Curriculum Vitae – Kalaiyar Swarnalatha

Higher education qualifications

1996 – 1999	Sri Meenakshi Govt. Arts College for Women, Madurai (India) BSc Chemistry
1999 - 2001	The American College, Madurai (India) MSc Chemistry

Research (PhD) education

April 2001- Dec 2005	Madurai Kamaraj University, School of Chemistry: PhD, *Synthesis, Characterization and Photoinduced Electron Transfer Reactions of Some Ruthenium-polypyridyl complexes* (under Prof. S. Rajagopal and Prof. R. Ramaraj)

Post-doctoral positions/other

2011	Summer research fellow with Prof. G. Ranga Rao, Department of Chemistry, IIT-Madras, Chennai.
2008 & 2009	Summer research fellow with Prof. A.K. Mishra, Dept of Chemistry, IIT-Madras, Chennai.

Current employment

Manonmaniam Sundaranar University Tirunelveli, India Dept of Chemistry

Jan 2006 - continuing Assistant Professor (Physical Chemistry)

Previous positions *(in reverse chronological order) –NIL-*
Other activities interrupting research

2010-2011	Deputy Coordinator for UGC-NET/SET Coaching Schemes
2011-2012	Coordinator for UGC-NET/SET Coaching Schemes
2011	Observer, DD & CE, MSUniversity, Tirunelveli
2012-Present	Faculty-in-charge for Remedial Coaching Classes
2012-Present	Observer, Central Secondary Board of Education, New Delhi

Supervision of PhD students and post-doctoral researchers (as main supervisor)

Ongoing: Currently main sup. for 5 Ph D stud [due 2015 – Sep, Dec]
UGC-Postdoctoral Fellow – 1, > 25 MSc and 5 MPhil research projects

Other information Honours & Awards *(selected)*

1999	Proficiency Prize winner in under graduate level
2002	Qualified CSIR UGC-NET June 2002 (Lectureship)
2003	Junior Research Fellowship (JRF) awarded by DST, New Delhi
2005	Selected as Senior Research Fellow (SRF)
2008	IASc-INSA-NASI Summer Research Fellowship
2009	IASc-INSA-NASI Summer Research Fellowship
2011	IASc-INSA-NASI Summer Research Fellowship
2012	Chaired Session in an International Conference held at KL, Malaysia.
2014	Best Session Presenter- International Conference at Abu Dhabi
2015	Best Poster Award for a paper presented in National Conference at MSU

Commissions of trust & service to the scientific community *(selected)*

2006-present **Member**, Board of Studies, M S University, Tirunelveli, India
2011 **Reviewer**, Journal of Environmental Biology
2011-present **Member**, World Academy of Science, Engineering & Technology (WASET)
2011-present **Member**, ISRAPS, BARC, Mumbai, India
2013-present **Member**, European Photochemistry Association (EPA)

2013-present **Member**, Asia-Pacific Chemical, Biological & Environ. Engg. Society (APCBEES)

Some key collaborators

Dr. V. Ganesh, Scientist, CSIR-Central Electrochemical Research Institute (CECRI), Karaikudi, Tamil Nadu, India

Dr. Ian A. Nicholls, Professor, Department of Health and Life Sciences, Linnaeus University, Kalmar, Sweden

*P*rojects completed/ongoing

1. University Seed Money Project (completed)

A sum of **Rs.75,000/-** has been sanctioned for the proposal entitled "Encapsulated Redox Centers. Regulating the redox switching of Quinones by Calixarenes". (2011)

2. DST (FAST TRACK) Project (Completed)

A sum of **Rs.13.68 lakhs** for a period of 3 years has been sanctioned for the proposal entitled "Excited state Dynamics of Ruthenium(II)-polypyridyl complexes in nanomicellar cavities. Tunning the Light Harvesting Unit". (2011-2014)

3. DST SERB Project (Ongoing)

A sum of **Rs.37.88 lakhs** for a period of 4 years has been sanctioned for the proposal entitled "Photoinduced Hydrogen Production using novel coumarin based Ruthenium(II) sensitizers". (2013-2017)

Peer-reviewed publications

*1.1 **K. Swarnalatha**, E. Rajkumar, S. Rajagopal, R. Ramaraj, Y-L. Lu, K-L Lu, P. Ramamurthy.
Photoinducedelectron transfer reactions of ruthenium(II) complexes containing 2,2'-bipyridine-4,4'-dicarboxylicacid with phenolate ions. steric and charge effects.
J. Photchemistry and Photobiology A: Chemistry (2005) *171*, 83-94**.**

*1.2 M. Ganesan, V. K. Sivasubramanian, T.Rajendran, **K. Swarnalatha,** S.Rajagopal, R.Ramaraj.
Electron transfer reactions of tris(polypyridine)ruthenium(III) complexes with organic sulfides: Importance of hydrophobic interaction.
Tetrahedron (2005)*61*, 4863-4871.

