



**Sankalp Goyal**

**Metallurgical Engineering & Material Science**

**Indian Institute of Technology, Bombay**

**Dual Degree (B.Tech + M.Tech)**

**Specialization in Metallurgical Process Engg.**

**Contact No.: +919769025114**

**UG Third Year**

**DOB: 27/10/91**

Examination	University	Institute	Year	CPI/%
Graduation	IIT Bombay	IIT Bombay	2011	8.73
Intermediate/+2	CBSE Board	Spring Valley School	2009	87.4%
Matriculation	CBSE	Choithram School	2007	86.4%

### Academic Achievements

- Secured **Department Rank 1** (in a batch of 43 dual degree students) at the end of 4 semesters with a semester performance index (SPI) of 9.78 in the third semester
- Awarded the **Institute Academic Prize** for the year 2011-2012 for excellence in academics
- Recognized by the Dean R n D, IIT Bombay through a **letter of appreciation** for participating in the 5th Science Expo 2011, Mumbai for school children to increase awareness about materials science and engineering
- Awarded the **KVPY scholarship** by the Department of Science and Technology, Govt. of India
- Secured **13<sup>th</sup> Rank** in the **Regional Mathematical Olympiad** organized by National Board for Higher Mathematics, Department of Atomic Energy, Govt. of India
- Secured **State Rank 1** in **National Standard Examination in Astronomy** organized by Indian Association of Physics Teachers and Homi Bhabha Centre for Science Education
- Secured **4<sup>th</sup> Rank** in **National Creativity Olympiad** Finals organized by The Institute of Engineers, Jamshedpur (Scientific Creativity Contest)
- Awarded **Certificate of Merit** in **Australian National Chemistry Quiz** by Royal Australian Chemical Institute in the years 2004, 2005 and 2006
- Secured **1<sup>st</sup> Rank** in **Indian Maths Marathon** organized by Society of Advancement of Mathematics and Sciences

### Projects Undertaken

#### Laser Based Curvature Measurement System

[Autumn'11]

Guide: Prof Prita Pant, Dept. of Metallurgical Engineering and Material Science, IIT-B

- Developing a system for instantaneous curvature measurement for thin films for in-situ measurement under various operating temperatures during film deposition
- Presently able to measure radii from 6 to 40 meters with less than 10 % error using a multi-point illumination technique

#### Shape Memory Alloy Trainer

[Autumn'11]

Guide: Prof Prita Pant, Dept. of Metallurgical Engineering and Material Science, IIT-B

- Goal is to design, build and implement a shape memory alloy trainer
- Trainer is designed and approved. Building and implementation is underway

#### Bubble Raft (Structure of Materials Project)

[Spring'10]

Guide: Prof A. S. Panwar, Dept. of Metallurgical Engineering and Material Science, IIT-B

- Created a working model of Bubble Raft Dislocation
- Modelled representation of structural dislocations in a crystal lattice showing Edge dislocations
- Was selected to be showcased at the **5<sup>th</sup> Science Expo, Nehru Science Centre, Mumbai**

#### Structural Analysis of Sydney Harbour Bridge (Mechanics of Materials Project)

[Autumn'10]

Guide: Prof K. Narasimhan, Dept. of Metallurgical Engineering and Material Science, IIT-B

- Modelled a structure of the Sydney Harbour Bridge depicting various structural aspects
- Analysed the Sydney Harbour Bridge's Arched Bridge design on the basis of strength, life and failure

**UID Software Project (Registration Protocol)****[Autumn'09]**

Guide: Prof. D. B. Phatak, CSE Dept., IIT Bombay

- Led a team of 80 members as the Coordinator of the project and created a C++ program which uniquely registers a student, accepts its biometric fingerprint and update it to the central database
- The program can recognize counterfeit data and match fingerprints using image processing technique of thinning used for keeping personal information, and can keep a record of marks and attendance

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**Core Courses Undertaken**

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|------------------------------------|--|
| • Transport Phenomenon(Grade AA)   | • Theory of Machine and Machine Design(Grade AA)     |
| • Strength of Materials(Grade AA)  | • Thermodynamics of Materials(Grade AB)              |
| • Structure of Materials(Grade AA) | • Colloids and Interfacial Science(Grade AA)         |
| • Kinetics of Processes(Grade AA)  | • Experimental Techniques in Mat. Science (Grade AA) |

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**Internships**

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**Kennametal India Ltd, Bangalore****[May-July '11]**

- Project Title: Novel Techniques of Vanadium Diffusion in Tungsten Carbide Inserts
- Devised a new reaction and carried out complete thermodynamic analysis to experimentally determine reaction variables (including reactants, reaction mixture composition, temperature, reaction time, etc.)
- Completed the In-Plant Training on the manufacturing of Tungsten Carbide Cobalt Cutting Tool Inserts

**Cummins Turbo Technologies, Pithampur****[June '10]**

- Studied the Supply Chain of a Mid-Range Turbo Charger, contributed ideas and suggested corrections for better productivity and process efficiency
- Developed a model for increasing the Supply Chain efficiency by generating segment-wise data sheets of parameters including cycle time, throughput time, bottle neck constraints, etc.

**Hyundai Motor India Ltd., Chennai****[July '10]**

- Completed the In-Plant Training (including manufacturing processes, general marketing strategies)
- Got an insight into the utility of large scale robotics used in automobile assemblies

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**Position of Responsibility**

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**Hospitality Coordinator, Mood Indigo 2010**

- Ensured participation of more than 100 colleges through strategic PR campaigns across India
- Registered and allocated accommodation to more than 3000 people on the first day of the festival at the rate of 200 registrations per hour

**Sports Secretary, Hostel-2 IIT Bombay**

- Achieved remarkable participation from all UG students
- Organized practice sessions for every Sports General Championship (GC)
- Organized Intra-Hostel Sports events for Football, Volleyball, Pool, Table Tennis, etc.
- Efforts propelled hostel to 1<sup>st</sup> position in Table Tennis and 2<sup>nd</sup> position in Weight Lifting GC

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**Extra-Curricular Activities**

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- Won various events at Freshizza, IIT Bombay (English Skit (4<sup>th</sup> position), Impromptu drama competition (2<sup>nd</sup> position), Treasure Hunt (3<sup>rd</sup> position) )
- Stood 1<sup>st</sup> in Intra-school Badminton Competition in seniors category during the year 2006-2007
- Stood 2<sup>nd</sup> in the Inter-school Volleyball Competition during the year 2004-2005