



Kunal Gupta
Chemical Engineering
Indian Institute of Technology, Bombay

08002022
UG Third Year (B.Tech.)
Male
DOB: 16 January 1989

Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2010	7.19
Intermediate/+2	Board: CBSE	St. Anselms Sr Sec School	2007	72.00
Matriculation	Board: CBSE	Maheshwari Public School	2005	91.00

Minor: Energy Sciences & Engineering Department

[Ongoing]

PROFILE

- Strong technical track record in multidisciplinary courses including Energy Management, Environment Sciences & Engineering, Economics, Experimentation & Measurement Sciences and Industrial Design
- Leadership facets, research exposure and multinational industrial experiences in energy and oil sector with emphasis on team work, initiative and innovation
- Diverse interest in mountaineering, swimming, photography and travelling; achievements include zonal awards and championships

INDUSTRIAL AND RESEARCH EXPERIENCES

RELIANCE INDUSTRIES LIMITED, Reliance Technology Group, Navi-Mumbai

[May'11-Jul'11]

Optimal Design of CO₂ Transport System for Enhance Oil Recovery [EOR] & Algae Refinery

- Conceptualized a 200Km pipeline for CO₂ transport from Jamnagar to Kutch for EOR and Algae Oil Refinery
- Devised a flexible transport model that caters a wide domain ranging from 38Kg/hr to 10148.32Kg/hr
- Implemented the designed configuration that reduced the operational cost from \$10 to \$2.3 per ton of CO₂
- Reduced the projected capital cost of Rs 5.00 billion, of existing project to Rs 3.00 billion
- Reviewed the World's Largest Oil Refinery Complex- Reliance Jamnagar and their business strategies

ESSAR OIL LIMITED, Jamnagar Refinery, Gujarat

[Nov'10-Dec'10]

Process Operations in Naptha-Hydrotreater & Continous Catalytic Reformer [NHT-CCR]

- Critically investigated the unit operations and processes involved in the Jamnagar Oil Refinery
- Technically interpreted and evaluated the process flow sheets and piping & instrumentation diagrams
- Simulated and validated the existing process parameters in NHT-CCR unit for the designed specifications
- Performed hydraulic, material and energy calculations for the operations and identified the Bottle Neck

JAWAHARLAL NEHRU CENTRE OF ADVANCED SCIENCE & RESEARCH, Bengaluru

[May'09-Jul'09]

Physical Diagnostics & Mathematical Modelling of Coanda Effect

- Surveyed various Research papers and Scientific journals to comprehend the fundamentals of Coanda Effect
- Integrated the Hydrodynamic model from First Principle and simulated it for different parameters
- Designed and Fabricated an experimental setup for physically diagnosing the problem and data acquisition
- Regressed the generated data and proposed an empirical correlation to quantify Coanda Effect
- Presented a talk on Coanda Effect in Summer Colloquium at JNCASR, Bengaluru before 20 Research Scholars

SEMINARS

ELECTROCHEMICAL COMPRESSION OF HYDROGEN GAS IN FUEL CELLS

[Jan'11-April'11]

- Surveyed the journals and research papers for the understanding of the high compression technology
- Designed a Proton Exchange Membrane based Electrochemical Compressor that can compress upto 130bars
- Simulated the cell model for various cell parameters and estimated its compression performance

NET ENERGY VALUE CONTROVERSY OF CORN BASED ETHANOL

[Jul'10-Dec'10]

- Worked in team of 4 students and compiled the process details from past relevant dissertations
- Calculated the Net Energy Value of the Corn based ethanol that came out to be negative by 27%
- Critiqued the possible, adverse Economical, Social and Environmental issues of Corn commercialization

MARKET STRUCTURE ANALYSIS OF BEVERAGE INDUSTRY

[Jul'08-Dec'08]

- Critically reviewed the marketing and business strategies of the Top 10 International beverage firms
- Analysed the market shares and revenue trends of last 2 decades and commented on the market forms
- Got an opportunity to deliver the presentation in the class of 300 students

