

# Curriculum Vitae

**Dr. R. Karthiga**

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## Contact Information

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## Career Objective

*Research-oriented, dedicated, and reliable professional seeking an opportunity for continuous growth in the field of chemistry and nanotechnology. Looking to utilize my teaching and research skills to support the chemistry department during the upcoming academic year.*

## Academic Record

QUALIFICATION	INSTITUTION	SCORE	CLASS	YEAR
Ph. D.,	Madurai Kamaraj University	Awarded		2018
M.Phil	St. Joseph arts and Science College, Cuddalore, (Thiruvalluar University)	89%	Distinction	2011
M.Sc.,	Annamalai University	65 %	1 <sup>st</sup>	2008
B.Sc.,	Kondavaru Kandasamy Naidu College, Cuddalore. (Madras University)	70 %	1 <sup>st</sup>	2003
B.Ed.,	Krishnasamy college of Education, Pondy. (University of Pondicherry)	81 %	1 <sup>st</sup>	2009

## Paper Publications (total number 21)

1. Effect of FeWO<sub>4</sub> doping on the photocatalytic activity of ZnO under visible light irradiation, Applied Surface Science Vol.356, August 2015, 333-340. (Impact factor 6.607) (Coauthors: K Buvaneswari, B Kavitha, M Rajarajan, A Suganthi)
2. Photocatalytic and antimicrobial activity of NiWO<sub>4</sub> nanoparticles stabilized by the plant extract, Materials Science in Semiconductor Processing Vol.40, May 2015, 123-129. (Impact factor 3.927) (Coauthors: B Kavitha, M Rajarajan, A Suganthi)
3. Green Synthesis of ZnO Nanoparticles Using *Sollanam Santhocarbom* to Study Its Solar photocatalytic Activity, International Journal of Science and Research (IJSR) Vol.6 (6), June 2017, 2370-2376. (Impact factor 7.803) (Coauthors: A Sudha)
4. Green synthesis and characterization of zinc oxide (ZnO) nanoparticles using *Achras sapota Linn* latex and its antimicrobial activity, International Journal of Creative Research Thoughts Vol.6 (2), April 2018, 615-620. (Impact factor 7.97) (Coauthors: B Kavitha)
5. Effect of Fe and Cu codoped NiMoO<sub>4</sub> nanoparticles on the photocatalytic degradation of Methylene blue under visible light irradiation, Asian Journal of Research in Chemistry Vol.11 (3), April 2018, 663-670. (Impact factor 0.535) (Coauthors: R Arunadevi, B Kavitha, M Krishnan)
6. Synthesis of MoO<sub>3</sub> microrods via phytoconstituents of *Azadirachta indica* leaf to study the cationic dye degradation and antimicrobial properties, Journal of Alloys and Compounds Vol.753, April 2018, 300-307. (Impact factor 5.316) (Coauthors: B Kavitha, M Rajarajan, A Suganthi)
7. *Azadirachta Indica* as a bio-material: Rapid synthesis of Cr<sub>5</sub>O<sub>12</sub> shell nanoparticles to study its photocatalytic and Antimicrobial properties, Journal of King Saud University-Science, Vol.31(4), November 2019, 1235-1244. (Impact factor 4.011) (Coauthors: M Rajarajan, A Suganthi)
8. Green synthesis of Ag-Mo/CuO nanoparticles using *Azadirachta indica* leaf extracts to study its solar photocatalytic and antimicrobial activities Material sciences and

- semiconductor processing, Vol.91, November 2019, 230-238. (Impact factor 3.927)  
(Coauthors: M Rajarajan, A Suganthi)
9. Enhancement of electrochemical sensor for the determination of glucose based on mesoporous VO<sub>2</sub>/PVA nanocomposites, Surfaces and Interfaces, Vol.16, May 2019, 164-173. (Impact factor 4.837) (Coauthors: AM Azharudeen, M Rajarajan, A Suganthi)
  10. Synthesis and characterization of CuWO<sub>4</sub> as nano-adsorbent for removal of Nile blue and its antimicrobial studies, Journal of Material and Environmental Science, Vol.11 (1), November 2020, 57-68. (Coauthor: B Kavitha)
  11. Fabrication, characterization of polyaniline intercalated NiO nanocomposites and application in the development of non-enzymatic glucose biosensor, Arabian Journal of Chemistry, Vol.13 (2), June 2020, 4053-4064. (Impact factor 5.165) (Coauthors: AM Azharudeen, M Rajarajan, A Suganthi)
  12. Selective enhancement of non-enzymatic glucose sensor by used PVP modified on  $\alpha$ -MoO<sub>3</sub> nanomaterials, Microchemical Journal Vol.157, May 2020, 105006. (Impact factor 4.821) (Coauthors: AM Azharudeen, M Rajarajan, A Suganthi)
  13. Plant assisted synthesis of Hg/ SnO<sub>2</sub> and its characterisation using *Azardirachta Indica*, International journal of Research and analytical reviews Vol.8 (3), August 2021, 608- 618. (Impact factor 7.17).
  14. Biosynthesis of NiO<sub>2</sub> nanoparticles from marine seaweeds *HORMOPHYSA SPS* and its antimicrobial activity, International journal of science and research Vol.10 (9), September 2021, 13- 19.(Impact factor 5.611) (Coauthors: R. Ramya)
  15. Ultrasensitive and Selective Electrochemical Detection of Dopamine Based on CuO/PVA Nanocomposite-Modified GC Electrode, International Journal of Photoenergy, 2022, Article ID 8755464. (Impact factor 1.92) (Coauthors: AM. Azharudeen, A. Roy, S. Arun Prabhu, M. G. Prakash, A. Mohamed Ismail Badhusha, H. Ali, K. Mohammedsaleh Katubi, Md. Rabiul Islam)
  16. Solar Power Light-Driven Improved Photocatalytic Action of Mg-Doped CuO Nanomaterial Modified with Polyvinylalcohol, Journal of Nanomaterial, 2022, Article

