



**Dr. M.Meenakshisundaram**

**Co-ordinator (Self Supporting stream )**

**Contact**

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**Academic Qualifications:**

**M.Sc., Ph.D.,**

Degree	College/ University/Board	Year of Passing/ Awarded	Major Subjects Offered	Marks Obtained (CGPA)/ Total Marks (CGPA)	Percentage /Division	Specialization
UG	Madurai Kamaraj University, Madurai.	2000	Botany	2295/3600	63-I	Plant Biotechnology
PG	Madurai Kamaraj University, Madurai.	2002	Botany	1638/2400	68. - I	Plant -Microbe interaction
Ph.D	Madurai Kamaraj University, Madurai.	2008	Botany	---	---	Microbiology

### Teaching Experience: 14 Years and 1 Months (till July, 2023)

Sl.No.	Designation	From	To	Total
1.	Assistant Professor	15 June 2009	Till date	14 Years and 1 months

### Areas of Research

1. Microbiology 2. Plant Biotechnology

### Research Experience

Research Stage	Title of Thesis	University where the work is/was carried out
Ph.D	Studies on Arbuscular mycorrhizal fungi with <i>Gluconacetobacter diazotrophicus</i> and its effect on improvement of <i>sorghum bicolor</i>	Department of Botany, Thiagarajar College, Madurai.

### Research Supervision / Guidance

Research	Program of Study		Completed	Ongoing
	Ph.D.	M.Phil.		
			2	---
			15	2 (Part Time)

**FUNDED RESEARCH PROJECT**

<b>S.No</b>	<b>Funding Agency</b>	<b>Amount (Rs)</b>	<b>Topic</b>	<b>Period</b>	<b>Status</b>
1	UGC	3,30,000/-	Detoxification of heavy metals by biosurfactant producing bacteria from uyyokondan river, Tiruchirappalli District	2015-2017	Completed
2	DST	21,10,000/-	Fast track scheme for young Scientist	2013-2016	Completed
3	DST	9,75,000/-	Inspire Internship Science Camp	2018	Completed
4	DST	9,75,000/-	Inspire Internship Science Camp	2016	Completed
	DST	9,75,000/-	Inspire Internship Science Camp	2016	Completed
5	DST	9,75,000/-	Inspire Internship Science Camp	2015	Completed
6	DST	9,75,000/-	Inspire Internship Science camp	2015	Completed
7	DST	9,75,000/-	Inspire Internship Science Camp	2014	Completed
8	DST	9,75,000/-	Inspire Internship Science Camp	2013	Completed
9	IASc (Indian Academy of Sciences)	1,43,500/-	Science Academies Lecture Workshop on "Emerging vistas in Plant Sciences"	2017	Completed
10	IASc (Indian Academy of Sciences)	1,85,250/-	Science Academies Lecture Workshop on "New Frontiers in Plant Sciences and Biotechnology"	2016	Completed
11	IASc (Indian Academy of Sciences)	1,25,500/-	Science Academies Lecture Workshop on Modern Trends in Biological Sciences	2014	Completed
12	ICMR	40,000/-	Workshop on Need based Value added Research Proposal writing	2014	Completed
13	CSIR	30,000/-	National Seminar on Frontiers in Biotechnology	2013	Completed

