

Summary

Chemical Engineering graduate from NIT Surat with strong skills in modeling, simulation, and process optimization. Experienced in applying engineering principles to solve real-world industrial challenges. Proficient in Python, MATLAB, Excel, and data analysis tools. Quick learner with strong problem-solving, collaboration, and time-management abilities.

Education

2021 - 2025	BTech Chemical engineering at NIT SURAT	(CGPA: 8.74)
2021	Class 12 Board of Secondary Education Andhra Pradesh	(percentage:94.7)
2019	Class 10 CBSE	(percentage:89.6)

Work Experience

SUN PHARMACEUTICAL INDUSTRIES LTD | VADODARA Jan 2025 – June 2025
 Research Intern – Modeling & Simulation of Wurster Coater and Sparger design for DCM removal

- Designed predictive models for droplet evaporation kinetics, particle coating uniformity and intraparticle coating variability.
- Developed advanced CFD and DEM models to resolve coating inefficiencies in Wurster coater processes, including agglomeration and non-uniformity.
- Engineered and scaled a nitrogen-based sparger system for DCM removal in liposome formulations, optimizing bubble size and mass transfer rates.
- Derived scale-independent KLa equations and performed scale-up of spargers and homogenizers from lab to commercial scale.
- Collaborated with various internal teams and external vendors to validate models, enhance productivity, and reduce trial-based experimentation.

GET 2024 SUMMER INTERN RELIANCE INDUSTRIES LTD | NAVI MUMBAI May 2024 - July 2024
 Summer Intern – PET Recycling & Process Optimization

- Analyzed and optimized the bottle-to-bottle PET recycling process, focusing on sustainability and efficiency.
- Identified challenges across unit operations and evaluated their impact on process performance.
- Researched and compared top 5 global PET recycling machinery manufacturers (USA, China, Germany, and Europe) based on operational efficiency, installation requirements, and output quality.
- Selected the best manufacturer that met Reliance’s project requirements for setting up a bottle-to-bottle PET recycling plant.
- Developed a comprehensive process understanding, emphasizing decontamination, IV retention, and high-quality PET resin production.

Projects

PROCESS AND EQUIPMENT DESIGN FOR BENZENE PRODUCTION FROM TOLUENE USING HDA PROCESS

- Designed and optimized the benzene production process using the HDA method.
- Performed material and energy balance calculations across reactors, separators, and distillation columns to enhance efficiency.
- Designed critical equipment, including a distillation column, ensuring optimal performance and verifying against flooding and weeping conditions.
- Conducted thermodynamic and kinetic analyses to maximize benzene yield and reduce by- products. This project developed skills in process design, equipment design, and cost analysis.
- Key skills used: Material balance, Energy balance, Process design, Process Equipment design, Cost estimation.

Skills

Technical Skills: Fluid flow operations, Heat exchanger design and integration, Rigorous Distillation column design, Process design, Process equipment, Process scale-up, Computational fluid dynamics (CFD), Discreate element method (DEM).
 Interpersonal Skills: Multi-Tasking, Adaptability, Self – motivated, Decision-Making, Team player, Time management.
 Analytical skills: MS Excel, SQL, Python-Pandas, NumPy, Tableau, Power BI.