



**Rahul Boriwal**  
**Metallurgical Engineering & Material Science**  
**Indian Institute of Technology, Bombay**  
**Specialization: Ceramics & Composites**

**09D11007**  
**UG Third Year(Dual Degree )**  
**Male**  
**DOB: 27/03/1990**

Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2011	6.79
Intermediate/+2	MP Board	St. Meera H.S. School	2008	81.00
Matriculation	MP Board	St. Meera H.S. School	2006	72.00

#### SCHOLASTIC ACHIEVEMENTS

- Secured AIR 670(C) in **IIT-JEE** with 99.6 percentile(among more than 0.4 million students) ,the entrance examination conducted by Indian Institute of Technology
- Secured Air 670(C) in **AIEEE**(All India Engineering Entrance Exam) with 99.9 percentile(among more than 1 million students)
- Selected for **SGSITS** Scholarship for Excellent performance in 12th.

#### SCIENTIFIC RESEARCH & PROJECTS

- Preparation of Aerogel**(Core Project) (Jan'11 – till date)  
Guide: **Prof. A. S. Panwar**
  - Part of a team of 8 students to start the synthesis of **Aerogel** (*lightest substance ever known with excellent thermal insulation and mechanical properties*)
  - Built a **Supercritical Dryer** (*high pressure equipment*) that is essential in the processing of Aerogels
  - First ever attempt in India** to synthesize Aerogels at the Undergraduate Level.
- Preparation of silly Putty** ( May 2011)  
Guide: **Prof. A. S. Panwar**
  - Worked on a lab Preparation of Silly Putty
- User-ID Project**(Software Project) (July-Nov '09)  
Guide: **Prof. D. B. Phatak**
  - Successfully compiled and documented a C++ program which can be used in Registration of a person's identity in the form of his BIOMETRIC fingerprint
  - The same program is being used in the **current biometric system of ID cards** in IIT Bombay.
- Shaft Designing & Modelling**(Course Project) (Aug-Nov 2010)  
Guide: **Prof. N. Vishwanathan**
  - Modeled a cylindrical shaft using MATLAB with the aim to calculate the temperature distribution with respect to time and distance in all three coordinates and hence this work resulted in an efficient tubular shaft design
- Carbon Nanotubes** (July'11 – till date)  
Guide: Prof. Sudhanshu Mallick
  - Conducted a detailed analysis **Carbon Nanotubes** Manufacturing Process by Powder Metallurgy.
  - Studied its various Mechanical Properties.
- Strength of Materials**(Course Project) (Autumn 2010)  
Guide: **Prof. K. Narasimhan**
  - Working on an explicit model of WEMBLEY STADIUM.
  - To explain the mechanics of materials involved in its construction.

#### COMPUTER SKILLS

- OS : Linux, Windows98/XP/Vista/7, Linux, Ubuntu
- Programming Languages : C, C++
- Software : MS office, Adobe Photoshop, Matlab, HTML

## COURSES UNDERTAKEN

### Non-Core Courses

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

### Core Courses

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

### 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

## LEADERSHIP SKILLS

- **Maintenance Secretary, Hostel 2** (Representative of Hostel 2 in HMC Meeting of 14 Hostels)
- Co-ordinator in Techfest 2011 (Annual Technical festival of IIT Bombay).
- Co-ordinator in Mood Indigo 2010 (Annual Cultural Festival of IIT Bombay)
- Organizer Techfest 2010 & Mood Indigo 2009.

## EXTRA CURRICULAR ACTIVITIES AWARDS AND ACHIEVEMENTS

- **All India Nexus Competition ( Kochi)**
  - Co-ordinator for the India's Largest Technical Competition which received entries from all over the world.
- Part of a winning **Gyrations 2010**
- A member of winning **PAF 2011** and a member of 1<sup>st</sup> runner up team in PAF 2010
- Worked in a team of 4 to construct a F1 Car

## SPORTS

- Completed a 8 month course in Swimming that was certified by the National Sports Organization (2009)
- Made a record of **12 hr Continuous Swimming** in Swimathon 2010 & 2011 covering a distance of about **14.5 & 17.5 km** resp.
- 3<sup>rd</sup> position in 50m Backstroke Swimming GC
- A member of Inter Hostel Swimming & Hockey Team

## DECLARATION

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

**RAHUL BORIWAL**