

Faculty Profile



Dr. M. Thirumavalavan, M.Sc., Ph. D., PGDES
Professor - Chemistry

HIGHLIGHTS:

- Number of Journal Publications: 70
- H-Index: 19
- Project Funding Received: 6 (Completed-Abroad); 6 (Under Review)
- Patents Published: 15
- Patents Granted: NIL

PROFESSIONAL LINKS:

- Scopus ID: 54906219600
- Scopus Link: <https://www.scopus.com/authid/detail.uri?authorId=54906219600>
- Google Scholar ID: <https://scholar.google.com/citations?hl=en&user=tO4a9HAAAAAJ>
- Anna University Faculty ID: 2122256
- AICTE Faculty ID: 1-25455714081
- Anna University Supervisor ID: 4170088, dated on 16/03/2023
- LinkedIn: NIL

PROFESSIONAL BACKGROUND:

- Teaching Experience till date: 26.8 Years
- Industrial Experience: NIL

INTERNATIONAL EXPOSURE:

Total: 18 Years

- Research Professor (Teaching and Research), Graduate Institute of Environmental Engineering/Department of Electrical Engineering, National Central University, Taiwan - July 2008 to November 2021
- Post-Doctoral Scientist, Department of Inorganic and Biochemistry, Universitat Jaume I de Castellon, Spain - June 2008 to June 2008
- Post-Doctoral Scientist, Department of Chemistry, National Tsing Hua University, Taiwan - August 2006 to May 2008

- Post-Doctoral Scientist, Department of Environmental Chemistry, Tohoko University, Japan - July 2006 to July 2006
- Post-Doctoral Scientist, Department of Chemical Engineering, Instituto Superior Technico, Portugal - October 2004 to July 2006

ADDITIONAL INTERNATIONAL EXPOSURE

- Adjunct Faculty, Science Education Centre, National Chung-Hsing University, Taiwan - 2020 to till now
- Scientific Editor, Proof Reader and Consultant, Foreign Language Centre, National Cheng Kung University, Taiwan - 2020 to till now
- Research and Scientific Editorial Consultant, National Taipei University, Taiwan - 2018 to till now
- Research and Scientific Editorial Consultant and collaborator, Seoul National University of Science and Technology, South Korea - 2022 to till now

AREA OF SPECIALIZATION:

- Inorganic Chemistry
- Analytical Chemistry
- Electro Chemistry
- Nanotechnology/Nanobiotechnology
- Environmental Chemistry
- Polymer Chemistry
- Applied Chemistry
- Materials Science: Biomaterials/Biopolymers/Bio-ceramics
- Chemical Management

Ph.Ds AWARDED WITH DETAILS: NIL

S:No	Name of Scholar	Title of Thesis	Year of Completion	Full Time/Part Time

Ph.Ds GUIDING: NIL

- **Full Time Scholars:** NIL
- **Part Time Scholars:** NIL

SPONSORED RESEARCH / FUNDING APPLIED / CONSULTANCY:

- SERB-SURE (Rs. 30 Lakhs) - Under review
- SERB-SURE-Co-PI (Rs. 30 Lakhs) - Under review
- ICMR-IRPP (Rs. 90 Lakhs) - Under review
- ICMR-IRPP-Co-PI (Rs. 70 Lakhs) - Under review
- TSCST (Rs. 4.5 Lakhs) - Under review
- Yunnan Int. J. Lab (R&D), China-30 Lakhs RMB

PUBLICATIONS:

Scopus

1. Title: “Practical Approaches for Isolation, Purification and Characterization of Antioxidant Proteins and Peptides from *Macrotyloma uniflorum* (Lam.) Verdc. (Horse gram) seeds: Effects of heat treatment on the nutritional composition”

Authors: Shanmuganathan Nagarjun, Prabakaran Janani, Suresh Harykrishnan, Kanagaraja Abinaya, Sakthivelu Meenakumari, **Munusamy Thirumavalavan**, Raman Pachaiappan

Journal: *Food Chem.*, 2025, 477, 143592. **IF: 8.5**

2. Title: “Exploring the separation, purification, characterization and antioxidant activity of proteins and peptides from selected seagrasses in Palk Bay region of Tamil Nadu in India”

Authors: Ramesh Arya, Kanagaraja Abinaya, Sakthivelu Meenakumari, **Munusamy Thirumavalavan**, Devadasan Velmurugan, Periasamy Anbu, Raman Pachaiappan

Journal: *Int. J. Biol. Macromol.*, 2025, 295, 139606. **IF: 8.2**

3. Title: “An evaluation study on screening, partial purification, and characterization of antioxidant peptides from two varieties of *Clitoria ternatea*”

Authors: Suresh Harykrishnan, Mariappan Ganapathy, Kanagaraja Abinaya, Sakthivelu Meenakumari, **Munusamy Thirumavalavan**, Periasamy Anbu, Raman Pachaiappan

Journal: *Int. J. Biol. Macromol.*, **2025**, 285, 138312. **IF: 8.2**

4. Title: “A Review on Recent Trends in Green Synthesis, Pharmaceutical and Medical Applications of Nano ZnO”

Authors: **Munusamy Thirumavalavan**, Kalpana Sugumar, Sharmila Queenthly Sabarimuthu

Journal: *Inorganic Chemistry Communications (In press)*. **IF: 4.4**

5. Title: “Synthesis, spectral, DFT, topology, NCI and molecular docking studies of (1E,1'E)-N, N'-(sulfonylbis(4,1-phenylene))bis(1-(4-bromophenyl)methanimine)”

Authors: V. Tamilselvi, M. Arivazhagan, **Munusamy Thirumavalavan**, Kalpana Sugumar, S. Manivel^e, N. Elangovan, Natarajan Arumugam, R. Padmanaban

