

## CURRICULUM VITAE

- 1. Name:** Dr. Preeti Sunil Kulkarni (Preeti Ramesh Bhagat)
- 2. Address:** 101 C, Venkatesh Sharvil, Opposite Pari Industry, Dhayari Narhe Road, Sinhagad Road, Off Sinhagad Road, Pune 411041.
- 3. Email:** psk.agc@mespune.in
- 4. Institution:** Department of Chemistry, MES, Abasaheb Garware College, Pune 411041
- 5. Gender:** Female
- 6. Category:** General
- 7. Academic Qualification**

	Degree	Year	Subject	University/Institute	% Marks
1.	B.Sc.	2000	Chemistry	MES Abasaheb Garware College	71
2.	M.Sc.	2002	Analytical Chemistry	MES Abasaheb Garware College	75
3.	Ph.D.	2010	Chemistry	BARC-Pune University Collaborative Research Programme	-

- 8. Ph.D thesis title:** Estimation of iodine and its species by neutron activation analysis and membrane based chemical separation methods.

**Guide's name:** Prof. N.S.Rajurkar (University of Pune)

**Co-Guide's name:** Dr. R. Acharya (BARC Mumbai)

**University/Organization:** University of Pune and BARC Mumbai

- 9. Work experience**

Sr.No.	Positions held	Name of the Institute	From	To
1	Research associate	Tata Research Design and Development Centre	2002	2004
2	Assistant Professor	MES Abasaheb Garware College	2012	Till date

- 10. Fellowships received**

Sr.No.	Name of award	Awarding Agency	Year
1	Junior Research fellowship	DAE	2004-2006
2	Senior Research fellowship	DAE	2006-2009

## 11. Publications

1. Bamb, Rachana; Walimbe, Prasad; Kulkarni, Sunil; **Kulkarni, Preeti**. Concentration-dependent anomalous diffusion of crystal violet dye in agar gel: application of the continuous time random walk model. *Physical Chemistry Chemical Physics*, 2025, 27, 6212. **RSC Publication**.
2. **Kulkarni, Preeti**; Bamb, Rachana; Watwe, Varuna; Kulkarni, Sunil. Enhanced Sunlight Driven Photocatalytic Degradation of Methylene Blue Dye Using TiO<sub>2</sub>: Exploiting the Self-dye Degradation Property and pH Specificity in a Novel Approach. *Topics in Catalysis*, 2025. **Springer Publication**.
3. Dimble, Akshay; Bagul, Nikhil; Walimbe, Prasad; **Kulkarni, Preeti**; Kulkarni, Sunil. Hydroxide-Source-Dependent Polymorphism and Phase Stability of Cobalt(II) Hydroxides in Diffusion-Driven Systems. *Langmuir*, 2024, 40, 35, 18631-18641. **ACS Publication**
4. **Kulkarni, Preeti**; Watwe, Varuna; Khatavkar, Nirmal, Rutuja; Jagdale, Harshada; Kulkarni, Sunil. Simultaneous Determination of Ni(II) and Co(II) in Aqueous Solution Using an Image-Based Do-It-Yourself Photometer. *Journal of Chemical Education*, 2024, 101, 8, 3451-3458. **ACS Publication**
5. **Kulkarni, Preeti**; Watwe, Varuna; Khatavkar, Sakshi; Khandagale, Akshay; Kulkarni, Sunil. A Smart Phone Based Low-Cost Flame Photometer constructed from a scrap oil tin container for Lithium detection from psychotropic drugs for undergraduate students, *Journal of Chemical Education*, 2023, 100, 12, 4811-4821. **ACS Publication**
6. Salve, Vrushabh; Takale, Kiran; **Kulkarni, Preeti**; Kulkarni, Sunil. Biomimetic spatial control of Liesegang patterns of calcium phosphate in hydrogel employing sucrose and glycine. *Colloids and Surfaces A: Physicochemical and Engineering Aspects*, 2023, 679, 132598. **Elsevier Publication**.
7. Walimbe, Prasad; Itatani, Masaki; **Kulkarni, Preeti**, Lagzi, Istvan; Kulkarni, Sunil. A Quasi Universal Matalon-Packter Law for Periodically Precipitating System of Iron (II) Hydroxide Involving Volumes and Concentrations of The Invading Electrolyte. *Langmuir*, 2023, 39, 38, 13420–13429. **ACS Publication**.
8. Phalke, A; Watwe, V; Kulkarni, S; **Kulkarni, Preeti**. Evaluating the Efficiency of Cadmium Removal by Alginate Hydrogels from Water Using 5,7-Dibromo-8-hydroxyquinoline as a Complexing Reagent, *Precision Chemistry*, 2023, 1, 9, 538-547. **ACS Publication**.
9. Bandal, G.; Watwe, V.; Kulkarni, S.; **Kulkarni, Preeti**. Effect of Addition of Surfactant on Physicochemical Properties of Cobalt Oxide Nanoparticles Synthesised Using a Domestic Microwave: Applications as Photocatalyst and Supercapacitor, *Optik*, 2023, 278, 170743. **Elsevier Publication**.
10. Watwe, V.; Kulkarni, S.; **Kulkarni, Preeti**. Development of Dried Uncharred Leaves of Ficus Benjamina as a Novel Adsorbent for Cationic Dyes: Kinetics, Isotherm, and Batch Optimization. *Industrial Crops and Products*, 2023, 195, 116449. **Elsevier Publication**.

