BIO-DATA

1. Name : **Dr. K. MUTHU**

2. Present Position & Official address : **Assistant Professor**

Department of Chemistry
Manonmaniam Sundaranar University
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3. Name of the Father/~~Husband~~ : M. Karuppiah

4. Date of Birth : 08.04.1977

5. Nationality : Indian

6. General Educational Qualification:

Degree	Branch	Institution/University	Month & Year
Ph.D.,	Chemistry	University of Madras	December 2009
M.Sc.,	Chemistry	Madurai Kamaraj University	November 2001
B.Sc.,	Chemistry	Madurai Kamaraj University	April 1998
HSC/+2	Phy, Che, Bot, Zoo	TN State Board	March 1995
SSLC		TN State Board	April 1993

7. Nature of the Occupation (teaching specialization) : Teaching to M. Sc., M. Phil Students and Research supervision for M. Phil., and Ph.D Students

- Applications of Organic spectroscopy
- Chemistry of Natural Products
- Organic reaction mechanism
- Pericyclic reaction
- Retrosyntheitc analysis
- Organic Photochemistry

8. Research interest : i) Natural Product Chemistry
ii) Synthetic Organic Chemistry
iii) Green Chemistry
iv) Biosynthesis of Metal Nanoparticles

v) Antioxidant, Antimicrobial Antidiabetic & Anticancer activity
vi) Green Catalysis
vii) Photocatalystic reduction of Industrial waste dye and wastewater

9. Professional Experience:

Institution	Post Held	Duration of service	Job description: UG&PG Teaching/Research/ Extension etc.
Manonmaniam Sundaranar University, Tirunelveli -12	Assistant Professor in Chemistry	13.10.2010 to till date	PG & M.Phil., level teaching for Organic Chemistry, PG, M.Phil and Ph.D level Research supervision
Sri Ramanujar Engg. College, Kolappakkam, Chennai – 48.	Assistant Professor in Chemistry	22.03.2010 to 10.10.2010	UG level teaching for Basic Engineering Chemistry

10. Supervision of candidates for Research :

	Completed	**Thesis submitted**	**ongoing**
M.Sc	**55**		**10**
M.Phil	**10**		**-**
Ph.D	**2**	**2**	**4**

11. Other Academic activities

- **Member - Board of Studies in PG Organic Chemistry 2015-2018 Manonmaniam Sundaranar University**
- **Faculty in-charge for PG & UG Chemistry 2017-2019 DD&CE, Manonmaniam Sundaranar University**
- **Member - Board of Studies in PG Chemistry 2017-2020 Sathakathulla Appa College, Tirunelveli**
- **Member - Board of Studies in UG Chemistry 2017-2020 Periyar University, Salem**
- **Member - Board of Studiesin UG & PG Chemistry 2021-2024 St. Mary's College, Thoothukudi**
- **Member - University Representative 2021-2023**

Muthukaruppan Memorial Arts and Science College, Sillankulam, Thoothukudi

- **Chairman – Board of valuation in UG & PG Chemistry**
  DD&CE, Manonmaniam Sundaranar University

- **Member - Board of Studies in PG Chemistry &Organic Chemistry**
  Manonmaniam Sundaranar University

- **Member - University Representative 2023-2025**
  CSI Jayaraj Annapackiam College – Nallur, Alangulam, Thenkasi dist

- **Member – Selection committee for Principal, Temporary Assistant Professors in various College to Affiliated Manonmaniam Sundaranar University**

- **Reviewer - More than 70 manuscript reviewed in the International/National Journals such as Elsevier, Springer, Wiley and Taylor and Francis Publications.**

List of Publications (International/National/Proceeding) Journals

46. R Sundaram, **K Muthu**, Rosmarinic acid alleviates the cardiac abnormalities in high fat diet induced hypercholesterolemic rats Prostaglandins and Other Lipid Mediators 176 (2025) 106936 [https://doi.org/10.1016/j.prostaglandins.2024.106936]

