

**Name :** Dr. P.KIRUTHIKA LAKSHMI, M.Sc., M.Phil., Ph.D., UGC-NET  
**Designation :** Assistant Professor  
**Department :** Biotechnology  
**Date of Joining :** 15/07/2024  
**E-mail :** kiruthikalakshmi@americancollege.edu.in  
kiruthikaparameswaran@gmail.com



-----**ACADEMIC CREDENTIALS**-----

<b>Qualification</b>	<b>College/University</b>	<b>Year</b>	<b>Marks (%)</b>
<b>Ph.D</b> (Microbiology)	Lady Doak College Madurai Kamaraj University, Madurai	2009-2014	Highly Commended
<b>M.Phil</b> (Microbiology)	Lady Doak College Madurai Kamaraj University, Madurai	2007-2008	92
<b>M.Sc</b> (Microbiology)	Lady Doak College Madurai Kamaraj University, Madurai	2005-2007	81
<b>B.Sc</b> (Microbiology)	Nadar Saraswathi College Madurai Kamaraj University, Theni	2002- 2005	77

-----**PROFESSIONAL QUALIFICATIONS**-----

**December 2018**

- **Qualified UGC- National Eligibility Test (NET) for Assistant Professor**

-----**PROFESSIONAL EXPERIENCE**-----

- **TEACHING EXPERIENCE:** 5 years
- **RESEARCH EXPERIENCE:** 9 years

**July 2024 onwards**

**Department of Biotechnology, The American College, Madurai**

- Working as Assistant Professor in Department of Biotechnology

**2019 -2024**

**Department of Microbiology, The Madura College, Madurai**

- Worked as Assistant Professor in PG Department of Microbiology

**2014 to 2018**

**Department of Botany and Microbiology, Lady Doak College, Madurai**

- Worked as Research Associate in Indo-UK (DBT-BBSRC,UK sponsored) Major Research Project entitled “Sustainable bio-energy from microalgae-A systems perspective”

**2009-2012**

**Department of Botany and Microbiology, Lady Doak College, Madurai**

- Worked as Senior Research Fellow in CSIR Major Research project entitled “Molecular Profiling of microcystin producing toxic cyanobacterial strains from the algal blooms of contaminated water bodies of Madurai”

**2008-2009**

**Aravind Eye Care System, Anna Nagar, Madurai**

- Worked as Microbiologist in Department of Ocular Microbiology

-----**THESIS/DISSERTATIONS**-----

- **Ph.D Thesis Title:** “Molecular profiling of toxic cyanobacterial strains from the algal blooms of contaminated water bodies of Madurai, TamilNadu” under the supervision of Dr.S.Srisudha and Dr.P.Gunasekaran
- **M.Phil. Dissertation:** “Characterization and Optimization for the production of Cryptophycin from *Nostoc* and its applications”
- **M.Sc. Dissertation:** “Biocontrol efficiency of few selected Blue Green and Green Algae against human and plant pathogens”
- **PGDBMD Dissertation:** “*In silico* structure prediction and sequence analysis of wild type and mutant *Mycobacterium tuberculosis* RNA Polymerase ( $\beta$ -subunit)”

-----**DIPLOMA/CERTIFICATE COURSES**-----

Course : **Introduction to Professional Scientific Communication**  
Mode : MOOC – NPTEL (Jan-Feb 2024)  
Type of Certification : **Silver**

Course : **Nanotechnology in Agriculture**  
Mode : MOOC – NPTEL (Feb-Apr 2022)  
Type of Certification : **Silver (Topper 5%)**

Course : **Functional Genomics**  
Mode : MOOC – NPTEL (Aug-Sep 2021)  
Type of Certification : **Gold (Topper 2%)**

Course : **Structural Biology (Silver Certification)**  
Mode : MOOC – NPTEL (Jan-Apr 2021)  
Type of Certification : **Silver**

Course : **Cell Culture Technologies (Gold Certification Topper 2%)**  
Mode : MOOC – NPTEL (Feb-Apr 2020)  
Type of Certification : **Gold (Topper 2%)**

Course : **PG Diploma in Biomolecular Modeling and Dynamics (PGDBMD)**  
College/University : Lady Doak College, Madurai Kamaraj University, Madurai (2007-2008)

