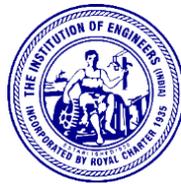




**GOKARAJU RANGARAJU**  
**Institute of Engineering & Technology**  
**(Autonomous)**

**Department of Electrical & Electronics Engineering**

**AY 2021-  
22**



**Annual Report - Events Conducted**



# GOKARAJU RANGARAJU

## INSTITUTE OF ENGINEERING AND TECHNOLOGY

(Autonomous)

### Department of Electrical & Electronics Engineering

Sl.No.	Event	Title	Targetted Participants	Date	No. of Participants	Resource Person	IRG	Expenditure
1	Guest Lecture_ IEEE EEC	Latest trends and development in Electrical machines	Faculty of GRIET, UG Students	16-09-2021	4+80=84	Mr. Sree Venkat, Technical Director (Gyrate-the motor inside).		₹ 3,000
2	ICMED 2021	International Conference on Design and Manufacturing aspects for Sustainable Energy	Faculty of GRIET, PG Students, Outside Participants	24-09-2021 to 26-09-2021	80+14+20=114	Dr K Venkateswarlu, Dr Iraklis Nikolakakos, Dr Manoj Kumar Gupta, Dr Vinod Khadkikar	710000	710000



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3	Technical talk(ISTE)	Career in Biomedical Engineering and ISTE Farewell	Faculty of GRIET, UG Students	26-Oct-21	6+63=69	Dr. Tatiparti Padma, Professor, Dept. of ECE, GRIET.	7275
4	Co-Curricular Activity(IEEE-EEC)	PRAGNYA'21 BLAST"N"CODE ELECTRYONZ	Faculty of GRIET, UG Students	25-Nov-21	0+10=10	Mr. Anil Kumar R, Assistant Professor Mrs. M N Sandhya Rani, Assistant Professor	₹ 1,550
5	Industry visit (HAL)	AZADI KA AMRIT MAHOSTAV	Faculty of GRIET, UG Students	17-Dec-21	2+55=57	DS Nagamalleswar rao Associate professor, D. Karun kumar Assistant professor	
6	Technical talk(IEEE-IAS)	Inauguration of IEEE Industry Application society student branch chapter	Faculty of GRIET, UG Students	27-Jan-22	8+73=81	Prof. Zuhaina Zakaria, Dean Institute of Graduate studies University Teknologi Mara, Malaysia.	
7	Technical talk(IEEE-IAS)	Technical Talk on Electric Vehicles and its Future scope in India	Faculty of GRIET, UG Students	05-Feb-22	8+41=49	V. Ananda, Solution Lead Power Electronics, Tech Mahindra, Hyderabad	



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8	Industry visit(IEEE-IAS)	Industrial visit to 400KV Substation	Faculty of GRIET, UG Students	28-Feb-22	1+25=26	Shri Mohammed Mosin, Deputy, General Manager, Power Grid Corporation of India Ltd Sub-station, Ghatkesar, Ranga Reddy District, Telangana, India		
9	Technical talk(IEEE-IAS)	Sensorless control of Electric drives	Faculty of GRIET, UG Students	29-Mar-22	4+123=127	Dr GOPINATH G R Assistant Professor, EEE MAHINDRA UNIVERSITY ECOLE CENTRALE HYDERABAD		

Total Events	Conducted
Industry Visits	2
Guest Lectures/ Technical Talk	5
International Conference	1
National Conference	
Workshop	



## Gokaraju Rangaraju Institute of Engineering & Technology (Autonomous)

Seminar/Webinar	
Co-curricular	1
Hackathon	
Extra-curricular	
FDP/STTP	
GRIET Achievements	
<b>Total</b>	<b>9</b>

HOD  
EEE

Co-Ordinator  
IEEE / ISTE/ IEI/ EEC

## 1. Guest Lecture

**DATE: 16-09-2021**

**Venue: GRIET**

IEEE-EEC has organized a guest lecture on **Latest trends and development in Electrical machines**. The speaker has given a very deep insight about types of machines, which are available in nowadays, and some of the Advanced Machines and their Efficiencies. He briefly explained about Electrical Engineering Fundamentals that we see in daily life which are interlinked with us. Students have actively participated and got the benefits of the technical talk.



