

FACULTY PROFILE

Name : **Dr. P.M. AYYASAMY**
Designation : Assistant Professor
Contact Address with phone : Department of Microbiology
Number and email ID : Periyar University
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Educational Background : Ph.D - Bharathiar University, Coimbatore (May - 2005)
M.Sc - Bharathiar University, Coimbatore (April - 1999)
B.Sc - Gobi Rural Arts and Science College (April - 1997)
Affiliated to Bharathiar University

Ph.D. Guided : 5 - Completed, 8 - On going

M.Phil. Guided : 18 - Completed

Teaching Experience : 7.3 Years

Years of Experience	Position Held	Department / Institutions in which taught
6 Years (28 th Oct 2008 to till date)	Assistant Professor	Microbiology, Periyar University, Salem, India
1 Year 3 Months (6 th June 2005 to 23 rd Sep 2006)	Lecturer and Head	Microbiology, Nehru Arts and Science College, Coimbatore, India

Research Experience : 9.8 Years

Years of Experience	Position Held	Department / Institutions in which taught
6 Years	Assist. Prof.	Microbiology, Periyar University, Salem, India
1 Year 9 Months	Post Doctoral Researcher	Environmental Engineering, The Catholic University of Korea & Korea University, South Korea
2 Years	Junior Project Fellow	Environmental Sciences, Bharathiar University, Coimbatore

Research Interest : Environmental Microbiology, Biogeochemistry and Bioremediation of water and soil

Research Publications:

1. Nagarajan, G., S. Rajakumar and P.M. P.M. Ayyasamy, 2014. Vegetable wastes: An alternative resource for biogas and bio compost production through lab scale process. *International Journal of Current Microbiology and Applied Sciences*, (In Press).
2. Baby, V., S. Rajakumar and P.M. Ayyasamy, 2014. Prevalence and Screening of Potential Fe(III) and Mn(VI) Resistant Microorganisms in Industrial Soil. *Int. J. of Innovative Res. in Sci. Eng. and Technol.* 3(7): 14702-14710
3. Palani Velan, R., S. Rajakumar, Suresh S.S. Raja and P.M. Ayyasamy, 2014. Optimization of prime parameters for textile dye decolorization by design of experiments (DOEs) using *Lysinibacillus fusiformis* M1. *Desalination and Water Treatment*, Page 1-13. doi: 10.1080/19443994.2014.944583.
4. Palani Velan, R., S. Rajakumar and P.M. Ayyasamy, 2014. Effect of various carbon and Nitrogen Sources on Decolorization of Remazol Golden Yellow Using Prospective Bacterial Species. *Journal of Environmental Biology*, 35: 781-787. ISSN: 0254-8704.
5. Jeya, K.R., A. Sakthidesai, S. Rajakumar and P.M. Ayyasamy, 2014. Efficacy of Sustainable Technologies for Fluoride Removal from Groundwater Resource: A General View. *Nature and Environment*, 19: 163-172.
6. Gowthami, R. and P.M. Ayyasamy 2014. Dairy Wastes: A Potential Bioresource For Industrial Products. *International Journal of Science Innovation and Discoveries*, 4: 1- 16.
7. Sakthi Thesai, A., K.R. Jeya, S. Rajakumar and and P.M. Ayyasamy, 2014. Incidence and effects of fluoride in Indian natural ecosystem: A Review. *Advances in Applied Science Research*, 5: 173-185.
8. Selvakumar, S., P. Sekar, S. Rajakumar and P.M. Ayyasamy, 2014. Rapid Screening of Crude Oil Degrading Bacteria Isolated from Oil Contaminated Areas. *The SciTech Journal*, 1: 24-27.
9. Prabhakaran, P., A. Sureshbabu, S. Rajakumar and P.M. Ayyasamy, 2014. Bioremediation of crude oil in synthetic mineral salts medium enriched with aerobic bacterial consortium. *International Journal of Innovative Research in Science, Engineering and Technology*, 3: 9236-9242. ISSN: 2319-8753.
10. Janarthanan, R., P. Prabhakaran and P.M. Ayyasamy, 2014. Bioremediation of vegetable wastes through biomanuring and enzyme production. *International Journal of Current Microbiology and Applied Sciences*. 3: 89-100. ISSN: 2319-7706.

