


Name	Dr. D. THIRUMALAI	
Designation	Assistant Professor	
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Academic Qualifications	M. Sc., M.Phil., Ph.D	
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Teaching Experience:

- Working as Assistant Professor in the Department of Chemistry, Thiruvalluvar University, Vellore since 7th March 2013. Teaching “Organic Chemistry” (Both Theory and Practical) and “Drug Design, Action and Delivery” (Theory only) for M.Sc. Students, and “Organic Spectroscopy” for M. Phil. Students.
- Worked as Assistant Professor (Senior) in the School of Advanced Sciences, VIT University, Vellore from 3rd June 2009 to 6th March 2013. Taught “Medicinal Chemistry”, “Bioorganic and Medicinal Chemistry”, and “Chemistry of Natural Products” for M.Sc., Organic Chemistry students. Taught “Bio-Physical Chemistry”, “Engineering Chemistry (Theory & Lab)” and “Materials and Instrumental Techniques (Theory & Lab)” for B.Tech. students.

Research Experience:

June 2005–Mar. 2009	Researcher, Industrial Technology Research Institute (ITRI), Taiwan.
Oct. 2004 – May 2005	Post-Doctoral Researcher, Department of Chemistry, National Tsing Hua University, Taiwan.
June 2001–May 2004	CSIR-Senior Research Fellow, Dept. of Organic Chemistry, University of Madras.
Jan. 1999–May 2001	Research Fellow, Dept. of Organic Chemistry, University of Madras.
Sep. 1997-Dec.1998	M. Phil. Scholar, Dept. of Organic Chemistry, University of Madras.

Research Area/Specialization(s):**❖ Synthesis of Acridinedione and Pyridine Derivatives**

- Synthesis and DNA-Intercalation Studies of Acridinedione Derivatives.
- Synthesis of acridinedione based Schiff bases as photochromic molecules and acridinedione based thiourea derivatives as potential anion sensors.
- Synthesis of pyridinedinitrile derivatives, arylcyclopentenopyridine, arylhexahydroquinoline, pyranopyridine, nicotinonitrile and dicyanoaniline derivatives as anti-oxidants.

❖ Synthesis of Dendrimers as MRI contrast agents

- Synthesis of water-soluble linear dendrimers attached with various macrocyclic ligands capable of forming complex with Gd^{3+} ions, which could increase the contrast in Magnetic Resonance Imaging (MRI).
- Synthesis of star-burst dendrimers as blood pool agents in Magnetic Resonance Angiography (MRA).

❖ Synthesis of Dendrimer Encapsulated Metal Nanoparticles

- Synthesis of dendrimer encapsulated silver, gold and palladium nanoparticles.
- Design, synthesis and delivery of novel drugs.

Research Guidance/Supervision:

Programmes of Study	Completed	On Going
Ph.D	-	3
M.Phil	2	4

Research Papers:

Published in International Journals	Published in National Journals	Presented in International Conferences	Presented in National Conferences
24	1	5	15

Funded Research Projects (Completed) : Nil**Funded Research Projects (Ongoing):**

S. No	Agency	Period		Project Title	Budget (Rs. Lakhs)
		From	To		
1.	DST-SERB Fast track proposal for Young Scientists.	09.06.2014	08.06.2017	Synthesis and Evaluation of Novel "Starburst" Dendritic Contrast Agents for Magnetic Resonance Imaging (MRI).	24.42

Consultancy Projects	: Nil
Number of Seminars/Conferences/Workshops/Events attended	: 20
Number of Seminars/Conferences/Workshops/Events organized	: 02
Number of Invited/Special Lectures delivered	: Nil
Number of Books/Chapters/Monographs/Manuals written	: 01

Achievements/Awards/Honors:

1. Qualified **GATE** - A National Level Exam in 1999.
2. Awarded Senior Research Fellowship (2001) by CSIR, India.
3. DST-Young Scientist award. (Ref. No: SB/FT/CS-074/2013 dated 20.05.2014).

