

Name : Dr. Charumathi P

Designation : Assistant Professor

Department : Zoology

Qualification : M.Sc., Ph.D.,

Experience : Teaching - 7 Years

Research : 11 Years

Area of Specialization(s) : Cell Signalling

Email(OfficialID) : charumathi@psgrkcw.ac.in



Academic Qualifications

Degree	Branch	Institution/University Name	Year of Graduation
Ph.D.	Health	University of Lleida, Spain	2014
M. Sc.	Zoology	University of Madras, Chennai	2008
B.Sc.	Animal Science and Biotechnology	PSGR Krishnammal College for Women, Coimbatore	2006

Additional Qualifications

Diploma/ Vocational/ Certification	Area of Specialization	Institution/University/Agency Name	Year
Certification	Coursera	Introduction to Translational Science by University of Rochester	2025
Certification	NPTEL	Cell Culture Technologies	2024
Certification	TINY EARTH	Tiny Earth Partner Instructor- TINY EARTH, University of Wisconsin, Madison	2024
Certification	Coursera	Fundamentals of Immunology: Innate Immunity and B-Cell Function by RICE University	2022
Certification	Coursera	The Science of Stem Cells by the American Museum of Natural History	2022
Certification	NPTEL	Human Molecular Genetics	2021

Research Guidance

Programme	No.ofScholars	
	Completed	Pursuing
PhD	-	3

Research Publications (Indexed) - 19

International

1. Mohanasundaram, M., Kandaswamy, K., P.B, Harathi, Subramani,R., Pushparaj, C. Anti-biofilm potential of *Matricaria chamomilla* against tetra species representative gut commensals. *Folia Microbiologica* (2025). <https://doi.org/10.1007/s12223-025-01399-6>
2. Abdul Azeez, M. K., Merlin, M., Suresh, S. N., Jothipandiyam, S., Pushparaj, C., Subramani, R., & Paramasivam, N. (2025). Edible Coating for Extending Prawn Shelf Life Using Synergistic Antimicrobial Combination of K-Casein, Chlorella, and Carvacrol. *ACS Food Science & Technology*. <https://doi.org/10.1021/acscfoodscitech.5c00297>
3. Senthilkumar, P., Suresh, S. N., Wadaan, M. A., Pushparaj, C., Subramani, R., & Natarajan, A. (2025). Kefir Grains in Self-Assembled Nanofibrils: Structural Role and Nutritional Applications. *APMIS*, 133(9). <https://doi.org/10.1111/apm.70064>
4. Sivakumar, S. R., Suresh, S. N., Winifrida, K., Subramani, R., & Pushparaj, C. (2025). Converting vegetable and fruit mixture waste into eco-friendly bioplastic sheets and films using a solution casting method. *Biomass Conversion and Biorefinery*, 15(7), 10015–10025. <https://doi.org/10.1007/s13399-024-05723-x>
5. Suresh, S. N., Senthilkumar, P., Pushparaj, C., & Subramani, R. (2025). Carboxy Methyl Cellulose/Carrageenan Composite Film Incorporated With Nanofibrils for Food Packaging Application. *Journal of Applied Polymer Science*, 142(29), e57178. <https://doi.org/10.1002/app.57178>
6. T.C., D., N.K., N., Pushparaj, C., Narayanasamy, A., Manickam, P., Thiruvencataswamy, S., & Sennimalai, R. (2025). Novel therapeutic approaches targeting cancer stem cells: Unveiling new frontiers in breast cancer treatment. *Pathology - Research and Practice*, 266, 155800. <https://doi.org/10.1016/j.prp.2024.155800>
7. Thiagarajan, A., Subramaniyam, N., Thiagarajan, V., Pushparaj, C., Kandasamy, S., Rajendran K, S., & Subramani, R. (2025). Betacyanin–curcumin smart films for detecting fresh chicken quality in real time. *Sustainable Food Technology*. <https://doi.org/10.1039/D5FB00180C>
8. Ashwathi, K., Nandhini, V. M., Thirumalai, V., Ezhili, N., & Pushparaj, C. (2024). Phytochemical profiling of ethanolic extract of bee pollen using Gas Chromatography Mass Spectroscopy and its in silico analysis of hypocholesterolemic activity. <https://pubchem.ncbi.nlm.nih.gov>
9. Senthilkumar, P., Gogoi, B., Dhan, S. S., Subramani, R., Pushparaj, C., & Mahesh, A. (2024). Improving therapeutic potential in breast cancer via histone deacetylase inhibitor loaded nanofibrils. *Drug Development Research*, 85(2). <https://doi.org/10.1002/ddr.22172>
10. Subramani, R., Pushparaj, C., & Ganesan, A. (2024). Kinetic modelling of Okra and *Gracilaria corticata* hydrocolloid mucilage polysaccharides. *Journal of Research and Innovation in Food Science and Technology*, 13(1), 17–22. <https://doi.org/10.22101/jrifst.2023.349221.1378>
11. Suresh, S. N., SenthilKumar, P., Pushparaj, C., Sarangi, P. K., Regina, V. R., & Subramani, R. (2024). Almond gum-chitosan nanocomposite as edible formulation for advancing postharvest longevity of fruits and vegetables. *Polymers for Advanced Technologies*, 35(6). <https://doi.org/10.1002/pat.6453>
12. Siva Nandhini Suresh, Charumathi Puspharaj, Arunadevi Natarajan, Ramesh Subramani, Gum acacia/pectin/pullulan-based edible film for food packaging application to improve the shelf-life of ivy

