

Nikita Sahu

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EDUCATION

Birla Institute of Technology and Science, Pilani

Bachelor of Engineering in Chemical Engineering

Dept. Rank 6/100

Goa, India

Aug. 2018 – May 2022 (*expected*)

CGPA: 8.83/10

R.N. Podar School (CBSE)

Percentage in Class 12: 93.6%

Mumbai, India

Graduated May 2018

Lilavatibai Podar High School (ICSE)

Percentage in Class 10: 95.4%

Mumbai, India

Graduated May 2016

RESEARCH PROJECTS

Graphene Based Drug Delivery Systems

August 2021 – December 2021

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
- Material Science and Engineering
- Chemical Engineering Thermodynamics

August 2021 - December 2021

January 2021 - May 2021

August 2020 - December 2020

LEADERSHIP AND ON CAMPUS ACTIVITIES

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| Research and Collaboration Head, <i>Alumni Relations Cell</i> Led a team of 70+ students, Member of BITS Echo editorial team, Content head | May 2020-July 2021 |
| Event Manager, Organising Committee, <i>BITSAA Global Meet</i> Managed the event with 1000+ dignitaries and 60+ events | January 17-19 2020 |
| Mentor, <i>Peer Mentorship Program</i> Guided seven freshers through academic and extra curriculums in their first year. | August 2019- August 2020 (<i>Certificate</i>) |
| Performer, <i>Mime Club</i> Performed in front of 3000 people during college fests | August 2018- August 2019 |

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