Membership Professional/National/International Bodies: Lifetime Membership in CRSI (Chemical Research Society of India)

Additional Responsibilities:

1. Placement officer, Thiruvalluvar University, Vellore.
2. Member in patent cell in Thiruvalluvar University, Vellore.

Countries Visited:

1. **Taiwan** for working as "Postdoctoral Researcher" at Department of Chemistry, National Tsing Hua University & at Industrial Technology Research Institute (ITRI) Taiwan, during October-2004 to March 2009.

Patents Filed:

1. Dendritic polymers and magnetic resonance imaging (MRI) contrast agent employing the same. **D. Thirumalai**, Jim Lin and Jassy Wang, *US patent*, No. US 8,303,937, **2012**.
2. Dendritic polymers and magnetic resonance imaging (MRI) contrast agent employing the same. **D. Thirumalai**, Jim Lin and Jassy Wang, *US patent*, No. 20090169480, **2009**.

Products Developed : Nil

Publications in Journals:

1. Saravanan D, **Thirumalai D**, Sivakumar A, Asharani IV (2016) A Systematic Review on Natural Toxins in Food Plants. *Int. J. Res. Ayurveda Pharm. Sci.* 7:52-57.
2. Lavanya M, **Thirumalai D**, Asharani IV, Aravindan PG (2015) Domino synthesis of functionalized 1,6-naphthyridines and their in vitro anti-inflammatory and anti-oxidant efficacies. *RSC Adv.* 5, 86330-86336.
3. Saravanan D, **Thirumalai D**, Asharani IV (2015) Anti-HIV flavonoids from natural products: A systematic review. *Int. J. Res. Pharm. Sci.* 6:1-8.
4. Saravanan D, **Thirumalai D**, Asharani IV (2015) Evaluation of phytonutrients, mineral composition, antimicrobial and hepatoprotective activities of leaves of *Actinodaphne madraspatana* Bedd (Lauraceae). *J. Chem. Pharm. Res.*, 2015, 7:312-320.
5. **Thirumalai D**, Paridhavi M, Gowtham M (2013) Evaluation of Physiochemical, Pharmacognostical and Phytochemical Parameters of *Premna herbacea*. *Asian J. Pharm. Clin. Res.* 6:173-181.
6. Asharani IV, Thirumalai D, Paridhavi M, Gowtham M (2013) Physiochemical, Pharmacognostical And Phytochemical Evaluation of *Premna Latifolia*. *Int. J. Pharm. Pharm. Sci.* 5:309-317.
7. Silver Nanoparticle Biosynthesis and Antibacterial Activity of Aqueous Leaf Extract of *Lagerstroemia speciosa*, V. Sai Saraswathi, **D.Thirumalai**, M. Himaja, I.V. Asharani, K. V. Bhaskar Rao and S. R. Sathish Kumar, *IJAPR*, **2013**, 4 (7), 1995 – 1999.
8. Synthesis of Dendrimer-Encapsulated Silver Nanoparticles and Its Catalytic Activity on the Reduction of 4-Nitrophenol. I. V. Asharani and **D. Thirumalai**, *J. Chin. Chem. Soc.* **2012**, 59 (11), 1455-1460.
9. Standard Operating Procedures for the Quality Control Studies of Herbal Drugs. **D. Thirumalai**, M. Paridhavi, M. Gowtham, *Int. J. Pharm. Chem. Sci.*, **2012**, 1(1), 205-220.
10. An Overview of Standardization of Herbal Drugs. **D. Thirumalai**, M. Paridhavi, M. Gowtham, *Int. J. Rev. Life Sci.*, **2011**, 1(3), 167-170.
11. A phytochemical review on *premn*a species. **D. Thirumalai**, M. Paridhavi, M. Gowtham, *Int. J. Res. Phytochem. Pharmacol.*, **2011**, 1(4), 196-200.
12. Detection of metals present in leaves of *Lagerstroemia Speciosa*. V. Sai Saraswathi, **D. Thirumalai**, Himaja Malipeddi, M. Saranya and P. Kusal Yadav, *Int. J. Pharm. Pharm. Sci.*, **2011**, 3 (4), 297-298.
13. Pharmacognostic and preliminary phytochemical study of *Lagerstroemia Speciosa* leaves. V. Sai Saraswathi, **D. Thirumalai**, P. Kusal Yadav and M. Saranya, *International Journal of Research in Ayurveda and Pharmacy*, **2011**, 2 (3), 893-898.

