

CURRICULUM VITAE

Name: **Ms. Moogambigai Sugumar**

Designation: Research Scholar

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Thiruvannmiyur, Chennai – 600 041, India

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EDUCATIONAL PROFILE

S.No	Course	Year of Passing	Subject	University/Institution	%
1	Ph.D. Science and Humanities (Pursuing)	2017 – Till Date	Biotechnology	Anna University, Chennai	--
2	MSc (2014-2016)	2016	Bioinformatics and clinical trial management (Non – medical)	Dr.MGR Janaki college of arts and science for women, Chennai	82
3	BSc (2011-2014)	2014	Plant Biology and Plant Biotechnology	Stella Maris College Chennai	70

PUBLICATIONS

Google scholar: <https://scholar.google.com/citations?user=XWcL4ToAAAAJ&hl=en&oi=ao>

1. Ekambaram, Rajalakshmi, **Moogambigai Sugumar**, Swetha Karuppasamy, Prabalaya Prasad, and Sangeetha Dharmalingam. "Fabrication of wheatgrass incorporated PCL/chitosan biomimetic nanoscaffold for skin wound healing: In vitro and In silico analysis." Journal of Drug Delivery Science and Technology (2022): 103286 (**IF – 3.92**)
<https://www.sciencedirect.com/science/article/abs/pii/S1773224722001964>
2. **Moogambigai Sugumar**, Vaidhegi Kugarajah and Sangeetha Dharmalingam, "Optimization of operational factors using statistical design and analysis of nanofiller incorporated polymer electrolyte membrane towards performance enhancement of microbial fuel cell", Process safety and Environmental Protection, (2021), in press, (**IF – 6.158**)
<https://www.sciencedirect.com/science/article/abs/pii/S095758202100687X>.

3. **Sugumar, Moogambigai,** and Sangeetha Dharmalingam. "Statistical assessment of operational parameters using optimized sulphonated titanium nanotubes incorporated sulphonated polystyrene ethylene butylene polystyrene nanocomposite membrane for efficient electricity generation in microbial fuel cell." *Energy* 242 (2022): 123000, (IF – 7.147)
<https://www.sciencedirect.com/science/article/abs/pii/S0360544221032497>
4. Kugarajah, Vaidhegi, **Moogambigai Sugumar,** Elamathi Swaminathan, Nagaraj Balasubramani, and Sangeetha Dharmalingam. "Investigation on sulphonated zinc oxide nanorod incorporated sulphonated poly (1, 4-phenylene ether ether sulfone) nanocomposite membranes for improved performance of microbial fuel cell." *International Journal of Hydrogen Energy* 46, no. 42 (2021): 22134-22148. (IF – 5.816)
<https://www.sciencedirect.com/science/article/abs/pii/S0360319921013975>.
5. Ekambaram, Rajalakshmi, **Moogambigai Sugumar,** Elamathi Swaminathan, Arul Princy Micheal Raj, and Sangeetha Dharmalingam. "Design and fabrication of electrospun Morinda citrifolia-based nanofibrous scaffold as skin wound dressing material: in vitro and in silico analysis." *Biomedical Materials* 16, no. 4 (2021): 045014. (IF – 3.715)
<https://iopscience.iop.org/article/10.1088/1748-605X/abef59/meta>
6. Kugarajah, Vaidhegi, **Moogambigai Sugumar,** and Sangeetha Dharmalingam. "Nanocomposite membrane and microbial community analysis for improved performance in microbial fuel cell." *Enzyme and Microbial Technology* 140 (2020): 109606. (IF – 2.287)
<https://www.sciencedirect.com/science/article/abs/pii/S0141022920300995>
7. **Sugumar, Moogambigai,** and Sangeetha Dharmalingam. "Statistical optimization of process parameters in microbial fuel cell for enhanced power production using Sulphonated Polyhedral Oligomeric Silsesquioxane dispersed Sulphonated Polystyrene Ethylene Butylene Polystyrene nanocomposite membranes." *Journal of Power Sources* 469 (2020): 228400. (IF – 9.127)
<https://www.sciencedirect.com/science/article/abs/pii/S0378775320307047>

