



Maitreyee Tengshe  
Chemical Engineering  
Indian Institute of Technology Bombay

22B0318  
B.Tech.  
Gender: Female  
DOB: 03/07/2004

Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2026	

Pursuing **Honors** degree offered by the Department of **Chemical Engineering** at IIT Bombay

Pursuing a **Minor** degree offered by the Department of **Biosciences and Bioengineering** at IIT Bombay

## SCHOLASTIC ACHIEVEMENTS

- Awarded **Rank 12** in Chemical Engg. batch of **140+ students**, Sem 3, for **academic excellence** [2023]
- Bagged an SPI of **9.17** in Sem 3 with **AA grade in 4** and **AB grade in 4** among all 11 core courses [2023]
- Secured a percentile of **99.6** in JEE Mains Examination amongst **1M+** candidates across the nation [2022]
- Consistently achieved **Rank 1** at school in National Science and Math Olympiads (NSO, IMO) [2016-2020]

## WORK EXPERIENCE

**Process Modelling Intern | Xsemble** [May 2024-Present]

*Development of Reusable Computational Components for Chemical Engineering Applications*

- Developed **50+** modular components and **6+** flowcharts detailing various industrial chemical engg. processes
- Designed repositories of **batch, semi-batch & CSTR reactors**, with variable volume & non-isothermality
- Optimised numerical models for pipeline flow calculating **friction factor & pressure drop** for liq. & gases
- Enhanced **heat exchanger** modelling with detailed E-NTU and LMTD methods for direct industrial use

## KEY PROJECTS

**Cohesion Modelling in Granular mechanics | Guide: Prof. Devang Khakhar** [May 2024-Present]

*Worked on 3+ contact models, focusing on 2 particle interactions for aggregation & fragmentation study*

- Leveraged **LAMMPS**, using **post-processing C code** for simulations of diverse granular cohesion models
- Implemented the **JKR Model** extensively for examining two particle collisions, working towards **aggregates**
- Established **3+ scaling relationships** by finding bond-breaking forces wrt. overlap and 5+ other parameters
- Incorporating lubrication, capillary forces and **liquid bridges** for optimisation of **granulation methods**

**Chemical Research Analyst | Guide: Prof. Rahul Nabar**

[Jun 2024-Present]

*Addressed industrial challenges by investigating current technological advancements*

- Researched resolving racemic mixtures for **optical purity** using DKR, chromatography, and crystallization
- Analyzed **5+ commercial uses of quartz**, highlighting applications, market trends and growth potential
- Explored **10+ studies on photoreactors**, including modelling, industrial scale-up and energy applications
- Identified promising companies at **ACHEMA**, particularly for flow reactors, catalysts, AI, and startups

**Star Tracker based Attitude Determination System | Satellite Prog. IITB** [Mar - Dec 2023]

*Leverages images of stars taken by the satellite to determine the accurate attitude to be tested onboard POEM*

- Analyzed star images & functions using **MATLAB** for SNR, encircled energy & Point Spread Function
- Successfully integrated **RasPi** with 4 RasPi HQ and NoIR cameras to check compatibility for star images
- Designed a dark room **testing setup** for STADS modelling the stars at infinite distance using a collimator
- Ensured precise **defocus distance** in the lenses for appropriate point spread of the star onto the sensor

## POSITION OF RESPONSIBILITY

**Joint Secretary Academic Affairs | Dept. of Chemical Engg. | IIT Bombay** [Apr 2024-Present]

*Nominated representative of 800+ students; Leading a team of 8, responsible for academic decisions of the dept.*

- Managing **20+** events with an annual budget of **INR 320k** witnessing an overall footfall of **1600+** students
- Engaged constantly in solving academic queries of **800+** students with course registration & backlog recovery
- Pioneered **15+** faculty led core project opportunities catering to **150+** undergraduate students for 3 months

**Alumni Secretary | Student Alumni Relations Cell | IIT Bombay**

[Jun 2023-Apr 2024]

*Part of a team of 20 Alumni Secretaries bridging the gap between 60k+ Alumni and 12k+ students*

- Functioning effectively as the **sole point of contact** between all alumni and students of ChemE Department
- Spearheaded the execution of Placement Mentoring Program, connecting **650+** students with 300+ alumni
- Orchestrated a series of Core Talks by accomplished alumni in core for **100+** students of the department

## EXTRA CURRICULARS AND ACHIEVEMENTS

Sports	<ul style="list-style-type: none"><li>Among the <b>top 3</b> to complete Crossy GC run of nearly 5 km, with <b>50+</b> participants</li><li>Underwent rigorous <b>training</b> in an intense <b>10 day</b> Annual Training Camp by 2MER, NCC</li></ul>
Special Men-tions	<ul style="list-style-type: none"><li>Proficient in Conversational <b>German</b> with A1 certification from Goethe Institute, Germany</li><li>Bagged <b>Best Delegate</b> in Model United Nations conducted by Sanjay Ghodawat Institutes</li><li>Qualified Kathak exam Prarambhik, with <b>First</b> Division qualification by Govt. of India</li></ul>
Social	<ul style="list-style-type: none"><li><b>Contributed</b> to Puneet Sagar Abhiyan in collaboration with youth-led Beach Please organisation</li><li>Active role in <b>3+ Lake cleaning initiatives</b> of Powai lake by NCC, IIT Bombay</li></ul>