ID 2430840. (Impact factor 2.987) (Coauthors: AM. Azharudeen, A. Mohamed Ismail Badhusha, MS. Khan, S. Arun Prabhu, P. Vijaya Kumar, Hamza A. Odeibat, Huma Naz, K. Buvaneswari, and Md. Rabiul Islam)

17. *Aerva Lanata* Mediated Phyto-Fabrication of SnO<sub>2</sub> Nanoparticles and Evaluation of Their Antimicrobial Activity, International Journal of Research and Analytical Review, Vol 9(2), May,2022 (Impact factor 7.71) (Coauthors: C. Mutharasu, A. Velmurugan, P. Sambathbabu) <http://doi.org/10.1729/Journal.30270>
18. Nanoproperties of fly ash geopolymer concrete with polypropylene fibres, International journal of emerging trends in engineering research, Vol.11 (4), 2023, 116-121. (Coauthor: S. Subbiah Illamvazhuthi) <https://doi.org/10.30534/ijeter/2023/021142023>
19. Facile Synthesis of Stable CuO Nanoparticles for Reduction of Methylene Blue Dye Degradation, Strad Research, Vol 10, (4), 2023 , 18-27, (Coauthor: S. Karthikarania) <https://doi.org/10.37896/sr10.4/004>
20. Green Synthesis of Copper Oxide Nanoparticles (CuO nps), Characterisation and its Photocatalytic Activity by Using Adhatoda Vasika Leaf Extract. GIS SCIENCE JOURNAL, Vol. 10(4), 2023, 81-97, ISSN NO : 1869-9391 (Co-author: S. Karthikarani, T. Pandimeena )
21. Drug Delivery Application Of 5-Fluorouracil Loaded  $\alpha$ -Fe<sub>2</sub>O<sub>4</sub> Nanoparticles By Using Hydrothermal Method, Journal of Interdisciplinary Cycle Research, Vol.15(3), 2023, 298-307. (Coauthor: S. Karthikarani, T. Pandimeena)
22. Hibiscus Rosasinesis Flower Extract Mediated Ni/ZnO nanoparticles for Visible Light Driven Photocatalytic Degradation of Roseaniline Dye as a Pollutant, Journal of Water and Environmental Nanotechnology 8 (3), 229-240 (Coauthor: S. Karthikarani)

## Paper Presented

**International Conference** (total number 32)

1. **R. Karthiga**, B.Kavitha K. Vignesh, M. Rajarajan and A. Suganthi, Green synthesis, photocatalytic and antimicrobial properties of NiWO<sub>4</sub> nanopatticles, **Third International**

- Conference on Advanced Oxidation Process** held on 25 – 28, September, 2014, Munnar, Kerala.
2. B.Kavitha, **R. Karthiga**, K. Vignesh, M. Rajarajan and A. Suganthi, Visible light induced Degradation of Methylene blue Dye using FeWO<sub>4</sub> Modified ZnO nanoparticles, **Third International Conference on Advanced Oxidation Process** held on 25 – 28, September, 2014, Munnar, Kerala.
  3. **R. Karthiga**, B. Kavitha M. Rajarajan and A. Suganthi, Biosynthesis, Photocatalytic and Antimicrobial of Hg/SnO<sub>2</sub> nanoparticles using *Azadirachta indica* plant extract, **International conference on environment and energy** held on 15 – 17, December, 2014, Jawaharlal Nehru Technological University, Hyderabad.
  4. **R. Karthiga**, B. Kavitha M. Rajarajan and A. Suganthi, Plant assisted synthesis of MoO<sub>3</sub> nanoparticles with enhanced photocatalytic performance with *Azadirachta indica* leaves, **International Conference on Nanostructured Polymeric Materials and Polymer Nanocomposites** held on 13 – 15 November, 2015, Mahatma Gandhi University, Kottayam, Kerala, India.
  5. B. Kavitha, **R. Karthiga**, M. Rajarajan and A. Suganthi, Fabrication of NiWO<sub>4</sub> modified SnO<sub>2</sub> nanoparticles and its photocatalytic activity under visible light irradiation, **International Conference on Nanostructured Polymeric Materials and Polymer Nanocomposites** held on 13 – 15 November, 2015, Mahatma Gandhi University, Kottayam, Kerala, India.
  6. R. Arunadevi, B. Kavitha, **R. Karthiga**, M. Rajarajan and A. Suganthi, Effect of Fe and Cu codoped NiMoO<sub>4</sub> on the Photodegradation of Methylene Blue, **International Conference on Nanostructured Polymeric Materials and Polymer Nanocomposites** held on 13 – 15 November, 2015, Mahatma Gandhi University, Kottayam, Kerala, India.
  7. AM. Azharudeen, B. Kavitha, **R. Karthiga**, M. Rajarajan and A. Suganthi, Synthesis and Characterization of W<sub>3</sub>O<sub>6</sub>/PVA nanocomposite utilized as a non-enzymatic Glucose Biosensor, **International Conference on Nanostructured Polymeric Materials and Polymer Nanocomposites** held on 13 – 15 November, 2015, Mahatma Gandhi University, Kottayam, Kerala, India.
  8. **R. Karthiga**, B. Kavitha M. Rajarajan and A. Suganthi, MoO<sub>3</sub> nanorods fabricated with *Azadirachta indica* plant extract: Photocatalytic and antimicrobial activities, **International Conference on Nanostructured Polymeric Materials and Polymer**