45. Sundaram Ramalingam, **Karuppiah Muthu**, Abdulrahman I Almansour, Natarajan Arumugam, Karthikeyan Perumal Chebulagic Acid Ameliorates Oxidative Stress and Inflammation via Regulation of Insulin Signaling Pathway in High-Fat Diet/Streptozotocin-Induced Diabetic Rats. *Rev. Bras. Farmacogn.* (2024). [https://doi.org/10.1007/s43450-024-00600-0]

44. R Sundaram, **K Muthu**, Chrysin attenuates hyperglycemia associated with hepatorenal and glycoprotein abnormalities via regulation of glucose metabolism in HFD/ STZ-induced diabetic rats, Phytomedicine Plus 4 (2024) 100632, [https://doi.org/10.1016/j.phyplu.2024.100632]

43. R Sundaram, **K Muthu**, J Prabhakaran, Ameliorative potential of β-sitosterol and lupeol on high fat diet and streptozotocin -induced hepatorenal and cardiac complications via regulation of carbohydrate metabolic enzymes in diabetic rats, Pharmacological Research-Modern Chinese Medicine 11 (2024) 100416

42. Sundaram Ramalingam, **Muthu Karuppiah**, Prabhakaran J Ferulic acid attenuates streptozotocin induced alternation in glycoprotein moiety via regulation of carbohydrate

metabolic enzymes in rats, Comparative Clinical Pathology 33 (2024) 599-610 (https://doi.org/10.1007/s00580-024-03578-2)

41. Thangapushbam, V., Rama, P., Sivakami, S., Jothika, M., **Muthu, K**., Abdulrahman I. Almansour., Natarajan Arumugam & Karthikeyan Perumal, "Potential In-vitro Antioxidant and Anti-inflammatory Activity of *Martynia annua* Extract mediated Phytosynthesis of MnO_2 Nanoparticles" Heliyon. 10 (2024) e29457. (DOI: https://doi.org/10.1016/j.heliyon.2024.e29457) [I.F- 3.4]

40. Rama, P, Thangapushbam, V, Sivakami, S, Jothika, M, Mariselvi, P, Sundaram, R, & **Muthu, K**,'Preparation, characterization of green synthesis FeO nanoparticles and their photocatalytic activity towards Basic Fuschin dye', Journal of the Indian Chemical Society, 101(4), (2024) 101142. ISSN:**0019-4522**. I.F-3.20, https://doi.org/10.1016/j.jics.2024.101142.

39. Thangapushbam, V., Sivakami, S., Rama, P., Jothika, M., & **Muthu, K**, A facile green synthesis of $Ag@MnO_2$ nanoparticles using *Martynia annua* plant extract and their biological activity and catalytic reduction of dye, Results in Chemistry. 7 (2024)101495. (DOI: https://doi.org/10.1016/j.rechem.2024.101495) [I.F- 2.5]

38. G Vasu, S Ramalingam, **K Muthu**, R.Sundaram, J Prabhakaran, Chebulagic Acid Alleviates Inflammation Via Regulation of Skeletal Muscle IR/IRS-1/AKT/GLUT4 Signaling Pathway in Diabetic Rats Research Square 2024, DOI: https://doi.org/10.21203/rs.3.rs-3859769/v1

37. **K.Muthu**, V.Thangapushbam, P.Rama, S.Sivakami, M. Jothika, Green Synthesis, Characterization and photocatalytic reduction of Congo red using Ag NPs from Millingtonia hortensis leaf extract Research Square 2023 DOI: https://doi.org/10.21203/rs.3.rs-2767566/v1

36. P.Rama, P.Mariselvi, R.Sundaram, **K.Muthu "**Eco-friendly green synthesis of silver nanoparticles from Aegle marmelos leaf extract and their antimicrobial, antioxidant, anticancer and photocatalytic degradation activity**"** Heliyon 9(6) (2023) e16277 (**Impact factor 4.00**) [https://doi.org/10.1016/j.heliyon.2023.e16277]

