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### **Educational Details:**

- Ph.D: Awarded November 2016, Vivekananda College, Tiruvedakam West, Madurai Kamaraj University, Madurai-625 234, India.

*Thesis Title: "High Valent Oxo(salen)iron Complexes: Functional Models of enzyme and their Reactivity"*

- M.Sc: Awarded April 2008- First Class with Distinction, Vivekananda College, Tiruvedakam West, Madurai-625 234, India.

*Thesis Title: "Synthesis and characterization of Ru(III)-polypyridyl complexes"*

- B.Sc: Awarded April 2006- First Class with Distinction, Vivekananda College, Tiruvedakam West, Madurai-625 234, India.

- Date of Birth : 09.04.1986

### **Awards Received:**

- Received the "**Best Student Award**" in the year 2000-01 from Nadar Saraswathi Higher Secondary School, Theni
- Received the summer fellowship award in the year 2007 from Indra Gandhi Centre for Atomic Research (IGCAR), Kalpakkam, Chennai.
- Received the Rank Holder award (1<sup>st</sup> rank) in the year 2008 in M.Sc. Chemistry.
- Received the medal (1<sup>st</sup> rank) for Gandian thought studies
- Receiving the Research Fellowship (UGC-JRF) under UGC Major Research Project from 2<sup>nd</sup> February, 2010.
- Selected as a research candidate to participate in the "**Science Conclave**" in the year 2011, at Allahabad.

**Teaching experience: SIX years**

**Additional Qualification:**

1. Diploma in Gandhian Thought. (DGT)
2. Diploma in Corrosion & Prevention
3. Certificate in Journalism & Mass communication.
4. Certificate in First aid & Hygiene
5. Certificate in MS-Office

**Research Area of Interest:**

1. Electrochemical Bio-sensors for heavy metal ions and biomaterials sensing
2. Density Functional Theory (DFT) studies of biomimics
3. Enzyme Catalysis-Kinetics
4. Electrochemical corrosion studies using bio-inspired materials
5. Bioremediation of industrial effluents using microorganisms

**Papers published:** see the **Annexure I**

	<b>International</b>	<b>National</b>
<b>Published papers</b>	18	---
<b>Submitted papers</b>	4 ( <i>Under review</i> )	---

**Paper presentation International/National conferences and seminars:** see the **Annexure II**

## **Journals/Publications**

1. Electrochemical sensing of nicotine using  $\text{CuWO}_4$  decorated reduced graphene oxide immobilized glassy carbon electrode. **P. Karuppasamy**, A. Karthika, , A. Suganthi, M. Rajarajan, **Ultrasonics and Sonochemistry, Elsevier, 2019**, Accepted for publication, <https://doi.org/10.1016/j.ultsonch.2019.01.038>
2. A novel electrochemical sensor for determination of Hydroquinone in water using  $\text{FeWO}_4/\text{SnO}_2$  nanocomposite modified glassy carbon electrode, A. Karthika, **P. Karuppasamy**, A. Suganthi, M. Rajarajan, **Arabian Journal of Chemistry, Elsevier, 2019**, accepted for publication.
3. Bioinspired Superhydrophobic Material for various Automotive Applications and its Characterization. J. Bruce Ralphin Rose, E. Maha Vishnu, A.Nivedha, **P.Karuppasamy**, *Engineering Reports, Wiley-Interscience*, 2019 (Under review)
4. Electrochemical behaviour and voltammetric determination of mercury (II) ion in cupric oxide/poly vinyl alcohol nanocomposite modified glassy carbon electrode A. Karthika, **P. Karuppasamy**, A. Suganthi, M. Rajarajan, A. Karthika, **Microchemical Journal, Elsevier, 2019**, 145, 737-744. <https://doi.org/10.1016/j.microc.2018.11.030>
5. A novel highly efficient and accurate electrochemical detection of poisonous inorganic Arsenic(III) ions in water and human blood serum samples based on  $\text{SrTiO}_3/\beta$ -Cyclodextrin nanocomposite. A. Karthika, **P. Karuppasamy**, A. Suganthi, M. Rajarajan, **Journal of Physics and Chemistry of Solids, Elsevier, 2019**, 127, 11-18. <https://doi.org/10.1016/j.jpjcs.2018.11.008>