## 2. ICMED

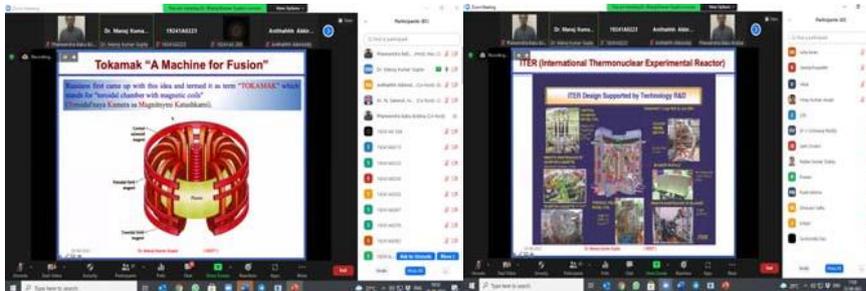
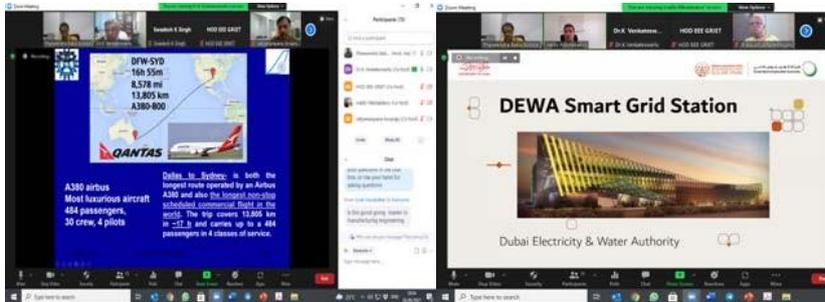
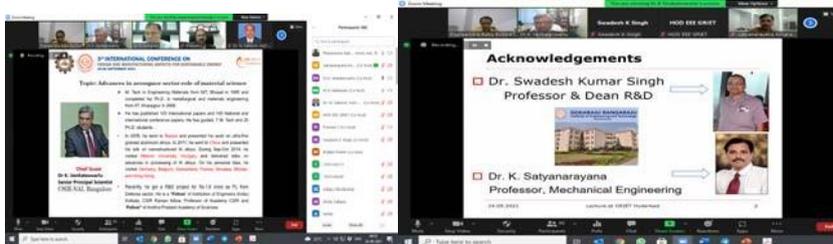
**DATE: 24-09-2021 to 26-09-2021**

**Venue: GRIET**

ICMED 2021 followed double blind review with minimum of two reviewers for each paper submitted. Care has been taken for plagiarism of all the article. Licensed plagiarism tool (Turnitin and Plagiarism Checker X) have been used and ensured each article has less than 25% plagiarism. The ICMED 2021 peer-reviewed and accepted papers have been edited as conference proceedings to be published with E3S Web of Conferences (Open Access proceedings in Environment, Energy and Earth Sciences), which is indexed by Scopus, CPCI (Web of Science), Google Scholar, CAS, DOAJ, EBSCO, ProQuest and Ei Compendex. As editors of this special issue of the ICMED 2021 proceedings, we wish to express our sincere gratitude to the plenary speakers, authors, participants, reviewers, program and technical committee members, and organizing members; who have contributed in organization of the conference and publication of this special issue. With high standard and high-quality



submissions and presentations in the ICMED, we are very much sure, one day ICMED will become a leading conference in this specific academic area of ‘Design and Manufacturing Aspects for Sustainable Energy’. A Total of 85 papers are published out of 130 papers received.



### **3. ISTE Farewell event**

**Date: 26-10-2022**

**Venue: GRIET**

The event started with the introduction of Speaker Dr. Tatiparti Padma. The session started at 10:30 AM which was attended by students and also the faculty. Ma'am started the talk by telling what is Biomedical Engineering and how is it related to engineering branches. There has been tremendous Growth in Biomedical Department since the start of the Corona Virus.