35. V. Thangapushbam, **K.Muthu, "**Biosynthesis of silver nanoparticles using *Martynia annua*and its antimicrobial and cytotoxic activities**"** Materials Technology 37(14) (2022) 3174-3183 (**Impact factor 3.297**) [https://doi.org/10.1080/10667857.2022.2135475]

34. Sivasubbu MangalaNagasundari, Kasi Murugan, Jayakumar Palanisamy, **Karuppiah Muthu "**Plant (Pedalium murex L.) mucilage green synthesized and capped silver nanoparticles: in vitro biological and solar-driven photocatalytic dye degradation activity**"** Phosphorus, Sulfur, and Silicon and the Related Elements 197 (2022) 254-262 (Impact factor 1.31) [https://doi.org/10.1080/10426507.2021.2012675]

33. Ramalingam Sundaram, **Karuppiah Muthu**, Palanivelu Shanthi Panchanatham Sachdanandam, "Antioxidant and antihyperlipidemic activities of catechol derivatives and biflavonoid isolated from *Semecarpusanacardium* seeds" Toxicology Mechanism

and Methods 32, 2022, 123-131 (https://doi.org/10.1080/15376516.2021.1973170) 2021 (**Impact factor : 2.295**).

32. Ganesh Vasu Sundaram Ramalingam, **Karuppiah Muthu** "Chebulagic acid attenuates HFD/Streptozotocin induced impaired glucose metabolism and insulin resistance via up regulations of PPAR γ and GLUT 4 in type 2 diabetic rats" Toxicology Mechanism and Methods32(3), (2022) 159-170 (https://doi.org/10.1080/15376516.2021.1976333) (**Impact factor : 2.295**).

31. R. Sundaram, V. Ganesh, E. Nandhakumar, **K. Muthu** "Hepatoprotective and anti-inflammatory potential of chebulagic acid on carbon tetrachloride–induced hepatic fibrosis by antioxidative activities in rats" Comparative Clinical Pathology 30, 2021, 961-971(https://doi.org/10.1007/s00580-021-03295-0). (**Impact factor :0.966**).

30 B. Akilandaeaswari**, Karuppiah Muthu, "**One-pot Green Synthesis of Au-Ag Bimetallic Nanoparticles from *Lawsonia inermis* seed extract and its catalytic reduction of environmental polluted methyl orange and 4-ntrophenol**"**Journal of the Taiwan Institute of Chemical Engineers 127 (2021) 292-301(https://doi.org/10.1016/j.jtice.2021.07.019) (**Impact Factor 5.876**)

29. S. MangalaNagasundari, **K.Muthu**, K.Kaviyarasu, Dunia A. AlFarraj, RouaM.Alkufeidy "Current trends of Silver doped Zinc oxide nanowires photocatalytic degradation for energy and environmental application" Surfaces and Interfaces (2021), 23, 100931 (DOI: org/10.1016/j.surfin.2021.100931) (**Impact factor 6.137**)

28. **K. Muthu**, S. Rajeswari, B. Akilandaeaswari, S.M. Nagasundari& R. Rangasamy "Synthesis, characterisation and photocatalytic activity of silver nanoparticles stabilised by *Punicagranatum*seeds extract" Materials Technology 36 (2021) 684-693 (**Impact factor 3.846**) [https://doi.org/10.1080/10667857.2020.1786786].

27**. K. Muthu**, S. Rini, S. MangalaNagasundari & B. Akilandaeaswari "Photocatalytic reduction and antioxidant potential of green synthesized silver nanoparticles from *Catharanthusroseus* flower extract" Inorganic and Nano-Metal Chemistry 51:4 (2021) 579-589 (**Impact factor 1.716**) [https://doi.org/10.1080/24701556.2020.1799404].

26. B. Akilandaeaswari & **K.Muthu** "Green method for synthesis and characterization of gold nanoparticles using *Lawsonia inermis* seed extract and their photocatalytic activity" Materials letters 277 (2020) 128344 (**Impact factor 3.574**) [https://doi.org/10.1016/j.matlet.2020.128344].

