

# Nikita Sahu

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July 24, 2023  
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## EDUCATION

### Université Grenoble Alpes (Bionanotechnology Track)

Erasmus Masters in Nanoscience and Nanotechnology (Phase 2)

Grenoble, France  
Sept. 2023 – Aug. 2024 (expected)

### Katholieke Universiteit Leuven

Erasmus Masters in Nanoscience and Nanotechnology (Phase 1)

Leuven, Belgium  
Sept. 2022 – Aug. 2023\*

### Birla Institute of Technology and Science, Pilani

Bachelor of Engineering in Chemical Engineering

CGPA: 8.96/10; Rank: 6/72

Goa, India  
Aug. 2018 – Dec. 2021  
(Graduated one semester early)

## RESEARCH PROJECTS

### Synthesis and characterization of Cyclometalated Iridium Complexes

Guided by Prof. Shin Aoki, Tokyo University of Science

Conducted synthetic organic chemistry protocols to synthesize, functionalise and characterise cyclometalated iridium complexes.

July 2023 – August 2023

### Microfluidic electrochemistry in a Urine Biosensor

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.

February 2023 – May 2023

### Metabolomics study on therapeutic biomarkers

Guided by Prof. Pramod Wangikar, IIT Bombay

Worked on Metabolomics Data Analysis and website design for Clarity Bio Systems India Pvt. Ltd.

January 2022 – August 2021

### Effect of mutation in peptides on their interactions with proteins

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.

January 2022 – June 2022

### Graphene based drug delivery systems

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.

August 2021 – December 2021

### Recent advancements in Life Cycle Assessment

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.

January 2021 – August 2021

### Material Modeling and simulation of CNT reinforced polymer

As a summer research intern at Dhio Research Institute Pvt.Ltd.

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.

May 2020 – July 2020  
(Certificate)

## 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

## RELEVANT COURSEWORK AND SKILLS

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**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:** Biosensors and Bioelectronics, Biomachines and Biomimetics, Chemistry at Nanoscale, Nanostructured Biomacromolecules, Physical Chemistry of Biosystems, Supramolecular Chemistry, Polymer Chemistry, Transport phenomena, Semiconductor Devices, Quantum Physics, Semiconductor Physics

**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, 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

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- **Erasmus Mundus Category A Scholarship** (2022-2024)  
Full funding to carry out 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

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<b>BEST Soft Skills Track (BSST), <i>Board of European Students of Technology (BEST)</i></b>	March 2023
Participated in the "Become the BEST version" workshop track of BSST 2023	<i>(Certificate)</i>
<b>Research and Collaboration Head, <i>Alumni Relations Cell</i></b>	May 2020-July 2021
Led a team of 70+ students, Member of BITS Echo editorial team, Content head	
<b>Event Manager, Organising Committee, <i>BITSAA Global Meet</i></b>	January 17-19 2020
Managed the event with 1000+ dignitaries and 60+ events	
<b>Performer, <i>Mime Club</i></b>	August 2018- August 2019
Performed in front of 3000 people during college fests	