Journal: *J. Mol. Struct.*, 2024, 1315, 138808 (Chemistry and Engineering, Multidisciplinary). **IF: 3.8**

6. Title: “Solute-solvent interaction and adsorption studies of sulpha drug derivative: A DFT study”

Authors: N. Elangovan, Natarajan Arumugam, **Munusamy Thirumavalavan**, Sharmila Queenthly Sabarimuthu, R. Padmanaban Jebasingh Bhagavathsingh, Shanty Mathew

Journal: *J. Mol. Liquids*, 2024, 406, 125150. (Chemistry and Engineering, Multidisciplinary). **IF: 6.0**

7. Title: “Comparison study (experimental and theoretical), hydrogen bond interaction through water, donor acceptor investigation and molecular docking study of 3,3-((1,2-phenylenebis (azaneylylidene)) bis (methaneylylidene)) diphenol)”

Authors: N. Elangovan, **Munusamy Thirumavalavan**, T. Sankar Ganesan, S. Sowrirajan, S. Chandrasekar, Natarajan Arumugam

Journal: *J. Biomol. Struct. Dynamics*, 2024, 1-16 (Chemistry and Engineering, Multidisciplinary). **IF: 4.4**

8. Title: “Synthesis, Topology, Molecular docking and dynamics studies of *o*-phenylenediamine derivative”

Authors: T. Sankar Ganesan, N. Elangovan, **Munusamy Thirumavalavan**, Shanthi Seenan. S. Sowrirajan, S. Chandrasekar, Natarajan Arumugam, Abdulrahman I. Almansour, Sakkarapalayam M. Mahalingam, Datta Darshan V. M, Subba Rao Kanchi, Venketesh Sivaramakrishnan

Journal: *J. Bimol. Struc. Dynam.*, 2024, 1-20, (Chemistry and Engineering, Multidisciplinary).
IF: 4.4

9. Title: “Enhanced corrosion inhibition effect of sodium tartrate on copper in potable water”

Authors: Ramasamy Sudhakaran*, Thiagarajan Deepa, **Munusamy Thirumavalavan**, Sharmila Queenthly Sabarimuthu, Sellamuthu Babu, Thayuman Asokan, Abdulrahman I. Almansour, Pandian Bothi Raja, Karthikeyan Perumal

Journal: *J. King Saud Univ. Sci.*, 2023, 35, 102921. **IF: 3.8**

10. Title: “Trisodium citrate as a potential and eco-friendly corrosion inhibitor of copper in potable water”

Authors: Ramasamy Sudhakaran, Thiagarajan Deepa, **Munusamy Thirumavalavan**, Sharmila Queenthly Sabarimuthu, Sellamuthu Babu, Thayuman Asokan, Pandian Bothi Raja, Natarajan Arumugam, Karthikeyan Perumal, Sinouvassane Djearmane, Lai-Hock Tey, Saminathan Kayarohanam

Journal: *J. King Saud Univ. Sci.* 2023, 35, 102907. **IF: 3.8**

11 Title: “Functionalized chitosan and sodium alginate for the effective removal of recalcitrant organic pollutants”

Authors: **Munusamy Thirumavalavan**,

Journal: *Int. J. Biol. Macromol.*, 2023, 243, 125276 (8 pages). **IF: 8.2**

12. Title: Trivalent rare earth elements substitution in 58S bioactive glass matrix for bone repair applications-An *in vitro* and *in vivo* study

Authors: Likha Chandran, Arumugam Marimuthu, Ravichandran Abimanyu, Parasuraman Padmanabhan, **Munusamy Thirumavalavan**, Anbalagan M. Ballamurugan

Journal: *Materials Chemistry and Physics*, 2023, 300, 127533. **IF: 4.8**

13. Title: “A comprehensive study on the mechanism for controlled synthesis of different final products of ZnO nanomaterials using polysaccharides as chelates”

Authors: Shi-Tsung Lin, **Munusamy Thirumavalavan**, and Jiunn-Fwu Lee

Journal: *Results in Physics*, 2018, 9. 1596-1601. **IF: 4.6**

14. Title: “Isolation, purification and characterization of proteinaceous fungal α -amylase inhibitor from rhizome of *Cheilocostus speciosus* (J.Koenig) C.D.Specht”

Authors: Abinaya Balasubramanian, Manish Bhattacharjee, Meenakumari Sakthivel, **Munusamy Thirumavalavan**, Thirumurthy Madhavan, Santhosh Kumar Nagarajan, Velusamy Palaniyandi and Pachaiappan Raman

Journal: *Int. J. Biol. Macromol.* 2018, 111, 39-51. **IF: 8.2**

15. Title: “*In-situ* electrochemically generated peroxomonophosphoric acid as oxidant for effective removal of gaseous acetaldehyde”

Authors: Govindan Muthuraman, **Munusamy Thirumavalavan** and Il Shik Moon

Journal: *Chem. Eng. J.* 2017, 325, 449-456. **IF: 16.8**

16. Title: “A facile approach to the isolation of proteins in *Ferula asafetida* and their enzyme stabilizing, anti-microbial and anti-oxidant activity”

Authors: Chandran Sanjana, Meenakumari Sakthivel, **Munusamy Thirumavalavan**, Jagadeshwar Reddy Thota, Vairamani Mariappanadar and Raman Pachaiappan

17. Title: "Isolation and characterization of α -amylase inhibitor from *Leucas aspera* (Willd) Link: α -amylase assay combined with FPLC chromatography for expedited identification"

Authors: Christopher Meera, Sakthivel Meenakumari, **Munusamy Thirumavalavan** and Raman Pachaiappan

Journal: *J. Plantbiochem. Biotechnol.*, **2017**, 26, 346-355. **IF: 1.5**

18. Title: "Feasible preparation and characterization of tunable novel montmorillonite/block-copolymers based composites as potential dual adsorbent candidates"

