



EDUCATION

Year	Degree/Exam	Institute	CGPA/Marks
2023	M.TECH	IIT Kharagpur	9.41 / 10
2020	B.TECH	University of Petroleum and Energy Studies	78.1%
2016	Senior School Certificate Examination	Shakti Shanti Academy (CBSE)	85.8%
2014	Secondary School Examination	Imperial Public School (CBSE)	9.8 / 10

INTERNSHIPS

Philips Carbon Black Limited, Palej [June 2019-July 2019]

Topic-A case study on Consistent pellet hardness in line 2

- Identified the various causes of inconsistency in pellet hardness of **N550** and **N660** grades of carbon black
- Analysed the data of pellet hardness and its dependence on various process parameters and came out with some effective solutions
- Achieved a significant decrease in **average deviation** of pellet hardness data from 4.3 to 1.88

Institute-IIT Kanpur [June 2018-July 2018]

Topic-Removal of Petroleum Spillage from water by Ferromagnetic composite of Bacterial-cellulose iron oxide nanoparticles

- Synthesized Bacterial Cellulose-Iron oxide nanoparticles which was characterized by **scanning electron microscope**
- Cellulose being **oleophilic and hydrophobic** in nature extracted about 80% oil from water, observed with **UV-Vis** spectroscopy

PROJECTS

Mtech Project | Supervisor: Prof.Sunando DasGupta | IIT Kharagpur [May 2022-Ongoing]

Topic1: Effect of external force field on aggregation

- Project aims to monitor defibrillation of amyloid beta peptides in the presence of external electric and magnetic field
- Explored and optimized the frequency of electric field leading to maximum defibrillation of amyloid-beta fibrils
- Sinusoidal Electric field of 20Hz was found to have maximum defibrillation propensity

Topic 2: Inertial Sorting

- Designed different microchannels in **COMSOL Multiphysics** for precise manipulation and separation of particles of micron sizes
- Utilized **passive hydrodynamic forces** inside the particle tracing module of COMSOL to bring about a separation of 67% to 73%
- The channels made is to be realized to test its feasibility with experiments

Btech Project: Guide: Dr.Pranava Chaudhari | UPES, Dehradun [August 2019-April 2020]

Topic:Parameter estimation of a multicomponent reactor system using novel multiobjective optimization approach

- Tuned 30 Kinetic parameters in such a manner that reactor model prediction was accurate as well as unbiased for each component
- Optimization was done using **NSGA-2** algorithm and parameters obtained were compared for few experimental conditions
- Multi-objective optimization showed not only a reduction in error but also the result was equally distributed for each component

COURSEWORK INFORMATION

Core Subjects: Advanced Heat Transfer | Advanced Mass Transfer | Advanced Fluid Dynamics | Chemical Reaction Engineering | Chemical Engineering Thermodynamics | Process Dynamics and Control | Chemical Project Economics

Elective Subjects: Microscale Transport Phenomena | Petroleum Refining | Petrochemicals | Instability and Patterning in thin films

POSITIONS OF RESPONSIBILITY

Teaching assistantship | Heat Transfer Lab | Prof.Sunando DasGupta [2022]

- Guided Under Graduate 3rd year b-tech students in Heat Transfer Lab
- Demonstrated experiments to students and explained them the necessary concepts

Major and Minor project leader | UPES, Dehradun

- Led the minor and major project in a group of 4 members during the academic years 18-19 and 19-20 respectively [2018-20]
- Divided the work equally among everyone depending on the interest and arranged regular discussions
- Arranged regular meeting with the mentor to discuss important concepts and organized financial aid and resources for the project

Class Representative | UPES, Dehradun

- Worked as a class representative of the batch of 38 students from the academic year 2017 to 2020 [2017-20]
- Conveyed the message of students to the department and managed the class timings and requirements accordingly

AWARDS AND ACHIEVEMENTS

- Awarded monthly scholarship by MHRD, for securing AIR 439 in Chemical Engineering **GATE -2021**
- Ranked among the top 8% students of 22219 students who appeared for **GATE-2021** exam of engineering science
- Secured position among the top 14% students who appeared for **Gate 2020** in Chemical engineering
- Runner up in the 24th Chapra CHESS Championship in **2017** held at Maa Science Institute in Chapra

SKILLS AND EXPERTISE

Software- COMSOL | ASPEN PLUS | ASPEN HYSYS | MS office(basics) **Language-** Python | MATLAB

EXTRA CURRICULAR ACTIVITIES

- Attended Executive excellence program held by **TIMES Professional Learning program** held at UPES [2019]
- Presented paper in **PREZENTO 2.0** during the annual tech-fest of UPES-IGNITE [2019]
- Participated in **Clash Royal** event of annual tech fest of UPES- IGNITE [2018]