11. Baby, V., S. Rajakumar and P.M. Ayyasamy, 2013. Reduction of ferric iron in synthetic medium amended with acetate as a sole carbon source. *International Journal of Current Microbiology and Applied Sciences*, 2: 501-513. ISSN: 2319-7706.
12. Menaga, D., S. Rajakumar and P.M. Ayyasamy, 2013. Free radical scavenging activity of methanolic extract of *Pleurotus florida* mushroom. *International Journal of Pharmacy and Pharmaceutical Sciences*, 5: 601-606. ISSN: 0975 – 1491.
13. Seenivasagan, R., S. Rajakumar and P.M. Ayyasamy, 2013. Optimization of Carbon Sources, Temperature and pH for Nitrate Removal in Synthetic Nitrate Rich Medium Using *Bacillus sp.* (SW-59). *International Journal of Innovative Research in Science, Engineering and Technology*, 2: 6315-6321. ISSN: 2319-8753.
14. Seenivasagan, R., R. Kasimani, S. Rajakumar and P.M. Ayyasamy, 2013. Screening of Assimilatory and Dissimilatory Denitrifying Microbes Isolated From Nitrate Contaminated Water and Soil. *Preparative Biochemistry and Biotechnology*, 44: 586-597. ISSN:1082-6068.
15. Menaga, D., S. Rajakumar, A. Sureshbabu, G. Rubalakshmi and P.M. Ayyasamy, 2013. Phytochemical studies, antioxidant activities and identification of active compounds using GC-MS of *Pleurotus florida* mushroom. *Indo American Journal of Pharmaceutical Research*, 3: 5141-5149. ISSN: 2231-6876
16. Monisha, T., S. Rajakumar and P. M. Ayyasamy, 2013. Microbial-Treated Sago Mill Effluent: A Potential Water Resource for Agroecosystem Management. In: Microbiological Research in Agro ecosystem Management, Velu, Rajesh Kannan (Eds.), *Springer*. ISBN: 978-81-322-1087-0.
17. Palanivelan, R., S. Rajakumar, P. Jayanthi and P.M. Ayyasamy, 2013. Potential process implicated in bioremediation of textile effluents: A review. *Advances in Applied Science Research*, 4: 131-145. ISSN: 0976-8610.
18. Sivakami, G., U. Priyadarshini, V. Baby, S. Rajakumar and P.M. Ayyasamy, 2012. Bioremediation of Ferric Iron in Synthetic Metal Oxide Using *Bacillus sp.* (SO-10). *Journal of Current Perspectives in Applied Microbiology*, 1 (2): 34-41. ISSN: 2278-1250
19. Rajakumar, S., P.M. Ayyasamy, K. Shanthi, Y.C. Song and P. Lakshmanaperumalsamy, 2012. Incidence, Survival and Antibiotic Resistance of *Aeromonas Hydrophila* Isolated From Lamb and Chicken Meat Retail Outlets. *Journal of Current Perspectives in Applied Microbiology*, 1 (2): 34-41. ISSN: 2278-1250.
20. Prabakaran, P., S. Rajakumar and P.M. Ayyasamy, 2012. Studies on isolation and screening of potential crude oil degrading microorganisms obtained from petroleum hydrocarbon contaminants. *Indian Journal of Environmental Protection*, 32: 988-994. ISSN: 0253- 7141.

