Curriculum Vitae cum Scientific Profile

S. DIVYABHARATHI
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Objectives

To obtain a position requiring innovative, challenging employment that will utilize my skills and offer advancement opportunity

Education

2020 - 2025 **Ph.D., Chemistry** (thesis submitted), Annamalai University, Tamil Nadu, India

2018 - 2020 **M.Sc., Chemistry**, **(88%),** Theivanai Ammal College, Villupuram, affiliated to Thiruvalluvar University, India.

2015–2018 **B.Sc., Chemistry**, **(78%),** Theivanai Ammal College, Villupuram, affiliated to Thiruvalluvar University, India.

2014-2015 **XII STD**, **(82%),** Bonne Nehru Higher Sec. School, Thirukanur, Villupuram.

2012-2013 **X STD**, **(83%),** Bharatha Devi English High School, Madagadipet, Pondicherry.

Research Experience

- **Ph.D. Thesis**: *Design, Synthesis, Structural, In Silico and In Vitro Evaluation of Bispidinone & Piperidone Derivatives* under the supervision of Dr. T. Vidhyasagar, Associate Professor, Department of Chemistry, Annamalai University, Chidambaram, Tamil Nadu, India.

Technical and Professional Skills (hands on experiences)

- English Typewriting Junior Grade (Feb-2017)
- Tamil Typewriting Junior Grade (Feb-2018)
- Tamil Typewriting Senior Grade (Aug-2018)
- Vocational Certificate Course –Style Technology Embroidery (2015-2016)
- Vocational Diploma Course-Drinking Water analysis and Industrial Practices (2017-2018)
- Column and Thin Layer Chromatographic Techniques

List of Publications

1. **S. Divyabharathi**, A.R. Karthiga, R. Reshwen Shalo, K. Rajeswari, T. Vidhyasagar*, S. Selvanayagam, Crystal structure, Hirshfeld surface analysis, DFT and the molecular docking studies of 3-(2-chloroacetyl)-2,4,6,8-tetraaryl-3,7-diazabicyclo[3.3.1]nonan-9-one. Acta Crystallographica Section, E80, (2024), 981-985, https://doi.org/10.1107/S2056989024008302.
2. A.R Karthiga**, S Divyabharathi,** R Reshwen Shalo, K Rajeswari, T Vidhyasagar, S. Selvanayagam, Crystal structure, Hirshfeld surface analysis, DFT optimized molecular structure and the molecular docking studies of 1-[2-(cyanosulfanyl)acetyl]-3-methyl-2,6-bis(4-methylphenyl)piperidin-4-one, Acta Crystallographica Section, E80 (2024) 1014-1019, https://doi.org/10.1107/S2056989024008508.
3. **S. Divyabharathi**, G. Vengatesh, A.R. Karthiga, R. Reshwen Shalo, K. Rajeswari,P. Ganesh, T. Vi dhyasagar*, Experimental and theoretical studies of alkyl 2-(2,4,6,8-tetraaryl-3,7-diazabicyclo[3.3.1]nonan-9-ylidene)hydrazine carboxylates: Synthesis, spectroscopic, crystal structure, Hirshfeld surface, and antimicrobial studies, Journal of Molecular Structure, 1322(1), (2025), 140353, https://doi.org/10.1016/j.molstruc.2024.140353.
4. R. Reshwen Shalo, A.R. Karthiga, **S. Divyabharathi**, T. Balasankar, K. Rajeswari, T. Vidhyasagar, Rational design, synthesis, computational studies and biological evaluation of new diazepanone derivatives: Crystal structure of 2,7-bis(4-chlorophenyl)-1,3-dimethyl-1,4-diazepan-5-one, Journal of Molecular Structure, 1322(2), (2025), 140360, https://doi.org/10.1016/j.molstruc.2024.140360.
5. A.R Karthiga, **S Divyabharathi**, R Reshwen Shalo, K Rajeswari, T Vidhyasagar, Design, synthesis, structural, *in silico,* and *in vitro* exploration of structurally modified hydrazones of piperidin-4-one with acetyl & ester moieties, Journal of Molecular Structure, 1322(2), (2025), 140408, https://doi.org/10.1016/j.molstruc.2024.140408.
6. A.R. Karthiga, **S. Divyabharathi,** R. Reshwen Shalo, K. Rajeswari, T. Vidhyasagar, Crystal structure of 3-methyl-2,6-diphenyl-1-(2-thiocyanatoacetyl)piperidin-4-one: A combined experimental and theoretical study, Chemical Data Collections, 56 (2025) 101183. https://doi.org/10.1016/j.cdc.2025.101183.
7. R. Reshwen Shalo, A.R. Karthiga, **S. Divyabharathi,** K. Rajeswari, T. Vidhyasagar, Synthesis and characterization of an unsymmetrical salen Schiff Base: Crystal structure and anticancer evaluation, Journal of the Indian Chemical Society, 102 (2025) 101854, https://doi.org/10.1016/j.jics.2025.101854.

