CURRICULUM VITAE

Dr. S. Arunachalam., M. Sc., Ph.D., F.I.C.S.,
2/288 Sai Priya Nivas,
Vadvalli
Coimbatore – 641041
INDIA
Email: drarunachalam.s@gmail.com

EDUCATIONAL QUALIFICATIONS

Ph.D., Chemistry
Degree Awarded on 12th March 2012 (Highly Commended)
Sri Ramakrishna Mission Vidyalaya College of Arts and Science,
Coimbatore-641 020 (Affiliated by Bharathiar University, Coimbatore-641 046)

M.Sc., Chemistry
Percentage**: 66.6 % (Completed Year: 2007)**
Kongunadu Arts and Science College,
Coimbatore-641 029 (Affiliated by Bharathiar University, Coimbatore-641 046)

B.Sc., Chemistry
Percentage: 59**% (Completed year: 2004)**
Sri Ramakrishna Mission Vidyalaya College of Arts and Science,
Coimbatore-641 020 (Affiliated by Bharathiar University, Coimbatore-641 046)

PROJECT PROFILE

PG : Synthesis, Spectral Characterization And Electrochemistry Of New Symmetrical Tetradentate Schiff Base Complexes Of Co(II), Ni(II) And Cu(II).

Ph.D: Ruthenium(II)/(III) Schiff Base Complexes: Synthesis, Spectroscopic investigations and Application (Catalytic and Biological) Studies

RESEARCH GUIDANCE

Bharathiar University : Ph.D., : 7

PAPERS PUBLISHED IN INTERNATIONAL JOURNAL

1. Synthesis, spectral characterization, catalytic and antibacterial studies of new Ru(III) Schiff base complexes containing chloride/bromide and triphenylphosphine/arsine as co-ligands
   S. Arunachalam, N. Padma Priya, C. Jayabalakrishnan and V. Chinnusamy, *Spectrochim. Acta Part A.*, **74** (2009) 591-596.

2. Ruthenium(III) tetradentate Schiff base complexes : Spectral catalytic and its biocidal efficiency
   S. Arunachalam, N. Padma Priya, C. Saravanakumar, C. Jayabalakrishnan and V. Chinnusamy, *J. Coord. Chem.*, **63** (2010) 1795-1806.

3. Biocidal and catalytic efficiency of ruthenium(III) complexes with tridentate Schiff base ligands
   S. Arunachalam, N. Padma Priya, K. Boopathi, C. Jayabalakrishnan and V. Chinnusamy, *Appl. Organomet. Chem.*, **24** (2010) 491-498.

4. Synthesis and characterization of organosoluble ruthenium(II) complexes bearing Schiff base ligands: Efficient reusable catalyst for the hydrogenation reactions

S. Arunachalam, N. Padma Priya, C. Jayabalakrishnan, and V. Chinnusamy, *Internat. J. Appl. Biolog. Pharm. Tech.,* **2** (2011) 110-122.

5. Ruthenium(II) Schiff base complexes: Synthesis, Physico-chemical, spectrometric, microbial and DNA binding and cleaving studies
S. Arunachalam, N. Padma Priya, C. Jayabalakrishnan and V. Chinnusamy, *Internat. J. Appl. Biolog. Pharm. Tech.,* **2** (2011) 352-365.

6. **Mononuclear Ru(III) Schiff base Complexes: Synthesis, spectral, redox, catalytic and biological activity studies**
N. Padma Priya, **S. Arunachalam**, A. Manimaran, D. Muthupriya and C. Jayabalakrishnan.
Spectrochimica Acta Part A: Molecular and Biomolecular spectroscopy Vol. 72 (2009) 670.

7. **Catalytic and Antimicrobial studies of new Binuclear Ruthenium(III) complexes containing bis-β-diketone**
N. Padma Priya, **S. Arunachalam**, N. Sathya, V. Chinnusamy and C. Jayabalakrishnan.
Transition Metal Chemistry Vol. 34 (2009) 437.

8. **Tetradendate Schiff base ruthenium(III) complexes containing triphenylphosphine/arsine as co-ligands : Physico-chemical, spectrometric, catalytic and biocidal activity studies** N. Padma Priya, **S. Arunachalam**, N. Sathya and C. Jayabalakrishnan.
Journal of Coordination Chemistry, **63** (2010) 1440.

9. **Ruthenium (II) complexes: physico-chemical, spectroscopic, Redox, microbial and DNA binding studies**
N. Padma Priya, **S. Arunachalam,** C. Jayabalakrishnan and V. Chinnusamy**.**
Internat. J. Appl. Biolog. Pharm. Tech., **2** (2011) 556.