21. Rajakumar, S., P.M. Ayyasamy and K. Anbarasu, 2012. Carbon and nitrogen source renewal in the earth. *Journal Viva Origino*, 40: pp. 18. ISSN: 0910-4003
22. Priya Meenatshi, N., S. Jayaram, P.M. Ayyasamy and S. Karthikeyan, 2012. Antibacterial effect of *Ficus bengalensis* against human pathogens. *Biomedicine*, 32: 560-564.
23. Menaga, D., P.U. Mahalingam, S. Rajakumar and P.M. Ayyasamy, 2012. Evaluation of phytochemical characteristics and antimicrobial activity of *Pleurotus Florida* mushroom. *Asian Journal of Pharmaceutical and Clinical Research*, 5: 102-106. ISSN: 0974-2441
24. Ayyasamy, P.M. and S. Lee, 2012. Mobility and biotransformation of heavy metals from soil in synthetic medium containing glucose at various pH using *Shewanella* sp. (HN-41). *Geomicrobiology Journal*, 29: 843-851. ISSN: 0149-0451.
25. Palanivelan, R., S. Rajakumar and P.M. Ayyasamy, 2012. Exploration of promising dye decolorizing bacterial strains obtained from Erode and Tripur textile wastes. *International Journal of Environmental Science*, 2: 2470-2481. ISSN: 0976 - 4402
26. Menaga, D. and P.M. Ayyasamy, 2012. Effect of horse gram on the cultivation of *Pleurotus florida* mushroom and their phytochemical analysis and antimicrobial activity. *International Journal of Research in Pharmaceutical Science*, 3: 140-145. ISSN: 0975-7538.
27. Menaga, D., R. Dhandapani, S. Rajakumar and P.M. Ayyasamy, 2012. Beta-Glucans: A new source for human welfare. *International Journal of Chemical and Pharmaceutical Science*, 3: 1-14. ISSN: 0976-9390.
28. Usharani, K., Umarani, K., P.M. Ayyasamy, K. Shanthi and P. Lakshmanaperumalsamy, 2010. Physico-Chemical and bacteriological characteristics of Noyyal river and ground water quality of Perur, India. *Journal of Applied Science & Environmental Management*, 14:29-35. ISSN: 1119-8362.
29. Ayyasamy, P.M. and S. Lee, 2009. Redox transformation and biogeochemical interaction of heavy metals in Korean soil using different treatment columns in the presence of *Shewanella* sp. *Chemosphere*, 77: 501-509. ISSN: 0045-6535.
30. Ayyasamy, P.M., S. Rajakumar, M. Sathishkumar, K. Swaminathan, K. Shanthi, S. Lee and P. Lakshmanaperumalsamy, 2009. Nitrate removal from synthetic medium and groundwater with aquatic macrophytes. *Desalination*, 242: 286-296. ISSN: 0011-9164
31. Ayyasamy, P.M. S. Chun and S. Lee, 2009. Desorption and dissolution of heavy metals from contaminated soil using *Shewanella* sp. (HN41) amended with various carbon sources and synthetic soil organic matters. *Journal of Hazardous Material*, 161:1095-1102. ISSN: 0304-3894.

