

Curriculum Vitae

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Post-Doctoral Fellow

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Academic Qualification:

Degree	Institution	Year	Division	Subject
Doctor of Philosophy (Ph. D)	Indian Institute of Science Education and Research (IISER) Pune, India	2012 - 2019	-	Polymer Chemistry*
Master of Science (M. Sc.)	Swami Ramanand Teerth Marathwada University, Nanded, India	2006 - 2009	First class	Organic Chemistry
Bachelor of Science (B.Sc.)	Swami Ramanand Teerth Marathwada University, Nanded, India	2003-2006	First class	Chemistry, Physics, Mathematics

* Ph. D. Thesis title: “*Fluorescent Biodegradable Block Copolymer Nano-assemblies for Bioimaging and Drug Delivery*”; Research Supervisor: **Prof. M. Jayakannan**.

Academic Awards:

- **CSIR Senior Research Fellowship:** Qualified in October 2014.
- **CSIR Junior Research Fellowship:** Qualified National Eligibility Test for Ph. D admission and eligibility for lectureship conducted by CSIR-UGC examination, held in December 2011. All India Rank: 33

Expertise:

- Synthesis and detailed characterization of small organic molecules.
- Synthesis, structural and photophysical characterization of π -conjugated chromophores.
- Syntheses of amphiphilic biodegradable substituted caprolactone block copolymers by **ring opening polymerization (ROP)** by using fluorescent initiators and characterization of these polymers through NMR, GPC, MALDI-TOF, TGA and DSC.

- Self-assembly studies of these fluorescent amphiphilic block copolymers in detail through microscopic techniques such as FESEM, AFM, TEM and photophysical studies such as UV-visible, steady state fluorescence and life time studies.
- Encapsulation studies of drug or dye molecules into the block copolymer nanocarriers and their in vitro release studies.

Experience in Instruments:

- Structural characterization involving ^1H , ^{13}C , FTIR, HRMS, MALDI-TOF spectroscopic analysis.
- Expertise in handling various instruments: Gel Permeation Chromatography (GPC), Thermogravimetric Analysis (TGA), Differential Scanning Colorimetry (DSC), Dynamic Light Scattering (DLS), UV-Vis spectrophotometer, fluorimeter with TCSPC life time measurements.
- Experience in sample preparation and morphology interpretation of Scanning Electron Microscopy (SEM), Transmission Electron Microscopy (TEM) and Atomic Force microscopy (AFM).
- Interpretational knowledge of confocal laser scanning microscopy (CLSM), fluorescence microscopy, cell viability assay for understanding the drug delivery application of the polymer nano-assemblies.

List of Publications:

1. **Kulkarni, B.;** Surnar, B.; Jayakannan, M. Dual Functional Nanocarrier for Cellular Imaging and Drug Delivery in Cancer Cells Based on π -Conjugated Core and Biodegradable Polymer Arms. *Biomacromolecules* **2016**, *17*, 1004-1017.
2. **Kulkarni, B.;** Jayakannan, M. Fluorescent-Tagged Biodegradable Polycaprolactone Block Copolymer FRET probe for Intracellular Bioimaging in Cancer Cells. *ACS Biomater. Sci. Eng.*, **2017**, *3*, 2185-2197.
3. **Kulkarni, B.;** **Malhotra, M.;** Jayakannan, M. Perylene-Tagged Polycaprolactone Block Copolymers and their Enzyme-Biodegradable Fluorescent Nano-assemblies for Intracellular Bio-imaging in Cancer Cells. (*Manuscript submitted*).
4. **Kulkarni, B.;** Jayakannan, M. Pt-Drug Conjugated Luminescent Block Copolymer Nanocarriers for Cancer Therapy. (*Manuscript under preparation*).

Conferences and Symposia:

1. Poster Presentation in MACRO-2015. Kolkata, January 2015.
2. Poster Presentation in ICONSAT-2016. Pune, February 2016.
3. Poster Presentation in MACRO-2017. Trivandrum, January 2017.
4. Oral Presentation in MACRO-2018. Pune, December 2018.