

# CURRENTS



## About Department

### Inside This Issue

EEE Dept. faculty  
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The Department of Electrical and Electronics Engineering has been playing a vital role in producing professionals of highest caliber ever since it was established in 1998. The department runs one under-graduate programme to cater to the ever challenging needs of technical excellence in all areas of Electrical Engineering such as Power systems, Control Systems & Power Electronics. The department conducts regular seminars, guest lectures, workshops and technical symposiums on latest technologies.

The Department has obtained UGC-Autonomous Status in the Year 2014 and have been running programme (B. Tech.) successfully. The College Academic Council and Board of Studies of the department strive to provide quality education with the most advanced curriculum to make the students industry ready and excel in the contemporary business world.

The B. Tech. Programme under Department of Electrical and Electronics Engineering was accredited by the National Board of Accreditation (NBA) of All India Council for Technical Education (AICTE).

# VISION AND MISSION OF THE DEPARTMENT

## **Vision**

To become a Department recognized for its ability to provide quality education to the students and make them excel in the domain of electrical & electronics engineering, with research proficiency and ethics, to meet the challenges of society.

## **Mission**

M1: To impart quality education and advancements in program of studies for producing engineers with scientific temperament and moral values in the field of electrical & electronics engineering.

M2: To create and develop research culture with deep sense of commitment, so as to enable the industries to adopt the research outputs.

M3: To enhance the technical dexterity, so as to find the suitable solutions in their respective domain,

## **Quality Policy**

Madanapalle Institute of Technology & Science is committed to bring out and nurture the talents and skills of youth in the fields of Engineering and Management to cater to the challenging needs of society and industry by

- ❖ Contributing to the academic standards and overall knowledge development of the students
- ❖ Providing excellent infrastructure and conducive learning environment.
- ❖ Enhancing the competence of faculty and promoting R&D Programs
- ❖ Collaborating with institutions and industries.
- ❖ Ensuring continual improvement of Quality Management System.

## Message from Correspondent

Technology places a vital role in shaping a student's career. EEE Department provides excellent opportunities for the students to discover their potentials. If students are able to go out of college with flying colors, it's no exaggeration to say that it's only because of the supportive environment that is provided in the college. Currents provides a glimpse of the activities and achievements in EEE Department. Students must make use of the opportunities provided to them in order to excel in their career. They must aim high. Students should consider technology as a treasure box and make proper use of it to achieve their goals. It gives me an immense pleasure looking at the efforts put by the EEE department, in coming up with creative ideas to design a souvenir every year.



**Dr. N. Vijaya Bhaskar Choudary,**  
*M.Com, Ph.D.*

*Secretary & Correspondent*

## Message from Chairman

*The Electrical and Electronics Engineering Department has produced many phenomenal students who are at very good positions. Students graduated from our college, come back here and support the institution to the best of their abilities. I advise the students to have a clear vision about what they want to become and plan accordingly at the earliest possible stage. They must gain practical knowledge rather than mere bookish knowledge to reach greater heights in their career. They must convert their ideas into reality and must not refrain from trying out new things. I hope the Department continues to achieve success in every aspect and publish the achievements in this incredible Currents every year.*

*In the present sophisticated world of opportunities, at the best of times in the best of context, we are there to strengthen such programs that empowers work ambience and gets perfect platforms to those who want to grow and be in forefront of the industry.*

*I wish you all the very best.*



**Late, Sri. N. Krishna Kumar,**  
M.S (U.S.A), Chairman

## Message from Principal

*The technological information dissemination to public is the key factor in bringing concerned people/Department together. The Department of Electrical and Electronics Engineering contributing best of its efforts in development of Newsletter by publishing Currents. The documentation of different activities and bringing it to relevant technical community is the excellent towards service of society. These activities will help in making the science and technology much stronger towards knowledge bank. I am congratulating all the EEE department staff and students on this occasion. I wish good luck and extend my warm patronage to all of those who have contributed their best to bring out the Currents in good shape.*



**Dr. C. Yuvaraj, Ph.D.**

*Principal*

## Message from HOD

I am happy that Dept. of EEE is bringing out a Currents (Newsletter). Currents will definitely help to showcase the activities that are happening in the department. It also helps in building up teamwork which is very much needed today in the world of competition. It provides a platform for exposing the merits and academic achievements of the faculty. This enhances the documentation culture of the department. This would definitely create an impact in the minds of readers, by way of providing larger visibility and dimension to the campus. I hope that this culture of releasing Newsletter continue forever.



**Dr. A V PAVAN KUMAR, Ph.D.**

*Head of the Department*

*Department of EEE*



## DETAILS OF EEE NEWSLETTER – CURRENTS

Chief Editor	Faculty Editors	Student Editors
<b>Dr.A.V.Pavan kumar, Professor &amp; Head of the Department EEE.</b>	<b>Mr.B.Vijayakumar, Assistanr Professor, Dept Of EEE</b>	<b>Ch. Manohar -21691A0225 N. Nihanth Kumar- 22691A0225 G.Keerthi Chitanya-23691A0225</b>
	<b>Mr.Rajesh K S, Assistanr Professor, Dept Of EEE</b>	

### CONSOLIDATED DATA

S.NO	EVENT NAME	DATE
1	One day workshop on "Energy Audit"	07th January 2022
2	A Webinar on "Programmable Logic Controller (PLC) for Industrial Automation"	11th March 2022
3	Industrial Visit to Vikram Solar Power Plant (TTD 10MW Solar Power Plant) Kosuvaripalle, AP	11th & 15th March 2022.
4	Industrial Visit to Rayalaseema Thermal Power Project (RTPP) Muddanur, Kadapa, AP	09th April 2022
5	Industrial Visit to NPTI Bangalore and NDS Eco Motors Pvt. Ltd. Bangalore	04th April 2022.
6	A Workshop on “Applications of Electromagnetic Simulation tool for Designing Electric Vehicle Motor”	9th May 2022
7	Two days National Level Technical Symposium on Techno fest on Electrical Revolutions & Advancements TERA 2k22	05th & 06th May 2022 (Physical & Virtual mode)
8	An industry guest-lecture on "Solar Projects, Future Technology, Growth & Opportunities”	17th September 2022

<b>9</b>	A Guest Lecture on "Intelligent Controller for Smart Integrated Wind and Solar based Hybrid Power Generation Scheme"	14th October 2022
<b>10</b>	A Three Day On Campus Skill Development (Hands-on) Programme on Conventional Bike Retrofitting in to EV	3rd to 5th November 2022
<b>11</b>	An Industrial Visit to Heritage Foods Limited, B Kothakota, Annamaiah District, Andhra Pradesh	8th November 2022
<b>12</b>	One day skilled workshop on "Fundamentals of PCB design"	19th November 2022
<b>13</b>	A Guest Lecture on "Thermal Power Plant Engineering (Thermal Power Generation, Boiler, Turbine & Generator and Auxiliaries)"	14th December 2022
<b>14</b>	Poster Presentation on "National Energy Conservation Day"	14th December 2022
<b>15</b>	Industrial Visit to "Rayalaseema Thermal Power Project (RTPP)" Muddanur, Kadapa, Andhra Pradesh	18th December 2022
<b>16</b>	A One Day Virtual Workshop on "Robotics, AI & Machine Learning"	19th December 2022
<b>17</b>	A Guest Lecture on "Entrepreneurship opportunities in Solar Power"	29th December 2022



## EVENTS ORAGANISED

### EVENT-1

Department of Electrical & Electronics Engineering Organised Physical mode One day workshop on "Energy Audit" on Date: 07.01.2022.