*1.3 **K. Swarnalatha**,E. Rajkumar,S.Rajagopal, R. Ramaraj, I. SadhiyaBanu, P. Ramamurthy.
Proton coupled electron transfer reaction of phenols with excited stateruthenium(II)-polypyridyl complexes.
Journal Physical Organic Chemistry (2011)*24*, 14-21.

1.4 **K. Swarnalatha,** L. A. Bebin.
Astudy on the interaction of alizarin red with calf thymus DNA: Fluorescence enhancement technique
Advances in Applied Research, (2010) *2*, 132-137.

1.5 **K. Swarnalatha,** G. Abraham.
Study on the interaction between a luminescent metal-ligand probe and bovine serum albumin by fluorescence spectroscopy.
Elixir Chemical Physics Letters, (2011) *40*, 5179-5182.

1.6 **K. Swarnalatha,** P.E. J. P.Rathy;
Characterization and photophysicalstudies of CdSnanoparticles synthesized by reverse micelle method.
World Academy of Science, Engineering and Technology, (2012)*62*, 1608.

1.7 **K. Swarnalatha**, S. Kamalesu, T. Shankar, T. A. Rajasekar.
Photodynamics of silica coated CdS nanoparticles.
Interl J Emerg Tech and Adv Engg., (2013) *3*, 660-664.

*1.8 E. Rajkumar, **K. Swarnalatha**, P. M. Mareeswaran, S. Rajagopal.
Photoinduced electron transfer reaction of ruthenium(II) complexes carrying amino acid moiety with quinones
J Fluores (2014) 24:875–884

*1.9 **Kalaiyar Swarnalatha**, Alagesan Muthuvinothini
Fluorescence sensing of melamine based on zirconia-coated CdS quantum dots
J Mater Sci (2015) 50:2318–2326

1.10 **S. Kamalesu, A. Anish Babu, K. Swarnalatha**
Synthesis, Characterization and Theoretical Calculations of Ruthenium(II) complexes containing 5-chlorothiophene-2carboxylic acid.
Proceedings of the National Conference on Chemistry for Sustainable Energy, Clean Environment and Health (CEEH) ISBN 978-93-81402-17-7

Book Chapters & Books

E. Rajkumar, P. Thanasekaran, **K. Swarnalatha**, T. Rajendran, J. Helen Retna Monica, S. Rajagopal; A biomimetic model of the electron transfer in photosystem II–Photoinduced electron transfer reactions of some ruthenium(II) – polypyridyl complexes with phenols. Photo/Electrochemistry and Photobiology in the Environment, Energy and Fuel, (2006)**,**169-206, ISBN: 81-308-0122-1, Research Signpost, 37/661 (2), Fort P.O., Trivandrum-695 023, Kerala, India.

Some academic performance indicators

***h*-index** = 4 **Total peer reviewed publications** > 10 Book – 1 (international level)
Total citations > 24 (Google Scholar Since 2009)
External funding (2008→present) as main applicant > INR 52.09 lakhs (DST, New Delhi)
Conference presentations >25 (>5 invited lectures – International/National)
In addition, organized 3 seminars

Conference contributions not covered by published material

2.1 **S. Kamalesu, A. Anish Babu, K. Swarnalatha**
Synthesis, Characterization and Theoretical Calculations of Ruthenium(II) complexes containing 5-chlorothiophene-2carboxylic acid.
National Conference on Chemistry for Sustainable Energy, Clean Environment and Health (CEEH) organized by Department of Chemistry, Manonmaniam Sundaranar University, Tirunlevlei during 21 & 22 Jan **2015 [Best Poster Award]**

2.2 **K. Swarnalatha, A. Muthuvinothini**
Fluorescence sensing of Melamine based on Zirconia coated CdS Quantum Dots
International Conference on "Materials and Drug Chemistry (MDC-14)" organized by Department of Chemistry, Sara Tucker College, Tirunelveli
27th August **2014** [Poster Presentation]