**Nanocomposites** held on 13 – 15 November, 2015, Mahatma Gandhi University, Kottayam, Kerala, India.

9. **R. Karthiga**, B. Kavitha M. Rajarajan and A. Suganthi , Green synthesis of Ag/Mo/CuO Nanoparticles using *Azadirachta indica* leaf extract to study its photocatalytic and antimicrobial activity, **International conference on Resent trends in Analytical chemisatry (ICORTAC-2015)** held on 28-30, December, 2015, University of Madras, Guindy campus, Chennai.
10. K. Eswaran, B. Kavitha, **R. Karthiga**, M. Rajarajan and A. Suganthi , Artificial Neural network modeling of Adsorption and Photocatalytic Removal of an organic dye using CuWO<sub>4</sub>/Kaolinite, **International conference on Resent trends in Analytical chemisatry (ICORTAC-2015)** held on 28-30, December, 2015, University of Madras, Guindy campus, Chennai.
11. R. Arunadevi, B. Kavitha, **R. Karthiga**, M. Rajarajan and A. Suganthi , Facile synthesis and enhanced photocatalytic activity of cobalt and manganese codoped Tunsten Oxide, **International conference on Resent trends in Analytical chemistry (ICORTAC-2015)** held on 28-30, December, 2015, University of Madras, Guindy campus, Chennai.
12. A. Mohamed Azharudeen, T. Suriyakala, B. Kavitha, **R. Karthiga**, M. Rajarajan and A. Suganthi, Synthesis, Characterization of CuO/PEG nanocomposite utilized as a non-enzyme glucose biosensor, **International conference on Resent trends in Analytical chemisatry (ICORTAC-2015)** held on 28-30, December, 2015, University of Madras, Guindy campus, Chennai.
13. **R. Karthiga**, B. Kavitha M. Rajarajan and A. Suganthi, CuO fabricated with *Azaditachta indica* plant extract: Photocatalytic and antimicrobial activities, **Second International conference on Advance polymeric Materials** held on 7– 9 April, 2017, Mahatma Gandhi University, Kottayam, Kerala, India
14. **R. Karthiga**, B. Kavitha, M. Rajarajan and A. Suganthi, Green synthesis of chromic oxide (Cr<sub>5</sub>O<sub>12</sub>) nanoparticles using *Azadirachta indica* and its antimicrobial activities, **Second International conference on Advance polymeric Materials** held on 7– 9 April, 2017, Mahatma Gandhi University, Kottayam, Kerala, India
15. **Dr. R. Karthiga**, A simple one pot green synthesis of NiVO<sub>4</sub> nanocomposite using “*Morindo tinctoria*” ,and its Antimicrobial activity Solar photocatalysis studies, “**International Conference on Advanced Materials for Energy and Environment**

(**AMEE-2022**)”, held during 10-11 January 2022, Mother Teresa Women’s University, Kodaikanal, India

16. Dr. R. Karthiga, A simple one pot green synthesis of NiVO<sub>4</sub> nanocomposite using “*Morindo tinctoria*”, and its Antimicrobial activity Solar photocatalysis studies, **International e-Conference on Nanomaterials & Nano-engineering (APA Nanoforum 2022)** held on 24-26 February 2022, APA & CSIR-NPL, India
17. Dr. R. Karthiga, “Novel Green Route of Synthesis of ZnO Nanoparticle Using *Martynia Annu* Leaf Extract and Antimicrobial Activity” **Electrochemical Techniques and their Applications in the Development of Sensors” (ETADS-22)**, during 20-22nd January, 2022, Madurai Kamaraj University, Madurai, Tamil Nadu, India,.
18. C. Mutharasu, R. Karthiga, A. Velmurugan, P. Sambathbabu, Aerva Lanata Mediated Phytofabrication Of SnO<sub>2</sub> Nanoparticles And Evaluation of Their Antimicrobial Activity, International Conference On Environmental Issues In Business and Road Map for Innovative Solutions (ICEIB - 2022)”, held on 2<sup>nd</sup>May, 2022, Government Arts College For Women, Nilakottai.
19. C. Mutharasu, R. Karthiga, Aerva Lanata mediated phyto-fabrication of SnO<sub>2</sub> nanoparticles and evaluation of their antimicrobial activity , **International Conference on Recent Trends in Solar Cells (ICRTSC-2023)** on 12 and 13 January 2023 Cardamom Planters’ Association College, Bodinayakanur.
20. P.Sambathbabu, R.Karthiga, Green Synthesis of NiVO<sub>4</sub> Nanocomposite Using Leaf Extract of *Morindo Tinctoria* to Study its Photocatalytic And Antimicrobial Activity, , **International Conference on Recent Trends in Solar Cells (ICRTSC-2023)** on 12 and 13 January 2023 Cardamom Planters’ Association College, Bodinayakanur.
21. A. Velmurugan, R. Karthiga, Novel Green Route of Synthesis of ZnO Nanoparticle Using *Martynia Annu* Leaf Extract and Antimicrobial Activity, , **International Conference on Recent Trends in Solar Cells (ICRTSC-2023)** on 12 and 13 January 2023 Cardamom Planters’ Association College, Bodinayakanur.
22. M.Manikandan, .R. Karthiga, Structural, Optical, Photocatalytic of Methylene Blue and Antibacterial Activity of Mn Modified ZnO Nanoparticles, , **International Conference on Recent Trends in Solar Cells (ICRTSC-2023)** on 12 and 13 January 2023 Cardamom Planters’ Association College, Bodinayakanur.
23. K. Priyadarshini, R. Karthiga, Highly Efficient Photocatalytic Degradation of Cationic Dye over SrVO<sub>4</sub> under Natural Solar Irradiation for Emerging Contaminants, ,

