

Curriculum Vitae

Dr. Wagalgave Sopan Mahadev

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Academic Details:

Degree/ Experience	Subject	Institute	Duration/Class
IInd Postdoc	Design and synthesis of bioorthogonal chemical probes	The State University of New York at Buffalo, USA	2022-2023
Ist Postdoc	Design and synthesis of organic small molecules and polymers for TADF and room-temperature phosphorescence	JNCASR, Bangalore	2021-2022
PhD Project Assistant	Chemical Science Organic synthesis	CSIR-IICT, Hyderabad DIAT, Pune	2016-2021 2014-2015
Master (M.Sc.)	Organic Chemistry	Savitribai Phule Pune University.	2012-2014/ First Class
Bachelor (B.Sc.)	Chemistry, Botany, Environmental Science	Swami Ramanand Teerth Marathwada University, Nanded	2009-2012/ First Class
HSC	English, Hindi, PCMB	Latur Board	2007-2009/ Second Class
SSC	Marathi, Hindi, English, Mathematics, Sciences, Social Sciences	Latur Board	2007/ First Class

Work History:

October 2022 - May 2023: Postdoctoral Fellow at The State University of New York at Buffalo, USA.

Project guide: Prof. Qing Lin

Project Title: Design and synthesis of bioorthogonal chemical probes to study the conformational dynamics and signalling of the class B G protein-coupled receptors in live cells.

July 2021 - August 2022: Postdoctoral Fellow at Jawaharlal Nehru Center for Advanced Scientific Research (New Chemistry Unit), Bengaluru, India.

Project guide: Prof. Subi Jacob George

Project Title: Design, and synthesis of organic small molecules and polymers for TADF

and room temperature phosphorescence

January 2016 - April 2021: PhD Scholar in Academy of Scientific and Innovative Research -Indian Institute of Chemical Technology (CSIR-IICT) (Department of Polymer and functional materials), Hyderabad, India.

Project guide: Dr. Sidhanath V. Bhosale

Project Title: Design, Synthesis, Supramolecular Self-Assembly and Optoelectronic Applications of Small Organic Molecules

December 2014 - June 2015: Project Assistant at Defence Institute of Advanced Technology (DIAT), Pune, India

Project guide: Prof. Shaibal Banerjee

Project Title: Synthesis of organic small molecules

Technical skills:

- **Working knowledge and hand expertise:** In design and synthesis of multi-step synthesis of targeted π -conjugated organic molecules, Polymers as well as heterocyclic compounds, isolation and characterization of dyes and chromophore (Rylene diimides, Porphyrin, etc.) for supramolecular self-assembly, organic optoelectronic applications.
 - Experience in metal-mediated coupling reactions, organolithium, Grignard reagent, performed amide coupling reactions including synthetic protection and deprotection protocols
 - Expertise in handling air, moisture sensitive reactions and chain growth polymer reactions and purification of the product by chromatographic methods from small scale to large scale
- **Expertise in Spectroscopic, Microscopic and Chromatographic techniques** UV-Visible spectroscopy, Fluorescence spectroscopy, Excitation spectroscopy, Fourier transform Infrared spectroscopy, Nuclear Magnetic Resonance, mass spectrometry, confocal microscopy, transmission electron microscopy, atomic force microscopy, Polarized Optical Microscopy, Fluorimeter (steady-state and time-resolved anisotropy/fluorescence; Integrating Sphere), Circular Dichroism, Cyclic Voltammetry, X-ray Powder Diffraction, Dynamic light Scattering, column chromatography, Flash column chromatography, thin layer chromatography.
- **Hands-on experience** Operating and analysis of obtained data from various analytical techniques Thermogravimetric analysis, and Differential scanning calorimetry.
 - Experience in the use of Origin 9.3 pro software including linear and nonlinear curve fittings, MS-office, Chem Draw, Corel Draw, MestRec and MestReNova
 - Identify experimental and technical problems and resolve them independently
 - Adapt existing and develop new scientific techniques and experimental protocols
 - Ability to perform collaborative projects with colleagues in partner institutions, and research groups.

Teaching Experience:

- **Trained** a couple of postgraduate and fresher PhD students during my Postdoctoral Fellowship.
- **During my doctoral research:** I was involved in the partial fulfilment of the award of

Master in Nanoscience at the Department of Nanoscience and Nanotechnology University of Madras, Guindy Campus, Chennai, Co-guided to Ms. Iyswariya K., from May 2019 to Nov 2019.