Energy is one of the major input to economic development of a country. Especially for developing countries the increasing energy demand requires more focus and huge investment. As we are in shift to pollution free environment, focus is on alternate electrical technology. For the efficient use of energy and conservation Government of India has enacted the Energy Conservation Act, 2001 and established the Bureau of Energy Efficiency (BEE) in March, 2002. The main objective of workshop is to cover need of energy audit and its significance in academic institutions and role of energy auditors in its implementation.



Talk about the workshop

### EVENT-2

Department of Mechanical Engineering & Electrical & Electronics Engineering in association with the ISTE Student Chapter Organised A Webinar on "Programmable Logic Controller (PLC) for Industrial Automation" was jointly on Date: 11.03.2022.

The programme is started at 1:00 PM with a welcome address to all the audience by the Dr. A V Pavan Kumar, H.O.D, EEE, MITS, Madanapalle. Then after, Dr. M Lakshmana Rao Professor & Head, Department of ME, MITS, Madanapalle addresses the audience by giving the brief introduction about the objective of conducting such an event. Also, he added the importance of the programming logic controller which widely used technologies in EEE as well Mechanical department.

The resource person Er. Rajesh Kumar, Manager in the department of Instrumentation & Automation at Neelachal Ispat Nigam Ltd. Jajpur, Odisha, INDIA was introduced by Dr. Pratap Ranjan Mohanty, Assoc. Prof., Dept. of EEE. The resource person started the session by extending his hearty thanks to the participants, organising members, HoDs, Principal and Management of MITS Madanapalle for giving him opportunity to share his knowledge and experience in automation industries specifically about the programmable logic controller (PLC).

**MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE**  
(UGC - AUTONOMOUS INSTITUTION)

**Webinar on**  
"Programmable Logic Controller (PLC) for Industrial Automation"  
Date: 11.03.2022  
Time: 1 PM

Organizer: Department of Electrical & Electronics Engineering and Department of Mechanical Engineering in Association with ISTE Student Chapter

**Resource Person**  
**Er. Rajesh Kumar,**  
(10 years of experience in Automation)  
Manager in the department of Instrumentation & Automation at Neelachal Ispat Nigam Ltd. Jajpur, Odisha, INDIA

**Coordinators**  
Dr. Pratap Ranjan Mohanty,  
Associate Professor,  
Dept. of EEE, MITS, Madanapalle  
Dr. Subodh Kumar,  
Assistant Professor,  
Dept. of ME, MITS, Madanapalle

**Conveners**  
Dr. A V Pavan Kumar,  
Associate Professor & Head,  
EEE, MITS, Madanapalle  
Dr. M. Lakshmana Rao,  
Professor & Head,  
ME, MITS, Madanapalle

Dr. N. Vijayashankar Choudary  
Secretary & Correspondence  
Mrs. N. Kaverthi  
Executive Director  
Dr. C. Vinodh  
Principal, MITS, Madanapalle

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### **EVENT-3**

Department of Electrical & Electronics Engineering Organised Industrial Visit to Vikram Solar Power Plant (TTD 10MW Solar Power Plant) Kosuvaripalle, AP on Date: 11.03.2022 to 15.03.2022.

The Industrial visit was arranged for the students of B. Tech II-year Section B. A total of 68 number of students along with 07 faculties reached Vikram Solar Power Plant, Kosuvaripalle, Chittoor, Andhra Pradesh at around 10.00 AM. The Plant Engineer Mr. Y. Dinesh welcomed the faculty members and all the students. The plant engineer along with his team members elaborated the main equipment that are installed in the solar farm. Initially, the students were split into seven groups along with the one faculty member and one technician. The explanations on the installation of solar strings employed with online grid tie inverter, input and output voltage levels of the solar system was explained to the students. As the next part, the students were brought near to the 480V/33KV Inverter transformer yard and described about the construction of the transformer. Finally, the descriptions about the SCADA and overall performance metrics were made by the Site Engineer Mr. Y. Dinesh. The Industrial visit was concluded and reached college by 1.20 PM. Feedback: The participants were moreover passionate to know the working, operation of solar power plant and its future scope.



#### **EVENT-4**

Department of Electrical & Electronics Engineering in association with ISTE Student Chapter Organised Industrial Visit to Rayalaseema Thermal Power Project (RTPP) Muddanur, Kadapa, AP on Date: 09.04.2022.

RTPP was developed under 3 stages namely stage I,II, and III. The station is performing well in the recent years by achieving high plant load factor. It stood first in country during 98–99, 2002–03, 2003–04 and second during 99–2000, 2001–02. The station has received Meritorious productivity awards for six consecutive years and Incentive award for seven consecutive years. BHEL commissioned stage IV unit 1x600MW in March 2018 leading to total installed capacity of RTPP to 1650MW.

The students were visited every module of the plant and their queries are clarified by the experts. Various sections like i) Switch yard ii) Crusher division iii) Bunkers iv) Mills (pulverized coal) v) Boilers vi) Turbines and Generators vii) Cooling Towers and viii) Control Unit were visited by the students. The students were acquired insight regarding the internal working environment and the functioning of the plant through the visit with better visualization of practical aspects and useful information. The visit was more interactive with effective learning and the students were made to learn the innovative technology implemented in the plant. We extends our sincere gratitude to the Management, Principal, Dean – Administration, Vice Principal (Academics and Administration), HoD of EEE and ISTE coordinator for fruitful encouragement support for organizing the industrial visit.



**Industrial Visit**  
**in Association with**  
**ISTE Student Chapter**  
to  
**Rayalaseema Thermal Power Project (RTPP)**  
**Kalamalla, Kadapa, AP**  
on 9<sup>th</sup> April 2022

Department of Electrical & Electronics Engineering

**MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE**  
(UGC-AUTONOMOUS INSTITUTION)  
www.mits.ac.in Madanapalle-517325, Chittoor Dist., Andhra Pradesh



#### **EVENT-5**

Departments of Electrical & Electronics Engineering & Mechanical Engineering Organised Industrial Visit to NPTI Bangalore and NDS Eco Motors Pvt. Ltd. Bangalore on Date: 04.04.2022.

