

**NAME: KRISHNA KALYANI SAHOO**

**CURRENT POSITION:** Ph. D. Research Scholar, Indian Institute of Technology Guwahati

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**CONTACT NO.:** +91-8280008787

**DATE OF BIRTH:** 13 March 1995

**GENDER:** Female

**NATIONALITY:** Indian

**EDUCATION**

**January 2019 to Present:**

**Ph. D. in Biotechnology,**  
Indian Institute of Technology Guwahati  
Area of Research: Bioprocess Engineering  
Supervisor: Prof. Debasish Das  
CGPA: 9.60/10

**May 2018:**

**Master of Technology in Biotechnology,**  
National Institute of Technology, Rourkela  
Area of Research: Bioprocess Engineering  
Supervisor: Dr. Nivedita Patra  
CGPA: 8.79/10

**May 2016:**

**Bachelor of Technology in Biotechnology,**  
College of Engineering and Technology,  
Bhubaneswar (BPUT Odisha)  
CGPA: 8.76/10

**March 2012:**

**Intermediate In Science (AISSCE),**  
Kendriya Vidyalaya No.1, Bhubaneswar  
Percentage: 92.80

March 2010:

**Matriculation (AISSE),**

Kendriya Vidyalaya No.1, Bhubaneswar

Percentage: 93.10

## **PROJECTS**

**Ph. D. Research Project:**

June 2019 to Present

**Biological conversion of CH<sub>4</sub> and CO<sub>2</sub> into methanol using methanotrophic bacteria:**

The potential of methanotrophic bacteria to utilize the major greenhouse gases (methane and CO<sub>2</sub>) for growth and methanol production is being exploited to sequester these greenhouse gases. Furthermore, bioprocess optimization and process engineering strategies will be applied to enhance the utilization of gases and increase methanol titre and productivity. This concept can be strategically implemented in potential industries (oil and gas) of the energy sector for the sustainable sequestration of CO<sub>2</sub> and methane being released as exhaust off-gases and flare gases, coupled with the production of methanol - a potential fuel and an industrial solvent of huge commercial significance.

**M. Tech Research Project:**

May 2017 to May 2018

**Optimization of bacoside A production in cell suspension culture of *Bacopa monnieri* (Brahmi) for scale-up using stirred tank reactor:**

Several factors influencing the production of bacoside A (a secondary metabolite) from callus cultures of *Bacopa monnieri* were optimized by using the statistical optimization technique, response surface methodology (RSM), and the production of the metabolite was scaled-up using stirred tank bioreactor.

**B. Tech Research Project:**

September 2015 to May 2016

**Immunostimulatory effect of chitosan and mangrove plant extract (*Xylocarpus granatum*) on Indian major carp, *Labeo rohita*:**

The efficacy of intraperitoneally injected chitosan, plant extract and the mixture of chitosan and plant extract in modulating the various specific and non-specific immune parameters of *Labeo rohita* was evaluated, by using the serum samples drawn from the immunized fishes.

## INTERNSHIPS

**May 2015 to July 2015:** Summer Research Fellow at **International Centre for Genetic Engineering and Biotechnology, New Delhi**

Worked as an intern on the project entitled as “**Genetically Engineered of Algae (*Chlorella sorokiniana*) for Enhanced Lipid Biosynthesis**” under the supervision of Dr. Shashi Kumar Rhode (got selected through Science Academies’ Summer Research Fellowship Programme for Students and Teachers- 2015)

**December 2014 to February 2015:** Winter Research Intern at **CSIR-Institute of Minerals and Materials Technology, Bhubaneswar**

Worked as an intern on the project entitled as “**Isolation and screening of Polyhydroxyalkanoates (PHA) from Marine Microorganisms**” under the supervision of Dr. Sony Pandey

**May 2014 to June 2014:** Summer Trainee at **Imgenex India Pvt. Ltd., Bhubaneswar**

Undertook training in **Industrial Biotechnology (Proteomics, Immunotechniques and Molecular Biology)**

## PUBLICATIONS

1. **Sahoo, Krishna Kalyani**, Gargi Goswami, and Debasish Das. "Biotransformation of Methane and Carbon Dioxide into High-Value Products by Methanotrophs: Current State of Art and Future Prospects." *Frontiers in Microbiology* 12 (2021): 520.
2. Seth, Bishwanath, **Krishna Kalyani Sahoo**, K. R. Aravind, Binod B. Sahu, V. R. Singh, and Nivedita Patra. "Statistical optimization of bacoside A biosynthesis in plant cell suspension cultures using response surface methodology." *3 BIOTECH* 10, no. 6 (2020).

## CONFERENCES

**February 2018: NCAPS-2018**

Oral presentation of my work entitled “**Enhanced growth of *Bacopa monnieri* in vitro cultures using optimized cultivation conditions**” at National Conference on Recent Trends in Applied Perspectives of Plant Sciences (NCAPS-2018) held in Pachaiyappa’s College, Chennai during February 27-28, 2018

## **PROFESSIONAL SKILLS/EXPERTISE**

- Handling and operating Stirred Tank Bioreactor
- Plant, bacterial and algal cell culture
- Extraction of metabolites and quantitative analysis using High Performance Liquid Chromatography (HPLC)
- Process optimization using statistical optimization technique (CCD-RSM)
- Bacterial and algal transformation, qualitative and quantitative analysis of nucleic acids
- General Programming: C, C++
- Software: MS Office, Design-Expert

## **SCHOLARSHIPS & CERTIFICATES**

**January 2019 to Present:** Receiving Institute Fellowship by Ministry of Human Resource Development (Government of India) for pursuing Doctorate of Philosophy

**December 2018:** Qualified CSIR-NET-Lectureship Exam with All India Rank 33

**July 2016 to May 2018:** Received GATE Fellowship by Ministry of Human Resource Development (Government of India) for pursuing Master of Technology

**May 2016:** Was honoured with the "PEN OF HOD", by the Department of Biotechnology, CET Bhubaneswar

**March 2016:** All India Rank 415 in GATE-2016

**May 2015 to July 2015:** Received Summer Research Fellowship by Science Academies' SRF Programme

**October 2010:** Selected for "INSPIRE Internship Programme sponsored by DST, Government of India", at KIIT University, Bhubaneswar