Authors: Hsuan-Hsuan Chen, **Munusamy Thirumavalavan**, Ru-Zhen He, Ya-Ting Shih and Jiunn-Fwu Lee

Journal: *Appl. Clay Sci.*, **2017**, 137, 192-202. **IF: 5.9**

19. Title: "The influence of structural and processing parameters of modifiers on interlayer structure of modified montmorillonite"

Authors: Hsuan-Hsuan Chen, **Munusamy Thirumavalavan**, Yi-Jun Ma and Jiunn-Fwu Lee

Journal: *RSC Adv.*, **2015**, 5, 83217-83224. **IF: 4.03**

20. Title: "A facile approach for achieving an effective dual sorption ability of Si/SH/S grafted sodium montmorillonite"

Authors: Hsuan-Hsuan Chen, **Munusamy Thirumavalavan**, Fang-Yu Lin and Jiunn-Fwu Lee

Journal: *RSC Adv.*, **2015**, 5, 57792-57803. **IF: 4.03**

21. Title: "A versatile chitosan/ZnO nanocomposite with enhanced antimicrobial properties"

Authors: Madasamy Malini, **Munusamy Thirumavalavan**, Wen-Yi Yang, Jiunn-Fwu Lee and Gurusamy Annadurai

Journal: *Int. J. Biol. Macromol.*, **2015**, 80, 121-129. **IF: 8.2**

22. Title: "Enhanced adsorption of inorganic and organic pollutants by amine modified sodium montmorillonite nanosheets"

Authors: **Munusamy Thirumavalavan**, Ya-Ting Jhuang and Jiunn-Fwu Lee

Journal: *RSC Adv.*, **2015**, 5, 20583-20594. **IF: 4.03**

23. Title: "Effects of porogen and cross-linking agents on improved properties of silica supported macroporous chitosan membranes for enzyme immobilization"

Authors: Wen-Yi Yang, **Munusamy Thirumavalavan**, and Jiunn-Fwu Lee

Journal: *J. Membr. Biol.*, **2015**, 248, 231-240. **IF: 2.5**

24. Title: "Facile synthesis of thiol-functionlaized mesoporous silica - Their role for heavy metal removal efficiency"

Authors: Ling-Chu Lin, **Munusamy Thirumavalavan** and Jiunn-Fwu Lee

Journal: *Clean - Soil, Air, Water*, **2014**, 42(9999), 1-11. **IF: 2.4**

25. Title: "Development of silica gel supported modified macroporous chitosan membranes for enzyme immobilization and their characterization analyses"

Authors: Wen-Yi Yang, **Munusamy Thirumavalavan**, Malini Madasamy, Gurusamy Annadurai and Jiunn-Fwu Lee

Journal: *J. Membr. Biol.*, **2014**, 247, 549-559. **IF: 2.5**

26. Title: "Synthesis of ZnO/Zn nano photocatalyst using modified polysaccharides for photodegradation of dyes"

Authors: Shi-Tsung Lin, **Munusamy Thirumavalavan**, Ting-Yan Jiang and Jiunn-Fwu Lee

Journal: *Carbohydr. Polym.*, **2014**, 105, 1-9. **IF: 10.7**

27. Title: "Preparation and morphology studies of nano zinc oxide obtained using native and modified chitosans"

Authors: **Munusamy Thirumavalavan**, Kai-Lin Huang and Jiunn-Fwu Lee

Journal: *Materials*, **2013**, 6(9), 4198-4212. **IF: 3.8**

28. Title: "Investigation of preparation conditions and photocatalytic efficiency of nano ZnO using different polysaccharides"

Authors: **Munusamy Thirumavalavan**, Fang-Mai Yang and Jiunn-Fwu Lee

Journal: *Env. Sci. Poll. Res.*, **2013**, 20, 5654-5664. **IF: 5.2**

29. Title: "Evaluation of analytical approaches linked to high performance liquid chromatography for analysis of microcystin-LR in natural water systems: Effects of column and mobile phase gradient"

Authors: **Munusamy Thirumavalavan**, Ya-Lan Hu and Jiunn-Fwu Lee

Journal: *Toxicol. Env. Chem.*, **2013**, 95(2), 221-231. **IF: 1.6**

30. Title: "Synthesis and properties of nano-ZnO using polysaccharides as templates: Effects of various parameters on surface modification of polysaccharides"

Authors: **Munusamy Thirumavalavan**, Kai-Lin Huang and Jiunn-Fwu Lee

Journal: *Colloids and Surfaces A: Physicochem. Eng. Aspects*, **2013**, 417, 154-160. **IF: 5.6**

31. Title: "Effects of humic acid and suspended soils on adsorption and photo-degradation of microcystin-LR onto water samples from taiwan reservoirs and rivers"

Authors: **Munusamy Thirumavalavan**, Ya-Lan Hu and Jiunn-Fwu Lee

Journal: *J. Hazard. Mater.*, **2012**, 217-218, 323-329. **IF: 14.2**

32. Title: "Adsorption and photo-degradation of Microcystin-LR onto sediments collected from reservoirs and rivers in taiwan: A laboratory study to determine the fate, transfer and degradation of microcystin-LR"

Authors: **Munusamy Thirumavalavan**, Ya-Lan Hu and Jiunn-Fwu Lee

Journal: *Env. Sci. Pollut. Res.*, **2012**, 19, 2390-2399. **IF: 5.2**

33. Title: "Synthesis of Hf(IV) complex from cyclam (1,4,8,11-tetraazacyclotetradecane) containing amino-amido groups"

Authors: **Munusamy Thirumavalavan**, Jiunn-Fwu Lee

Journal: *Syn. Communs.*, **2012**, 42(2), 223-226. **IF: 1.9**

34. Title: "Monitoring of the structure of mesoporous silica materials tailored using different organic templates and their effect on the adsorption of heavy metal ions"

