

## STAFF PROFILE

- 1) Name : Dr. P. KALAIVANI  
 2) Designation : Assistant Professor in Chemistry  
 3) Department : Chemistry  
 4) Qualification : M.Sc., M.Phil., Ph.D  
 5) Experience : Teaching : 7 Research : 13  
 6) Area of Specialization (s) : Inorganic/ Coordination chemistry  
 7) E-mail : [kalaivani19@gmail.com](mailto:kalaivani19@gmail.com)

8) Academic Qualifications:

B.Sc. (Chemistry) 2004	Bharathiar University	84.6%
M.Sc. (Chemistry) 2006	Bharathiar University	81.5 % with distinction
M.Phil. (Chemistry) 2007	Bharathiar University	72%
Ph.D. (Inorganic Chemistry) 2011	Bharathiar University	Awarded

9) Additional Qualifications :

Diploma/ Vocational/ Certification	Area of Specialization	Institution/ University/ Agency Name	Year
Post Doctoral Research Associate	Inorganic Chemistry	Bharathiar University	16.11. 2011 – 31.05.2014

10) Projects

Completed

Project Title	Agency	Amount	Duration
Ruthenium sandwich complexes with N,S donor ligands: DNA/ Protein binding, DNA cleavage, Antioxidant activity and Cytotoxicity	Department of Science and Technology Science and Society Division (DST SERB), Government of India, New Delhi.	Rs. 24,26,000/-	3 years ( 2015-2018)

11) Research Guidance

Programme	No. of Scholars
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	Completed	Pursuing
Ph. D.	-	4
M. Phil.	1	-

## 12) Research Publications

### International

1. M.Sindhu, **P.Kalaivani**, F.Dallemer, R.Prabhakaran “Coumarine based Cu(II) complex as chemosensor for selective detection of l-threonine and l-asparagine”, *Inorganica Chimica Acta* (2021), Vol. 526, Page No 120525, **Impact Factor: 2.545**
2. C.Elamathi , R. J. Butcher, A. Mohankumar , P.Sundararaj, K.Elango, **P. Kalaivani** and R. Prabhakaran ,”Dual sensing of methionine and aspartic acid in aqueous medium by quinoline based fluorescent probe” *Dalton Trans.*, (2021), Vol. 50, Page 8820 – 8830. **Impact Factor: 4.390**
3. MathiyazhaganSindhu, **Palaniappan Kalaivani** and RathinasabapathiPrabhakaran, “New organorutheniummetallates containing ferrocenecarboxalidine thiosemicarbazones and their nucleic acid/albumin binding and *in vitro* cytotoxicity” *Applied Organometallic Chemistry* (2020), Vol. 34, Page No 1-20. **Impact Factor: 4.105**
4. **P. Kalaivani**, H. Puschmann, MV. Kaveri, T. Suresh and R. Prabhakaran, “One-pot synthesis of new water-soluble binuclear octahedral Ni(II) and mononuclear Ru(II) carbonyl complexes containing 2,6 pyridine dicarboxylic acid, *Journal of Chemical Sciences* (2019), Vol.131,Page No.81. **Impact Factor: 1.406**
5. C. Elamathi, R. J. Butcher, A. Mohankumar, P. Sundararaj, A. Madankumar, **P. Kalaivani** , R. Prabhakaran, “A quinoline-based probe for effective and selective sensing of aspartic acid in aqueous medium: *in vitro* and *in vivo* live cell imaging” *Inorganic Chemistry Frontiers* (2019), Vol.6, 3237-3244, **Impact Factor: 5.934**
6. A.Mohankumar, G.Devagi, G.Shanmugam, S.Nivitha, P.Sundararaj, F.Dallemer, **P.Kalaivani**, R.Prabhakaran, “Organoruthenium(II) complexes attenuate stress in *Caenorhabditis elegans* through regulating antioxidant machinery” *Eur. J. Med. chem.* (2019), Vol. 168, 123-133, **Impact Factor: 4.833**
7. G.Devagi, A. Mohankumar, G. Shanmugam, S. Nivitha, F.Dallemer, **P.Kalaivani**, P. Sundararaj. R. Prabhakaran. “ Organoruthenium(II) Complexes Ameliorates Oxidative Stress and Impedes the Age Associated Deterioration in *Caenorhabditis elegans* through JNK-1/DAF-16 Signalling” *Nature Scientific Reports* (2018), 8, 7688, **Impact factor : 4.259**
8. G.Devagi, F.Dallemer, **P.Kalaivani** and R.Prabhakaran “Organometallicruthenium(II) complexes containing NS donor Schiff bases: Synthesis, structure, electrochemistry, DNA/BSAbinding, DNA cleavage, radical scavenging and antibacterial activities” *Journal of Organometallic Chemistry* (2018), Vol.854, Page No.1-14, ISSN: 0022 – 328X. **Impact factor 2.173**