A team comprising of Dr Ram Krishna, Ph.D., Associate Dean, IIIC and Dr M. Vaigundamoorthi, Ph.D., Professor, Department of EEE, Internship Coordinator/EEE, visited the National Power Training Institute (NTPI), Bangalore and NDS Eco Motors Pvt. Ltd. on April 11, 2022. During this visit, our team met Dr M. Ravichandran Babu, Director,

NTPI, Bangalore, and discussed the opportunities for students to undergo 2–4-week training in the fields of power systems: substation simulator, switch gear & protection relays, high voltage division, smart grid, thermal power plant simulator. Our team has visited various facilities of the above-mentioned technical division, including the hostel for boarding and lodging facilities available in NPTI. Our team has interacted with faculty trainers and all additional directors of NPTI and discussed the job opportunities upon completion of training, and NTPI has accepted to provide training for 240 students in the months of July and August 2022.



**Attended & Submitted by: Dr Ram Krishna, Ph.D., Associate Dean, IIC, Department of Mechanical, Dr M. Vaigundamoorthi, Ph.D., Professor, Department of EEE**

#### EVENT -6

Department of Electrical & Electronics Engineering organized A Workshop on “Applications of Electromagnetic Simulation tool for Designing Electric Vehicle Motor” on Date: 09.05.2022.

IEEE (MITS STUDENT CHAPTER( STB64791) in Association with Department of Electrical & Electronics Engineering jointly organizes one day workshop on “Applications of Electromagnetic simulation tool for designing Electric Vehicle motor “ on 09-05-2022. Dr M. Vaigundamoorthi ,Professor/EEE ,IEEE - MITS student chapter coordinator & Dr A.V. Pavan Kumar ,HOD/EEE coordinated this one day workshop . In this one day workshop FN session , the speaker discussed about types of motor used by various Electric Vehicle manufacturers and approval procedure in various organization for the newly designed motors . He explained the advantages of BLDC motors and PMSM over induction motor & DC motors .He also discussed the operation , speed torque characteristics and control procedure for BLDC motor and their suitability for Electric traction . In AN session

, He discussed the design procedure of BLDC motor in MAGNET software . He also explained the steps to be followed in design of electric motors in MAGNET software . The participants are downloaded the trial software and trained the use of software in designing the Electrical Machines.



**Madanapalle Institute of Technology & Science**  
(UGC-AUTONOMOUS)  
Angallu, Madanapalle

**IEEE**

**IEEE- MITS Student Chapter in Association with Department of EEE Organizes**  
**One day workshop on "Applications of electromagnetic simulation tool for designing electric vehicle motors"**

On 9<sup>th</sup> May 2022  
Timings: 10:00AM to 12:00PM  
02:00PM to 04:00PM

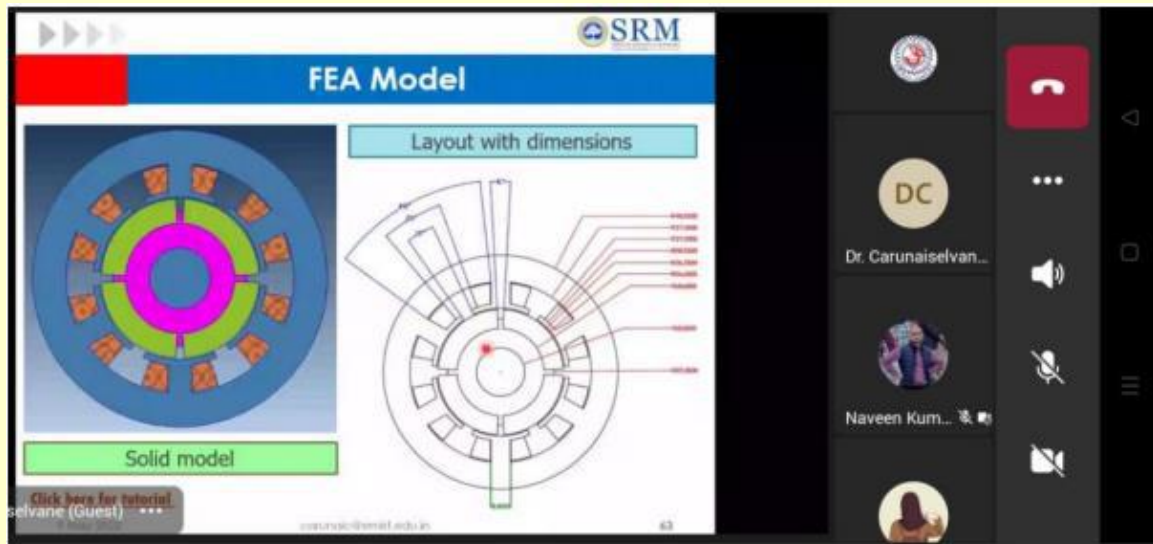
Speaker name:  
Dr C.Carunaiselvane, Ph.D.(IIT R)  
SRM University ,Chennai

Chief patron:  
Dr. N.Vijaya Bhaskar Chowdary ,Ph.D  
Secretary & Correspondent

Execute director:  
Mrs.Keerthi

Patron:  
Dr.C. Yuvaraj,Ph.D  
Principal

Co ordinators:  
Dr. A.V.Pavan kumar, Ph.D  
(HOD/ EEE)  
Dr.M.Vaigundamoorthi, Ph.D



**FEA Model**

Layout with dimensions

Solid model

Click here for tutorial  
selvane (Guest)

SRM

DC

Dr. Carunaiselvan...

Naveen Kum...



## **EVENT-7**

Department of Electrical and Electronics Engineering organized Two days National Level Technical Symposium on Techno fest on Electrical Revolutions & Advancements TERA 2k22 on Date: 05.05.2022 and 06.05.2022 (Physical & Virtual mode).

On day -01 Inauguration function took place at college auditorium. Dr.C.Yuvaraj, Principal, Dr.C.Kamal Basha, vice principal (Administration) chief guest Dr.K.Pushpanathan, Director, TIAS Energy Pvt. Ltd, Chennai. Dr.A.V.Pavankumar, HOD/EEE, Dr.K.Arulkumar, convenor of TERA2k22 lighted the lamp and inaugurated the technofest TERA2k22. Dr.C.yuvaraj, principal sir highlighted the benefits of the symposium. He also delivered the importance of electric vehicles in todays trends and mission and vision of 2030 in india.

We have received around 41 team of participants from various colleges for paper/poster presentation, project expo and technical quiz. 35 Internal participants and 06 external participants have participated. The chief guest Dr. K. Pushpanathan, Director, TIAS Energy Pvt. Ltd, Chennai delivered a topic on “Trends and opportunities in Renewable Energy”. Participants are from III year EEE students and final year students and various colleges participants. Panel I, II, III & IV have been created for paper/poster and project expo presenters. Panel – I for Off line presentation, Panel II and III for online and poster presentation. Project – IV is for project expo. Both online and offline presentation is done.