Authors: **Munusamy Thirumavalavan**, Ying-Ting Wang, Ling-Chu Lin and Jiunn-Fwu Lee

Journal: *J. Phy. Chem. C*, **2011**, 115(16), 8165-8174. **IF: 4.8**

35. Title: "Fourier transform infrared spectroscopic analysis of native and surface modified fruit peel adsorbents before and after the adsorption of heavy metal ions from aqueous solution"

Authors: **Munusamy Thirumavalavan**, Yi-Ling Lai and Jiunn-Fwu Lee

Journal: *J. Chem. Eng. Data*, **2011**, 56(5), 2249-2255. **IF: 3.2**

36. Title: "Synthesis and structural studies of biologically important heterocyclic compounds"

Authors: Periyasamy Murugan, **Munusamy Thirumavalavan**, Tian-Huey Lu, Kuo Chu Hwang

Journal: *J. Heterocyclic Chem. (In press)*. **IF: 3.5**

37 Title: "Effect of preparation conditions on the adsorption of heavy metal ions from aqueous solution by mesoporous silica materials prepared using organic template (HDTMAB)"

Authors: Ling-Chu Lin, **Munusamy Thirumavalavan**, Ying-Ting Wang and Jiunn-Fwu Lee

Journal: *J. Chem. Eng. Data*, **2010**, 55, 3667-3673. **IF: 3.2**

38. Title: "Surface area and pore size tailoring of mesoporous silica materials by different hydrothermal treatments and adsorption of heavy metal ions"

Authors: Ling-Chu Lin, **Munusamy Thirumavalavan**, Ying-Ting Wang and Jiunn-Fwu Lee

Journal: *Colloids and Surfaces A: Physicochem. Eng. Aspects*, **2010**, 369, 223-231. **IF: 5.6**

39. Title: "Cellulose based native and surface modified fruit peels for the adsorption of heavy metal ions from aqueous solution: Langmuir adsorption isotherms"

Authors: **Munusamy Thirumavalavan**, Yi-Ling Lai, Ling-Chu Lin and Jiunn-Fwu Lee

Journal: *J. Chem. Eng. Data*, **2010**, 55, 1186-1192. **IF: 3.2**

40. Title: "Effective adsorption of heavy metal ions (Cu^{2+} , Pb^{2+} , Zn^{2+}) from aqueous solution by immobilization of adsorbents on ca-alginate beads"

Authors: Yi-Ling Lai, **Munusamy Thirumavalavan** and Jiunn-Fwu Lee

Journal: *Toxicol. Env. Chem.*, **2010**, 92 (4), 697-705. **IF: 1.6**

41. Title: "Effects of PAH biodegradation in the presence of non-ionic surfactants on a bacterial community and its exoenzymatic activity"

Authors: Yi-Tang Chang, **Munusamy Thirumavalavan** and Jiunn-Fwu Lee

Journal: *J Environ. Sci. Health Part A*, **2010**, 45(4), 421-431. **IF: 2.6**

42. Title: "Synthesis of heterobinuclear Cu(II)-Zn(II) complexes derived from lateral macrobicyclic tricompartamental ligands: Spectral, magnetic, electrochemical and catalytic studies"

Authors: **M. Thirumavalavan**, P. Akilan and M. Kandaswamy

Journal: *Polyhedron*, **2006**, 25, 2623-2628. **IF: 3.0**

43. Title: "Synthesis and characterization of novel unsymmetrical macrobicyclic tricompartamental mono and binuclear nickel(II) complexes: Electrochemical and kinetic studies of phosphate hydrolysis"

Authors: **M. Thirumavalavan**, P. Akilan and M. Kandaswamy

Journal: *Inorg. Chim. Acta*, **2006**, 359, 3831-3840. **IF: 3.2**

44. Title: "Electrochemical and kinetic response of heterobinuclear Ni(II)-Zn(II) complexes derived from unsymmetrical lateral macrobicyclic tricompartamental ligands"

Authors: **M. Thirumavalavan**, P. Akilan and M. Kandaswamy

Journal: *Inorg. Chim. Acta*, **2006**, 359, 2555-2560. **IF: 3.2**

45. Title: "Direct synthesis of macrocyclic Vo^{2+} complex from cyclam (1,4,8,11-tetraazacyclotetradecane) with amino-amido groups and ESR studies"

Authors: **M. Thirumavalavan**, A.M. Martins

Journal: *Inorg. Chem. Commun.*, **2006**, 9, 497-499. **IF: 4.4**

46. Title: "Lateral macrobicyclic compartmental mono and binuclear nickel(II) complexes derived from phenolate ligands: Synthesis, spectral, electrochemical and kinetic studies"

Authors: **M. Thirumavalavan**, P. Akilan and M. Kandaswamy

Journal: *Polyhedron*, **2005**, 24, 1781-1791. **IF: 3.0**

47. Title: "New tetraaza macrobicyclic ditopic receptors for metal ion: synthesis, redox response and kinetics of phosphate hydrolysis of unsymmetrical macrobicyclic mono and binuclear nickel(II) complexes"

Authors: **M. Thirumavalavan**, P. Akilan and M. Kandaswamy

Journal: *Supramol. Chem.*, **2004**, 16, 495-504. **IF: 2.4**

48. Title: "Coordination behaviour of novel macrocyclic tricompartamental ligands: Synthesis, magnetic, electrochemical and kinetic studies of unsymmetrical mono and binuclear copper(II) complexes"

Authors: **M. Thirumavalavan**, P. Akilan and M. Kandaswamy

Journal: *Supramol. Chem.*, **2004**, 16, 137-146. **IF: 2.4**

49. Title: "Compartmental unsymmetrical lateral macrobicyclic ligands with aromatic backbone providing phenoxo bridge: Synthetic, spectral, magnetic, electrochemical and kinetic feature of mono and binuclear copper(II) complexes"

