IEEE PES Power & Energy Society® BANGALORE CHAPTER

BNM Institute of Technology

An autonomous Institution under VTU

IEEE Power and Energy Society (SBC14831H)

List of Events Organized during 2024-25

Sl. No	Event Title	Date	No. of Participants
1	Power Riddles	17th October, 2025	60
2	IEEE Event Plan Discussion	29th September, 2025	25
3	IEEE Membership Drive 2025	25th September, 2025	27
4	Electrothon - A Hardware Hackathon	29th August, 2025	110
5	BMRCL Visit	9th July, 2025	56
6	EV Internship	2nd to 20th June, 2025	56
7	Hydro Project and Substation visit, Perigalkuthu, Kerala	10th, 11th and 12th April, 2025	40
8	Vtools reporting	28th March, 2025	38
9	Mathemagiks	14th March, 2025	123
10	Technical talk on “Clean Energy Transition and Autonomous Grid”	23rd November, 2024	102
11	Inauguration of IEEE BNMIT, Power and Energy Society Student Branch Chapter	23rd November, 2024	102

IEEE PES BNMIT Office Bearers

Sl. No	Name	Position Held
1	Deekshitha K	Chair
2	Shaswatha Varadhan	Vice-Chair
3	Sanjana Sulibhavi	Secretary
4	Shreelakshmi	Treasurer
5	Nimisha T	Webmaster

Faculty Advisor: Dr. Madhu S

B.N.M. Institute of Technology

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Department of Electrical & Electronics Engineering

Report on event conducted on POWER RIDDLE by BNMIT IEEE PES SBC

Event Date: 17th October 2025

Time of the Event: 11.00 AM to 2.30 PM

Participants:60

Venue: N206, BNMIT

Event name: POWER RIDDLE

Team size: 2-3

Entry fee: 100

Total number of teams: 20

Budget allotted:5000

Prize money: 1500

Number of rounds: 2

EVENT DESCRIPTION:

The Power Riddle competition, organized by IEEE PES Student Branch Chapter, was an engaging and intellectually stimulating event designed to challenge participants' logical reasoning and technical understanding in a fun crossword format.The event began with a brief introduction, followed by distribution of crossword grids that contained 19 technical words related to the field of electrical and electronics engineering. Each correct word carried 2 marks, and teams had to complete the entire grid within the given time limit.

Participants were allowed to use a maximum of three clues, with 2 marks deducted for every clue used. The competition encouraged strategic thinking, teamwork, and efficient time management. The top five teams with the highest scores qualified based on their speed and accuracy.In case of a tie, preference was given to the team that used fewer clues or submitted earlier, ensuring a fair and competitive environment. The event concluded with appreciation for all participants for showcasing their enthusiasm and analytical skills.

WINNER DETAILS

Place	Winners' Names	Sem & Branch
1st Place	Sharin Cherian	V Sem EEE
	Anuj Vaman Naik	VSem EEE
	Ashutosh M Sharma	V Sem EEE
2nd Place	Uday shetty	III Sem, EEE
	Adithya Yagnamurthy	III Sem, EEE
	Abhiram	III Sem, EEE

EVENT POSTER

PHOTO GALLERY

OUTCOMES OF THE EVENT:

- Participants improved their understanding of electrical and electronics concepts through engaging crossword-based problem solving.
- The event sharpened students' reasoning and analytical skills by challenging them to connect clues with technical terms.
- Teams learned to coordinate effectively under time pressure, enhancing teamwork and collective decision-making.
- The rule-based format encouraged smart clue usage, promoting accuracy, speed, and strategic problem-solving.

Dr. Madhu S
Associate Professor & BNMIT IEEE PES
Dept. of EEE

Dr. K Venkatesha
Professor & Head
Faculty Advisor, Dept. of EEE

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Department of Electrical & Electronics Engineering

Report of IEEE Week Events Discussion organized by BNMIT IEEE Power and Energy Society (PES) student chapter and BNMIT IEEE Student Branch Chapter

Event Date: 29th September 2025

Time of the Event: 10.30PM to 11.10 PM

Venue: A209, Auditorium Building, BNMIT

Overview:

The IEEE Week Event Discussion was held on 29th September 2025 with the primary agenda of finalizing the dates for the upcoming IEEE Week Celebration. During the meeting, members shared their views and deliberated on suitable options. After the discussion, the celebration schedule was confirmed. IEEE Week will officially be conducted from 8th October 2025 to 18th October 2025.IEEE Week Event Discussion was conducted on 29th September 2025. The main agenda was to discuss the dates for the IEEE Week Celebration which is to be held during 8th October 2025 to 18th October 2025.

Objective:

To finalize the dates for the IEEE Week events from 8th October 2025 to 18th October 2025.

PHOTO GALLERY

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Department of Electrical & Electronics Engineering

Report of IEEE Membership Drive September 2025 organized by BNMIT IEEE Power and Energy Society (PES) student chapter and BNMIT IEEE Student Branch Chapter

Event Date: 25th September 2025

Time of the Event: 1.00 PM to 2.10 PM

Venue: Ground Floor, Auditorium Building, BNMIT **Overview:**

The IEEE Membership Drive was successfully conducted on 25th September 2025 for the students of the 2025–2029 batch. The event aimed to familiarize the newcomers with the IEEE organization, its vision, and its global presence in advancing technology for humanity. During the session, students were introduced to the different technical and non-technical societies under IEEE, each offering unique learning and networking opportunities. The drive highlighted how IEEE membership nurtures students' skills, not only in academics and research but also in leadership, teamwork, and innovation. It further emphasized the benefits of being part of a worldwide professional community, gaining access to resources, conferences, and collaborations that enhance personal and professional growth.

