

Title	Prof./Dr./Mr./Ms.	First Name	Thirupathi	Last Name	Natesan	Photograph
Designation		Professor				
Department		Chemistry				
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Education						
Subject		Institution	Year	Details		
Ph.D		Indian Institute of Science	1998	Thesis topic: Contributions to the chemistry of cyclotriphosphazanes and bicyclic tetraphosphapentazanes		
M. Sc		University of Madras	1991	Subject: Chemistry		
B. Sc		University of Madras	1989	Subject: Chemistry		
Career Profile						
Organisation/Institution		Designation	Duration	Role		
University of Delhi		Professor	2010 onwards	Research and Teaching		
University of Delhi		Associate Professor	2007-2010	Research and Teaching		
University of Delhi		Reader	2004-2007	Research and Teaching		
Case Western Reserve University		Research Associate	2002-2004	Research		
Iowa State University		Post Doctoral Fellow	1999-2002	Research		
University of Ottawa		Post Doctoral Fellow	1998-1999	Research		
Indian Institute of Science		Research Associate	1997-1998	Research		
Research Interests/Specialization						
Organometallic Chemistry						
Platinum group metal complexes of nitrogen donor ligands, transition metal amides, imides and related complexes						
Main Group Chemistry						
Group 12 metal carboxylate complexes, phosphorus-nitrogen rings, cages and their coordination chemistry aspects						
Teaching Experience (Subjects/Courses Taught)						
Inorganic Chemistry						
<ul style="list-style-type: none"> M. Sc: Supramolecular and photoinorganic chemistry (2008 onwards), Chemistry of d-and f-block elements (2004-08), Catalysis and Bio-inorganic Chemistry (2005-09) and Transition metal organometallic Chemistry (2008 onwards) plus M. Sc Practical (2004 onwards) Ph.D: (a) Metal alkoxide, aryloxide, amide, imide and related compounds (2004-2009) & (b) Organometallic Chemistry (2009 onwards) 						
Honors & Awards						
1. CSIR-Junior Research Fellow (1992-94) & CSIR-Senior Research Fellow (1994-97)						

2. General Proficiency Certificate, Ripon and Mendeleev medals (1986-89)

3. Stood University sixth rank in M.Sc (1989-1991)

Publications

Books/Monographs: Nil

Publications in In Indexed/Peer Reviewed Journals (LAST FIVE YEARS)

<u>Year of Publication</u>	<u>Title</u>	<u>Journal</u>	<u>Co-Authors</u>
2018	Critical role of anions in platinum(II) precursors upon the structural motifs of six-membered cycloplatinated N,N',N''-triarylguanidines	<i>ACS Omega</i> 2018 , DOI: 10.1021/acsomega.8b00782	V. Mishra
2018	Syntheses, characterization, solution behavior and catalytic activity of <i>trans</i> -[(guanidine) ₂ PdX ₂] (X = Cl, OC(O)R; R = Me, Ph and ^t Bu) in Heck-Mizoroki coupling reactions involving chloroarenes/methyl acrylate	<i>Polyhedron</i> 2018 , DOI: 10.1016/j.poly.2018.05.022	P. Elumalai, R. Ujjval, M. Nethaji
2018	Probing the factors that influence the conformation of a guanidinato ligand in [(η ⁵ -C ₅ Me ₅)M(NN)X] (NN = chelating N,N',N''-tri(o-substituted aryl)guanidinate(1-); X = chloro, azido and triazolato)	<i>New J. Chem.</i> 2018 , 42, 1853	R. Kumar, R. Kishan, J. M. Thomas, C. Sivasankar
2017	Syntheses, characterisation, and catalytic role of (η ⁵ -C ₅ Me ₅)Rh(III) guanidinato complexes in transfer hydrogenation (TH) and TH-etherification	<i>RSC Adv</i> 2017 , 7, 33890.	R. Kumar
2016	Six-membered Cyclopalladated N,N',N''-Triarylguanidines, [κ ² (C,N)Pd] ₂ (μ-OAc)(μ-Pz)], [κ ² (C,N)Pd(μ-Pz)] ₂ and a Novel [AgNO ₃]{κ ² (C,N)Pd} ₂ (μ-NO ₃)(μ-Pz)}: Syntheses, Reactivity Studies, Structural Aspects, and Solution Behavior	<i>Polyhedron</i> 2016 , 117, 679.	P. Agarwal, J. M. Thomas, C. Sivasankar, M. Nethaji
2016	Syntheses, structural aspects, solution behavior, and catalytic utility of cyclopalladated N,N',N''-triarylguanidines [κ ² (C,N)Pd(Pyrazole) ₂ X] (X = Br, OC(O)CF ₃ and PF ₆) in Suzuki-Miyaura coupling reactions of aryl bromides	<i>Organometallics</i> 2016 , 35, 3112.	P. Agarwal, M. Nethaji
2015	Reactions of Cd(OAc) ₂ · 2H ₂ O with variously substituted pyridines. Efforts to unravel the factors that determine structure/nuclearity of the products	<i>Polyhedron</i> 2015 , 98, 238.	P. Saxena