10. **Synthesis, Spectral Characterisation, Catalytic and Biological studies of New Ru^{II} carbonyl Schiff base complexes containing N_2O donar ligands**
S. Manivannan, A. Manimaran, **S. Arunachalam**, C. Jayabalakrishnan and V. Chinnusamy.
Indian Journal of Chemical Society Vol. 85 (2008) 988.

11. **Schiff Bases: Facile Synthesis, Spectral Characterization And Biocidal Studies**
S. Kalaivani, N. Padma Priya and **S. Arunachalam**
Internat. J. Appl. Biolog. Pharm. Tech., **3** (2012) 219.

12. **Facile synthesis, spectral investigations and biocidal studies of ruthenium(II) schiff base complex**
S. Kalaivani, N. Padma Priya and **S. Arunachalam**
International Journal of Chemical and Analytical Science 3(2012) 1454.

13. **A New Route to Confirm Dopant Incorporation of Dopants in ThinFilms**
S. Balamurali, R. Chandramohan, M. Karunakaran, **S. Arunachalam**
International Journal of Chemical and Analytical Science 3 (2012) 1625.

14. **Potential of agricultural waste for Ni (II) ion removal from aqueous solution: Thermodynamic and kinetic studies**
G.Gohulavani, N.Muthulakshmi Andal, **S. Arunachalam**
TERI Information Digest on Energy & Environment 12 (2013) 17.

15. **Facile synthesis of Ru^{II} Schiff base complexes : Spectral characterization and antimicrobial applications**
S. Arunachalam, N. Padma Priya and H. Shahul Meeran
Indian Journal of Chemical Society 91 (2014) 56.

PAPERS PRESENTED IN CONFERENCES

1. **S. Arunachalam,** N. Padma Priya, P. Pradeesh Kumar, C. Jayabalakrishnan and V. Chinnusamy. **"Synthesis, Spectral Characterisation, Redox and Catalytic Behavior of new Novel Ruthenium(III) Schiff base complexes containing O-N-S donar ligands",** *National Conference on Current Trends in Chemistry (CTRIC-2008),* Department of Applied Chemistry, Cochin University of Science and Technology, Cochin, Kerala, January 18 – 19th (2008).

2. N. Padma Priya, **S. Arunachalam,** D. Muthu Priya, V. Chinnusamy and C. Jayabalakrishnan. **"Synthesis, Characterisation, Cyclic Voltametry and Antimicrobial Studies of new Ruthenium(III) complexes containing Tetradentate Schiff base"**, *National Conference on Current Trends in Chemistry (CTRIC-2008),* Department of Applied Chemistry, Cochin University of Science and Technology, Cochin, Kerala, January 18 – 19th (2008).

3. **S. Arunachalam** and V. Chinnusamy. **"Synthesis, Spectral Characterisation, Redox and Catalytic Behavior of new Novel Ruthenium(III) containing O-N-S donar ligands",** *National level Seminar on Emerging Trends in Analytical Techniques,* Department of Chemistry, Islamiah College, Vaniyambadi, Tamil Nadu, August 11-12th (2008).

4. **S. Arunachalam** and V, Chinnusamy. **"Synthesis, Spectral Characterisation, Redox and Catalytic Behavior of new Novel Ruthenium(III) complexes containing O-N-S donar ligands",** *National Conference on Recent Advances in metalloorganic Chemistry (RAMC-2008),* Department of Chemistry, Periyar University, Salem, Tamil Nadu, 16-17th October (2008).

5. **S. Arunachalam,** P. Pradeesh Kumar and V. Chinnusamy**. "Synthesis, Spectral, Catalytic and Antimicrobial Studies of a new family of mononuclear Ruthenium(II) Schiff base complexes containing Triphenylphosphine/ Pyridine/ Morpholine",** *International Conference on Recent Advances in Chemistry and 45th Annual Convention of Chemist,* Post Graduate Department of Studies in Chemistry, Karnatak University, Dharwad, Karnataka, India, 23-27th November (2008).

6. **S. Arunachalam,** N. Padma Priya, C. Jayabalakrishnan and V. Chinnusamy. **"Synthesis, Spectral Characterisation, Redox and Catalytic and Biocidal Behavior of new Ruthenium(III) Schiff base complexes",** *National Conference on Trends in Coordination and Organometallic Chemistry (NCCOC-2008),* Post Graduate and Research Department of Chemistry, Sri Ramakrishna Mission Vidyalaya College of Arts & Science, Coimbatore, Tamil Nadu, 17-18th July (2008).