**International Conference on Recent Trends in Solar Cells (ICRTSC-2023)** on 12 and 13 January 2023 Cardamom Planters' Association College, Bodinayakanur.

24. R. Karthiga, R. G. Niranjana, M. Lavanya, A Novel rare earth metal Oxide ( $\text{OsO}_4$ ) crafted reduced graphene oxide sheets for the enhanced electrochemical Performance, **International Conference on Expanding Frontiers in Chemistry (EFC 23)** 15 & 16, February 2023, Arul Anandar College, Karumathur – 625 514, Madurai District Tamil Nadu, India
25. R. Karthiga, Enhanced Photocatalytic and antimicrobial performance using  $\text{NiWO}_4/\text{ZnO}$  nanocomposite (Via photosynthesis) under visible light irradiation, **Second international conference on Frontiers in chemistry and material Science** , 19 and 20, December 2022, Mannar Thirumalai Naicker College, Madurai
26. C. Mutharasu, R. Karthiga, Aerva Lanata mediated phyto-fabrication of  $\text{SnO}_2$  nanoparticles and evaluation of their antimicrobial activity , **International Conference on Recent Trends in Solar Cells (ICRTSC-2023)** on 12 and 13 January 2023 Cardamom Planters' Association College, Bodinayakanur.
27. P.Sambathbabu, R.Karthiga, Green Synthesis of  $\text{NiVO}_4$  Nanocomposite Using Leaf Extract of Morinda Tinctoria to Study its Photocatalytic And Antimicrobial Activity, **International Conference on Recent Trends in Solar Cells (ICRTSC-2023)** on 12 and 13 January 2023 at Cardamom Planters' Association College, Bodinayakanur.
28. A. Velmurugan, R. Karthiga, Novel Green Route of Synthesis of  $\text{ZnO}$  Nanoparticle Using Martynia Annuua Leaf Extract and Antimicrobial Activity, **International Conference on Recent Trends in Solar Cells (ICRTSC-2023)** on 12 and 13 January 2023 at Cardamom Planters' Association College, Bodinayakanur
29. M.Manikandan, .R. Karthiga, Structural, Optical, Photocatalytic of Methylene Blue and Antibacterial Activity of Mn Modified  $\text{ZnO}$  Nanoparticles, **International Conference on Recent Trends in Solar Cells (ICRTSC-2023)** on 12 and 13 January 2023 at Cardamom Planters' Association College, Bodinayakanur
30. K. Priyadarshini, R. Karthiga, Highly Efficient Photocatalytic Degradation of Cationic Dye over  $\text{SrVO}_4$  under Natural Solar Irradiation for Emerging Contaminants, **International Conference on Recent Trends in Solar Cells (ICRTSC-2023)** on 12 and 13 January 2023 at Cardamom Planters' Association College, Bodinayakanur
31. R. Karthiga, R. G. Niranjana, M. Lavanya, A Novel rare earth metal Oxide ( $\text{OsO}_4$ ) crafted reduced graphene oxide sheets for the enhanced electrochemical Performance,



**International Conference on Expanding Frontiers in Chemistry (EFC 23)** 15 & 16, February 2023, Arul Anandar College, Karumathur – 625 514, Madurai District Tamil Nadu, India

32. R. Karthiga, Enhanced Photocatalytic and antimicrobial performance using NiWO<sub>4</sub>/ZnO nanocomposite (Via phytosynthesis) under visible light irradiation, **Second international conference on Frontiers in chemistry and material Science** , 19 and 20, December 2022, Mannar Thirumalai Naicker College, Madurai

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#### National Conferences (total number 38)