6. Molecular Polyoxometalate for Methylene Blue Dye Removal by Adsorption Technique: Kinetics, Thermodynamics and Mechanistic Study. C. Sabarinathan, **P. Karuppasamy**, C.T. Vijayakumar, T. Arumuganathan. **Microchemical Journal, Elsevier, 2019**, 146, 315-326. <https://doi.org/10.1016/j.microc.2019.01.015>
7. Insight into structural aspects and study of reaction kinetics of model [oxo(salen)iron(IV)] complexes with methionine dipeptides. **Periyakaruppan Karuppasamy**, Dharmaraj Thiruppathi, Jeyaraj Vijaya Sundar, Varatharaj Rajapandian, Muniyandi Ganesan, Thangamuthu Rajendran, Sher Singh, Seenivasan Rajagopal, Veluchamy Kamaraj Sivasubramanian. **Journal of Physical Chemistry. A, American Chemical Society. 2019**. (under review)
8. Iron(III)-salen ion catalyzed H<sub>2</sub>O<sub>2</sub> oxidation of s-alkyl-L-cysteines in aqueous CH<sub>3</sub>CN: Spectral, kinetic and electrochemical study. **Periyakaruppan Karuppasamy**, Dharmaraj Thiruppathi, Muniyandi Ganesan, Thangamuthu Rajendran, Seenivasan Rajagopal Veluchamy Kamaraj Sivasubramanian. **Polyhedron, Elsevier, 2019**, 159, 135-145. <https://doi.org/10.1016/j.poly.2018.11.019>
9. Electrocatalytic oxidation of cysteine, methionine and methionine glycine using the [oxoiron(IV)-salen] ion modified glassy carbon electrode. **Periyakaruppan Karuppasamy**, Dharmaraj Thiruppathi, Muniyandi Ganesan, Thangamuthu Rajendran, Seenivasan Rajagopal. Veluchamy Kamaraj Sivasubramanian. **Bioelectrochemistry, Elsevier, 2019**. (under review)
- 10.
11. Spectral, Computational, Electrochemical and Antibacterial Studies of iron(III)-salen Complexes **P. Karuppasamy**, D. Thiruppathi, J. Vijaya Sundar, V. Rajapandian, M.

Ganesan, T. Rajendran, S. Rajagopal, N. Nagarajan, P.Rajendran, V. K. Sivasubramanian\*<sup>a</sup>. *Arab.J.Sci.Engg. Springer*. **2015**, 40(10), 2945–2958.

12. Electron transfer reactions of methionine peptides with photochemically generated ruthenium(III)-polypyridyl complexes. Dharmaraj Thiruppathi, **Periyakaruppan Karuppasamy**, Muniyandi Ganesan, Veluchamy Kamaraj Sivasubramanian, Thangamuthu Rajendran, Seenivasan Rajagopal, *Photochem Photobiol B: Chem*, **2014**, 295, 70-78.
13. Electron transfer reactions of photochemically generated ruthenium (III)-polypyridyl complexes with methionines. Dharmaraj Thiruppathi, **Periyakaruppan Karuppasamy**, Veluchamy Kamaraj Sivasubramanian, Muniyandi Ganesan, Thangamuthu Rajendran, Seenivasan Rajagopal, *International Journal of Chemical Kinetics, Wiley- Interscience*, **2014**,46(10), 606-618.
14. Bioremediation of soil from an industrial effluent affected system using Vermicompost. C.Lakshmi, N.Nagarajan, **P.Karuppasamy\***, *International Journal of Current Science Research*, **2017**, 3(11), 1426-1451.
15. Structural Characterization of Iron (III)-Salen Complexes Containing Axial Ligands- A Computational Study. P.Kavitha, **P. Karuppasamy,\*** *Journal of advanced chemical sciences*, **2016**, 2(2), 255-258.
16. Inhibitive Action of Calcium Lignosulfonate on the Corrosion of Mild Steel in Sulfuric Acid Medium. J. Thiruppathy, M. Ragu, M. Ganesan, V.K. Sivasubramanian, **P.Karuppasamy**, T. Rajendran. *International Journal of Scientific and Research Publications*, **2014**, 4( 9), 1-8.