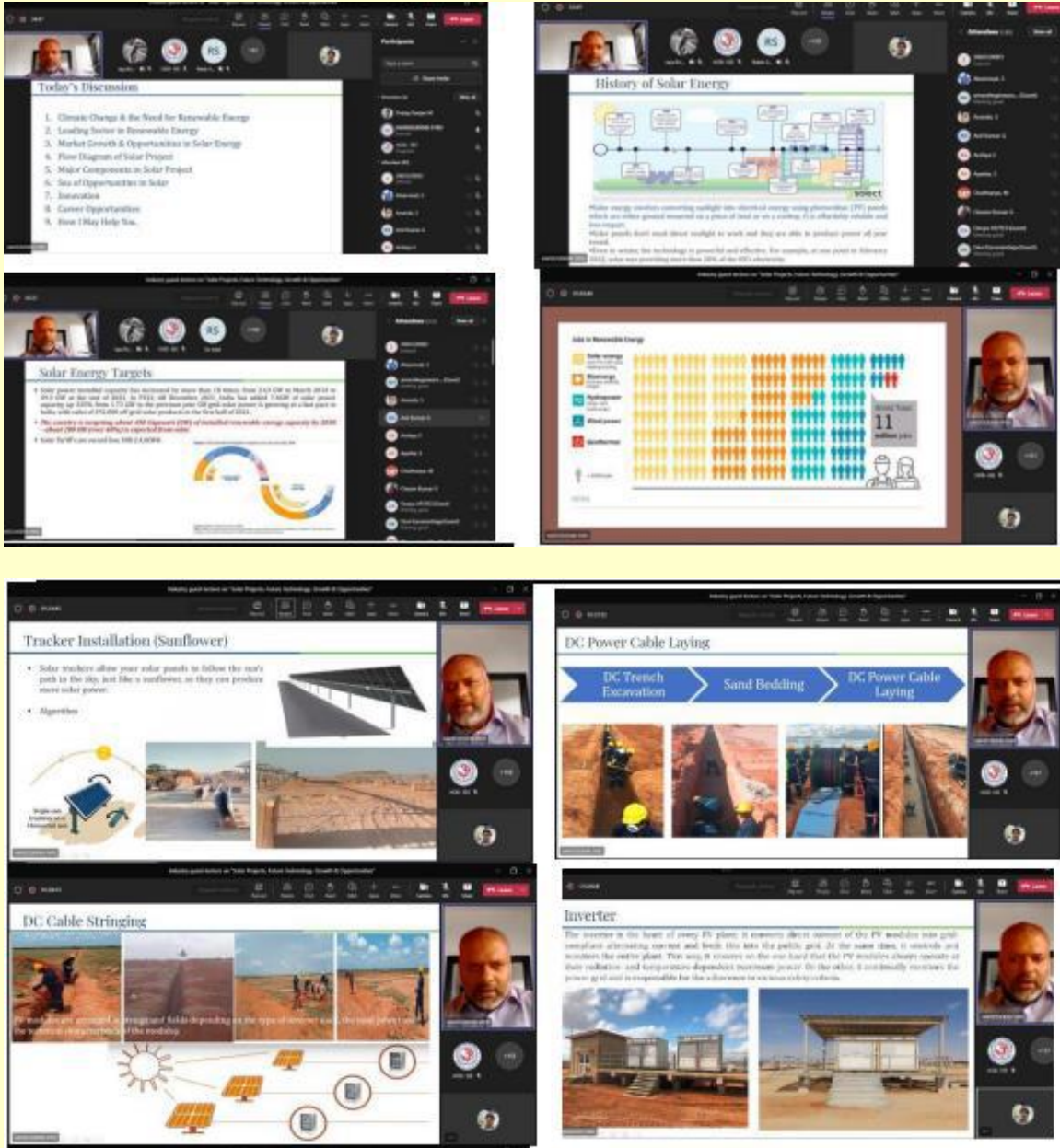




The programme is started at 11:00 PM with a welcome address to all the audience by the Dr. A V Pavan Kumar, H.O.D, EEE, MITS, Madanapalle. The resource person Mr. Syed Hafeez, General Manager – Planning & Project Control in Sterling & Wilson Renewable Energy Limited (SWREL), Mumbai, INDIA was introduced by Dr. Pratap Ranjan Mohanty, Assoc. Prof., Dept. of EEE. The resource person started the session by extending his hearty thanks to the participants, organising members, HoD, Principal and Management of MITS Madanapalle for giving him opportunity to share his knowledge and experience in "Solar Projects, Future Technology, Growth & Opportunities".

The eminent resource person highlighted the climate change and the need for renewable energy. Also, he focused on the leading sectors in the renewable energy. Besides, the growth in market and opportunities in the solar sector are being discussed during the session. The distinguished speaker discussed the solar projects through flow diagram. Also, the basic architecture of solar project is elaborated by the eminent resource speaker. During the session, the major opportunities are solar sector are being focused by the speaker. Besides, the prominent resource person pointed that there are huge number of opportunities for the engineering graduates in recent decades. Moreover, possibilities and innovations in solar sector are being highlighted during the session. At the end, the prominent speaker underlined the career opportunities for graduates. Also, speaker assured to help the participants/students for any kind of solar projects.

The banner is for an online industry guest lecture. At the top, it says "Industry Guest-Lecture (online)" in blue text on a white background. Below that, a red banner contains the title "Solar Projects, Future Technology, Growth & Opportunities" in white text. The central part features a circular portrait of Mr. Syed Hafeez, with his name and title "Resource Person" above it. To the left of the portrait is the IEEE logo, and to the right are logos for the Department of Electrical & Electronics Engineering, MITS Madanapalle, and the National Board of Accreditation (NBA). Below the portrait, the date "17<sup>th</sup> September 2022" and time "11 AM" are displayed. A red banner below this states "Organized by Department of Electrical & Electronics Engineering". The bottom section lists the faculty members: Dr. P. R. Reddy (Coordinator), Dr. A. V. Pavan Kumar (H.O.D), Dr. C. Yerrala (In-charge), Mr. N. Kalyan (In-charge), and Dr. N. Vijayashankar (Coordinator). The bottom-most part of the banner features the Madanapalle Institute of Technology & Science logo and name, along with the text "(UGC-AUTONOMOUS INSTITUTION)", "ESTD. 1996", and the website "www.mits.ac.in".



**EVENT-9**

Department of Electrical & Electronics Engineering on the occasion of Institute of Electrical & Electronics Engineers Day Celebrations organised A Guest Lecture on "Intelligent Controller for Smart Integrated Wind and Solar based Hybrid Power Generation Scheme" on Date: 14.10.2022.

