



Dr. DIANA MATHEW
Assistant Professor in Chemistry
Department of Basic Sciences and Humanities

Administrative Responsibilities

Institute level:

- Member of Product development, monitoring & commercialisation Committee (R&D)
- Member of Science Club
- Member of Women Empowerment Cell
- Member of the Admission Test Cell

Departmental Level:

- First year tutorship- S1 CSDS
- Semester 1- B.Tech. Chemistry Course Coordinator

Education Summary

- **PhD:** Tailoring the Photophysical Properties and Applications of BODIPYs and Dipyrrinato-Palladium Complexes by meso-Substituents - July 2023 - NIT Calicut,
Supervisor: Dr P. Parameswaran
- Qualified GATE (Chemistry, 2015)
- Qualified CSIR-UGC-NET (Lectureship, Chemistry, Dec. 2014)
- **Post Graduation:** MSc. Chemistry - 2014 - St. Berchmans College, Changanacherry- 2nd Rank in MG University
- **Graduation:** BSc. Chemistry- 2012- Assumption College, Changanacherry- 2nd Rank in MG University

Employment History

Teaching and Research

- Assistant Professor at Christ College of Engineering Iringalakuda (August 2022 - present)
- Guest lecturer in Chemistry, Govt. Polytechnic College, Chelakkara, Thrissur (2023, 4 months)
- Full-time research scholar at Department of Chemistry, NIT Calicut, Nature of Work -Research (July 2017 – July 2023, 5 years)
- Govt. Guest Lecturer, Department of Chemistry, Catholicate College Pathanamthitta (2016-2017, 8 months)

Journal/Papers Published

- Hydrogen-Bonding Receptor substituted BODIPYs as Selective ON-OFF Fluorimetric Sensor for Fluoride Ions in Polar Aprotic Organic Solvents: A Molecular-Level understanding based on Experimental and Theoretical Study, Diana Mathew, S. Sujatha, C. Arunkumar, and P. Parameswaran, *J. Photochem. Photobiol. A*. (ISSN: 1010-6030, impact factor: 5.1) 114780, 2023.
- Substituent-controlled photophysical responses in dihydropyridine derivatives and their application in the detection of volatile organic contaminants, K. S. Shurooque, Diana Mathew, P. Parameswaran, A. K. Sajeev, Narayanan Unni K. N, Lakshmi Chakkumkumarath, *J. Org. Chem.* (ISSN: 0022-3263 (print), 1520-6904 (web), Impact factor: 4.19), 2023, 88, 21, 15007–15017.
- Interactions of Porphyrins with DNA: A Review focusing Recent Advances in Chemical Modifications on Porphyrins as Artificial Nucleases, Diana Mathew, Subramaniam Sujatha, *J. Inorg. Biochem.* (ISSN: 0162-0134, Impact factor: 4.15), 2021, 219, 111434-469, DOI: doi.org/10.1016/j.jinorgbio.2021.111434.
- Meso-Carbazole decorated BODIPYs - An Electron Donor-Acceptor System with Excellent FluoroSolvato/Vapochromic Behavior, Aggregation-Induced Emission, and Antileishmanial Activity, Diana Mathew, S. Sasidharan, P. Saudagar, S. Subramanian and P. Parameswaran, *New J. Chem.* (ISSN: 1369-9261, impact factor: 3.92), 2023, DOI: 10.1039/D3NJ00747B.
- Synthesis, Structure, Photophysical properties, and Evaluation of in vitro Cytotoxic activity of Homoleptic Dipyrin based Palladium Complexes, Diana Mathew, Yingqi Hu, Jianzhang Zhao, Chellaiah Arunkumar, Subramaniam Sujatha, *Polyhedron* (ISSN: 0277-5387, Impact factor: 3.05), 2020, 190, 114794- 803, DOI: 10.1016/j.poly.2020.114794.
- Dual Chromophoric Meso-Aryl BODIPYs with Aggregation Induced Red-Emission Characteristics: Optical Properties and their Application in Fe³⁺ Detection, Diana Mathew and P. Parameswaran, *Eur. J. Inorg. Chem.* (ISSN: 1434-1948 (print); 1099-0682 (web), impact factor: 2.55), 2023, e202300112.
- Synthesis, TDDFT Calculations and Biological Evaluation of Dicationic Porphyrins as Groove Binders and Antimicrobial Agents, Diana Mathew, Jagadeesan Ramesh, Santanu Sasidharan, Kannan Subburaj, Prakash Saudagar, Pattiyil Parameswaran, Subramaniam Sujatha, *Chemistryselect* (ISSN:2365-6549, Impact factor: 2.10), 2021, 6, 396-409, DOI: doi.org/10.1002/slct.202003858.

Poster Presentations at International Conferences

- International Conference on Recent Trends in Catalysis 2020 (RTC 2020) organized by the Department of Chemistry, National Institute of Technology, Calicut, Kerala in 2020.
- International Conference on Materials of Millenium (MATCON-2019) organised by the Department of Applied Chemistry, CUSAT, Kerala in 2019.
- International Conference on Chemistry and Physics of Materials organized by the Department of Chemistry, St. Thomas College, Thrissur, Kerala in 2018.

Patents

- Novel BODIPY-based reusable test paper strip and method of colorimetric detection of fluoride ion (Indian Patent), Diana Mathew, Sujatha. S, Parameswaran Pattiyil, Patent No. 376024, 2020.

Areas of Interest

- Synthetic Bio-inorganic Chemistry
- Design and Synthesis of BODIPYs and Dipyrrin-metal complexes
- Porphyrinato complexes
- Design and Synthesis of dyes and fluorophores
- Photophysical Studies of fluorescent molecules
- Sensing Studies and DFT/TD-DFT calculations

Achievements

- Received senior/junior research fellowship from MHRD (July 2017 – July 2022)
- Received UGC Post Graduate Merit Scholarship for Rank Holders in 2012 and Post Metric Scholarship by the Govt. of Kerala in 2010.

Professional Training Received/ Conferences Attended

- Completed the NPTEL online certification (SWAYAM) course in Mechanisms in Organic Chemistry organised by IIT Bombay in July-September 2023.
- Completed the NPTEL online certification (SWAYAM) course in Metal Mediated Synthesis-1 organised by IIT Bombay in July-September 2023.
- Online FDP on Advances in Synthetic Organic Chemistry and their Application in Medicinal Chemistry during August 2021 conducted by the Department of Chemistry, National Institute of Technology Calicut.
- Online FDP on Smart and Functional Nanomaterials during August 2021 conducted by the Department of Chemistry, National Institute of Technology Calicut.

- National Conference on Changing Trends in Polymer Science and Technology (CTPST-2021), held at National Institute of Technology Calicut, India in January 2021.
- International Conference on Materials of Millenium (MATCON-2021) organized by the Department of Applied Chemistry, CUSAT, Kerala in 2021.
- Faculty Development Program on Novel Strategies and Applications in Organic Chemistry NSAOC-2019, organized by the Department of Chemistry, National Institute of Technology, Calicut, Kerala in 2019.
- Three-day Colloquium on Spectroscopy: Theory and Applications organized by SRIBS, Kottayam. 2017