Deepesh Rai **09D11004**
Metallurgical Engineering & Material Science **UG Third Year(Dual Degree)**
Indian Institute of Technology, Bombay **Male**
Specialization: Ceramics & Composites **DOB: 28/12/1991**

Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2011	8.49
Intermediate/+2	CBSE	Mother Teresa School	2009	87.80
Matriculation	CBSE	Mother Teresa School	2007	89.60

SCHOLASTIC ACHIEVEMENTS

- **Ranked 3rd** in MEMS Department among Dual Degree students (45 students).
- Awarded Certificate of Merit for reason of outstanding Performance and among the **top .1%** of successful candidate in **AISSE 2007** in Mathematics.
- Awarded the **Proficiency Trophy** for Being School Topper in **AISSCE 2007** exam.

MAJOR PROJECTS AND TECHNICAL ACCOMPLISHMENTS

- **Broadband characterization of Metamaterials Using a Microstrip line** (May-June 2011)

  Guide- Prof. N. Venkataramani

  Co-Guide- Dr. R.P.R.C. Aiyar

  Description

  A broad-band technique for determining the electromagnetic properties of Planar SRR, which uses a microstrip line, was presented. Measured data was obtained for SRR between .1GHz and 6GHz. This technique shows a good agreement between Simulated and predicted data. Simulations were done using Ansoft HFSS

- **Shaft Design and Modelling *(Course Project)*** *(Aug-Nov 2010)*

  Guide - Prof N Vishwanathan

  Description

  Simulated and designed a cylindrical Shaft using the MATLAB. The aim of the project was to calculate the temperature distribution (as a result of transient heat flow) with respect to time and distance in all the three coordinates. This work resulted in an efficient tubular Shaft design

- **Unique ID Project (Registration Protocol)** (Autumn'09)

  Guide: Prof. D. B. Phatak

  Description:

  Headed a batch of 20 students programming the layout of the User Interface to be used to take input data of Personal Details, Fingerprints from the applicant and store them in the central database using C++.
  The same program is being used in the current biometric system of ID cards in IIT Bombay

- **Entrepreneurial Business Plan for Dye Sensitized Solar Cells**

  Guide: Prof. N. Venkatramani **(**July '11 – till date)

  Formulating a business plan for innovative technology startup aimed at producing low cost **Dye Sensitized Solar Cells.**

- **Microwave Sintering and Mechanical Properties of PM Copper Steel** **(**July '11 – till date)

  Guide: Prof. Sudhanshu Mallick

  Conducting a detailed analysis of Microwave sintering Technique to produce widely used PM copper steel.

- **Structural Modelling (Hoover Dam)**

  Guide: Prof. Narasimhan

  Designed a model of the Hoover Dam(one of the Biggest Dam in the World. Carried out the Stress-Strain Analysis of the whole structure.

TECHNICAL SKILLS

- Knowledge of Windows and Ubuntu and simulation software **Ansoft HFSS**
- Languages Known – **BASICS, C , C++ ,HTML**
- Comprehensive Knowledge of **MS Office, Adobe After Effects**
- **Electronic skills:** Proficiency in design and usage of 8051 (89x51\/52) and AVR (mega16/32) microcontroller circuits and programming in KeilC, ICC-AVR and Eagle circuit design package.

COURSES UNDERTAKEN

Non-Core Courses

Calculus Computer programming and Utilization Linear Algebra
Differential Equations Data Analysis and Interpretation Electricity and Magnetism
Electrical and Electronic Circuits Modern Physics

Core Courses

Structure of Materials Thermodynamics of Materials Transport Phenomena
Kinetics of Processes Mechanics of Materials Phase Transformation
Ceramics and Powder Metallurgy Materials Technology

Humanities and Social Science

Economics Sociology

LABORATORY COURSES

- **Electronics lab**
  IC's, ADC's, DAC's and microcontroller were introduced
- **Metallographic and Structural characterisation lab**
  Sample preparation and micro structural analysis of steel , cast iron, brass, aluminium
- **Heat treatment**
  Carried out various processes like annealing, normalising, tempering and quenching of steel samples
- **Mechanical testing**
  Tensile and compression testing, impact testing and fractographic analysis.
- **Engineering Graphics and Drawing**
  Orthographic projections, isometric views, projections of points, Lines, planes and solids

EXTRA CURRICULAR ACTIVITIES

- **Social Activities**: Was a part of **NSS** team (National Service Scheme) of IITB – made rural visits – surveyed for problems faced (lack of education, living conditions, possible remedies), personality development, NavchetnaShivir (yoga), generated cloth donations, encouraged participations

LEADERSHIP SKILLS

- Worked as an organizer in marketing in **Techfest 2010** Asia's largest Technological Festival.
- Worked as a Coordinator in Hospitality **Techfest 2011** Asia's largest Technological Festival in which I handled the accommodation for 2000 Participants.

MANAGEMENT COURSES

- **Management Courses at School of Management (IIT):** Human Resource Management, Project Management, Entrepreneurship in Materials Engineering.

DECLARATION

I hereby declare that the information given above is true to the best of my knowledge, as of August 2011.

DEEPESH RAI