The programme is started at 1:30 PM with a welcome address to all the audience by the Dr. A V Pavan Kumar, H.O.D, EEE, MITS, Madanapalle. The resource person Dr. V. B. Thurai Raaj in Assistant Professor, Dept. of EEE, MITS Madanapalle was introduced by Mr. Gumpu Srinivasulu, Assistant Professor, Dept. of EEE. The resource person started

the session by extending his hearty thanks to the participants, IEEE coordinators, executive members, HoD, Principal and Management of MITS Madanapalle for giving him opportunity to share his knowledge and experience in “Intelligent Controller for Smart Integrated Wind and Solar based Hybrid Power Generation Scheme”. The resource person highlighted the intelligent controllers requirement for the integration of renewable energy into the grid. Also, he focused on the various challenges in the integration of renewable energy into the grid and various controllers. Besides, the growth in market and opportunities in the renewable energy sector are being discussed during the session. The distinguished speaker discussed various renewable energy models. Also, the basic architecture of solar and wind are elaborated by Dr. Thurai Raaj. During the session, the major opportunities are renewable energy sector are being focused by the speaker. Besides, the prominent resource person pointed that there are huge number of opportunities for the engineering graduates in recent decades. Moreover, possibilities and innovations in solar sector are being highlighted during the session. At the end, the prominent speaker underlined the career opportunities for graduates. Also, speaker assured to help the participants/students for any kind of research guidance.





## **EVENT-10**

Department of Electrical & Electronics Engineering in association with ISTE Student Chapter Organised A Three Day On Campus Skill Development (Hands-on) Programme on Conventional Bike Retrofitting in to EV on Date: 03.11.2022 to 05.11.2022.

Day 1 (03.11.2022)

9.30 AM – 10.45 AM

The session was started at 9.30 AM. Dr. A V Pavan Kumar, Professor & Head, EEE Dept. (Coordinator) initiated the inaugural session and welcome the dignitaries and the participants to the Three-Day On-Campus Skill Development (Hands-on) Program on “Conventional Bike Retrofitting into EV”. Dr. Eswar Sunkara, Chief Scientific Officer, MITS has given insight of EV eco system through of the world and compared it the EV technology development in India. He also stressed about the job opportunities in the field of Electric Vehicle sector for electrical engineers in near future. Dr. C. Kamal Basha, Vice Principal Administration addressed the meeting and signifies the efforts of MITS, Madanapalle for making platform like research interaction and knowledge sharing even in pandemic situation. Besides, he indicated in brief regarding the importance of programs like FDP and Skill development programs. Dr. P. V. Venkateswara Rao, ISTE institute level coordinator shared his views on the sill development program and advised student community to interact and learn new skills. Dr Pratap Ranjan Mohanty, Assoc. Prof., Dept. of EEE and Convenor for the Skill development program has introduced the resource person to the audience and given the objective of the skill development program. The Chief Guest & Resource Person for the Skill Development Program Mr Ashhar Ahmed, Co-Founder & Director, SkillShark EduTech, Hyderabad, INDIA.



11.00 AM – 1.00 PM

Resource presented evolution of EV technology around the world and presented the status of EV technology in India. Classification of E Vehicles, types of electric motors utilized for E Vehicle and different types of batteries used in E Vehicle. In detail explanation of selection of Electric Motor – Calculation of motor power based on type of vehicle, no of passengers is demonstrated. Calculation and selection of battery pack to give desired output. Battery- Different types of batteries, selecting battery, charging and discharging characteristics. Calculation to determine the no. of batteries required for a particular vehicle. Calculation to determine no. of KM for one charging.

2.00 PM – 4.30 PM

The session started with the explanation of various parts in the conventional bike. The operation of bike engine and how the power is generated to drive the vehicle. The gear system and all other aspects of the conventional Bike. The students participated in the removing the bike engine and other parts of the vehicle. The students in groups participated in the activity for disassembling the vehicle engine. The session ended with the online quiz conducted by the resource person to gauge the understanding of the participants.

Day 2 (04.11.2022)

10.00 AM – 11.30 AM

Day 02 the session started with the recap. As the selection of motor and battery were discussed the focus was on the design of controller for the E vehicle. The entire session was about designing the controller for controlling the speed of motor for driving the vehicle and design process of battery management system. The components utilized for making of retrofitting are displayed and students were able to calculate the power rating of motor and battery pack requirement.

11.45 AM – 1.00 PM

The session started with design process of mounting the electrical motor into the bike and placement of batteries and controller.

Participants in groups participated in fixing the controller to bike and to all the connections related to the controller. The bike was taken to workshop for welding purpose. A case to hold the batteries need to be prepared and some parts of the bike need to be removed to

create the space to fix the parts. First the base for the electric motor was created and welded to the frame.

Day 3 (05.11.2022)

10.00 AM – 11.30 AM

Day 03 the session started assembling all the parts related to E vehicle. Participants in groups assembled all the parts of Electric Vehicle. The power and control connection were given. The operation of the central controller was explained by the resource person in detail. The wiring schematic and how the speed of the motor is controlled by controlling the acceleration knob. The safe operation and the safety procedures that need to be taken care while charging the e vehicle.

11.45 AM – 1.00 PM

The final inspection of all the connections were performed by the technical expert along with the resource person. The interactive session where the participants interacted with the resource person and cleared all the doubts regarding the connections, charging and development of charging infrastructure. In depth discussion on Renewable energy based charging station and development of such infrastructure can still reduce the carbon emission.

**MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE**  
www.mits.ac.in (UGC-AUTONOMOUS INSTITUTION)  
Madanapalle-517325, Annamayya Dist., Andhra Pradesh

Organized by Department of EEE in Association with ISTE Student Chapter

**SKILL SHARK** Three-Day On-Campus Skill Development (Hands-on) Program  
**Conventional Bike Retrofitting into EV**

Inviting Students, Faculties, Researchers, Professionals, Entrepreneurs, Engineers

3<sup>rd</sup> to 5<sup>th</sup> Nov 2022  
10.00 AM to 5.00 PM IST

Registration Link: [shorturl.at/bJN04](https://shorturl.at/bJN04)

Register Here

\*Certificates will be provided.

**Registration Fee**  
MITS Students/Staff @ INR 400/-

**Others**  
Student @ INR 800/-  
Faculty / Researcher / Professional / Entrepreneurs / Engineer @ INR 1,000/-

For any queries please contact : +91 9438526974 / 9100904908 | [pratapranjanm@mits.ac.in](mailto:pratapranjanm@mits.ac.in)

Chairman: Dr. P.R. Mohanty, Vice-Chairman: Dr. A.V. Pavan Kumar, Chief Coordinator: Dr. C. Yuvraj, Patron: Mrs. Keerthi Nadeba, Chief Patron: Dr. N. Vijaya Shankar Choudary, Assoc. Prof: Prof. S. N. S. Reddy, Registrar: Faculty In-charge: Secretary & Correspondent



Conventional Bike



Retrofitted into e-bike





## **EVENT-11**

Department of Electrical & Electronics Engineering organized An Industrial Visit to Heritage Foods Limited, B Kothakota, Annamaiah District, Andhra Pradesh on Date:08.11.2022.