KEY ACADEMIC PROJECTS

ENERGY AUDIT OF HOSTELS IN IIT BOMBAY CAMPUS, ENERGY SCIENCE & ENGINEERING

[Jan'10-Apr'08]

- Formulated an algorithm for Energy Audit and benchmarked the current energy systems in IIT Bombay
- Assessed the potential of Solar and Bio Energy Sources in campus that summed up to 78000 KWH
- Proposed the installation of Solar Heaters and Biogas plants that reduced the energy consumption by 84.9% and simple pay back period of 3.6 years

CAMPUS BUS ROUTE SIMULATOR

[Jul'08-Dec'08]

- Studied the concepts of basic modular programming and learnt about human interactive interfaces
- Developed a code in C++ incorporating concepts of classes, stacks and queues to simulate the campus routes
- Assisted students in locating the optimum bus and the corresponding routes

COMPUTER AND INSTRUMENTAL SKILLS

- **Software Packages:** MATLAB, Scilab, Aerosol Simulator, Excel-Macros, C++ & C
- **Industrial Packages:** ASPEN-Plus & Hysys, Petrosim, HTRI, Ansys-Fluent, Gambit, Pipe-Net
- **Instrumental Expertise:** Laser Doppler Velocimetry [LDV], High Speed Camera, Stopped Flow Reactor

LEADERSHIP EXPERIENCES

DEPARTMENT PLACEMENT CO-ORDINATOR

[Jul'11-Till Date]

- Elected for Institute Placement Team of 80 members responsible for placing 1500 students
- Revived the placement preparation program with introduction of 10 online Moodle test, 4 Informal talks, 5 group discussions and personal interview sessions
- Compiled the preference of the students and revitalized a pitching strategy for desired companies
- Delegated around 200 companies and coordinated for the various placements activities

FINE ARTS INCHARGE, PERFORMANCE ARTS FESTIVAL

[Jan'11-May'11]

- Spearheaded the team of 35 students that won 2nd position in P.A.F among 5 teams
- Administered the Fine Arts activities in P.A.F The Largest Cultural Competition in IIT Bombay
- Managed a budget of Rs 0.1 million solely allocated for Production and Fine Arts department in P.A.F

HOSTEL MAINTENANCE SECRETARY

[Jul'09-Dec'10]

- Coordinated in team of 5 Secretaries and allocated a budget of around Rs 0.4 million for hostel needs
- Introduced an Online Complaining Portal that systematized the complain lodging for 380 hostel inmates

AWARDS AND RECOGNITIONS

ACADEMICS

- Recognized with precious Research Fellowship, awarded by Indian Academy of Science, Bengaluru [2009]
- Certified member of International Association of Engineers an international association of engineers
- Recipient of the Certificate of Academic Excellence in Secondary School Examination [2006]

TECHNICAL

- Was offered with Pre Placement Offer by Reliance Industries Ltd for remarkable work at Internship [2011]
- Attained the 2nd position in Autobots held at Techfest IIT Bombay Asia's Largest Technical Competition [2010]
- Conferred a letter of appreciation for dedication and innovation at Summer Research Project [2009]
- Awarded certificate for successfully completing training in Rashtriya Chemicals & Fertilizers, Chembur [2008]

SPORTS

- Was a recognized Central hockey player in National Sports Organization- Hockey, IIT Bombay [2011]
- Competed with 400 people in a ironic 15km marathon "I-Race" held at IIT Bombay [2010]
- Awarded the 'A' Certificate for serving National Cadet Corp for 3 consecutive years
- Was awarded a certificate of 10 days Camping under the NCC programme [2007]
- Participated and won 3 gold and 2 silver medals in athletics during the schools and college

CULTURAL

- Awarded with a distinguished "The Gem of the P.A.F" title among 1200 students [2011]
- Acknowledged as Special Mention for P.A.F'08 and P.A.F'09 for consecutive years among 1000 students
- Scripted and Participated in Gyration, Inter Hostel Dance Competition [2009]
- Competed and won scores of National. Inter and Intra college Debating Competitions [2004-05]