KiTS
KKR & KSR Institute of Technology & Sciences
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Department of Electronics and Communication Engineering

WORKSHOP REPORT

DATE : 31st August to 1St September & 6th September to7th September 2018
**EVENT : WORKSHOP**
VENUE : ECE Dept
ORGANIZED BY : SPACE ,E.C.E Dept.

Faculty Coordinators: Ms.K.LeelaRani,Asst.Prof

EVENT DESCRIPTION:

SPACE the Association of Department of Electronics and communication engineering, KKR & KSR Institute of Technology and science, Guntur has organized a two day workshop on **"Antenna modeling techniques using HFSS tool"** on 31st August to 1St September & 6th September to7th September 2018. The resource person for this work shop is **"Mr.M.Shekar , Asst,Prof Vignana University"** . This workshop is conducted to enhance the design idea of antennas using software tool .
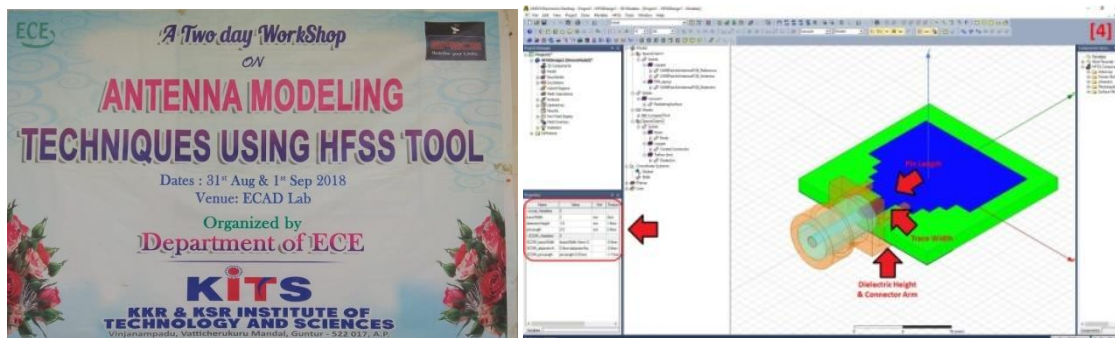
WHAT IS HFSS:

HFSS is high frequency structure simulator it is high performance full wave electromagnetic field simulator 3D volumetric passive device modeling that takes advantages of familiar Microsoft Windows graphical user interface .it integrates simulation, visualization ,solid modeling and automaton in easy to learn environment.

HFSS contains multiple simulation engines in one package, each targeted toward a specific application or simulation output
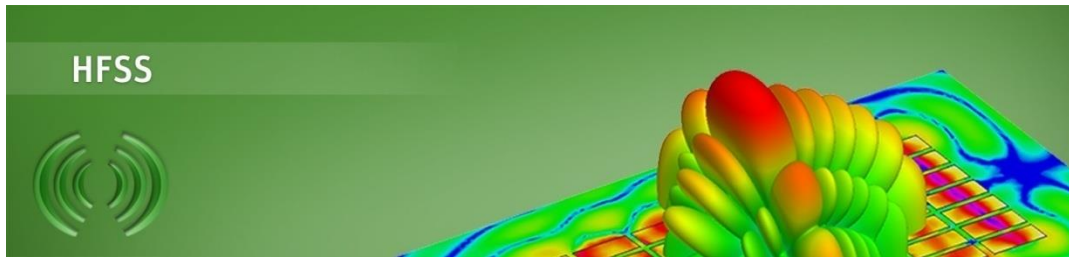
HFSS Hybrid Technologies.

The FEM-IE hybrid technology is built upon HFSS FEM, IE MoM and the patented ANSYS domain decomposition method (DDM) to solve electrically large and complex systems. By applying the appropriate solver technology, local regions of high geometric detail and complex materials are addressed with finite element HFSS, while regions of large objects or installed platforms are addressed with 3D MoM HFSS-IE. The solution is delivered in a single setup through a single, scalable and fully coupled system matrix.

Finite Element Method (Frequency Domain)

This is the high-performance 3D, full-wave, frequency domain electromagnetic solver based on the proven finite element method. Engineers can calculate SYZ parameters and resonant frequency; visualize electromagnetic fields; and generate component models to evaluate signal quality, transmission path loss, impedance mismatch, parasitic coupling and far-field radiation. Typical applications include antennas/mobile communications, integrated circuits, high-speed digital and RF interconnects, waveguides, connectors, filters, EMI/EMC, etc.