BOOK CHAPTER

1. Dharmalingam, Sangeetha, **Vaidhegi Kugarajah,** and Moogambigai Sugumar. "Membranes for Microbial Fuel Cells." *Microbial Electrochemical Technology*. Elsevier, 2019. 143-194, <https://www.sciencedirect.com/science/article/pii/B9780444640529000078>

EXPERIENCE

Research Scholar Anna University , College of Engineering, Chennai, TN, India Working on Microbial Fuel Cells, Statistical Analysis, Environmental Engineering	Jan 2017 to Till date
Senior Research Fellow Anna University , College of Engineering, Chennai, TN, India Working on a DBT Project relating Microbial Fuel Cells Title: An Investigation on a Scalable and sustainable Microbial fuel Cell for continuous electricity production from waste biomass	Aug 2016 to Mar 2020
Intern HCL Worked on Bioinformatics tools in MATLAB	06th May 2015 to 28th May 2015
Intern STELLA MARIS COLLEGE One year programme in Career oriented Certificate course of the university Grants Commission in Herbal Therapy and Beauty care	Jul 2012 to Apr 2013

AWARDS AND HONOURS

- 1 University Rank Holder for the batch 2014-2018 M.Sc Bioinformatics And Clinical Trial Management (Non-Medical) Dr. Mgr Janaki college of arts and science for women chennai,
2. Participated in various concurrent programmes organized under YRC and completed satisfactorily two years of service during 2011 – 2013 in the Youth Red Cross Unit (STELLA MARIS COLLEGE)
3. Awarded Best paper three times in various National and International Conferences
4. Contribution to the Student Senate as “PG REPRESENTATIVE” during the year 2015 – 2016

TECHNICAL SKILLS

S.No	Specific Field	Skills
1	Environmental Biotechnology	Microbial Fuel Cells, Statistical Analysis for the Optimization studies (RSM)
2	Polymers and Material Science	Polymer Synthesis, Instrumentation – FTIR, TGA, UV, EIS, nanomaterial synthesis and characterization
3	Microbiology	Isolation of pure culture, culture maintenance and subculture, community analysis, staining and antibiotic assays
4	Molecular Biology	DNA isolation, Qualitative and quantitative analysis, Agarose Gel Electrophoresis, PCR
5	Biochemistry	Protein estimation assays, TLC, Enzyme assays
7	Plant Biology and Plant Biotechnology	Mycology, Microbiology, Plant anatomy, Plant Tissue Culture, Phytochemicals, Horticulture, Genetics, Plant Breeding, Microbial Technology.

9	Bioinformatics	Protein structure prediction, Docking analysis, Phylogenetic analysis, Genome analysis, Sequence alignment, construction of phylogenetic tree, SWISSDOCK, ADME, Database Creation Using PERL – CGI with MySQL Connectivity and Tool Designing Using PERL – CGI, cheminformatics.
10	Nanotechnology	Chemical and synthesis of nanoparticles and characterization
12	Separation and Bioprocess Engineering	Filtration, sedimentation, cell disruption techniques, effect of pH, temperature, substrate concentration, growth kinetics of bacteria. thermal death kinetics
13	Software	Microsoft Office, Origin, Mendeley, Endnote, Chemdraw, Minitab, Design Expert, AutoDock, BiofilmQ

CONFERENCES PRESENTATION & PARTICIPATION

1. Participated in Scavenger Hunt in Autumn, Inter Department Culturals held on 2 – 3 September, 2011 at Stella Maris College, (Autonomous), Chennai – 600 086.
2. Participated in “MASS TREE SAPLINGS PLANTATION” in the project of VRUKSHA MAHAYAGNAM PHASE – III at Vittalapuram Village and Surrounding Villages, off East Coast Road, Kanchipuram District, Tamilnadu on Gandhi Jayanthi day of 02.10.2011.
3. Attended Three Days Training on “Mycological Techniques”, supported by Department of Biotechnology, Ministry of Science and Technology, Government of India under the STAR COLLEGE SCHEME conducted at Stella Maris College from February 13 – 15th 2012.
4. Secured Second place at “AMUZA 2012” held on 7 – 8th December 2012 for the event SHORT – FILM at Stella Maris College (Autonomous), Chennai – 86.
5. Secured Second place at “LANTANA 2013 – 2014” held on 29th January 2014 for the event “WEALTH OUT OF WASTE” at Ethiraj College for Women, College (Autonomous), Chennai – 600 008.
6. Secured First place at “EUPHORIA INTER COLLEGIATE CULTURAL FEST 2014” held on 26th September, 2014 for the event JAM at Dr. MGR Janaki College of Arts and Science for Women, Chennai.
7. Secured First place at “EUPHORIA INTER COLLEGIATE CULTURAL FEST 2014” held on 26th September, 2014 for the event SPELL ON JEWEL at Dr. MGR Janaki College of Arts and Science for Women, Chennai.
8. Attended a Seminar for PG students on “Current Trends in Biology” jointly organized by CICS and TWAS-ROCASA held on 05th February, 2015.
9. Attended the programme on “6th Popular Lecture Series for Popularization of Biotechnology” at Sathyabama University, Chennai from 20 to 22nd July 2015.

