7.4 Energy and the community

Metric	Parameter
7.4.1	Local Community Outreach for Energy Efficiency

Report

Online Workshop

on

"Application of Automated Machine Learning in Electrical Industry"

Organised by

Department of Electrical & Electronics Engineering

Date: 24.05.2023

Time: 3.00 PM to 5.00 PM

Venue: Simulation Lab

Organized in association with: **Institution Innovation Council & Entrepreneurship Development Cell**

Submitted by: Ms. Revathy Gopinath, Assistant Professor, Dept. of EEE

Attendance: 37 participants

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. The resource person was **Mr. A M Govind Kumar, Director of SeaportAi, Chennai, Tamilnadu.**

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 "Machine Learning".

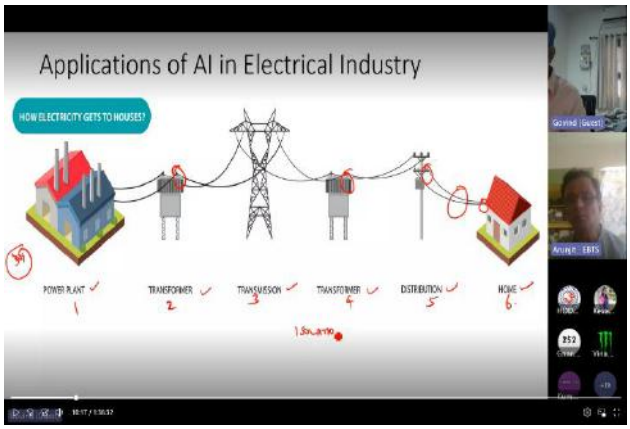
The topic the resource person covered is Introduction to Machine Learning and its application in electrical industry. The audience was made aware of the following through his presentation.

- Industry 4.0
- Application of AI in electrical industry
- Industrial Analytics – From preventive to predictive maintenance
- What is Automated Machine Learning
- Evolution of IT industry
- What is PowerBi
- Data Visualization using PowerBi
- How PowerBi dashboard can be used for energy sector

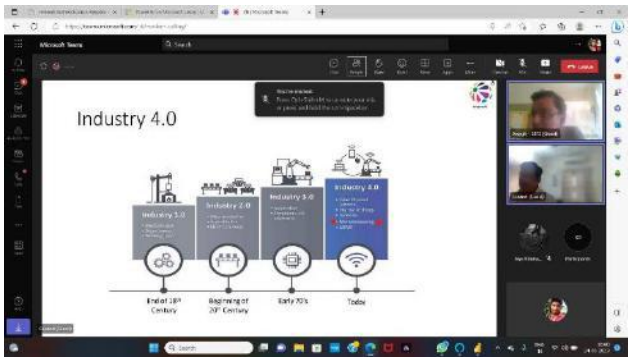
The session was concluded followed by a vote of thanks, given by Ms. Revathy Gopinath, Assistant Professor, Electrical and Electronics Engineering Department, MITS, Madanapalle.

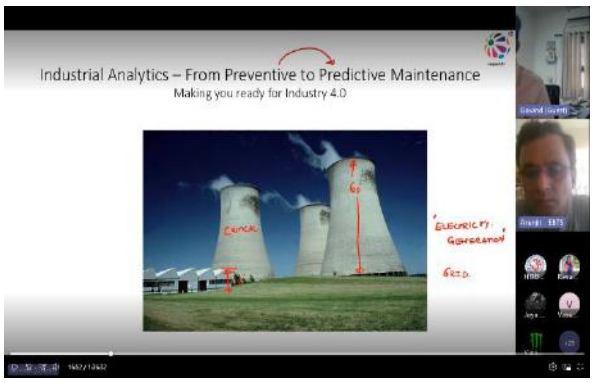
Photos:

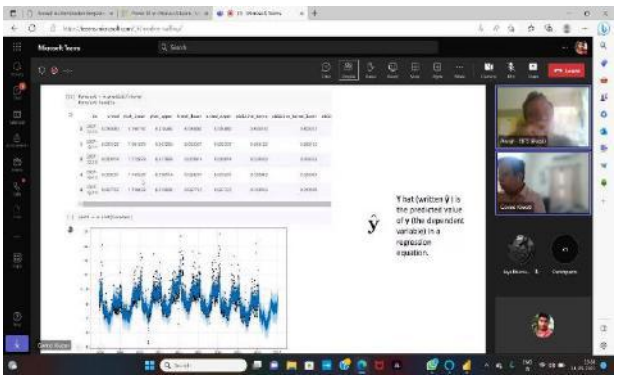

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE
(UGC-AUTONOMOUS INSTITUTION) www.mits.ac.in
Madanapalle-517325, Annamayya Dist., Andhra Pradesh
Online Workshop on
"Application of Automated Machine Learning in Electrical Industry"
In association with IIC & ED
Resource Person
Mr. A M Govind Kumar
Director of SeaportAi
Chennai, Tamilnadu
DATE
24/05/23
Session Start
3.00 PM -5.00 PM
Chief Patron
Dr. N. Vijaya Bhaskar Choudary
Secretary & Correspondent
Patron
Mrs. N. Keerthi
Executive Director
Program Chair
Dr. C. Yuvaraj
Principal
Convener
Dr. A.V Pavan Kumar
Professor, Hod EEE
Coordinator
Ms.Revathy Gopinath
Assistant Professor, Department of EEE
Venue : Seminar Hall B

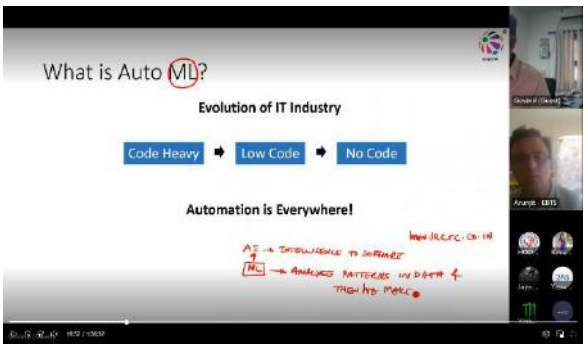

Applications of AI in Electrical Industry
HOW ELECTRICITY GETS TO HOUSES?
POWER PLANT
TRANSFORMER
TRANSMISSION
TRANSFORMER
DISTRIBUTION
HOME

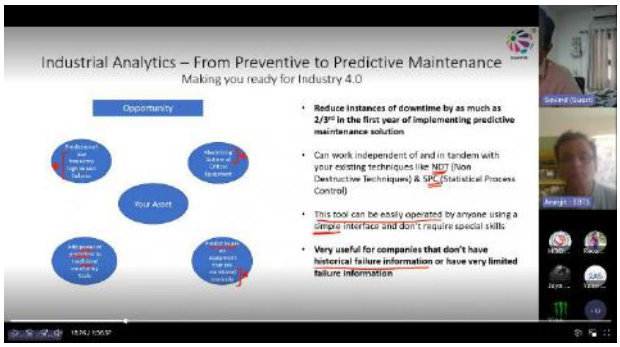

Applications of AI in Electrical Industry
Load Forecasting & Balancing

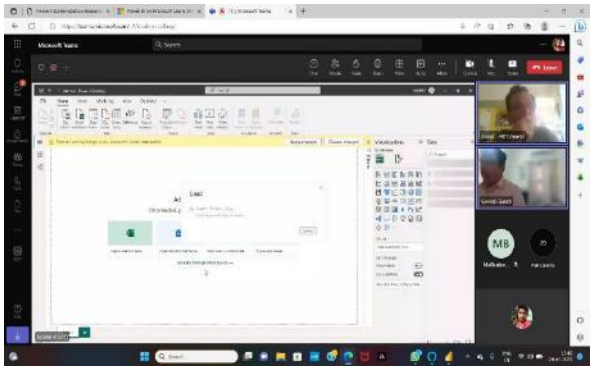

Industry 4.0

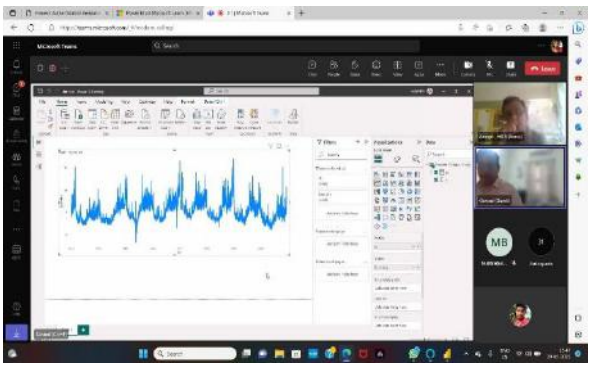

Industrial Analytics – From Preventive to Predictive Maintenance
Making you ready for Industry 4.0
ELECTRICITY GENERATION
GRID