A total of 63 numbers of students from EEE II YEAR along with 03 faculties and 01 instructor reached Heritage Foods Limited, B Kothakota, Annamaiah District, Andhra Pradesh at around 12.15 PM. The total number of students was divided into two (02) groups and each student group was guided by resource person in the industry and two technical staff during the visit. The resource person and the technical staff of the industry explained about the receiving of the milk from the farmers, measuring parameters, milk purification process, chilling process and testing of milk to determine concentration of fat contents at the initial stage. In the next stage the milk is processed for high temperature (About 100 degree Celsius) for mixing the fat contents to obtain the thin milk. And the temperature is reduced again and the milk stored at 4 degree Celsius temperature in the storage tanks. And the company as tie-up with Nestle brand products and they deliver curd and curd products to them. The resource person explained about the curd preparation process, packing process, hot storage and cold storage process. At the end they explained about the electrical control panels in the industry for controlling varies motors, boilers and about the condensers. The visit was more interactive with effective learning and the students were made to understand the theoretical concepts involved in a Heritage Food Products manufacturing. The industrial visit was concluded at 2:45 PM and the students returned to MITS, Madanapalle, Angallu at 04.00 PM on the same day. We would take this opportunity to thank MITS Management, Principal, Vice Principal Administration and Vice Principal Academics for their continuous support towards organizing such events for betterment of student and faculty community.







## **EVENT -12**

Department of Electrical & Electronics Engineering Organised One day skilled workshop on "Fundamentals of PCB design" on Date: 19.11.2022.

Department of Electrical & Electronics Engineering in association with Institutions Innovation council (IIC) at MITS organised one day skilled workshop Titled "Fundamentals of PCB design" through online mode. The workshop started by 10.00 am with 35 participants. The coordinator Dr. K. Arulkumar welcomed the resource person and participants and given the brief introduction and significance of the workshop. The head of the Electrical & Electronics Engineering Dr. A. V. Pavan Kumar greeted the resource person and given the significance of the workshop with the today scenario in the industry. The online platform is given to the resource person Mrs. Uma Maheswari, cognizant for the presentation.

Topics include:

1. Printed Circuit Board (PCB) introduction
2. Layers of PCB design
3. Masking & Traces of PCB
4. Different softwares used in market

## 5. Demo of the software circuit – DESIGNSPARK

The participants installed the software designspark in the laptop and followed the resource person demo. The circuit of voltage source, resistor and LED is connected in the schematic design, PCB design and project file.

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**Department of Electrical & Electronics Engineering**  
One day skilled workshop on  
**Fundamentals of PCB design**  
Date : 19.11.2022

**Resource person**  
**Mrs. Y. Uma Maheswari**  
Cognizant

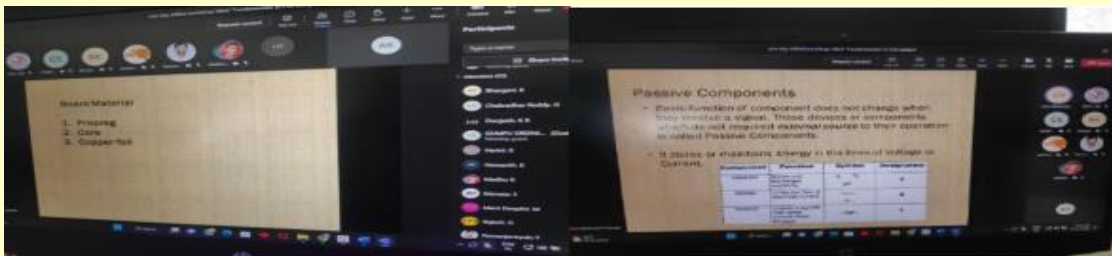
**Chief Patron**  
Dr. N. Vijaya Bhaskar Choudary  
Secretary & Correspondent

**Chief Patron**  
Mrs. N. Keerthi  
Executive Director

**Patron**  
Dr. C. Yuvaraj  
Principal

**HOD/EEE**  
Dr. A. V. Pavan Kumar  
Professor

**Co-ordinator: Dr. K. Arulkumar, Associate Professor**



## EVENT-13



Department of Electrical & Electronics Engineering in association with IIC and IEEE students' chapter A Guest Lecture on "Thermal Power Plant Engineering (Thermal Power Generation, Boiler, Turbine & Generator and Auxiliaries)" on Date: 14.12.2022.



The programme is started at 3:00 PM with a welcome address to all the audience by the Dr. A V Pavan Kumar, H.O.D, EEE, MITS, Madanapalle and shared his view on National Energy Conservation Day. Vice Principal Academics Dr. P. Ramanathan has shared the importance of Energy conservation day and motivated students towards learning and utilization of knowledge to build better technology for future. The resource person Mr. D. Anbarasu, Assistant Director(Technical) – National Power Training Institute, Bangalore, INDIA was introduced by Dr. A. V Pavan Kumar, H.O.D, EEE. The resource person started the session by extending his hearty thanks to the participants, organising members, HoD, Principal and Management of MITS Madanapalle for giving him opportunity to share his knowledge and experience in “Thermal Power Plant Engineering”. The topic the resource person covered is Thermal power plant Generation, Power plant Equipment’s, Power Plant Schemes, Power Plant Layout, Generator and Electrical system. The audience was made aware of the following through his presentation.

**Guest Lecture on**  
**"Thermal Power Plant Engineering"**


In association with IIC and ISTE  
 Organized by Department of Electrical & Electronics Engineering

**Resource Person**  
**Mr. D. Anbarasu**  
 Asst. Director(Technical),  
 National Power Training Institute,  
 Bangalore

