Nikita Sahu

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Education

Birla Institute of Technology and Science, Pilani — Goa, India
Bachelor of Engineering in Chemical Engineering — *Aug. 2018 – May 2022 (expected)*
Dept. Rank 6/100 — *CGPA: 8.83/10*

R.N. Podar School (CBSE) — Mumbai, India
Percentage in Class 12: 93.6% — *Graduated May 2018*

Lilavatibai Podar High School (ICSE) — Mumbai, India
Percentage in Class 10: 95.4% — *Graduated May 2016*

Research Projects

Graphene Based Drug Delivery Systems — August 2021 – Present
Guided by Prof. Sutapa Roy Ramanan, BITS Pilani K K Birla Goa Campus
Designing a graphene based nano vehicle assembly for targeted and efficient drug delivery.

Recent advancements in Life Cycle Assessment — January 2021 – August 2021
Guided by Prof. Sampatrao Daggu Manjare, BITS Pilani K K Birla Goa Campus
Understanding the advancements done in field of Life Cycle Assessment and Life Cycle Engineering and coming up with new models to integrate the pillars of sustainability and costing into the methods.

Synthesis of Helical Nanofibers via Non-covalent interactions — July 2020 – December 2020
Guided by Prof. Sutapa Roy Ramanan, BITS Pilani K K Birla Goa Campus
The impact of non-covalent interactions was examined along with the influence of enantiomeric dopants in the fabrication of polymeric nano-helices and their applications in sensing.

Production of Insulin from rec-E.Coli — July 2020 – December 2020
Guided by Dr. Vivek Rangarajan, part of the course "Biochemical Engineering"
A literature survey on the current market, production method, process designs and purification techniques of insulin from rec-E.Coli.

AspenPlus Simulation for Production of Sulfuric Acid — July 2020 – December 2020
Guided by Prof. Sampatrao Daggu Manjare, part of the course "Process Design Principles"
Literature survey and Process Simulation of Production of Sulfuric Acid using AspenPlus

Material Modeling and Simulation of CNT Reinforced Polymer — May 2020 – July 2020
As a summer research intern at Dhio Research Institute Pvt.Ltd. — *(Certificate)*
Molecular dynamics simulations were carried out by embedding single wall CNT (5,5) into acrylate based polymer while imposing periodic conditions in NPT ensemble using the COGNAC modeller on J-OCTA.

Lab on a Brick Novel Design — September 2019 – November 2019
Guided by Prof. Anirban Roy, BITS Pilani K K Birla Goa Campus — *(Certificate)*
A novel approach and design for construction of a microfluidic device with a hybrid approach that allows for desktop testing and analysis of samples through modification of commercially available LEGO blocks.

Teaching Experience

Undergraduate Teaching Assistant, BITS Goa

- Kinetics and Reactor Design — August 2021 - December 2021
- Material Science and Engineering — January 2021 - May 2021
- Chemical Engineering Thermodynamics — August 2020 - December 2020

Leadership and On Campus Activities

Research and Collaboration Head, *Alumni Relations Cell* May 2020-July 2021
Led a team of 70+ students, Member of BITS Echo editorial team, Content head

Event Manager, Organising Committee, *BITSAA Global Meet* January 17-19 2020
Managed the event with 1000+ dignitaries and 60+ events

Mentor, *Peer Mentorship Program* August 2019- August 2020
Guided seven freshers through academic and extra curriculars in their first year. *(Certificate)*

Performer, *Mime Club* August 2018- August 2019
Performed in front of 3000 people during college fests

Relevant Coursework and Skills

Relevant Courses: Supramolecular Chemistry, Polymer Chemistry, Bio and Chemical Sensors, Healthcare Technologies, Nanobiotechnology, Introduction to Nanoscience, Engineering Chemistry, Material Science and Engineering

Core Courses: Mathematics I (Multivariable and Vector Calculus), Mathematics II (Linear Algebra and Complex Analysis), Mathematics III (Differential Equations), Probability and Statistics, Fluid Mechanics, Thermodynamics, Heat Transfer, Mass Transfer, Transport Phenomena, Numerical Methods, Kinetics and Reactor Design, Process Design and Economics, Chemical Process Calculations, Separation Processes, Biochemical Engineering, Process Dynamics and Control

Lab Courses: Biology, Chemistry, Physics, Heat Transfer, Engineering Chemistry, Separation Processes, Kinetics and Reactor Design, Process Control, CFD, Fluid Mechanics

Languages: Python, C, MATLAB

Software: ASPENPlus, GaBi, openLCA, J-OCTA, AutoCad, COMSOLMultiPhysics

Seminars and Workshops: Class seminars on 'Bio-Inspired Supramolecules in Ion Channels and Catalysis' and 'Regulation of Enzymes by Covalent Modification' as a part of the course Supramolecular Chemistry, Computational Structure based Screening and Explicit Molecular Dynamics

Specialisations (Online): Fundamentals of Immunology (Rice University); Cancer Biology (John Hopkins University); Drug Development Product Management (UCSD)

MOOC: Introduction to Molecular Spectroscopy (University of Manchester); Nanotechnology: A Maker's Course Materials Data Sciences and Informatics (Georgia Institute of Technology); Psychological First Aid (John Hopkins University) Python for Everybody - Basics, Data Structures, Accessing Web Data (University of Michigan);

Scholarship and Volunteering

- **Hindustan Times Scholarship** (a unique initiative to reward bright young minds) (2014)
  One of the 150 students chosen from over 27,000 applicants and 250+ schools across Mumbai, Pune and Chandigarh to be rewarded with a scholarship.
- **Jaganath Cancer Aid Foundation** June 19- July 19
  Engaged in the cancer awareness campaign and educated the family members of the patient at the shelter homes
- **Research Associate, Association of Students for Analysis and Research (ASAR)** April 2021 – July 2021
  Critical evaluation of impact of nanomaterials on environment: Accumulation and Penetration of Nanoparticles