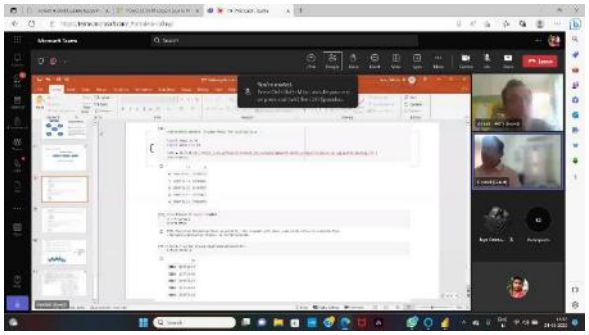


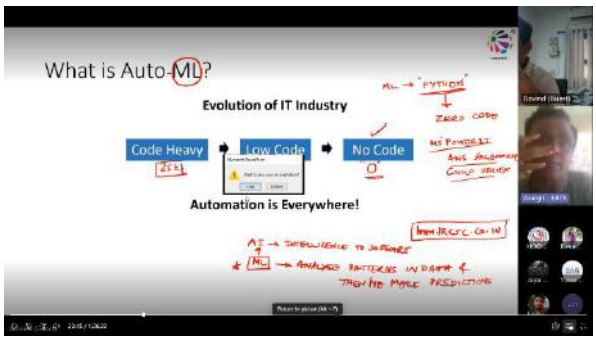

What is Auto ML?
Evolution of IT Industry
Code Heavy
Low Code
No Code
Automation is Everywhere!

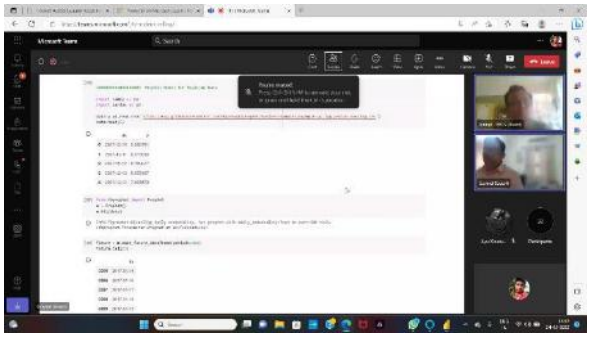

Industrial Analytics – From Preventive to Predictive Maintenance
Making you ready for Industry 4.0
Opportunity
Your Asset

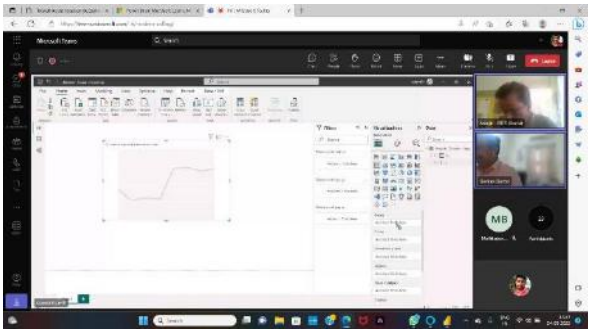












Signature of the Coordinator

Signature of HoD, EEE

Report on
One day Refresher Program
on Emerging Trends in Physical science research
&
National Science Day Celebrations
Organized by Department of Physics, MITS Association of NSS team MITS.
28th February 2023

Report submitted by: Dr S. Sreedhar, Asst. Professor, Dept. of Physics, MITS

National Science Day Celebrations:

The Department of Physics, Madanapalle Institute of Technology & Science celebrated National Science Day on 28 February 2023 and conducted one day Refresher Program on Emerging Trends in Physical science research. The national science day will be celebrated to mark the discovery of the Raman Effect by Indian Physicist Sir C V Raman on this particular day in 1928. For his discovery, Sir C. V. Raman was awarded Nobel Prize in Physics in 1930.
Every year, this day is celebrated across the India with scientific temper for spreading the message of importance of science and its applications among the people. Govt. of India also announces a particular theme for it and the current year 2023 theme is "Global Science for Global Wellbeing".

