

# Syed Azeemuddin

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## EDUCATION:

**PhD in Electrical and Computer Engineering**, GPA: 4.0 / 4.0

Southern Illinois University Carbondale, USA

Date of Graduation- Aug 2008

**Master of Science in Electrical and Computer Engineering**, GPA: 4.0 / 4.0

Southern Illinois University Carbondale, USA

Date of Graduation- December 2005.

**Bachelor of Engineering in Instrumentation Engineering**, Percent: 89 %

Osmania University, Hyderabad, India

Date of Graduation- July 2003.

## WORK EXPERIENCE:

**Assistant Professor (July 2008 - Present):** International Institute of Information Technology – Hyderabad, India

**Guide/Advisor:** 5 MS Students

### Courses Taught:

- ECE 381 - Electromagnetic Theory
- ECE 461 - CMOS Digital VLSI Design
- ECE 361 - Introduction to VLSI Design
- ECE 467 - Design of CMOS RFIC
- IEC 102 - Engineering Circuit Analysis
- ECE 260 - Electrical Machines

**Research Assistant (June 2005 – June 2008):** Southern Illinois University, USA

**Teaching Assistant (Aug 2006 – June 2008):** Southern Illinois University, USA

- Analog VLSI Design
- Digital VLSI Design
- RF integrated Circuit Design
- Electronic circuit Design
- Fiber Optics Communications

**User Argonne National Laboratory USA (June 2005 – March 2007):**

Have Clean-room experience, fabricated 2-Mask Process with Permalloy materials on high frequency transmission lines. Working experience on instruments for Photo Lithography, Oriel

Aligner, Sputtering, Etching and Measurement Instruments like AFM and MFM, High Frequency Measurements on Probe station, Vector Network Analyzer (8755D).

### **ACADEMIC EXPERIENCE:**

**PhD Dissertation:** Delta sigma modulators (DSMs) are well known and very widely used in the field of communications and signal processing techniques. This modulator is robust, less sensitive to noise and moreover converts analog data to digital data along with modulation. Application of conventional delta sigma modulators which are available commercially to optical signals is a current day challenge. As the output of these DSM is bipolar it is difficult to apply to optical signals which are always positive or zero. Hence a delta sigma modulator with binary output was developed and the name was kept as Binary Delta Sigma Modulator (BDSM) earlier by researchers. In this work a binary delta sigma modulator is designed and simulated with the help of ring lasers. Excellent simulation results were achieved and the demodulation was done using a low pass filter.

**Master's Thesis:** Permalloy Magnetic Domain Control for Radio Frequency Integrated Circuit Applications. Magnetic domain dynamics, which includes domain wall motion and magnetization rotation, is a key to the functioning of spintronics and high-frequency integrated circuit (RFIC) components that incorporate magnetic materials, usually Permalloy thin films. No efforts have been directed towards domain control and domain dynamics for RFIC Permalloy thin film structures despite intensive research efforts for spintronics components, which use much thinner film structures. This research, which is part of high-frequency circuit design research effort, dealt with Permalloy thin film domain control and domain dynamics.

### **PUBLICATIONS:**

1. S. Sharma, A. Syed, and A. Idrisi, "A Self Learning VLSI Lab along with Web-based Platform to Design Schematics and Layouts," *T4E 2011, IEEE International Conference on Technology for Education*, Chennai, India, July 2011
2. A. Syed and M. R. Sayeh, "Effect of various parameters on working of all-optical Schmitt trigger," *Elsevier Optik - Int. J. Light Electron Opt.*(2011), doi:10.1016/j.ijleo.2010.12.008
3. A. Sharma , A. Syed, A. R Harish, "Miniature Slotted RFID Tag Antenna for Metallic Objects," *ICCSP-2011, IEEE Conference on Communications and Signal Processing*, Kerela, India, Feb, 2011.
4. A. Pandey, R. Sachdev, A. Syed, R. Raj, R. Humad, "All Optical Digital Logic Gates Using Semiconductor Ring Lasers Supported by GUI," *Photonics-2010, International conference on fiber optics and photonics*, Optics InfoBase, Guwahati, India, Dec, 2010.
5. A. Syed, "Permalloy Magnetic Domain Control for Radio Frequency Applications," *ICMM-2010, International Conference on Magnetic Materials, American Institute of Physics*, Kolkata, India, Oct 2010.
6. A. Syed, "Role of Dimension Size of Patterned Permalloy Films in High Frequency Applications," *IEEE-NANO 2010, IEEE International Conference on Nanotechnology*, Seoul, Korea, Aug 2010.