Date  
14/12/22  
Time  
3.00-4.00 PM

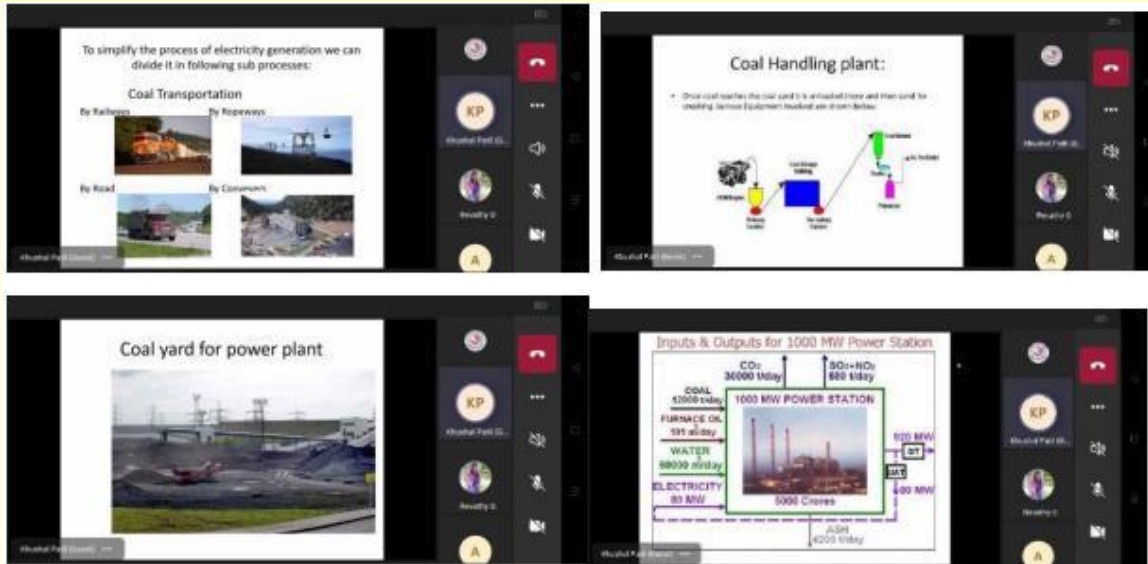
<b>Chief Patron</b> Dr. N. Vijaya Bhaskar Choudary Secretary & Correspondent	<b>Patron</b> Mrs. N. Keerthi Executive Director	<b>Co-Patron</b> Dr. C. Yuvaraj Principal
<b>Convener</b> Dr. A.V Pavan Kumar Professor, Hod EEE	<b>Co-ordinator</b> Revathy Gopinath (Assistant Professor, Department of EEE)	



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#### EVENT-14

Department of Electrical & Electronics Engineering in association with IIC and IEEE students' chapter Organised Poster Presentation on "National Energy Conservation Day" on Date: 14.12.2022.

Department of Electrical & Electronics Engineering, MITS – Madanapalle organized a oneday event on National Energy Conservation Day'22 14th December 2022. The Theme for the poster presentation is on Energy Conservation. The event started with the welcome address by Dr A V Pavan Kumar, HoD, EEE. The importance of the Energy Conservation Day and the theme of the poster presentation explained by Ms. Revathy Gopinath, Assistant Professor & IIC coordinator, Dept. of EEE A total of 22 students i.e. 9 batches participated in poster making competition. The students designed the posters on the theme of Energy Conservation during the event. The participants were given time of 2 hours to think, design and present their idea in the form of a poster. The participants participated very actively and presented their ideas in an innovative manner by sketching their ideas on the poster. The participants were allowed to present their idea in the form of poster to the committee for evaluation. All the participants presented their idea and how the problems in electric power generation and utilization can be achieved by energy conservation were presented.

**National Energy Conservation Day 2022**

In association with IIC and IEEE

Organized by Department of Electrical & Electronics Engineering




**Poster Presentation**



Date  
14/12/22

Time  
10.00 - 12.00 PM

<b>Chief Patron</b> Dr. N. Vijaya Bhaskar Choudary Secretary & Correspondent	<b>Patron</b> Mrs. N. Keerthi Executive Director	<b>Co-Patron</b> Dr. C. Yuvaraj Principal
<b>Convener</b> Dr. A.V Favan Kumar Professor, HOD EEE	<b>Co-ordinator</b> Gumpu Srinivasulu (Assistant Professor, Department of EEE)	<b>Co-ordinator</b> Revathy Gopinath (Assistant Professor, Department of EEE)



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**EVENT-15**

Department of Electrical & Electronics Engineering Industrial Visit to “Rayalaseema Thermal Power Project (RTPP)” Muddanur, Kadapa, Andhra Pradesh on Date: 18.12.2022.



The Industrial Visit to RTPP, started at 6.15 AM by college bus and reached the plant by 11.30 AM. Total crew was divided into five batches with a size of 12 students under the guidance of each faculty member. The students along with faculty members visited the plant between 12 .00 PM and 2.00 PM. Sri P. Hari Babu, AEE/O&M/ Stage-II/RTPP elaborated the functioning mechanism of the Rayalaseema Thermal Power Project (RTPP) and strongly insisted the safety precautions that should be adhered during the visit. Rayalaseema Thermal Power Station is located at Yerraguntla (Md) in Kadapa District in Andhra Pradesh. The power plant is one of the coal-based power plants of APGENCO. The Thermal Power Station has a capacity of 1650 MW; 5 units of 210 MW each and 1 units of 600 MW as listed below.

Plant	Installed Capacity (MW)	Date of Commissioning	Status
I	2X210	1994	Commissioned
II	2X210	2007	Commissioned
III	1X210	2010	Commissioned
IV	1X600	2018	Commissioned

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Organized by Department of Electrical & Electronics Engineering

**Industrial Visit**  
 to  
**Rayalaseema Thermal Power Project (RTPP)**  
**Kalamalla, Kadapa, AP**

[www.mits.ac.in](http://www.mits.ac.in)

## EVENT-16

Departments of AI&DS, EEE and ME Organised A One Day Virtual Workshop on "Robotics, AI & Machine Learning" Jointly on Date: 19.12.2022.



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**A One Day Virtual Workshop on  
Robotics, AI & Machine Learning**

**Resource Person**  
**Jubilee Prasad Rao**  
Principal R&D Engineer  
Global Technology Connection Inc, Atlanta

**19<sup>th</sup> December 2022** **Venue: Seminar Hall - A**

<b>Chief Patron</b> Dr. N. Vijaya Bhaskar Choudary Secretary & Correspondent	<b>Patron</b> Mrs. N. Keerthi Executive Director	<b>Chief Coordinator</b> Dr. C. Yuvaraj Principal	<b>Coordinator</b> Dr. Eswar S CSO, MITS	<b>Conveners</b> Dr. K. Chokkanathan Dr. Arul Kumar Dr. I. Arun
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## EVENT-17

Department of Electrical & Electronics Engineering in association with IIC and ED cell Organised A Guest Lecture on "Entrepreneurship opportunities in Solar Power" on Date: 29.12.2022.

The programme is started at 2:00 PM with a welcome address to all the audience by the Dr. A V Pavan Kumar, H.O.D, EEE, MITS, Madanapalle. The resource person Mr. Tinsu Mathew, Managing Director of EL Sol Power Solutions Pvt. Ltd, Kerala, INDIA was introduced by Ms. Revathy Gopinath, Assistant Professor, EEE. The resource person started the session by extending his hearty thanks to the participants, organising members, HoD, Principal and Management of MITS Madanapalle for giving him opportunity to share his knowledge and experience in "Entrepreneurship Opportunities in Solar Power".

The audience was made aware of the following through his presentation.