Pre event sessions:
Quiz Science Day Quiz competition conducted on **20/02/2023 12:10 PM - 01:00 PM Seminar Hall-B**. total of 29 students were attended for the events. The quiz competition framed in such that to know basic knowledge of science discoveries, general awareness in science and wisdom of Indian science and technology. The winners were awarded prizes on 28-03-23 on national science day.
Date: 28-02-2023
LIST of Competition Organised by: NSS UNIT MITS in Association with PHYSICS DEPARTMENT on the occasion of National science day.
1) ESSAY (Timings 9:30am to 10:30am)
2) POSTER MAKING (Timings 10:30 am to 11:00 am)
3) SHOTGUN (timings 11:00 am to 12:00 pm)
4) PROJECT EXPO (timings 1:00 pm to 2:00 pm)
5) DEBATE (Timings 2:00pm to 3:00pm)

The National Science day celebration program started at 1:30 PM with welcome address by **Dr. M. Chandra Sekhar**, Head, Department of Physics. MITS, Madanapalle. Inauguration session chaired by **Prof. P. Ramanathan**, **Vice Principal, Academics, Dr. S. Eswar, CSO, MITS and Dr. Chandra Mohan, I B. Tech. Coordinator,**

Dr. M. Chandra Sekhar briefly described about Sir C V Raman and mentioned the importance of National Science Day. **Prof. P. Ramanathan**, **Vice Principal, Academics,** he laid emphasis on inventions and discoveries made in the field of science that have made the human life sophisticated and hence suggested the students and the teaching fraternity to strive for the benefit of science. **Dr. S. Eswar, CSO, MITS narrated** the sir C V Raman history and remarkable events in the his scientific journey. He lauded how sir CV raman make remarkable discoveries with minimal resources available at that time in India. **Dr. Chandra Mohan, I B. Tech. Coordinator** narrated important of science in the development of technology.

In the Afternoon Session, continued with conduction of One day Refresher Program
On Emerging Trends in Physical science research with the following speakers delivers the talk on excited topics.

S. No.	Program	Timings
1	Science Day Celebrations MITS. By. **Dr. M. Chandra Sekhar**, Head, Department of Physics. MITS, Madanapalle.	1:30 pm to 2:00 pm
2	Title: Experiments that have changed the world. By **Dr. Md. Mahabul Islam**, Assistant Professor, Department of Physics, MITS.	2:00 pm to 2:30 pm
3	Title- Cosmology- the birth and expansion of Universe. By **Mr. Prasad. K.** Mechanical Engineering, MITS	2:30 pm to 3:00 pm
4	Title- A glimpse on the applications of Raman Effect from day today life to advanced research. By **Mr. Chandra Kanth**, Assistant Professor, Department of Physics, MITS.	3:00 pm to 3:30 pm
5.	Title-Latest development in LASER based Raman Spectroscopy technique: application in engineering, material science, Biology etc.. By **Dr. S. Sreedhar,** Assistant Professor, Department of Physics, MITS.	3.30 pm to 4.00 pm
6.	Title- NSS events on science day. Valedictory	4.00 pm to 4.30 pm.

The closing ceremony is headed by **honourable Principle of MITS, Prof. C. Yuvaraj**. He pinned current situations like people mind set to choose one field blindly by following others. He addressed the change of technology in energy and mobility section. Earlier use to coal and transitioned with oil, now being transition with Electrical Vehicle, and future is more towards green technologies like hydrogen fuel, clean energy solutions. The students need to take the research carrier opportunities to address the future technological challenges. He appreciated conducting various programmes on this occasion for spreading the importance of science and motivated students towards research. He congratulated the winners of competitions. NSS Team MITS, faculty in charge **Dr. Rajesh**, Mechanical department, MITS delivered speech on the occasion of science day and activities conducted by NSS volunteers.

Valedictory remarks given by Dr. B. Jagadeesh Babu, Asst. Prof. Dept. of Physics. Function closed.

మిట్స్ కళాశాలలో ఘనంగా జాతీయ సైన్స్ దినోత్సవం

మదనపల్లె,ఫిబ్రవరి 28 (కురుక్షేత్రం ప్రతినిధి):అంగళ్లు సమీపంలోని మదనపల్లె ఇనిస్టిట్యూట్ ఆఫ్ టెక్నాలజీ అండ్ సైన్స్ మిట్స్ కళాశాలలో మంగళవారం జాతీయ సైన్స్ దినోత్సవాన్ని ఘనంగా జరుపుకున్నారు. ఈ సందర్భంగా కలశాల వైస్ ప్రిన్సిపాల్ డాక్టర్ రామనాథన్ మాట్లాడుతూ ఈ రోజు భారతీయ వైజ్ఞానిక ప్రతిభ ప్రపంచానికి తెలిసిన రోజుగా పరిగణిస్తామని,వైజ్ఞానిక రంగంలో నోబెల్ అందుకున్న దేశం మనదేనని ఆయన అన్నారు.ప్రతిష్టాత్మక దేశ పౌర పురస్కారం భారత రత్న అందుకున్న తొలి విజ్ఞాన కెరటం.ఒక్క మాటలో చెప్పాలంటే వైజ్ఞానిక శాస్త్రానికే వైద్యుడిలా మారిన వైజ్ఞానిక యోధుడు,ఆధునిక భారత విజ్ఞాన శాస్త్రవేత్తల పరిశోధనా ప్రతిభను అంతర్జాతీయస్థాయిలో ఇనుమడింపజేసిన వ్యక్తుల్లో సర్ సీవి రామన్ అగ్రగణ్యుడని అన్నారు.