9. G. Devagi, F. Reyhaneh, F. Dallemer, R. Jayakumar, **P. Kalaivani** and R. Prabhakaran, "Morphological and in vitro evaluation of programmed cell death in MCF-7 cells by new organoruthenium complexes", *New J. Chem.* (2017), Vol. 41, 8620-8636, **Impact factor 3.269**
10. P. Naveen, Ruchi Jain, **P. Kalaivani**, R. Shankar, F. Dallemer and R. Prabhakaran "Unpredicted formation of Cu(II) complexes containing 2-thiophen-2-ylmethyl-1H-benzimidazole and their most promising invitro cytotoxicity in MCF-7 and HeLa cell lines over cis-platin" *New J. Chem.*(2017) Vol. 41,Pages. 8885-8898, **Impact factor 3.269**
11. G.Kalaiarasi, Ruchi Jain, A.Shanmugapriya, H.Puschman, **P.Kalaivani** and R.Prabhakaran. New Binuclear Ni(II) metallates as potent antiproliferative agents against MCF-7 and HeLa cells. *Inorganica Chimica Acta.* (2017), Vol. 462. Page No.174 – 187, ISSN 0020 – 1693, **Impact factor 1.918**
12. G.Devagi, G. Shanmugam, A. Mohankumar, P. Sundararaj, F.Dallemer, **P.Kalaivani**, and R.Prabhakaran "Caenorhabditis elegans as a model for exploring the efficacy of synthesized organo ruthenium complexes for aging and Alzheimers disease a neurodegenerative disorder: A systematic approach". *Journal of organometallic chemistry* (2017), Vol. 838. Page No.12 – 23, ISSN 0022 -328. **Impact factor 2.336.**
13. C.Umadevi, **P. Kalaivani**, H. Puschmann, S. Murugan, P.S. Mohan and R.Prabhakaran,"Substitutional impact on biological activity of new water soluble Ni (II) complexes: Preparation, spectral characterization, X-ray crystallography, DNA/protein binding, antibacterial activity and *in vitro* cytotoxicity". *Journal of photochemistry & photobiology, B: Biology* (2017). Vol. 167, Page No.45 – 57, ISSN 1011 – 1344. **Impact Factor: 3.035.**
14. R. Prabhakaran, **P. Kalaivani**, K.Senthilkumar and K.Natarajan. "Synthesis, structural characterisation, DNA/protein binding and invitro cytotoxicity of three structurally different organo ruthenium metallates from single pot". *Journal of Organometallic Chemistry* (2016),Vol. 825–826, 15, Page No.83–99 ISSN: 0022 – 328X. **Impact factor – 2.173.**
15. G.Kalaiarasi, C.Umadevi, A Shanmugapriya, **P.Kalaivani**, F.Dallemer and R.Prabhakaran. "DNA(CT), protein(BSA) binding studies, anti-oxidant and cytotoxicity studies of new binuclear Ni(II) complexes containing 4(N)-substituted thiosemicarbazones". *Inorganica Chimica Acta* (2016), Vol.453. Page No.547 – 558, ISSN: 0020 – 1693. **Impact factor – 1.918.**
16. A.Shanmugapriya, G.Kalaiarasi, **P.Kalaivani**, F.Dallemer and R.Prabhakaran. "CT-DNA/BSA protein binding and antioxidant studies of new binuclear Pd(II) complexes and their structural Characterisation". *Inorganica Chimica Acta* (2016), Vol.449. Page No.107 – 118, ISSN: 0020 – 1693. **Impact factor – 1.918.**
17. ThangavelSathiyakamatchi, **PalaniappanKalaivani**, Frank R. Fronczek, Karuppanan Natarajan and RathinasabapathiPrabhakaran. Impact of chelation on anticancer activities of organometallic ruthenium(II) complexes containing 2,5-di(1H-pyrazol-1-yl)-1,4-benzoquinone: synthesis, structure, DNA/protein binding, antioxidant activity and cytotoxicity", *RSC Advances* (2016), Vol.6, Page No.46531-46547, ISSN: 2046 – 2069. **Impact factor- 3.289.**

18. **P. Kalaivani**, C. Umadevi, R. Prabhakaran, F. Dallemer and P.S. Mohan “New palladium metallacycles containing 4(N,N′)-diethylaminosalicylaldehyde-4(N)-thiosemicarbazones: Synthesis, spectral, structural and DNA/protein binding studies” *Inorganica Chimica Acta* (2015), Vol. 438, Page No.264–276, [ISSN: 0020-1693], **Impact factor- 2.046.**
19. **P. Kalaivani**, R. Prabhakaran, F. Dallemer and K. Natarajan, “Photophysical properties and *in vitro* cytotoxicity studies of new Ru(II) carbonyl complexes and mixed geometrical Ru(II)-Ni(II) complex in HS-DNA/BSA protein and human lung (A549) and liver (Hep G2) cells”, *RSC Advances*, (2014), Vol.4, Page No.51850-51864. **Impact factor -3.84**
20. **P. Kalaivani**, S. Saranya, P. Poornima, R. Prabhakaran, F. Dallemer V. Vijaya Padma, K. Natarajan, “Biological evaluation of new Nickel (II) metallates: Synthesis, DNA/protein binding and mitochondrial mediated apoptosis in human lung cancer cells (A549) via ROS hyper generation and depletion of cellular antioxidant pool”, *Eur. J. Med. chem.*, (2014),82, 584-599, **Impact factor -4.833**
21. T. Sathiya Kamatchi, **P. Kalaivani**, P. Poornima, V. Vijaya Padma, F.R. Fronczek, K. Natarajan, New organometallic Ru(II) complexes containing chelidonic acid (4-oxo-4H-pyran-2,6-dicarboxylic acid): Synthesis, structure and in-vitro biological activity, *RSC Advances*, (2014), Vol.4, Page No.2004–2022, **Impact factor -3.049**
22. **P. Kalaivani**, R. Prabhakaran, F. Dallemer, E. Vaishnavi, P. Poornima, V. Vijaya Padma, R. Renganathan, K. Natarajan, “Synthesis, structural characterization, DNA/protein binding and *in vitro* cytotoxicity of isomeric ruthenium carbonyl complexes”, *Journal of Organo Metallic Chemistry*, (2014), Vol.762, Page No.67-80, [ISSN: 0022-328x], **Impact factor 2.173.**
23. **P. Kalaivani**, C. Umadevi, R. Prabhakaran, F. Dallemer, P.S. Mohan, K. Natarajan, “New palladium(II) complexes of 3-methoxysalicylaldehyde-4(N)-substituted thiosemicarbazones: Synthesis, Spectroscopy, X-ray crystallography and DNA/Protein binding study”, *Polyhedron*, (2014), Vol.80, Page No.97-105, [ISSN: 0277-5387], **Impact factor 2.011.**
24. **P. Kalaivani**, R. Prabhakaran, E. Vaishnavi, T. Rueffer, H. Lang, P. Poornima, R. Renganathan, V. Vijaya Padma and K. Natarajan “Synthesis, structure, DNA/Protein binding and *in vitro* cytotoxicity of new ruthenium metallates” *Inorganic Chemistry Frontiers* (2014), Vol.1, page 311-324, **Impact factor 5.106.**
25. **P. Kalaivani**, R. Prabhakaran, P. Poornima, R. Huang, H. Virginie, F. Dallemer, V. Vijaya Padma, K. Natarajan, “Synthesis and structural characterization of new ruthenium(II) complexes and investigation of their antiproliferative and metastatic effect against human lung cancer (A549) cells” *RSC Advances*, (2013) Vol 3, Page No 20363-20378, ISSN No. 2046-2069, **Impact Factor: 3.708**
26. R. Prabhakaran, **P. Kalaivani**, R. Huang, P. Poornima, S. Vinotha, V. Vijaya Padma, K. Natarajan, “Synthesis, DNA/protein binding and *in vitro* cytotoxic studies of new palladium metallothiosemicarbazones”, *Bio. Org. Med. Chem.* (2013), Vol 21, Page No.6742-6752, 2013 ISSN No. 0968-0896, **Impact Factor: 2.951**