11. K. D. Takale.; V. S. Watwe.; P. C. Walimbe.; **Kulkarni, Preeti**; Kulkarni, S. D. Cu(II)-Metallized Three-Layered Cu-8HQ Complex with Hierarchical Crystallite Morphologies Synthesized via Reaction-Diffusion. *Langmuir* 2023, 39 (7), 2641–2651. **ACS Publication.**
12. V. S. Watwe.; G. A. Bandal.; **Kulkarni, Preeti**. Source-Normalized Error Analysis Method for Accurate Prediction of Adsorption Isotherm: Application to Cu(II) Adsorption on PVA-Blended Alginate Beads. *Journal of Iranian Chemical Society* 2023, 20, 949–959. **Springer Publication.**
13. **Kulkarni, Preeti**. A Simple and Rapid Spectrophotometric method for the determination of Iodate in table salt samples using Pyrogallol red dye, *Journal of ISAS*, 2022, 1, 2, 47-57.
14. **Kulkarni, Preeti**; V. S. Watwe.; S. D. Kulkarni, Dynamic Studies of Copper Adsorption on Mesoporous Alginate Beads Using an Integrated Approach of Fractal-like Kinetic Reaction and Diffusion Modeling. *International Journal of Chemical Kinetics* 2022, 54 (12), 726–736. **Wiley Publication.**
15. Kulkarni, Sunil; Takawane, Smita; Walimbe, Prasad; Takale, Kiran; **Kulkarni, Preeti**. Recognition of spatiotemporal patterns of the periodically precipitating 2D reaction-diffusion system by determination of precise band location: Implications on the Matalon-Packter law. *JCIS Open*, 2022, 6, 100053. **Elsevier Publication.**
16. Watwe, Varuna; **Kulkarni, Preeti**. Evaluation of Cr(VI) adsorption on glutaraldehyde crosslinked chitosan beads using cyclic voltammetry employing gold electrode. *Journal of Analytical Science and Technology*, 2021, 12, 37. **Springer Publication.**
17. Watwe, Varuna; Kulkarni, Sunil; **Kulkarni, Preeti**. Cr(VI)-Mediated Homogeneous Fenton Oxidation for Decolorization of Methylene Blue Dye: Sludge Free and Pertinent to a Wide pH Range. *ACS Omega*, 2021, 6(41), 27288-27296. **ACS Publication.**
18. Walimbe, Prasad; **Kulkarni, Preeti**; Kulkarni, Sunil. Obstruction scaling model for the diffusion of the outer electrolyte leading to Liesegang patterns of (AgNO<sub>3</sub> + KCl) system in agarose hydrogel. *Chemical Papers*, 2021, 1-12. **Springer Publication.**
19. Walimbe, Prasad; Takale, Kiran; **Kulkarni, Preeti**; Kulkarni, Sunil. Precise Evaluation of Spatial Characteristics of Periodically Precipitating Systems via Measurement of RGB (Red, Green, and Blue) Values of Pattern Images. *Langmuir*, 2021, 37(27), 8212–8221. **ACS Publication.**
20. **Kulkarni, Preeti**; Watwe, Varuna; Chavan, Tejashree; Kulkarni, Sunil. Artificial Neural Networking for remediation of methylene blue dye using Fuller's earth clay. *Current Research in Green and Sustainable Chemistry*, 2021, 4, 100131. **Elsevier Publication.**
21. **Kulkarni, Preeti**; Watwe, Varuna; Doltade, Tukaram; Kulkarni, Sunil. Fractal kinetics for sorption of Methylene blue dye at the interface of Alginate Fullers earth composite beads. *Journal of Molecular Liquids* 2021, 336, 116225. **Elsevier Publication.**
22. Hadalgeri, Bhargav; **Kulkarni, Preeti**; Nyayanit, Narendra; Kulkarni, Sunil. Periodically Precipitating Patterns of AgCl through Reaction-Diffusion in Agar Gel: Role of Supersaturation. *Colloids and Surfaces A Physicochemical and Engineering Aspects*, 2020, 607, 125528. **Elsevier Publication.**
23. **Kulkarni, Preeti**; Watwe, Varuna; Pathak, Gayatri; Sayyad, Sana; Kulkarni, Sunil. Evaluation of thermodynamic parameters via reaction stoichiometry and the corrected Langmuir parameter for sorption of Cu(II) on chitosan and chitosan blended PVA films. *Journal of Molecular Liquids*, 2020, 317, 113962. **Elsevier Publication.**
24. **Kulkarni, Preeti**; Watwe, Varuna; Hipparge, Abubakar; Sayyad, Sana; Sonawane, Rutika; Kulkarni, Sunil. Valorization of Uncharred Dry Leaves of *Ficus benjamina* towards Cr (VI)

