



Pravesh Jain
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Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2011	7.24
Intermediate/+2	C. B. S. E.	Bonnie Foi Hr. Sec. School	2007	73.20
Matriculation	C. B. S. E.	K. V. Narsinghpur	2005	77.40

SCHOLASTIC ACHIEVEMENTS

- Secured all India rank of **2190** among approximately **3,20,000** appeared for **IIT-JEE '08**
- Achieved **99.8 percentile** in **AIEEE - 2008** among approximately 0.9 million students
- Was among the **82** students from all over India and only from the state to get selected for the **Indian Statistical Institute, Kolkata** in 2008
- Granted Merit Cum Means scholarship by **MHRD, Govt. of India** for my academic excellence since July 2008
- Recipient of a scholarship for excelling in a nationwide **Talent Support Exam - 2007**, which is provided to the top 300 students across the nation

SUMMER INTERNSHIP

Electrochemical behaviour of Cu-Ni alloys envisaged for nuclear waste storage (May - July 2011)

Mateis, INSA VALOR, INSA Lyon, France, under Prof. Catherine Alemony & Prof. Bernard Normand

- Carried out electrochemical tests (potential evolution versus time and electrochemical impedance spectroscopy) to find out surface reactivity evolution as a function of pH and alloy composition
- Modelled and simulated these impedance spectrum to determine capacitance of double layer as a function of composition and pH
- Determined point of zero charge for each composition. Correlated this value to species adsorption on the substrate. Finally correlated adsorption phenomenon to the sensitivity of the alloy to crevice and pitting corrosion

Metallizing Al and Zn over Steel and Liquid Metal Embrittlement

(May 2010 – July 2010)

Larsen and Toubro Limited, Mumbai, R&D Dept.

- Carried out comprehensive literature survey related to various *Thermal Spray Techniques* and *Liquid Metal Embrittlement*
- Characterized thermal spray coating of Aluminium and Zinc and carried out *corrosion tests*
- Conducted tests to find the embrittling effect of liquid Aluminium and Zinc on carbon steel and its dependency on temperature and time of exposure
- Suggested prevention measures for steel degradation by liquid Aluminium and Zinc

COMPUTING SKILLS

- Glauber Dynamics, Kawasaki Dynamic, Molecular Dynamics, LAMMPS, CADD, spectral and finite difference techniques, Fast Fourier Transforms, phase field, Monte Carlo and level set methods, continuum equations of diffusion. Case studies: phase field models and their implementation for spinodal decomposition, solidification, and precipitate growth kinetics, Monte Carlo/Potts models and their implementation for grain growth
- **Tool/Language/OS:** MS-Office, C++, Ubuntu, Windows

SEMINAR

Friction Stir Welding of Stainless Steels with Aluminium

(Jan-2011 - April-2011)

- Did a seminar on friction stir welding between dissimilar materials with Professor R. Raman. Presented the topic covering each aspect of the same

KEY PROJECTS

Simulation of massive phase transformations under Prof. M.P. Gururajan (Jan-2011 - April-2011)

- Simulated of massive phase transformations using Kinetic Monte Carlo Method

Ceramics in Biomedical Implants under Prof. S. Mallick, IITB (July-2010 - Aug-2010)

- Carried out literature survey about the recent development in the field of orthopaedic and dental implants
- Studied the growing importance of *alumina-zirconia composites* and *nano composites* as an alternative to total hip replacement (THR) and metal based solutions
- Studied the advantages of *bioactive glass* as an alternative to traditional *hydroxypetite*

Kinetics of selective hydrogenation under Prof. N. Venkatramani (Jan-2010 – Mar-2010)

- Studied various research papers on kinetics of the selective hydrogenation of *cyclopentadiene* on a Cu- Al₂O₃ aerogel catalyst in an integral plug flow reactor
- The working formulae based on the data available was formulated and the reaction mechanisms involved in various were deduced

Respiration and Lungs Surfactants under Prof. Ajay Panwar, IITB (Aug-2009 – Nov-2009)

- Carried our literature survey on Colloidal and Interfacial Science of this phenomena
- Analyzed Lung Surfactants in the aspects of its function, composition and deficiency effects

Use of material science in an Inkjet printer under Prof. Parag Bhargava, IITB (Feb-2009 - Apr-2009)

- Conducted analysis of the materials used and manufacturing processes employed in components such as *Cartridge, PCB, LED, Encoder Strip, Piezoelectric crystals* etc.
- Analysed the role of each component on the overall functioning of the desk jet printers

Carrom Board Simulator in C++ under Prof. A. Ranade (Sept-2008 – Nov-2008)

- Coded and graphically stimulated a Carrom game in which *classes* and *pointers* were extensively used to simulate coin's dynamics after multiple collisions with other coins and board boundaries
- Real life factors such as *friction* and *coefficient of restitution* were taken into account

POSITIONS OF RESPONSIBILITY

General Secretary, Hostel -2 (April-2011 - till date)

- Elected by 485 students to head a three-tier council of 30 members responsible for complete administration viz messing facilities, maintenance of infrastructure and other facilities, cultural activities, sports activities, technical activities and alumni relationships
- Part of a 15 member institute body responsible for formulation and review of constitution and policies
- Successfully implemented various initiatives such as biometric system, fully automatic roti making machine, bicycle pooling

Cultural Councillor, Hostel - 2 (2010-2011)

- Managed a team of 8 secretaries to enrich the cultural scenario of my hostel
- Awarded **Best Office Bearer - 01** amongst 29 hostel office bearers
- **Won Cultural Trophy** for which 14 hostels compete throughout the year. Won it after 10 years with record breaking 280 points, earlier record being 225 points
- **Won Overall Performing Arts Trophy.** Performing arts festival is biggest cultural event of IITB in which teams of 3-4 hostels performs all live show for 75 minutes. The preparations spans roughly 2 months
- Conceptualized and conducted **23 new intra hostel events** out of a total of 34 intra hostel events
- Awarded **Hostel Ogranizational Color**, highest award given in the field of organization

Coordinator, Techfest (2010)

- Lead a team of 14 organizers
- **Hubs:** Organized informal sessions and workshops by eminent personalities on varied subjects
- **Stages:** Conceptualized and conducted quizzes and tech-hunt such as Tech-Housie, Guess-Genius

and Geek with a personality, which were a massive hit in the Techfest '10

KEY EXTRACURRICULAR ACTIVITIES

Cultural:

- Proficient **Bulbul Tarang** (an Indian musical tuned instrument) player. Played at various inter college and college level
- Participated in various cultural events and received '**Cultural Special Mention**' for 2009-10 & 2010-11

Technical:

- Made a moving robot based completely on hydraulic mechanism for **Hydranoid** – Techfest' 11
- Designed and fabricated a **3-digit mechanical calculator**. The whole structure was made up of **MS** and the machine was selected for exhibition in Techfest'10 – Asia's largest science and technical festival
- Designed and constructed a **Tetrapede** (4-legged robot) for Techfest' 09