14. Dynamic Contrast-Enhanced Folate-Receptor-Targeted MR Imaging Using a Gd-loaded PEG-Dendrimer–Folate Conjugate in a Mouse Xenograft Tumor Model. Wei-Tsung Chen, **D. Thirumalai**, Tiffany Ting-Fang Shih, Ran-Chou Chen, Shin-Yang Tu, Chin-I Lin and Pang-Chyr Yang, *Molecular Imaging and Biology*, **2010**, 12(2), 145-154
15. Synthesis of 4-aryl-5-oxo-1*H*,4*H*-5,6,7,8-tetrahydroquinoline and 4-aryl-5-oxo-1*H*-4,5,6,7-tetrahydrocyclopenteno[*b*]pyridine derivatives by ultrasound irradiation and by conventional methods, **D. Thirumalai**, P. Murugan and V. T. Ramakrishnan, *Indian J. Chem.*, **2006**, 45B, 335-338.
16. Synthesis and Photocyclization of 1,2,4-Triazole-3-thiones, S. Aruna, A. Senthilvelan, **D. Thirumalai**, S. Muthusamy and V.T. Ramakrishnan, *Synthesis*, **2006**, 3841.
17. The different electronic natures displayed by the alkylthio groups in simple and higher conjugated aniline systems. Han, Chien-Chung; Balakumar, R.; **Thirumalai, D.**; Chung, Ming-Tsu. *Organic & Biomolecular Chemistry*, **2006**, 4, 3511-3516.
18. A Novel Colorimetric and Fluorescent Chemosensor for Anions Involving PET and ICT Pathways, V. Thiagarajan, P. Ramamurthy, **D. Thirumalai** and V. T. Ramakrishnan, *Org. Lett.*, **2005**, 7, 657-660.
19. Photochemical Synthesis of Benzoxazolo[3,2-*b*]isoquinolin-11-one and Isoquinolino[3,2-*b*][1,3]benzoxazin-11-one Under Basic Conditions, A. Senthilvelan, **D. Thirumalai** and V. T. Ramakrishnan, *Tetrahedron*, **2005**, 61, 4213-4220.
20. Synthesis and characterization of 9-(4-nitrophenyl)-3,3,6,6-tetramethyl-3,4,6,7,9,10-hexahydro-1,8(2*H*,5*H*)acridinedione and its methoxyphenyl derivative. K. Palani, **D. Thirumalai**, P. Ambalavanan, M. N. Ponnuswamy and V. T. Ramakrishnan, *J. Chem. Cryst.* **2005**, 35, 751-760.
21. A Facile and Simple Route to the Synthesis of Condensed Acridine Systems. P. Murugan, K.C. Hwang, **D. Thirumalai** and V. T. Ramakrishnan, *Syn. Commun.* **2005**, 35, 1781-1788.
22. Photochemical Synthesis of Triazolo[3,4-*b*]-1,3(4*H*)-benzothiazines: A Detailed Mechanistic Study on Photocyclization/Photodesulfurization of Triazole-3-thiones. A.Senthilvelan, **D. Thirumalai** and V.T.Ramakrishnan, *Tetrahedron*, **2004**, 60, 851-860.
23. Synthesis of Nicotinonitrile Derivatives as a New Class of NLO Materials. V. Raghukumar, **D. Thirumalai**, V. T. Ramakrishnan, V. Karunakaran and P. Ramamurthy, *Tetrahedron*, **2003**, 59, 3761-3768.
24. 10-(4-Fluorophenyl)-3,3,6,6,9-pentamethyl-3,4,6,7,9,10-hexahydroacridine-1,8(2*H*, 5*H*)-dione and 10-(4-Fluorophenyl)-3,3,6,6-tetramethyl-9-propyl-3,4,6,7,9,10-hexahydroacridine-1,8(2*H*, 5*H*)-dione, A. Subbiah Pandi, D. Velmurugan, S. S. Raj, Hoong-Kun Fun, P. R. Seshadri and **D. Thirumalai**, *Acta. Cryst. C*, **2001**, 57, 821-824.