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Many devices have been developed for measuring the bio signals in the human body like EEG Sensor, Inertial Sensor, Blood Pressure Sensor, Pulse Oximetry Sensor, and many more Biomedical Devices. IoT is a network in which all physical objects are connected to the internet through network devices or routers and exchange data. Internet of things (IoT) plays a major role in Biomedical Engineering, Data is being collected by sensors through Intra-BAN communications this data through Inter-BAN communication like 3G/4G communications being sent to medical staff, medical server and Ambulance so immediate actions could be taken by doctors by taking patients health profile into consideration She mentioned that it is a good and intelligent technique which increases the chance of protecting Patients. She then explained about Biomedical Signal Processing and how is it actually performed their application areas and the advantages of using them. Then our Principal Dr. J Praveen Sir started his speech with the importance of student bodies in college, gave his precious ideas to the new team. He instructed us to conduct guest lectures and Industrial Visits every month which will educate the students The letter of Appreciation was provided to the ISTE TEAM individually by our Principal Dr. J Praveen Sir, Mr. Phaneeshwar Sir, Dr. J Sridevi madam EEE Department HOD and Dr. N Swetha madam ECE Department HOD



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(Autonomous)



**Guest lecture  
on carrier in  
Biomedical  
engineering  
and farewell  
by ISTE GRIET  
SB**

**Date:26/10/21**





**4. Pragnya**

**Date:25-Nov-2021**

**Venue:GRIET**

IEEE-EEC has organized technical event's on Blast''n''code and Electryonz. It was an problem analytic activity where students had participated and tested their knowledge on coding also they have gained lot of technical knowledge along with fun. Got technical knowledge in identifying and building circuits.





## **5. Industry visit**

**Date: 17-Jan-2021**

**Venue: HAL**

We arrived at Hindustan Aeronautics limited at 10:16 AM. We entered into Public exhibition hall. There was a presentation about the history and functioning of Hindustan Aeronautics limited. They gave information about advanced technology used in MARK 4 RUDRA, Light Combat Helicopter, Light Utility Helicopter, Dornier 228, SU-30 MKI, Hawk mk 132, Light Combat Aircraft Tejas. And the technology development in signal transmission and receiving, controls of pilot, capturing the audio and video of movement of ships and transmitting it to the base. They even gave the information about the inventions made by Hindustan Aeronautics limited, different models of planes designed and tested in harsh environment, different types of engines, turbines. And information about upcoming plans in development(In R&D) of aircrafts. Later at 11:30 students entered Hindustan Aeronautics limited hall where there was demonstration of different technologies used in communications, different radar systems, navigation systems, video recording and transmitting, identifying the jets (either friend or foe), break control hydraulic, hydraulic, engine and electrical monitoring system unit, Integrated communication system, auto flight controls, hybrid micro electronics, voice activated command system.