వైజ్ఞానిక ఆవిష్కరణల్లో భారతీయులకు నోబెల్ రావడం గగనం. అలాంటిది సర్ సీవీ రామన్ ఆ ఘనత సాధించారన్నారు. అంతేకాదు, విజ్ఞానశాస్త్రంలో ఆ ఘనత సాధించిన ఏకైక ఆసియా వాసిగానూ చరిత్ర సృష్టించారన్నారని కొనియాడారు.నేటికి మనం ఆయనను స్మరించుకోవడం ఎంతో గర్వకారణమన్నారు.ఈ కార్యక్రమం లో కళాశాల ఫిజిక్స్ విభాగాధిపతి డాక్టర్ చంద్రశేఖర్,కళాశాల సి.ఎస్.ఓ డాక్టర్ ఈశ్వర్,ఈఈఈ విభాగాధిపతి డాక్టర్ పవన్,బి.టెక్ ఫస్ట్ ఇయర్ కో-ఆర్డినేటర్ డాక్టర్ చంద్రమోహన్ పాల్గొన్నారు.

Sir CV Raman a doctor for science and one of the people who made the research talents of modern Indian scientists

(By Our Skyline Staff Reporter)

Madanapalle, February 28: National Science Day was celebrated grandly at MITS Engineering College, Madanapalle. college Vice Principal Dr Ramanathan said in this prog at this day will be considered as the day when our Indian scientific talent is known to the world and we are the country that won the Nobel in the field of science. Sir CV Raman was the first scientific awardee to receive the prestigious national civilian award Bharat Ratna. In one word, he said that Sir CV Raman is a scientific warrior who has become a doctor for science, and one of the people who made the research talents of modern Indian scientists famous at the international level. It is a feat for Indians to get the Nobel in scientific discoveries. Such is the achievement of Sir CV Raman. Moreover, he said that he has created history as the only Asian who has achieved that feat in science. He said that we are very proud to remember him on this day. College Physics Head Dr Chandra Shekhar, College CSO Dr Eshwar, EEE Department Head Dr Pawan, B Tech First Year Coordinator Dr Chandra Mohan and others participated in this program.

















A Report on "Rayalaseema Thermal Power Project (RTPP)" Muddanur, Kadapa, Andhra Pradesh 08.01.2023

Submitted by: Dr. V B Thurai Raaj, Assistant Professor, Department of EEE

REPORT RECEIVED ON 21.01.2023
No. of students visited : 43
Year & Semester : III Year I semester B. Tech III Year EEE-A students
No. of faculty Members accompanied : 04
Date of Visit : 08.01.2023

One-day Industrial Visit to Rayalaseema Thermal Power Project (RTPP), Muddanur has been organized for the III Year I semester B. Tech, EEE, Sec.-A students on 08th January 2023.

Faculty Accompanied:

1. Dr. V B Thurai Raaj
2. Mr. S. Bharath Kumar
3. Mrs. K. Revathi
4. Mr. Y. Ramanjaneyulu

The Industrial Visit to RTPP started at 6.30 AM by college bus and reached the plant by 11.00 AM. The total crew was divided into five batches with a size of 11 students under the guidance of each faculty member. The students along with faculty members visited the plant between 1.00PM and 5.00 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 that safety precautions should be adhered to during the visit.

About RTPP:

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

RTPP was developed under 3 stages namely stage I, II, and III. The station has been performing well in the recent years by achieving a high plant load factor. It stood first in the 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.

Field Visit Information:
The students visited all segments of the Power Plant and interrogated with the experts.
Various segments like

1. Cooling Towers
2. Unit Control Board(UCB)
3. Main Control Room(MCR)
4. Turbine Floor
5. Switch yard
6. Generator Transformer Yard
7. Boilers
8. Bunkers
9. Mills (pulverized coal)
10. Cooling Tower pump house

were visited by our students. The students learnt the internal functioning mechanism and observed the working environment of the plant by undergoing the visit. They experienced the operation of each segment by visualizing their practical aspects.