27. **P. Kalaivani**, R. Prabhakaran, M.V. Kaveri, R. Huang, R. J. Staples, K. Natarajan, "Synthesis, spectral, X-ray crystallography, electrochemistry, DNA/Protein binding and radical scavenging activity of new palladium(II) complexes containing triphenylarsine", *Inorg. Chim. Acta*, (2013), Vol 405, Page No.415-426, ISSN No. 0020-1693, **Impact Factor: 2.041**.
28. R. Prabhakaran, **P. Kalaivani**, P. Poornima, R. Huang, V. Vijaya Padma, K. Natarajan, "DNA binding, Antioxidant, Cytotoxicity (MTT, Lactate dehydrogenase (LDH), NO) and Cellular uptake studies of structurally different nickel(II) thiosemicarbazone complexes: Synthesis and spectral, electrochemistry and X-ray crystallography", *J. Bio. Inorg. Chem.*, (2013), Vol 18, Page No.233-247, ISSN No. 0949-8257, **Impact Factor: 3.164**.
29. **P. Kalaivani**, R. Prabhakaran, P. Poornima, F. Dallemer, K. Vijayalakshmi, V. Vijaya Padma, K. Natarajan, "Versatile coordination 5oimbato of salicylaldehydethiosemicarbazone in ruthenium(II) carbonyl complexes: Synthesis, Spectral, X-ray, Electrochemistry, DNA binding, Cytotoxicity and Cellular uptake studies" *Organometallics*, (2012), Vol 31, Page No.8323 -8332, ISSN No. 0276-7333, **Impact Factor: 4.253**
30. R. Prabhakaran, **P. Kalaivani**, P. Poornima, F. Dallemer, G. Paramaguru, V. Vijaya Padma, R. Renganathan, R. Huang, K. Natarajan, "One pot synthesis of structurally different mono and dimeric Ni(II) thiosemicarbazone complexes and N- arylation on coordinated ligand: A comparative biological evaluation on DNA/Protein binding, Antioxidant, Cytotoxicity (MTT, Lactate dehydrogenase (LDH) and NO release) and Cellular uptake studies" *Dalton Trans*, (2012), Vol 41, Page No.9323-9336, ISSN No. 1477-9226, **Impact Factor: 4.097**.
31. **P. Kalaivani**, R. Prabhakaran, E. Ramachandran, F. Dallemer, G. Paramaguru, R. Renganathan, P. Poornima, V. Vijaya Padma K. Natarajan, "Influence of terminal substitution on structural, DNA, Protein binding, anticancer and antibacterial activities of palladium(II) complexes containing 3-methoxy salicylaldehyde-4(N) substituted thiosemicarbazones" *Dalton Trans*. (2012), Vol 41, Page No.2486-2499, ISSN No. 1477-9226, **Impact Factor: 4.097**.
32. E. Ramachandran, **P. Kalaivani**, R. Prabhakaran, N.P. Rath, S. Brinda, P. Poornima, V. Vijaya Padma K. Natarajan, "Synthesis, X- ray crystal structure, DNA binding, antioxidant and cytotoxicity studies of Ni(II) and Pd(II) thiosemicarbazone complexes", *Metallomics*, (2012), Vol 4, Page No.218-227 (2012), ISSN No. 1756-5901, **Impact Factor: 3.978**
33. **P. Kalaivani**, R. Prabhakaran, F. Dallemer, P. Poornima, E. Vaishnavi, E. Ramachandran, V. Vijaya Padma, R. Renganathan K. Natarajan, "DNA, Protein binding, Cytotoxicity (Cellular uptake, Lactate dehydrogenase (LDH) release, NO scavenging activity) and antibacterial activities of new palladium(II) complexes containing (N,N')-diethylaminosalicylaldehyde-4(N)thiosemicarbazones: Effect of substitution on enhanced activity" *Metallomics*, (2012), Vol 4, Page No.101-113, ISSN No. 1756-5901, **Impact Factor: 3.978**.
34. E. Ramachandran, **P. Kalaivani**, R. Prabhakaran, M. Zeller, T.R. Wagner, K.