10. Secured First place in the event “Paper Presentation” held on 14 -15th September, in the year 2015 on the science day at Dr. Mgr Janaki College of arts and science for women, Chennai.
11. Attended National seminar on “Innovative Bioresearch – Publish & Relish” at Dr. MGR Janaki College of Arts and Science for Women, Chennai.
12. Participated in the 4 days Seminar on “Fundamentals and Applications of Nanoscience and Nanotechnology” from 5 – 8th October, 2015 at the Science City Auditorium, Chennai – 600 025.
13. Attended the Training Programme on “Bioinformatics Tools and Languages with Emphasis on Novel Phytochemicals” from 01 to 03rd February, 2016 at Queen Mary’s College, Chennai – 600 004.
14. Attended a Certificate Course on Effective Patent Drafting” (PAT DRAFT-2016) from 9th to 13th November 2016, Centre for Intellectual Property Rights (CIPR), Anna University, Chennai -600025
15. Attended “GIAN short Course on Fuel cell Technology” from 5th to 9th December 2016 at IIT Gandhinagar, Gujarat.
16. Presented a poster on “Microbial Fuel Cells – Electricity from Wastewater” International Conference on Advances in Functional Materials, January 6-8, 2017 at Anna University, Chennai – 600025.
17. Participated in the “International Conference on Membrane Technology and its applications (MEMSEP – 2017) at National Institute of Thiruchirapalli, Tamilnadu, India and delivered the oral presentation entitled “Membranes for Microbial Fuel cells”.
18. Attended One week workshop on “Current State-of-the-Art Technologies for Career Growth of Mechanical and Material Engineers” held during 21-26th September 2017, at the Department of Mechanical Engineering, College of Engineering Guindy, Anna University, Chennai -25.
19. Participated in International Engineering Sourcing Show VII event held at Chennai Trade Centre during 8 – 10th May 2018 and displayed a poster Representing the Innovative work carried out in ANNA UNIVERSITY
20. Participated on AWSAR (Augmenting Writing Skills for Articulating Research), 18th September, 2018 workshop organized by DST at TAG auditorium, Department of Mechanical Engineering, Anna University.

21. Attended National Symposium on Electrochemistry in Materials and Devices (NSEMD – 2018) organized by CSIR – Central Salt and Marine Chemicals Research Institute, Bhavnagar and Indian Society of ElectroAnalytical Chemistry during 28 – 29th September 2018.
22. Attended Hands- on Training on Electrochemical Techniques” at Pondicherry University on November 30th 2018.
23. Attended short term GIAN course on “Scanning and Transmission Electron Microscopy: Basics and Application on low dimensional structures” at Crystal Growth Centre, Anna University from 3rd to 7th December 2018.
24. Attended One Day Seminar on Recent Trends in Industry on 12th December, 2018, conducted by AU-FRG Institute for CAD/CAM, Department of Mechanical Engineering, Anna University, Chennai – 25.
25. TEQIP III Sponsored Short Term Training Program (STTP) on “Waste to Energy: Fuel cell and Electrochemical Techniques” Sardar Vallabhbhai National Institute of Technology SVNIT, Surat, Gujarat, India 2019.
26. Attended National workshop on Bioelectrochemical Technologies For Waste To Energy Conversion And Resource Recovery BETWEC-2019, Pondicherry University
27. Attended Author Workshop on “How to Write Research Papers Effectively” jointly organized by University Library, Anna University, Chennai – 25 and Elsevier India on 06th September, 2019 at College of Engineering, Guindy Campus, Anna University, Chennai – 600 025.
28. Awarded best oral presentation for the topic entitled, Comparative Studies on SPSEBS – STiO₂ and SPEEK – STiO₂ for long term MFC operation at International Conference on Sustainable Technologies in Healthcare and Environment (INCHE-2020), March 6-7th, 2020 Kamaraj College of Engineering and Technology, Madurai.
29. Attended in International Webinar on “Principal and Application of Green Chemistry in Organic Synthesis and Analytical Sciences” on 20th June, 2020 organised by Department of Applied Sciences conducted by KIET Group of Institutions, Delhi – NCR, Meerut Road (NH-58), Ghaziabad – 201206
30. Attended in International Webinar on “Physics of Nanomaterials : Synthesis and Characterization with Practical Examples” on 23rd June, 2020 organised by

