

FADIL FAIZAL MANNIGHAYIL

(+91)9496874929 • ffm21ms197@iiserkol.ac.in • fadilfm363@gmail.com

IISER KOLKATA

PERSONAL STATEMENT

An enthusiastic fifth-year BS-MS Chemistry student with a strong passion for organic chemistry research. My interest lies in synthetic organic chemistry, specifically focusing on sustainable methodology and catalysis development. In the domain of sustainable production technologies, my research focus is driven by an intense fascination with the increasing necessity to confront environmental challenges in our modern world.

EDUCATION

Indian Institute of Science Education and Research (IISER), Kolkata	2021 - Present
Integrated BS-MS Dual Degree	CGPA: 8.36

MSS Public School, Mavilikkadavu, Kerala, India	2019 - 2021
AISSE, Higher Secondary Education, Central Board of Secondary Education, Kerala	CGPA: 9.6

Ansar English School, Perumbilavu, Kerala, India	2019
AISSE, Secondary Education, Central Board of Secondary Education, Kerala	CGPA: 9.01

RESEARCH EXPERIENCE

Visible Light Mediated Photoredox Catalysis	Dec 2023 - Present
Indian Institute of Science Education and Research, Kolkata, India.	
Supervised by : Prof. Dr. Suman De Sarkar	
Photoredox mediated radical generation and follow-up synthetic utilization with and without the help of photocatalysts is the primary focus of this project.	

Pd-methyl naphthyl tBubrettphos complex enabling arylation of fluoroalkylamines at room temperature	
RESOLV Student challenge Program 2025, Ruhr-Universität Bochum, Germany	May 2025 - August 2025
Supervised by : Prof. Dr. Lukas J. Goossen	
The project is an industrial collaboration focused on developing an efficient catalyst for coupling reactions. It began with the design and extensive screening of the catalyst, followed by exploration of their applicability across a range of reaction scopes to evaluate performance and versatility.	

Fragmentation and Synthetic Applications of Pyridinium Salts through photolysis	
Summer Project 2024, Indian Institute of Science Education and Research, Kolkata	May 2024 - July 2024
Supervised by : Prof. Dr. Suman De Sarkar	
The work is primarily focusing on the hetero coupling of 2- and 4- substituted heterocycles with the help of visible light (SETs). The project commenced with the synthesis and isolation of pure substituted heterocyclic compounds. Followed by coupling the compound heterogeneously with the help of visible and UV light using photocatalysts.	

Synthesis of heteroaryl phosphonium salt	March 2024
CH3204 Course Project (sem 06)	
Supervised by : Prof. Debasish Halder and Prof. Dr. Suman De Sarkar	
In this project, a pre-functionalized pyridine salt was prepared to achieve C-4 selective pyridine derivatives. This method offers a free-flowing, stable product with broad applicability, including 4-selective functionalization of pyridines and use in photo-mediated reactions.	

Development of Metal Complexes as anticancer agents

June 2023 - July 2023

Summer Project 2023, Jawaharlal Nehru University, New Delhi, India.

Supervised by: Dr. Pijus K. Sasmal

The Work Primarily focused on synthesizing Ir-metal complexes as anti-cancer agents. By successfully synthesizing heterocyclic ligand molecules and isolating them, followed by ligating them with Ir-metal and analysing them with spectroscopic methods as a possible anti-cancer agent.

Exploring the Versatility and Applications of Nitrocellulose

Jan 2023

A Comprehensive Study on Properties, Synthesis, and Emerging Trends

Course Project, IISER Kolkata

Supervised by : Dr. Subhajit Bandyopadhyay

The project focused on the discovery, the structure, properties, and the chemistry behind it. Analysed the reason behind its widespread usage in different fields. Different physical properties with similar Molecules were also compared. I have studied its synthetic mechanism and hydrogen bonding.

WORKSHOP, CONFERENCES AND SYMPOSIUMS

Poster Presentation: At the annual Summer School 2025 Organized by the RESOLV, Ruhr University Bochum.

RESOLV 11th Summer School Solvation Science-2025: Lecture series, Advanced laboratory hands-on modules and various Events on the field of solvation science at the Ruhr University Bochum on June 10-13, 2025.

Online workshop: "NMR Spectroscopy and MNOVA Software" Organized by the Dept. of Chemistry, RBVRR Women's College, Hyderabad and SIAS Research Forum.

ETOMC-2024: Emerging Trends in Organometallics and Catalysis, International Symposium held at IISER Kolkata during July 12-13, 2024.

IINCM 2024: Sustainability and Interdisciplinary in Chemical Sciences, Conference held at IISER Kolkata during Feb 23-25, 2024.

Nano-Jatha Event-2024: Event on Nanoscience and Nanotechnology held at IISER Kolkata on July 5, 2024.

Departmental Chemical Science Day, DCS, IISER Kolkata, 2025.

Departmental Chemical Science Day, DCS, IISER Kolkata, 2024.

SKILLS AND TECHNIQUES

Techniques: TLC and Column chromatography, Glove-box, Flash Column, Sample preparation, Handling and analysing UV, IR, GC, HRMS and NMR spectroscopy.

Softwares used: Python, MNOVA, Chemdraw, GNU plot, Origin, Microsoft Office, Adobe softwares, LaTeX.

Coursework: Completed Basic and Advanced Courses in Chemical Science, Biological Science and Earth Science as part of Pre-Major. Had Compulsory courses in Physics, Chemistry, Biology, Earth Science, Mathematics and Computer Science. Did relevant courses like Reaction Mechanism in Organic Chemistry, Organic Chemistry I,II and III, Advanced Organic Chemistry II, Advanced Organic Synthesis, Advanced Main Group and Organometallic Chemistry, Advanced Transition Metal Chemistry, Quantum Chemistry I and II, Physical Organic Chemistry, Fluorescence Spectroscopy and Organic, Inorganic and physical chemistry Laboratory. ([Teaching Plan](#))

Soft skills: Teamwork, Communication, Problem-Solving, Adaptability, Time Management, Work Ethic.

Extra-Curricular activities: Reading, Gaming, Football, Cricket, Gym, Basketball and Carroms.

Languages: English, Hindi, Malayalam, Tamil.

HONOURS AND ACTIVITIES

RESOLV Student Challenge Winner 2025 and won an award endowed with ₹500 for the submission.

Belongs to the top one percent of the state in AISSE.

Ranked under 1000 in the IISER Aptitude Screening Test(IAT).

Represented IISER Kolkata in the Inter IISER Sports Meet (IISM) 2023 and fourth position in carroms.

Member of student mess committee(SMC) 2024, IISER Kolkata.

Event Organiser of Inter INCI (IISER, NISER, CEBS, IISc) Cultural Meet 2024, IISER Kolkata.

REFERENCES

References available upon request.