SESSION ACTIVITIES:

As per the given instructions by the Dr. Siva Ganga Prasad, HOD ECE dept., the faculty in charges and SPACE Coordinators made proper arrangements for the workshop. Between 9.50AM to 10.00 AM the registration process for participants was completed. Registrations were done by the **Space team.** The program started with the opening remarks of HOD sir. One of the ECE third year students gave the brief introduction about the guest. Exactly at 10.15 AM the lecture is started by **Mr.M.Shekar , Asst,Prof Vignana University.** The Resource person given hands of experience on Antenna Designing.

In the workshop he explained the following things
- About Antenna
- Parameters of designing an antenna
- Micro Strip antenna
- Designing of Antenna using HFSS Tool
- COAXIAL feeding

According to resource person the following are the parameters which are consider. They are return Loss, VSWR, Polarization, Gain, Radiation Pattern and Directivity. Next he explained about Micro strip antenna .He said "In telecommunication, a microstrip antenna (also known as a printed antenna) usually means an antenna fabricated using microstrip techniques on a printed circuit board. They are mostly used at microwave frequencies. An individual microstrip antenna consists of a patch of metal foil of various shapes (a patch antenna) on the surface of a PCB, with a metal foil ground plane on the other side of the board. Most microstrip antennas consist of multiple patches in a two-dimensional array. The antenna is usually connected to the transmitter or receiver through foil microstrip transmission lines. The radio frequency current is applied (or in receiving antennas the received signal is produced) between the antenna and ground plane. Microstrip antennas have become very popular in recent decades due to their thin planar profile which can be incorporated into the surfaces of consumer products, aircraft and missiles; their ease of fabrication using printed circuit techniques; the ease of integrating the antenna on the same board with the rest of the circuit, and the possibility of adding active devices such as microwave integrated circuits to the antenna itself to make active antennas.
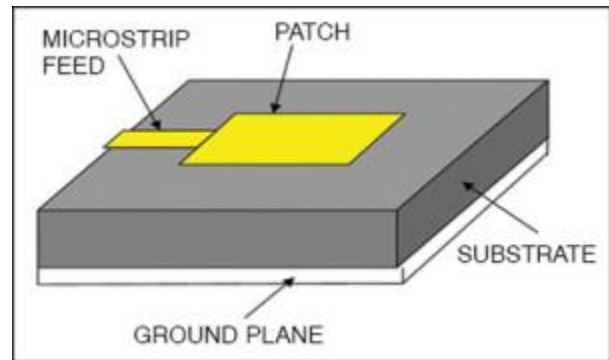
Next He explained step by step procedure of designing of Micro strip antenna using HFSS Tool antennas. He explained the coaxial feeding with his hands on experience.
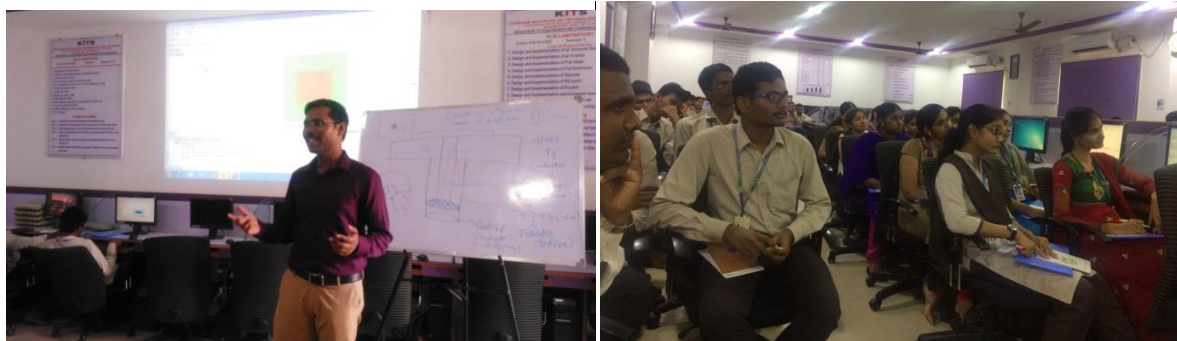
At the end of the session the speaker was honored by the HOD sir with a Shalv and Memento. After the feedback from the participants, The Vote of Thanks was delivered by **Ms. K. Leela Rani,** Assistant Professor of ECE. On behalf of the department of Electronics and communication engineering, the hosting department, she extended her gratitude to the College Management, Principal, Vice Principal, in charge HOD, Delegates and Organizing Committee. The workshop came to end with the National Anthem.