid memories of my Alma Mater, whose guidance and mentorship in countless ways greatly shaped me and prepared me for the world beyond the campus. I sincerely thank the ATMECE Alumni Network for connecting the dots on the ATMECE canvas and making each of us an integral part of its beautiful journey.

ABHIJITH SUBRAMANI

Greetings to all,

New beginnings are always special, and so has been my journey. I co-founded Nclues and am also actively involved in voluntary services through the Rotary Club. In a short span of time, I have come a long way, carrying with me the pearls of wisdom I gathered at ATMECE.

The institution gave me strong roots to pursue my dreams and passion, while encouraging me to explore my potential in every sphere of life. I am deeply grateful to my Alma Mater for

NAVANEET YAVAGAL

Greetings to all.

I am currently working as a Lead - Operations Engineer at EmQos. I extend my heartfelt gratitude to the Department Head, faculty members, and the Training & Placement Cell for their invaluable support in shaping my overall development. Over the past decade, the institute has scaled great heights and established itself as one of the most prestigious institutions in the state, imparting holistic education and driving excellence through its in-house expertise. I remain ever thankful to my Alma Mater for everything it has given me.