Authors: **M. Thirumavalavan**, P. Akilan, P. Amudha and M. Kandaswamy

Journal: *Polyhedron*, **2004**, 23, 519-527. **IF: 3.0**

50. Title: "Synthesis and characterization of μ -phenoxo-bridged binuclear copper(II) complexes derived from binucleating ligands: Studies on spectral, magnetic properties and catecholase activity"

Authors: **M. Thirumavalavan**, S. Maria Rayappan, P. Akilan and M. Kandaswamy

Journal: *Ind. J. Chem. Technol.*, **2004**, 11, 29-34. **IF: 0.8**

51. Title: "Synthesis of lateral macrobicyclic compartmental ligands: Structural, magnetic, electrochemical and catalytic studies of mono and binuclear copper(II) complexes"

Authors: **M. Thirumavalavan**, P. Akilan, M. Kandaswamy, K. Chinnakali and G. Senthil Kumar

Journal: *Inorg. Chem.*, **2003**, 42, 3308-3317. **IF: 5.5**

52. Title: "Lateral macrobicyclic tricompartamental ligands: Synthetic, spectral, magnetic, electrochemical and kinetic aspects of binuclear copper(II) complexes"

Authors: P. Akilan, **M. Thirumavalavan** and M. Kandaswamy

Journal: *Polyhedron*, **2003**, 22, 1407-1413. **IF: 3.0**

53. Title: "Synthesis of mono and binuclear copper(II) complexes using new macrobicyclic tricompartamental ligands: Magnetic, electrochemical and catalytic studies"

Authors: P. Akilan, **M. Thirumavalavan** and M. Kandaswamy

Journal: *Polyhedron*, **2003**, 22, 3483-3492. **IF: 3.0**

54. Title: 3,4:9,10-dibenzo-1,12-diformyl-5,8-dioxadodecane

Authors: P.G. Aravindan, M. Yogavel, **M. Thirumavalavan**, P. Akilan, D. Velmurugan, M. Kandaswamy, S.S. Raj and H.K. Fun

Journal: *Acta. Cryst. E.*, **2003**, E59, o806-o807. **IF: 0.3**

55. Title: "Synthesis and spectral studies of macrocyclic mono and binuclear gadolinium(III) complexes derived from schiff's bases"

Authors: P. Akilan, **M. Thirumavalavan** and M. Kandaswamy

Journal: *Ind. J. Chem. Technol.*, **2003**, 10, 363-366. **IF: 0.8**

56. Title: "Synthesis of new macrobicyclic tricompartamental ligands and site preference of metal ion: Structural and electrochemical properties of mononuclear copper(II) complexes"

Authors: **M. Thirumavalavan**, P. Akilan and M. Kandaswamy

Journal: *Inorg. Chem. Commun.*, **2002**, 5, 422-426. **IF: 4.4**

57. Title: "Synthesis, spectral, magnetic and electrochemical properties of new dimeric copper(II) complexes"

Authors: P. Amudha, **M. Thirumavalavan** and M. Kandaswamy

Journal: *Polyhedron*, **1999**, 18, 1371-1375. **IF: 3.0**

58. Title: "Synthesis, spectral, electrochemical and magnetic properties of new phenoxo-bridged dicopper(II) complexes derived from unsymmetrical binucleating ligands"

Authors: P. Amudha, **M. Thirumavalavan** and M. Kandaswamy

Journal: *Polyhedron*, **1999**, 18, 1363-1369. **IF: 3.0**

59. Title: "An innovative strategy for identification of bioactive compounds of savoury Moringa-Ragi flour pancake (Ragi adai) and divulging their nutritional potential: A promising natural solution for iron and calcium deficiency in pregnant women"

Authors: Davasarthi Rawat, Pinki Kumari Singh, Sakthivelu Meenakumari, **Munusamy Thirumavalavan**, Rajendran Subhashini, Raman Pachaiappan

Journal: *Food Chem.*, (Under Review) **IF: 8.5**

60. Title: "A novel approach for profiling of nature-inspired and bioactive proteins and peptides isolated from selected medicinal plants as bio-factories and their implications in Alzheimer diseases by *in-silico* analysis"

Authors: Kanagaraja Abinaya, Nagasathiya Krishnan, Anantha Krishnan Dhanbalan, **Munusamy Thirumavalavan**, Velmurugan Devadasan, Pachaiappan Raman

Journal: *Journal of the Science of Food and Agriculture.*, (Revision Under Review) **IF: 3.4**

61. Title: "Paper waste as a renewable energy source for the production of biofuel with the help of yeast: Optimization of bioconversion by using response surface methodology"

Authors: Sharmila Queenthly Sabarimuthu, Aishwarya Kaushal, **Munusamy Thirumavalavan**, Anbalagan M. Ballamurugan

Journal: *Env. Sci. Poll. Res.* (Under Review) **IF: 5.2**

62. Title: "Morphology-controlled green synthesis of nano ZnO by using *Musa paradisiaca* (banana leaf) as a versatile capping agent and the effect of capping agent: Phase transition of ZnO structure and induced internal strain"

Authors: Saranya Balasubramaniam, Thirumalaikumaran Rathinam, **Munusamy Thirumavalavan**,

Journal: *Mat. Today Chem.* (Under Review) **IF: 6.7**

63. Title: "An *In-Silico* study of phytochemicals of *Cissus Quadrangularis* as sesources for docking with main protease of SARS COV-2"

Authors: Sharmila Queenthly Sabarimuthu, S. Shervin Prince, **Munusamy Thirumavalavan**, Mohanya Kumaravel

Journal: *Comp. Methods. Prog. Med.* (Under Review) **IF: 4.9**

64. Title: "Insight into the classification and dynamic bioactive properties of nutritional and anti-Nutritional factors in onion raita"