- Natarajan, "Synthesis, characterization, crystal structure and DNA binding studies of Pd(II) complex containing thiosemicarbazone and PPh<sub>3</sub>/AsPh<sub>3</sub>" *Inorg. Chim. Acta*, (2012), Vol 385, Page No.94-99, ISSN No. 0020-1693, **Impact Factor: 2.041**
35. E. Ramachandran, S.P. Thomas, P. Poornima, **P. Kalaivani**, R. Prabhakaran, V. Vijaya Padma K. Natarajan, "Evaluation of DNA binding, antioxidant and cytotoxic activity of mononuclear Co(III) complexes of 2-oxo-1,2-dihydrobenzo[h]quinoline-3-carbaldehyde thiosemicarbazones" *Eur. J. Med. Chem.*, (2012), Vol 50, Page No.405-415, ISSN No.0223-5234, **Impact Factor: 3.432**.
36. R. Prabhakaran, **P. Kalaivani**, S.V.Renukadevi, R. Huang, R. Karvembu, K. Senthilkumar, K. Natarajan, "Copper ion mediated selective cleavage of C-S bond in ferrocenylthiosemicarbazoneforming mixed geometrical [(PPh<sub>3</sub>)Cu(μ<sub>2</sub>-S)<sub>2</sub>Cu(PPh<sub>3</sub>)<sub>2</sub>] having Cu<sub>2</sub>S<sub>2</sub> core: Towards a new avenue in copper-sulfur chemistry" *Inorg. Chem.*, (2012), Vol 51, Page No 3525-3532, ISSN No. 0020-1669, **Impact Factor: 4.794**
37. R. Prabhakaran, **P. Kalaivani**, R. Jayakumar, M. Zeller, A.D. Hunter, S.V. Renukadevi, E. Ramachandran, K. Natarajan, "Synthesis, Structure and biological evaluation of bis salicylaldehyde-4(N)-ethylthiosemicarbazone ruthenium (III) triphenylphosphine" *Metallomics*, (2011), Vol 3, Page No 42-48, ISSN No. 1756-5901, **Impact Factor: 3.978**
38. S. Priyarega, **P. Kalaivani**, R. Prabhakaran, T. Hashimoto, A. Endo, K. Natarajan, "Nickel(II) complexes containing thiosemicarbazone and triphenylphosphine: Synthesis, spectroscopy, crystallography and catalytic activity" *J. Mol. Struct.* (2011), Vol 1002, Page No 58-62, ISSN No. 0022-2860, **Impact Factor: 1.599**.
39. R. Prabhakaran, **P. Kalaivani**, R. Huang, M. Sieger, W. Kaim, P. Viswanathamurthi, F. Dallemer, K. Natarajan, "Can geometry control the coordination geometry of 2-hydroxy-1-naphthaldehyde-4(N)-phenylthiosemicarbazone? A study towards its origin" *Inorg. Chim. Acta*, (2011), Vol 376, Page No 317-324, ISSN No. 0020-1693. **Impact Factor: 2.041**
40. R. Prabhakaran, R. Sivasamy, J. Angayarkanni, R. Huang, **P. Kalaivani**, R. Karvembu, F. Dallmer, K. Natarajan, "Topoisomerase II inhibition activity of new square planar Ni(II) complexes containing N-substituted thiosemicarbazones: Synthesis, spectroscopy, X-ray, crystallography and electrochemical characterization", *Inorg. Chim. Acta*, (2011), Vol 374, Page No 647-653, ISSN No. 0020-1693, **Impact Factor: 2.041**.
41. R. Prabhakaran, S. Anantharaman, M. Thilagavathi, M.V. Kaveri, **P. Kalaivani**, R. Karvembu, N. Dharmaraj, H. Bertagnolli, K. Natarajan, "Preparation, spectroscopy, EXAFS, Electrochemistry and pharmacology of new ruthenium(II) carbonyl complexes containing ferrocenylthiosemicarbazone and triphenylphosphine/arsine" *Spectro. Chim. Acta*, (2011), 78, 844-853, ISSN No. 1386-1425, **Impact Factor: 2.129**
42. **P. Kalaivani**, T. Anbuselvi, M. Natesan, D. Jayaperumal and J.H. Prasanth, "Performance of 'CHAP' as Vapour Phase Corrosion inhibitor for Metals" *Corrosion and Materials*, (2006), Vol 31, S-1.

## National

### 13) Other Publications

(Proceedings)

1. **P. Kalaivani**, Sindhu. M and R. Prabhakaran published research article entitled “New hetero binuclear Ru(II)/Fe(II) Cyclopentadienyl complexes containing formilferrocene-4(N)-substituted thiosemicarbazones: Synthesis spectral characterization and DNA binding studies” ,Proceedings of *Nirmala Annual Research Congress NARC’17* published by Internal Quality assurance cell, Nirmala College for Women, Coimbatore, ISBN No. 978-93-5279-759-2yj6, Page No.18,2017
2. M. Sindhu ,**P. Kalaivani**, “Synthesis, Spectral Characterization and Binding Studies of New Copper(II) Complexes of 4-Methoxysalicylaldehyde-4(N)- Substituted Thiosemicarbazone” Proceedings of *Nirmala Annual Research Congress NARC’18* published by Internal Quality assurance cell, Nirmala College for Women, Coimbatore, ISBN No. 978-93-5321-859-1, Page No.195,2018
3. M. Sindhu and **P. Kalaivani**, “Synthesis, Spectral characterization and binding interactions of Ru(III)/Fe(II) Cyclopentadienyl complexes containing acetylferrocene-4-(N)-substituted thiosemicarbazones”, Proceedings of *Nirmala Annual Research Congress NARC’19* published by Internal Quality assurance cell, Nirmala College for Women, Coimbatore,ISBN-978-93-5391-196-6, Page No:355-359,2019
4. P. Anusha, M. Sindhu and **P. Kalaivani**, “Cation Sensing of Schiff Base using absorbance and fluorescent method”, Proceedings of *Nirmala Annual Research Congress NARC’19* published by Internal Quality assurance cell, Nirmala College for Women, Coimbatore,,ISBN-978-93-5391-196-6, Page No:424-427,2019
5. M.J. Archana, M. Sindhu and **P. Kalaivani**, “Synthesis, Characterization and Sensing behavior of Schiff Base”, Proceedings of *Nirmala Annual Research Congress NARC’19* published by Internal Quality assurance cell, Nirmala College for Women, Coimbatore,ISBN-978-93-5391-196-6, Page No:428-431,2019
6. S. Nikarika, M. Sindhu and **P. Kalaivani**, “Selective detection of  $\text{Cu}^{2+}$  ion by using Schiff base derived from 2-hydroxy-4(N, N')diethylaminobenzaldehyde”, Proceedings of *Nirmala Annual Research Congress NARC’19* published by Internal Quality assurance cell, Nirmala College for Women, Coimbatore, ISBN-978-93-5391-196-6, Page No:432-435,2019
7. Dr.Poornima paramasivan and **Dr.Kalaivani Palaniappan**, “A pedagogy model for improving the quality of honours project in biomedical sciences”, NAAC sponsored National Seminar on Quality Sustenance and Enhancement: Prospects for attaining Global standard, ISBN: 978-93-5391-892-7, Page No.38-45,2020
8. M. Sindhu and **P. Kalaivani**, “Effective teaching strategies in United Kingdom” NAAC sponsored National Seminar on Quality Sustenance and Enhancement: Prospects for attaining Global standard, ISBN: 978-93-5391-892-7, Page No:29-34, 2020