gourd, *International Journal of Food Science and Technology*, Volume 57, Issue 9, September 2022, Pages 5878–5886, <https://doi.org/10.1111/ijfs.15909>

13. Siva Nandhini Suresh, Charumathi Puspharaj, Ramesh Subramani, Development of Almond gum/alginate composites to enhance the shelf-life of post-harvest Solanum Lycopersicum L, *Food Hydrocolloids for Health*, Volume 2,2022, 100087, ISSN 2667-0259, <https://doi.org/10.1016/j.fhfh.2022.100087>.
14. Maxwalt, S., Rahupathy, K., Suresh, S. N., Subramani, R., & Pushparaj, C. (2022). Synthesis of eco-friendly nanocomposite with silver nanoparticle to increase the antimicrobial activity. *Materials Today: Proceedings*, 62, 2822–2828. <https://doi.org/10.1016/j.matpr.2022.02.374>
15. Suresh, S., Pushparaj, C., & Subramani, R. (2021). Recent development in preparation of food packaging films using biopolymers. *Food Research*, 5(6), 12–22. [https://doi.org/10.26656/FR.2017.5\(6\).082](https://doi.org/10.26656/FR.2017.5(6).082)
16. Nàger, M., Sallán, M. C., Visa, A., Pushparaj, C., Santacana, M., Macià, A., Yeramian, A., Cantí, C., & Herreros, J. (2018). Inhibition of WNT-CTNNB1 signaling upregulates SQSTM1 and sensitizes glioblastoma cells to autophagy blockers. *Autophagy*, 14(4), 619–636. <https://doi.org/10.1080/15548627.2017.1423439>
17. Pushparaj, C., Das, A., Purroy, R., Nàger, M., Herreros, J., Pamplona, R., & Cantí, C. (2015). Voltage-gated calcium channel blockers deregulate macroautophagy in cardiomyocytes. *International Journal of Biochemistry and Cell Biology*, 68, 166–175. <https://doi.org/10.1016/j.biocel.2015.09.010>
18. Das, A., Pushparaj, C., Herreros, J., Nager, M., Vilella, R., Portero, M., Pamplona, R., Matias-Guiu, X., Martí, R. M., & Cantí, C. (2013). T-type calcium channel blockers inhibit autophagy and promote apoptosis of malignant melanoma cells. *Pigment Cell and Melanoma Research*, 26(6), 874–885. <https://doi.org/10.1111/pcmr.12155>
19. Das, A., Pushparaj, C., Bahí, N., Sorolla, A., Herreros, J., Pamplona, R., Vilella, R., Matias-Guiu, X., Martí, R. M., & Cantí, C. (2012). Functional expression of voltage-gated calcium channels in human melanoma. *Pigment Cell and Melanoma Research*, 25(2), 200–212. <https://doi.org/10.1111/j.1755-148X.2012.00978.x>

Other Publications: International/National- 1

1. Praveetha, S., Yamuna, T., Paviya, S. N., Miruthulaa, M., & Pushparaj, C. (2024). Developing a citrus bio-enzyme-based detergent for efficient industrial kitchen grease removal. *Advances in Applied Research*, 16(3), 101–112. <https://doi.org/10.5958/2349-2104.2024.00011.3>

Letter of Appreciation

- Award of Appreciation by Lions International for Teachers Day at PSGR Krishnammal College- 05.09.2024