1. **R. Karthiga**, B. Kavitha, K. Vignesh, M. Rajarajan and A. Suganthi, Biosynthesis of ZnO nanoparticles using *Mirabilis jalapa* flower extract and its antimicrobial activities., **National conference on recent development in green chemistry**, 18-19 December, 2013, Kongunadu Arts and Science College, Coimbatore.
2. **R. Karthiga**, B. Kavitha, M. Rajarajan and A. Suganthi, Green synthesis of chromic oxide (Cr<sub>5</sub>O<sub>12</sub>) nanoparticles using *Azadirachta indica* and its antimicrobial activities, **National conference on Modern trends in chemistry- MTC –II**, 24-25 July 2014, PSNA college of engineering and technology, Dindigul
3. **R. Karthiga**, B. Kavitha, M. Rajarajan and A. Suganthi, Evaluation of Photocatalytic and antimicrobial activity of NiWO<sub>4</sub> nanoparticles, **National conference on Water crisis: The challenges ahead of global governances**, 27 -28 August 2014, PSGR Krishammal college for woman, Coimbatore.
4. **R. Karthiga**, B. Kavitha, M. Rajarajan and A. Suganthi, Adsorption of Congo red Dye from aqueous solution using Ag<sub>2</sub>W<sub>2</sub>O<sub>7</sub> nanoparticles and its antimicrobial activity, National Conference on **Advanced Developments of Medicinal Chemistry in Target Drug Design**, 11-12 September, 2014, Kongunadu Arts and Science College, Coimbatore.
5. **R. Karthiga**, B.Kavitha M. Rajarajan and A. Suganthi, Visible light driven photodegradation of crystal violet using ZnO/Bi<sub>2</sub>Mo<sub>3</sub>O<sub>12</sub> Nanocomposite, **National Seminar on Emerging Trends in Chemistry – 05**, 18 – 19 September, 2014, Cardamom Planters' Association College, Bodinayakanur.
6. K. Buvaneswari, **R. Karthiga**, B.Kavitha, M. Rajarajan and A. Suganthi ,Studies on the removal of methylene blue using ZnO/FeWO<sub>4</sub> Nanocomposite under visible light

- irradiation, **National Seminar on Emerging Trends in Chemistry – 05**, 18 – 19 September, 2014, Cardamom Planters' Association College, Bodinayakanur.
7. A. Mohamed Azarudeen, B. Kavitha, **R. Karthiga**, K. Vignesh, M. Rajarajan and A. Suganthi, Kinetics and Equilibrium studies of Rhodamine B Dye using  $\text{TiO}_2/\text{Bi}_2\text{Mo}_3\text{O}_{12}$  Nanoparticles, **National Seminar on Emerging Trends in Chemistry – 05**, 18–19 September, 2014, Cardamom Planters' Association College, Bodinayakanur.
  8. R. Arunadevi, **R. Karthiga**, B. Kavitha M. Rajarajan and A. Suganthi, Synthesis, and characterization and Antimicrobial activities of Ag Doped  $\text{TiO}_2$  nanoparticles modified with PEG, **National Seminar on Emerging Trends in Chemistry – 05**, 18 – 19 September, 2014, Cardamom Planters' Association College, Bodinayakanur.
  9. P. Muthuraj, **R. Karthiga**, B.Kavitha M. Rajarajan and A. Suganthi, Synthesis of  $\text{NiWO}_4$  Nanoparticles using *Azadirachta Indica* for effective degradation of methylene blue in aqueous system, **National Seminar on Emerging Trends in Chemistry – 05**, 18 – 19 September, 2014, Cardamom Planters' Association College, Bodinayakanur.
  10. **R. Karthiga**, B.Kavitha M. Rajarajan and A. Suganthi, Comparison of photocatalytic activity of  $\text{TiO}_2/\text{NiFe}_2\text{WO}_4$  Nanoparticles towards organic dye degradation, **National Seminar on Emerging Trends in Chemistry – 05**, 18 – 19 September, 2014, Cardamom Planters' Association College, Bodinayakanur.
  11. R. Nithya, **R. Karthiga**, B.Kavitha M. Rajarajan and A. Suganthi , Green synthesis and characterization of  $\text{SnO}_2$  nanoparticles using *Azadirachta indica* aqueous extract, **National Seminar on Emerging Trends in Chemistry – 05**, 18 – 19 September, 2014, Cardamom Planters' Association College, Bodinayakanur.
  12. V. Karthick, **R. Karthiga**, B.Kavitha M. Rajarajan and A. Suganthi, Green synthesis and characterization of copper oxide nanoparticles using *Azadirachta indica* aqueous extract, **National Seminar on Emerging Trends in Chemistry – 05**, 18 – 19 September, 2014, Cardamom Planters' Association College, Bodinayakanur.
  13. B. Sudhakar, **R. Karthiga**, B. Kavitha M. Rajarajan and A. Suganthi , Green synthesis of  $\text{Fe}_2\text{O}_3$  nanoparticles, **National Seminar on Emerging Trends in Chemistry – 05**, 18 – 19 September, 2014, Cardamom Planters' Association College, Bodinayakanur.