9. M.Sindhu **P.Kalaivani** and R.Prahakaran, "New Organo Ruthenium Metallates Containing Ferrocenilidene Thiosemicarbazones and their Nucleic Acid/Albumin Binding And invitro Cytotoxicity" TNSCST Sponsored National Level Seminar on "Anti-Cancer Drugs From Nano Composite Materials (NSADNC–2021)" ISBN 978-81-926279-8-4, Page No. : 10,9 th April, 2021
10. M. Saranya, P. Priyanka, M.Steesha, M.Sindhu and **P.Kalaivani**, "New Ni(II) Complexes Containing 2-Chloro Quinoline 3-Carboxaldehyde 4(N) - Substituted thiosemicarbazones : Synthesis, Spectral Characterization and Protein binding Studies" TNSCST Sponsored National Level Seminar on "Anti-Cancer Drugs From Nano Composite Materials (NSADNC–2021)" ISBN 978-81-926279-8-4, Page No. : 29, 9 th April, 2021
11. **P.Kalaivani** and R.Prahakaran, "DNA/Protein binding and mitochondrial mediated apoptosis in human lung cancer cells (A549) via ROS hypergeneration and depletion of cellular antioxidant pool of new Nickel(II) metallates", TNSCST Sponsored National Level Seminar on "Anti-Cancer Drugs From Nano Composite Materials (NSADNC–2021)" ISBN 978-81-926279-8-4, Page No. : 10-11, 9 th April, 2021
12. S.K Meghasurendran, G. B Gopechandana M.Sindhu and **P.Kalaivani**, Synthesis, Spectral Characterization, Cyclic Voltammetric and BSA Binding and Studies of New Ni(II) thiosemicarbazone Complexes Containing 2-Chloroquinoline-3-Carboxaldehyde and 2, 2'-Bipyridine, TNSCST Sponsored National Level Seminar on "Anti-Cancer Drugs From Nano Composite Materials (NSADNC–2021)" ISBN 978-81-926279-8-4, Page No. : 28, 9 th April, 2021

#### 14) Presentations in Conference

##### **International**

1. Preparation and structural characterization of unusual ruthenium(II) 2-hydroxy-1-naphthaldehyde-4(N)-ethylthiosemicarbazone complexes: Presented in **International conference** on coordination & organometallic chemistry (ICCOC-2009) , Department Of chemistry, Bharathiar University, Coimbatore held on 19<sup>th</sup> and 20<sup>th</sup> March (2009).
2. Synthesis, Spectroscopy, X- ray crystallography and electrochemistry of Ni(II) and Pd(II) thiosemicarbazone complexes: Presented in **International Conference** on Coordination & Organometallic Chemistry (ICCOC-2009), , Department Of chemistry, Bharathiar University, Coimbatore held on 19<sup>th</sup> and 20<sup>th</sup> March (2009).
3. Versatile coordination of salicylaldehyde-4(N)-ethylthiosemicarbazone: Synthesis, spectroscopy, X- ray crystallography and electrochemistry of Ni(II) and Pd(II) complexes: Presented in **International conference** on coordination & organometallic chemistry (ICCOC-2009) held on 19 and 20 March (2009), , Department Of chemistry, Bharathiar University, Coimbatore held on 19<sup>th</sup> and 20<sup>th</sup> March (2009).
4. New Hetero Binuclear Ru(II)/Fe(II) Cyclopentadienyl complexes of Formylferrocene-4(N)-substituted Thiosemicarbazones: Synthesis, Spectral characterization, DNA/BSA Binding and Anticancer Studies, Presented in **International Conference** on "Advances in New Materials" Department of Inorganic Chemistry, University of Madras, Chennai.

5. Synthesis, spectral characterization and their biological evaluation of new organoruthenium (II) complexes, Presented in **International conference** on Innovation in chemical sciences-2019, Kongunadu arts and science college on 19.2.2019
6. Development of new mixed hybrid organoruthenium derived biocomposites of Bovine serum albumin, International virtual Conference on Renewable Energy Science and Technology (ICREST-2020) Department of Energy Science, Alagappa university on 28,29.09.2020
7. New ruthenium (III)-arene complexes bearing acetylferrocene 4(N)-substituted thiosemicarbazones: Synthesis, Characterization, DNA/BSA binding and Antiproliferative activity” International Virtual Conference on Advanced Materials for Emerging Technologies (ICAMET-21), Research Faculty Enrichment Council (RFEC), Sri Ramakrishna Mission Vidyalaya College of Arts and Science, Coimbatore -641 020 (**Best Oral Presentation**) 27.04.2021.
8. Synthesis, Spectral Characterization and Cationic Sensing Studies Of Schiff Bases Derived From 2-Hydroxy-4(N,N')- Diethylaminobenzaldehyde,” International Conference “Recent Advances in Interdisciplinary Areas of Chemical Sciences” RAICAS-2021, Post Graduate Department of Chemistry, V.V. Vanniaperumal College for Women, Virudhunagar- 626 001 on 24.07.2021