Department of Applied Sciences conducted by KIET Group of Institutions, Delhi – NCR, Meerut Road (NH-58), Ghaziabad – 201206

31. Attended in International Webinar on “Sustainable Approaches for Environmental Protection : Lesson from Covid – 19 Pandemic” on 25th June, 2020 organised by Department of Applied Sciences conducted by KIET Group of Institutions, Delhi – NCR, Meerut Road (NH-58), Ghaziabad – 201206
32. Attended in International Webinar on “Mathematical Approach of Solute Transport Modelling” on 27th June, 2020 organised by Department of Applied Sciences conducted by KIET Group of Institutions, Delhi – NCR, Meerut Road (NH-58), Ghaziabad – 201206
33. Participated in the International Virtual Seminar on Materials and their Applications organized by the Department of Chemistry & Physics, SMM Institute of Engineering and Technology, Dindigul on 18 to 19th June 2020.
34. Attended the workshop on “Optimization of process parameters using Minitab software” on 14th and 15th September 2020, organized by Bannari Amman Institute of Technology, Sathyamangalam.
35. Participated in a Two Day National Webinar on “Impact of COVID – 19 in Service Sector: Strategies to Overcome the Challenges” organised by PG & Research Centre of Commerce, Jayaraj Annapackiam College for Women (Autonomous), Periyakulam on 1st – 2nd June 2020.
36. Attended Health, Economics and Policy Online Seminar organised by Lancaster University, Edvoy and IEC Abroad on 12th June 2020
37. Participated in International Webinar on “Nanobio Technology Enabled Biomedical Sensor Devices for Point-of-Care Disease Diagnosis & The effectiveness of protected areas in biodiversity conservation in Tunisia” Organised by Rajendranath College of Polytechnic, West Bengal, India on 31st July 2020.
38. Participated and Presented a paper (Oral) entitled “STATISTICAL OPTIMIZATION OF PROCESS PARAMETERS IN MICROBIAL FUEL CELL FOR ENHANCED POWER PRODUCTION USING SULPHONATED POSS DISPERSED SULPHONATED POLYSTYRENE ETHYLENE BUTYLENE POLYSTYRENE NANOCOMPOSITE MEMBRANES” in the International Virtual Conference on “INNOVATIVE RESEARCH IN CHEMICAL SCIENCES (IRCS – 2020)” organized by the Department of Chemistry, SRM Institute of Science and Technology, Ramapuram Campus, Chennai – 89 during 29th and 30th June, 2020