Objective:

- To encourage students to become IEEE members
- To introduce the various IEEE societies
- To explain the role of IEEE in personal and professional growth
- To create awareness about global exposure and opportunities
- To motivate students to engage in collaborative activities

Conclusion:

The IEEE Membership Drive not only introduced students to the wide range of opportunities offered by IEEE but also encouraged them to join a global community of innovators and leaders. The session motivated students to take part in future activities and

to utilize IEEE as a platform for enhancing their academic growth, professional skills, and personal development.

PHOTO GALLERY

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Department of Electrical & Electronics Engineering

Report of Electrothon – National Level Hackathon organized by BNMIT IEEE Power and Energy Society (PES) student chapter

Event Date: 29th August 2025

Time of the Event: 7.30 AM to 8.00 PM

Participants: Students from B.E., B.Tech, M.Tech, MCA

Venue: Ground Floor, Auditorium Building, BNMIT

Number of Participants: 110

Duration: 14 Hour Chief

Guests:

Overview:

The Department of Electrical and Electronics Engineering successfully organized Electrothon, a National Level 14-hour Hackathon aimed at fostering problem-solving, critical thinking, and innovative prototyping among engineering students. This theme-based hackathon brought together budding engineers, researchers, and innovators from across the country to develop cutting-edge solutions in various domains. The event encouraged creativity, collaboration, and technical excellence, providing participants a platform to address real-world energy challenges through technological innovation.

Objectives:

- The hackathon was designed to foster interdisciplinary collaboration among participants from various domains.
- It focused on enhancing practical skill development through hands-on problem solving and prototyping.
- The event promoted a spirit of entrepreneurship, encouraging participants to think beyond the project and towards viable solutions.
- It aimed to strengthen academia-industry ties by bridging the gap between theoretical knowledge and industry needs.
- Participants worked on real-world challenges related to energy and sustainability.

Event Structure

- Teams of 2 to 4 participants had registered with a nominal fee, categorized based on IEEE/Non-IEEE/PES membership.
- The Preliminary Round included an online screening challenge to shortlist the top 31 teams.
- The Final Round was conducted as an on-site 12-hour hackathon, where participants worked on real-time problem statements under the specified themes.
- The final solutions were evaluated by a panel of judges from academia and industry, based on the following criteria:
    1. Innovation and originality
    2. Feasibility and cost-effectiveness
    3. Sustainability and potential for real-world implementation

Publicity:
The publicity for the event was started in May 2025 through which 117 teams registered for the Preliminary round. After the Online screening, 32 teams registered for the final round held 29th August 2025.

Poster of the Event

Expected Outcomes:

- Developed prototype-level solutions addressing challenges in energy and sustainability**.**
- Enhanced technical and teamwork skills among the participants.
- Strengthened collaboration between academia and industry**.**
- Created a repository of innovative ideas for potential incubation and further research**.**

Conclusion:

The Electrothon - National Level Hackathon provided a dynamic platform for participants to apply advanced technologies to real-time problem statements in energy and sustainability. The event led to the development of functional prototype-level solutions, showcasing the participants' technical acumen, creativity, and problem-solving abilities. It also encouraged interdisciplinary collaboration, allowing teams to integrate diverse technical skills and knowledge to design feasible and innovative solutions with potential for real-world implementation.

Beyond technical achievements, the hackathon played a crucial role in fostering soft skills such as teamwork, communication, and project management among participants. It also served as a catalyst for promoting a startup and innovation culture**,** inspiring students to think beyond academic boundaries. The inclusion of industry experts for mentoring and evaluation further strengthened academia-industry connections**,** creating opportunities for future collaboration.

PHOTO GALLERY


GPS Map Camera
Bengaluru,Karnataka,India
27th Cross Road, Banashankari Stage 2,
Bengaluru, Karnataka 560070, India
Lat 12.922328, Long 77.566672
08/29/2025 10:24 AM GMT+05:30
Note : Captured by GPS Map Camera


GPS Map Camera
Bengaluru,Karnataka,India
27th Cross Road, Banashankari Stage 2,
Bengaluru, Karnataka 560070, India
Lat 12.922316, Long 77.566640
08/29/2025 10:06 AM GMT+05:30
Note : Captured by GPS Map Camera


GPS Map Camera
Bengaluru,Karnataka,India
27th Cross Road, Banashankari Stage 2,
Bengaluru, Karnataka 560070, India
Lat 12.922032, Long 77.567787
08/29/2025 11:41 AM GMT+05:30
Note : Captured by GPS Map Camera


GPS Map Camera
Bengaluru,Karnataka,India
27th Cross Road, Banashankari Stage 2,
Bengaluru, Karnataka 560070, India
Lat 12.922333, Long 77.566650
08/29/2025 10:01 AM GMT+05:30
Note : Captured by GPS Map Camera

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Department of Electrical & Electronics Engineering

Report on Industrial Visit to Bangalore Metro Rail Corporation Limited (BMRCL)

Date: 09/ 07 / 2025 Duration of Activity (in Hrs): 6Hrs No of Students Participated: 56, No of Faculty Participated: 2 Mode of Session Delivery: Offline

Course Outcomes

- Ability to correlate theoretical concepts of electrical and electronics engineering with real-world metro rail applications.
- Improved understanding of large-scale infrastructure management, commercial strategies, and operational safety.
- Development of practical awareness regarding modern urban transport technologies and their challenges.

Introduction

As part of the academic curriculum, the 5th semester students of the Department of Electrical and Electronics Engineering organized an industrial visit to Bangalore Metro Rail Corporation Limited (BMRCL). The visit aimed to provide students with practical exposure to large-scale infrastructure operations and an understanding of metro rail systems, both from the technical and commercial perspectives.

The visit was held on 9th July 2025 at the BMRCL Operation and Maintenance Wing, Baiyappanahalli, Bengaluru. Faculty members accompanied the students and ensured the smooth coordination of the program.

Details of the Visit

1. Orientation and Commercial Aspects

The session began with an introduction to BMRCL's services and its contribution to Bengaluru's urban transport system. Students were briefed about the commercial aspects of metro operations, including various ticketing methods, offers, and passenger-friendly schemes such as smart cards, group travel concessions, and mobile app-based ticketing. The officials highlighted how these initiatives improve customer convenience and encourage greater public use of metro services.