7. A. Sharma, A. Syed, "Non-linearity Between Frequency Bands and Segmentations of Meander Antennas," *SIBIRCON-2010, IEEE Conference on Computational Technologies in Electrical and Electronic Engineering*, Novosibirsk, Russia, July 2010.
8. A. Sharma, G. Krishna, A. Syed, "A High Performance CMOS Bandgap Voltage Reference with offset compensation technique," *ICES – 2010, International Conference on Embedded Systems*, Coimbatore, India, July 2010.
9. M. Pal, P Manimaran, A. Syed, "A wavelet based multifractal analysis on foreign exchange time series," *International Conference on Frontiers of Interface between Statistics and Sciences*, Hyderabad, India, Jan 2010.
10. A. Syed, Ralu Divan, Axel, P Wang, "Patterned Permalloy Films for High Frequency on Chip Circuit" *European Journal of Scientific Research*, Vol. 32, Issue 2, June, 2009.
11. A. Syed and M. R. Sayeh, "All-optical Schmitt trigger using ring lasers," *Proceedings of Photonics-2008, International conference on fiber optics and photonics*, New Delhi, India, Dec, 2008.
12. A. Syed, P. Wang, A. Hoffman, R. Divan, "High-Frequency Domain-Wall Motion and Magnetization Rotation of Patterned Permalloy Films under External Magnetic Field Excitation," *Proceedings of IEEE-Nano, conference on Nanotechnology*, Cincinnati, USA, 2006.
13. C. Rong, A. Syed, P. Wang, "Microwave Dielectric Properties of On-Chip Liquid Films," *Proceedings of IEEE workshop on Life Science systems and Applications*, Bethesda, MD, USA, 2006.

#### **Accepted papers:**

1. A. Sharma , A. Syed, A. R Harish, "Miniature Slotted RFID Tag Antenna for Metallic Objects," *NCC-2011, National Conference on Communications*, Bangalore, India, Jan, 2011.

#### **ACHIEVEMENTS:**

1. Received **Doctoral Fellowship Award** Southern Illinois University Carbondale, USA (2008)
2. Received **Masters Fellowship Award**, Southern Illinois University Carbondale, USA (2005)
3. Received **Gold Medal Award**, Osmania University, Hyderabad, India (2003)

#### **PROJECTS GRANTS:**

1. Virtual Lab in VLSI – USD 37,500, Received from MHRD, Govt. of India, in Jan 2010, Status – Ongoing
2. Virtual Lab in Electromagnetic Theory – USD 37,500, Received from MHRD, Govt. of India, in Jan 2010, Status – Ongoing

#### **COMPUTER SKILLS:**

Languages- C Basics, Matlab, Mathematica

Operating Systems- SunOS Solaris 8, Windows (all versions)

CAD Tools: Tools from Cadence, Synopsys, Tanner, and OOMMF, Optiwave, HFSS (Basics)

**Memberships:**

Member- IEEE

Member - Optical Society of America

**Services:**

1. Campus Activities coordinator
  2. Campus Life Coordinator
  3. Faculty Guide in apex body of student mentors
  4. Program Coordinator, IIT wing of National Service Scheme, Govt. of India
  5. Activity Leader of Campus Activities News letter
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1. Invited Talk, “Virtual Labs in EMT and VLSI”, National Conference on New Innovations in Computations and Electronics, Deccan College of Engineering and Technology, Hyderabad, India, Oct 2010.
  2. Guest lecture, “Intersection of Communications and IC Design”, Vignan Jyothi College of Engineering and Technology, Hyderabad, India, Aug 2010.
  3. Invited Talk, “Radio Frequency Inductors”, – Workshop on Recent Trends in VLSI, Muffakham Jah College of Engineering and Technology, Hyderabad, India, March 2010.
  4. Invited Panel Member in ICVLSICOM 2010 – International Conference on VLSI held at Meenakshi Sundar Rajan college of Engineering Technology, Chennai, India, Jan 2010.