32. Lee, S., P.M. Ayyasamy and C. Saho, 2008. Microbial and organic controls on the reductive dissolution of heavy metals from soil. *Geochimica et Cosmochimica Acta*, 72: pp. A527. ISSN: 0016-7037.
33. Ayyasamy, P.M., R. Yasodha, S. Rajakumar, P. Lakshmanaperumalsamy, S. Lee and P.K.S.M. Rahman, 2008. Impact of sugar factory effluent on growth and biochemical characteristics of terrestrial and aquatic plants. *Bulletin of Environmental Contamination and Toxicology*, 81: 449-454. ISSN: 0007-4861
34. Ayyasamy, P.M., R. Banuregha, G. Vivekanandhan, S. Rajakumar, R. Yasodha, S. Lee and P. Lakshmanaperumalsamy. 2008. Bioremediation of sago industry effluent and its impact on seed germination (green gram and maize). *World Journal of Microbiology and Biotechnology*, 24: 2677-2684. ISSN: 0959-3993
35. Rajakumar, S., P.M. Ayyasamy, K. Shanthi, P. Thavamani, P. Velmurugan, Y.C. Song and P. Lakshmanaperumalsamy, 2008. Nitrate removal efficiency of bacterial consortium (*Pseudomonas* sp. KW1 and *Bacillus* sp. YW4) in synthetic nitrate-rich water. *Journal of Hazardous Material*, 157: 553-563. ISSN: 0304-3894
36. Ayyasamy, P. M., K. Shanthi, P. Lakshmanaperumalsamy, S.J. Lee, N.C. Choi, and D.J. Kim, 2007. Two-stage removal of nitrate from groundwater using biological and chemical treatment. *Journal of Bioscience and Bioengineering*, 104: 129-134. ISSN: 1389-1723
37. Rajakumar, S., K. Shanthi, P.M. Ayyasamy, P. Velmurugan and P.Lakshmanaperumalsamy, 2006. Limnological studies of Kodaikanal Lake in Tamil Nadu, India. *Nature, Environment and Pollution Technology*, 5: 533-539. ISSN: 0971-4871.
38. Rajakumar, S., P. Velmurugan, K. Shanthi, P.M. Ayyasamy and P. Lakshmanaperumalsamy, 2006. Prevalence of Coliform Bacteria in Kodaikanal and Yercaud Lake, Tamil Nadu, South India. *Research Journal of Microbiology*, 1: 527-233. ISSN: 1816-4935.
39. Shanthi, K., P.M. Ayyasamy, S. Rajakumar, K. Ramasamy and P. Lakshmanaperumalsamy, 2005. Influence of various carbon sources on nitrate reduction with sludges. *Asian Jr of Microbiology Biotechnology and Environmental Sciences*, 7: 431-438. ISSN: 0972-3005
40. Sathishkumar, M., G. S. Murugesan, P.M. Ayyasamy, K. Swaminathan and P. Lakshmanaperumalsamy, 2004. Bioremediation of arsenic contaminated ground water by modified mycelial pellets of *Aspergillus fumigatus*. *Bulletin of Environmental Contamination and Toxicology*, 72: 617-624. ISSN: 0007-4861.
41. Ayyasamy P.M., Banuregha R., Vivekanandhan G., Savithamani K. and P. Lakshmanaperumalsamy, 2002, Treatment of sago factory effluent by aerobic microbial consortium. *Indian Journal of Environmental Protection*, 22: 554-558. ISSN: 0253-7141.

42. Shanthi, K., P.M. Ayyasamy, K. Ramasamy and P. Lakshmanaperumalsamy. 2007. Heavy metal status of water, sediment, fish and water hyacinth samples of Singanallur Lake, Coimbatore, Tamil Nadu. In : Lakes and Coastal Wetlands : Conservation, Restoration and Management, P.K. Mohanty (ed.), Capital Publishing Company, New Delhi, India. ISBN: 81-85589-51-0.
43. Rajakumar, S., P. Velmurugan, K. Shanthi, P.M. Ayyasamy and P. Lakshmanaperumalsamy, 2007. Water quality of Kodaikanal Lake, Tamilnadu in relation to physico-chemical and bacteriological characteristics. In : Lakes and Coastal Wetlands : Conservation, Restoration and Management, P.K. Mohanty (ed.), Capital Publishing Company, New Delhi, India. ISBN: 81-85589-51-0.
44. Shanthi. K, P. M. Ayyasamy, K. Ramasamy and P. Lakshmanaperumalsamy, 2001. Anaerobic- Anoxic - Aerobic activated sludge treatment for nitrogen bearing synthetic waste water. In: *Proceedings of the National Conference on Control of Industrial pollution and Environmental Degradation* (ENVIRO - 2001), pp. 577 - 582.
45. Shanthi. K, P. M. Ayyasamy, K. Ramasamy and P. Lakshmanaperumalsamy, 2001. Removal of nitrogenous compounds from sewage wastewater by an bench scale activated sludge process. In : *Proceedings of the International Conference on Industrial Pollution and Control Technologies* (ICIPACT - 2001), 1: 84 - 98.