2015	Ionic and neutral half-sandwich guanidinatoruthenium(II) complexes and their solution behavior	<i>Eur. J. Inorg. Chem.</i> 2015 , 3182	R. Kishan; R. Kumar; S. Baskaran; C. Sivasankar
2014	Depalladation of neutral monoalkyne- and dialkyne inserted palladacycles and alkyne insertion/depalladation reactions of cationic palladacycles derived from <i>N,N',N''</i> -triarylguanidines as facile route for guanidine containing heterocycles/carbocycles:	<i>Organometallics</i> 2014 , 33,5554	P. Saxena, M. Nethaji
2014	Synthesis, Structural and Mechanistic aspects Mono- and dialkyne insertion reactions of cyclopalladated <i>N,N',N''</i> -triarylguanidines [$\kappa^2(C,N)(\mu-Br)_2$ and <i>cis-/trans-</i> [$\kappa^2(C,N)$ (Lewis Base)Br]. Scaffolds for enlarged, rearranged, and zwitterionic palladacycles through ring contraction cum amine-imine tautomerization	<i>Organometallics</i> 2014 , 33,3182	P. Saxena, M. Nethaji
2013	Insertion Reactions of Six-Membered Cyclopalladated <i>N,N',N''</i> -Triarylguanidine, [Pd{ $\kappa^2(C,N)-C_6H_3Me-3(NHC(NHAr)(=NAr))-2$ }($\mu-Br$) ₂ (Ar = 2-MeC ₆ H ₄) with PhC≡C—C(O)OR (R = Me and Et): A Gateway to Second Orthopalladation through Novel Rearrangements	<i>Organometallics</i> 2013 , 32,7580	P. Saxena, M. Nethaji.
2013	Six-membered [C,N] cyclopalladated sym- <i>N,N',N''</i> -tri(4-tolyl)guanidines: Synthesis, reactivity studies and structural aspects	<i>J. Organomet. Chem.</i> 2013 , 741-742, 141	P. Elumalai, M. Nethaji

Conference Presentations (LAST FIVE YEARS)

1. V. Thakur, **N. Thirupathi**, *Cyclopalladated N,N,N-Triarylguanidines [$\kappa^2(C,N)Pd(\mu-OAc)_2$ and [$\kappa^2(C,N)Pd(PPh_3)Br$] as Catalysts in Suzuki-Miyaura Cross Coupling Reactions of Aryl Bromides and Activated Aryl Chlorides* 2016 In Abstract "19th CRSI National Symposium in Chemistry" PP81, Department of Chemistry, University of North Bengal, Siliguri.
2. R. Kumar, **N. Thirupathi**, *Half Sandwich Ruthenium(II) Electron Deficient Triarylguanidinato Complexes: Reactivity Studies and Catalytic Activity in Azide-Alkyne Cycloaddition Reactions* 2016 In Abstract "19th CRSI National Symposium in Chemistry" PP83, Department of Chemistry, University of North Bengal, Siliguri.
3. V. Mishra, **N. Thirupathi**, M. Nethaji, *Synthesis, Structural Studies and Solution Behaviour of Pt₂Ag₂ Clusters [$\kappa^2(C,N)Pt(\mu_2-OC(O)CF_3)_2Ag$]₂ Containing Six-Membered Cycloplatinated *N,N',N''*-Triarylguanidines* 2016 In Abstract "19th CRSI National Symposium in Chemistry" PP88, Department of Chemistry, University

