MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE

ECE Department

Under TEQIP-II

GUEST LECTURE

On

"FUNDAMENTALS OF ELECTROMAGNETIC THEORY"

@ MITS Seminar Hall - on 11-12 April 2014



An expert talk on "FUNDAMENTALS OF ELECTROMAGNETIC THEORY" was conducted for II B.Tech ECE students on 11-5-2014 and 12-5-2014 in the premises of MITS organized by Department of Electronics &Communication Engineering. This program was presided by Dr. AR Reddy, HOD, ECE. In this programDr RS Raju, Chief Scientist, CSIR-CEERI Pilani delivered a talk on Basics of Electromagnetic Theory and its applications.

Report by Dr AR Reddy, Professor & Head, ECE Department

The Guest lecture commenced with a brief introduction of the resource Person to the audience, given by Dr. AR Reddy. The technical lecture began with a short review of some fundamental concepts of Electromagnetic fields like Maxwell's equations(Derivation and concepts),Boundary conditions(EM fields on boundaries),Wave guides(Rectangular & Circular waveguides, field configurations), Poynting vector(Estimation of dispersion and Interaction impedance),Basics of MW tubes(Linear cross field & FW devices. Recent advancements) and Applications (Magnetic circuits, electron optical systems, RF circuits) .

Apart from the guest lecture, Dr Raju has interacted with ECE faculty. The following were discussed on conducting research in electronics by Dr Raju.

1. **How to begin research work ⇨ Knowledge, team and infrastructure build up**
2. **Financial & technical support ⇨ writing proposals (Internal & external)**
   i. Seeking technical collaboration
3. **Execution of project ⇨ Design, planning of fabrication & test facilities**
   i. Synergy of knowledge & facilities inside & outside lab
4. **Evaluation of project ⇨ Choosing appropriate committee members for PARC**
5. **Writing Proposals for financial/technical support**
   Internal ⇨ for seed money /partial support
   External ⇨ ISRO
   ⇨ Deity (Dept. of Electronics & Information Technology)
   ⇨ DST bears all (other than staff salary & running expenditure)
   ⇨ DRDO usually awards in contract/tender mode
   ⇨ BRNS/BRFST board of research in fusion sci. & tech. of (DAE)
   ⇨ CSIR supports research through Human Research Dev. Group (HRDG)
6. **Tech. Support University ⇨ As partner (they may project their own financial needs)**
   R&D Institute ⇨ through MoU / collaborator / participating lab
   Out sourcing ⇨ execution of work on payment basis
7. **Execution Assignment of tasks to individuals ð based on individual capabilities**
   Design based on available materials & fabrication facilities
   Anticipation of problems in advance essential back up of corrective actions.