

SAI KIRAN ORUGANTI

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EDUCATION

- *Dual Masters Micro electronics(under a fellowship programme)*
Hochschule Darmstadt, Germany
- *Bachelor's Of Engineering Ravishankar University Raipur, India.*

MASTER THESIS AND INTERNSHIP PROFILE

Master Thesis:

Project - MIROS: Paramagnetic oxygen MEMS Sensor chip at ABB DECRC and IMTEK Freiburg.

1st March 2007 onwards I have been carrying out my master thesis on a joint venture project between ABB Corporate Research Centre Ladenburg Germany and Institut für Mikrosystemtechnik (IMTEK) Freiburg Germany. Under joint supervision from Dr. Louise Ejsing(ABB DECRC) , Dr. Andreas Greiner(IMTEK) and Prof.Dr.Jan Korvink(IMTEK).

My responsibility is to perform laboratory experiments and develop a parametric model, which can be used for manipulation in order to understand the sensor behaviour and underlying physics involved.

Status: On 23rd June 2008 the FEM model has been developed and magneto-structural interaction has been accomplished. Next milestone is to simulate the Fluid structure interaction in the presence of magnetic field. On the experiments side, the frequency scan experiments have been performed for various gases with varying mixtures.

End date: 1st September 2008

Intern/ Research Intern/Research Student Assistant

Research Intern: IMTEK Simulations Department Freiburg.

Project: Nano-Bond

15th August 2007- 15th February 2008 I worked as a research student intern at the Institut für Mikrosystemtechnik at the department of Microsystem engineering at the Simulation lab, under Dr.Andreas Greiner, on the topic: Simulation Of Extended Elastic Bodies Immersed in Fluid which is simulated by SPH or DPD methods applied to MEMS and NEMS wafers for bonding. The funding of this project has been done by German Federal Ministry of Research and education(BMBF).

Tools Used: **Moldyn**, developed by **IMTEK simulations lab**.

Acknowledged at the IMTEK Poster session 2008.

Internship (Undergraduate):

Title: Unmanned Aerial Vehicle

From MAY 2003 - JULY 2003 at *Research Centre IMARAT-Vignyana Kancha - Hyderabad-500 069, India.(Ministry of Defence)*

As a part of my Undergraduate Industrial exposure programme, I was selected for 2.5 months internship at the premier missile development centre (Govt. of India, defence unit)of India.The project assigned to me was development of an Unmanned Aerial Vehicle(UAV). Its during this project I learnt the Mixed technology of a very powerful tool called Systemvision :VHDL-AMS. Not only I was successful at simulation of the UAV model on the VHDL-AMS platform, but also was successful at pointing out advantages of this language-tool over previous models on various other platforms.

Tools Used: Mentor Graphics :VHDL-AMS.

PUBLICATIONS

1. Sai Kiran Oruganti, Thomas Schumann, and S.V.H. Nagendra, Rakes Aryasomayajula , Calculation Of Pull-In Voltages In MEMS Devices By Taking Geometry Into Consideration. Ulyanovsk state university Russia. October 2007.

2. Sai Kiran Oruganti, Thomas Schumann, and S.V.H. Nagendra, "Electromagnetic-mechanical simulations of geometrical features for developing design limits of MEMS sensors for system on chip (SoC) applications", in Proc. XXXVIII. Workshop of Multi Project Chip Group, cooperating organisation SSCS, IEEE German Section, Ulm, Germany, July 2007

MARCH 2007

3. SaiKiran Oruganti,S.V.H.Nagendra , Mayank Batwara."A proposal to calculate Capacitances based on structural discrepancies using ANSYS 10.0" At Indian National Conference on MEMS devices "MECHEX-2007" Jabalpur India

4. SaiKiran Oruganti,S.V.H.Nagendra , Mayank Batwara."Mechanical and Electrostatic Models of MEMS Devices", At Indian national Conference onMEMS Devices,"MECHEX-2007" Jabalpur India.

EDUCATIONAL PROJECTS

1. Implementation Of LED Dimmer On an FPGA Board.(2007)

As a part of the second phase of Dual-Masters programme I was assigned a team project at Hochschule Darmstadt-Germany. The project was implemented to control the intensity of LED using an FPGA board. The hardware description language being used is VHDL.

The main motive of this project is to vary the intensity of the LED using pulse width modulation technique.

Tool used: Xilinx; VHDL **Status of the project:** **Success.**

2. Design of ALU of An 8051 Microcontroller Using VHDL.(December, 2005-February 2006)

As a part of the first phase of Dual masters programme I was assigned a team project to implement the design of an ALU of an 8051 Microcontroller. The structural modelling feature of this language was used for incorporating the facility to study glitches and timing analysis of the hardware.

Tool used: Xilinx VHDL **Status of the project:** **success**

IT SKILL SET:

Languages: C++, JavaScript, HTML, XHTML,
Python(scripts)

Operating Systems: Windows 9x/XP, Linux, Unix.

Tools: Ansys 10.0,11.0, Modelsim, Xilinx, Moldyn,
Mentor Graphics Paraview kitware.
Mathematica, Matlab.

PERSONAL DETAILS:

Date of Birth : 17th NOV ' 1981

Sex : Male

Marital Status : Single

Nationality : Indian

Religion: Hindu

Languages Known : English, Hindi , German (first level)