2. Visit to the Metro Control Room

The students were then taken to the Centralized Metro Control Room, which serves as the nerve center of metro operations. The officials explained the functioning of the control room,including:

- Real-time monitoring of train movement across different metro lines. - Safety protocols and signaling mechanisms to ensure smooth train operations. - Communication systems that link train operators, station staff, and control room officials.
- Emergency handling mechanisms for passenger safety and operational reliability.

This session provided valuable insights into the integration of advanced technologies in urban transport management.

3. Visit to Maintenance Facility

The students were shown the metro train maintenance depot, where they observed the inspection, cleaning, and servicing of metro coaches. The working staff explained routine checks carried out to maintain safety, reliability, and efficiency of the trains.

Learning Outcomes

- Gain exposure to the commercial management aspects of a large public transport system.
- Understand the technological and operational workflow of a metro rail system. - Appreciate the importance of safety, real-time monitoring, and preventive maintenance in large-scale transport infrastructure.
- Relate theoretical concepts of power systems, control, and automation to real-world applications.

Conclusion

The visit to Bangalore Metro Rail Corporation Limited (BMRCL) was an enriching experience for the 5th semester students. It not only deepened their technical knowledge but also provided awareness about the practical challenges and solutions in managing a modern urban metro system. The faculty and students expressed their gratitude to the BMRCL officials for their detailed guidance and support during the visit.

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Department of Electrical & Electronics Engineering

Report of Technical Talk organized by BNMIT IEEE Power and Energy Society (PES) student chapter

Event Date: 2nd June to 20th June 2025

Time of the Event: 9.30 AM to 4.00 PM

Participants: 5th sem EEE Students (2023-2027 Batch)

Venue: N004, New Building, BNMIT

Target Audience / Number of Participants: 56- 5th Sem Duration: 3 weeks

Resource Persons: R. Sasikumar (Jr. R&D Engineer), Sudhakar V (Junior Project Engineer), A. Arun Praveen Raj (Project Engineer) **Overview:**

The Department of Electrical and Electronics Engineering organized a three-week internship program for the 5th semester students in collaboration with *Pantech Solutions India Pvt. Ltd.* The training focused on **Electric Vehicle (EV) Design and Simulation**, integrating industry-relevant tools such as **MATLAB**, **Ansys**, and **Fusion 360**. This program aimed to bridge the gap between academic learning and industrial applications by providing students with practical exposure to modern engineering design and analysis tools.

The internship was structured to combine theoretical knowledge with extensive hands-on sessions, including problem-solving tasks, collaborative group activities, and software-specific hackathons.

Objectives

- To introduce students to the fundamentals of Electric Vehicle systems and design.
- To familiarize students with professional tools like MATLAB, Ansys, and Fusion 360 used in EV modeling and simulation.
- To provide practical exposure through hands-on sessions and software-based design challenges.
- To encourage teamwork and innovation through group tasks and hackathons.
- To enhance problem-solving and design-thinking skills relevant to modern engineering practices.

Event Structure

The internship was divided into three weekly modules, each focusing on one primary software platform:

Week 1 – MATLAB for EV Simulation

- **Concepts Covered:** Modeling of electric vehicle systems, control algorithms, battery simulation, power electronics.
- **Activities:** Theoretical sessions, hands-on MATLAB Simulink exercises, problem-solving, mini project and a MATLAB hackathon.

Week 2 – Ansys for Thermal and Structural Analysis

- **Concepts Covered:** Motor thermal analysis, battery heat management, structural integrity under load.
- **Activities:** Ansys Workbench demonstrations, simulation tasks, real-time case studies, group- based problem-solving and Ansys hackathon.

Week 3 – Fusion 360 for Mechanical Design

- **Concepts Covered:** 3D modeling of EV components, assembly design, dynamic simulations.
- **Activities:** Design tasks using Fusion 360, component modeling challenges, team-based activities and a design hackathon.

Resources Required

- Licensed software access for MATLAB, Ansys, and Fusion 360.
- High-performance computers for smooth execution of simulations.
- Projectors, whiteboards, and technical manuals for concept delivery.
- Resource persons/trainers from Pantech Solutions with domain expertise.
- Workspace for collaborative group activities and hackathons.

Expected Outcome

By the end of the internship, students were expected to:

- Understand the fundamental and applied aspects of Electric Vehicle design.
- Gain proficiency in simulation tools and design software relevant to the EV industry.
- Apply theoretical knowledge to real-world problems through structured activities.
- Demonstrate team collaboration, creativity, and technical problem-solving skills.
- Develop prototypes or simulation models using industry-standard tools.

Conclusion:

The internship program provided an immersive learning experience, combining theoretical foundations with real-time applications. It enabled students to enhance their software proficiency, technical understanding, and innovation mindset, aligning with current trends in EV technology.

REPORT on

Industrial Visit to

(A) Small Hydro Electric Project, Poringalkuthu, Kerala

(B) KSEB Nemmara 110 kV Substation, Kerala

Start Date: 10/ 04 / 2025 to 13 / 04 / 2025

Duration of Activity (in Hrs): 4 days

No of Students Participated: 36, No of Faculty Participated: 2 No of External Participants: 02, Expenditure Amount: Rs. 1, 81, 217 (One Lakh Eighty One Thousand Two Hundred Seventeen) Mode of Session Delivery: Offline

Objective:

To provide students with practical exposure to the operation, layout, and equipment of a high-voltage electrical substation and enhance their understanding of power transmission and distribution systems.

Benefit in terms of Learning / Skill / knowledge obtained:

Students gained hands-on understanding of substation components, protection systems, and real-time power distribution operations, bridging the gap between theoretical concepts and practical applications.