2.3 **K. Swarnalatha**
Encapsulation of Hydrophobic Fluorescent Core in a Hydrophilic Shell
3rd International Conference on Biotechnology, Nanotechnology and its applications (ICBNA'2014)
19-20, March **2014**, Abu Dhabi, UAE**.** [Oral presentation]
Awarded Best Session Paper [Outstanding Achievement Certificate]

2.4 **S. Kamalesu, K. Swarnalatha,**
Ruthenium Complexes containing 2-Thiophene carboxylic acid ligands: Synthesis, Characterization, Photophysical and DFT Studies
DAE-BRNS 12th Biennial Trombay Symposium of radiation and Photochemistry (TSRP – 2014) organized by Bhabha Atomic Research Centre (BARC) during 6-9 Jan **2014** [Poster Presentation].

2.5 **K. Swarnalatha**
Characterization and Photophysical Studies of CdS Nanoparticles Synthesized by Reverse Micelle Method
International Conference on Biological, Ecological and Environmental Science and Engineering (ICBEESE 2012), 19-21**,** February **2012**, KualaLampur, Malaysia.[Oral presentation]

2.6 S. Sornalatha, **K. Swarnalatha**
Redox-Switching of quinones controlled by ruthenium(II)-polypyridyl complexes
6th Asian Conference on Electrochemical Power Resources, 5-8 January **2012**, Bengaluru, India. [Oral presentation]

2.7 **K. Swarnalatha**
Excited State Dynamics of Ruthenium(II)-polypyridyl Complexes in Nanomicellar CavitiesInternational Conference on Membranes: Biological and Environmental Applications(ICM-2011),16-19, September, **2011**, Kottayam, Kerala. [Invited Speaker]

2.8 **K. Swarnalatha**
Fluorescence Enhancement Technique to Study the interaction of Metal-ligand probe with Bovine Serum Albumin
3rd Asia Pacific Symposium on Radiation Chemistry (APSRC-2010)& DAE-BRNS 10th Biennial Trombay Symposium on Radiation & Photochemistry (TSRP-2010), 14-17, September 2010, Mumba, India. [Poster]

2.6 **K. Swarnalatha,** A. Godlyn Abraham, L. Annie Bebin
Near-Infrared Spectroscopic Characterization of Redox Reactions of p-Benzoquinone
International Conference on Recent Frontiers in Applied Spectroscopy(ICORFAS-2010), 22-24, September 2010, Chidambarm, India.[Poster]

2.7 **K. Swarnalatha**, A. K. Mishra
Synthesis and Photophysical Evaluation of Long-Chain Alkyl Derivatives of 1-Naphthol (A Potential Fluorescent Probe for Lipid Bilayer Membranes)
Fluorescence in Biology: An International Conference,
16-19, March2009,Mumbai, India.[Poster]

2.8 **K. Swarnalatha**
Super Smart Micelles as Drug Carriers
An International Conference on Active/Smart Materials
07-09, January 2009, Madurai, India [Poster]

2.9 **K. Swarnalatha**
Predominant Static Quenching of Ruthenium(II) Polypyridyl Complexes with Quinones
An International Conference on Frontiers of Radiation and Photochemistry PhotoRadChem – 2007, 8-11, February 2007, Kottayam, India. [Poster]

2.10 **K. Swarnalatha**, S. Rajagopal, R. Ramaraj
Photoinduced Electron Transfer Reactions of Ruthenium(II) Complexes carrying 2,2'-bipyridine- 4,4'-dicarboxylic acid with quinones
3rd Trivandrum International Symposium on Recent Trends in Photochemical Sciences, 5-7, Jan 2004,Trivandrum, India.[Poster]

2.11 S. Kamalesu, **K. Swarnalatha**
Ruthenium Complexes containing 2-Thiophene carboxylic acid ligands: Synthesis, Characterization,Photophysical and DFT Studies
DAE-BRNS 12th Biennial Trombay Symposium of radiation and Photochemistry (TSRP – 2014), 6-9, Jan 2014,Mumbai, India.[Poster]

2.12 **K. Swarnalatha**
Molecular Engineering of Photosensitizers for Solar Energy Conversion
National Seminar on Expanding the Frontiers in Chemistry.14-15, Februay 2013, Madurai, India.[Invited Speaker]

2.13 S. Kamalesu, P. Rathnamala, **K. Swarnalatha**
Influence of pH on the electron transfer in the Photosynthetic Membrane
National Conference on Recent Advances in Inorganic Chemistry, 22-24, March 2012, Tiruchirappalli, India.[Poster]

2.14 **K. Swarnalatha**
National Seminar on Nanostructured Materials and Applications(NSNMA-2011)
04-05, March 2011, Madurai, India.