Course : **Diploma in Computer Application (D.C.A)**  
College/University : Nadar Saraswathi College of Arts and Science, Theni (2003-2004)

Course : **Certificate Course in Herbal Medicine**  
College/University : Nadar Saraswathi College of Arts and Science, Theni (2004-2005)

-----**AWARDS, GRANTS AND HONORS**-----

- Received **2 Minor Research Project grants** funded by TNSCST during 2021-2022 & 2022-2023.
- Received “**Best Woman Young Scientist Award**” for Outstanding Contributions in the Field of Microbiology during National Level Conference on “SMART SUMMIT-2021” conducted by PEARL-Foundation
- Received **Best project award** for the project entitled “ Development of sustainable Techniques for Biological Deinking of mixed waste paper ” in the Intercollegiate Research Competition- Exploria ‘24 organized by Research and Development Cell, Fatima College, Madurai on 22<sup>nd</sup> February 2024.
- Awards- **DBT-BBSRC Research Associateship** (2014), **CSIR Senior Research Fellowship** (2009).
- Honored with “**Victoria Rathinamuthu prize**” for the best candidate in M.Phil Microbiology, Lady Doak College, Madurai.

- Acknowledged with “**Certificate of Academic Merit**” for excellent and consistent academic performance for M.Sc., Microbiology.
- Awarded “**FIRST PRIZE**” for Paper presentation in National Symposium on Vistas in Algal research conducted by Krishnamurthy Institute of Algology & SDNB Vaishnav College, Chennai.
- Rewarded “**SECOND PRIZE**” for Paper presentation in National seminar on Biological approaches for monitoring and protection of environment conducted by PSGR Krishnammal College for women, Coimbatore.

-----**PLENARY, PUBLIC AND INVITED/LEAD LECTURES DELIVERED**-----

- Delivered a **Guest lecture** on “**Strategies to kick-start your research journey**” to the Students and Faculty members of Microbiology Department, VPMM Arts and Science College, Krishnankovil on 27.01.2024.
- Delivered **scientific talks** on the topics
  1. KURAITHTHU MATHIPPIDAPPADUM NEER PAASIGAL
  2. NUNNUYIR KOLLIYIN MURAIYANA PAYANBADU THAGAVALGAL
 for **ARIVIYAL NERAM** program broadcasted by **All India Radio**, Madurai on 8.12.2023
- Delivered a **Guest lecture** on “**Human Microbiome: Clinical Implications and Therapeutic Interventions**” to the students and Faculty members of Biotechnology Department, Theni College of Arts and Science, Theni on 27.03.2023.
- Delivered a **Guest lecture** on “**Craft your Career**” to the students and Faculty members of Botany Department, Lady Doak College, Madurai On 23.02.2023.
- Delivered a Guest lecture on “**Genome-The Blueprint of Life**” to the students and Faculty members of Microbiology and Biochemistry Department in Nadar Saraswathi College of Arts and Science, Theni on 07.12. 2017.

-----**PAPERS/POSTERS PRESENTED IN SEMINAR/CONFERENCE/SYMPOSIUM**-----

- Presented a paper entitled “Evaluation of *Pithophora sp.* as a potential source of eco-friendly and sustainable bio stimulant for cultivation of rice under hydroponics system in National Conference on Biology Beyond Boundaries 2024 organized by Department of Zoology, Thiagarajar College, Madurai on 12.03.2024 to 13.03.2024