- In partial fulfilment of the award of Master's Degree in chemistry at the Department of chemistry, Devagiri College, Aurangabad, Co-guided to Mr. Dipak S. from March 2018 to Sept 2018.

Accomplishments:

- Awarded **National Eligibility Test (NET)** is conducted Council of Scientific and Industrial Research (CSIR) with All India Rank (AIR) 35, in 2019.
- Awarded **Senior Research Fellow (CSIR-SRF)** held by the Council of Scientific and Industrial Research (CSIR) at Hyderabad, in 2018.
- Awarded **Graduate Aptitude Test in Engineering (GATE)** conducted by IIT Roorkee in 2017 - AIR-1432.
- Awarded **Maharashtra State Eligibility Test (MH-SET)** held by Savitribai Phule Pune University in 2016.
- Awarded **Junior Research Fellow (CSIR-JRF)** held by the Council of Scientific and Industrial Research (CSIR) with AIR 61, in 2014.
- Securing **2nd Best Academic Award in Mater Degree in Chemistry (MSc)** held by Savitribai Phule Pune University in 2014.

Conferences and Workshops attended:

8. Attended the “12th National Workshop on Fluorescence and Raman Spectroscopy” conducted by IISER Thiruvananthapuram in 2021 (FSC 2021).
7. Poster Presentation in CSIR- Inter-Institutional Students Conference on Sustainable Chemistry for Health, Environment and Materials (Su-CHEM YUVA-2019) organized by CSIR-IICT held on July 24 -26, 2019
6. Oral presentation in Exploring New Horizons in chemical sciences (ENHCS-2019) organized by Deogiri college Aurangabad held on January 2019
5. Poster Presentation at International Conference on Sustainable Chemistry for Health, Environment and Materials (Su-Chem 2018) organized by CSIR-IICT held on August 2018.
4. State-level Dr. T. R. Ingle Inter-Collegiate Poster Competition conducted on 2014
3. International Conference on Nature Inspired Initiative in Chemical Trends (NIICT-2016) organized by CSIR-IICT held on September 2016.
2. 2nd International Conference on Herbal & Synthetic Drug Studies with Poster Presentation held in 2014.
1. Attended 2 days symposium on “Coalescence of Chemical Sciences to Confront the Future Challenges” held on 2013 by RSC at S.P. College, Pune.

Publications and book chapter:

A. Published articles:

16. Swadhin Garain, **Sopan M. Wagalgave**, Anju Ajayan Kongasseri, Bidhan Chandra Garain, Shagufi Naz Ansari, Gopa Sardar, Dinesh Kabra, Swapan K. Pati and Subi J. George, “Anion- π Induced Room Temperature Phosphorescence from Emissive Charge-transfer States”, *J. Am. Chem. Soc.* **2022**, *144*, 10854-10861. (Impact Factor-16.38) (First, two authors equally contributed)
15. Ratan W. Jadhav, **Sopan M. Wagalgave**, Bajarang V. kumbhar, Rushikesh M. Khadake, Ambadas B. Rode, Sidhanath V. Bhosale, and Sheshanath V. Bhosale, “Aminoglycoside Antibiotic Kanamycin Functionalized Tetraphenylethylene Molecular Probe for Highly Selective Detection of Bovine Serum Albumin Protein”, *Scientific Reports*, **2022**, *12*, 11526. (Impact Factor-4.99)
14. **Sopan M. Wagalgave**, Mohammad Al Kobaisi, Sidhanath V. Bhosale, Sheshanath V. Bhosale, “Donor-Acceptor-Donor π -conjugated material derived from merocyanine diketopyrrolopyrrole: design, synthesis and photovoltaic applications”, *Journal of Electroanalytical Chemistry*, **2022**, *915*, 116341. (Impact Factor-4.59)
13. Dnyaneshwar I. Bhusanur, Dinesh N. Nadimetla, Sarvesh S. Harmalkar, Rajesh S. Bhosale, Avinash L. Puyadd, **Sopan M. Wagalgave**, Sidhanath V. Bhosale, Sheshanath V. Bhosale, “Synthesis, crystal structure and supramolecular self-assembly of tetraphenylethylene subunit appended isoindigo derivatives”, *Journal of Molecular Structure*, **2022**, *1255*, 132452. (Impact Factor-3.84)
12. **Sopan M. Wagalgave**, Avinash C. Mendhe, Dinesh N. Nadimetla, Mohammad Al Kobaisi, Babasaheb R. Sankpal, Sidhanath V. Bhosale, Sheshanath V. Bhosale, “Aggregation induced emission (AIE) materials based on diketopyrrolopyrrole chromophore for CdS nanowire solar cell applications”, *Journal of Electroanalytical Chemistry*, **2021**, *895*, 115451. (Impact Factor-4.59) (First, two authors equally contributed)
11. Pramod D Jawale Patil, **Sopan M Wagalgave**, Mohammad Al Kobaisi, Shailesh S Birajdar, Rajesh S Bhosale, Rajita D Ingle, Rajendra P Pawar, Sheshanath V Bhosalee, Sidhanath V Bhosale, “An efficient naphthalimide based receptor for selective detection of Hg^{2+} and Pb^{2+} ions”, *Indian Journal of Chemistry-Section B (IJC-B)*, **2021**, *60*, 1353-1361. (Impact Factor-0.59)
10. **Sopan M. Wagalgave**, Mahmood Al Jaber, Keerti Bhamidipati, Deepak Shejul, Dinesh N Nadimetla, Mohammad Al Kobaisi, Nagaprasad Puvvada, Sidhanath V. Bhosale, Sheshanath V. Bhosale, “Characteristics of the pH-regulated aggregation-induced enhanced emission (AIEE) and nanostructure orchestrate via self-assembly of naphthalenediimide–tartaric acid bola-amphiphile: role in cellular uptake”, *New J. Chem.*, **2021**, *45*, 8775-8785. (Impact Factor-3.59)
9. **Sopan M. Wagalgave**, Sheshanath V. Bhosale, Avinash L. Puyad, Jing-Yu Chen, Lathe Jones, JingLiang Li, Akhil Gupta, Sidhanath V. Bhosale, “Donor-acceptor-donor modelled donor targets based on indoline and naphthalene diimide functionalities for efficient bulk-heterojunction devices”, *Dyes and Pigments*, **2021**, *184*, 108808. (Impact Factor-4.88)
8. **Sopan M. Wagalgave**, Sachin D. Padghan, Mohammad Al Kobaisi, Duong Duc La, Keerti Bhamidipati, Nagaprasad Puvvada, Rajesh S. Bhosale, Sidhanath V. Bhosale, Sheshanath V. Bhosale, “Selectivity and bio-compatibility of self-assembled chiral flower-like and helical