The visit was more interactive with effective learning and the students were made to learn the innovative technology implemented in the plant. We extend our sincere gratitude to the Management, Principal, Dean-Administration, Vice Principal, Associate Dean-IIIC, and Head of the Department-EEE for their fruitful encouragement and constant support in arranging & organizing the industrial visit.

Report

Guest-Lecture

on

"Role of Static Power Conversion in Current and Future Power Systems"

Organised by

Department of Electrical & Electronics Engineering

Date: 21.01.2023

Organized in association with: **IEEE student chapter and ISTE, MITS Madanapalle.**

Submitted by: **Dr. Gumpu Sreenivasulu**, Assistant Professor, Dept. of EEE.

Attendance: 30 participants (Internal)

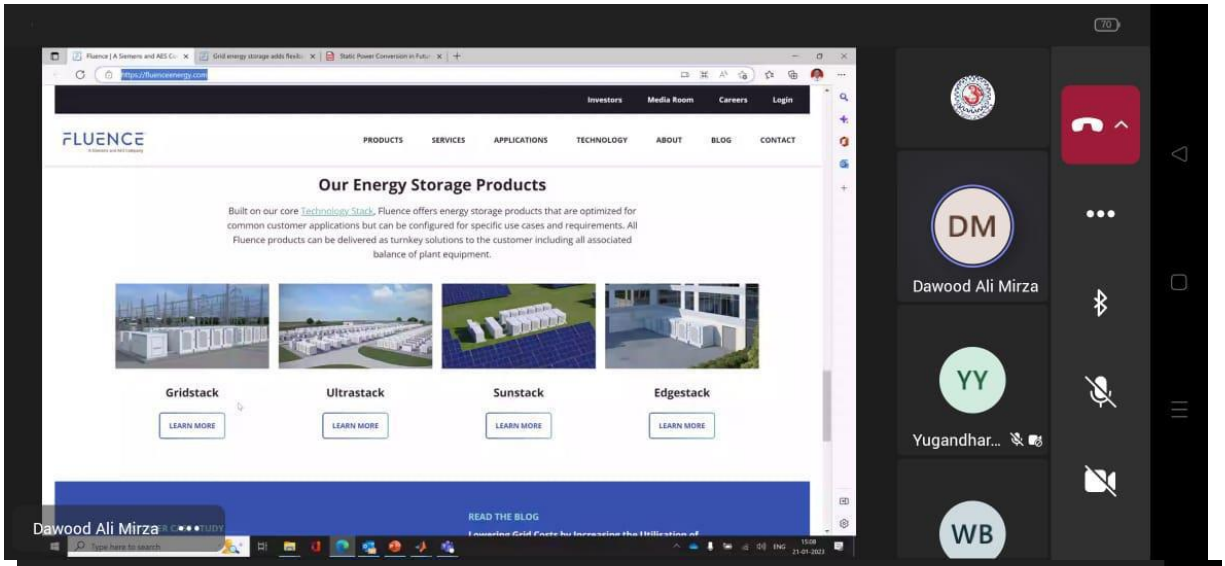
The programme is started at 2:30 PM with a welcome address to all the audience by the **Dr. A V Pavan Kumar**, H.O.D, EEE, MITS, Madanapalle. The resource person **Mr. Dawood Ali Mirza** R&D Engineer, Fluence India, was introduced by **Dr. Gumpu Sreenivasulu**, Assistant Professor, Dept. of EEE.

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 ''Role of Static Power Conversion in Current and Future Power Systems".

The resource person highlighted the various types of renewable energy and 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 converters. 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 Mr. Dawood Ali Mirza. During the session, the major opportunities, power converters and controllers design 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.

The session was concluded followed by a vote of thanks, given by Dr. Gumpu Sreenivasulu, Assistant Professor, Department of EEE (IEEE Coordinator) MITS, Madanapalle.