About the Industrial Visit:

(A) Small Hydro Electric Project, Poringalkuthu, Kerala

Contact Person: Mr. Aravind, Sub-Engineer, KSEB, Poringalkuthu, Kerala

An industrial visit to the Small Hydro Electric Project at Poringalkuthu, Kerala was organized on on 11 / 04 / 2025, for the VI sem students of Electrical & Electronics Engineering Department, BNMIT.
The objective of the visit was to enhance students' understanding of renewable energy systems, particularly hydroelectric power generation, and to provide them with real-world exposure to the operation of a hydroelectric power station.

The Poringalkuthu Hydro Electric Project, operated by the Kerala State Electricity Board (KSEB), is situated in the Thrissur district and utilizes the tailrace water from the Sholayar Hydro Electric Project.

With an installed capacity of [insert capacity, e.g., 32 MW], this small hydro project plays a crucial role in Kerala's green energy initiatives by harnessing the hydropower potential of the Chalakudy River.

Upon arrival, the students were briefed by the project engineers about the history, significance, and technical specifications of the plant. The visit included a guided tour of the power house, control room, turbine section, and switchyard. The students were able to closely observe the operation of Francis turbines, generators, excitation systems, and the governor mechanism used for regulating water flow and speed.

The control room staff explained the automation system used for monitoring and controlling plant operations, including the protection schemes, synchronization with the grid, and energy metering systems. The role of civil structures like dams, spillways, and penstocks in the overall plant performance was also elaborated.

A key takeaway for the students was the sustainable and eco-friendly nature of small hydroelectric projects and their contribution to the state's renewable energy targets. The interactive session that followed gave students the opportunity to ask questions about efficiency improvements, load dispatching, environmental impacts, and maintenance practices in hydropower stations.

This industrial visit proved to be a valuable learning experience, bridging theoretical knowledge with field application and giving the students insight into the challenges and opportunities in the renewable energy sector. It also inspired discussions around careers in sustainable energy and the future scope of small-scale hydropower in India.

Group Photo-1: Students of VI sem EEE, BNMIT with faculties at Small Hydro Electric Project, Poringalkuthu, Kerala

Group Photo-2: Students of VI sem EEE, BNMIT with faculties at Small Hydro Electric Project, Poringalkuthu, Kerala

(B) KSEB Nemmara 110 kV Substation, Kerala

Contact Person: Mr. Sreejith, Executive Engineer, Nemmara, KSEB

An industrial visit to the 110 kV Nemmara Substation, located in Palakkad district, Kerala, was conducted on 12 / 04 / 2025 for theVI sem students of Electrical & Electronics Engineering Department, BNMIT. The visit aimed to provide students with hands-on exposure to electrical power transmission and distribution systems and to supplement their academic curriculum with real-world engineering practices.

The Nemmara Substation is a vital node in the Kerala State Electricity Board (KSEB) transmission network, facilitating the regulation and distribution of electricity to surrounding rural and semi-urban areas. On arrival, the students were welcomed by the substation engineers and staff, who gave a brief introduction to the operational importance of the substation and its role in grid stability.

The students were then taken on a guided tour of the substation, where they observed and learned about critical components such as:

- **Power Transformers** (110/11 kV step-down),
- **Current and Potential Transformers** for protection and metering,
- **Circuit Breakers** and **Isolators** for fault handling and maintenance isolation,
- **Busbars**, **Lightning Arrestors**, and **Earthing systems**,
- **SCADA Systems** and **Relay Panels** inside the control room.

The engineers explained the power flow path from transmission to distribution, fault detection methods, system automation, and safety protocols followed during maintenance operations. Students were also introduced to substation layout planning and the significance of clearances and insulation in high-voltage environments.

The visit concluded with an interactive Q&A session, where students clarified their doubts and discussed career opportunities in power sector utilities. The experience proved immensely beneficial in enhancing the practical understanding of electrical power systems and gave students a clearer perspective on how theoretical knowledge is applied in field operations.

Overall, the industrial visit to the Nemmara Substation was a highly educational and enriching experience for the students, providing them with valuable insights into the functioning and management of modern electrical substations.

Group Photo-1: Students of VI sem EEE, BNMIT with faculties at Nemmara 110 kV Substation, KSEB

Group Photo-2: Students of VI sem EEE, BNMIT with faculties at Nemmara 110 kV Substation, KSEB

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Department of Electrical & Electronics Engineering

Report on vTools Reporting by Anaghaa R

Event Date: 28th March 2025

Time of the Event: 3.15 PM to 4.45 PM

Venue: N401, BNMIT

Event name: VTOOLS REPORTING

EVENT DESCRIPTION:

A training session was organized by Anaghaa R, the previous IEEE BNMIT Student Chair, for all office members and society chairs. The session focused on giving information about the usage of IEEE vTools effectively, how to update them, and how to track analytics. Apart from that, various kinds of events that can be held under IEEE societies were discussed. The workshop was created with the purpose of improving the operating effectiveness of IEEE BNMIT and equipping the members with appropriate skills to deal with their respective roles efficiently.

OUTCOMES OF THE EVENT:

- Enhanced knowledge of IEEE vTools usage among office bearers and society chairs.
- Improved skills in updating and managing event records on IEEE vTools.
- Better understanding of roles and responsibilities within the student branch and societies.
- Empowered members with practical tools to enhance professional and organizational performance.
- Encouragement of proactive engagement in future IEEE initiatives.

EVENT POSTER:

B.N.M. Institute of Technology

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Department of Electrical & Electronics Engineering

Report on event conducted on International Day of Mathematics(pi-day) by BNMIT IEEE VTS & IEEE PES Student Branch Chapters

Event Date: **14th March 2025**

Time of the Event: **2.00 PM to 4.30 PM**

Participants:123

Venue: **N004, BNMIT**

Event name: Mathemagikz
Team size: 2-3
Entry fee: 100
Total number of teams: 41
Budget allotted: 4k
Prize money: 2.5 k for 1st place, 1.5 k for 2nd place Number of rounds: 2

EVENT DESCRIPTION:

The competition consisted of two rounds, which tested participants with a mix of math questions and number puzzles that tested logic, pattern recognition, and problem-solving skills. There was a time limit of 30 minutes per round.