7. S. Manivannan, A. Manimaran, **S. Arunachalam,** C. Jayabalakrishnan and V. Chinnusamy. **"Synthesis, Spectral, Redox and Catalytic and antimicrobial activities of new Ruthenium(III) Schiff base complexes containing PPh_3/$AsPh_3$ as co-ligands",** *National Conference on Trends in Coordination and Organometallic Chemistry (NCCOC-2008),* Poast Graduate and Research Department of Chemistry, Sri Ramakrishna Mission Vidyalaya College of Arts & Science, Coimbatore, Tamil Nadu, 17-18th July (2008).

8. **S. Arunachalam,** N. Padma Priya, C. Jayabalakrishnan and V. Chinnusamy. **"Spectral and applications (Catalytic and Biocidal) of Six coordinated Ruthenium(III) complexes incorporated with Tridentate Schiff base Ligands",** *International Conference on Coordination and Organometallic Chemistry(ICCOC-2009),* Department of Chemistry**,** Bharathiar University, Coimbatore, Tamil Nadu, 19-20th March (2009).

9. N. Padma Priya, **S. Arunachalam,** N. Sathya, V. Chinnusamy and C. Jayabalakrishnan. **"Catalytic and Antimicrobial studies of new binuclear ruthenium(III) complexes containing bis-β-diketone",** *International Conference on Coordination and Organometallic Chemistry(ICCOC-2009),* Department of Chemistry**,** Bharathiar University, Coimbatore, Tamil Nadu, 19-20th March (2009).

10. **S. Arunachalam,** N. Padma Priya, C. Jayabalakrishnan and V. Chinnusamy. **"Oxidation of Alcohols by ruthenium(III) complexes with non polluting co-oxidants"**, *National Seminar on Recent Developments in Green Chemistry (NSGC-2009),* Poast Graduate and Research Department of Chemistry, Sri Ramakrishna Mission Vidyalaya College of Arts & Science, Coimbatore, Tamil Nadu, 22-23rd June (2009).

11. **S. Arunachalam,** V. Chinnusamy, **"Ruthenium(III) Schiff base complexes: Physico-chemical, Spectral, Electrochemistry, Catalytic and Biocidal studies"** *National Seminar on Recent Advances in Electroanalytical Techniques,* Department of Chemistry, Gandhigram Rural Institute – Deemed University, Gandhigram, Dindigul, Tamil Nadu – 624302, 25-26th February (2010).

12. S.M. Sathish Kumar, P. Hemalatha, S. Sheeladevi, C. Murugan, V. Sreejith, M.P. Praveen, **S**. **Arunachalam** and N. Padma Priya. "Facile synthesis of Ru(II) Schiff base complex : Spectral characterization and Biocidal studies" "National conference on developing scenario in applied sciences and communicative English" (ISBN: 978-93-80716-46-6).

13. S.M. Sathish Kumar, N. Padma Priya and **S**. **Arunachalam** "Physico-chemical, spectrometric, catalytic, biocidal and DNA binding studies of Ruthenium (II) carbonyl complexes", International Conference on Biologically Active Molecules - 2012 (8th - 10th March 2012) " Biologically Active Molecules " (ISBN: 978-93-82062-03-5)

14. **S. Arunachalam**, N. Padma Priya and H. Shahul Meeran. "**Green technical approach for catalytic oxidation of alcohols using ruthenium(III) complexes**" *National conference on Recent Developments in Green Chemistry (NCRDGC - 2013),* Department of Chemistry, Kongunadu Arts & Science College, Coimbatore, Tamil Nadu, 18-19th December (2014).

15. **S. Arunachalam**, N. Padma Priya and R. Thayala Sankar, **"Ruthenium (II) Schiff Base Complex : Facile Synthesis, Spectral Investigations and Biocidal Studies of ruthenium(III) complexes"** *National conference on Recent Developments in Green Chemistry (NCRDGC - 2013),* Department of Chemistry, Kongunadu Arts & Science College, Coimbatore, Tamil Nadu, 18-19th December (2014).

16. N. Padma Priya, Shahul Meeran and **S. Arunachalam "Green technical approach for catalytic oxidation of alcohols using ruthenium(III) complexes"** *National conference on Recent* Advances in Science & Humanities (RASH'14), Department of Science and Humanities, United Institute of Technology, Coimbatore, Tamil Nadu, 22nd March (2014) . **(Received Best Paper Presentation AWARD)**

SEMINARS / WORKSHOPS ATTENDED

1. **"Regional Symposium on Current Trends in Chemistry"**, Department of Chemistry, Kongunadu College of Arts and Science, Coimbatore, Tamil Nadu, 10th September 2004.