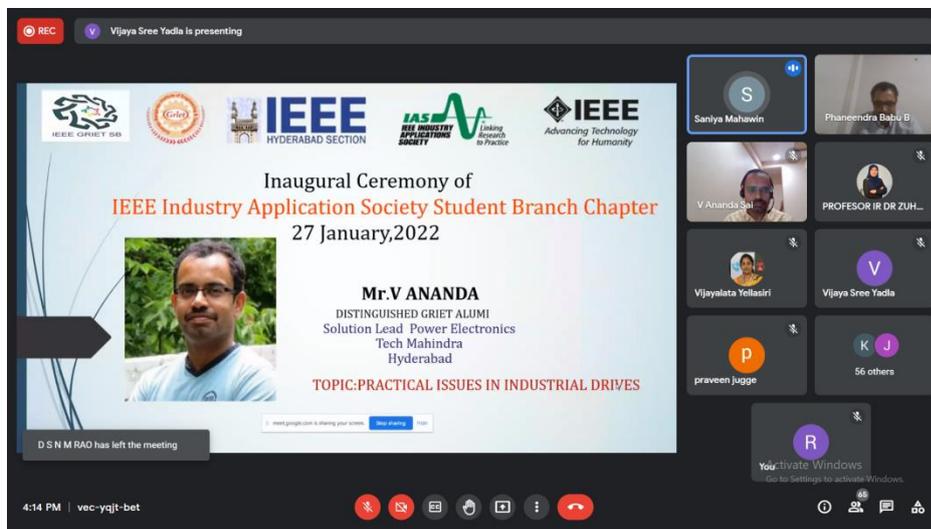
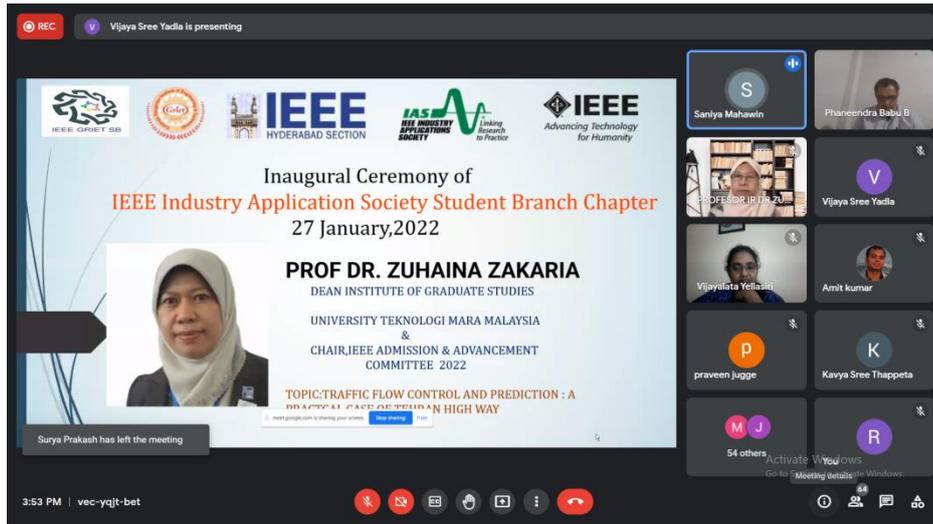
## 6. IAS Inauguration event

Date: 27-Jan-2022

Venue: Online

The event started with the introduction of the Chief Guest Prof. Zuhaina Zakaria and Guest of Honour Mr. V.Ananda. The session started at 3:32 PM. with prayer. IEEE IAS SB Chair, Ms Saniya gave a brief introduction to IEEE and IEEE Industry Application Society. Dr. B. Phaneendra Babu sir addressed the event and IEEE GRIET SB Chapter. Principal, GRIET - Dr J Praveen address the participants; Dr Amit Kumar, Immediate past chair joined the event and addressed the participants; D, r Y Vijaya Latha, IEEE Hyderabad section Vice Chair joined the event and addressed the participants. The inauguration of the IEEE IAS Student body logo. by Prof. Zuhaina Zakaria. Followed by Technical talk on traffic control and prediction: A practical case of Tehran Highway. Mam has explained how traffic is a big problem in big cities and how problematic it is to estimate the traffic estimation. Mam also explained a case study on how the air is polluted by the use of more vehicles and mam explained how to manage traffic networks by traffic prediction. She gave the information on what are the methods proposed for traffic prediction and how it works and explained how it is tested and verified. There was a Q&A session in which students asked various curious questions regarding traffic control and prediction: A practical case of Tehran Highway. Mam answered all the questions students asked Mr. V.Ananda sir started technical talks on Practical issues in conducting industrial drives. He has explained his experience when he went for a sight visit to a plant in August 2007 in Chennai how the change in humidity and atmosphere has caused the failure of IGDTS. explained about the earthing system and the importance of bonding between different systems like the power drive system. And explained the methods on common noise reduction, the safety of operating personals, guidelines as per IEC/UL 61800-5-1, Power quality, DC-Link capacitor, and its lifetime and thermal conditions. There was a Q&A session in which students asked various curious questions regarding Practical issues in conducting industrial drives. Sir answered all the questions students asked. The Inauguration completed with vote of thanks by IEEE IAS SB secretary.