25. R. Sundaram, P. Meenatchi, **K. Muthu**, V. Ganesh, G. Rahul, G. Kirubananthan, T. Muthusamy "Effect of β-sitosterol on glucose homeostasis by sensitization of insulin resistance via enhanced protein expression of PPRc and glucose transporter 4 in high fat diet and streptozotocin-induced diabetic rats" Cytotechnology (2020) 72, 357–366. (**Impact factor 2.040**) [https://doi.org/10.1007/s10616-020-00382-y].

24 Sundaram Ramalingam, **Muthu Karuppiah**, Muthusamy Thiruppathi, Shanthi Palanivelu & Sachdanandam Panchanatham "Antioxidant potential of biflavonoid attenuates hyperglycemia by modulating the carbohydrate metabolic enzymes in high fat

diet/streptozotocin induced diabetic rats" Redox Report 2020, 25(1), 1–10. (**Impact factor 4.412**) [https://doi.org/10.1080/13510002.2020.1722914].

23. Sundaram Ramalingam, **Muthu Karuppiah**, Muthusamy Thiruppathi "Antihyperglycaemic potential of rosmarinic acid attenuates glycoprotein moiety in high-fat diet and streptozotocin-induced diabetic rats" Frontiers in Life Science 2020, 13(1), 120–130 (**Impact factor 2.0**) [https://doi.org/10.1080/26895293.2020.1733104].

22 **Karuppiah Muthu,** B. Akilandaeaswari, S. MangalaNagasundari "Green Synthesis of Silver Nanoparticles using *Polyalthialongifolia* stem bark extract and their Catalytic Reduction of 4-Nitrophenol" Asian Journal of Chemistry 319(11) (2019), 2439-2442. [https://doi.org/10.14233/ajchem.2019.22071].

21 Sundaram Ramalingam, **Muthu Karuppiah**, V. Vishnu Priya, Shanthi Palanivelu, Sachdanandam Panchanatham, "Isolation and characterization of catechol derivatives from *Semecarpusanacardium*nuts" International Journal of Green Pharmacy 13(3) (2019) 289-298. [http://dx.doi.org/10.22377/ijgp.v13i3.2610].

20 V. Karthik, V. Vishnu Priya, R. Gayathri, **K. Muthu**, R. Sundaram "Evaluation of *in vitro* rheumatoid arthritis activity of catechol derivatives isolated from *Semecarpusanacardium*seeds" Drug Invention Today 12(7) (2019) 1399-1401. (**Impact factor 0.200**) [ISSN: 0975-7619].

19. Sundaram Ramalingam, **Muthu Karuppiah**, Sivakumar Mullaivanam Ramasamy, Ganesh Vasu, Rahul Gopalakrishnan, Shanthi Sivakumar, V. Vishnupriya "Preliminary phytochemical screening of Semecarpusanacardium nut milk extract – A Siddha drug" Drug Invention Today 12(4) (2019) 642-645. (**Impact factor 0.200**) [ISSN: 0975-7619].

18. B. Amrithaa, V. Vishnu Priya, R. Gayathri, G. Dhanasekaran, **K. Muthu**, R. Sundaram "Antiproliferative effect of β-sitosterol on human lung adenocarcinoma cell line A549 – *In vitro*" Drug Invention Today 11(8) (2019) 1818-1822. (**Impact factor 0.200**) [ISSN: 0975-7619].

17. R. Sharmila, V. Vishnu Priya, R. Gayathri, G. Dhanasekaran, **K. Muthu**, R. Sundaram "Antioxidant potential of β-sitosterol on human lung adenocarcinoma cell line A549 – *In vitro*" Drug Invention Today 11(8) (2019) 1799-1802. (**Impact factor 0.200**) [ISSN: 0975-7619].

16. G.L. Gohul, V. Vishnupriya, R. Gayathri, G. Dhanasekaran, **K. Muthu**, R. Sundaram "Anti-inflammatory activity of catechol derivatives on buccal tumor cell line TR146 *in vitro*" Drug Invention Today 11(7) (2019) 1538-1540. (**Impact factor 0.200**) [ISSN: 0975-7619].

