VARDHAMAN COLLEGE OF ENGINEERING, HYDERABAD

Autonomous institute affiliated to JNTUH

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Academic Year: 2019-20

REPORT ON IEEE MTT-S SOCIETY

Event name: Workshop on EM CAD tools - HFSS

Conducted on: 04/01/2020 – 08/01/2020

Agenda:

IEEE MTT-S Vardhaman Student Chapter conducted its first event on ***"Workshop on EM CAD tools – HFSS"*** for the year 2020 in Advanced Communication Laboratory, Room No. 3001, Dept. of ECE for three days.

Dr. Sulakshana Chilukuri, MTT-S Student Chapter Faculty advisor, the faculty coordinators from RF and MWE domain Dr. DMK. Chaitanya, Dr. P. Nageshwara Rao, Mr. K. H. Murali delivered lectures on various topics. The detailed schedule of the workshop is attached.

Day 1 (Forenoon) : Lecture on Fundamentals of Antennas

The two-hour lecture is focused on brief discussion about

1. Antennas and types
2. Antenna Parameters
3. Microstrip Patch antenna

Day 1 (Afternoon): Lecture on Design parameters of RF & MWE Components

The two-hour lecture is mainly focused on the following points

1. Fundamentals of Patch antenna
2. Types of Feeding techniques. Advantages & Disadvantages
3. Design parameters of RF & MWE Components
4. Fundamentals of HFSS

Day 2 (Forenoon): Lecture on Fundamentals of HFSS

The two-hour lecture is mainly focused on the following points

1. Introduction to HFSS
2. Applications of HFSS
3. HFSS EM Methodology – FEM & Adaptive meshing
4. Design flow using HFSS
5. Modelling
6. Boundaries & Excitations
7. Solution types & set ups
8. Extraction of results

Day 2 (Afternoon): Lecture & Hands on training on Design of Microstrip Patch antenna using Line feed

Hands on training on designing of Microstrip antenna using HFSS involves the following design steps

1. Calculating length and width of patch using empirical design equations
2. Modelling the geometry using HFSS modeler
3. Assigning Boundaries, excitations, Radiation sphere
4. Analysis set up & post processing the results

Day 3 (Forenoon): Hands on training on Design of Microstrip Antenna using Coax feed

Hands on training on designing of Microstrip antenna using HFSS involves the following design steps

1. Calculating length and width of patch using empirical design equations
2. Modelling the geometry using HFSS modeler
3. Assigning Boundaries, excitations, Radiation sphere
4. Analysis set up & post processing the results

Day 3 (Afternoon): Hands on training on Design of Patch antenna using Coplanar waveguide feeding

Hands on training on designing of Microstrip antenna using HFSS involves the following design steps

1. Calculating length and width of patch using empirical design equations
2. Calculating the gap between coplanar ground and feed line width using design equations
3. Modelling the geometry using HFSS modeler
4. Assigning Boundaries, excitations, Radiation sphere

5. Analysis set up & post processing the results

Day 4 (Forenoon): Fundamentals on RF Engineering

The two-hour lecture is mainly focused on the following points

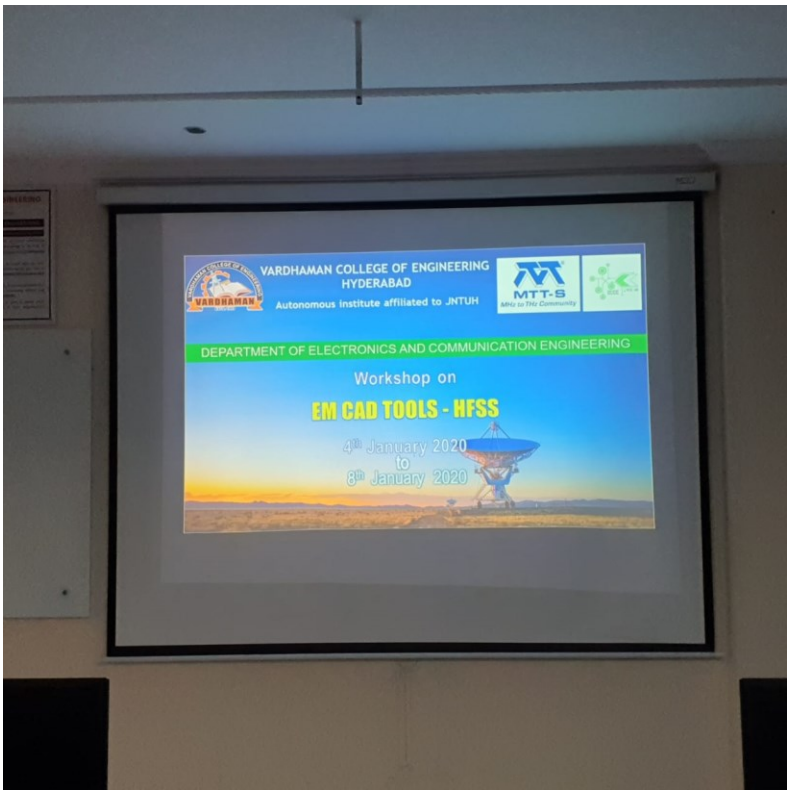
1. Microwave Frequency Spectrum
2. Frequency ranges of various Wireless Applications