Genbank Sequences Submitted

S. No	Bacterial Strains sequenced	GenBank Accession No's (NCBI)
1	<i>Micrococcus endophyticus</i> (ES37)	JX042488
2	<i>Exiguobacterium aurantiacum</i> (ESL52)	JX014269
3	<i>Exiguobacterium aurantiacum</i> (TSL7)	JQ885975
4	<i>Bacillus firmus</i> (TSL9)	JX316004
5	<i>Brevibacillus laterosporus</i> (TS5)	JQ885974
6	<i>Lysinibacillus fusiformis</i> (M1)	JX316003
7	<i>Bacillus firmus</i> (SW59)	KF926417
8	<i>Bacillus weinstephensis</i> (DS45)	KF926418
9	<i>Bacillus</i> sp. (EW4)	KJ600629
10	<i>Bacillus</i> sp. (EW6)	KJ600630
11	<i>Bacillus</i> sp. (SSM2)	KJ600631
12	<i>Bacillus methylotrophicus</i>	KM001063
13	<i>Bacillus megaterium</i>	KM001064

Professional Activities

1. Resource Person

- (i) Special Lecture on “Waste Water Treatment Technology” for the M.Sc. Students held on 16th August 2013 at Department of Environmental Science, JSS University, Mysore, Karnataka.
- (ii) A special lecture on “Current perspectives in Biofertilizer Technology” for a MBA students held on 21st March 2012 at Department of Environmental Management, Bharathidasan University, Tiruchirappalli.
- (iii) A special lecture on “Advances in Biofertilizer Technology” for Science students held on 30th January 2012 at Department of Microbiology, Krishnammal College, Coimbatore.
- (iv) A special lecture on “Biofertilizer Technology” for a Science students held on 12th January 2012 at Department of Microbiology, Selvam College of Arts and Science, Namakkal.
- (v) A special lecture on “Pollution and Proper sanitation” in a Science awareness programme held on 30th June 2010 at Dept of Biotechnology, Vysya College, Salem.
- (vi) A special lecture on “Biofertilizer and its advantages” in a Young Student Scientist Programme held from 3 - 22 may, 2010 at Periyar University, Salem.
- (vii) A special lecture on “Bioremediation of nitrogenous components in water and soil” held on 28 January 2010 at Department of Microbiology, Sri Ganesh College of Arts and Science, Salem.
- (viii) A special lecture on “Bioremediation of ground water nitrate” held on 31st March 2007 at Dept of Chemical Engineering, Seoul National University, South Korea.
- (ix) A special lecture on “Waste Utilization and Biocompost Process” for National Service Camp held on 15th April 2006 at Masthikavundanpathi, Coimbatore.

2. Members in the Academic Board

- (i) Board of Study: Department of Microbiology, Periyar University, Salem; Department of Microbiology, Vivekanandha College of Arts and Science, Thiruchengode; Department of Zoology, Gobi Arts and Science College, Gobichettipalayam.
- (ii) Life Member: Association of Microbiologist of India, India.
- (iii) Life Member : Indian Association of Applied Microbiologists, India.

3. Professional role in academic activities of Periyar University

- (i) Camp Officer: Acted as Camp Officer for Central Valuation of Supplementary Examination at Periyar University, Salem during 05.08.2013 to 18.08.2014.
- (ii) Camp Officer: Acted as Camp Officer for Central Valuation (Dummy printing) at Periyar University, Salem during 18.11.2013 to 10.02.2014.
- (iii) Chief Superintendent: Acted a Chief Superintendent for the Special Examination (September 2013) held at Periyar University, Salem during 16.09.2013 to 30.09.2013.
- (iv) Inspection for course approval: Acted as a course approval expert on 22 July 2013 at Department of Microbiology, Vivekanandha CAS for women, Thiruchengode
- (v) University Observer for PRIDE Examination: Acted a Periyar University Observer for the Examination held at Jodhpur and Alwar, Rajasthan; Rivari, Haryana; Bangalore, Karnataka during March 2009, September 2009, May 2010 and July 2012.