- Presented a paper entitled “Formulation of Novel Biofertilizer Based on Fungal Metabolites for Sustainable Agriculture” in National Science Day and Third BioForum Annual Conference on Biological Sciences organized by Department of Biotechnology, The Madura College on 05.03.2024.
- Presented a poster entitled “Formulation and Evaluation of Zero-Waste Herbal Hand Sanitizer from Citrus Peel Extracts” in National Science Day and Third BioForum Annual Conference on Biological Sciences organized by Department of Biotechnology, The Madura College on 05.03.2024.
- Presented a poster entitled “Zero Waste Management of Spent Mushroom Compost for Recovery of Cellulolytic Enzymes with Potential Application in Biobleaching of Waste Paper” in National Science Day and Third BioForum Annual Conference on Biological Sciences organized by Department of Biotechnology, The Madura College on 05.03.2024.
- Presented a paper entitled “Formulation of Natural Antibiofilm Coating for Water Storage Tanks Using the Effective Phenolic Compounds Extracted From *Strychnos Potatorum*” in National Science Day and Second BioForum Annual Conference on Biological Sciences organized by Department of Biotechnology, The Madura College on 01.03.2023 to 02.03.2023
- Presented a paper entitled “Bio-Deinking of Mixed Office Waste Paper using Extracellular Enzymes from Cellulolytic Fungi-*Aspergillus sp.*” in National Science Day and Second BioForum Annual Conference on Biological Sciences organized by Department of Biotechnology, The Madura College on 01.03.2023 to 02.03.2023
- Presented a paper entitled “Evaluation of *Spirulina sp.* as a Potential Source of Eco-Friendly and Sustainable Biostimulant for Cultivation of Rice under Hydroponic System” in National Science Day and Second BioForum Annual Conference on Biological Sciences organized by Department of Biotechnology, The Madura College on 01.03.2023 to 02.03.2023
- Presented a poster entitled “Multivariate analysis on fatty acid distribution among fresh water green algae” in the INTERNATIONAL CONFERENCE ON MICROALGAL AND CYANOBACTERIAL BIOTECHNOLOGY (MACB 2016), organized by NFMC, Bharathidasan University, Trichy on 30<sup>th</sup> August to 1<sup>st</sup> September, 2016.
- Presented a poster entitled “FTIR Spectroscopic study on accumulation of lipids in fresh water green microalga during their various phases of growth” in the INTERNATIONAL CONFERENCE ON MICROALGAL AND CYANOBACTERIAL BIOTECHNOLOGY (MACB 2016), organized by NFMC, Bharathidasan University, Trichy on 30<sup>th</sup> August to 1<sup>st</sup> September, 2016.
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- Presented a poster entitled “Evaluation of seasonal variations in water quality of Vaigai River, Madurai, using Chemometric Techniques” in the INTERNATIONAL CONFERENCE ON SUSTAINABLE WATER RESOURCE MANAGEMENT AND TREATMENT TECHNOLOGIES-WATER 2011, organized by NEERI, Nagpur on 19<sup>th</sup> to 21<sup>st</sup> January, 2011.
- Presented a paper entitled “Chemometric assessment of seasonal variations in water quality of Thenghaal (Thiruparankundram) kanmaai, Madurai” in the NATIONAL SEMINAR ON BIOLOGICAL APPROACHES FOR MONITORING AND PROTECTION OF ENVIRONMENT, organized by PSGR Krishnammal College for women, Coimbatore on 11<sup>th</sup> and 12<sup>th</sup> January, 2011.
- Presented a poster entitled “Characterization of cyanobacterial toxins and its effect on serum biochemistry and histological changes in Tilapia” in the INTERNATIONAL SYMPOSIUM ON PHYCOLOGICAL RESEARCH, organized by Banaras Hindu University, Varanasi on 25<sup>th</sup> to 27<sup>th</sup> February, 2010.
- Presented a paper entitled “Antifungal susceptibility of natamycin against *Fusarium* and *Aspergillus* sp. isolated from corneal ulcer by using microbroth dilution method” in the NATIONAL CONFERENCE ON HOSPITAL ACQUIRED INFECTION- A CHALLENGE TO CLINICIANS HAICON 2009, organized by Madurai Medical College, Madurai on 2<sup>nd</sup> May, 2009.
- Presented a paper entitled “A study on Production, Optimization and Characterization of Cryptophycin from *Nostoc* sp and its evaluation as Antifungal agent” in the NATIONAL SYMPOSIUM ON ALGAE IN AGRICULTURE AND FOOD INDUSTRY, organized by Krishnamurthy Institute of Algology & Pachaiyappa’s College, Chennai on 20<sup>th</sup> and 21<sup>st</sup> September, 2008.
- Presented a paper entitled “A preliminary study on the Biocontrol efficiency of *Spirulina* sp against human and plant pathogens” in the NATIONAL SYMPOSIUM ON CURRENT SCENARIO IN MICROBIAL TECHNOLOGY, organized by Bharathidasan University, Trichy on 3<sup>rd</sup> to 5<sup>th</sup> January, 2008.
- Presented a paper entitled “A preliminary study on the Biocontrol efficiency of *Pithophthora* sp against human and plant pathogens” in the NATIONAL SYMPOSIUM ON VISTAS IN ALGAL RESEARCH, organized by Krishnamurthy Institute of Algology & SDNB Vaishnav College, Chennai on 22<sup>nd</sup> and 23<sup>rd</sup> September, 2007.