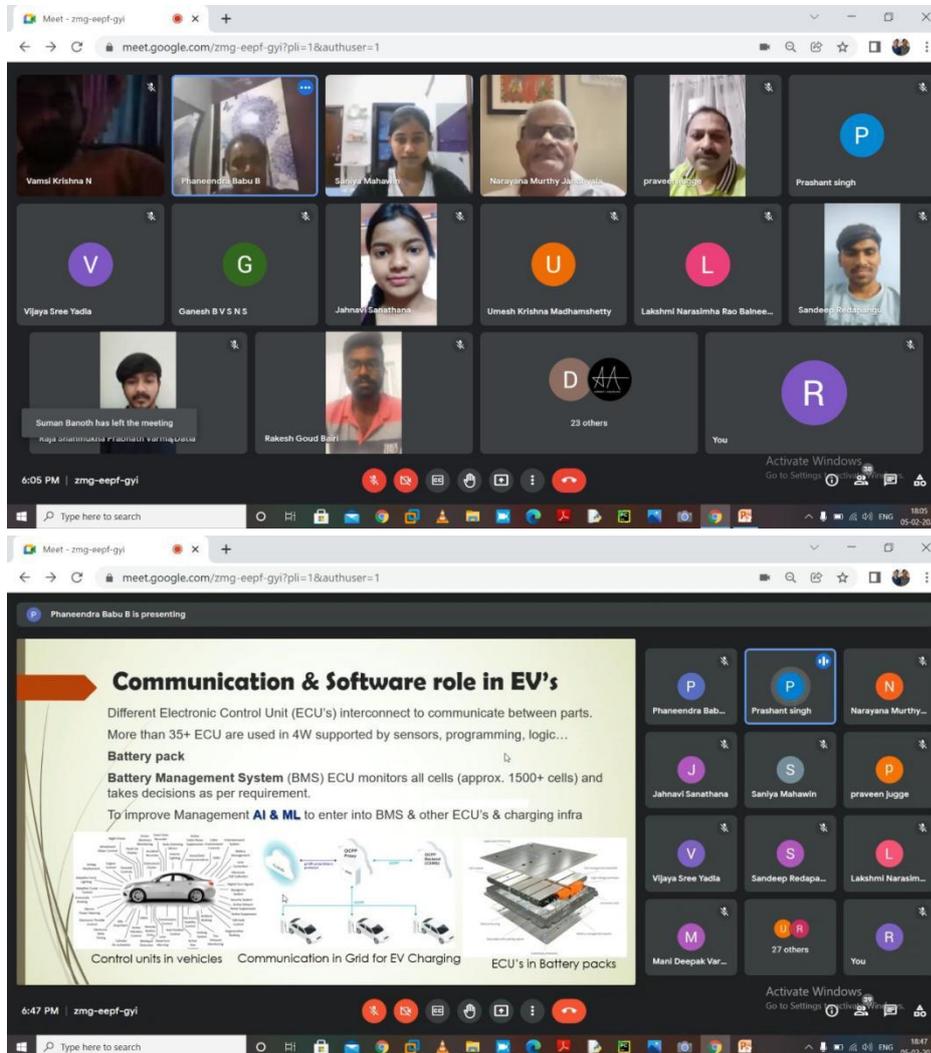
**7. Technical talk**  
**Date:05-Feb-2022**  
**Venue: GRIET**

The event started with the introduction of the Chief Guest Mr.B.T. Prashant Singh and address the participants. The session started at 6:01 PM. IEEE IAS SB Chair, Ms. Saniya gave a brief introduction about Electric Vehicles. Dr. B. Phaneendra Babu sir addressed the event. Mr.B.T. Prashant Singh sir started technical talks on Electric Vehicles and its Future in India. Sir started with what are the developments and research going on in the upcoming EV Technologies and the history of EV and challenges faced by EV technologies in the 19th century and how they are developed in technology and their safety by 21st century. he also explained how the usage of EVs is rising in India. He compared the ICE and EV vehicle's range, maintenance and lifetime of battery of EV. Prashant sir explained the different types of vehicles available in the market like conventional, hybrid, plug-in hybrid, full electric. And explained the working and their functions of electric vehicles and also the different types of functioning of different company EV's and charging stations. He gave details of standards and regulations that need to be followed by Electric Vehicles and different software used in EV's and different technologies



## Gokaraju Rangaraju Institute of Engineering & Technology (Autonomous)

that came in charging the vehicles. There was a Q&A session in which students asked various curious questions regarding different technologies in Electric Vehicles. Sir answered all the questions which are asked by the students. The event completed with vote of thanks by IEEE IAS SB secretary Jahnvi



### 8. Industry visit

**Date:28-Feb-2022**

**Venue: Ghatkesar (400KV Substation)**

The department of Electrical Engineering, Gokaraju Rangaraju College of Engineering and Technology, Hyderabad had organized a one-day Industrial visit to 400kV Power Grid Substation, Ghatkesar on 28<sup>th</sup> February, 2022. There were 25 students from EEE- III year along with teaching faculties Dr.Pakkiraiah. At 10:30 am, we reached at Substation, Ghatkesar. After reaching there, Shri Mohammed Mosin received us with a warm welcome. Mohammed Mosin



sir had explained the working substation in depth. Then we were taken to the control room. In the control room, every quantity of the substation is continuously monitored and we observed the real time data of substation on the panel.

