CENTRE FOR EXCELLENCE IN MICROWAVE ENGINEERING
DEPT. OF ELECTRONICS & COMMUNICATION ENGINEERING
UNIVERSITY COLLEGE OF ENGINEERING (AUTONOMOUS)
OSMANIA UNIVERSITY – HYDERBAD – 500 007.

μwaves

BULLETIN **JAN 2007, VOL. 1**

From Director's Desk:

Wishing all the readers and researchers a very happy and prosperous new year. The year has been really good for our Department, which for the first time with active partnership with the leading Industry in Hyderabad – Astra Microwave Products Ltd., has succeeded in establishment of the Centre for Excellence in Microwave Engineering. When Mr. Malla Reddy, MD for Astra Microwaves approached me with the desire to establish such a Centre, it was in fact dream came true as I had large desire for creating state of the art research facilities in Microwave Engineering in the Department. With the modest facilities available, we could complete many sponsored research projects from CSIR, DST (FIST), AICTE, LRDE, SAC, LRDE, Min of HRD, GEIBC, etc. With the advancement in the field of Mobile, Cellular, Satellite, Radar Communication system, there is a lot of demand for experts in RF and Microwave field. But, most of the Electronics graduates prefer to be digital, signal processing, VLSI, VHDL Software engineer! With the objective of creating quality manpower in the field of Electromagnetics, RF, and Microwave Communication Engineering the Centre (CEME) has been established. The activities of the Centre were formally launched on 30th October 2006, with the organization of Workshop on Recent Trends in Microwave Engineering. Record number of 100 participants attended the workshop in which invited lectures were delivered by Dr. R.P. Shenoy, Distinguished Scientist and Chairman of Board of Directors, Astra Microwaves, Prof. B.N. Das, Prof. Ajoy Chakraborty from IIT, Kharagpur, Prof. S.K. Koul from IIT Delhi, Dr. Shree Hari Rao, Director, DLRL, Mr. Varadarajan, Director LRDE, Mr. R. Das RCI, Mr. Kirty, Astra Microwaves. Vice Chancellor, Registrar of OU, Principal, Dean were present on the occasion of inauguration.

With this humble and modest beginning, we wish to take off with real zeal and full speed in a year to come to meet our mission and goals. We need the active support of our well wishers as we march ahead to create an environment in this Centre that will stimulate young engineers and researchers to strive for innovation.

Prof. G.S. Sanyal, my respected Guru, and teacher of my teacher advised us to solve "The most difficult problems in Microwave and electromagnetic fields (and not the simple ones!)".

We promise, we will exactly do that.

Dr. V.M. Pandharipande

Objectives of the Centre

- To encourage UG & PG students/research scholars to enter in the field of RF Circuit Design, Microwave Circuit Design, simulation, Numerical methods in Electromagnetics, Antenna Analysis & Design, Microwave Communication System Design.
- To improve teaching skills in the area of Electromagnetics & Microwave Engineering by producing Quality course material, Design tutorials.
- To carry out R & D projects on practical problems originating from Defence R&D Labs, Industries, R & D Institutions.
- Organize short term & long term courses in the broad field of RF and Microwave Circuits, Antennas, Phased Arrays, Radar Systems.
- To strengthen Institute – Industry interaction on mutual basis.

Advisory Committee

Following advisory Committee has been constituted to monitor the progress and guide the activities of the Centre.

1. Prof. D. N. Reddy, Principal, University College of Engineering, Chairman
2. Prof. A.D. Rajkumar, Dean Faculty of Engineering, OU
3. Prof. V.M.Pandharipande, Director of Centre, Professor of ECE
4. Prof. K. Subba Rao, Head, ECE, OU
5. Dr. AD Sharma, Director, NERTU
6. Dr. R. Shree Hari Rao, Director DLRL, DRDO
7. Dr. V. Borkar, Research Centre Imarat, DRDO
8. Mr Malla Reddy, M.D., Astra Microwave Product Limited
9. Ms. Prameelamma, Director (Tech) Astra Microwaves
10. Mr. P.A. Chitrakar, C.O.O. Astra Microwaves

Work Shop

- **A Workshop on** ' Recent Trends in Microwave Engineering' **was conducted by the Centre** on 30th October 2006, to formally launch the center.

Summary of the Workshop:

Number of Participants: 101

From Industry: 26

From educational Institutions: 38

From R & D Institutions: 13

Number of Resource Faculty: 8

Keynote address by Dr. R.P. Shenoy

Release of CD Lecture notes: Prof. Mutha Reddy, Registrar

Inauguration of the Centre: Prof Suleman Siddique, Vice Chancellor

Releasing the Logo: Dr. R.P. Shenoy

Felicitation of the Teacher: Prof. B.N. Das

Research Publications

1. "A Printed Wideband Monopole Antenna for Wireless Communication" 3rd International Conference on Microwave Antennas, Propagation and Remote Sensing, International Centre for Radio Science Jodhpur, 18 – 22 December 2006.