2. **"International Workshop on Spectroscopy and its Applications",** Department of Chemistry, Kongunadu College of Arts and Science, Coimbatore, Tamil Nadu, 26-27th February 2005.

3. **"National Seminar on Recent Advances in Chemistry",** Department of Chemistry, P.S.G.R. Krishnammal college of Arts and Science for Women, Coimbatore, Tamil Nadu, 16-17th January 2005.

4. **"National workshop on Chemistry in the Techno-World",** Department of Chemistry, Vivekanandha College of Arts and Sciences, Trichengodu, Tamil Nadu, 11th February (2005).

5. **"State level Seminar on Frontiers in Nano Sciences",** Post Graduate Department of Chemistry, Kongunadu College of Arts and Science, Coimbatore, Tamil Nadu, 8th January (2008).

6. **"Workshop on Magnetic Resonance in Chemistry and Biology in memory of Prof. Dr. Arthur Schweiger (1947-2007)",** Department of Chemistry, National Institute of Technology, Trichirapally, Tamil Nadu, 13-14th March (2008).

7. **"UGC – Sponsored Interaction Programme for Ph.D Scholars / Post Doctoral Fellows (Sciences)",** UGC – Academic Staff colleges, Bharathiar University, Coimbatore, Tamil Nadu, 05-25th March (2009).

8. **National level Short Term Course on "NMR Spectroscopy",** Sophisticated Analytical Instrumentation Facility (SAIF), Indian Institute of Technology (IIT), Chennai, 28,29.05.2009

9. **"Hands on Training on Analytical Equipments (HPLC, GC, FT-IR & UV – Visible spectrophotometer)",** Karpagam University, Coimbatore, Tamil Nadu, 21-23rd Decemer (2010).

10. **"Value @ Amrita's Virtual Labs in Physics and Chemistry",** Amrita Vishwa Vidyapeetham University, Coimbatore, 17 February (2011).

11. Acted as Resource Person in **"Young Student Scientist Programme"** Kongunadu Arts and Science College, Coimbatore, 4 – 13 February 2012.

12. **"One day workshop on Spectroscopy",** Bharathiar University, Coimbatore, 07 March 2012.

13. **"Recent Developments in Spectroscopic Techniques and its Applications"** Kongunadu Arts and Science College, Coimbatore, 16 March 2012.

14. **"People Empowering People"** Faculty Development Program by ICT Acedamy of Tamilnadu, CMS College of Engineering & Technology, 20th to 24th January 2014.

15. **"Leadership Skills - Beginners"** Faculty Development Program by ICT Acedamy of Tamilnadu, Nehru Arts & Science College, 08th & 09th January 2015.

REVIEWER IN THE JOURNALS

Spectrochimica Acta Part A (Sciencedirect)
Journal of Coordination Chemistry (Taylor and Francis)
Applied Organometallic Chemistry (John-Wiley interscience)
Journal of Soudi Chemical Society (Sciencedirect)
Journal of Indian Chemical Society
Bulletin of Chemical Society of Japan

FELLOWSHIP

Life member in Indian Chemical Society (F/7341 LM)

ANALYTICAL TECHNIQUES KNOWN

- ✓ FT-IR Spectrometer
- ✓ UV-Vis Spectrophotometer
- ✓ Circular Dichorism
- ✓ Cyclic Voltametry
- ✓ Electron paramagnetic resonance
- ✓ NMR
- ✓ TG-DTA
- ✓ DSC

INTRUMENTS HANDLING

- ✓ Elemental Analyser
- ✓ FT-IR Spectrometer
- ✓ UV-Vis Spectrophotometer
- ✓ Circular Dichroism [CD]
- ✓ Cyclic Voltametry [CV]
- ✓ Electron paramagnetic resonance [EPR]
- ✓ Nuclear Magnetic Resonance
- ✓ Gas Chromotography-Mass Spectrometer

AREA OF INTEREST

⇒ ***Teaching***

(i) Inorganic Chemistry
(ii) Organic Chemistry
(iii) Environmental Chemistry
(iv) Analytical Chemistry
(v) Physical Chemistry
(vi) Applied Chemistry

⇒ ***Research***

(i) Organometallic Chemistry

(ii) Cytotoxicity studies
(iii) Synthesis of Biologically Active molecules
(iv) Pincer complexes
(v) Synthetic Organic Chemistry
(vi) Solid State and Chemistry of Crystalline Solids
(vii) Catalysis (Hydrogenation, Oxidation reactions)
(viii) Environmental Chemistry
(ix) Pulse Electron paramagnetic resonance [EPR]