



## **Dr. Sejal A Rathod**

Assistant Professor, Life Science

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### **Education**

PhD (2023) – Central University of Gujarat, Gandhinagar, Gujarat.

Thesis titled “Development of Matrix Metalloproteinase Responsive Nanoparticles for Cancer Treatment”

MSc (2011) – Sardar Patel University, Anand, Gujarat.

BSc (2009) – Sardar Patel University, Anand, Gujarat.

### **Key Skills**

Dr. Sejal Rathod is capable of providing comprehensive solutions to industry, academic and other government bodies in the following areas:

1. Development and characterization of nanoparticles for various applications including drug delivery, diagnosis, sensors, waste water treatment.
2. Biotechnology - molecular biology, rDNA technology.
3. Phytomedicines.

### **Background**

Joined GSFC University in April 2025

### **Scholarship and Accomplishments**

Dr. Sejal Rathod has completed her PhD in nanoscience subject from school of Nanoscience, Central University of Gujarat, where she has developed stimuli responsive theragnostic nanoparticles for cancer diagnosis and therapy. She had developed skills of synthesis of organic and inorganic nanoparticles and analysis through UV, FTIR, DLS, PSA, XRD, HPLC, XPS, HR-TEM, SEM, TGA, DSC, AAS, ICP-OES, CHNS, MRI, Ultrasound CT techniques. During her PhD, she has undergone workshops conducted by The National Mission on Nano Science and Technology, Department of Science and Technology (DST) and Global Initiative of Academic Networks (GIAN). She has conducted lab practicals and guided MSc students for dissertation. Dr. Sejal has qualified National Eligibility Test (NET)

conducted by University Grant Commission and a lifetime member of Vijnana Bharti (VIBHA).

Dr. Sejal has three years of research experience in department of Microbiology and Biotechnology Centre, M S University, Baroda. She has worked as JRF & SRF under UGC funded project where she has studied a proteomic study of tuberculous granulomas derived under various in vitro conditions. She had carried out literature survey, design and execution of experiments, data analysis and manuscript writing. She had developed research skills on primer design, cloning in E. Coli and Yeast, protein extraction and purification, animal and bacterial Cell culture, fluorescence microscopy, FACS analysis, ELISA, RNA isolation and qRT-PCR, Total cell protein isolation and 2D gel electrophoresis, Protein identification. She has also conducted class lectures, lab practicals, guided MSc students for dissertation during her tenure.

Dr. Sejal has worked as senior project associate in National Innovation Foundation – India, Gandhinagar for one year. She has evaluated grassroot ideas of herbal healers for further research and participated in workshop for scouting and documentation. Also, she has been part of organizing committee for India International Science Festival – 2023. She has teaching experience as assistant professor in Department of Microbiology, School of Science, ITM (SLS) Baroda University where she taught microbiology subjects, conducted exams, assessed answer sheets and prepared mark sheets. She has served as class coordinator and BoS member.

Dr. Sejal has research interest in nanoparticle based systems for drug & gene delivery, phyto-medicines, agrochemicals. She is interested in working with life science based innovation development and patent filing and industry-academia project collaborations.

### **Most Three Notable Publications**

1. **Chauhan Sejal**, Kulhari Hitesh *et al.* Manganese Nanocarrier for Matrix Metalloproteinase 9 Responsive Delivery of Irinotecan for Colon Cancer Treatment. Journal of Industrial and Engineering Chemistry. 2023; 128: 258–267. DOI: 10.1016/j.jiec.2023.07.057. (IF: 5.9).
2. **Chauhan Sejal**, Kulhari Hitesh *et al.* Matrix metalloproteinase enzyme responsive delivery of 5-Fluorouracil using Collagen-I peptide functionalized Dendrimer-Gold nanocarrier. Drug Development and Industrial Pharmacy. 2022; 48(7): 333-342. DOI: 10.1080/03639045.2022.2113404. (IF: 2.4).
3. Saha A, **Chauhan Sejal**, Bagchi T. Effect of recombinant malarial antigen on monocyte functionality. Transactions of The Royal Society of Tropical Medicine and Hygiene. 2016; 110: 480-486. DOI: 10.1093/trstmh/trw049. (IF: 1.9).