- nanostructures”, *New J. Chem.*, **2020**, *44*, 18092-18101. (Impact Factor-3.59)
7. Dipak A Shejul, **Sopan M. Wagalgave**, Ratan W Jadhav, Mohammad Al Kobaisi, Duong Duc La, Lathe A Jones, Rajesh S Bhosale, Sidhanath V Bhosale, Sheshanath V Bhosale, “Aggregation induced emission characteristics and solvent triggered hierarchical self-assembled chiral superstructures of naphthalenediimide amphiphiles”, *New J. Chem.*, **2020**, *44*, 1615-1623. (Impact Factor-3.59)
 6. Pramod D. Jawale Patil, **Sopan M. Wagalgave**, Dr. Rajita D. Ingle, Dr. Jagadeesh B. Nanubolu, Dr. Rajesh S. Bhosale, Dr. Sidhanath V. Bhosale, Dr. Rajendra P. Pawar, Prof. Sheshanath V. Bhosale, “Merocyanine-Benzothiazole Chromophore-Based Sensor for Selective Picric Acid Detection”, *ChemistrySelect*, **2019**, *4*, 10013-10020. (Impact Factor-2.30)
 5. **Sopan M. Wagalgave**, Sachin D. Padghan, Mahesh D. Burud, Mohammad Al Kobaisi, Duong Duc La, Rajesh S. Bhosale, Sidhanath V. Bhosale, Sheshanath V. Bhosale, “Supramolecular super-helix formation via self-assembly of naphthalene diimide functionalised with bile acid derivatives”, *Scientific Reports*, **2019**, *9*, 12825. (Impact Factor-4.99)
 4. Pramod D Jawale Patil, Rajita D Ingle, **Sopan M Wagalgave**, Rajesh S Bhosale, Sidhanath V Bhosale, Rajendra P Pawar, “Sheshanath V Bhosale, A Naphthalimide-Benzothiazole Conjugate as Colorimetric and Fluorescent Sensor for Selective Trinitrophenol Detection”, *Chemosensors*, **2019**, *7*, 38. (Impact Factor-3.29)
 3. Ahmed Ali Said, **Sopan M Wagalgave**, Jian Xie, Avinash L Puyad, Wangqiao Chen, Zongrui Wang, Sheshanath V Bhosale, Sidhanath V Bhosale, Qichun Zhang, “NDI-based small molecules as an electron transporting layers in solution-processed planar perovskite solar cells”, *Journal of Solid-State Chemistry*, **2019**, *270*, 51-57. (Impact Factor-3.49) (First, two authors equally contributed)
 2. **Sopan M Wagalgave**, Sheshanath V Bhosale, Rajesh S Bhosale, Avinash L Puyad, Jing-Yu Chen, Jing-Liang Li, Richard A Evans, Akhil Gupta, Sidhanath V Bhosale, “An efficient, three-dimensional non-fullerene electron acceptor: functionalizing tetraphenylethylene with naphthalene diimides”, *Mater. Chem. Front.*, **2019**, *3*, 1231-1237. (Impact Factor-6.06)
 1. **Sopan M. Wagalgave**, Duong Duc La, Rajesh S. Bhosale, Mohammad Al Kobaisi, Lathe A. Jones, Sheshanath V. Bhosale and Sidhanath V. Bhosale, “Fabrication of diverse nanoarchitecture through the self-assembly of a naphthalene diimide derivative bearing four carbamates”, *New J. chem.*, **2018**, *42*, 6785-6793. (Impact Factor-3.59)

B. Manuscripts under Revision:

1. Anju Ajayan Kongasseri, Swadhin Garain, Shagufi Naz Ansari, Bidhan Chandra Garain, **Sopan M. Wagalgave**, Utkarsh Singh, Swapan K. Pati, Subi J. George, “Engineering the Ambient Triplet Harvesting Pathways of Organic Phosphors via Modular Non-Covalent Donor-Acceptor Design”, (*Submitted to *Angewandte**)

C. Book chapter:

1. **Sopan M. Wagalgave**, Shailesh S. Birajdar, Jotiram N. Malegaonkar, Sidhanath V. Bhosale, “Patented AIE materials for biomedical applications”, *Progress in molecular biology and translational science*, **2021**, *185*, 199-223. (Impact Factor-3.86)

List of References:

