Yash Shah **09D17004**
Energy Engineering **UG Third Year (Dual Degree)**
Indian Institute of Technology, Bombay **Male**
Specialisation: Energy Systems Engineering **DOB: 18/03/1990**

Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2012	8.53
Intermediate/+2	Maharashtra State Board	Jai Hind College	2008	85.33
Matriculation	Maharashtra State Board	St. Francis School	2006	88.00

Scholastic Achievements: Year

- Presently pursuing Minor in Designing from Industrial Design Centre IIT-B; with **minor CPI of 9.75/10** (4 courses completed)
- Among the **1st student** to be awarded an **AP grade** for outstanding performance in Special Design course Project. (2011)
- Secured **All India Rank 1014** out of 4, 00,000 entrants, in IIT-JEE. (2009)
- Secured **All India Rank 1242** out of 10, 00,000 entrants, in AIEEE. (2009)
- Awarded **Merit certificate** at Homi Bhabha Bal Vaidnyanik competition, for Science Talent Search Competition. (2005)

Internship and Training: Duration

Process Engineer, PRAJ Industries Limited: (Apr- Jun 2011)

- Was part of the commissioning team, gave technical solutions to problems faced during the guarantee run of GLOBUS SPIRITS and NUWAY distillery plants.
- Learned process controls via Programmable Logic Controller (PLC) systems.
- **Suggested alternate hybrid refrigeration scheme** (CO_2-NH_3 cascade + cooling tower) for process cooling utility; using the CO_2 generated from plant's own fermentation process.
- **Estimated 100 m^3 of water savings** and **18.5% of electricity savings** daily, based on the proposed refrigeration scheme for a 50 klpd plant.
- Estimated **a profit of Rs. 4 per bottle of liquefied CO_2** which is generated in excess via this scheme.

Key Projects: Duration

Sustainable, affordable and adaptable society model:- *(Guide: Prof. B.K. Chakravarthy)* (June-Nov 2011)

In collaboration with Holcim Foundation (Switzerland), ACC Cements (India) and Industrial Design Centre, IIT Bombay.

- Used "*Collaborative model for Innovation*" to conceptualize the model of a sustainable and affordable coastal society; incorporating several new energy saving and green technologies; for which I was awarded **AP grade**.
- Estimated performance parameters of a foldable (umbrella type) solar concentrator proposed to be used in houses of Wadi village (Karnataka) to overcome major problem of indoor pollution caused by cooking.
- **Proposed new climate based design** of houses of Wadi Village for pleasant indoor temperatures, lighting and ventilation.

New design of faulty explosive detector calibrator:- ***(Guide: Prof. B.K. Chakravarthy)*** (Jan-Feb 2011)

Special Design course Project. In collaboration with DRDO & Industrial Design Centre, IIT Bombay.

- Conceptualized and **created new design model** of an explosive detector calibration device; previously used by Defence Research and Development Organisation (DRDO), India.
- Thoroughly analyzed the working of this faulty calibrator, and **overcame the major drawback** of error in temperature measurements via the new design of temperature sensor module.

Design analysis of Banra Worli Sea Link:- ***(Guide: Prof. S.B. Kedare)*** (Oct-Nov 2011)

- Calculated major design parameters: stresses, strains, tensions, moments, column bending, bending etc.
- Suggested the type and design of materials that can be used based on these information as well as temperature changes and seismic activities, to support the bridge.

Heartbeat counter: *- (Guide: Prof. Rajesh Gupta, IIT B)* (Mar- Apr 2011)

- Designed and developed a working circuit of low cost heart beat counter consisting of an optical touch heartbeat sensor, based on the principle of variation of transmitted I.R. intensity.
- Programmed the circuit to detect the generated cardiogram and count the pulses correctly.

Single axis tracking mechanism:- ***(Guide: Prof Rangan Banerjee,Dean R&D IIT B)*** **(**May-Aug 2010**)**

Summer Internship Project under National Solar Thermal Power testing, simulation and research facility.

- Developed working model of **low power consuming** single-axis optical solar tracker.
- Simulated this model under critical circumstances and **originated ways to improve its efficiency.**

Dye Sensitized Solar Cells:- ***(Guide: Prof Rangan Banerjee,Dean R&D IIT B)*** **(**Feb-Apr 2010**)**

- Designed and fabricated working Dye sensitized solar cells (*gratzel cells).*
- Simulated it under normal atmospheric conditions to obtain maximum power inclination.

Positions of Responsibility: Duration

Institute Secretary of Academic Affairs- Student Head of Practical Training Cell: (July 2011- Present)

- Presently **leading a team of 24 Internship Coordinators**; responsible for providing internship opportunities to all the undergraduate students of IIT Bombay.
- **Formed the first ever company and university policy** to protect the interests of students & company and to ensure fairness in the intern recruitment process.
- Thoroughly reviewed and upgraded the existing Practical Training student policy.
- Planning **new initiatives** like internships via embassies and foreign-exchange collaborations.

Coordinator- Front Stage, Nokia India Fest: (Dec- Feb.2010)

A Channel [V] initiative, an inter-collegiate festival, whose first edition was held in Goa with a budget exceeding ***INR 30 million****, for which* ***40000 students*** *registered from over* ***650 colleges****.*

- Selected from among the **best college-fest coordinators**, to conceptualize and execute Informal Events.
- The events successfully saw participation of more than 600 students.

Computer skills:

- Operating Systems: Microsoft Windows, Microsoft Office, Linux, Mac OS.
- Proficient in: SolidWorks, C/C++, P-Spice, SEQUEL, MATLAB, Scilab, Mathematica, Adobe Photoshop.

Key Courses Undertaken:

Introduction to Industrial Design	Product Design Studio Project	Equipment Design & Control	Material science for energy applications
Design issues	Fluid Mechanics	Combustion engineering	Heat & Mass Transfer
Power generation systems and planning	Introduction to renewable energy technologies	Electrical energy systems	Power electronics and machines

Other co-curricular activities and achievements:

- Awarded certificate of Social Service by Global Cancer Concern India (GCCI), for participating in campaign for creating awareness and raising resources for the cause of cancer patients.
- Examined and reported the working of Tata power plant Trombay.
- Studied and modelled ‘electricity’ and ‘water’ distribution of IIT Bombay campus.
- Learning and playing piano since past 4 years.
- Made F1 car and participated in all freshmen racing competition organised by Science Club of IIT Bombay.