of North Bengal, Siliguri.

4. P. Agarwal, **N. Thirupathi**, M. Nethaji *The influence of synthetic routes upon the formation of $[Cd(\kappa^2O, O'-OC(O)^tBu)_2(H_2O)_2]$ and $\{Na_2[Cd(\kappa^2O, O'-OC(O)Me)(\kappa^2O, O'-OC(O)^tBu)(OC(O)^tBu)_2] \cdot 2^tBuC(O)OH\}_\infty$* 2016 In Abstract "18th CRSI National Symposium in Chemistry" P9, Punjab University and Institute of Nanoscience and Technology, Mohali.
5. R. Kumar, **N. Thirupathi**, *Transfer Hydrogenation of Ketones and Aldehydes Catalyzed by $[(\eta^5-C_5Me_5)RhCl\{\kappa^2(N,N')(ArN)_2C-N(H)Ar\}]$* 2016 In Abstract "18th CRSI National Symposium in Chemistry" P200, Punjab University and Institute of Nanoscience and Technology, Mohali.
6. V. Mishra, **N. Thirupathi** *Bis-Chelate Palladium(II) Amide Complexes Derived from N-Aryl-N',N''-dipyridylguanidines: Pre-Catalysts for Heck-Mizoriki Coupling Reactions involving Styrene and Aryl Bromides/Activated Aryl Chlorides* 2016 In Abstract "18th CRSI National Symposium in Chemistry" P258, Punjab University and Institute of Nanoscience and Technology, Mohali.
7. Saxena, P.; **Thirupathi, N.**; Nethaji, M. *Mono and Dialkyne Insertion Reactions of Cyclopalladated N,N',N''-Triarylguanidines, $[(C,N)Pd(\mu-Br)]_2$ and cis/trans- $[(C,N)Pd(Lewis\ base)Br]$: Scaffolds for Enlarged, Rearranged and Zwitterionic Palladacycles through Ring Contraction cum Amine Imine Tautomerisation* 2014 In Abstract "16th CRSI National Symposium in Chemistry" P327, Indian Institute of Technology, Bombay.
8. Kishan, R.; **Thirupathi, N.**; Nethaji, M. *Synthesis, Structural Aspects and Solution Behavior of Rhodium (III) Half Sandwich Complexes Ligated by N,N',N''-Triarylguanidinate Ligands* 2014 In Abstract "16th CRSI National Symposium in Chemistry" P330, Indian Institute of Technology, Bombay.
9. Agarwal, P.; **Thirupathi, N.** *Reactivity Studies of Cyclopalladated N,N',N''-Triarylguanidines with Pyrazole and Substituted Pyrazoles: Structural Aspects and Solution Behaviour of New Palladacycles* 2013 In Abstract "Modern Trends in Inorganic Chemistry (MTIC-XV)", P-77, Indian Institute of Technology, Roorkee.
10. Kumar, R.; **Thirupathi, N.** *Synthesis, Structural Aspects and Solution Behaviour of $[(\eta^5-C_5Me_5)RhX\{\kappa^2(N,N')((ArN)_2CNHAr)\}]$ and $[(\eta^5-C_5Me_5)RhL\{\kappa^2(N,N')((ArN)_2CNHAr)\}][SbF_6]$; X = Cl, N₃, and N₃C₃R₂ Ar = 2-X'C₆H₄; X' = F and Cl; L = Lewis base* 2013 In Abstract "Modern Trends in Inorganic Chemistry MTIC-XV", P-78, Indian Institute of Technology, Roorkee.
11. Kishan, R; Kumar, R; Nethaji, M; **Thirupathi, N.** *Neutral and Cationic Half Sandwich Ruthenium (II) Arene Complexes Ligated by N,N',N''-Triarylguanidinate(-1) Ligands: Synthesis, Structural Aspects, Solution Behaviour, and Their Utility in Transfer Hydrogenation* 2013 In Abstract "Emerging Trends in Development of Drugs and Devices", p.80, University of Delhi, Delhi.
12. Agarwal, P; **Thirupathi, N.** *Reactivity Studies of Guanidine Derived Palladacycles with Pyrazole and Structural Aspects* 2012 In Abstract "New Directions in Chemical Sciences (NDCS-2012)", p.48, Indian Institute of Technology, Delhi.