-----**SEMINAR/ WORKSHOP/SYMPOSIUM/CONFERENCE ATTENDED**-----

- Attended Webinar on “Information and Communication Technology” organized by the UGC-Malaviya Mission Teacher Training Centre, Madurai Kamaraj University on 10.02.2024.
- Participated in the Workshop on “Single Cell Omics” conducted by Aravind Medical Research Foundation, Madurai on 12<sup>th</sup> & 13<sup>th</sup> October, 2023
- Participated in the National Level Conference on “SMART SUMMIT-2021” conducted by PEARL-Foundation, Madurai on 19<sup>th</sup> June 2021.
- Participated in the Workshop on Preservation and Processing of Biological Specimens jointly organized by the Government Museum, Madurai and Department of Biotechnology, The Madura College, Madurai on 17<sup>th</sup> to 19<sup>th</sup> February, 2021.
- Participated and mentored the students on Universal Human Values during Student Induction Programme (2019-2020) held at The Madura College on 01.07.2019 and 02.07.2019.
- Participated in “National Seminar on Advancement and Applications of Plant Sciences for Societal Improvement” organized by Lady Doak College on 8<sup>th</sup> and 9<sup>th</sup> January, 2018.
- Participated in “Indo-UK Workshop on Data Analysis in Vibrational Spectroscopy and Mass Spectrometry based Metabolic Profiling” organized by Lady Doak College on 22<sup>nd</sup> and 23<sup>rd</sup> August, 2017.
- Participated in “Science Communication Workshop” organized by The Wellcome Trust/DBT India Alliance on 11<sup>th</sup> December, 2014.
- Participated in “Awareness Workshop on Intellectual Property Rights (IPR)” organized by Lady Doak College, Madurai on 8<sup>th</sup> February, 2011.
- Participated in “LABCON-2009, National Conclave on Clinical Laboratory Management & Post Conference Workshop on NABL Standards & their Application” organized by Federation of Hospital Administrators & Meenakshi Mission Hospital & Research Centre, Madurai on 14<sup>th</sup> and 15<sup>th</sup> February, 2009.
- Participated in “Science for Sanitation Programme” organized by Lady Doak College, Madurai on 26<sup>th</sup> January, 2008.
- Participated in “National Level Symposium on Bioinformatics- Motif’07” organized by Bharathiar University, Coimbatore on 28<sup>th</sup> September, 2007.
- Participated in “National Symposium on Frontier Areas in Plant Biotechnology” organized by Lady Doak College, Madurai on 20<sup>th</sup> and 21<sup>st</sup> January, 2006.
- Participated in “Gala Galaxy-2003, An Intercollegiate Science Exhibition” organized by Nadar Saraswathi College, Theni on 3<sup>rd</sup> to 5<sup>th</sup> March, 2003.