Papers presented

1. ***Benzohydrazide derivative as corrosion protector for magnesium alloy***, National conference on emerging trends in advanced functional materials, held at Department of Chemistry, Theivanai Ammal College, Villupuram on Feb 5, 2019.
2. ***Synergistic corrosion inhibition effect of cationic surfactant between anion and cation for carbon steel surface*** in international conference on Bioorganic and biofuel chemistry, held at Department of Chemistry, Sri sarada mahavidyalam Arts and Science college for women, Ulundurpet on Aug 7, 2019.
3. ***Synergistic effect of cationic surfactant in carbon steel surface,*** National seminar on recent advances in chemistry, held at Department of Chemistry, Theivanai Ammal College, Villupuram on Aug 9, 2019.
4. ***corrosion inhibition of cationic surfactant in carbon steel surface,*** National conference on recent trends in chemistry, held at Department of Chemistry, Valliammai Women College of Arts and Science, Villupuram on Sep 20, 2019.
5. ***Corrosion inhibition of cetyltrimethylammonium bromide in neutral medium*** in National conference on hybrid materials and medical applications-19, held at Department of Physics, Theivanai Ammal College, Villupuram on Sep 26, 2019.
6. ***Corrosion inhibition of magnesium alloy in the presence of 4-chloro-N-(3,4,5-trimethoxybenziliden) benzohydrozide in alkaline medium*** in National conference on recent developments in chemical sciences, held at Department of Chemistry, Bwda Arts and Science college, Villupuram on Oct 4, 2019.
7. **Crystal Structure and Crystal Explorer studies of 2,4,6,8-Tetrakis(p-chlorophenyl)-3,7-diazabicyclo [3.3.1] nonan-9-one** in the RUSA 2.0 & TNSCST sponsored National conference on Newer Materials for energy and environmental applications (NCNM-2022), held at Department of Chemistry, Faculty of science, Annamalai University during 22nd and 23rd of September 2022.
8. **Crystal Structure, *CrystalExplorer* and Molecular docking studies of 3-methyl-2,6-diphenyl-1-(prop-2-yn-1-yl)piperidin-4-one** in the RUSA 2.0 & TNSCST sponsored National seminar on Emerging Trends in Chemical Sciences- 2023 (NETCS-2023) organized by the Department of Chemistry, Annamalai University, Annamalai Nagar, Tamilnadu-608002 on 22nd September 2023.
9. **Synthesis, Structural, DFT and Molecular Docking Studies of 3-(2-chloroacetyl)-2,4,6,8-tetraphenyl-3,7-diazabicyclo [3.3.1] nonan-9-one** in the "International Conference on Recent Trends in Materials Science (ICRTMS-2024) organized by PG and Research Department of Physics, Jamal Mohamed College (Autonomous), Tiruchirappalli in association with Indian Spectro Physics Association (ISPA) Chennai, India on 4th January 2024.
10. **Synthesis, Spectral, SC-XRD, DFT and biological evaluation of Propargyl piperidin-4-one derivative,** "International conference on Frontier Areas in Chemical Technologies-2024"

(FACTs-2024) held at the Department of Industrial Chemistry, School of Chemical Sciences, Alagappa University, Karaikudi-630003 on Mar 22-23, 2024**.**

11. **Crystal Structure, *CrystalExplorer* and Molecular docking studies of (E)-1,3-dimethyl-2,6-diphenylpiperidin-4-one oxime hydrochloride**, Material Innovations for Health, Energy and Environment held at Easwari Engineering College, Ramapuram, Chennai. Sep 23-24, 2025.

Workshops, Seminars and FDPs attended

1. ***One day workshop on E-resources, research publications & plagiarism*** held at K.S. Narayanasamy Knowledge Center, Krishnasamy College of Engineering and Technology, Cuddalore on Sep 21, 2019.
2. ***Seminar on computational methods in chemistry and physics of materials*** held at Department of Chemistry, B.S. Abdul Rahman Crescent Institute of Science & Technology, Chennai on Nov-28-29, 2019.
3. ***Hands on training on scientific instruments*** held at Research and Development cell, Theivanai Ammal College, Villupuram on Sep 19, 2019.
4. ***Intellectual property rights & innovations*** held at Research and Development cell, Theivanai Ammal College, Villupuram on Jan 24, 2020.
5. ***Five days PDP on Empowering Educators with AI Tools for Smarter Teaching and Future-Ready Curriculum Design*** held at National Institute of Technical Teachers' Training and Research, Ministry of Education, Government of India, Taramani, Chennai, July 7-11, 2025.
6. ***Six days FDP on Smart and Sustainable materials: Advances in Material Chemistry for Global Challenges*** held at SRM, Ramapuram, Chennai, July 21-26, 2025.
7. ***International Seminar on New Trends in Advanced Functional Materials*** held at SRM, Ramapuram, Chennai, July 31, 2025.
8. ***Six days FDP on Next Generation Research on Energy Materials*** held at Vel Tech Multi Tech Dr. Rangarajan Dr. Sagunthala Engineering College, Chennai, August 4-9, 2025.
9. ***Six days FDP on Emerging Trends in Advanced Materials, Smart Fabrication Techniques and Precision Metrology*** held at AICTE Training and Learning (ATAL) Academy, August 18-23, 2025.
10. ***Six days FDP on Bioremediation and Green Technologies for Waste Management and soil Health in the Agri-Food Sector*** on 25.08.2025 to 30.09.2025. AICTE Training and Learning (ATAL) Academy, August 25-30, 2025.
11. ***Virtual Workshop on Chem Draw*** held at Arul Andar College, Karumathur, Madurai, Sep 25, 2025.

Awards and Distinctions

1. Tmt. S. Santha Endowment Prize for having secured **Best Outgoing Student** Placed in Post Graduate, Theivanai Ammal College for Women (Autonomous), Villupuram, 2018-2020.
2. Marie Curie Endowment Prize for **First Place in M.Sc., Chemistry**, Theivanai Ammal College for Women (Autonomous), Villupuram, 2018-2020.
3. Management Prize for Best Performance Award for **First Place in PG Science**, Theivanai Ammal College for Women (Autonomous), Villupuram, 2018-2020.

Research Interests

- Synthesis of Bispidine derivatives
- Synthesis of 4-piperidone derivatives

Additional Skills

- Molecular Docking
- DFT like, MEP, HOMO-LUMO, Hirshfeld Analysis, Energy frame work, Theoretical NMR and IR.

References

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