## RESEARCH PAPERS PUBLISHED:

- ❖ R. Rameswari ., **M.Meenakshisundaram**, 2022 . Microplastic : Distribution , isolation, Detection, and effects of Flora and Fauna – A- Mini review. World Journal of Environmental Sciences, 11: 1-8
- ❖ R. Rameswari ., **M.Meenakshisundaram**, 2021. Non steroidal ecdysteroid against methoxyfenzoide arrests hatching and yalk protein degradation in silk moth Bombyx mori. International Journal of Entomology Research, 6: 166-173.
- ❖ M.Pramila ., N. Prabhusaran., **M.Meenakshisundaram.**, J. Lalithambigai **and** P.Karthick, 2018. Evaluation of antibacterial potential of silver nitrate – *An invitro approach. Saudi Journal of pathology and microbiology.* 211-214.
- ❖ M.Pramila ., N. Prabhusaran., **M.Meenakshisundaram.**, J. Lalithambigai **and** P.Karthick, 2018. Characterization of *Azadirachta indica* mediated copper and silver nanoparticles comparative approach. *Annals of international medical and dental Research* . 4: (6) 1-6.
- ❖ M.Pramila ., N. Prabhusaran., **M.Meenakshisundaram.**, J.Lalithambigai and P.Karthick, 2018. Invitro antibacterial analysis of copper solution (microparticle) a novel anti-infective molecule for wound management. *Journal of dental and medical sciences*, 17: (7) 22-26.
- ❖ M.Pramila ., N. Prabhusaran., **M.Meenakshisundaram.**, J.Lalithambigai and P.Karthick and Ganeshkumar, 2018. An overview of factors influencing the occurrence of post operative wound infection. *World journal of pharmaceutical and medical research*, 4: (1) 57-66.
- ❖ M.Pramila ., N. Prabhusaran., **M.Meenakshisundaram.**, Prabakar, Y.K J.Lalithambigai and P.Karthick 2018. Antibacterial analysis of *ocimum sanctum* mediated silver and copper nanoparticles. *International Journal of Allied medical sciences and clinical Research*, 4: 827-837.
- ❖ M.Pramila ., **M.Meenakshisundaram.**, N. Prabhusaran., J.Lalithambigai and P.Karthick 2018. Evaluation of wound biofilm forming bacterial pathogens by crystal violet binding assay. *Asian journal of multidimensional Research*, 7: 1-18.
- ❖ M.Pramila ., **M.Meenakshisundaram.**, N. Prabhusaran., J.Lalithambigai and P.Karthick

2018. Post operative wound infection: Isolation, characterization and invitro antibiotic susceptibility analysis . *The Pharma innovation Journal*, 7 (7) 169-175.
- ❖ **M.Meenakshisundaram** and M.Pramila, 2018. An overview of factors influencing the occurrence of post operative wound infection . *World journal of Pharmaceutical and medical research*, 1:57-66.
  - ❖ **M.Meenakshisundaram** and M.Pramila, 2017. Biosynthesis of iron (Fe) nanoparticles and its inhibitory effect on *Pseudomonas aeuroginosa* biofilm. *Indian Journal of Applied Research*, 7: (8)251-259.
  - ❖ **M.Meenakshisundaram** and M.Pramila, 2017. Detoxification of heavy metals by microbial biosurfactants *International Journal of Current Microbiology and Applied Sciences*, 6: (3)402-411.
  - ❖ **M.Meenakshisundaram** and M.Pramila, 2016.Ecofriendly synthesis and characterization of silver Nanoparticles from *Azadirachta indica* and *Ocimum Sanctum* leaf extract. *International Journal of Scientific Research & Development*, 4: 2331-0613
  - ❖ **M.Meenakshisundaram** , M.Pramila and R.Rameswari, 2016. Isolation and Screening of biosurfactant producing bacteria from uyyokondan river, Tiruchirappalli District, Tamil Nadu. *International Journal of Advanced Research*, (1) 170-176.
  - ❖ R.Rameswari and **M.Meenakshisundaram**, 2015. Counts of indicator bacterial assemblages and concentration of trace metal and physiochemical analysis of oil polluted water and sediment samples from automobile garage in Tiruchirappalli city, India. *Int Research Journal of Env Science*, 4 (10): 1-10.
  - ❖ R.Rameswari and **M.Meenakshisundaram**, 2015. Microbiological and physiochemical analysis of petroleum and diesel oil contaminated samples from motor mechanic workshop in trichy city, Tamilnadu, india. *Journal of Environmental science, computer science and technology*, 4:834-842.
  - ❖ M.Pramila and **M.Meenakshisundaram**, 2015. An insilico approach to treat Halistosis disease using mint compound-Benzydamine. *International Journal of Pharma Biosciences*, (6) 2: 1197-1207.
  - ❖ R.Rameswari and **M.Meenakshisundaram**, 2015. Characterization of PHA accumulating *Bacillus* sp associated with petroleum and diesel oil contaminated soil using traditional techniques. *International Journal of Advanced Research*, 3 (4) 226-232.

