



Seshadri Gowrishankar
Chemical Engineering
Indian Institute of Technology, Bombay

09002056
UG Third Year (B.Tech.)
Male
DOB: 09/04/1992

Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2011	9.00
Intermediate/+2	CBSE	Chinmaya Vidyalaya, Hyderabad	2009	93.60
Matriculation	CBSE	Bharatiya Vidya Bhavan, Hyderabad	2009	93.00

Pursuing both a **Minor in Statistics** (1 course left) and an **Honours** degree in Chemical Engineering.

SCHOLASTIC ACHIEVEMENTS

- **Department rank 4** (Chemical Engineering, BTech) in a class of 63 students (after 4 semesters)
- Received the **Institute Merit Award** from the Director for securing the **2nd Highest CPI** in the Chemical Engineering Dept in the **2nd Year**; additionally secured a Semester Performance Index of **9.81/10** in the **4th Semester**.
- Secured an **'AP' Grade**, for extraordinary performances in both **"Fluid Mechanics"** and **"Heat and Mass Transfer"**; (not awarded in either course in at least the **last 5 years**)
- Secured an All India Rank of **833** out of over 0.4 million students in the IIT-JEE, 2009 (top **0.2 percentile**)
- Awarded a **Certificate of Merit** from CBSE for being in the top **0.1 percentile** in **Mathematics** in the Higher Secondary School Examination in the country.
- Awarded the **Kishore Vaigyanik Protsahan Yojana (KVPY)** scholarship; a national scholarship awarded to students with an aptitude for research by the Department of Science and Technology, Govt of India.

INTERNSHIPS

Project Trainee, NATCO Research Centre, NATCO Pharma Limited, Hyderabad

(May 2011-July 2011)

- Worked on the **scale-up process** in the production phase of Amifostine (Generic Name : Ethiol).
- Provided a suitable solution for the scale up of the reaction by **correctly predicting** the reason for **higher reflux rates** in the **plant scale reaction** when compared to the **laboratory scale reaction**.
- Studied in detail the **generic production facilities and processes** used for many drugs in both the plant scale; also studied the systematic **process of product development** in laboratory scale research.

Summer Research Assistant, University of Hyderabad (Guide : Prof T P Radhakrishnan)

(May 2010-July 2010)

- Worked on the **"Electrical properties of a silver nanoparticle embedded Poly-(Vinyl) Alcohol (PVA) films"**.
- Demonstrated the unique **semi-conductor like properties** of such films by using various **imaging techniques** (like TEM, SEM, AFM) and characterizing the **Voltage-Current relationship** using a 4-probe testing device.
- Suggested an **explanation** for such a behaviour in nanoparticle embedded polymer films.

KEY ACADEMIC PROJECTS

Team Member, Biosynth Project (Guide: Prof Sanjay Mahajani, IIT Bombay)

(April 2010-April 2011)

- A student-run project to set-up an economically viable **Bio-Diesel Plant** and create a demand for Bio-Diesel.
- Successfully developed a Bio-Diesel production process from both **waste vegetable oil** and **High Free Fatty Acid** content oil.
- Involved in the setting up of a **Pilot Plant** for the scale-up of the production process.

Electrical Instability of Fluid Particles (Guide: Prof Rochish Thakur, IIT Bombay)

(July 2011 – present)

- Modelling the behaviour of **charged fluids** and the **instabilities** of such fluid particles in **electric fields**.

Sudoku Solver in C++ (A project of my own initiative)

(December 2010)

- Developed a unique algorithm in **C++** to solve a Sudoku using a **4-D matrix** which can solve exceptionally tough Sudokus involving **multiple trial and error guesses**.

COURSE PROJECTS

Molecular and Statistical Thermodynamics (Guide: Prof Jhumpa Adhikari)

- Simulated the behaviour of a **2-D Morse Fluid System** using the **Metropolis Monte-Carlo Algorithm** in Scilab.
- Computed the **distribution of Potential Energy** in the system with the increase in the number of Monte-Carlo cycles.

Numerical Analysis (Guide: Prof Mani Bhushan)

- Developed a numerical algorithm using **finite differences and orthogonal collocation method** to solve a non linear differential equation in Scilab.

Computer Programming and Implementation (Guide: Prof Deepak Phatak)

- **Led a team of 4 students** to develop a software for **uniquely identifying a fingerprint** of an individual.
- Devised a method to check for **duplication in fingerprints** by **comparing the matrix** obtained after converting a greyscale input into a binary matrix form.
- This system has been introduced as an **attendance and access control system** in IIT-Bombay.

SEMINARS AND TALKS PRESENTED

- Stood **1st** in the Original Paper Presentation Competition at **Azeotropy 2011**; the Chemical Department Festival at IIT-B, for my work on **electrical properties of nanoparticles**. *(February 2011)*
- Gave a popular lecture to over **200 students** and professors on “**Should Bumblebees Fly?**” at the Annual Seminar Weekend in IIT-Bombay. The lecture described the **unique aerodynamics** involved in insect flight! *(March 2011)*

LEADERSHIP POSITIONS

Editorial Board Member, InsIghT (Official Media Body in IIT-Bombay) *(May 2011-present)*

- One of only **3 junior undergraduate members** on the Editorial Board otherwise comprised of **senior students**.
- Work includes content generation, reporting, investigative journalism and **leading teams** to investigate an article.
- Actively worked towards involving more **enthusiastic students** to be active contributors of Insight.

Convener, Speakers Club *(May 2010-April 2011)*

- **As the head of the club**, conducted over **10** workshops, open events and practice sessions.
- As part of the **core team**, led the planning and execution of the **2nd IIT-B National Debate**, which saw participation from over **100 colleges** from across the country.
- Promoted debating and other speaking activities, leading to a **4-fold increase** in the club's active members.

EXTRA-CURRICULAR ACTIVITIES

Sports

- **Winner** of the Institute Swimathon for **two consecutive years**; **swimming non-stop for 12 hours** distances of **19.7 km (2010)** and **19 km (2011)**.
- **Co-founded** the **Bridge Club** and conducted a **beginner level workshop** in Bridge, after a hiatus of 3 years.

Cultural

- **Broke** as an adjudicator in the IIT-B National Parliamentary Debating Tournament 2010.
- **1st at the Just A Minute (JAM)** competition at **Malhar'11** (The annual college festival of St Xaviers, Mumbai).
- Integral part of **winning** Hostel Debating Team in the Debating General Championships (2010-11).
- Contributed over **10 articles** for campus magazines such as Insight and CheA Voice.
- **Completed** the **1st Level Certificate** examination in Tabla after **four** years of training.

SOFTWARE SKILLS

- Operating Systems – Windows, Linux
- Programming Languages – C, C++, MATLAB, HTML
- Softwares – Adobe Photoshop, Microsoft Office