

Sreya Malayam Parambath

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HIGHLIGHTS

- A passionate analytical chemist with 5+ years of experience in peptide synthesis, purification, and characterization using different analytical techniques including HPLC, LC-MS, GC, and ESI-MS.
- Hands-on experience designing and characterizing small inorganic complex molecules using various spectroscopic and chromatography instruments.
- Achieved and fostered collaborations to complete research projects in a timely manner.

EDUCATION

- **University of Mississippi** **University, MS**
PhD, Chemistry and Biochemistry August 2018–June 2023
- **Indian Institute of Science Education and Research** **Thiruvananthapuram, India**
BS-MS (Integrated Bachelor of Science-Master of Science) August 2013–April 2018

PROFESSIONAL EXPERIENCE

- Corden Pharma Colorado** **Boulder, CO**
– **Analytical Chemist** **July 2023 – Present**
 - Operated HPLC for peptide purification and analysis of peptide purity/ assay.
 - Analyzed the average molecular weight of peptide using MALS.
 - Gained hands-on-experience with UV/Vis spectroscopy, IC, and KF instruments.
 - Proficient in the sample preparation of IC and GC instruments.
 - Ensured proper management of hazardous and non-hazardous waste.
- University of Mississippi** **University, MS**
– **Research Assistant** **August 2018 – June 2023**
 - Designed, synthesized, and characterized peptides to develop biomolecular hydrogen-evolving catalysts.
 - Utilized solid phase peptide synthesis for peptide synthesis.
 - Operated HPLC for purification, and qualitative analysis of peptides.
 - Quantified hydrogen evolution by the catalysts using Gas Chromatography.
 - Characterized hydrogen evolving catalysts by various analytical methods, including LC-MS, GC-MS, IR, NMR, UV/Vis, SEC, and Fluorescence.
 - Analyzed the mass of peptides using ESI-MS and MALDI-MS.
 - Well-versed with ChemStation, CaryWinUV, and LabSolutions software for operating HPLC, UV/Vis, and GC instruments, for method development, calibration, troubleshooting, and result interpretation.
- **Member of Laboratory Safety Committee** **February 2022 - Present**
 - Ensured laboratory safety in the research laboratories.
 - Conducted timely safety inspections in research laboratories.
 - Documented and reported safety violations.
- Indian Institute of Science Education and Research** **Thiruvananthapuram, India**
– **Master's Researcher** **May 2017 - May 2018**
 - Designed, synthesized, and characterized several functionalized ligands for use in metal-organic frameworks (MOFs).

- Designed and characterized nanoparticle-incorporated metal-organic frameworks using techniques like TEM, TLC, and NMR.
- Utilized MOFs for testing various heterogeneous catalytic reactions.

National Chemical Laboratory

Pune, India

– Project Fellow

May 2016 - July 2016

- Involved in synthesizing pyridine-containing amine derivatives for functionalization of C-H bond.
- Contributed to the research focused on synthesizing and characterizing various amine derivatives employing techniques such as Schlenk line and column chromatography.

TECHNICAL SKILLS

Chromatography and Analytical skills: Gas chromatography (GC) | Reverse phase HPLC | GC-MS | Gel electrophoresis | UV-Vis spectroscopy | FPLC | Glove box | Autoclave | Mass Spectrometry (ESI and MALDI-MS) | NMR spectroscopy | NIR spectroscopy | Column Chromatography | PD10 column | Size exclusion chromatography | Thin Layer chromatography (TLC) | Fluorescence spectroscopy | Circular dichroism spectroscopy | Photocatalysis | Cyclic voltammetry | Dynamic light scattering (DLS) | Chronoamperometry | Titration | DNA-metal nano cluster synthesis | TGA | Pipets | Weighing balance | KF

Instrument maintenance: Agilent HPLC | Shimadzu gas chromatography (GC) | mBraun Glove Box | CEM peptide synthesizer | Lyophilizer | Balance | Agilent UV/Vis

Biochemistry skills: Rational metalloenzyme design | De novo peptide design | Solid phase peptide synthesis

Software: ChemDraw | OpenLab | PyMOL | ImageJ | CCBUILDER | WinEPR | MestreNova | TopSpin | Origin | Ultra scan-III | Voyager Pro | Shimadzu lab solution | MS Office

AWARDS AND RECOGNITION

- Poster presentation award - CEMO's Spring Meeting Mississippi State University, 2022
- Represented Mississippi at NSF EPSCoR National Conference Portland, 2022
- INSPIRE Fellowship Govt. of India, 2013-2018

PRESENTATIONS

- Talk on 'mechanistic insights into photochemical processes of a de novo designed artificial metalloenzyme hydrogenase' at ACS Fall, 2022.
- Poster on 'synthetic design of artificial hydrogen evolving catalysts using de novo method' at SERMACS 2021, Birmingham, Alabama.

PUBLICATIONS

1. **Malayam Parambath, S.;** Williams, A. E.; Hunt, L. A.; Selvan, D.; Hammer, N. I.; Chakraborty, S. A De Novo-Designed Artificial Metalloenzyme Hydrogenase: Insights into Photochemical Processes and the Role of Protonated Cys. *ChemSusChem* **2021**, *14* (10), 2237–2246.
2. **Malayam Parambath, S.;** Prakash, D.; Swetman, W.; Surakanti, A.; Chakraborty, S. Converting a Cysteine-Rich Natively Noncatalytic Protein to an Artificial Hydrogenase. *Chem. Commun.* **2023**.