- ❖ **Meenakshisundaram, M and Bharathiraja, C.** 2014. Isolation and Molecular identification of Hydrocarbon degrading bacteria from oil contaminated soils from Tamil Nadu. *Indian Journal Applied Research*, 4: (7) 2249-2255.
- ❖ Subash, N., **Meenakshisundaram, M.**, Sasikumar, C and Unnamalai, N. 2013. Mass cultivation of *Trichoderma harzianum* using agricultural waste as a substrate for the management of damping off disease and growth promotion in chilli (*Capsicum annum*). *International Journal of Pharmacy and Pharmaceutical Sciences*, 6(5)188-192.
- ❖ Rameshwari, R and **Meenakshisundaram, M.** 2013. A Review on downstream processing of Bacterial thermoplastic Polyhydroxyalkonate. *International Journal of Pure Applied Bioscience*, 2 (2) 68-80.
- ❖ Ramesh, P., Rajendran, A and **Meenakshisundaram, M.** 2013. Green synthesis of Zinc oxide nanoparticles using flower extract *Cassia auriculata*. *Journal of Nanoscience and Nanotechnology*, 2: (1) 41-45.
- ❖ R.Rameswari and **M.Meenakshisundaram.** 2013. A Review on bacterial polyhydroxyalkonate . *International Journal of Recent scientific Research*, 4: (11) 1781-1788.
- ❖ **M.Meenakshisundaram** and C.Bharathiraja.2013. Isolation of wood rot fungi from Maruthamali Hills Western Ghats area of south India, *International Journal of Current Microbiology and Applied Sciences*, 2: (9) 215-218.
- ❖ Bharathiraja, C., Anbalagan, S., Kannan, S., **Meenakshisundaram, M.**, Krishnan, M., Jean Francois Picimbon. 2013. Intra Populational Genetic diversity in the Tobacco Armyworm *Spodoptera Litura* (Lepidoptera: Noctuidae), *Asian Journal of Biochemical and Pharmaceutical research*, 2: (3) 100-113.
- ❖ Bharathiraja, C., Sukirtha, R., **Meenakshisundaram, M.**, Anbalagan, S., Krishnan, M and Baburaj, S.2013. *In vitro* micropropagation and somatic induction of *Tribulus terrestris* from nodal explants, *International Journal of Biology, Pharmacy and Allied Sciences*, 2 (4) 903-914.
- ❖ Sivaranjani, K and **Meenakshisundaram, M.** 2013. Biological synthesis of silver nanoparticles using *ocimum basilicum* leaf extract and their antimicrobial activity, *International Research Journal of Pharmacy*, 4 (1) 225-229.

- ❖ Subash, N., **Meenakshisundaram, M.**, Unnamalai, N and Sasikumar, C.2013. Effect of *Trichoderma harzianum* to control damping off disease and capsicum annum growth promotion in chilli, *International Journal of Pharma Biosciences*, 4 (2) 1076-1082.
- ❖ Subash, N., **Meenakshisundaram, M** and Sasikumar, C. 2013. In vitro evaluation of different strains of *Trichoderma harzianum* as biocontrol agents of chilli, *International Journal of Biology, Pharmacy and Allied sciences*, 2 (2)495-500.
- ❖ Subash, N., Viji, J., Sasikumar, C and **Meenakshisundaram, M.** 2013.Isolation, media optimization and formulation of *Trichoderma harzianum* in agricultural soil, *Journal of Microbiology and Biotechnology Research*, 3 (1) 61-64.
- ❖ **M.Meenakshisundaram** and K.Santhaguru. 2012. Biocontrol potential of Fluorescent pseudomonas against wilt off tomato caused by *Fusarium oxysporum*. *International journal of science innovations and Discoveries*, (2) 152-163.
- ❖ **M.Meenakshisundaram** and R.Vasanthi. 2012. Optimization of Pectinase enzyme production by using sour orange peel as substrate in solid state fermentation. *Asian Journal of biochemical and pharmaceutical Research*, 1: (2) 16-26.
- ❖ **M.Meenakshisundaram**, and K.Santhaguru. 2011. Studies on association of Arbuscular Mycorrhizal fungi with *Gluconacetobacter diazotrophicus* and its effect on improvement of *Sorghum bicolor* (L.). *International journal of current scientific research*, 1 (2) 23-30.
- ❖ **M.Meenakshisundram**, K.Santhaguru and K.Rajendran. 2011. Effects of Bioinoculants on quality seedlings production of *Delonix regia* in tropical nursery condition. *Asian Journal of Biochemical and Pharmaceutical research*, 1 (1) 97-107.
- ❖ **M.Meenakshisundarm** and K.Santhaguru.2010. Isolation and nitrogen fixing efficiency of a novel endophytic diazotroph *Gluconacetobacter diazotrophicus* associated with *Saccharum officinarum* from southern districts of Tamilnadu. *International journal of Biological and Medical research*, 1 (4) 298-300.