### **National**

1. One pot synthesis of three unusual ruthenium(II) carbonyl complexes containing 2-hydroxy-1-naphthaldehyde-4(N)-methylthiosemicarbazone: Towards a new avenue in thiosemicarbazone chemistry, presented in National conference on recent trends in coordination and organometallic chemistry (NCCOC-2008) , Sri Ramakrishna Mission Vidyalaya college of Arts and Science, Coimbatore held on 17<sup>th</sup> and 18<sup>th</sup> July (2008).
2. Multiple coordination behaviour of salicylaldehyde – 4(N)- methyl thiosemicarbazone in ruthenium(II) carbonyl complexes: One tub synthesis and characterization Presented in Recent advances in Inorganic and nano Chemistry, Madurai Kamaraj University, Madurai held on March 29<sup>th</sup> and 30<sup>th</sup> (2010)
3. Preparation, spectral and X-ray crystallographic characterisation of Ni(II) thiosemicarbazone complexes and their electrochemical reduction to Ni(I): Presented in Recent advances in Inorganic and nano Chemistry, Madurai Kamaraj University, Madurai held on March 29<sup>th</sup> and 30<sup>th</sup> (2010)
4. Synthesis, structural characterization, DNA/protein binding and anti microbial studies of new binuclear Pd(II) complexes containing diphenyl phosphino methane, presented in national level 10<sup>th</sup> Mid Year CRSI Symposium in Chemistry, CRSI (Chemical Research Society of India), National Institute of Technology, Tiruchirappalli held on 23<sup>th</sup> -25<sup>th</sup> July (2015)

5. DNA/Protein binding, anti oxidant and anti-bacterial studies of new binuclear nickel(II) complexes containing ONS Schiff base, presented in national level 10<sup>th</sup> Mid Year CRSI Symposium in Chemistry, CRSI (Chemical Research Society of India), National Institute of Technology, Tiruchirappalli held on 23<sup>th</sup> -25<sup>th</sup> July (2015)
6. Synthesis, structural and DNA/protein binding studies of new organo-ruthenium metallates, presented in national level 10<sup>th</sup> Mid Year CRSI Symposium in Chemistry, CRSI (Chemical Research Society of India), National Institute of Technology, Tiruchirappalli held on 23<sup>th</sup> -25<sup>th</sup> July (2015)
7. Synthesis, spectral, X-Ray Crystallographic, DNA And Protein Binding Studies on new organoruthenium(II) complexes containing 10-iminobenzothiazole base ligands, presented in State Level seminar on “ Emerging Trends in Frontiers of Metal Organic Chemistry”, Nirmala college for Women, Coimbatore held on February 18<sup>th</sup> (2016)
8. Synthesis, structural characterisation, DNA/protein binding and anti-oxidant studies of new binuclear nickel(II) complexes containing 1,3-bis(diphenylphosphino)propane and ONS donor Schiff bases, , presented in State Level seminar on “ Emerging Trends in Frontiers of Metal Organic Chemistry”, Nirmala college for Women, Coimbatore held on February 18<sup>th</sup> (2016)
9. Unpredicted formation of 2-thiophen-2-yl-1-thiophen-2-ylmethyl-1H-benzimidazole copper(ii) complex: synthesis, spectral, structural characterization and biological studies, presented in State Level seminar on “ Emerging Trends in Frontiers of Metal Organic Chemistry”, Nirmala college for Women, Coimbatore held on February 18<sup>th</sup> (2016)
10. DNA, Protein binding, anti-microbial and antioxidant studies of new binuclear palladium(II) complexes containing ONS Schiff base and diphenylphosphinoethane spacer, presented in State Level seminar on “ Emerging Trends in Frontiers of Metal Organic Chemistry”, Nirmala college for Women, Coimbatore held on February 18<sup>th</sup> (2016)
11. New binuclear Ni(II) metallates and their synthesis, structural,characterization,DNA/ Protein binding, DNA cleavage, anti oxidant and anti bacterial studies, presented in National Conference on Emerging Biomaterials(NCEB-2016), Department of Nanoscience & Technology, Bharathiar University,Coimbatore
12. New organoruthenium(II)cyclopentadienyl complexes containing bisacetylferrocene-4(N)-substitutedthiosemicarbazones: synthesis,spectral characterization and DNA/BSA binding studies”, presented in National Conference on “Recent Trends in Chemistry, Department of Chemistry, SRMV College of Arts and Science, Coimbatore on 02.02.18
13. New Cu(II) complexes of 4-methoxysalicylaldehyde-4(N)substituted thiosemicarbazones: Synthesis, spectral characterization and DNA/protein binding studies, presented in National Seminar on “Innovations in Chemical sciences and Green Technology, Department of Chemistry, PSGR Krishnammal College for Women, Coimbatore on 6.09.2018 & 7.09.2018