17. The Inhibition Effect of the Extract of Naturally Occurring Compounds on the Corrosion of Copper and Brass in Acid Medium. **P. Karuppasamy**, M.Ganesan, T.Rajendran, V. K. Sivasubramanian. *Journal of Applicable Chemistry*. **2014**, 3 (4): 1789-1796.
18. Schiff bases as corrosion inhibitor for mild steel in H<sub>2</sub>SO<sub>4</sub> and characterization of Schiff bases by spectral studies. **P. Karuppasamy**, R. Arumugam, G.Veeramanikandan, M. Ragu, J. Thiruppathy, M. Ganesan, T. Rajendran, V. K.Sivasubramanian. *International Journal of Chemical Studies*. **2014**, 2(1), 58-75.
19. The Inhibition Effect of Schiff Bases on Corrosion of Mild Steel in HCl and Their Characterization. **P. Karuppasamy**, M. Ragu, J. Thiruppathy, M. Ganesan, T. Rajendran, V. K.Sivasubramanian. *International Journal of Multidisciplinary Research and Development*. **2014**, 1(2): 14-24.
20. Sodiumlignosulphonate (SLS) as corrosion inhibitor for mild steel in sulfuric acid medium. Thiruppathy, J., **Karuppasamy, P.**, Ragu, M., Ganesan, M., Rajendran, T. and Sivasubramanian, V. K. *International Journal of Current Research*. **2014**, 6(8), 7803-7808.
21. Study the Voltammetric Behavior of Symmetrical Tetradentate Schiff Bases. **P. Karuppasamy**, R. Arumugam, M. Ragu, M. Ganesan, T. Rajendran, V. K. Sivasubramanian. *Journal of Applicable Chemistry*. **2014**, 3 (5):1-10.
22. Sulfonated Melamine Formalin Resin as a Corrosion inhibitor for Mild Steel in Acidic Media. J. Thiruppathy, **P. Karuppasamy**, M. Ragu, M. Ganesan, T. Rajendran, **V. K. Sivasubramanian**. *Asian Journal of science and Technology*, **2014**, 5(11), 688-694.

## Annexure-II

### Paper presentation International/National conferences and seminars

1. Presented a paper **“Influence of axial ligands in the structural characterization of metal (III)-salen complexes containing axial ligands – A Density Functional Approach”** in the *International Conference on modern trends in chemistry* held on 28<sup>th</sup> February, 2019. Organized by Department of Chemistry, Vivekananda College, Madurai-625 234
2. Presented a paper **“Influence of axial ligands in the structural characterization of iron (III)-salen complexes containing axial ligands – A DFT study”** in the Silver Jubilee Celebration *International Conference on modern trends in chemistry (MTC-25)* held on 23<sup>rd</sup> February, 2018. Organized by Department of Chemistry, Department of Chemistry, K.L.N College of Information Technology, Pottapalayam, Sivagangai-630 611, Tamil nadu, India.
3. Presented a paper **“Iron (III) - Salen Catalyzed H<sub>2</sub>O<sub>2</sub> oxidation of L-Cysteine in aqueous CH<sub>3</sub>CN Medium: A Kinetic, Spectral study”**. DST sponsored national seminar on *Modern Trends in Chemistry MTC-II “Newer Perspectives in Nano and Green Chemistry”* held on 24<sup>th</sup> & 25<sup>th</sup> July 2014. Organized by Department of Chemistry, PSNA College of Engineering and Technology, Dindigul - 624 622.
4. Presented a paper **“A polymer as a corrosion inhibitor for mild steel in acidic media”** DST sponsored national seminar on *Modern Trends in Chemistry MTC-II “Newer Perspectives in Nano and Green Chemistry”* held on 24<sup>th</sup> & 25<sup>th</sup> July 2014. Organized by Department of Chemistry, PSNA College of Engineering and Technology, Dindigul - 624 622.
5. Presented a paper **“The inhibitory effect of schiff bases in the corrosion of mild steel in acid medium”** DST sponsored national seminar on *Modern Trends in Chemistry MTC-II “Newer Perspectives in Nano and Green Chemistry”* held on 24<sup>th</sup> & 25<sup>th</sup> July 2014. Organized by Department of Chemistry, PSNA College of Engineering and Technology, Dindigul - 624 622.

