Tejas pravin shah **09D17005**
Energy Systems Engineering **UG Third Year(Dual Degree)**
Indian Institute of Technology, Bombay **Male**
Specialization: Energy Systems Engineering **DOB: 17/08/1991**

Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2012	9.01
Intermediate/+2	Maharashtra State Board	Kishinchand Chellaram college	2009	87.50
Matriculation	Maharashtra State board	Blossoms High School	2007	89.69

EXPERIENCE & KEY ACADEMIC PROJECTS

Applied Materials (Guide – Prof. Rangan Banerjee) (Mumbai, May 2011 to July 2011)

Nano materials manufacturing Company

- Conducted a complete **energy audit** of the solar cell manufacturing research facility.
- **Energy benchmarking** was done which sets a benchmark on the amount of energy that a particular process can consume.
- Worked on the **energy optimization** of the main sources of Power consumption viz. vacuum pumps and air conditioning units (**Variable frequency drives** to optimize performance of motors and pumps) and provided energy efficient solutions like installing **pressure sensors, thermally stable coating for Heaters**, etc. The suggested changes were expected to save **energy consumption worth lakhs of rupees**.
- The report has been submitted to the **President of Applied Materials, India.**

P.B. Shah & Co. (Mumbai, May 2010 to July 2010)

Government (BARC, Trombay) authorized mechanical design and fabrication projects undertaking firm

- Carried out business administration which includes making deals with clients, making **Comparative statement reports** and preparing **bids for tenders**.

CENTRAL RAILWAYS – Technoeconomic feasibility of Solar Photovoltaic modules for the Non-Traction Load of Railways (A part of UIC funded project awarded to IIT Bombay) (Mumbai, December 2011)

- Designed and conceptualized **Solar PV modules** for Non traction load of Railways. Complete design (mechanical and electrical) with analysis including obtaining connected load profile, **Load mapping**, design and determination of installed capacity required and payback period.
- **BENCHMARKING** based on **passenger earnings** for all suburban stations was done.
- **Energy saving** measures like **shifting operation time, Voltage dimmers, balancing the load,** analysis of different kinds of light sources for such systems were studied and proposed.

DESIGN AND FABRICATION OF DYE SENSITIZED SOLAR CELL – (Prof. Rangan Banerjee, Dean R & D, IIT Bombay) (Mumbai, Spring 2010)

- Designed and Fabricated a dye sensitized solar cell using **N3 dye, Titanium dioxide coated conductive glasses** and other chemicals and not traditional silicon, design including amount of different materials, coating thickness, sintering time, temperature, etc.
- The cell being almost **negligible in cost compared to silicon cells** and having an efficiency of about 6% (which is considered very good for dye sensitized type solar cells) which is comparable to that of Silicon cells (10-15%).

SCHOLASTIC ACHIEVEMENTS

- **Department Rank 4** from a batch **of 26 students**.
- Awarded certificate of merit **in National Talent search Exam (NTSE)** (awarded to top 1000 students in India).
- **All India Rank 1022** in the JEE exam 2009 from among 3,84,000 students.
- Achieved an all **Maharashtra rank of 18** in the All India Mathematics open examination in 2006.

- Was awarded certificate of merit for being in **top 1%** in National Standard examination of Chemistry conducted by **Indian Association of Chemistry Teachers (IACT) in 2006.**

POSITIONS OF RESPONSIBILITY

- Member of the **Energy Science Department Council 2011-2012 –** Influencing policy decisions for the department, Initiating and managing Events of the department.
- **EVENTS MANAGER (HELIOS 2012, Annual department festival)** – Conceptualizing and leading a team of 10 members to organize various events for the department technical festival.
- **Co-ordinator** for **Techfest 2011** (Annual Technical Festival of IIT Bombay) and **Mood Indigo 2010** (Annual Cultural Festival of IIT Bombay) – Managing events which includes negotiations with artists, planning and execution of their performance as well as their Hospitality and Publicity.
- School House **Vice Captain in 2006 and Captain in 2007** – Managing all Academic, Sports, Cultural and Social events of the house which includes all kinds of competitions as well as conducting sports and cultural events for the house.

MAJOR COURSES COMPLETED

- Solar thermal energy utilization, Electrical energy systems, Power generation and systems planning, Combustion engineering, Wind energy conversion systems, Renewable energy technologies, Heat and Mass transfer, Fluid Mechanics, Equipment design and control, Power electronics, Analog and Digital Electronics, Numerical Analysis, Material Science, Thermodynamics, Pyschology, Data analysis, Economics, Linear Algebra, Ordinary differential equations, C++ programming, Nuclear Engineering.

OTHER ACADEMIC PROJECTS

- **Design and model of an automated multi storeyed Car Parking System (Prof. Rajesh Gupta)**

  Designed and made a mini car parking system model with two floors which uses a motor to park the car automatically in the desired slot using Electronic IC's, photosensors and also interfacing the electronic circuit with ATMEGA microprocessor using Arduino.

  Adjudged as a new idea and to be proposed for a **PATENT.** (**Spring 2010)**
- **Mini National Unique ID development project (Prof. Deepak B. Phatak)**

  Project on maintaining Databases (Matching fingerprint) of all citizens of India including their thumb impressions and other details using C++ language. (**Autumn 2009)**
- **Design and Analysis of Cable stayed bridges (Prof. Shirish B. Kedare)**

  Designed a model of a cable stayed bridge and did mechanical analysis (stress, strain, bending, torsion, etc) for all kinds of loads (passenger, wind and temperature effects). **(Autumn 2012)**

ELECTIVES AND AUTHORITY SKILLS

Electives (Additional courses) completed	**Marketing Management, Accounts and Finance, Human Resource Management, Analog Electronics.**
Software skills	Adobe Photoshop, Pagemaker, Coreldraw, Matlab, LT spice.
Programming Skills	C++, Visual Basic, 8051, 8085 and 8086 microcontroller, HTML, ATMEGA.
Languages	English, Hindi, Marathi, Gujurati

CO-CURRICULAR ACTIVITIES

- Was placed at **the 4th position in inter school science quiz** with a team of four which included competitions like fastest finger first, treasure hunts, etc at the Nehru Science Centre, Mumbai from among 256 different schools in 2006.
- Visited and modeled **Tata Power plant** at Trombay, Mumbai under the guidance of Prof. Rangan Banerjee.
- Studied the entire IIT Bombay electricity and Water **distribution networks** and proposed ways to optimize them.
- Made a study of the complete working of all types of **Infrared Remote Controls** as a part of a course project.

EXTRA-CURRICULAR ACTIVITIES

- Proficient in Carrom and Chess (have won inter school carom championship with schools from all over India).
- Member of National Service Scheme, IIT Bombay, worked for social causes like teaching the unprivileged around the Campus and making village trips to help villagers solve their difficulties.
- Have Interest in playing indoor and outdoor games.