4. Organizing Secretary / Organizing Member / Technical Assistant

- (i) Acted as Co-ordinator for the National Workshop on “Microbes to Commercial Products” held on 2nd September 2014.
- (ii) Acted as Co-ordinator for the National Seminar on “Challenges for Microbiologists to Become Entrepreneur (Micropreneur - 2014)” held on 27th August 2014.
- (iii) Acted as Co-ordinator for conducting the National Seminar on “National Seminar on Molecular Aspects of Microbiology (NSMM-2012)” held on 7th March 2012.
- (iv) Acted as Co-Ordinator for conducting the 9th National Conference of IAAM on “Current Trends in Microbial Technology (CTMT)” - Oct 2011.
- (v) Acted as Organizing Secretary for conducting the National Seminar on “Current trends in Viral Diseases and its Diagnosis (CTVD)” – March 2011.
- (vi) Acted as an Co-ordinator for the National Seminar on “Recent Trends in Microbial Technology with reference to Extremophiles” conducted during 21 & 22 October, 2010 at Department of Microbiology, Periyar University
- (vii) National Seminar on Current Trends in Advanced Biological Research (CTAB 2006), held on 24 - 25 January 2006 at Nehru Arts and Science College, Coimbatore.

5. External Examiner for M.Phil / Ph.D

- (i) Department of Microbiology, Sri Venkateswara University, Tirupati.
- (ii) Department of Microbiology, Bharathidasan University, Thiruchirappalli - 24.
- (iii) Department of Environmental Science, PSG. CAS (Affiliated to Bharathiar University), Coimbatore - 46
- (iv) KSR College of Arts and Science, Thiruchengode during the academic year 2010-11.

6. Syllabus and question paper sets: Syllabus and theory question papers for M.Sc and M.Phil was made in Periyar University, Salem, Sri Vinayaga Mission University, Salem, Gandhigram University, Gandhigram and Bharathidasan University, Trichirappalli.

7. Research lab Facilities: Basic facilities are available related to Microbiology, Bioremediation studies and analytical aspects.

8. Research Projects

S. No.	Project title	Funding agency / amount	Status
1	Prototype development and bioreactor designing for lab scale treatment of ground water and soil containing nitrate and fluoride	UGC Rs. 12,96,267/-	Completed
2	Detoxification of arsenic and iron from ground water and soil through bioreactor designing and different treatment columns	CSIR Rs. 15,92,000/-	Ongoing

9. Awards and Honors

1. Best Paper Award received in the “1st EIT International Conference on Water Resource Engineering” held during 18-19 August 2011 at Thailand
2. M.Sc Project awarded by Tamil Nadu State Council for Science and Technology (TNSCST), Chennai, Tamil Nadu, India.
3. Worked under Junior Project Fellowship sponsored by Defence Research and Development Organization (DRDO), Jodhpur, Rajasthan, India.

10. Countries Visited

- (i) **South Korea :** Visited for Post Doctoral Programme from 15.11.2006 to 31.08.2008.
- (ii) **Thailand :** a) Visited to attend “1st EIT International Conference on Water Resources Engineering 2011 (EITWRE2011) held during 18-19 August 2011.
b) Visited to attend “2nd EIT International Conference on Water Resources Engineering held during 05-06 September 2013.

11. Research Collaborators

1. **Dr. Lakshmanaperumalsamy**, Registrar, Karpagam University, Coimbatore.
2. **Dr. K. Swaminathan**, Prof and Head, Department of Microbial technology, Bharathiar University, Coimbatore.
3. **Dr. Sanghoon Lee**, Professor, Department of Environmental Engineering, The Catholic University of Korea, South Korea.

4. **Dr. P.K.S.M. Rahman**, Associate Professor, School of Science and Technology, University of Teesside, Middlesbrough - TS13BA, Tees Valley, United Kingdom.
5. **Dr. Kathirvelu**, Scientist, Scientist, Centre for Fire, Explosive & Environment Safety (CFEES), DRDO, Ministry of Defence, New Delhi.
6. **Dr. K. Shanthi**, Associate Professor, Dept. of Environmental Sciences, PSG College of Arts and Science, Coimbatore.
7. **Dr. S. Rajakumar**, Assistant Professor, Dept. of Environmental Management, Bharathidasan University, Trichirappalli.

12. Any other Informations: Reviewers in several reputed Journals

1. Journal of Hazardous materials (Elsevier)
2. Journal of Bioscience and Bioengineering (Elsevier)
3. Journal of Environmental Management (Elsevier)
4. Coloration Technology (Elsevier)
5. Canadian Journal of Chemical Engineering (Wiley Inter Science)
6. Journal of Science and Technology (Indian Journal)