2. "Studies on Reconfigurable Antennas – Patch Antennas – with switchable slots", 3rd International Conference on Microwave, Antennas, Propagation and Remote Sensing, International Centre for Radio Science, Jodhpur 18-22 December, 2006

3. "Dual Diversity Triple-COLD Adaptive Array with Minimum Bit Error Rate Approach" 3rd International Conference on Microwave Antennas, Propagation and Remote Sensing, International Centre for Radio Science Jodhpur, 18 – 22 December, 2006.

4. "Studies on Mutual Coupling between Microscript Slot Radiators" National Conference on recent Advances in Microwave Techniques and Applications", University of Rajasthan, Malviya National Institute of Technology, Jaipur, October 6-8, 2006

5. "Polarization Diversity Tripole Adaptive Array with Minimum Bit Error Rate approach" 2nd International Workshop on Satellite and Space Communication, 14-16 September, 2006, Madrid, Spain

6. "Studies on offset Microstrip Slot Radiator" National Conference on Communication, Control and Bio-Informatics, NCCB – 06, Govt. Engineering College, Kota Rajasthan, March 810, 2006.

7. "Analysis and Design of Equilateral Triangular Microstrip patch Antenna with Micro strip Feed" IETE Journal of Research, Vol. 52, No.1, January – February, 2006

8. Guest Editorial Special Issue on Electronics Engineering Education – 2020", IETE Tech. Rev. Vol. 22, No.1, Jan – Feb 2005, pp. 2-3.

9. "Dual Diversity Smart Antenna using Minimum Bit Error rate Processing" TSYGECA-06, Technical Symposium, Govt. Engineering College, Aurangabad, 23-24 January, 2006

10. "Amplitude Phase Keyed equi-length Poly Alphabetic Radar Waveform Design" International Conference on Radar Systems, 2005, Indian Institute of Science, Bangalore, December, 2005

11. "Computer Aided Radome Analysis for Airborne Antenna System" National Conference on Antennas, Propagation and Remote Sensing, Jodhpur, December, 2005

12. "Mutual Coupling between the Micro strip slots in the Ground Plane of a Micro strip Line" "National Conference on Antennas, Propagation and Remote Sensing International Centre for 'Radio Science", Jodhpur, December, 2005.

13. "Universal Radar Interface Design" National Conference on Antennas, Propagation and Remote Sensing, International Centre for Radio Science, Jodhpur, 20-22 December 2005.

14. "Broadband Dual Polarized Micro strip Antenna" Indian Conference on Microwaves, Antennas, Propagation and Remote Sensing" Centre for Radio Science, Jodhpur, December, 2005

15. "A 9 – 10 GHz MEMS Phase Shifter" International Radar Symposium, IRSI 2005, 19 – 22 December, 2005, Indian Institute of Science, Bangalore

16. "Design and Optimization of Phase Shifter by through sensitivity analysis" Indian Conf. of Microwave, Antenna, Propagation and Remote Sensing, 20 – 22 December, 2005, International Centre for Radio Science, Jodhpur

17. "Analysis and Implementation of the long loop PLL Method for Real Time Measurement of Eb/No Ratio "IETE Journal of Research Vol. 51, No.3, May – June, 2005, pp. 245 – 256

18. 'Teaching Learning Process in Electronics Education', IETE Tech. Rev. Special Issue, Vol.22, No.1, Jan.-Feb., 2005.

19. 'Gray code sequence generation as a test problem for solving TSPP instance in DNA array design', Proc. of IEEE International Conference on "Enabling Technologies for Smart Appliances", Jan. 2005

Academic Activities

- PhD Award

  Mr. N.V. Koteswara Rao, Faculty form C.B.I.T. was awarded PhD for his thesis "Studies on Microstrip Transverse Slots and Wide band Microstrip Patch Antennas" under the guidance of Dr. V.M. Pandharipande

- Prof. V.M. Pandharipande

    - Delivered invited lecture on "Milestones in Communication Engineering" at All India Seminar on "Role of Telecommunication for Betterment of Society" organized by Institution of Engineers AP Centre on 15th – 16th July, 2006
    - Delivered Keynote address at Lords Institute of Engineering & Technology for National Students Technical Symposium on 23rd February 2006 as Guest of Honour.
    - Delivered Keynote address for Workshop of "Effective Teaching' organized by Malla Reddy College of Engieering and Technology on 28th June, 2006
    - Organized on day workshop for Newly recruited Academic Consultants in College of Engineering, Osmania University on 2nd July, 2006
    - Has been a Member of PARC for the Project SAMRAT (Development of Advanced Communication EW Receiver) EELSEC, DLRL, Ministry of Defense. Attended Review Meeting on 21st August 2006.