Authors: Vinduja Vasudevan, Abinaya Kanagaraja, Meenakumari Sakthivelu, Pradeep Sudhakaran, **Munusamy Thirumavalavan**, Periasamy Anbu, Pachaiappan Raman

Journal: *Food Sci. Technol. Int.*, (Under Review) **IF: 2.3**

65. Title: "Remarkable influence of structure directing agents in the controlled synthesis and properties of nanomaterials: A mini review"

Authors: **Munusamy Thirumavalavan**,

Journal: *Nanomed.: Nanotech. Biol. Med.*, (Under Review) **IF: 4.2**

66. Title: "An overview of black mustard (*Brassica Nigra L.*): Important facts, constituents, health benefits, profuse therapeutic applications and adverse effects"

Authors: **Munusamy Thirumavalavan**,
Journal: *Bioorg. Chem.*, (Under Review) **IF: 4.5**

67. Title: “An Insight on the Progress of Quorum Sensing Mechanisms, Impact of Quorum Sensing on Antimicrobial Resistance and Quorum Sensing Inhibition: A Systematic Review”
Authors: Allwyn Vyas Gopalakrishnan, Kanagaraja Abinaya, Munusamy Thirumavalavan, Raman Pachaiappan,
Journal: *Nature Microbiology* (Under Review) **IF: 20.5**

68. Title: “Analytical Insights on identification and characterization of potential bioactive compounds from two renal lithiasis-resistant plants viz. *Aerva lanata* and *Aerva javanica*”
Authors: Ravichandran Sanjai, Arun Manomey Rahul, Pinki Kumari Singh, **Munusamy Thirumavalavan**, Devadasan Velmurugan, Raman Pachaiappan
Journal: *Sep. Purif. Tech.*, (Under Review) **IF: 8.2**

Non-Scopus

1. Title: “Comment on **Bioactive compounds of *Calotropis gigantea* for cancer treatment**”
Authors: **Munusamy Thirumavalavan**,
Journal: *Arch. Biotechnol. Pharmaceut. Res.*, (In Press) **IF: 1.0**

2. Title: “Prospective on biotransformation of paper waste into biofuel” (**Invited paper**)
Authors: **Munusamy Thirumavalavan**,
Journal: *Prog. Petrochem. Sci.*, 2024, 702-703. **IF: 3.994**

3. Title: “Comment on “Utilization of NaOH treated rice husk for adsorptive discharge of Eriochrome Black-T from an aqueous solution” (**Invited paper**)
Authors: **Munusamy Thirumavalavan**,
Journal: *Prog. Petrochem. Sci.*, 2024, 704-705. **IF: 3.994**

4. Title: “Production of antioxidant peptides from *Ferula asafoetida* root protein”
Authors: Chandrasekaran Prabakaran, **Munusamy Thirumavalavan** and Raman Pachaiappan
Journal: *Int. J. Mol.Biol.*, **2016**, 1, 1-7.

5. Title: “A short review on applications of nanomaterials in biotechnology and pharmacology” (*Invited manuscript*)
Authors: **Munusamy Thirumavalavan**, Kalpana Settu and Jiunn-Fwu Lee
Journal: *Curr. Bionanotech.*, **2016**, 2, 116-121.

6. Title: “Comment on Nanobiocatalyst advancements and bioprocessing applications” reported by Mission *et al.*, in 2014 in Journal of Royal Society Interface (J. R. Soc. Interface 12: 20140891)” (*Invited manuscript*)
Authors: **Munusamy Thirumavalavan** and Kalpana Settu
Journal: *Am. J. Pharmaco. Pharmacotherapeutics (IMed Pub)* **2016**, 020-021 (ISSN 2393-8862). **IF: 1.5**

7. Title: “A short review on chitosan membrane for biomolecules immobilization” (*Invited manuscript for an issue based on the theme “Chitosan”*)
Authors: **Munusamy Thirumavalavan** and Jiunn-Fwu Lee
Journal: *J. Mol. Genet. Med.*, **2015**, 9(3), 1000178 (5 pages). **IF: 4.0**

8. Title: “Design and synthesis of efficient ZnO nanomaterials for photocatalysis” (*Invited manuscript for a theme issue in a frontier area*)
Authors: **Munusamy Thirumavalavan** and Jiunn-Fwu Lee

PATENTS PUBLISHED/GRANTED:

- **M. Thirumavalavan**, S. Sharmila Queenthly, R. Pachaiappan, P. A. Vivekanand, T. Niruban Balu, “Biodegradable Polymer-Based Packaging Materials with Superior Barrier Properties for Sustainable Applications” (Indian Patent, Published 2025).
- S. Sharmila Queenthly, P. A. Vivekanand, **M. Thirumavalavan**, R. Pachaiappan, “Self-Healing Polymer Formulations for Advanced High-Durability Coatings in Extreme Environments” (Indian Patent, Published 2025).
- P. A. Vivekanand, **M. Thirumavalavan**, S. Sharmila Queenthly, R. Pachaiappan, “Electrochemical Catalyst Innovations for High-Efficiency Hydrogen Production in Renewable Energy Systems” (Indian Patent, Published 2025).
- **M. Thirumavalavan**, R. Pachaiappan, S. Sharmila Queenthly, P.A. Vivekanand, “Synthetic Biology Platform for Designing Customizable Gene Therapies and Treatments” (Indian patent, Published 2025).
- **M. Thirumavalavan**, S. Kalpana, S. Sharmila Queenthly, “Wearable Sensor System for Enhanced Telemedicine Management”, Indian patent (Published, 2024).
- S. Kalpana, S. Sharmila Queenthly, **M. Thirumavalavan**, “A Performance Evaluation System and Method for Amorphous Silicon Photovoltaic Module analysis”, Indian patent (Published, 2024).
- S. Sharmila Queenthly, **M. Thirumavalavan**, S. Kalpana, “Analysis of the Green Synthesis Interventions of Pharmaceutical Industries for Sustainable Development”, Indian patent (Published, 2024).
- **M. Thirumavalavan**, S. Sharmila Queenthly, M. Mettilda, S. Shanthi, H. Dolli, S. Anand, B. Yamini, G. Lavanya, M. Sasikala, A. Anancia Grace, “Lipid Nanoparticles for Delivery of Nucleic Acids and its performance analysis”, Indian patent (Published, 2024).
- **M. Thirumavalavan**, S. Kalpana, S. Sharmila Queenthly, “Nanotechnology Based Sensors for Monitoring Soil Quality and Maintaining Health of Agricultural Plants”, Indian patent (Published, 2023).
- S. Sharmila Queenthly, **M. Thirumavalavan**, S. Kalpana, “Analysis of Herbal Composition for Inflammatory Disorders”, Indian patent (Published, 2023).
- S. Kalpana, S. Sharmila Queenthly, **M. Thirumavalavan**, “Method for Performing of Zinc Oxide Nanoparticles Using *Lentinula Edodes* Mushroom and Chitosan”, Indian patent (Published, 2023).
- **M. Thirumavalavan**, S. Kalpana, A. M. Ballamurugan, S. Manikandan, “Preparation and Characterization of Solid Liquid Nanoparticles for the Effective Treatment of Breast Cancer”, Indian patent (Published, 2023).