39. Attended a Webinar on “EXPERTS ONLINE” organized by the Department of Chemistry, SRM Institute of Science and Technology, Ramapuram Campus, Chennai-89, in association with Association of Chemistry Teachers (ACT), Mumbai on 19th July, 2020.
40. Attended an “International Webinar on Women in Science” organized by the Department of Chemistry, SRM Institute of Science and Technology, Ramapuram Campus, Chennai-89 in association with Association of Chemistry Teachers (ACT), Mumbai, on 28th July, 2020.
41. Attended Faculty Development Programme on “PROSPECTIVE RESEARCH FOR SUSTAINABLE DEVELOPMENT” organized by the Department of Chemistry, SRM Institute of Science and Technology, Ramapuram Campus, Chennai-89, in association with Association of Chemistry Teachers (ACT), Mumbai from 20th to 24th July, 2020.
42. Participated in the Webinar on “Virtual Teaching of Social Sciences: A Primer” organised by the Department of Sociology, Pondicherry University, Puducherry, Department of Women’s Studies, Bharathiar University, Coimbatore & Department of Social Work, National College, Trivandrum, Kerala on 14th June 2020
43. Attended a Three day National level FDP on “Strategies, Methodologies and the Creative Spark for Everyone” organized by the Department of English and Foreign Languages, MITS – Madanapalle during 21-23 July 2020.
44. Participated in the International Faculty Development Programme on “Current Technology in Chemistry” from 23 – 27 August 2021 organised by the Department of Chemistry, Easwari Engineering College (Autonomous), Ramapuram.
45. Participated in the AICTE Sponsored online short term training program on “Fuel cell Technologies for Hybrid and Electric Vehicles” from 17th to 22nd August 2020 organized by Maharaj Vijayaram Ganapathi Raj College of Engineering.
46. Attended webinar on “ Potential Methods for Manufacturing Nanocomposites” conducted by the Department of Mechanical Engineering, Loyola – ICAM College of Engineering and Technology (LICET), Chennai held on 03rd July 2020.
47. Attended the webinar on “Advances in the synthesis of Biopolymer-Ceramic Composites for Biological Applications” organized by the Department of Physics, Saveetha Engineering College on 10th July 2020.

48. Participated in the webinar on “The various career Opportunities of Biotechnology & its allied subjects” organized by LLB-SCHOOL in association with CPMB, TNAU and IMoT Agri forum, on 12th September, 2020.
49. Attended the International webinar on ‘Nanostructured Metal oxide thin films for Sensor Technology’ organized by the Department of Physics, Saveetha Engineering College, on 16th July 2020.
50. Attended the International webinar on ‘Nanomaterials- a multidisciplinary approach’ organized by the Department of Physics, Saveetha Engineering College, on 20th July 2020.
51. Participated in the Five day web series on “LEARNATHON” organised by The Headway Academy, from 3rd to 7th June 2020.
52. Participated in the 7 days Online Certificate Course on “Art of Business” from 13 – 19 July 2020, Organised by The Headway Academy.
53. Participated in the online “COVID-19 Awareness Program” organized by D.K.T.E. Society’s Textile and Engineering Institute, Ichalkaranji.
54. Participated in Virtual Workshop on ‘Computer Aided Drug Design’ conducted by Department of Biotechnology, St. Peter’s College of Engineering and Technology, Avadi, Chennai – 54 From 27th – 30th July, 2020.
55. Participated in “National Webinar by Industry Experts” organized by Department of Biochemistry, Microbiology and PG Departments of Applied Microbiology, Bioinformatics & Clinical Trial Management on 12 – 13th June, 2020.
56. Participated in the International Webinar on “Changing Trends in Vaccination Strategies – Lessons Learnt from Polio” conducted by Department of Biotechnology, Alpha Arts and Science College, held on 11th July 2020.
57. Participated on the Webinar on “Excellence in Nanotechnology” at 22.6.2020 by the Department of Biotechnology. Thiruvalluvar University, Vellore.
58. Participated in COVID -19 Pandemic General Awareness Quiz organized by Department of RISE, Chandigarh Group of Colleges, Landran, Mohali on 15.04.2020.
59. Participated in the International Virtual Conference on “INNOVATIVE STRATEGIES IN CHEMICAL SCIENCE AND TECHNOLOGIES (ICCST2020)” organized by the Department of Chemistry, Bhaktavatsalam Memorial College for Women, Chennai – 80 on 27 & 28th June 2020.

60. Attended the International Webinar on “Cyclic and Linear Sweep Voltammetry – Fundamental & Applications” conducted by the Department of Chemistry, Bhaktavatsalam Memorial College for Women on 31st May 2020.
61. Participated in Three day Webinar on Waste to Energy organized by Centre for Environment, Institute of Science and Technology, Jawaharlal Nehru Technological University Hyderabad (JNTUH), Kukatpally, Hyderabad on 19th – 21st September 2020.

REFEREES

1. Dr. D Sangeetha

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