Day 5 (Afternoon): How to do Literature Survey? & How to write a technical paper?

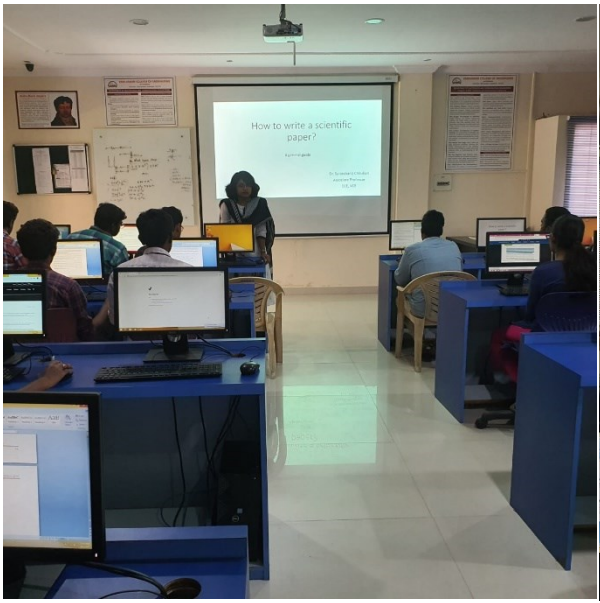
The three-hour lecture is mainly focused on ***typical structure of Research paper*** and introduced terminology used in different sections in the paper and how to read the paper? where to look for specific content? and what to do read? Introduced the priorities of author, publisher and Reader, Key elements for publishing, structure and components of paper, citations and referencing, submission of articles and tips.

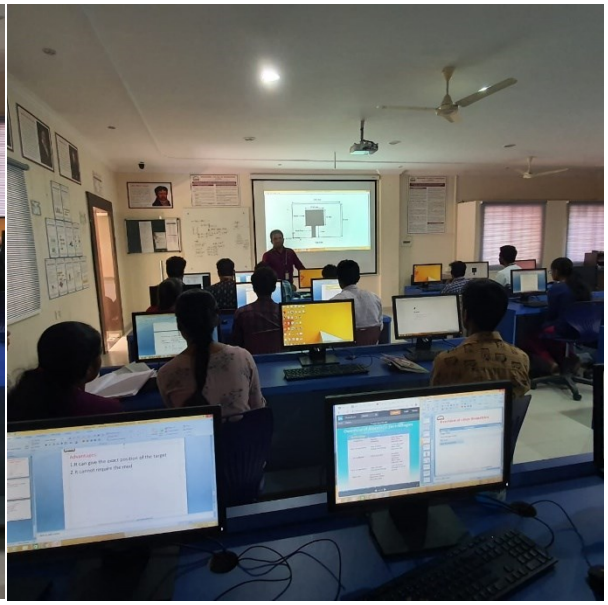
A total of 45 students and 5 faculty members have attended the event. Out of which 15 are MTT student members and 3 IEEE professional members.

Photos clicked during session









Outcomes:

1. Total of 45 students enthusiastically participated the training session.
2. Apply design ground rules, model and simulate a patch antenna
3. Design a compact patch antenna for a specific wireless application
4. Understand how to do literature survey.
5. Ways to find out research gaps and formulating the objectives of the proposed research.
6. Able to write their project into technical paper