- ❖ **M.Meenakshisundaram** and K.Santhaguru, 2009. Impact of *Glomus fasciculatum* and *Gluconacetobacter diazotrophicus* on alleviation of drought stress in *Sorghum bicolor* (L) Monech. *Journal of cell and Tissue Research*, 9 (3) 1957-1962.
- ❖ **M.Meenakshisundaram**, V.Kumarasamy and K.Santhaguru, 2009. Evaluation of grain legume rhizobia from semi arid regions of Tamil Nadu. *Electronic journal of Environmental sciences*, 2: 69-72.
- ❖ P.Kamalakannan, **M.Meenakshisundaram** and S. Chandrasekaran. 2008. Ecological studies on herbaceous vegetation in two dry deciduous forests in dindigul districts of Tamil Nadu. In: Forest biodiversity, vol 1, K.Mutuchelian; S.Kannaiyan, and A.Gopalam (Eds) Associated publishing company, New Delhi, pp 112-125.
- ❖ **M.Meenakshisundaram** and K.Rajendran, 2007. Microbial inoculants for quality seedlings production of Neem (*Azadirachta indica*) in tropical nursery conditions. *Journal of Non Timber Forest Products*.14 (4): 255-260
- ❖ **M.Meenakshisundaram** and K.Santhaguru.2005. Interaction between AM fungi and *Gluconacetobacter diazotrophicus* on infection, growth total nitrogen, phosphorus and soluble sugars and chlorophyll content in leaves of *S.bicolor*. *Journal of Soil Biology and Ecology*, **25**: 231-234.
- ❖ K.Senthilvadivelan, **M.Meenakshisundaram** and K. Santhaguru, 2004. Arbuscular mycorrhizal diversity of tree-legumes in the soils of Sirumalai Hills. *Journal of Range management of Agroforestry*, **25**(2): 173-176.
- ❖ **M.Meenakshisundaram** and K.Santhaguru, 2006. Interactive effects of AM fungi and *Gluconacetobacter diazotrophicus* on alleviation of drought stress in *S.bicolor* (L) Monech. *Proceeding of National seminar on Current Trends in Biotechnological Application*, Thiagarajar College.Madurai.
- ❖ P.Muthumanickam, **M. Meenakshisundaram** and K.Santhaguru, 2006. Biocontrol basis of plant growth promotion by *fluorescent pseudomonads* and it's infested in *Lycopersicum esculentum*. *Proceeding of National seminar on Current Trends in Biotechnological Application*, Thiagarajar College.Madurai.



## NATIONAL CONFERENCES / SYMPOSIUMS / WORKSHOPS PARTICIPATED

### NATIONAL CONFERENCES :

- ❖ Participated Faculty Development Programme on “ **Curriculum Pedagogy and Assessment**” organized by the Internal Quality Assurance cell and Curriculum Development Cell of Nehru Memorial College, (Autonomous) on 10. 12. 2022.
- ❖ Participated Faculty Development Programme on “**Publication of Quality research Papers in Reputed Journals**” organized by the Internal Quality Assurance cell and Research and Curriculum Development Cell of Nehru Memorial College, (Autonomous) on 02. 12. 2022.
- ❖ Participated in one day workshop on” **Intellectual Property Rights**” (IPR) organized by the internal Quality Assurance cell and Research and Development cell of Nehru Memorial College, (Autonomous) on 01.12. 2022
- ❖ Participated Faculty Development Programme on “**Child sexual Awareness Program**” conducted by Whistle aaythasiragugal on 10.12.19.
- ❖ Participated Faculty Development Programme on” **Students skills, Mentoring and Counselling**” organized by Nehru Memorial College, (Autonomous) on 30<sup>th</sup> May, 2019.
- ❖ Participated Faculty Development Programme on “**Teaching and Research Ethics**” organized by Internal Quality assurance cell and Research Development Cell of Nehru Memorial College (Autonomous), on 15.07.2022
- ❖ Participated Faculty Development Programme on “**Learning outcome based Curriculum Frame work in Higher Education : A Hallmark**” organized by Internal Quality Assurance cell and Curriculum Development Cell of Nehru Memorial College (Autonomous) on 01.4.2022.
- ❖ Participated **Science Academies lecture workshop on Thrust areas in Biosciences** organized by Department of Biotechnology, Cauvery College for women, Trichi on 22 & 23 Feb, 2022.

