

# MUDIT BHATIA

Indian Institute of Science Education and Research, Thiruvananthapuram

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Kota, Rajasthan

## EDUCATION

BS-MS Dual degree Program

**IISER-Thiruvananthapuram**

August 2016 – Present

Thiruvananthapuram, Kerala, India

- August 2016-August 2018, Bachelor Degree Education in all fields of basic science.
- August 2018-Present, Masters Degree Education with Biology Major and Chemistry minor.
- Current S.G.P.A= 10/10
- Current C.G.P.A= 9.63/10

Higher Secondary Certificate

**Board of Secondary Education, Rajasthan**

May 2014 – May 2016

Kota, Rajasthan, India

- 92%

Senior Secondary Certificate

**Central Board of Secondary Education, New Delhi, India**

May 2014

Kota, Rajasthan, India

- 9.4 C.G.P.A

## RESEARCH EXPERIENCE

Major Project under the guidance of Dr. N. Sadananda Singh

**Assistant Professor, IISER-TVM**

August 2020- Present

Thiruvananthapuram, India

- Determination of regulators of Cholesterol Homeostasis in HeLa cell lines
- Determining the regulators of genes, PCSK9 and LDLR, using gene knockouts created using CRISPR-Cas9

Minor Project under the guidance of Dr. Sukhendu Mandal

**Associate Professor, IISER-TVM**

Jan 2020-March 2020

Thiruvananthapuram, India

- The project entitled "Modulator induced synthesis of Silver Nanoparticles on NU-1000 Metal-Organic Framework"
- Synthesising equally spaced Silver Nanoparticles inside the available voids of NU-1000 by controlled reduction of silver using Thiobenzoic acid as a modulator

Research Project under the guidance of Dr. Jochen A. Muller

**Senior Scientist, Helmholtz Centre for Environmental Research, Leipzig, Germany**

May 2019 - July 2019

Leipzig, Germany

- The Project Entitled "Mixture effect of antibiotic on the effect of conjugation: Antibiotic Resistance Transfer".
- To depict the natural conditions under which bacteria gain antibiotic resistance from the environment and then to utilize the results into the time that should be allowed for bio-remediation in man-made conditions.

Research Project under the guidance of Dr. S. Venkata Mohan

**Principal Scientist, IICT-Hyderabad**

May 2018 - July 2018

Hyderabad, India

- The Project entitled "Production of Bio-hydrogen from food-waste using mixed bacterial culture and enhancing the production by increasing the buffering capacity of the system"
- A study on the laboratory scale (1 L Glass bottles) was to be replicated to a semi-pilot scale (5 L capacity) before it can be applied to a pilot scale plant of 1000 L capacity.  
A side project was also conducted to analyse the effect of magnetic field on the anaerobic fermentation, the equipment for which was totally designed from scratch.

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## Research Project under the guidance of Dr. Mahesh Hariharan

### Associate Professor, IISER-TVM

📅 Jan 2018 - April 2018

📍 Trivandrum, India

- The Project entitled "Relation of Conductivity of Phenol in Water solution at the critical solution temperature."
- A small project for the practical session during the semester whose hypothesis and designed completely done by the group of bachelor students.

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## Research Project under the guidance of Dr. Sukhendu Mandal

### Associate Professor, IISER-TVM

📅 May 2017 - July 2017

📍 Trivandrum, India

- The Project entitled "Production of Biodiesel from Biomass using organo-metallic crystals as catalysts"
- The project intended for the production of organo-metallic crystals using ligand produced withing the laboratory by **sonoghasira coupling**.  
The crystals would then be tested for their use as a catalyst in day-to-day activities including the production of Biofuels from Biomass.

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## Ecology Lab Project under the guidance of Dr. Ullasa Kondadaramaiah

### Assistant Professor, IISER-TVM

📅 August 2016 - November 2016

📍 Trivandrum, India

- The project entitled "Effects of Herbivory on plant growth."
- The first research project as a bachelor student for the practical session during the semester. The project was intended to teach about the formation of a null hypothesis and experimental design.

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## PUBLICATIONS

- Adelowo OO, Ikimiukor OO, Knecht C, Vollmers J, Bhatia M, Kaster A-K, et al. (2020) A survey of extended-spectrum beta-lactamase-producing Enterobacteriaceae in urban wetlands in southwestern Nigeria as a step towards generating prevalence maps of antimicrobial resistance. PLoS ONE 15(3): e0229451. <https://doi.org/10.1371/journal.pone.0229451>

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## SKILLS

- Research

#### Biology:

Experience in molecular biology in the field of cloning, DNA and RNA isolation, RT-PCR and techniques required in cell biology like re-vival, maintenance, transfection, transient transfection for gene knock down transduction for gene knockout cell line generation and freezing.

Basic experience in protein induction and isolation, SDS-PAGE, Western Blotting and lipid and chlorophyll extraction from algae.

#### Chemistry:

Synthesis and purification of organic compounds, analysis of Chemical Oxygen Demand, Biological Oxygen demand, total volatile fatty acids and buffering capacity

#### Physics:

Simple experiments in Optics, Electromagnetism and Mechanics.

Understanding the mechanical functioning of various small instruments and their implementation in making practical equipment out of scratch if required.

#### Laboratory Equipment:

Familiar with the use and the analysis of the results from the general equipment available in the lab like HPLC, Gas Chromatography, Mass Spectroscopy, Thermal Cycler, Spectrophotometer Gel Doc. System and fluorescent microscope.

- Language  
English(Full professional Proficiency), Hindi(Full Professional Proficiency), French (A1 level proficiency), Gujarati and Marathi(Minimum professional proficiency)
- Programming  
Elementary skills in Matlab, Mathematica, Python, Latex and R.
- Other Courses  
MIT Open Courseware on Biochemistry and Recombinant DNA technology.  
NPTEL Swayam course on Bioenergy by Prof. Mainak Das, IIT Kanpur.  
Udemy course R Programming A-Z by Kiril Eremenko.

## EXTRACURRICULAR ACTIVITIES

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- An active member of SCOM(students co-operative mess, IISER-TVM) for last 3 years. The committee manages the food provision to over 1500 students and staff daily and hence manages a turn-over of 65 million rupees annually.

## AWARDS AND ACCOLADES

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- All India Rank(AIR) 57 in CSIR-NET (Council of Scientific and Industrial Research - National Entrance Test) conducted by the Ministry of Human Resource and Development, Govt. of India.
- Elite Gold medal for NPTEL Bioenergy course Aug-Sep 2019 with a 100% score
- Former DAAD-WISE fellow 2019
- Selected for Khornana Bose Fellowship 2019
- Qualified IIT-JEE(Indian Institute of Technology - Joint Entrance Exam) Advanced 2017: All India Rank(AIR) 18k.
- Qualified JEE Main conducted by CBSE 2017: AIR 24k
- Qualified JEE Main conducted by CBSE 2016: AIR 5952
- Attended the Vijyoshi Science Camp, conducted by Department of Science and Technology(DST), Govt. of India, 2015, IISER - Kolkata
- Kishore Vaigyanik Protsahan Yojna (KVPY) Fellowship, DST, Govt. of India, 2015.
- Merit List of State Science Talent Search Exam(SSTSE), conducted by Board of Secondary Education, Rajasthan (BSER) (2012, 2014)
- Secured AIR-1 in Biology in National Science Talent Search Exam (NSTSE), 2014
- Qualified NSO conducted by SOF thrice(2012, 2013, 2014)
- Secured the Gold Medal in Ramanujan Interschool Mathematics Competition by AMITY International School, Noida(2014)