INPUT TO THE ANNUAL REPORT (2005-06)

Period for which activities are to be reported: April 01, 2005 to March 31, 2006.

Books and Book-Chapters published


Research Papers Published in Journals and Conference Proceedings:


6. Impact of Interfacial Barriers on Recombination Profile in Bilayer Organic Light-Emitting Diode, Organic electronics, 6 (2005), pp. 229-236. B. Mazhari,


27. Interpreting Unknown Lexicons in Machine Translation from Hindi to English, 4th IASTED International Conference on Computational Intelligence (CI 2005), Calgary, Alberta, Canada, July 4-6, 2005, R.M.K. Sinha.


38. A Multi-Scale Colinearity Statistic Based Approach To Robust Background Modeling, Seventh Asian Conf. on Computer Vision, (ACCV’06), Hyderabad, Jan 13-16, 2006, P Guha, K S Venkatesh, A Mukerjee.


40. Identification of antennas in an indoor wireless network, 28th general assembly of URSI, October 23-29, 2005, New Delhi, I. Ilamparidhi and A.R. Harish,


Sultanpur, March 24-25 2006, pp. 1-10, Deepti Shakya, UK Dwivedi and SN Singh.


107. A New Computationally Efficient Shot Detection Algorithm for Cricket Videos, National Communication Conference, NCC’06, IIT Delhi, O Kiran Kumar, K S Venkatesh.


121. Dispersion characteristics of dominant and higher order modes for single and coupled strip in multilayered cylindrical dielectrics using TLM method, Proc. in XXVIIIth General Assembly of International Union of


126. Effect of Anisotropy on Effective Dielectric Constant and Characteristic Impedance of Multi-port Fin-lines, Accepted in European Microwave Conference'06, in Feb 2006, Kumar Vaibhav Srivastava, Seema Awasthi and Animesh Biswas.

127. A novel compact defected ground structure(DGS)” Accepted for presentation in 12th International Symposium on Antenna Technology and Electromagnetics, Winnipeg, Canada, A. Mohan and A. Biswas.

128. A Modal Controllability Index for Optimal Placement of TCSC to Damp Inter-Area Oscillations, IEEE PES General Meeting San Francisco, USA, June 12-16 2005, pp. 1664 – 1668, B. Kalyan Kumar, SN Singh and SC Srivastava


4. Seminars Presented:

1. Tutorial delivered at IEEE Power Engineering Society General Meeting in San Francisco., A. Ghosh


5. VLSI Design Methodology, HBTI, Jan. 2006, B. Mazhari.


9. Member International Program Committee and Session Chair, The Fourth IASTED International Conference on Computational Intelligence (CI 2005) Calgary, Canada, July 4 – 6, 2005, R. M. K Sinha

10. Session Chair at International Conference on Artificial Intelligence (ICAI-2005), Las Vegas, USA, July 27-30, 2005, R. M. K Sinha


12. All Optical Packet Switching: Architectures and issues, Invited talk in TIFAC-CORE@DCE, Delhi College of Engineering, Delhi, 23 April 2006, YN Singh.


24. A new approach to electrical parameter extraction in MOS devices with high-K gate dielectrics; 05 July 2005; Department of Electrical and Computer Engineering, National University of Singapore, Singapore, S.Kar..

25. Novel features of and a new parameter extraction technique for high-K MOS devices; 14 October 2005; Department of Electrical and Computer Engineering, University of California, Santa Barbara, California, USA., S. Kar.


32. Inaugural talk on “VLSI Processing” on 19th Jan., 2006. in the Short course on “Introduction to VLSI Design” at HBTI, Kanpur, Jan 19-21, 2006, S. S. K Iyer.


5 Conference Attended Outside IIT Kanpur

1. IEEE International Symposium on Information Theory, Adelaide Australia (presented a contributed paper.), A. Ghosh

2. 12th National Conference on Communications, I.I.T. Delhi (IIT Kanpur representative in joint Telematics group meeting.) A Ghosh


15. Winter School on Speech Recognition, (IISc., Bangalore), Jan. 2006 , Invited Speaker, Panelist in Discussion, S Umesh


25. Third International Symposium on High Dielectric Constant Gate Stacks, 16-21 October 2005, Los Angeles, California, USA.: Participated as Chairman of the Symposium and Session Chair. S. Kar.


