Nikita Sahu

February 1, 2024

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Education

Université Grenoble Alpes (Bionanotechnology Track) — Grenoble, France
Erasmus Masters in Nanoscience and Nanotechnology (Phase 2) — *Sept. 2023 – Aug. 2024 (expected)*

Katholieke Universiteit Leuven — Leuven, Belgium
Erasmus Masters in Nanoscience and Nanotechnology (Phase 1) — *Sept. 2022 – Aug. 2023*

Birla Institute of Technology and Science, Pilani — Goa, India
Bachelor of Engineering in Chemical Engineering — *Aug. 2018 – Dec. 2021*
CGPA: 8.96/10; Rank: 6/72 — *(Graduated one semester early)*

Research Projects

BioHybrid architectures based nanopatterning for the electronic nose — *Feb. – Jul. 2024*
Guided by Prof. Pierre-Henri Elchinger, French Alternative Energies and Atomic Energy Commission (CEA)
Explore and characterise new materials for integrating onto the SPRi chip for the development of electronic nose for the analysis of VOCs

Synthesis and characterization of Cyclometalated Iridium Complexes — *Jul. – Aug. 2023*
Guided by Prof. Shin Aoki, Tokyo University of Science — *(Certificate)*
Applied synthetic organic chemistry protocols to synthesize, functionalise and characterise cyclometalated iridium complexes.

Microfluidic electrochemistry in a Urine Biosensor — *Feb. – May 2023*
Guided by Jinane Elias and Anita Ahmadi, OnePlanet Research Center (iMEC Netherlands)
Used numerical simulations in COMSOL Multiphysics to optimize the antigen and antibody interaction in a biosensor.

Metabolomics study on therapeutic biomarkers — *Jan. – Aug. 2022*
Guided by Prof. Pramod Wangikar, IIT Bombay
Analysed metabolomic profiles to identify diagnostic markers at Clarity Bio Systems India Pvt. Ltd. Also worked on redesigning the company's website.

Effect of mutation in peptides on their interactions with proteins — *Jan. – Jun. 2022*
Guided by Prof. Raviprasad Aduri, BITS Pilani K K Birla Goa Campus
Studied the effect of mutation in a peptide on its interaction with a protein using molecular docking and molecular dynamics simulations using GROMACS.

Graphene based drug delivery systems — *Aug. – Dec. 2021*
Guided by Prof. Sutapa Roy Ramanan, BITS Pilani K K Birla Goa Campus
Designed a graphene based nano vehicle assembly for targeted and efficient drug delivery.

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

Material Modeling and simulation of CNT reinforced polymer — *May – Jul. 2020*
As a summer research intern at Dhio Research Institute Pvt.Ltd. — *(Certificate)*
Carried out molecular dynamics simulations by embedding single wall CNT (5,5) into acrylate based polymer with periodic conditions imposed in NPT ensemble using the COGNAC modeller on J-OCTA.

Teaching Experience

Undergraduate Teaching Assistant, BITS Goa

- Kinetics and Reactor Design (Fall 2021)
- Material Science and Engineering (Spring 2021)
- Chemical Engineering Thermodynamics (Fall 2020)

Relevant Coursework and Skills

Cleanroom Training: A practical cleanroom training session with hands-on experience with basic protocols, deposition methods, electrical and physical characterisation techniques as part of the Spring Workshop 2023 at NaMLab, TU Dresden.

Relevant Courses: Cell Signalling and Cancer Biology*, Nanopores and Membranes*, Surface Functionalisation*, Fundamentals of Structural Biology*, Molecular Markers for medical imaging*, Biosensors and Bioelectronics, Biomachines and Biomimetics, Chemistry at Nanoscale, Physical Chemistry of Biosystems, Supramolecular Chemistry, Polymer Chemistry, Quantum Physics, Semiconductor Devices, Semiconductor Physics

Lab Courses: Biology, Chemistry, Physics, Heat Transfer, Engineering Chemistry, Separation Processes, Calorimetry, Biosensors, CFD, Fluid Mechanics

Languages: Python, C, MATLAB

Software: ASPENPlus, AutoCad, COMSOLMultiPhysics, MS-DIAL, GROMACS, SimaPro

Seminars and Workshops: 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

- **Erasmus Mundus Category A Scholarship** (2022-2024)
  Full funding for Masters studies including contribution to student participation costs, travel, installation and monthly allowance
- **Hindustan Times Scholarship** (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-July '19)
  Engaged in the cancer awareness campaign and educated the family members of the patient at the shelter homes
- **Mentor in the Peer Mentorship Program** (August '19 - August '20)
  Guided seven freshers through academic and extra curricular in their first year at BITS Pilani

Leadership and Extracurricular Activities

BEST Soft Skills Track (BSST), ***Board of European Students of Technology (BEST)*** March 2023
Participated in the "Become the BEST version" workshop track of BSST 2023 *(Certificate)*

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

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