In the first round, each team was given 30 mathematics question to solve. They were required to solve the basic maths questions and mark the answers in the OMR sheet. Based on their performance, teams were shortlisted for the next round.

The second round saw 15 selected teams tackling a sudoku where missing numbers were represented by letters, which had to be determined by solving mathematical questions. These questions covered arithmetic, algebra, trigonometry, and other basic mathematics concepts. The first team two teams to successfully completely solve the sudoku were declared as the winners.

WINNER DETAILS

Place	Winners' Names	Sem & Branch
1st Place	Manya N, 1BG24CS096	II Sem CSE-B
	Nagastuti K N, 1BG24CS101	II Sem CSE-B
	M R Niharika, 1BG24CS091	II Sem CSE-B
	Samarth M, 1BG23EC092	IV Sem, ECE

2nd Place	Vineet Reddy, 1BG23EC124	IV Sem, ECE
	Shashank Rao Pejaver, 1BG23EC095	IV Sem, ECE

EVENT POSTER

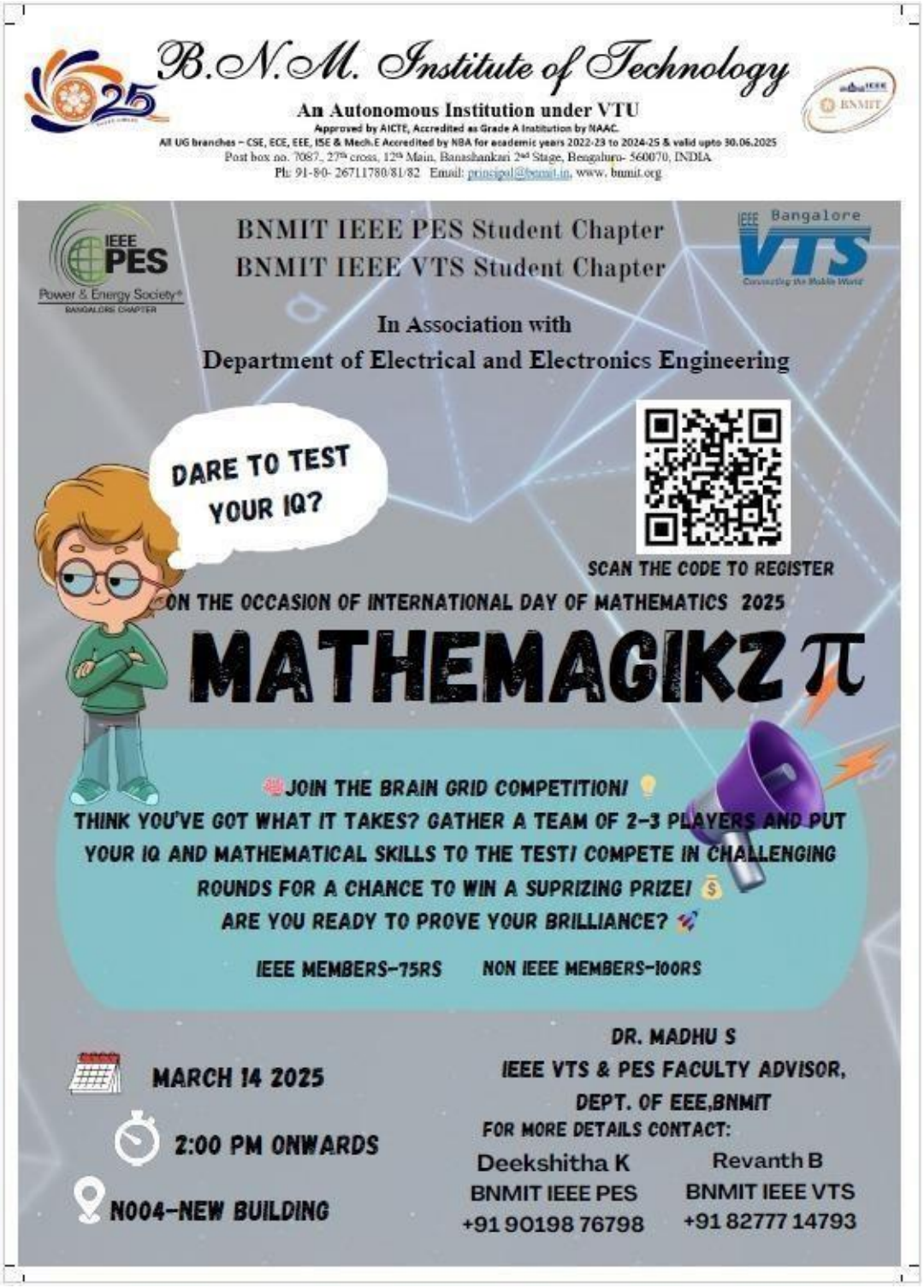

PHOTO GALLERY

OUTCOMES OF THE EVENT:

- Participants enhanced their mathematical problem-solving, logical reasoning, and pattern recognition skills.
- The event encouraged analytical thinking and quick decision-making under time constraints.
- Engaging activities provided a hands-on approach to applying mathematical concepts in a fun and interactive manner.
- The competition fostered teamwork, collaboration, and a deeper appreciation for mathematics beyond textbook learning.

B.N.M. Institute of Technology

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Department of Electrical & Electronics Engineering

Report of Technical Talk organized by BNMIT IEEE Power and Energy Society (PES) student chapter

Event Date: 23rd November 2024

Time of the Event: 11.30 AM to 1.00 PM

Participants: 3rd sem & 5th sem EEE Students.