14. **R. Karthiga**, B. Kavitha M. Rajarajan and A. Suganthi, Synthesis of SnO<sub>2</sub>/CuWO<sub>4</sub> Nanoparticles to study its photocatalytic activity under visible light, **National Seminar on Emerging Trends in Chemistry – 05**, 18 – 19 September, 2014, Cardamom Planters' Association College, Bodinayakanur.
15. **R. Karthiga**, B. Kavitha, M. Rajarajan, A. Suganthi, Green synthesis of Ag/CuO using *Azadirachta Indica* plant extracts to study its photodegradation and antimicrobial activities, **National seminar on Recent Trends in Chemistry (RTC – 6)**, 8 – 9, January, 2015, Jayaraj Annapackiam College for Women, Periyakulam.
16. R. Arunadevi, **R. Karthiga**, B. Kavitha, M. Rajarajan, A. Suganthi, Synthesis, Morphological properties and photocatalytic Application of Bi, N codoped SnO<sub>2</sub> nanoparticles, **National seminar on Recent Trends in Chemistry (RTC – 6)**, 8 – 9 January, 2015, Jayaraj Annapackiam College for Women, Periyakulam.
17. A. Mohamed Azarudeen, **R. Karthiga**, B. Kavitha, M. Rajarajan, A. Suganthi, Synthesis and characterization of PVP modified MoO<sub>3</sub> by Sol gel method, **National seminar on Recent Trends in Chemistry (RTC – 6)**, 8 – 9, January, 2015, Jayaraj Annapackiam College for Women, Periyakulam.
18. **R. Karthiga**, B. Kavitha, M. Rajarajan, A. Suganthi, Co decorated β – Fe<sub>2</sub>O<sub>3</sub> nanoparticles: Green synthesis using *Azadirachta Indica* plant extract and its enhanced visible light photocatalytic activity, **National conference on Frontier Areas in Chemistry**, 26 – 27, February, 2015, Thiagarajar College, Madurai.
19. P. Pandisudha, **R. Karthiga**, B. Kavitha, M. Rajarajan, A. Suganthi, Novel sphere Ag<sub>3</sub>PO<sub>4</sub>/CuO nanocomposite with enhanced photocatalytic activity for degradation of Amaranth, **National conference on Frontier Areas in Chemistry**, 26 – 27, February, 2015, Thiagarajar College, Madurai.
20. Synthesis of PEG modified CuO nanoparticles and its Biosensor application, T. Suriyakala, **R. Karthiga**, B. Kavitha, M. Rajarajan, A. Suganthi, **National conference on Frontier Areas in Chemistry**, 26 – 27, February, 2015, Thiagarajar College, Madurai.
21. R. Arunadevi, **R. Karthiga**, B. Kavitha, M. Rajarajan, A. Suganthi, Ca, Ba, Co-doped CuO Nanoparticles for enhanced visible light photocatalytic activity performance, **National conference on Frontier Areas in Chemistry**, 26 – 27, February, 2015, Thiagarajar College, Madurai

22. B. Kavitha, **R. Karthiga**, M. Rajarajan, A. Suganthi, Artificial neural network modeling of photocatalytic degradation of Rose Bengal using CuWO<sub>4</sub> modified SnO<sub>2</sub> Nanoparticles under visible light photocatalytic activity performance, **National conference on Frontier Areas in Chemistry**, 26 – 27, February, 2015, Thiagarajar College, Madurai
23. P. Pandisudha, R. Arunadevi, **R. Karthiga**, B. Kavitha, M. Rajarajan, A. Suganthi, Hydrothermal synthesis of Bi, N codoped SnO<sub>2</sub> nanoparticles and its antimicrobial activities, **Fourth international conference on advanced functional materials and applications (NCAFMA – 2015)**, 2-3, Kalasalingam University, Krishnankoil.
24. **R. Karthiga**, B. Kavitha, M. Rajarajan, A. Suganthi, Preparation of Cr<sub>3</sub>O<sub>5</sub> Nanoparticles using *Azadirachta indica* leaf extract to study their photocatalytic degradation of Methyl Orange, **Fourth International conference on advanced functional materials and applications (NCAFMA – 2015)**, 2-3, Kalasalingam University, Krishnankoil.
25. **R. Karthiga**, B. Kavitha, M. Rajarajan, A. Suganthi, Preparation of Cr<sub>5</sub>O<sub>12</sub> Nanoparticles using *Azadirachta indica* leaf extract to study their photocatalytic degradation of Methyl Orange, **National Seminar on Emerging Trends in Chemistry –16** , 6<sup>th</sup> January, 2016, Sadakathullah Appa college, Tirunelveli.
26. R. Arunadevi, **R. Karthiga**, B. Kavitha, M. Rajarajan, A. Suganthi, Co- precipitation synthesis and efficient antimicrobial activities of Fe-Cu-NiMoO<sub>4</sub> Nano flakes, **National Seminar on Emerging Trends in Chemistry –16** , 6<sup>th</sup> January, 2016, Sadakathullah Appa college, Tirunelveli.
27. K. Eswaran, **R. Karthiga**, B. Kavitha, M. Rajarajan, A. Suganthi, Facile synthesis of Ag<sub>3</sub>PO<sub>4</sub>/CuO nanocomposite with highly efficient visible light photocatalytic performance using Levenberg-merquardt algorithm, **National Seminar on Emerging Trends in Chemistry –16** , 6<sup>th</sup> January, 2016, Sadakathullah Appa college, Tirunelveli.
28. K. Buvaneswari, **R. Karthiga**, B. Kavitha, M. Rajarajan, A. Suganthi, Hydrothermal synthesis of ZnWO<sub>4</sub> nanoparticles to study its photocatalytic activity, **National Seminar on Emerging Trends in Chemistry –16** , 6<sup>th</sup> January, 2016, Sadakathullah Appa college, Tirunelveli.
29. T. suriyakala, **R. Karthiga**, B. Kavitha, M. Rajarajan, A. Suganthi, Synthesis of PEG modified CuO nanoparticles to study its photocatalytic activity, **National Seminar on**