➤ **OBJECTIVE OF VISIT:**

The trip was organized by the Samskruti Foundation and this visit was known as "National Science Day Study Trip". This foundation is coped with many engineering colleges to provide awareness about value ethics, tradition and culture of India. Our main purpose for this visit is to be familiar with industrial environment and to get practical knowledge of electrical power transmission and distribution. Being III-year students, they will get to know about basic industrial functioning of power transmission and distribution. Students will also get familiar with Transformer maintenance, circuit breaker, Transformer isolator, bus bar, Protective relays, Lightning arresters, Load break switches, SCADA system, Current and voltage Transformer and Battery room.

➤ **EQUIPMENT IN A 400KV SUB-STATION:**

The equipment required for a transformer Sub-Station depends upon the type of Sub-Station, Service requirement and the degree of protection desired. 400KV EHV Sub-Station has the following major equipment's:

- Bus-bar
- Insulators
- Isolating Switches
- Circuit breaker
- Protective relay
- Instrument Transformer
- Current Transformer
- Voltage Transformer
- Metering and Indicating Instrument
- Miscellaneous equipment
- Transformer
- Lightning arrestors
- Line isolator
- Wave tap

Shri Mohammed Mosin sir had explained the above equipment's one by one, their functions etc. He explained each and every thing with a great interest and shared a lot of



## Gokaraju Rangaraju Institute of Engineering & Technology (Autonomous)

knowledge with us. He explained the how the transmission and distribution takes places, the protective schemes taken to protect the equipment's present in substation.

### **SINGLE LINE DIAGRAM (SLD):**

A Single Line Diagram (SLD) of an Electrical System is the Line Diagram of the concerned Electrical System which includes all the required ELECTRICAL EQUIPMENT connection sequence wise from the point of entrance of Power up to the end of the scope of the mentioned Work. As these feeders enter the station they are to pass through various instruments. The instruments have their usual functioning.

#### ➤ **CONCLUSION:**

Now from this report we can conclude that electricity plays an important role in our life. We are made aware of how the transmission the transmission of electricity is done. We too came to know about the various parts of the substation system. We are very grateful to 400 kV Ghatkesar Substation for giving permission for this visit. Students got an opportunity to know regarding practical aspects about what they are learning in theory. We hope that such kind of events will be given by Samskruti Foundation in future also. It was an informative, interesting and a successful visit.





**9. Technical talk**

**Date :29-03-2022**

**Venue: GRIET**

The event started with the introduction of the Chief Guest Dr. Gopinath G R and address the participants. The session started at 1:35 PM. IEEE IAS SB Chair, Ms. Saniya gave a brief introduction about the present technology used in EV's. Dr. B. Phaneendra Babu sir addressed the event. Dr. Gopinath G R sir started technical talk on sensorless control of electrical drives. Sir started the event by giving an introduction about modeling, control, and sensorless techniques, extended Kalman Filter Observer. Later sir started explaining the characteristics and different types of permanent magnet synchronous motor and their purposes of internal and external mounted PMSM. He explained factors effecting the efficiency. He explained the factors and constants in modeling the PMSM of the stator and rotor. Sir explained inductance in the stationary alpha-beta reference frame, coordinate transformations in power noninvariant, and mechanical modeling. Sir explained the

speed control characteristics at different frequencies how torque and power will vary and the efficiency map of the Toyota Prius motor. Sir gave a brief explanation about control strategies for PMSM and vector control of IPMSM in the rotor reference frame, speed control design, estimation technique. Sir answered all the questions which are asked by the students. The event was completed with a vote of thanks by Vyshanavi



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