Venue: Auditorium Block Seminar Hall (A215), BNMIT

Number of Participants: 57- 3rd Sem and 45 – 5th Sem

Resource Persons: **Dr. Balaraman K, Executive Director, Idam Infrastructure**

About the resource Person – Dr. Balaraman K

Dr. Balaraman Kannan is a distinguished expert in the field of energy transition and renewable energy integration, having completed his tenure as the Director General of the National Institute of Wind Energy (NIWE) under the Ministry of New and Renewable Energy (MNRE), Government of India. With more than three decades of experience, his work spans across energy systems, power system engineering, and renewable energy, from planning to real-time operations. Dr. Kannan is highly specialized in clean energy transition, renewable energy integration, power system planning, and solving complex problems with a well-rounded blend of tools, technologies, and deep domain expertise. His vast international experience extends across countries such as England, Saudi Arabia, Qatar, Kuwait, UAE, Nigeria, Sri Lanka, Indonesia, Fiji, Angola, Bhutan, Bangladesh, Mongolia, Maldives, Denmark, Spain, USA, Cuba, and many others. His career has also seen him work in various sectors, including public sector undertakings such as BEML, state utilities like KEB/KPTCL, and private entities such as PRDC and Idam. His expertise in handling large systems, particularly in grid operations, is well-recognized internationally.

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Department of Electrical & Electronics Engineering

In Association with

IEEE Bangalore Section

IEEE Power & Energy Society, Bangalore Section

&

IEEE Bangalore Section

Technical Talk organized by

BNMIT IEEE Power & Energy Society Student Branch Chapter

Date: 23rd November 2024.

Time: 11:15 AM

Venue: Auditorium Block, Seminar Hall-A215

Resource Person

Clean Energy Transition and Autonomous Grid

Dr. Balaraman K
Executive Director, Idam Infrastructure
Ex. Director General NIWE, Ministry of New & Renewable Energy

Organizers

Dr. Venkatesha K
Professor & HoD
Dept. of EEE

BNMIT IEEE PES Chapter Advisor

Dr. Madhu S
Associate. Professor
Dept. of EEE

Coordinator

Dr. Priyashree S
Associate. Professor
Dept. of EEE

BNMIT IEEE PES Chapter Chair

Mr. Sathvik G P
Student, 7th Sem
Dept. of EEE

Sri. Narayan Rao R. Maanay
Chairman GB
BNMIT

Prof. T. J. Rama Murthy
Director
BNMIT

Dr. S. Y. Kulkarni
Additional Director &Principal
BNMIT

Prof. Eshwar N. Maanay
Dean
BNMIT

Dr. Krishnamurthy G. N.
Deputy Director
BNMIT

Poster of Technical Talk organized BNMIT IEEE VTSoC student Chapter Topic:
Clean Energy Transition and Autonomous Grid – A Brief Summary

The global energy sector is undergoing a significant transformation, driven by the urgent need to reduce carbon emissions and enhance sustainability. In his technical talk, Dr. Balaraman ighlightedh the key aspects of the clean energy transition and the development of autonomous grids to ensure a reliable and efficient power supply in the future.

Clean Energy Transition:

The shift from fossil fuel-based power generation to renewable energy sources such as solar, wind, and hydro is at the core of the clean energy transition. This transition is necessitated by climate change concerns, policy mandates, and advancements in energy storage and smart grid technologies. Dr. Balaraman emphasized the following challenges and opportunities:

- **Integration of Renewable Energy:** Managing variability and intermittency in renewable sources. **Energy Storage Solutions:** Role of battery energy storage systems in stabilizing the grid.
- **Grid Decentralization:** Rise of distributed energy resources (DERs) such as rooftop solar and microgrids.
- **Policy and Regulatory Frameworks:** Importance of supportive policies for accelerating clean energy adoption.

Autonomous Grid:

The concept of an autonomous grid revolves around self-regulating and self-healing power networks that utilize advanced digital technologies such as artificial intelligence (AI), machine learning (ML), and Internet of Things (IoT). The key aspects discussed include:

- **Smart Grid Technologies:** AI-driven demand response, predictive maintenance, and grid automation.
- **Resilience and Reliability:** Enhancing grid stability through real-time monitoring and adaptive control systems.
- **Cybersecurity in Autonomous Grids:** Ensuring data security and protection against cyber threats.
- **Electric Vehicle (EV) Integration:** Managing EV charging infrastructure and vehicle-to-grid (V2G) interactions.

Conclusion:

Dr. Balaraman underscores that achieving a clean energy transition and developing autonomous grids require a multi-disciplinary approach involving technological innovation, policy support, and

stakeholder collaboration. The convergence of renewable energy, digitalization, and automation will play a pivotal role in shaping the future of sustainable and resilient power systems.

Photo Gallery of the Event

Technical talk by Dr. Balaraman K Outcomes

The technical talk provided valuable insights into the future of energy systems, highlighting:

- **Enhanced Understanding:** Participants gained a deeper knowledge of the challenges and advancements in clean energy and autonomous grid technologies.
- **Industry Implications:** Awareness of policy and regulatory needs to drive adoption and integration.
- **Collaborative Approach:** Emphasis on cross-sector collaboration among industry leaders, policymakers, and academia to accelerate the clean energy transition.

Feedback

Feedback from participants was overwhelmingly positive. Students found the talks both engaging and relevant, particularly enjoying the detailed insights into how software vehicle works and sustainability is transforming modern engineering fields.

B.N.M. Institute of Technology

An Autonomous Institution under VTU

Department of Electrical & Electronics Engineering

Report of Inaugural Function of IEEE Student Chapter of Power and Energy Society (PES)

Event Date: 23rd November 2024

Time of the Event: 10.00 AM to 11.00 AM

Participants: 3rd sem & 5th Sem EEE Students.