15. Sundaram Ramalingam, **Muthu Karuppiah**, Sivakumar Mullaivanam Ramasamy, Ganesh Vasu, Rahul Gopalakrishnan, Shanthi Sivakumar, V. Vishnupriya "In vitro antioxidant potential of acyclic isoprenoid isolated from Semecarpusanacardium" Drug Invention Today 11(4) (2019) 928-932. (**Impact factor 0.200**) [ISSN: 0975-7619].

14. Ramalingam Sundaram, Purusothaman Ayyakkannu, **Karuppiah Muthu**, Soharaparveen Nazar, Shanthi Palanivelu, Sachdanandam Panchanatham "Acyclic Isoprenoid Attenuates Lipid Anomalies and Inflammatory Changes in Hypercholesterolemic Rats" Ind J ClinBiochem (Oct-Dec 2019) 34(4):395–406. [https://doi.org/10.1007/s12291-018-0764-8].

13. I.Merlin, C.Vedhi, **K.Muthu**, A.Syed Mohamed "Influence of pH and Temperature on The Structure and Size of Tin Oxide Nanoparticles" Journal of Nanoscience and Technology 4(5) (2018) 564-566. [https://doi.org/10.30799/jnst.182.18040527].

12. Ramalingam Sundaram, **Muthu Karuppaiah**, Palanivelu Shanthi, Panchanatham Sachdanandam "Acute and sub-acute studies of catechol derivatives from *Semecarpus anacardium*" Toxicology Reports 5 (2018) 231–239. [https://doi.org/10.1016/j.toxrep.2018.01.004].

12. Ayyakkannu Purushothaman, Packirisamy Meenatchi, Nallappan Saravanan, **Muthu Karuppaiah**, Ramalingam Sundaram "Isolation and Characterization of an Acyclic Isoprenoid from *Semecarpus anacardium* Linn. and its Antibacterial Potential in vitro" Journal of Pharmacopuncture 20(2) (2017) 119-126. [https://doi.org/10.3831/KPI.2017.20.016].

10. **Karuppiah Muthu** and Sethuraman Priya "Green synthesis, characterization and catalytic activity of silver nanoparticles using *Cassia auriculata* flower extract separated fraction" SpectrochimicaActa Part A: Molecular and Biomolecular Spectroscopy 179 (2017) 66–72 (**Impact Factor 4.831**).[https://doi.org/10.1016/j.saa.2017.02.024].

9. **Karuppiah Muthu**. "Antioxidant activity of Biosynthesized Silver Nanoparticles: A Green Chemistry Study" International Journal of Pharmacy and Pharmaceutical Research (Ijppr.Human), 2016. 7(1), 597-605 (ISSN: 2349-7203). **(Impact Factor – PIF 5.016)**.

8. **K. Muthu**, C. Rathika **"***Casuarinaequisetifolia* leaf extract mediated biosynthesis of Silver Nanoparticles**"** Journal of Nanoscience and Technology 2(3) (2016) 166–168 (ISSN: 2455-0191).

7. **Karuppiah Muthu** and S. Sangeetha, "Isolation and Preliminary Phytochemical Analyses of *Momordicacharantia L.,* Seed Extract" *International Journal of Applied and Pure Science and Agriculture (IJAPSA* Volume 02, Issue 04, April - 2016 *pp 240-242 [*e-ISSN: 2394-5532, p-ISSN: 2394-823X] (**Scientific Journal Impact Factor: 3.762**).

6. Kamaraj Banupriya and **Karuppiah Muthu**, "Green synthesis of Silver Nanoparticles using *Daturametel*leaves extract" *International Journal of Applied and Pure Science and Agriculture (IJAPSA) Volume 02, Issue 2, February – 2016 pp 215-219 [*e-ISSN: 2394-5532, p-ISSN: 2394-823X] (**Scientific Journal Impact Factor: 3.762**).