- **M. Thirumavalavan**, A. M. Ballamurugan, S. Kalpana, M. Ramadas, M, Lokesh “Methods and Analysis for Bio-Synthesizing Zinc Oxide Nanoparticles Using Cow Urine”, Indian patent (Published, 2023).
- **M. Thirumavalavan**, A. M. Ballamurugan, S. Kalpana, R. Abimanyu, “Sustained Release, Polymeric nanoparticles Oral formulation for Management of Osteoporosis”, Indian patent (Published, 2023).
- **M. Thirumavalavan**, S. Kalpana, S. Sharmila Queenthy, M. Mettilda, S. Shanthi “Analysis of Bagasse Fibre Based Gel as Quasi Electrolyte for Aluminium-Air Battery”, Indian patent (Published, 2023).

BOOKS OR CHAPTERS PUBLISHED

1. Book title: “Pedagogical Revelations and Emerging Trends”

Title: “Unlocking the learning potential: Exploring the outcome of jigsaw-based cooperative learning on the scholastic achievement”

Authors: S. Sharmila Queenthy and **M. Thirumavalavan**

STLC, ICEM 24 Conference Proceeding in Taylor & Francis

Year and Publisher: 2025, 5 pages (2527-261), CRC press (eBook ISBN: 9781003587538)

2. Book Title: “Hafnium: Chemical Characteristics, Production and Applications”

Chapter: “A Review on Hafnium: Synthesis, Properties and Applications of Variety of Hafnium Compounds” (*Invited chapter*)

Authors: **Munusamy Thirumavalavan** and Jiunn-Fwu Lee

Year and Publisher: **2014**, Nova Science publishers, (**ISBN**, *ebook*: 978-1-63463-196-9; **ISBN**, *Hardcover*: 978-1-63463-164-8).

https://www.novapublishers.com/catalog/product_info.php?products_id=51888&osCsid=3892bf6e3d05091b417ffb8805d87630

COURSES CERTIFIED:

- Successfully completed the course on “Education for Sustainable Development” in May 2023 and received Elite-Gold certificate

ACHIEVEMENTS AND AWARDS:

- Received Best Faculty Award by SEC
- Received Lifetime Achievement Award-2024 (HEICON-2024) by Knowledge Research Center
- Received Best Inorganic Scientist Award 2024 by Sciencefather
- Received Best Global Researcher Award 2024 by Sciencefather
- Organized an international webinar on “Electrocatalytic Degradation of Air Pollutants at Gel Induced Triphase Interface” at SEC, Chennai - October, 2022.
- Received the best Scientist/Researcher award (8th Edition of International Scientists Awards) by Elsevier and Scifix - June 2023.

- Recognized and honoured as “Eminent Faculty cum Researcher” by NCU, Taiwan - 2021
- Recognized and honoured as “The Best Editor and Proof-Reader” by Foreign Language Centre, NCKU, Taiwan - 2022.
- Received Literary award (Tamil Speech/Pattimandram) by VGP Ulaga Tamil Sangam and by Pondicherry Tamil Organization (for Tamil Poems/Lyrics)
- Completed 5 Funded Research Projects (nearly Rs. 5 Cr) sanctioned by NSC, Taiwan
- Editorial Board member/Editor of few international and national journals
- Potential Reviewer of many International and national journals
- Have been invited to act as a commentator for a paper in Chemistry world by Royal Society of Chemistry in 2014 <http://www.rsc.org/chemistryworld/2014/07/graphene-bbq-meat-gripe-water>
- Have been selected as “Leading Professionals of the World-2014” by International Biographical Centre (IBC)-Cambridge England
- Have been selected as “2000 outstanding Intellectuals of the 21st century-8th Edition” which is scheduled for publication in mid-2014 by “International Biographical Centre (IBC)-Cambridge England
- “Who’s Who in the World”-have been included as one of the world’s foremost achiever in the research in 31st edition of “Who’s Who in the World” which is scheduled for publication in 2014 (31st edition, 2014)
- Senior Research Fellowship (2000-2004) by Council of Scientific and Industrial Research (CSIR), New Delhi, India
- Junior Research Fellowship (1998-2000) by University Grants Commission (UGC), New Delhi, India.
- State Rank in SSLC (1987) and state level merit scholarship (1988-1992) by Tamil Nadu State Government.
- Completed Post Graduate Diploma in Environmental Science (PGDES) in 1996

SPECIAL SESSIONS DELIVERED:

Session Chair/Key Note Speaker:

- Acted as Chief Guest, Session Chair and Key note speaker for the International Conference on “Advances in Targeted drug delivery and Functional Materials [ATFM - 2024]” held at PG & Research Department of Chemistry, Government Arts College, Chidambaram - 22nd-23rd March, 2024.
- Acted as Chief Guest, Session Chair and Key note speaker for the International Conference on “International Conference on Sustainable Materials for Energy Applications (ICSME-24)” held Erode Sengunthar Engineering College, Perundurai - 21st-22nd March, 2024.