Venue: Auditorium Block Seminar Hall (A215), BNMIT

Number of Participants: 57 (3rd EEE) + 45 (5th EEE)

Dignitaries:

Chief Guest: Dr. Balaraman K, Executive Director, Idam Infrastructure, Ex Director General, NIWE, MNRE
Guest of Honour: Dr. Chandrasekhar Atla, Chief Guest Chair-IEEE PES Chapter, Deputy GM, M/s PRDC Pvt. Ltd, Bengaluru Prof. T J Ramamurthy, Director, BNMIT
Dr. S Y Kulkarni, Addditional Director & Principal, BNMIT
Prof. Eishwar N Maanay, Dean, BNMIT
Dr. Krishnamurthy G N, Deputy Director, BNMIT

The Department of Electrical and Electronics Engineering, BNMIT, successfully inaugurated the **IEEE Power & Energy Society (PES) Student Branch Chapter** on 23rd November 2024 in the presence of esteemed dignitaries, faculty members, and students. The event was attended by students of the **3rd and 5th semester** of the EEE department, along with faculty members and IEEE student members. The inauguration commenced with a welcome address, followed by the formal unveiling of the IEEE PES Student Branch Chapter at BNMIT.

About IEEE PES Chapter

The IEEE Power & Energy Society (PES) chapter in an engineering college serves as a student and faculty-led group focused on advancing knowledge and professional development in the fields related to Power and energy systems. These can include areas like power generation, transmission, distribution and utilization and related fields. **It also covers energy systems, sustainability, and emerging technologies in the power sector.**

Establishing a PES chapter can significantly enhance academic and professional opportunities for both students and faculty. The benefits of establishing a PES chapter are access to resources, professional networking, student development, networking opportunities, conduction of various activities like conferences, symposia, workshops, seminars, technical talks, competitions. Hackathons, etc.

Objective

The primary objective of the conducting the inauguration of the IEEE PES Student chapter are to formally start with the activities under IEEE PES chapter, to raise awareness of IEEE PES Chapter among the students, to promote professional development, to encourage student participation in Global IEEE PES activities, to foster innovation, research culture. The chair of IEEE PES chapter, Bangalore Section and the Staff Advisor ensures the chapter's sustainability and growth while aligning with the goals of IEEE.

List of students under IEEE PES Student Branch Chapter for 2024

Student Branch Chapter Advisor: Dr. Madhu S

Sl. No.	Name	Membership Number	Sem	Mail Id
1	Sathvik G P	99025502	VI - EEE	sathvikgp003@gmail.com
2	Shivakumar Y	100177921	VI - EEE	shivakumary2004@gmail.com
3	Keerthana G Iyer	100374871	VI - EEE	keerthanagiyer@gmail.com
4	Yashwanth V	100383420	VI - EEE	yashu1915@gmail.com
5	Gaurav Anand B M	100001210	VI - EEE	gauravbm12345@gmail.com
6	Anjan S	98532188	VI - EEE	anjankumar1573@ieee.org
7	Anupama D J	100381567	VI - EEE	anupamadj37@gmail.com
8	Bharathkumar K	100405125	VI - EEE	bharathkumark2003@gmail.com
9	V N Samiksha	100381619	VI - EEE	vnsamiksha636@gmail.com
10	Likith R V	99706859	VI Sem	likithrvivek06@gmail.com
11	Revanth B V	100396077	IV - EEE	revanthbv137@gmail.com
12	Deekshitha K	100396201	IV - EEE	deekshithakmurthy@gmail.com
13	Shrestha Sinha	100396305	IV - EEE	sinhashrestha2222@gmail.com
14	Suraj Gowda B H	100396336	IV - EEE	22eee004@bnmit.in
15	Vaishnavi U Kotarki	100396461	IV - EEE	vaishnavikotarki1@gmail.com

About the Chief Guest of the Event: Dr. Balaraman K, Chief Guest

Dr. Balaraman Kannan is a distinguished expert in the field of energy transition and renewable energy integration, having completed his tenure as the Director General of the National Institute of Wind Energy (NIWE) under the Ministry of New and Renewable Energy (MNRE), Government of India. With more than three decades of experience, his work spans across energy systems, power system engineering, and renewable energy, from planning to real-time operations. Dr. Kannan is

highly specialized in clean energy transition, renewable energy integration, power system planning, and solving complex problems with a well-rounded blend of tools, technologies, and deep domain expertise. His vast international experience extends across countries such as England, Saudi Arabia, Qatar, Kuwait, UAE, Nigeria, Sri Lanka, Indonesia, Fiji, Angola, Bhutan, Bangladesh, Mongolia, Maldives, Denmark, Spain, USA, Cuba, and many others. His career has also seen him work in various sectors, including public sector undertakings such as BEML, state utilities like KEB/KPTCL, and private entities such as PRDC and Idam. His expertise in handling large systems, particularly in grid operations, is well-recognized internationally.