5. Paramanantham, M., Murugesan, A., **Muthu, M.K** and Ramamoorthy, R "Green Synthesis of Silver Nanoparticles from *Holarrhenaantidysentrica*: Synthesis and

Antimicrobial Activity" *International Journal of Recent Scientific Research, Vol. 5, Issue, 3, pp.677-680, March, 2014.*[**ISSN: 0976-3031**].

4. Paramanantham, M., Murugesan, A., **Muthu, M.K** and Ramamoorthy, R "Green Synthesis of Silver Nanoparticles from *Helictresisora* Synthesis and Antimicrobial Activity" *International Journal of Recent Scientific Research, Vol. 5, Issue, 3, pp.673-676, March, 2014*. [**ISSN: 0976-3031**].

3. Ramalingam Sundaram, **Karuppiah Muthu**, Subramani Nagaraj, Palanivelu Shanthi, Panchanatham Sachdanandam "Isolation and characterization of catechol derivatives from *Semecarpus anacardium* seeds and their antibacterial potential in *In- vitro*" Biomedicine & Preventive Nutrition 4(2), 2014, 177-180. [http://dx.doi.org/10.1016/j.bionut.2013.12.001].

2. **K. Muthu**, M. Hema, S. Nagaraj, R. Rengasamy " *In-vitro* antibacterial potential, Phytochemical characterization of *Cyperus rotundus* flower extract" International Journal of Natural Products Research 2014; 4(1): 6-8. [**ISSN: 2249-0353**].

1. **Muthu Karuppiah**, Rangasamy Rajmohan "Green synthesis of silver nanoparticles using Ixoracoccinea leaves extract" Materials Letters 97 (2013) 141–143. (**Impact factor 3.574**). [http://dx.doi.org/10.1016/j.matlet.2013.01.087]

List of Books & Book chapter

1. S Mangalanagasundari, K Paulkumar, T JesiReeta, S Emmanuel Joshua Jebasingh, **K. Muthu**, K Murugan "Chapter 16 - Chitosan-based nanosystems: Exploitation in the agri-food sector" Micro and Nano Technologies (2020), Pages 355-391 [https://doi.org/10.1016/B978-0-12-821354-4.00016-9]

2. K.Paulkumar, T.JesiReeta, S.Immanuel Joshua Jebasingh, S Mangalanagasundari, **K. Muthu**, K Murugan "Chapter 20 - Potential utilization of zinc nanoparticles for wastewater treatment"Aquananotechnology Applications of Nanomaterials for Water Purification Micro and Nano Technologies 2021 Page 421-454 [https://doi.org/10.1016/B978-0-12-821141-0.00026-4].

3. K.Paulkumar, S.Mangalanagasundari, T.JesiReeta, S.Emmanuel Joshua Jebasingh, **K.Muthu,**K.Murugan, KamelA.Abd-Elsalam "Chapter 12 - Zinc nanomaterial applications in agroecosystems"Zinc-Based Nanostructures for Environmental and Agricultural ApplicationsNanobiotechnology for Plant Protection2021, Pages 223-241 [https://doi.org/10.1016/B978-0-12-822836-4.00011-2].

4. Rajmohan Rangasamy, Kannappan Lakshmi, and Karuppiah Muthu "Chapter15. Sustainable catalysis of nanocrystals:A green technology" Industrial Applications of Nanocrystals 2022, Pages 275-314 [ISBN: 978-0-12-824024-3] (https://www.elsevier.com/books/industrial-applications-of-nanocrystals/mallakpour/978-0-12-824024-3)

List of Publications in Proceeding: 14 Nos.

List of Best Research paper award: 7 Nos (National/International Conferences)

List of paper presentation in International/National seminars/Conference: More than 60Nos.

List of participation in International/National seminars/Conference/Workshops : More then 70 Nos.

	All	Since 2020
Citations	**855**	**688**
h-index	**14**	**12**
i10-index	**16**	**14**