## -----PUBLICATIONS-----

- **Parameswaran Kiruthika Lakshmi**, Sitharanjithan Abirami and Subbaraju Sree Gayathri (2024) “Nanomaterials as enzyme immobilization matrix” in the book “Nanoenzymes incorporated particles: fundamentals concepts, synthesis and applications”. Elsevier, US.ISBN: 978-0-443-18810-7, Page 53-84.
- **Parameswaran Kiruthika Lakshmi**, Subbaraju Sree Gayathri and Kanthaiah Kannan (2024) “Various activities on the enhancement of nanobiocatalysts” in the book “Nanoenzymes incorporated particles: fundamentals concepts, synthesis and applications”. Elsevier, US. ISBN: 978-0-443-18810-7, Page 113-132
- Subbaraju Sree Gayathri, **Parameswaran Kiruthika Lakshmi**, Sitharanjithan Abirami (2024) “Integrated approaches on the development of nanobiocatalyst and its bioprocessing applications” in the book “Nanoenzymes incorporated particles: fundamentals concepts, synthesis and applications”. Elsevier, US. ISBN: 978-0-443-18810-7, Page 223-252
- Chockaiyan Usha, Saravanan Muthupandian, Balajee Ramachandran, **Parameswaran Kiruthika Lakshmi**, Sree Gayathri, and Arul Yesudoss (2024) “Effect of Graphene-Based Nanomaterials in Agri Biotechnology” in the book “Graphene-Based Nanomaterials: Application in Food, Agriculture and Healthcare” CRC Press, Taylor & Francis Group, New York, ISBN: 978-1-003-30054-0, Page 71-82.
- **Parameswaran Kiruthika Lakshmi**, Sitharanjithan Abirami, Selvaraj Meenakshi, Chockaiyan Usha, Pandi Sakthieaswari, Kannan Aarthy, Subbaraju Sree Gayathri and Sathaiah Baby (2022). Application of *Deinococcus radiodurans* for bioremediation of radioactive wastes in the book “Microbes and Microbial Biotechnology for Green Remediation”, Elsevier, USA, ISBN 978-0-323-90452-0, Page 717-727.
- **P. Kiruthika Lakshmi** and C. Usha (2022) “Emerging Technologies Advancement to understand Plant-Microbe Responses on Climatic Change” in the book “Ecophysiology of Plant Stress Mitigators” Springer Nature, Singapore,ISBN 978-981-16-7759-5, Page 451-468.
- **P. Kiruthika Lakshmi**, S. Meenakshi (2022) “Micro and macroalgae: A potential biostimulant for abiotic stress management and crop production” in the book “New And Future Developments In Microbial Biotechnology And Bioengineering”, Elsevier, Netherlands, ISBN 978-0-323-85163-3, Page 63-77.



- **Parameswaran Kiruthika Lakshmi**, Chockaiyan Usha, Selvaraj Meenakshi, and Muthupandian Saravanan(2022) “Magnetic nanoparticles for diagnostic and therapeutic applications” in the book “Pharmaceutical nano biotechnology for targeted therapy” Springer Nature, Switzerland, ISBN 978-3-031-12657-4, Page 609-639.
- **Kiruthikalakshmi Parameswaran**, Abirami Sitharanjithan, Meenakshi Selvaraj, Usha Chockaiyan, Sreegayathri Subbaraju, Sakthieaswari Pandi, Aarthy Kannan, and Baby Sathaiah (2021) “PGPR: The redeemer of rice from abiotic stress” in the book “Antioxidants in plant microbe interaction” Springer Nature, Singapore, ISBN 978-981-16-1350-0, Page 101-136
- Usha Chockaiyan, Abirami Sitharanjithan, **Kiruthika Lakshmi Parameswaran**, and Meenakshi Selvaraj (2021) “Role of Artificial Intelligence in Cancer Nanotheranostics” in the book “Cancer Nanotheranostics”. Springer Nature, Switzerland, ISBN 978-3-030-76263-6, 285-299.
- Usha C., Sakthieaswari P., **Kiruthika Lakshmi P.** (2021) “Medicine at Nanoscale: a New Paradigm for Emerging Trend of Multidrug Resistance in Bacteria” in the book “Nano Strategies for Combatting Antimicrobial Resistance and Cancer.” IGI Global publishers, ISBN 9781799850502, 133-158.
- Esther Elizabeth Grace C., **Kiruthika Lakshmi P.**, Meenakshi S., SeetharamanVaidyanathan, Srisudha S., BrigetMary M. Biomolecular transitions and lipid accumulation in green microalgae monitored by FTIR and Raman analysis- Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy 224: 117382, 2020 (Impact factor-4.4).
- **Kiruthika Lakshmi P.**, Esther Elizabeth Grace C., Baby S., Srisudha S., Briget Mary M. Potential for biofuel production from sewage effluent using indigenous microalgae - International Journal of Creative Research Thoughts 6(1): 883-895, 2018 (Impact factor-5.97)
- **Kiruthika Lakshmi P.**, Srisudha, S and Gunasekaran, P. Genetic heterogeneity and phylogenetic divergence among *Nostoc sp.*, based on cpcB –cpcA gene sequence – International Journal of Current Research 4(5): 37-41, 2012 (Impact factor-1.125)
- **Kiruthika Lakshmi P.**, Srisudha, S and Gunasekaran, P. Chemometric assessment of surface water quality in Vaigai River, South India - International Journal of Current Research 4(10):71-74, 2012 (Impact factor-1.125)
- **Kiruthika Lakshmi P.** and Gunaseeli, R. Biocontrol efficiency of *Pithophora sp.* against human and plant pathogens- Indian Hydrobiology 12(1):33-38, 2009.