- removal from Water: Efficacy Influencing Factors and mechanism. *Scientific Reports*, 2019, 9, 19385. **Nature Publication.**
25. Kulkarni, Sunil; Walimbe, Prasad; Ingulkar, Rohit; Lahase, Jagdish; **Kulkarni, Preeti.** Revert Banding in One-Dimensional Periodic Precipitation of the (AgNO<sub>3</sub> + KBr) System in Agar Gel. *ACS Omega*, 2019, 4(8), 13061–13068. **ACS Publication.**
  26. Sujlegaonkar, Aditi; Kulkarni, Sunil; Kale, Sujata; **Kulkarni, Preeti.** Free Radical Scavenging Potential of N, N Di-p- Hydroxybenzylidene Ethylenediamine: Structure-Activity relationship, *Journal of Emerging Technologies and Innovative Research*, 2019, 6, 5, 107-108.
  27. **Kulkarni, Preeti;** Ramekar, Priyanka; Kulkarni, Sunil. An optical sensor for selenite determination in aqueous samples. *Journal of Analytical Science and Technology*, 2018, 9 (2). **Springer Publication.**
  28. Mulik, Anuradha; **Kulkarni, Preeti;** Bhadekar, Rama. Biosorption Studies on Nickel and Chromium by *Kocuria* sp. *BRI 36 Biomass*, 2018.
  29. **Kulkarni, Preeti,** Deshmukh, P. G., Jakhade, A. P., Kulkarni, S. D. & Chikate, R. C. 1,5 diphenyl carbazide immobilized cross-linked chitosan flms: An integrated approach towards enhanced removal of Cr(VI). *Journal of Molecular Liquids*, 2017, 247, 254–261. **Elsevier Publication.**
  30. Kulkarni, Sunil; Mir, Ab; **Kulkarni, Preeti.** Periodic precipitation of cobalt hydroxide in agar gel: Effect of ionic strength. *Journal of Molecular Liquids*, 2017, 241, 37-42. **Elsevier Publication.**
  31. **Kulkarni, Preeti;** Ganesh, A. A simple and rapid method for determination of Se (IV) using methylene blue dye. *Research Journal of Chemistry and Environment*, 2017, 21, 38-43.
  32. **Kulkarni, Preeti;** Dhar, Satish; Kulkarni, Sunil. A rapid assessment method for determination of iodate in table salt samples. *Journal of Analytical Science and Technology*, 2013, 4. **Springer Publication.**
  33. Y. Kalyan; A. K. Pandey; **Bhagat, Preeti;** R. Acharya, V. Natrajan, G. R. K. Naidu, A.V. R. Reddy. Membrane optode for mercury(II) determination in aqueous samples, *Journal of Hazardous Materials*, 2009, 166 (1), 377-382. **Elsevier Publication.**
  34. **Bhagat, Preeti;** R. Acharya; A.G.C.Nair; A.K. Pandey; N.S.Rajurkar; A.V.R. Reddy. Estimation of iodine in food, food products and salt using ENAA, *Food Chemistry*, 2009, 115, 706-710. **Elsevier Publication.**
  35. **Bhagat, Preeti;** A.K. Pandey; R. Acharya; V. Natrajan; N.S.Rajurkar; A.V.R. Reddy. Molecular iodine selective membrane for iodate determination in salt samples: Chemical amplification and removal, *Analytical and Bioanalytical Chemistry*, 2008, 391, 1081-1089. **Elsevier Publication.**
  36. **Bhagat, Preeti;** A.K. Pandey; R. Acharya; A.G.C.Nair; N.S.Rajurkar; A.V.R. Reddy. Molecular iodine removal and determination in aqueous samples using poly(vinylpyrrolidone) containing membranes. *Talanta*, 2008, 74, 1313- 1320. **Elsevier Publication.**
  37. **Bhagat, Preeti;** A. K. Pandey; R. Acharya; A.G.C.Nair; N.S.Rajurkar; A.V.R. Reddy. Selective preconcentration of molecular iodine by complexation with poly(vinylpyrrolidone) in membrane and its determination by NAA, *BARC Newsletter*, 2007, 285.
  38. **Bhagat, Preeti;** A.K. Pandey; R. Acharya; A.G.C.Nair; N.S.Rajurkar; A.V.R. Reddy. Selective removal and determination of iodine species in milk samples using polymer inclusion sorbent, *Talanta*, 71, 1226-1232, 2007. **Elsevier Publication.**

