



Prabhat Ranjan
Energy Science and Engineering
Indian Institute of Technology, Bombay

16D170027
Dual Degree (B.Tech. + M.Tech.)
Gender: Male
DOB: 27-01-1998

Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2021	8.94
Intermediate	CBSE	Chinmaya Vidyalaya	2015	93.40%
Matriculation	Jharkhand Board	Netarhat Residential School	2013	91.40%

SCHOLASTIC ACHIEVEMENTS

- Currently ranked 3rd in the department out of 27 students
- Received the prestigious **Charpak Lab Scholarship** for research in France from the **French Embassy in India**
- Awarded the **Erasmus+ Global Mobility Scholarship** for a semester exchange by the **European Union**
- Achieved **AP** grade for academic proficiency in **Biology** (8/462 students) and **Innovation by Design** (12/73 students)

INTERNATIONAL EXPOSURE

Aalto University, Finland | Study Abroad semester Jan '20 - Jul '20

- Completed **35 ECTS** equivalent to **900+ hours** of coursework in Master's program of **Advanced Energy Solutions**
- Attended 4 courses on the **Finnish culture** and in **pan-cultural team work and leadership**

International Student Energy Summit, London | Delegate Jul '19

- Attended the global summit consisting of **650+** delegates from **100+** countries around the world, held at Imperial College London, Royal Geographical Society and Natural History Museum, London
- Networked with delegates from **50+ leading companies** spanning different sectors and industries and brainstormed solutions for pressing **energy and environmental concerns**

Solar Decathlon China, Dezhou, China | Team Shunya Jul '18 - Aug '18

- Represented India at Solar Decathlon, a global **green architecture challenge** organised by **US Department of Energy**
- Worked as the **English Media manager** in the SDC committee for outreach to **100+** Non-Chinese Members

INSA Lyon, France | Internship May '19 - Jul '19

- Completed a research internship on the development of **building heat simulation methods** at INSA Lyon under the guidance of **Prof. Jean-Jacques Roux**, Département Génie Civil et Urbanisme

KEY PROJECTS

Development of Solar Drying Technology for Agricultural produce | Master's Thesis May '20 - Present

- Conducted an **extensive literature survey** on solar drying to **identify key shortcomings** in existing technologies
- Designing a solar dryer with an **integrated heat storage** solution to enhance the drying time during solar unavailability
- Formulating a **phenomenological model** that can be **solved numerically** to obtain design parameters for the dryer

Project Solarise | Team Shunya Aug '17 - Aug '18

*Won **Best participation award** in Solar Decathlon China 2018 | Only team from India*

- Worked as a **design engineer** collaborating with **65+** team members to build a **sustainable, net positive energy house**
- Successfully **deconstructed, shipped and reconstructed** the 1800 sq. ft house in 12 days at SDC site in Dezhou, China
- Underwent construction training at **Armstrong Pvt. Ltd.**; Documented the **construction process** and **design procedures**

WECC Composite Load Flow Model | Course Project | Prof. Zakir Hussain Rather Jul '19 - Nov '19

- Studied the **WECC flow modelling** used to simulate the dynamic behaviour of interconnected **Bulk Power system**
- Used **DigSILENT PowerFactory** to model a small scale power system with a PV and Grid

Study of watershed development | Course Project | Prof. N. C. Narayanan Jul '19 - Nov '19

- Extensively studied and presented the chronological **history of watershed development programs** in India
- Presented the **evolution of Watershed development guidelines** based on various committee and policy reports
- Analysed various case studies to **critique the government perspective** on watershed development

Investigating the evolution of Eukaryotes | Course Project | Prof. Supreet Saini Aug '18 - Nov '18

- Studied the process of **Endosymbiosis for the evolution of Eukaryotic cells**
- Formulated a **mathematical model** to explain the origin of mitochondria through the **Hydrogen hypothesis**

Study of Marine plastic Pollution | Course Project | Prof. Munish Chandel Jan '18 - May '18

- Identified types of plastic waste in ocean and its **effects on aquatic and human life** through extensive literature survey
- Presented different **policies, awareness programs and innovative interventions** for combating marine plastic problems

LEADERSHIP AND MENTORING

Core Team member | Team Shunya: Building sustainable homes for the future Aug '18 - Dec '19
Led a team of 50+ members

- Spearheaded **recruitment** of **45+ new team members** across **5+ batches**; Completely revamped the **team structure**
- Planned the next housing project end to end, within a budget of **INR 40 mn**; Pitched for **Solar Decathlon Europe 2021**
- Worked with 5 architects on **retrofittable and deployable design**; Headed several technical & managerial team meets

DAMP Mentor | Department academic mentorship Program, DESE Apr '18 - May '19
Mentored five sophomores

- **Mentored five sophomore undergraduate** students to help them fully realize their academic potential
- Published up-to-date course reviews on the DESE D-AMP blog to help **130+ students** of the department
- Underwent a **12-hour training** session conducted by **Student Wellness Centre**, IIT Bombay and TISS

Energy club Convener | Institute Technical Council, IIT Bombay Apr '17 - May '18

- Worked with a team of **5 members** to spread awareness about the popular energy technologies and innovations
- Organized 5+ documentary screenings, 5+ talks, workshops and Group Discussions for **10000+** residents of IIT-B

Teaching Assistant | BB101 (Biology) | Prof. Ambarish Kunwar Feb '18 - May '18

- Conducted **weekly tutorial sessions** for **35+** first-year students
- Assisted the professor in conducting regular exams and helped in evaluation procedures

KEY COURSES

Analytics and Modelling	Energy Systems Modelling and Analysis, Power Generation and System Planning Data Analysis and Interpretation, Energy Policy Analysis
Electrical Engineering	Distributed Generation and Microgrids, Electrical Energy Systems, Electrical Machines, Control and Instrumentation, Power Electronics
Mathematics	Introduction to Numerical Analysis, Linear Algebra, Calculus, Ordinary Differential Equations
Mechanical Engineering	Transport Phenomena, Thermo-fluid Devices, Reaction Engineering & Combustion
Environmental Engineering	Environmental management, Energy Resources, Economics and Environment Introduction to Climate Change, Water Resources Management
Biotechnology	Genetic Engineering, Metabolism and Bioenergetics

SOFTWARE SKILLS

Microcontroller	Arduino
Programing Languages	C++, Matlab, R, Python
Software Packages	SEQUEL, Simulink, \LaTeX , AutoCAD, Solidworks

EXTRA CURRICULAR ACTIVITIES

SPORTS	Member of Institute Hockey Team for Inter-IIT Sports meet for two consecutive years Led hostel team to Silver medal twice in Hockey GC Won gold Institute Hockey League Proficient in Freesbee, played with regional team in Finland
Hobby Projects	Remote Control Bot XLR8 Electronics Club, IITB Line Follower Bot Electronics Club, IITB Arduino Powered 8x8 Dancing LED cube Designed several websites using Jekyll and Hugo
Mountaineering	Completed a 15 day Mountaineering Adventure Course at Sanasar (Jammu) Won a prize for the discipline and overall conduct during the course
Social Service	Volunteer for CURED , Diabetes awareness initiative undertaken by TechFest 2016, IIT Bombay Volunteer at Abhyasika (Student-run NGO) : Taught underprivileged children