- ❖ Presented research paper on “**Biosynthesis of silver Nanoparticles from *ocimum sanctum***” on DST Sponsored **National Conference on Emerging Trends and New Challenges in Biotechnology – Advances in Biomaterials and applications** held on 31<sup>st</sup> January, 2018, organized by Dept of Biotechnology, M.G.R.College, Hosur.
- ❖ Presented research paper on “**Detoxification of heavy metals by microbial Biosurfactants**” on DST Sponsored National Conference on Emerging Trends and New Challenges in Biotechnology held on 2<sup>nd</sup> -3<sup>rd</sup>, February, 2017, organized by Dept of Biotechnology, M.G.R.College, Hosur,
- ❖ Participated ICMR Sponsored **National seminar on Emerging Trends in Control of vectors and vector borne diseases held** on 29<sup>th</sup>-30<sup>th</sup> September, 2016, organized by PG & Research Department of Zoology, Nehru Memorial College (Autonomous), Puthanampatti, Tiruchirappalli.
- ❖ Participated one day Faculty Development Programme on “**Sustenance/Enhancement of quality in Higher education**” held on 5<sup>th</sup> August 2015, organized by Nehru Memorial College (Autonomous), Puthanampatti, Tiruchirappalli.
- ❖ Participated one day Faculty Development Programme on **Impact of Research on Teaching in Higher Education** held on 11<sup>th</sup> June 2014, organized by Internal quality Assurance cell of Nehru Memorial College (Autonomous), Puthanampatti, Tiruchirappalli
- ❖ Presented research paper on “Isolation and Identification of Polyaromatic Hydrocarbon degrading bacteria from oil contaminated soils of Tamil Nadu” on **National Conference on Innovations, Implementations and Controversies of Animal Biotechnology** held on 20<sup>th</sup> & 21<sup>st</sup> March, 2014, organized by Dept of Animal Science, School of Life Sciences, Bharathidasan University, Tiruchirappalli.

- ❖ Participated one day Seminar on **Examinations Reforms**, organized by the internal quality Assurance of cell of Nehru Memorial College (Autonomous), Trichy, held on 16 Feb 2012.
- ❖ Participated one day Seminar on **Examinations Reforms**, organized by the internal quality Assurance of cell of Nehru Memorial College (Autonomous), Trichy, held on 15 March 2012.
- ❖ Participated **Faculty Developmental Programme on Higher Education**, organized by the internal quality Assurance of cell of Nehru Memorial College (Autonomous), Trichy, held on 21 January 2012.
- ❖ Participated one day National seminar on **Modern Tools in Biotechnology**, organized by school of Biotechnology & Genetic Engineering, Bharathiar University, Coimbatore held on 22nd Feb 2008.
- ❖ Presented research paper entitled Interactive effects of AM fungi and *Gluconacetobacter diazotrophicus* on alleviation of drought stress in *S.bicolor* (L) Monech, on National seminar on **Current trends in Biotechnological application**, Thiagarajar College, Madurai held on 20<sup>th</sup> - 21 July, 2006.
- ❖ Presented research paper entitled Biocontrol basis of plant growth promotion by *fluorescent pseudomonads* and its infested *Lycopersicum esculentum*, on National seminar on Current trends in Biotechnological application, Thiagarajar College, Madurai held on 20<sup>th</sup> - 21 July 2006.
- ❖ Presented research paper entitled Ecological studies on herbaceous vegetation in two dry deciduous forests in Dindigul districts of Tamil Nadu, presented research paper on National conference on Forest biodiversity resources: Exploitation, Conservation and Management, CBFS, Madurai Kamaraj University, Madurai, 21-22<sup>nd</sup> March 2006.
- ❖ Presented research paper entitled Interaction between AM fungi and *Gluconacetobacter diazotrophicus* on infection, growth, total nitrogen, phosphorus and soluble sugars and chlorophyll content in leaves of *S.bicolor*, presented research paper on VIII National Symposium on Soil biology in human welfare, Ponnaiyah Ramajeyam College, Thanjavur, 5<sup>th</sup>- 7<sup>th</sup> Oct 2005.
- ❖ Presented research paper entitled “Biofertilizers the need of the hour” presented research paper on National Seminar Vivekananda College, Madurai on 29<sup>th</sup> 2002.