- Emerging Trends in Chemistry –16** , 6<sup>th</sup> January, 2016, Sadakathullah Appa college, Tirunelveli.
30. A. Mohamed Azarudeen, **R. Karthiga**, B. Kavitha, M. Rajarajan, A. Suganthi, Synthesis, characterization and anti-microbial activities of  $W_3O_8/PVA$  nanocomposite, **National Seminar on Emerging Trends in Chemistry –16** , 6<sup>th</sup> January, 2016, Sadakathullah Appa college, Tirunelveli.
31. E. Muthuprama, **R. Karthiga**, B. Kavitha, M. Rajarajan, A. Suganthi, Synthesis, characterization of cerium molybdate nanocomposites, **National Seminar on Emerging Trends in Chemistry –16** , 6<sup>th</sup> January, 2016, Sadakathullah Appa college, Tirunelveli.
32. R. Devi, **R. Karthiga**, B. Kavitha, M. Rajarajan, A. Suganthi, Preparation and characterization of  $ZnMoO_4/WO_2$  by hydrothermal method, **National Seminar on Emerging Trends in Chemistry –16** , 6<sup>th</sup> January, 2016, Sadakathullah Appa college, Tirunelveli.
33. A. Karthika, K. Eswaran, **R. Karthiga**, B. Kavitha, M. Rajarajan, A. Suganthi, Effect of  $CuWO_4$  on kaolin: Photodegradation of Dye under visible light, **National Seminar on Emerging Trends in Chemistry –16** , 6<sup>th</sup> January, 2016, Sadakathullah Appa college, Tirunelveli.
34. R. Karthika, **R. Karthiga**, B. Kavitha, M. Rajarajan, A. Suganthi, Synthesis, characterization of  $NiFe_2O_4/TiO_2/MoO_3$  Nanocomposite with improved visible light photocatalyst, **National Seminar on Emerging Trends in Chemistry –16** , 6<sup>th</sup> January, 2016, Sadakathullah Appa college, Tirunelveli.
35. **R. Karthiga**, S. Sudha, Green synthesis of ZnO nanoparticles using Solla nam santhocarbom to study its solar photocatalytic activity, National Seminar on Nanomaterials and science, February 2017, The American College, Madurai.
36. **R. Karthiga**, S. Dhavagar, Biosynthesis of  $SnO_2$  Nanoparticles from Marine seaweeds (*Hoemophysa SPS*) and its Antimicrobial activity, **Recent trends in chemistry (RTC-)** 23<sup>rd</sup> January **2018** at Jayaraj Annapackiam college for women, Periyakulam.
37. **R. Karthiga**, R. Ramya, Biosynthesis of  $NiO_2$  Nanoparticles from Marine seaweeds (*Hoemophysa SPS*) and its Antimicrobial activity, **Recent trends in chemistry (RTC-)** 23<sup>rd</sup> January **2018** at Jayaraj Annapackiam college for women, Periyakulam.

38. **R. Karthiga**, R.P. Mahalakshmi, Synthesis of SnO<sub>2</sub>/Ba Nanoparticles and its solar photocatalytic activity, **Recent trends in chemistry (RTC-)** 23 January 2018 at Jayaraj Annapackiam college for women, Periyakulam.

#### Invited Talk to Various Institutions:

Sl. No.	Date	Particulars	Place
1	December 2014	Biosynthesis, Photocatalytic and Antimicrobial of Hg/SnO <sub>2</sub> nanoparticles using <i>Azadirachta indica</i> plant extract, <b>International conference on environment and energy</b>	Jawaharlal Nehru Technological University, Hyderabad
2	November 2015	MoO <sub>3</sub> nanorods fabricated with <i>Azadirachta indica</i> plant extract: Photocatalytic and antimicrobial activities, <b>International conference on Nanostructured Polymeric Materials and Polymer Nanocomposites</b>	Mahatma Gandhi University, Kottayam, Kerala, India
3	April 2017	CuO fabricated with <i>Azadirachta indica</i> plant extract: Photocatalytic and antimicrobial activities, <b>Second International conference on Advance polymeric Materials</b>	Mahatma Gandhi University, Kottayam, Kerala, India.
4	February 2023	Highly efficient photocatalytic degradation of cationic dye over SrVO <sub>4</sub> under natural solar irradiation for emerging contaminants, <b>International conference on polymer for advance Technology</b>	Asian Polymer Association.

#### Webinar participated

1. Emerging Trends in medicinal plant and Natural Products (ETMPNP), By Cardamom Planters' Association College, Bodinayakanur on 4<sup>th</sup> August, 2015
2. Three days National webinar on chemistry in circular economy and sustainability (CHEMinar-20) by Madurai Kamaraj University from 29<sup>th</sup> to 31<sup>th</sup> July 2020.
3. Nanocrystalline Materials for Application in Electrochemical power system, by Fatima Michael College of Engineering and Technology, on 21<sup>st</sup> July 2020.

4. Computational Chemistry on Biofuel Development (CCBD-2020) by St. Joseph's College of Engineering, on 16<sup>th</sup> July 2020.
5. Carbon Nanostructure and Its Application by St. Joseph's College of Engineering, on 20<sup>th</sup> July 2020.
6. "Advanced Nanomaterials and Their Applications" by The centre for Nanotechnology, St. Peter's Institute of Higher Education and Research, on 8<sup>th</sup> July 2020.
7. Translational and Interdisciplinary Research in Human Diseases Management, by centre of Drug Discovery and Development, Sathyabama Institute of science and Technology from 24- 30, July 2020.
8. 'Seaweeds Resources and Utilization in Tamil Nadu, by Department of Botany, Cardamom Planters' Association College, Bodinayakanur, on 9<sup>th</sup> October 2021

### Citation Index

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<b>I10-index</b>	<b>10</b>	<b>10</b>