27. National Power Engineering Conference (NPEC 2005) held at Thiagarajar College of Engineering, Madurai, during 16-17 December 2005 (Offered a tutorial and delivered inaugural address), S. C Srivastava.


6. Other Activities

(a) Technology Developed

1. AnglaBharti-II: English to Indian Languages Machine Aided Translation Technology (under development), R. M. K Sinha.


3. A working prototype developed for the measurement of Laser Range finder based Angle of Attack and Tracking Position of Rail axles for the Indian Railways as part of the project on “Trackside Bogie Monitoring System”. Further development required before technology transfer, J John.


6. UHF RFID tag antenna, prototypes are undergoing testing at the partnering organization. A. R Harish.

7. A low power, wideband, hybrid active filter: hardware under development, P. Sensarma.

8. A fast and improved PLL for Power System applications: hardware implementation in progress, P. Sensarma.


(b) Software Developed

1. AnglaHindi-II: English to Hindi MAT System (under development) RMK Sinha.

2. HindiAngla-II: Hindi to English MAT (under development), R. M. K Sinha.

(c) Industry visited/visit to other Institute for research Industry/Institute Name, Purpose, Period.


5. NTU Singapore during December 03-16, 2006 for exploring possible technical collaboration, A. R Harish.

6. Delivered two lectures on Fractal Antennas and Chaos at Microwave Frequencies, A. R Harish.

7. BHEL, Bhopal, for Research Based Industrial Consultancy. (MoU signed on April 25, 2006), P. Sensarma.

(d) Patents

(Title, Patents No.)


4. Transfer of Power to contact-less Smart Cards with light from the reader” 2190/DEL/2005, S. S. K Iyer.

(e) **Awards and Honours**

**Title, Awarded by**

1. Elected Fellow of IEEE for contributions to education in power electronic applications to transmission and distribution systems, A. Ghosh


7. Invited to join as Member of the State Advisory Committee of the U.P. Electricity Regulatory Commission, S. C Srivastava.


(f) **Continuing Education Activities**

**Name of the courses, type (QIP, Self-sponsored/Specific Industry), Place: Kanpur/Outside, Dates, Number attended from academic, Industry/others.**


2. Organization, Coordination, and part Instruction of Avionics Course for HAL candidates, K. S Venkatesh.


5. Two-day workshop on Recent Advances in Controls & Sensors sponsored by the Department of Electrical Engineering (IITK), IEEE UP Section, and INAE. March 24 & 25, 2006, R Potluri.


7. Delivered lectures for CHiP programme, S. Qureshi

8. Electrical Characterization and Characteristics of MOS Devices with Ultrathin (0.5-1.5 nm) High-K Gate Dielectrics”; Sponsored by The Electrochemical Society, USA at the 208th Meeting of The Electrochemical Society, 16-21 October 2005, Los Angeles, S.Kar.


15. Two lectures in QIP short course on “Overview of VLSI Design” on 20th-24th December, 2005, IIT Kanpur, S. S. K Iyer,

16. Organised a one day short course on “Solar Cells” on 30th December, 2005 at IIT Kanpur, S. S. K Iyer

(g) Participation in High Level Industry Academia Interaction Programme during Summer.
Name of the Industry, Period

(h) Any other important activity not specified in above columns.

1. Ongoing project: Design and Development of Burst Acquisition System for Geosynchronous Satcom Channels (Rs 8.5 lakhs, duration 24 months), K Vasudevan.

2. Currently, along with Drs Parthasarathi Sensarma and Laxmidhar Behera, I am negotiating with BHEL over a consultancy project to develop Automatic Voltage Regulators and Universal PID controllers for BHEL. The three of us visited BHEL Bhopal in December 2006 to understand their problem and needs. We expect an MOU to be signed in next couple of weeks, R Potluri.


7. Visited ETH Zurich during June 2005 for one month for research collaboration., L. Behera

8. With Institute support started and commissioned the Electronics fab facility at 4-i lab having Rework station for BGA/SMD components using Infra-red heating and accurate positioning using CCD camera, Reflow oven for bulk soldering, Chemical-free solder masking, CNC machine for rapid prototyping of PCBs, P. Sensarma.

9. Principal Investigator of a Sponsored Project under the NAMPET initiative of MCIT, Govt. of India for research in the area of Power Electronics. Total committed amount in period of review: Rs. 80 lakhs. As part of that setting up a new research laboratory for Power Electronics, P. Sensarma.