Photos: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Yugandhar...
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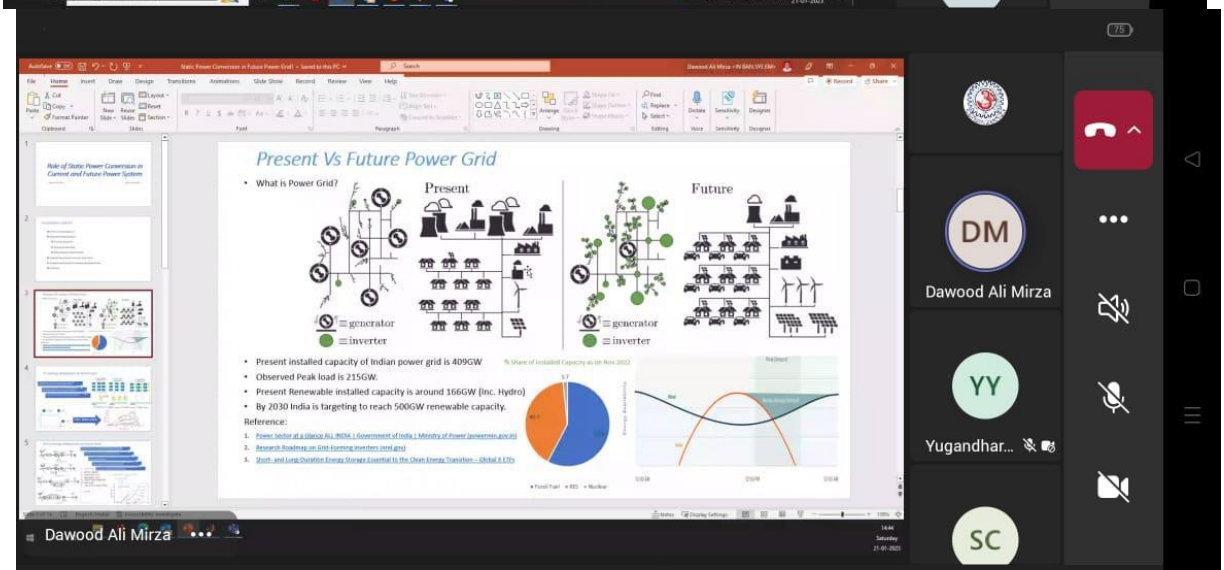
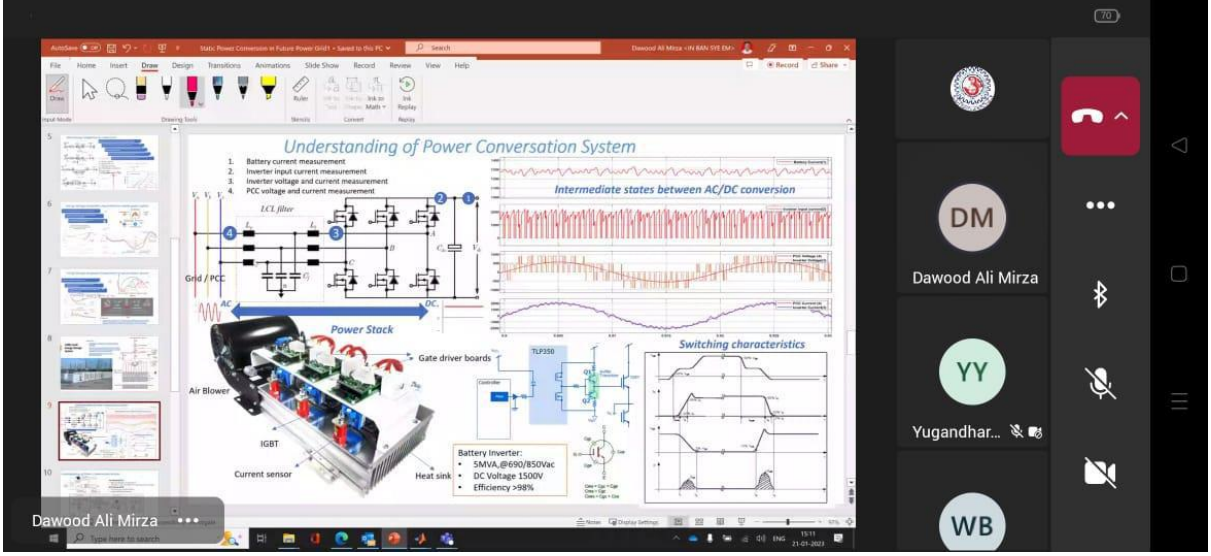
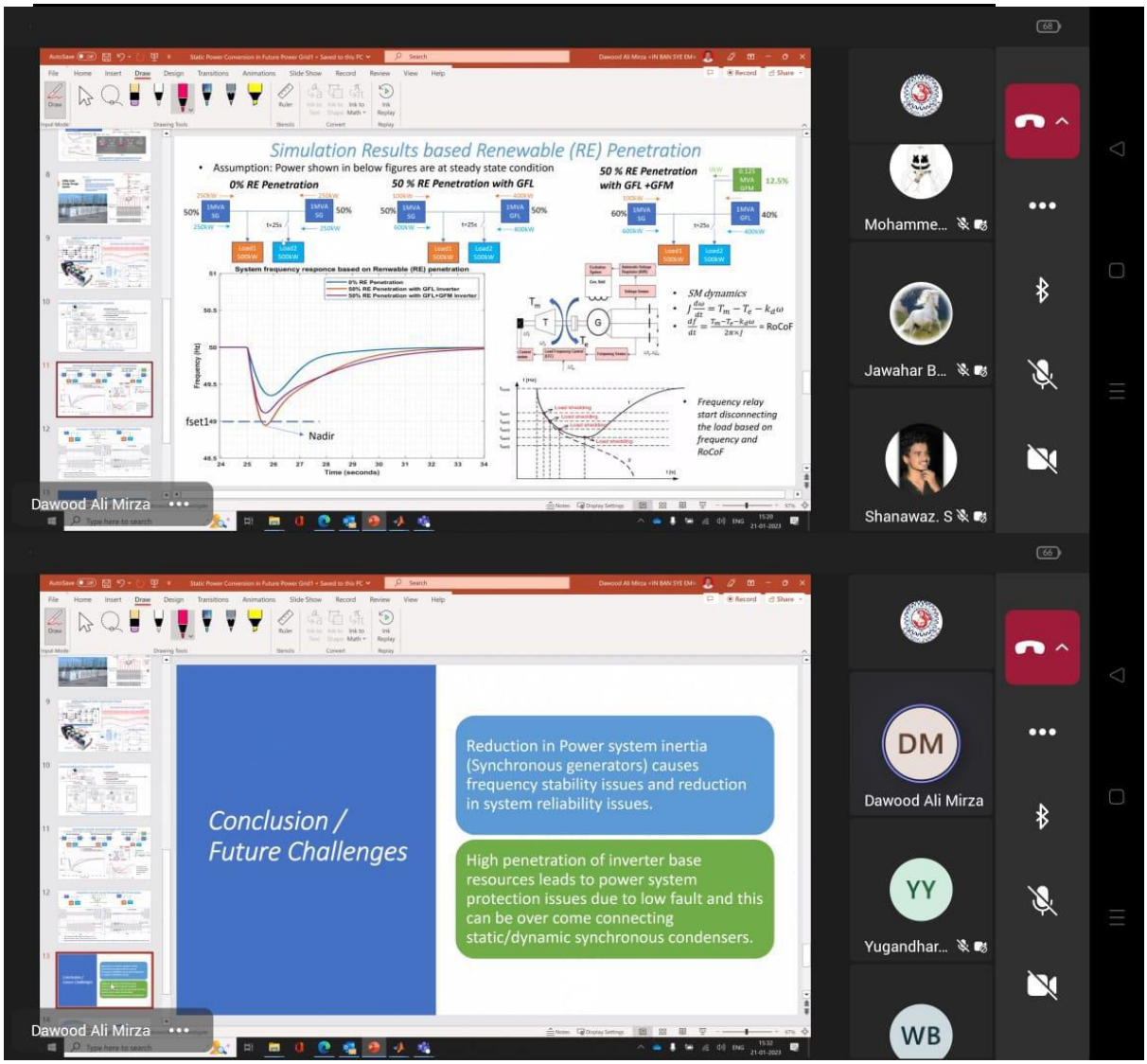

Present Vs Future Power Grid
What is Power Grid?
Present
Future
generator
inverter
Present installed capacity of Indian power grid is 409GW
Observed Peak load is 215GW.
Present Renewable installed capacity is around 166GW (Inc. Hydro)
By 2030 India is targeting to reach 500GW renewable capacity.
Reference:
Dawood Ali Mirza
Dawood Ali Mirza
Yugandhar...
SC


Understanding of Power Conversation System
Battery current measurement
Inverter input current measurement
Inverter voltage and current measurement
PCC voltage and current measurement
Intermediate states between AC/DC conversion
LCL filter
Grid / PCC
Power Stack
Gate driver boards
Switching characteristics
Air Blower
IGBT
Current sensor
Heat sink
Battery Inverter:
5MVA,@690/850Vac
DC Voltage 1500V
Efficiency >98%
Dawood Ali Mirza
Dawood Ali Mirza
Yugandhar...
WB



Signature of the Coordinator

Signature of HoD, EEE