13. Saxena, P; **Thirupathi, N.** *Efforts To Unravel the Factors that determine the Configuration of the Palladium and Coordination Modes of Thiocyanate in Guanidine Derived Six-membered [C,N]Palladacycles* 2012 In Abstract "New Directions in Chemical Sciences (NDCS-2012)", p.50, Indian Institute of Technology, Delhi.
14. Saxena, P; **Thirupathi, N.** *Lewis base coordinated cadmium (II) acetate aggregates: Efforts to unravel the role of steric/basic properties of Lewis base upon the degree of aggregation* 2012 In Abstract "Symposium on New Developments in NMR and Conference of the National Magnetic Resonance Society", P-80, Indian Institute of Science, Bangalore.

Lecture delivered

1. **Thirupathi, N.** *Alkyne Insertion Reactions of Cyclopalladated N,N',N''-Triarylguanidines and the Utility of Alkyne Inserted Products as Precursors for Guanidine Containing Heterocycles/Carbocycle* In Abstract "New Directions in Chemical Synthesis-II (Inorganic Synthesis)" L24, Indian Institute of Technology Bombay, Mumbai, 10-11 December 2014
2. **Thirupathi, N.** *Platinum (II) Complexes of Sym N,N',N''-Triarylguanidines* 2013 In Abstract "National Symposium on Recent Advances in Chemistry (NSRAC-2013)", p.24, Pondicherry University, Pondicherry.

Total Publication Profile *optional*

Books: _____ Nil

In Indexed/Peer Reviewed Journals: **36** Total publications in journals plus one US Patent

Public Service/University Service/Consulting Activity

University Service: Coordinator for CHNSO elemental analyzer, member of 400 MHz NMR spectrometer housed in USIC, University of Delhi, Delhi 7 (2008-till date); Member of various committees in USIC and Chemistry Department; Member of Technical and Purchase Committees for Mass Spectrometer, Coordinator for Refresher Course in Chemistry 2015

Professional Societies Memberships

- a. Life Member, Chemical Research Society of India
- b. Life Member, Nuclear Magnetic Resonance Spectroscopy
- c. Life Member, Indian Council of Chemist
- d. Life Member, International Union of Crystallography

Projects (Major Grants / Collaborations)

Major Projects Completed: Three (Two projects sponsored by DST and one project sponsored by CSIR)

Ongoing Project: *sym N,N',N''-Triarylguanidines as Scaffolds for New Class of Metallacycles and Half Sandwich Complexes of Platinum Group Metals* (2015 onwards; Sponsored by DST)

Other Details; M. Phil degree awarded: 4 (total)

Ph.D degree awarded: 9

Number of undergraduate students trained (2016): two (Deeksha Sharma; University of Delhi; Summer Internship in Exposure to Laboratory Research and Divyansh Anil Khurana, Indian Institute of Science; KVPY-SA 2013)

Number of Research Scholars presently working: 4