### Book Publication

Semi Micro Qualitative analysis published in Notion press with ISBN: **9781685381370** (Link <https://notionpress.com/read/basic-principles-of-inorganic-semi-micro-qualitative-ananalysis>)

### Membership in various bodies

- Reviewer in various international journals like Environmental Science and Pollution Research, Journal of Photochemistry, International journal of scientific research, etc.
- As a member in PG Chemistry Board, Central Valuation, MKU, Madurai.
- As a member in exam valuation, PG Chemistry Board, DDE, MKU, Madurai.
- As a Protocol committee Member INSPIRE programmes, Feb – 2014 and Sep – 2014.
- As a Protocol committee Member ETC – 05, 2014.
- As a resource person in YSSP program 2022, in CPA College, Bodinayakanur

- ✓ **Acted as an organizing committee member in International Conference on Recent Trends in Solar Cells (ICRTSC-2023) organized by Cardamom Planters' Association College, Bodinayakanur sponsored by TNSCST on 12 and 13 January 2023.**

### Research Guidance

- **M. Phil** (Degree awarded): Five
- **M.Sc** (Completed) : Thirty
- Ph.D (ongoing) : One

### Research Project

- The TNSCST sponsored student project scheme, for the project entitled “ Green synthesis of metal oxide nanoparticles using plant extract as surface modifier” (BS-552) for the academic year 2021-2022.

### Teaching Experience

Designation	Institution	Duration
Assistant Professor	Theni college of Arts and Science, Theni	2012 to 2013
Assistant Professor	C.P.A College, Bodinayakanur	2013 to 2016
Assistant Professor	TKS College of Arts and Science, Theni	2016 to 2020
Assistant Professor	C.P.A College, Bodinayakanur	2020 to till now

### Field of Major Scientific Interest

- i. Green synthesis of Metal oxide using Biomass.
- ii. Photocatalytic degradation of organic pollutants.
- iii. Photochemistry of transition metal complexes.
- iv. Synthesis and Characterization of metal oxide nanomaterials.

### Course able to handle

- Physical Chemistry
- Organic Chemistry
- Nanotechnology



- Analytical chemistry

### Chairperson

- **Acted as a chairperson, Second International conference on Advance polymeric Materials**, held on 7– 9 April, 2017, Mahatma Gandhi University, Kottayam, Kerala, India
- **Acted as a resource person in UGC sponsored Bridge Intensive Course held** in July 2014 at the Cardamom Planters' Association College, Bodinayakanur.
- **Acted as a resource person in UGC sponsored Bridge Intensive Course held** in July 2015 at the Cardamom Planters' Association College, Bodinayakanur.
- ✓ ***Acted as a speaker in international conference on polymer for advance Technology on February 23-25, 2023 Goa, India organized by Asian polymer Association supported by department of chemical and petro-chemical under the topic of textile pollution management.***

### Workshop Attended

1. 10-Day Hands-on Training on Advanced Molecular Docking during 16 – 26 October 2021 conducted by the Directorate of Research, SAFI Institute of Advanced Study, Calicut, Kerala in association with SIAS Research Forum.
2. 10-Day Hands-on Training on Advanced Latex during 4 – 14 December 2021 conducted by the Directorate of Research, SAFI Institute of Advanced Study, Calicut, Kerala in association with SIAS Research Forum.

### Faculty Development Program

1. Five day virtual faculty development program on '**Material processing and characterization on current perspectives**' by Bangalore Institute of Technology on 31<sup>st</sup> August 2020.
2. One day online faculty development program on '**How to write Effective Case Study**' by Atmiya university, Rajkot, Gujarat on 2<sup>nd</sup> May, 2020.
3. Two weeks (40 hours) Online Course on "**Directions and Dimensions of Accreditation Criteria in the light of NEP for HEIs**" by the Electronics and ICT Academy at PDPM

IITDM Jabalpur and Sri Sankara Arts and Science College, Kanchipuram during **3-12 February, 2022.**( recognized by AICTE/UGC)

**4. IP awareness / training program under National Intellectual property Awareness Mission on November 10, 2022 organized by Intellectual property Office, India.**

**5. Intellectual property Rights on 22.02.2023 in collaboration with TNSCST at Cardamom Planters' Association College, Bodinayakanur.**

**6. 40 hours of Digital Productivity and AI Fluency under the Microsoft digital skills programme conducted by Microsoft in partnership with naan mudhalvan from 1.7.2024 to 6.7.2024**

### **Instrument Handled**

- UV – Visible Spectroscopy
- FTIR Spectroscopy
- Cyclic Voltammeter
- UV – Visible DRS Spectroscopy
- Spectrofluorimetry

### **Software skills**

<b>Operating Systems</b>	Dos, Windows 95, 98, 2000, XP
<b>Chemistry related software:</b>	<ol style="list-style-type: none"><li>1. Origin,</li><li>2. ChemDraw,</li><li>3. Gaussian view,</li><li>4. Coral draw,</li><li>5. Python,</li><li>6. Autodocking vina,</li><li>7. Latex,</li><li><b>8. Molecular modeling</b></li></ol>

## **Personal Details**

Father's name : T. Rajendaran

Spouse : P. Saravanan

Date of Birth: 02.06.1983

Sex : Female

Marital Status: Married

Nationality: Indian

Religion : Hindu

Community : BC

Language : English and Tamil

## **Declaration**

I solemnly confirm all the information provided above is true to the best of my knowledge and belief.

Date :

Place : Theni

(Dr. R. KARTHIGA)