2.15 P. JencyPackiaRathy, **K. Swarnalatha**
Characterization and Photoluminescence of Near-Infrared Quantum dots Synthesized by microemulsion method
National Symposium on Radiation & Photochemistry, NSRP-2011, 10-12, March 2011, Jodhpur, India.[Poster]

2.16 L. Annie Bebin, K. Swarnalatha

Fluorescence Enhancement Technique to Study the Interaction of Alizarin Red with Calf Thymus DNA
National Seminar on Recent Advances in Inorganic and Nanochemistry – RAINC-2010
29-30, March 2010, Madurai, India.[Poster]

2.17 **K. Swarnalatha**, V. SaseRekha
Construction of Dye Sensitized Solar Cell using Nanoparticle
National Seminar on Emerging Trends in Advanced Material Research,
25-26, March 2010, Nagercoil, India.[Poster]

2.18 **K. Swarnalatha**
Encapsulated Redox Centers
10th CRSI National Symposium in Chemistry
1-3, Feb 2008,Bangalore, India.[Poster]

2.19 **K. Swarnalatha**
Interaction of Alizarin Red with different Surfactants: Importance of Buried Active Sites
National Symposium on Frontier Areas in Chemistry (NSFAC), 10-11, January 2008, Madurai, India.[Poster]

2.20 **K. Swarnalatha**
Synthesis of Luminescent Near IR Quantum Dot Micelles by Microemulsion Method
National Seminar on Frontiers in Organic Chemistry (FOCY 2007),11-12, Jan 2007, Calicut, India.[Poster]

2.21 **K. Swarnalatha**, S. Rajagopal, R. Ramaraj
Micellar Effect on the Photophysics and Photoinduced Electron Transfer Reactions of Tris-Chelated Ruthenium(II) Complexes of 4,4'-Dicarboxyl-2,2'-bipyridine
National Conference on Recent Trends in Chemical Research CTCR-2006, 13-14, May 2006**,**Mangalagangotri, India.[Poster]

2.22 **K. Swarnalatha**, S. Rajagopal, R. Ramaraj
Electron Transfer Reactions of Quinones with Excited State Ruthenium(II) Complexes containing 4,4'-Disubstituted-2,2'-bipyridine
National Symposium on Radiation and PhotochemistryNSRP-2005, 17-19, Jan **2005**, Dharwad, India [Poster]

2.23 **K. Swarnalatha**, S. Rajagopal, R. Ramaraj
Photoinduced Electron Transfer Reactions of Tris(4,4'-dicarboxyl-2,2'-bipyridine)ruthenium(II) complexes with Phenolate ions
National Symposium on Recent Developments in Organometallic Chemistry (REDOM-2003)
27-28, March 2003,Tirunelveli, India. [Oral]

2.24 **K. Swarnalatha**
Role of Ruthenium (II) ion in Artificial Photosynthesis
One Day Symposium on Recent Trends in Chemistry, 28thFeb 2005, Madurai, India.
[Invited lecture]

2.25 **K. Swarnalatha**
Micelle and its Applications, Seminar on Surfactants, 7th March 2008,Kanyakumari, India. [Invited Lecture]

Workshop

2.26 Attended ***"Faculty Development Series II: Effective Coping Skills for Teachers"*** conducted by Curriculum Development Cell (CDC) and Department of Psychology, ManonmaniamSundaranar University, Tirunelveli, Tamil Nadu, 12th March **2014**.

2.27 One Day Workshop on ***Puzzle Based Learning: An Introduction to Critical Thinking and Problem Solving*** conducted by Curriculum Development Cell (CDC) ManonmaniamSundaranar University, Tirunelveli, Tamil Nadu during 14th August **2013**.

2.28 Lecture – Workshop on ***'Recent Advances in Spectroscopy: Theory, Instrumentation and Applications'*** at Lady Doak College, Madurai, Jan 18 & 19, **2010.**

2.29 One day workshop on ***"UV- VIS- NIR / Fluorescence / Lifetime Scan"*** conducted by Sophisticated Analytical Instrument Facility (SAIF), Indian Institute of Technology – Madras, Chennai on 7th July **2008**.

2.30 Attended a ***"Workshop on Instrumental Techniques in Chemistry"*** organized by The Department of Chemistry, Annamalai University, Annamalainagar, 3-4 Nov **2007**.