Bharathkumar Rajagopal

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Education

Aix Marseille Université, Marseille | PhD Student Oceanography | 2025 – Present
- Supervisors: Dr. Christos Panagiotopoulos (MIO) and Dr. Stéphanie Rossignol (LCE)

Amity University, Noida | MSc Biotechnology | First Class with Distinction | (≥97th percentile in class) 2022 – 2024
- Advanced Molecular Biology, Advanced Microbiology, Advanced rDNA Technology, Animal Biotechnology, Python etc.,

PSG College of Arts & Science, Coimbatore | BSc Biotechnology | First Class 2019 – 2022
- Microbiology, Cell Biology, Chemistry of Biomolecules, Enzymology, Bioinformatics, Analytical Techniques etc.,

Research Experience

Doctoral Researcher | Mediterranean Institute of Oceanography (MIO) & Laboratoire de Chimie de l'Environnement (LCE) Dec 2025 – Present

Skills: Tyre Wear Particles, Oceanography, Analytical Chemistry
- Study of the production, atmospheric dispersion, aquatic transfer and impact of tire-wear particles/residues (TWP/TWR) and their associated chemical additives.

Independent Research Assistant | Under Scholarly Mentorship Jul 2024 – Aug 2025

Skills: Toxicology, Microbiome, Mothur, R, Manuscript Preparation
- Assisted in the research to study the relationship between lake pollutants, microbiome, and ecotoxicology under Dr. Boobal Rangaswamy & Contributed to scientific manuscripts for peer-reviewed publication.

Dissertation Trainee | CSIR-IITR, Lucknow Jan 2024 – May 2024

Skills: Microscopic Analysis, FACS, SEM, Micro/Nano-plastics, Mammalian Cell Culture, Handling Murine Model (*in vivo*)
- Conducted *in vitro* toxicity risk assessment of polystyrene nanoplastics on mammalian lung fibroblast cells
- Characterised nanoplastics using DLS and NTA; performed cytotoxicity assessment (MTT, LDH, NRU, Trypan Blue Dye Exclusion, and ROS generation assays), and Genotoxicity assessment (Comet assay). BALF assessment in murine model (*in vivo*)
- Analysed data via GraphPad; identified ROS-mediated toxicity pathways

Postgraduate Research Assistant | Amity University Jul 2023 – Dec 2023

Skills: Pollutant remediation, Bioremediation, Nano-delivery systems
- Developed pesticide-degrading microbial consortia microbeads.
- Optimised bacterial release efficiency for environmental remediation.

Summer Research Intern | Centre for Bioscience and Nanoscience Research May 2023 – Jun 2023

Skills: Microscopy, SEM, UV-Vis Spectroscopy, Mammalian Cell Culture, Nanoparticle Synthesis & Characterisation, Antimicrobial & Anticancer Assays
- Isolated Bacteria *Priestia megaterium* and sequeced (GenBank: OR234764.1)
- Biogenically synthesised silver nanoparticles (AgNPs) & Characterised nanoparticles via UV-Vis, FTIR, and SEM
- Evaluated antimicrobial (MIC, Time kill assay, Antimicrobial textile test) & anticancer (Hep-G2) properties

Skills

[1] **Characterisation:** LDIR, µFTIR, Pyrolysis-GC-MS, FACS (Flow Cytometry)
[2] **Risk Assessment:** *In vitro* Culture, Handling *in vivo* model, Cytotoxicity Assays, Genotoxicity (Comet) Assay
[3] **Bioinformatics:** Library Preparation, SWISS-MODEL, Mega X, PyMol, Mothur, QIIME 2
[4] **Language:** Python (Biopython), R, LaTeX

Publications

[1] Balakrishnan S., **Rajagopal, B.**[§], Velusamy A.[§], & Rangaswamy, B. Ecogenomic profiling of spatial variations in sediment microbial communities of a freshwater lake. *Cleaner Water, 100214.* doi:10.1016/j.clwat.2026.100214 § - equal contribution

[2] Sakthivel, I., Rangaswamy, B., **Rajagopal, B.**, & Shanmugam, L. (2025). Integrating kinetic models, gene circuits, and biofilm dynamics for enhanced exopolysaccharide production in nitrifying bacterial consortia. *Journal of Microbiological Methods, 107237.* doi:10.1016/j.mimet.2025.107237

[3] Kongaserry, A., Shanmugam, L., **Rajagopal, B.**, & Rangaswamy, B. (2025). Development of *Artocarpus heterophyllus* Lam. nanosuspension. In Review - Nanotechnology for Environmental Engineering.

Certificates

[1] Introduction to Professional Scientific Communication | NPTEL Jan 2024 – Feb 2024
[2] Certificate Course on Bionanotechnology | Association of Indian Biologists May 2020
[3] Certificate course in Bioinformatics | PSGCAS Sep 2019 – May 2020
[4] Hands-on Training: HPLC & GC-MS/MS | ICFRE-IFGTB Feb 2020
[5] Human Molecular Genetics | NPTEL Jan 2020 – Feb 2020