14. Synthesis, Spectral Characterization and Calf Thymus-DNA Binding Studies of New Ni (II) and Cu (II) Semicarbazone Complexes, presented in Futuristic Intricate Strataems in computational genomics CGEN-2019, Department of Bioinformatics, Nirmala College for women on, 24.01.2019.ISBN-987-93-5346-990-0
15. SYNTHESIS, SPECTRAL CHARACTERIZATION AND DNA/BSA BINDING STUDIES OF NEW COPPER(II) COMPLEXES CONTAINING NO AND NS DONOR LIGANDS, presented in 2<sup>nd</sup> National Conference on Recent trends and Advances in Green synthesis, Dept. Of Chemistry, SNS College of technology on 25.1.2018
16. SYNTHESIS, SPECTRAL CHARACTERIZATION AND CT-DNA BINDING STUDIES OF NEW Ni (II) AND Co(II) SEMICARBAZONE COMPLEXES, presented in 2<sup>nd</sup> National Conference on Recent trends and Advances in Green synthesis, Dept. Of Chemistry, SNS College of technology on 25.1.2018
17. Cyclopentadienyl complexes of acetylferrocene-4(*N*)-substituted thiosemicarbazones: Synthesis, spectral characterization and nucleic acid/serum albumin binding interaction, presented in National conference in Recent trends in chemistry-2019, Sri Ramakrishna mission vidyalaya College of arts and science on 1, 2.02.2019
18. Synthesis, spectral characterization, electrochemistry and binding studies of new Copper(II) 3-acetyl-2[H]-chromen-2-one substituted thiosemicarbazone complexes, presented in National conference in Recent trends in chemistry-2019, Sri Ramakrishna mission vidyalaya College of arts and science on 1, 2.02.2019
19. Synthesis of Ni(II) and Cu(II) 3-Acetylcoumarin thiosemicarbazone complexes and CT-DNA binding studies, presented in National conference in Recent trends in chemistry-2019, Sri Ramakrishna mission vidyalaya College of arts and science on 1, 2.02.2019
20. Cyclopentadienyl ruthenium complexes of ferrocenyl ligands: synthesis, Spectral characterization and their biological evaluation, presented in Frontier areas in chemical technologies-2019, Alagappa university on 25, 26-7-2019
21. Synthesis, spectral characterization and binding studies of new organoruthenium(III) complexes, presented in New perspective in chemical sciences, PSGR Krishnammal College for Women on 16, 17-9.2019
22. Selective detection of Cu<sup>2+</sup> ion by using Schiff base derived from 2-hydroxy-4-(*N,N'*) diethylaminobenzaldehyde, presented in New perspective in chemical sciences, PSGR Krishnammal College for Women on 16, 17-9.2019
23. New Ni(II) and Cu(II) metallates containing 3-Acetylcoumarin Schiff bases: Synthesis, spectral characterization, electrochemistry and DNA Binding studies' Presented in One day National Conference on 'Advances in Green Chemistry and its Applications (AGCE-2k20) Department of Chemistry, Sri Ramakrishna collge of Arts and Science on 30.1.2020
24. M.Sindhu P.Kalaivani and R.Prahakaran, "New Organo Ruthenium Metallates Containing Ferrocenilidine Thiosemicarbazones and their Nucleic Acid/Albumin Binding And invitro Cytotoxicity" TNSCST Sponsored National Level Seminar on "Anti-Cancer

Drugs From Nano Composite Materials (NSADNC–2021)" ISBN 978-81-926279-8-4, Page No. : 10,9 th April, 2021

25. M. Saranya, P. Priyanka, M.Steesha, M.Sindhu and P.Kalaivani, "New Ni(II) Complexes Containing 2-Chloro Quinoline 3-Carboxaldehyde 4(N) - Substituted thiosemicarbazones : Synthesis, Spectral Characterization and Protein binding Studies" TNSCST Sponsored National Level Seminar on "Anti-Cancer Drugs From Nano Composite Materials (NSADNC–2021)" ISBN 978-81-926279-8-4, Page No. : 29, 9 th April, 2021 **(II Prize in Poster Presentation)**
26. P.Kalaivani and R.Prahakaran, "DNA/Protein binding and mitochondrial mediated apoptosis in human lung cancer cells (A549) via ROS hypergeneration and depletion of cellular antioxidant pool of new Nickel(II) metallates", TNSCST Sponsored National Level Seminar on "Anti-Cancer Drugs From Nano Composite Materials (NSADNC–2021)" ISBN 978-81-926279-8-4, Page No. : 10-11, 9 th April, 2021(3<sup>rd</sup> prize in Oral Presentation)
27. S.K Meghasurendran, G. B Gopeechandana M.Sindhu and P.Kalaivani, Synthesis, Spectral Characterization, Cyclic Voltammetric and BSA Binding and Studies of New Ni(II) thiosemicarbazone Complexes Containing 2-Chloroquinoline-3-Carboxaldehyde and 2, 2'-Bipyridine, TNSCST Sponsored National Level Seminar on "Anti-Cancer Drugs From Nano Composite Materials (NSADNC–2021)" ISBN 978-81-926279-8-4, Page No. : 28, 9 th April, 2021

#### 15) Participation in Conference

1. International Virtual Conference on Advanced Materials for Emerging Technologies(ICAMET-21), Research Faculty Enrichment Council (RFEC), Sri Ramakrishna Mission Vidyalaya College of Arts and Science, Coimbatore -641 020

#### 16) Participation in Seminar

1. Participated in National Seminar on Water Vision- 2004, P.S.G.R.Krishnammal College for Women, Coimbatore during October 6<sup>th</sup> -8<sup>th</sup> (2004)
2. Participated in National Seminar on Recent Advances in Chemistry, P.S.G.R.Krishnammal College for Women, Coimbatore held on December 16<sup>th</sup> and 17<sup>th</sup> (2005)
3. Participated in "National Seminar on Current Developments in Chemistry" Bharathiar University, Coimbatore held on January 18<sup>th</sup> -19<sup>th</sup> (2007)
4. International seminar on "Novel Approaches in chemistry and its Environmental Impacts (NACE'15)" KPR Institute of Engineering and Technology, Coimbatore on 26.09.2015
5. National Seminar on Crystallography – an Outreach Programme by IUCr- 2017, Department of science and Humanities Karunya University, Coimbatore on 17.02.2017