Acted as a Resource Person- 10

- Talk on “Why Science Matters?” at Srivalli Varadaraj Matriculation Hr. Sec. School, Theni on 31.01.2026
- Tools for Journal Selection and Predatory Detection at the International FDP on AI in Biological Research organized by the Department of Zoology, V.O Chidambaram College Tuticorin on 22.08.2025
- Ethical Publication - A unified Approach to Predatory Journals & Retraction Management at the FDP organized by IQAC, V.O Chidambaram College Tuticorin on 03.09.2025
- Guest lecture on "Immune Evasion strategies of Viruses" organized by the Department of Biological Sciences, Halmos College of Arts and Sciences, Nova Southeastern University, Florida, USA on 10.04.2025
- Popularization of Science lecture at St. Joseph's Matriculation Higher Secondary School, Ondipudur, on 27.02.2025

Reviewer in journal

Medicine
Open Veterinary Journal
Hybrid Advances
BMC Endocrine Disorders
Journal of Bionic Engineering
Tissue Engineering and Regenerative Medicine

Paper Presentations in Conference

International

- Paper presentation on “Synthesis of eco-friendly nanocomposite with silver nanoparticle to increase antimicrobial activity”, at the 13th International Conference on Material Proceedings and Characterization at GRIET, Hyderabad on 22nd to 24th April 2022

Presentations in Seminar

- Oral Presentation on “Degradation of Poultry Excreta using citrious bioenzyme” One Day National Level Seminar on "Sustainable Environmenta Management for Future Generations" organized by KG College of Arts and Science, Coimbatore on 27.6.2025

Participation in Workshop - 5

Total Number- 5

Participation in Faculty Development Programme

Total Number- 15

Participation in Webinar

Total Number - 8

Conference/Seminar/Workshop Organized

- Organizing committee member of Two-day International Symposia on Fish and Fisheries, on 5th and 6th March 2020, organized by the Department of Zoology, PSGR Krishnammal College for Women
- Organizing Secretary for the DBT-CTEP sponsored Two Day National Workshop on BIO-ENTREPRENEURSHIP AND INNOVATION TOWARDS CAREER OPPORTUNITY on 16th and 17th February 2023, organized by the Department of Zoology, PSGR Krishnammal College for Women
- Organizing Committee member of DBT-CTEP sponsored Two-day International Conclave on “Anti-microbial Resistance” on 4th and 5th March 2024, organized by the Centre of Excellence in Life Sciences, KCW

- Organizing Committee member of iNSERB sponsored Two-day International Conclave on “One Health” on 18th and 19th Spetember 2024, organized by the Centre of Excellence in Life Sciences, KCW
- Scientific & Technical Steering Committee member of DBT-CTEP sponsored Two-day National Conference on “BioE3” on 24th and 25th July 2025, organized by the Centre of Excellence in Life Sciences, KCW

Grants

S.N O.	Project title	Name of the agency	Amount (in Lakhs)	Status
1.	Extraction of Chitin from Fish Scale	GRG Trust fund	1.5	Completed
2.	Development of Biodegradable, Ecofriendly Bioplastic from vegetable waste	GRG Trust fund	1.0	Completed
3.	DBT-Builder- PSGR Krishnammal College for Women- Interdisciplinary Life Science Programme for Advanced Research and Education (Level 1)- Co-PI	DBT-Builder	119.9	Ongoing
4	Strengthening of 8 Post Graduate Science Departments to Elevate from Basic Research to Interdisciplinary Research- Co- PI	DST- CURIE	59.21	Ongoing

Awards/Honors

Awards/Honors	Agency/Institute	Year of Award
Awarded- Mangala Sirpiyar Viruthu	Ulaga Tamil Neri Kazhagam and Thirukkural Ulagam Kalvi Saalai	2024
Visiting Researcher Fellowship	TWAS	2022
UdL fellowship	University of Lleida	2013
FI-DGR 2010 Predoctoral fellowship	Agència de Gestió d’Ajuts Universitaris i de Recerca (AGAUR), Cataluña, Spain.	2010

Indexing and Citations

H Index: 8

Citations: 386

Contribution

- Acting as a Coordinator for StartUp and Incubation wing of CIIED since 2023 onwards
- Acting as a Best Outgoing Student Selection Committee member since 2020 onwards
- Acting as an Alumni Executive Committee member since 2024 onwards
- Acting as a Coordinator for Echoes of KCW for social media platforms since 2024 onwards
- Acted as an Ecowatch club member from 2019 to 2022