- What is Entrepreneurship
- Opportunities in renewable energy industry in India

- Entrepreneurship Journey
- Basic Types of Solar Systems
- Solar On-grid and Solar Off-grid system
- On-grid System-Diagram, Major Components
- ROI & Advantages of Investing in Solar
- How to start Entrepreneurship journey?

The session was concluded followed by a vote of thanks, given by Dr. A V Pavan Kumar, H.O.D, Electrical and Electronics Engineering Department, MITS, Madanapalle.



### Faculty Publications -2022-2023

SL NO	Author	Co-authors	Title of the Paper/book/book chapter	Publisher
1	A V Pavan Kumar	Balamurali Krishna, P, P Sinha, M Kumar, A V Pavan Kumar, Maharana, Kar	An Intelligent Fault Detection and Classification Scheme for Distribution Lines Using Machine Learning	ETSAR
2	Balaji Damodhar T.S	Nandagopal V., Balaji Damodhar T.S., Vijayapriya P.,Thamilmaran A.	Improving Power Quality by DSTATCOM Based DQ Theory with Soft Computing Techniques	Tech Science PresS
3	Lakshmikhandan K	Ponnapalli B., Lakshmikhandan K., Palanisamy K., Sithambaram M.	A hybrid technique for grid-connected solar-wind hybrid system with electric vehicles	SAGE Publications Inc.
4	T.S. Balaji Damaodhar & Arulkumar K.	C.Shakthi gokul rajan, K. S. Arun singh, Balaji Damaodhar, K. Arulkumar	Transient Voltage Stabilization Using Dynamic Voltage Restorer with ANN controller based reactive power compensation	European Chemical Bulletin
5	Sreenivasulu G	Sreenivasulu G., Sahoo N.C., Balakrishna P.	A coordinated stochastic dispatch model for hybrid energy markets with renewable energy uncertainties using moth flame optimization	Springer Science and Business Media Deutschland GmbH
6	Bardhan Roy A.	Bardhan Roy A.	Optical studies and validation of multidimensional hybrid metamaterial embedded light trapping structure for p-Si/n-ZnO based thin c-Si solar cell	Taylor and Francis Ltd.
7	Balaji Damodhar T.S.	Ramesh P., Balaji Damodhar T.S., Sathyasekar K., Vinoth J., Bharatiraja C.	Minimization of leakage current in a maximum boost control impedance source transformer-less inverter	Elsevier Ltd
8	Lakshmikhandan K	Ramesh P., Gouda P.K., Lakshmikhandan K., Ramanathan G., Bharatiraja C.	A three-port bidirectional DC-DC converter for PV – Battery – DC microgrid	Elsevier Ltd



			application using fuzzy logic control	
9	Thurai Raaj V B	Pradeepkumar G, Senthil T, Manikandan P, Thurai Raaj V B, Rathika P, Ponmurugan P	Smart Controller for Air Conditioning in Car using IoT	IEEE Xplore
10	Thurai Raaj V B	Arunadevi R, Sudha S, Karthi V, Saranya M D, Thurai Raaj V B, Kavin Kumar K	Deep Learning based ROI Segmentation Using Convolution Neural Network	IEEE Xplore
11	Dr. Lakshmikhandaan K	Jenifer. A, K. Lakshmikhandaan, P Ponmurugan, C. S. Sundar Ganesh Devaraju Kalyan, T. Sathish	Wind and Solar Hybrid Power Generation for DC grid	IEEE Xplore
12	Dr. Balaji Damodhar	S. Priyadharsini 1, C. Kannan 1, *, S. Sivakumar 1 and T. S. Balajidamodhar	A review and generation of electricity from waste tyres by using pyrolysis technology	GSC Online Press
13	K. Arulkumar	Manideep, Sahina, Shakoor baba Yashwanth kumar, K. Arulkumar	Performance Analysis of Single-Phase Inverter Using Different Modulations Techniques, Vol. No. 08, Issue. 05, 2023.	International Journal for Research Trends and Innovation
14	Thurai Raaj V B	R Thejaswini, I Vennele, CV Swaroop Kumar, S Sreemanth Reddy, B Srinivasulu, Dr. V.B. Thurai Raaj	Power Quality Improvement PV based Using S-STATCOM	International Journal for Research Trends and Innovation
15	Jambulingam Jawahar Babu	Vavilala Sateesh Kumar, Syed M Shareef, Jambulingam Jawahar Babu	Performance Comparison of the Integer Order and Fractional Order Controllers	University of Oradea Publishing House
16	Sreenivasulu Gumpu	N C Sahoo, Balakrishna	An Optimal transport theory-based approach for efficient dispatch of transactions in energy markets	Wiley
17	Dr. C. Kamal Basha	M. Reddy Nagaraja, Syed Niha, J. rupesh, R. Jaswanth, Dr. C. Kamal Basha	Design a closed loop PFC based Bridge-less Landsman Converter	Bhavnagar: International Journal for Research Trends and Innovation

18	Dr. A. V Pavan Kumar	Hemalatha Nossam, Maneesha Syamakalla, Mohammed Sufian, Mallikarjuna Yanamala, Dr. A. V Pavan Kumar	Speed Control of Electric Vehicle Based on SOC of the Battery	International Research Journal of Modernization in Engineering Technology & Science
19	Dr. A. V Pavan Kumar	Veligandla Venkata Chandra Kanth, Gadikatla Sai Priya, Korlakunta Rukmini, Majjari Subramanyam, Dr. A.V. Pavan Kumar	Review on Piezo-Electric Materials	International Research Journal of Modernization in Engineering Technology & Science
20	Dr. A. V Pavan Kumar	K. Bhargavi, K. Balaji, A V Pavan Kumar, P.S. Ganesh, K. Mohammad Ashraf	A Single Stage Buckboost Transformerless Inverter for Single Phase Grid Connected Solar PV System	International Research Journal of Modernization in Engineering Technology & Science
21	N Sridhar	M. Baskar; S. Selvaganapathi; N. Sridhar; S. Muthupandian	Modeling of wind energy conversion system with variable load and variable source	AIP Conference Proceedings
22	Arjit Bardhan Roy	Arijit Bardhan Roy, Kalluri Vinay Kumar and Moumita Saha	Application and Utilization of High Aspect Ratio Anti Reflective Si Nano Structure Embedded Optical Sensor for IoT Applications	Chapman and Hall/CRC
23	Parth Sarathi Panigrahy, B. Sai Reddy, M. R. Harika, B. Arun Kumar	Parth Sarathi Panigrahy, B. Sai Reddy, M. R. Harika, B. Arun Kumar	Development of Fuel Cell-Based Energy Systems for 3-ph Power Development and Internet of Things Devices	Chapman and Hall/CRC
24	Aurobinda Bag	Aurobinda Bag, Bibhuti Bhushan Pati	Fuzzy Logic-Based IoT Technique for Direct Torque Control of Induction Motor Drive	Chapman and Hall/CRC