#### 17) Participation in Workshop/training

### Participation in Workshop

1. Participated in “National Workshop on Advances in Coordination Chemistry”, National Institute of Technology, Karnataka, during January 8<sup>th</sup> -10<sup>th</sup> (2009)
2. Two days Workshop on “ Techniques in Animal Biotechnology”, Department of Zoology, Nirmala college for Women, Coimbatore-18 on Sep 29<sup>th</sup> and 30<sup>th</sup> 2014
3. Workshop on “Hands on Training in Organic reaction monitoring: TLC, HPLC and IR, Department of Chemistry, Karunya University, Coimbatore on 01-03.2016
4. **Science Academies’ Lecture Workshop** “Advances in materials electrochemistry” PG and Research Department of Chemistry, Kongunadu Arts and Science College, Coimbatore on 22.07.2017
5. Workshop on “Outcome based education”, IQAC, Nirmala College for Women, Coimbatore on 22.06.2018 & 23.06.2018
6. Workshop on “Outcome based Eductaion (OBE)”, Nirmala College for Women, Coimbatore on 13.10.18

### Participation in training

1. Participated in “Hands on training on Instrumentation and Basic Techniques of biotechnology”, Nallamuthu Gounder Mahalingam College, Pollachi held on December 22 (2003).
2. Participated in “Instrumental methods of chemical Analysis”, The South India Textile Research association (SITRA), Coimbatore during February 14-23 (2005).
3. Participated in a three days training programme on “Persinality development” , P.S.G.R. Krishnammal College for Women, Coimbatore during 2005-2006
4. Training programme on Medical Textiles, The South India Textile Research association (SITRA), Coimbatore-641 014 (2015)
5. Analytical Instrumentation techniques, Nirmala College for women, 13 Coimbatore-18 (2015)
6. Instrumentation Training Programme, T.Stanes Phytopharma Lab Pvt Ltd Trichy Road, Coimbatore.( 2016)

### 18) Participation in Orientation Programme/ Induction Programme/ Short term Courses

1. Participated in Short term Course on “Photophysics of Organic Systems: Theory and Applications”, Bharathiar University, Coimbatore, held on February 1<sup>th</sup> -4<sup>th</sup> (2006)
2. Participated in the “UGC-sponsored 116<sup>th</sup> Orientation Programme” conducted by the Human Resource Development Centre, University, Coimbatore held from 10.05.2017 to 06.06.2017.
3. Participated in the “UGC-sponsored Refresher Course in Chemistry” conducted by the Human Resource Development Centre, Bharathiar University, Coimbatore held from 04.07.2018 to 24.07.2018.

4. Participated in “Online Refresher Course in Chemistry for Higher Education” organized by MHRD, SWAYAM, UGC, Government of India from 01.09.2019 to 31.12.2019.
5. Participated in SPARC Sponsored International Online Short-Term Course on “Recent Applications of Polymers” organized by Department of Microbiology, Alagappa University, Karaikudi from 03.05.2021 to 05.03.2021.

#### 19) Participation in Faculty Development Programme

1. Faculty Development programme on Environment audit of Infrastructure, Extension Activity and Institutional Social Responsibility, IQAC, Nirmala college for Women, Coimbatore on 30.10.2015
2. FDP programme on statistical Analysis using SPSS, Department of Botany, Nirmala college for Women, Coimbatore on 14.12.2018

#### 20) Conference/ Seminar/ Workshop Organized

- ✚ International Webinar on “**Chemistry of COVID Drugs**” - 28.05.2020
- ✚ Webinar on “**Drowning of planet in plastic pollution**” - 07.06.2021 funded under DBT Star College Scheme.
- ✚ Faculty Development Programme on “**Stress Management**” - 14.07.2021 and 15.07.2021 funded under DBT Star College Scheme.
- ✚ International Conference on “**Smart and Sustainable Developments in Material and Medicinal Chemistry**” - 19.07.2021 and 20.07.2021 funded under DBT Star College Scheme.
- ✚ Orientation programme on “**Bridge the Gap; Break the Barrier**” - 12.08.2021 funded under DBT Star College Scheme.
- ✚ International Conference on “**Accelerating Research on DNA: Current Trends & Future Directions**” - 25.08.2021 and 26.08.2021 funded under DBT Star College Scheme.
- ✚ Webinar on “**MOTOR VEHICLE LAWS FOR ROAD SAFETY**” - 15.09.2021.
- ✚ Webinar on “**ANTICANCER DRUGS**” - 20.10.2021 funded under DBT Star College Scheme.
- ✚ International Webinar on “**Nanomaterials; Small Science and Big Hopes**” - 23.10.2021 funded under DBT Star College Scheme.

#### 21) Invited Speaker/ Session Chair – Conference/ Seminar/ Workshop

- ✚ Resource person for the webinar on “**Current Trends in Chemistry**” and delivered the lecture on “**Food Adulteration**” held on 30<sup>th</sup> July 2020 organized by the Department of Chemistry, SNS College of Technology, Coimbatore, Tamil Nadu

#### 22) Member in Board of Study

NGM College, Pollachi

### 23) Membership in Professional Bodies

<b>Name of Professional Body</b>	<b>Nature of Membership</b>	<b>Duration</b>
<b>Royal society of Chemistry</b>	Honorary member	2013
<b>American Chemical Society</b>	Community Member	2021 onwards

### 24) Awards and Achievements

- ✚ INSA Visiting Scientist Fellowship 2021-2022 awarded by Indian National Science Academy, New Delhi (31.05.2021).
- ✚ Young Scientist awarded by DST-SERB FTR New Delhi, India (Aug. 2015 )
- ✚ Research Associate awarded by CSIR, New Delhi, India (Nov. 2011 –May 2014)
- ✚ Senior Research Fellow awarded by CSIR, New Delhi, India (March 2010- Nov.2011)
- ✚ Research Fellowship in Science for Meritorious Students (RFSMS) UGC, New Delhi, India (March 2008 – March 2010)