## WORKSHOPS PARTICIPATED:

- ❖ Participated Two day Science Academies Lecture workshop on “**Recent trends in Microbiology and Biotechnology**” organized by Dept of Microbiology, MGR College, Hosur held from 30 -31<sup>st</sup> January, 2018
- ❖ Participated Two day workshop on “**Innovative Curriculum Designing**”, organized by Nehru Memorial College (Autonomous), Puthanampatti, Trichy, on 24<sup>th</sup>-25<sup>th</sup> November, 2017.
- ❖ Participated Two day workshop on “**Group Monitoring workshop for Inspire organizers**”, organized by Srivenkateswara University, Tripathi on 26<sup>th</sup>-27<sup>th</sup> August, 2017.
- ❖ Participated one day Faculty Development Programme on “**Effective Teaching**”, organized by Nehru Memorial College (Autonomous), Puthanampatti on 12<sup>th</sup> June
- ❖ Participated Two-Day state level Training Program on “**Administrative Skill Development**”, organized by Nehru Memorial College (Autonomous), Puthanampatti, Trichy during Feb 23-24, 2017.
- ❖ Participated three days DST Sponsored National level workshop on “**Data Science Research –Biological Management**”, organized by Dept.of. Botany, Jamal Mohamed College, Trichy, during Jan 23-25<sup>th</sup> 2017.
- ❖ Participated in the National workshop on **Gas chromatographic techniques**, organized by Dept of Microbiology, Algappa University, Karaikudi during Dec 21, 2016.
- ❖ Participated Training programme on **Writing Research Proposals**, for College Teachers organized by School of Biological Sciences, Madurai Kamaraj University, Madurai, during May 21-30, 2012.
- ❖ Participated one day Training programme on “**Revisiting Examination system in the current scenario**” organized by the Nehru Memorial College (Autonomous) on 19<sup>th</sup> March 2016.
- ❖ Participated Training programme on **Autumn School in Biotechnology**, for College teachers organized by Plant Genetic Engineering lab, Department of Biotechnology, Bharathiar University, Coimbatore, during Sep 26-30, 2011

- ❖ Participated in the National level workshop **on Mycorrhizal techniques** organized by Dept.of. Botany & Microbiology, A.V.V.M.Sripuspham College, Poondi, Thanjavur, during March 13<sup>th</sup> 2007.
- ❖ Participated in the National Workshop on **“Advanced techniques in Molecular biology”** organized by Dept.of Biotechnology, J.J. College, Pudukkottai, Thanjavur, during 02<sup>th</sup> - 12<sup>th</sup> February 2005.
- ❖ Participated in the National Workshop on **“IPR and Patent awareness”** organized by Dept. of Biotechnology, J.J. College, Pudukkotai,Thanjavur sponsored by Department of Science and Technology. Held at Dept.of. Biotechnology, J.J College, Pudukkotai, Thanjavur, During 19<sup>th</sup> February 2005.

#### **ADDITIONAL RESPONSIBILITIES**

1. Served as **Head of the Department** of Botany, Nehru Memorial College from 12<sup>th</sup> June 2015 to till date.
2. Served as the **Chairman of the Board of Studies in Botany --- PG programme** of Nehru Memorial College from 2018 onwards.
3. Served as the **Chairman of the Board of Studies in Botany --- UG programme** of Nehru Memorial College from 2018 onwards.
4. Served as the **Coordinator** of the Self finance section from 2018 to till date
5. Served as the **Associate Dean of Research** from 2018 to 2021.