- 1. Prof. Subi Jacob George**
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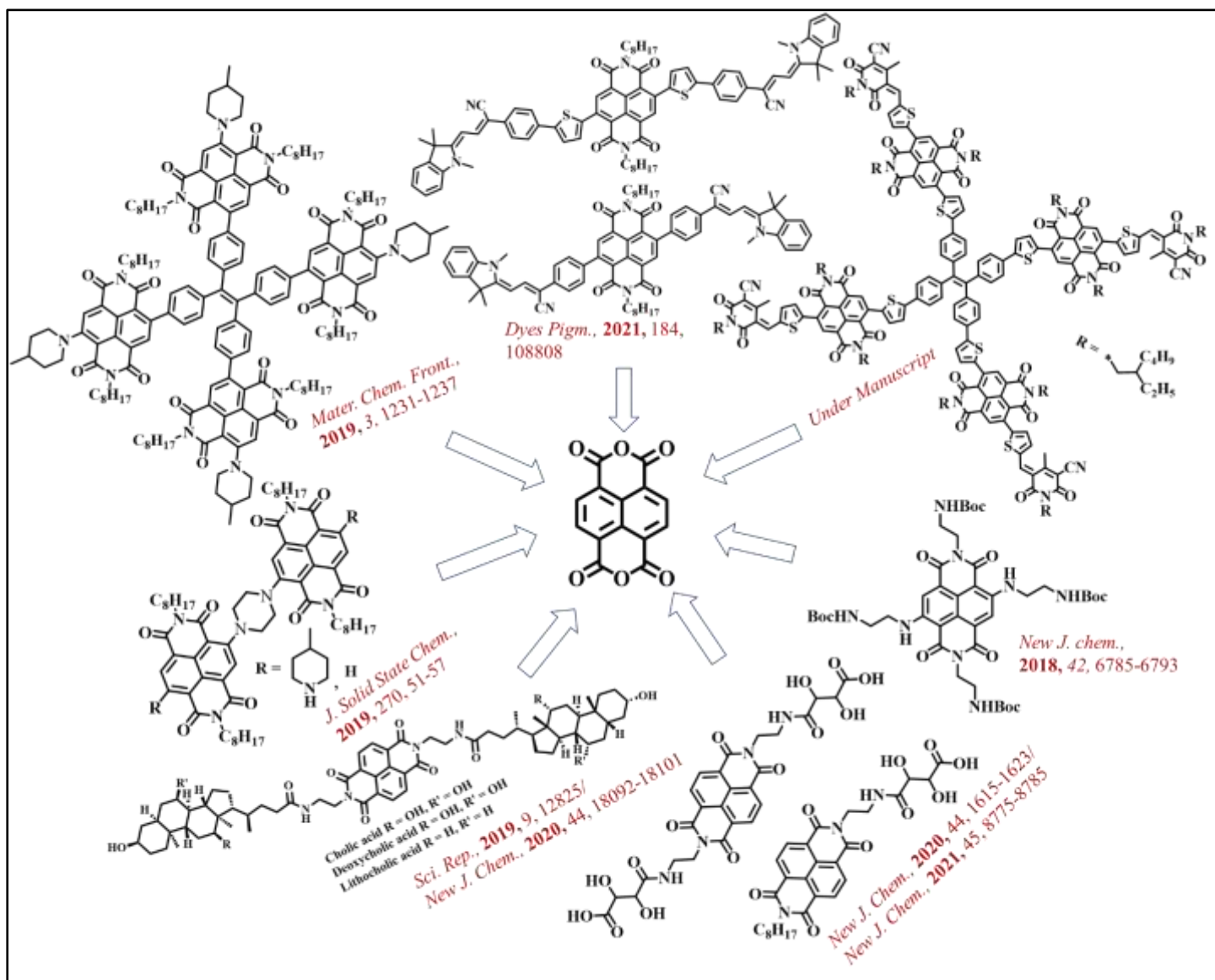
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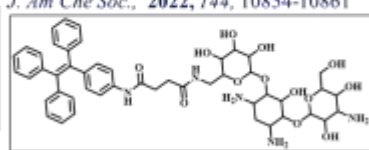
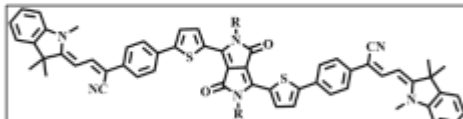
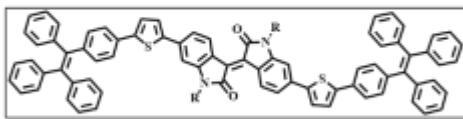
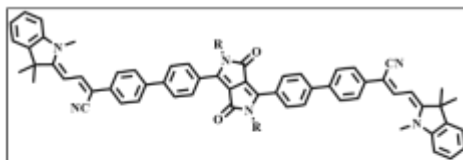
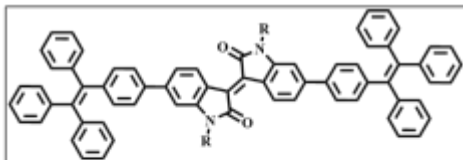
I declare that the above-written particulars are true to the best of my knowledge and belief.


Walgave Sopan Mahadev

Previous Research (Postdoctoral and Doctoral Research)

My research focussed on synthetic organic chemistry, which is the design and synthesis of novel rylene diimide, diketopyrrolopyrrole (DPP), isoindigo, porphyrin, polyaromatic system and peptide-based molecules. These molecules are applied in the supramolecular self-assemblies, biological and organic optoelectronic materials.





J. Mol. Struct., **2022**, 1255, 132452

J. Electroanal. Chem., **2021**, 895, 115451

J. Electroanal. Chem., **2022**, 915, 116341

J. Am. Chem. Soc., **2022**, 144, 10854-10861

Sci Rep., **2022**, 12, 11526

