

# NIDA FATHIMA

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Vadakara,Calicut  
Kerala,673541

## PROFILE

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Passionate researcher with experience at the intersection of chemistry and biology, with a growing interest in data analysis..Experienced in designing and characterizing RNA/DNA nanostructures for drug delivery and nanotechnology applications. Strong analytical, computational, and presentation skills, with expertise in Python programming and data handling.

## RESEARCH EXPERIENCE

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### MS Thesis (Jun 2022 - May 2023)

*Supervisor: Dr. Ashwani Sharma ,Assistant Professor, Dept. of Chemistry & Biology, IISER Tirupati*

*Title : Engineering of Highly Stable RNA Nanomotifs for Nanotechnology Applications*

- Designed a fluorescence-based method to compare the stability of different RNA three-way junctions (3WJs) used in RNA nanotechnology.
- Investigated the potential of RNA nanostructures in targeted drug delivery applications.

### Semester Project (Jan 2022 - Apr 2022)

*Supervisor: Dr. Ashwani Sharma, Assistant Professor, Dept. of Chemistry & Biology, IISER Tirupati*

*Title: Construction of Stimuli-Specific DNA Nanostructures Using i-Motif Sequences*

- Designed pH-responsive DNA nanostructures such as triangles, squares, and tetrahedrons using i-motif sequences.

### Summer Internship in Cancer Biology (Jun 2019 - Jul 2019)

*Supervisor: Dr. Sanjay Kumar, Assistant Professor, Dept. of Biology, IISER Tirupati*

- Worked on molecular biology techniques relevant to cancer biology research.

## EDUCATION

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### BS-MS (Bachelor of Science-Master of Science)

*Indian Institute of Science Education and Research (IISER), Tirupati*

2018 - 2023 | CGPA: 7.0

### 12th Standard

*Memunda Higher Secondary School, Kozhikode, Vadakara*

2015 - 2017 | Percentage: 98.1%

## TECHNICAL SKILLS

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- **Molecular Biology Techniques:** PCR, Transcription, DNA/RNA purification, Gel Electrophoresis (Agarose, Native PAGE, Denaturing PAGE, SDS PAGE)
- **Nucleic Acid Analysis:** Aptamer design using NUPACK, Fluorescence analysis (Synergy H1 microplate reader), UV-Melting techniques
- **Spectroscopy & Particle Analysis:** Circular Dichroism (CD) Spectroscopy, Dynamic Light Scattering (DLS)
- **Oligonucleotide Synthesis:** DNA/RNA synthesis using K&A-H6/H8 DNA-RNA Synthesizer
- **Computational & Data Analysis:** Python programming, Data handling in Excel, MS Office (Word, PowerPoint, Excel)
- **Presentation & Communication:** Strong scientific writing and presentation skills

## CERTIFICATIONS & QUALIFICATIONS

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- GATE Qualified (2025)

## VOLUNTEERING

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- National Service Scheme (2018 to 2023)
- Bharat Scout & Guide (2010 to 2017)

## LANGUAGES

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- English - Fluent
- Malayalam-Fluent
- Hindi – Intermediate
- Arabic - Intermediate

## REFERENCES

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- **Dr. Ashwani Sharma**  
Assistant Professor, Department of Chemistry & Biology, IISER Tirupati  
Email:a.sharma@labs.iisertirupati.ac.in
- **Dr .pankaj kumar koli**  
Assistant Professor, Department of Chemistry, IISER Tirupati  
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