- Following Research Scholars/ Students attended and presented papers at "International Conference on Microwaves, Antennas, Radar and Remote Sensing" organized by International Centre for Radio Science, Jodhpur during 18-22nd Dec 2006.
    1. Mr. Y. Ravinder 2. Mr. P. Naveen Kumar
- Organized a lecture on "**Satellite Communications**" By Mr. Kumar Swamy for ME (MRE) Students:
- ME MRE Students of the Department visited Production Unit of Astra Microwaves on 28.11.2006 as a part of Industrial Training.
- Prof. V. M. Pandharipande and Mr. Y. Ravinder attended one day Agilent ADS, esoff users meeting at Taj Residency, Hyderabad
- Mr. Y. Ravinder
    - Attended One day workshop on Antenna design systems, organized by MAXSOFT, Bangalore, at Hyderabad
    - Delivered a Lecture on " Smart Antennas for Wireless Communications" in the Department on 27.01.07
    - Attended a one day seminar on Vector Network Analyzer, Organized by Rhode& Schwartz, Bangalore at Hyderabad

The Centre is in process of establishing state of the art laboratories with following software and Hardware equipment facilities

Software

- Agilent Advanced Design Systems (ADS)
- AWR Microwave Office (VSS, MWO, Sonnet)
- Zealand IE3D
- Ansoft HFSS
- Empire

Hardware

- Vector Network Analyzer
- Power Meters
- Vector Signal Generators

- Spectrum Analyzer
- Noise Figure Meters

Prof. J.C Bose – Father of Wireless Communications

Although, in his epoch-making transatlantic wireless communication experiment, G.Marconi received the first transatlantic wireless signal at Signal Hill, St. John's, New found Land in the afternoon of December 12, 1901, the mercury coherer detector was invented by Sir J.C. Bose, Professor of Physical Science, Presidency College, Calcutta. This invention was first reported in April 27, 1899 meeting of Royal Society, London, UK. Soon after it was published in the Proceedings of the Royal Society. Twenty-one months after that disclosure (Feb. 1901) lieutenant L Solare of Royal Italian Navy, a childhood friend of Marconi, experimented with this detector device and presented a trivially modified version to Marconi, who then applied for British patent on the device. This scandal, first brought to light by Prof A. Banti of Italy has been critically analysed by Dr. P.K. Bondopadhyay of NASA, Johnson Space Centre Houston.

In order to give due credit to this great scientist of our country, the proposed laboratory of the center will be named after Dr. J.C. Bose

Quality Policy of the Centre

No compromise on Quality and Excellence in professionalism in every action of individual and team.

Thanks a Lot!

The Department of Electronics & Communication Engineering, College of Engineering, Osmania University is grateful to Mr. Malla Reddy, M.D., Astra Microwaves for coming forward to establish the Centre of Excellence in Microwave Engineering. The Centre will prove itself to be the role model for Institute – Industry partnership.

Appreciation

The logo for the center was designed by Mr. Anand Kumar 4th year student of Department of Electronics and Communication Engineering. The Centre will remember his contribution throughout

For further details Contact
Dr. V.M. Pandharipande,
Director
Centre for Excellence in Microwave Engineering
Department of Electronics and Communication Engineering
University College of Engineering
Osmania University, Hyderabad-500007 AP
Ph: 040-27682261
Fax & Ph: 040-27071273
Email: ceme_uceou@yahoo.com

PHOTO GALLARY

1) Prof. D.N. Reddy, Principal, College of Engineering giving Welcome address On Stage from left Prof V.M. Pandharipande, Dr. R.P. Shenoy, Dr. M. Mutha Reddy, Prof Suleman Siddiqui, Prof. A.D. Rajkumar and Dr. Rameshwar Rao

2) Lighting the Lamp

3) Prof. Suleman Siddiqui Vice Chancellor delivering the inaugural address

4) Dr. R.P. Shenoy distinguished scientist and chairman, Governing Board Astra Microwaves handing over the 1st copy of CD of Proceedings to Vice Chancellor.

5) Prof.B.N. Das, IIT Kharagpur Distinguished Professor in Microwaves being felicitated

6) Prof. V.M. Pandharipande, Director of the Centre presenting memento to Dr R. Shri Hari Rao, Director DLRL Hyderabad

7) Mr. S. Varadarajan, Director LRDE Bangalore delivering his talk on Radar Technology

8) Prof S.K. Koul, I.I.T, Delhi delivering his lecture on MMIC