- **Kiruthika Lakshmi P.** and Gunaseeli, R. A study on production, optimization and characterization of cryptophycin from *Nostoc sp.* and its evaluation as antifungal agent- Indian Hydrobiology 12(1):25-32, 2009.

-----**ACCEPTED FOR PUBLICATION**-----

- Book chapter entitled “Pandemic associated Biomedical Waste Management: Socio-Environmental Impact, Sustainable Strategies and Renewable Technologies” has been accepted for publication in the Book “Analytical Case Studies on Municipal and Biomedical Waste Management: Perspectives on Sustainable Development Goals” (Taylor & Francis Ltd., GB)

-----**RESEARCH REPORT IN NEWSPAPERS**-----

- “Toxic pollution of Vaigai water far exceeds permissible limits, reveals a study by LDC” – Indian Express, 16<sup>th</sup> March 2011.
- “Water is becoming toxin” – Dinamalar, 12<sup>th</sup> March 2011.

-----**SEQUENCES SUBMITTED TO DDBJ-EMBL-GENBANK DATABASES**-----

**Nucleotide entries:**

JN571292, JN571293, JN600450, JN600451, JN600452, JN600453, JN600454, JN600455, JN600456, JN600457, JN600458, JN600459, JN600460, JN600461, JN600462, JN600463, JN600464, JN600465, JN646757, JN646758, JN646759, JN646760, JN646761, JN646762, JN646763, JN571294, JN646750, JN646751, JN646753, JN646754, JN646755, JN646756, KF663701, KF663702, KF663703, KF663704, KF663705, KF663706, KF663707, KF663708, KF663709, KF663710, KF663711, KF663712, KF663713.

**Translated protein entries:**

AEO52927, AEO52926, AEP40381, AEP40382, AEP40383, AEP40384, AEP40385, AEP40386, AEP40387, AEP40388, AEP40389, AEP40390, AEP40391, AEP40392, AEP40393

-----**MEMBERSHIP/ PROFESSIONAL RESPONSIBILITIES UNDERTAKEN**-----

- Served as **Subject Expert** in **Board of Studies meeting** conducted by the Department of Microbiology, **Scott Christian College, Nagercoil** on 09.12.2023
- Served as **Chairman in Question Papers Setting Board** for M.Sc., Microbiology Degree Examination to be held during April 2024 in **Alagappa University, Karaikudi**.
- Lifetime member in **Indian Association of Medical Microbiologists (IAMM)**
- Served as organizer for various workshop, seminars, conference and exhibition

- Served as coordinator for AMICROZ, the student's club of Microbiology Department in The Madura College during 2021-2024.
- Served as external examiner and question paper setter for various institutions.

-----**AREA OF SPECIALIZATION**-----

- Molecular Biology and DNA profiling
- Insilico analysis using bioinformatics tools
- Phycology and algal toxins
- Production of biodiesel and bioactive fractions from algae

-----**ANALYTICAL SKILLS**-----

- Multiplex PCR, RAPD, RFLP, Sequencing, Denaturing Gradient Gel Electrophoresis
- Gas Chromatography, Fluorescent and Phase Contrast microscopy, Atomic Absorption Spectrophotometry, Spectrofluorometry, Photobioreactors
- Primer designing, Sequence similarity and molecular identification, Phylogenetic analysis,, predicting site of mutation, protein structure prediction and validation, ligand binding and docking

-----**PERSONAL DETAILS**-----

**DOB: 26-Apr-1985**

**Marital Status: Married**

**Languages Known: English & Tamil.**

-----**DECLARATION**-----

I hereby affirm that all particulars mentioned in this document are true to the best of my knowledge and belief.

**P.KIRUTHIKA LAKSHMI**