- Acted as Session Chair and Key note speaker for the International Conference on “Materials Science and Engineering” held at Dubai - 29th-30th May, 2023.
- Acted as Session Chair and Key note speaker for the State Level Seminar on “Recent Trends in Chemical Sciences” held at PCASFW, Dharmapuri - March 2023.

Invited Talks/Resource Person:

- 2019 - Department of Chemistry, C.A.H. College, Melvisharam,
- 2020 - Department of Chemistry, Government Arts College, Salem
- 2020 - Department of Tamil, Periyar University, Salem
- 2020 - Department of Chemistry, PSGR Krishnammal College for Women, Coimbatore
- 2021 - Department of Analytical Chemistry, University of Madras, Chennai and Department of Nano Science & Technology, Bharathiyar University, Coimbatore
- 2021 - Department of Chemistry, Presidency College, Chennai
- 2023- Saveetha College of Pharmacy, Thandalam, Chennai
- 2023- Department of Nanoscience and Technology, Bharathiar University. Coimbatore.

CONFERENCES/SEMINARS/WORKSHOPS ATTENDED:

International Conferences/Seminars:

- International conference on advances in new materials (ICAN-2014), June 20-21, **2014**, University of Madras, Chennai, India
Design and Synthesis of efficient ZnO/hybrid ZnO nanomaterials for photocatalysis”
Munusamy Thirumavalavan, Jiunn-Fwu Lee and Muthusamy Kandaswamy
- AsCA2007 (Asian Crystallographic Association meeting, 2007) Programme & Abstracts, Nov. 4-7, 2007, Taipei, Taiwan
“Structural studies of biologically important heterocyclic compounds”
Periyasamy Murugan, **Munusamy Thirumavalavan**, Tian-Huey Lu and Kuo Chu Hwang
- Inorganic Materials for the New Millennium (IMNM-2001), Jan-18-19, **2001**, Chennai
“Synthesis and characterization of macrocyclic binuclear copper(II) complexes derived from schiff bases”
M. Thirumavalavan, P. Akilan, V. Narayanan and M. Kandaswamy
- Inorganic Materials for the New Millennium (IMNM-2001), Jan-18-19, **2001**, Chennai
“Synthesis and characterization of macrocyclic binuclear nickel(II) complexes derived from schiff bases”
P. Akilan, **M. Thirumavalavan**, V. Narayanan and M. Kandaswamy
- International Conferences in Advances in Surface Science and Engineering (INSURE 2001), Feb-21-23, **2001**, Chennai
“Cyclic voltammetric studies of some chemically modified electrodes on substituted porphyrins”

N. Sengottuvelan, D. Saravanakumar, **M. Thirumavalavan**, R. Velu, V. Narayanan and M. Kandaswamy.

- Modern Trends in Inorganic Chemistry, Dec-12-14, **2001**, Kolkatta
“Coordination behaviour of tricompartamental binucleating ligands: Synthesis, spectral, x-ray, magnetic and electrochemical studies of macrocyclic copper(II) complexes”
M. Thirumavalavan, P. Akilan and M. Kandaswamy
- Symposium of Frontiers in Inorganic Chemistry, July-8-10, **1998**, Bangalore
“Synthesis, x-ray, structural, spectral, electrochemical and magnetic properties of new binuclear copper(II) complexes”.
P. Amudha, **M. Thirumavalavan** and M. Kandaswamy

National Conferences/Seminars:

- National symposium on current trends in Inorganic Chemistry, Mar-15-17, **2004**, Cochin
“Compartmental unsymmetrical lateral macrobicyclic ligands providing phenoxo bridge: Synthetic, spectral, magnetic, electrochemical and kinetic feature of mono and binuclear copper(II) complexes”
P. Akilan, **M. Thirumavalavan** and M. Kandaswamy
- 6th National symposium in Chemistry, Feb-6-8, **2004**, IIT-Kanpur
“Novel macrobicyclic tricompartamental ligands: Synthesis, magnetic, electrochemical and kinetic studies of unsymmetrical mono and binuclear copper(II) complexes”
M. Thirumavalavan, P. Akilan and M. Kandaswamy
- 5th National symposium in Chemistry, Feb-7-9, **2003**, Chennai
“Synthesis, spectral, magnetic, electrochemical and catalytic studies of lateral macrobicyclic tricompartamental mono and binuclear copper(II) complexes”
M. Thirumavalavan, P. Akilan and M. Kandaswamy
- National Conference on Solar Energy Conversion Processes, Mar-1-2, **2001**, Chennai
“Model complexes for oxygen evolving proteins in photosynthesis: Synthesis, spectral, electrochemical and catalytic studies of polynuclear manganese(III) complexes”
M. Thirumavalavan, P. Akilan, M. Marappan, V. Narayanan and M. Kandaswamy
- Indian Council of Chemists, Seventeenth Conference, Nov-26-28, **1998**, Chennai
“Synthesis of mono and binuclear gadolinium(III) complexes”
M. Thirumavalavan, P. Akilan and M. Kandaswamy

PROFESSIONAL MEMBERSHIPS:

- Life member of Indian Society of Analytical Scientists (ISAS), India
- Member of SPECTRUM, Chemical Society of University of Madras

OTHER DETAILS (If any):

- Professional Tamil speaker, writer and lyricist; Member of Taiwan Thamizh Sangam