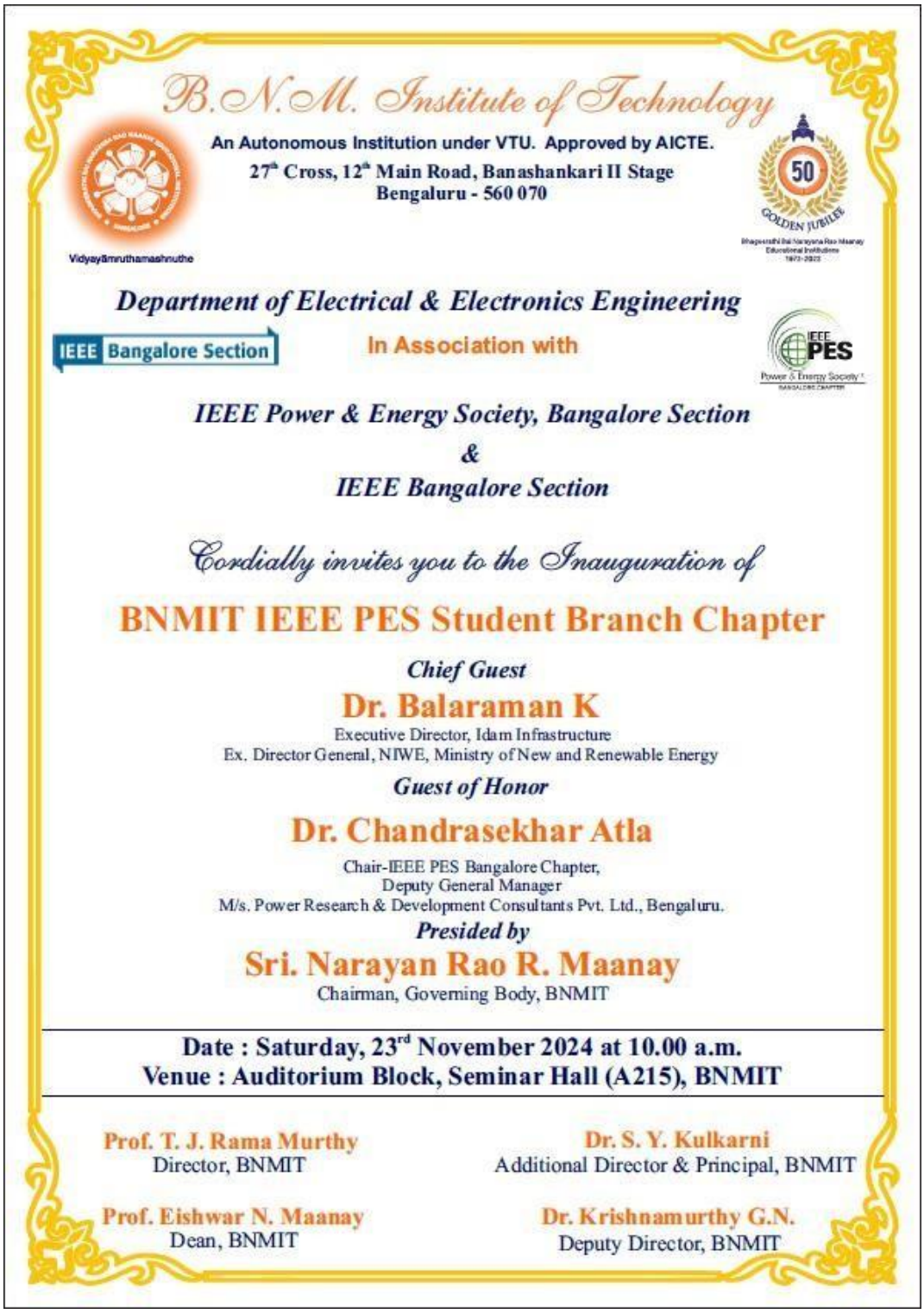
- The **Chief Guest** delivered an insightful technical talk on **"Clean Energy Transition and Autonomous Grid."** The talk focused on the growing importance of renewable energy integration, advancements in autonomous grid systems, and the role of smart technologies in ensuring sustainable power distribution.

About the Guest of Honour the Event: Dr. Chandrasekhar Atla

Dr. Chandrasekhar Reddy Atla serves as the Deputy General Manager at Power Research & Development Consultants Private Limited (PRDC), bringing over 20 years of experience in the power sector. His expertise encompasses a range of areas, including Battery Energy Storage Systems and their grid services, Impact of Electric Vehicles on the grid, Net-zero assessments, Energy Action Plans, Power system operation and planning, Large-scale renewable integration Energy Management Systems, Production-cost models, Wind, solar, and load forecasting EMTP and insulation coordination studies. Throughout his career, Dr. Atla has contributed to various publications and research initiatives. Notably, he co-authored a study titled "Impact Assessment of Electric Vehicle Charging Infrastructure in Electricity Distribution Systems," which addresses key technical challenges associated with integrating EV charging infrastructure into electricity distribution networks. Additionally, he has delivered presentations on topics such as "Load Forecasting: Methods & Techniques" and "Application of Forecasting Tools," highlighting his involvement in advancing forecasting methodologies in the power sector. Dr. Atla's extensive experience and research contributions have established him as a prominent figure in the field of power systems engineering.

- The **Chair of IEEE PES Society** elaborated on the objectives and activities of the **IEEE PES Chapter**, emphasizing various opportunities and advantages for students, including technical

workshops, industry collaborations, career path and Internship, PES Mentoring program, research prospects, and professional networking. The chair highlighted that the student membership enhances the student resume, and they can be updated with the current trends and latest technology. The procedures for applying for the financial support, event proposal, industry-academia conclave, young researchers meet were explained.

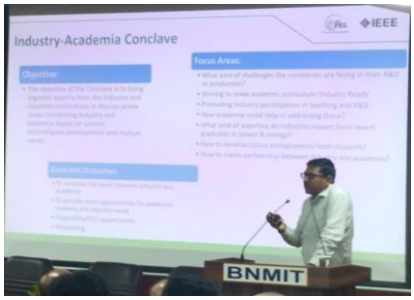


Invitation of the Inaugural Event of IEEE PES Chapter at BNMIT

Poster of Inauguration of BNMIT IEEE Power and Energy Society Branch Chapter Photo Gallery of the Event

Formal Inauguration of the Chapter by the Dignitaries

BNMIT IEEE PES Members with the Guests



Address by the Chief Guest

Outcomes

The inauguration of the IEEE PES Student chapter formally led to the start of various activities under IEEE PES chapter, raised awareness of IEEE PES Chapter among the students, promoted professional development, encouraged student participation in Global IEEE PES activities, The chair of IEEE PES chapter, Bangalore Section and the Staff Advisor assured for the chapter's sustainability and growth while aligning with the goals of IEEE and its PES Society.

Feedback

Feedback from participants was overwhelmingly positive. Students were keen on various activities that can be planned under the student chapter. The non-IEEE members got the interest to become the members of the IEEE.

Dr. Madhu S
Associate Professor & BNMIT IEEE VTS
Faculty Advisor, Dept. of EEE

Dr. K Venkatesha
Professor & Head
Dept. of EEE