6. Presented a paper ***“Kinetics and mechanism of electron transfer reaction of S-alkyl- L-cysteines with photochemically generated ruthenium(III)-polypyridyl complex”*** in the Silver Jubilee Celebration *International Conference on Advanced Materials, Processing and Devices (AMPD-2013)* held on 15<sup>th</sup> & 16<sup>th</sup> July 2013. Organized by Department of Material Science, School of Chemistry, Madurai Kamaraj University, Madurai-625 021.
7. Presented a paper ***“Electron transfer kinetics of methionylglycine with photochemically generated tris(2,2'-bipyridie) ruthenium(III)complex”*** in the Silver Jubilee Celebration *International Conference on Advanced Materials, Processing and Devices (AMPD-2013)* held on 15<sup>th</sup> & 16<sup>th</sup> July 2013. Organized by Department of Material Science, School of Chemistry, Madurai Kamaraj University, Madurai-625 021.
8. Presented a paper ***“A New Solvothermal Method to Synthesize Mononuclear Five Coordinated iron(III)-salen complexes: Characterization of complexes by Spectral and Electrochemical Methods”*** in the *International Conference on Recent Advances in textile and electrochemical sciences-2013 (RATES-2013)* held on 21-23, March 2013. Organized by Department of Industrial Chemistry, School of Chemical Sciences, Alagappa University, Karaikudi-630003.
9. Presented a paper ***“Kinetics and mechanism of the oxidation of Sulfur substituted cysteine by photochemically generated ruthenium(III)- polypyridyl complexes”*** in the *International Conference on Recent Advances in textile and electrochemical sciences-2013 (RATES-2013)* held on 21-23, March 2013. Organized by Department of Industrial Chemistry, School of Chemical Sciences, Alagappa University, Karaikudi-630003.
10. Presented a paper ***“A Newer and Efficient Method to Synthesize Iron(III)-Salen Complexes: Characterization of Complexes and Generated Iron-Oxo Intermediates”*** in the *CSIR Sponsored National Seminar on Modern Trends in Chemistry -2012 Green Chemistry* held on 23<sup>th</sup> & 24<sup>th</sup> February 2012. Organized by Department of Chemistry, PSNA College of Engineering and Technology, Dindigul - 624 622.



11. Presented a paper **“Studies on the corrosion inhibition of mild steel using azodyes in acid medium”** in the *CSIR Sponsored National Seminar on Modern Trends in Chemistry -2012 Green Chemistry* held on 23<sup>th</sup> & 24<sup>th</sup> February 2012. Organized by Department of Chemistry, PSNA College of Engineering and Technology, Dindigul - 624 622.
12. Presented a paper **“Photochemical generated ruthenium(III)-polypyridyl complexes and its oxidation of sulfur containing amino acids in Perchloric acid”** in the *CSIR Sponsored National Seminar on Modern Trends in Chemistry -2012 Green Chemistry* held on 23<sup>th</sup> & 24<sup>th</sup> February 2012. Organized by Department of Chemistry, PSNA College of Engineering and Technology, Dindigul - 624 622.
13. Presented a paper **“Electron transfer reactions of methionine peptides with photochemically generated ruthenium (III)-polypyridyl complexes”** in the CSIR & UGC Sponsored National Seminar on “Modern Trends in Chemistry” MTC- 14. Impact of Bioorganic, Bioinorganic and Biophysical developments on Human Life held on 25<sup>th</sup> and 26<sup>th</sup> February 2011. Organized by Post Graduate and Research Department of Chemistry, Vivekananda College, Tiruvedakam West, Madurai – 625 234.
14. Presented a paper **“Iron (III)-salen ion catalyzed H<sub>2</sub>O<sub>2</sub> Oxidation of Methionine Peptides in HEPES buffer using Aqueous Acetonitrile Medium: A kinetic, spectral study”** in the CSIR & UGC Sponsored National Seminar on Modern Trends in Chemistry (MTC-14) entitled “Impact of Bioorganic, Bioinorganic and Biophysical developments on Human life” held on 25<sup>th</sup> and 26<sup>th</sup> February 2011. Organized by Post graduate and Research Department of Chemistry, Vivekananda College, Tiruvedakam West, Madurai - 625 214.
15. Presented a paper **“Photoinduced electron-transfer reactions of ruthenium(II)-popyridyl complexes with Aromatic thiolate ions”** in the CSIR & UGC Sponsored National Seminar on “Modern Trends in Chemistry” MTC-14, Impact of Bioorganic, Bioinorganic and Biophysical developments on Human Life held on 25<sup>th</sup> and 26<sup>th</sup> February – 2011 at the Post graduate and Research Department of Chemistry, Vivekananda College, Madurai-625 234, Tamil Nadu, India.

16. Presented a paper ***“Solvothermal Synthesis of Ruthenium(II)-polypyridyl complexes”*** DST Sponsored National Seminar on “Modern Trends in Chemistry” MTC-13, Impact of Spectroscopy to group theory and Coordination compounds held on 26<sup>th</sup> & 27<sup>th</sup> February – 2010 at the Post graduate and Research Department of Chemistry, Vivekananda College, Madurai-625 234, Tamil Nadu, India.
17. Presented a paper ***“Solvothermal (One-pot) synthesis of Iron(III)-Salen complexes”*** DST Sponsored National Seminar on “Modern Trends in Chemistry” MTC-13, Impact of Spectroscopy to group theory and Coordination compounds held on 26<sup>th</sup> & 27<sup>th</sup> February – 2010 at the Post graduate and Research Department of Chemistry, Vivekananda College, Madurai-625 234, Tamil Nadu, India.