



## 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 3<sup>rd</sup> 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**

[2018-20]

- Led the minor and major project in a group of 4 members during the academic years 18-19 and 19-20 respectively
- 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**

[2017-20]

- Worked as a class representative of the batch of 38 students from the academic year 2017 to 2020
- 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 24<sup>th</sup> 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
- Presented paper in **PREZENTO 2.0** during the annual tech-fest of UPES-IGNITE
- Participated in **Clash Royal** event of annual tech fest of UPES- IGNITE

[2019]

[2019]

[2018]