

Suriya M.J

Chemical Engineering Student | Process Engineering & Simulation
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EDUCATION

National Institute of Technology, Warangal Warangal, Telangana

B.Tech, Chemical Engineering 2024 - 2028

CGPA: 6.53

Relevant Coursework: Chemical Reaction Engineering, Heat Transfer, Fundamentals of Mass Transfer, Chemical Engineering Thermodynamics, Fluid and Particle Mechanics

New Millennium School, Bahrain Bahrain

Class XII 2024

RESEARCH EXPERIENCE

Research Intern, Department of Chemical Engineering, IIT Madras April 2026 – June 2026

Supervisor: *Prof. Sumesh P. Thampi*

- Simulated active liquid crystal dynamics using the Ludwig lattice Boltzmann framework on a 32x32 periodic domain to study force-driven ordering transitions
- Identified the dominant active stress mechanism during isotropic-to-nematic ordering, tracking a force ratio that peaked at 0.83, and validated results against FFT wavenumber analysis
- Built a full Python analysis pipeline in a Linux (Ubuntu) environment, generating the visualizations and validation plots used in the final internship report

PROJECTS

Cyclone Separator Performance Analysis, Lapple Model March 2026

- Built a grade-efficiency model for a Lapple-type cyclone separator in Excel, performing sensitivity analysis across inlet velocities from 10-25 m/s that demonstrated a 37% reduction in cut size and nearly doubled collection efficiency at 5 microns
- Validated design feasibility by calculating a pressure drop of 2160 Pa using the Shepherd and Lapple correlation, confirming the design met standard operating limits

Drug Dissolution Rate Analysis, Noyes-Whitney Model March 2026

- Modeled paracetamol dissolution kinetics using the Noyes-Whitney equation and Python scripts with NumPy and matplotlib to generate dissolution and sensitivity analysis profiles
- Demonstrated a nearly 5x improvement in dissolution rate by increasing particle surface area from 0.0005 to 0.005 square meters

LEADERSHIP & EXPERIENCE

President, Rising Stars Gavel Club July 2020 – June 2021

- Directed weekly virtual operations for a 30-member club during COVID-19 disruptions, sustaining full engagement through remote-only programming
- Won 50+ awards including Best Speaker, Best Evaluator, and Table Topics across multiple sessions

Additional Secretary, International Students Working Group, NIT Warangal August 2025 – April 2026

- Represent international students in an official working group at NIT Warangal, coordinating between student concerns and administrative response, and serve as Master of Ceremonies for official events

TECHNICAL SKILLS

Simulation & Computational Tools: Ludwig (Lattice Boltzmann Method), Python (NumPy, matplotlib), Microsoft Excel

Programming & Systems: Python, C++, Linux (Ubuntu), MySQL, Git

Languages: English, Hindi, Tamil, French

ACHIEVEMENTS

- Selected as Delegate, Harvard Project for Asian and International Relations (HPAIR) ACONF 2026, Hanoi, Vietnam