## 12. Conferences Attended

- Preeti Bhagat, R. Acharya, A.K. Pandey, A.G.C.Nair, N.S.Rajurkar and A.V.R. Reddy. Selective removal of iodide in presence of iodate using anion exchange plasticized membrane. ARCEB'06, SINP, Kolkata, 2006, Page 318.
- Preeti Bhagat, A.K. Pandey, R. Acharya, A.G.C.Nair, N.S.Rajurkar and A.V.R. Reddy. Selective removal of molecular iodine in membrane by complexation with poly (vinylpyrrolidone) and its determination using Neutron activation analysis SESTEC 2006 BARC, Mumbai.
- Preeti Bhagat, R. Acharya, A.G.C.Nair, N.S.Rajurkar and A.V.R. Reddy. Determination of iodine in food products by Epithermal Neutron Activation Analysis NUCAR 2007, M.S. University, Vadodara.
- Sunil D. Kulkarni, Preeti R. Bhagat, N.S.Rajurkar, R. Acharya, A.K.Pandey, A.G.C.Nair and A.V.R.Reddy. "Review of R & D work carried out using NAA under BARC-PU MoU". CFNAA 2006, Mumbai.
- Preeti Bhagat, A.K. Pandey, R. Acharya, A.G.C.Nair, N.S.Rajurkar and A.V.R. Reddy. Iodine speciation in milk samples by chemical neutron activation analysis. Trace-07, 2007, A18, Kolkata, West Bengal.
- Preeti Bhagat, A.K. Pandey, R. Acharya, A.G.C.Nair, N.S.Rajurkar and A.V.R. Reddy. In situ removal of molecular iodine from iodometric reactions in membrane: Chemical amplification and determination of bromate and selenite. Accepted for presentation at SESTEC 2008, Delhi
- P.R. Bhagat, R. Acharya, A.K. Pandey, N.S. Rajurkar, A.V.R Reddy. Determination of total iodine and its species in commercial iodized salt samples using epithermal INAA and membrane based radiotracer method. Accepted for presentation at Indian Council of Chemists, at H. S. Gaur University, M.P
- P.S.Kulkarni, G.M.Arote Determination of Selenium (IV) in Aqueous samples by using Methylene Blue Dye, Oral presentation at Indian Council of Chemists, at Punjab University, Chandigarh 19<sup>th</sup> -21<sup>st</sup> Dec, 2012.
- Preeti.S.Kulkarni, Priyanka.V.Ramekar, A.K.Pandey, R.Acharya. Optical sensor for Se(IV) determination in aqueous samples Poster Presentation at International Conference in Emerging trends in Separation Science and technology SESTEC-2012 at Mithibai College Mumbai 27<sup>th</sup> Feb-1<sup>st</sup> March 2012.
- Preeti.S.Kulkarni, S.Dhar A Rapid method for determination of iodate in aqueous samples using Variamine Blue dye. Oral presentation at NCOPOCS Modern College 22<sup>nd</sup> to 24<sup>th</sup> Feb 2012
- P.S.Kulkarni, V.M.Patil, R.Kute, Removal of Cr (VI) from water using natural, crosslinked and 1,5-DPC treated Chitosan films, CTAC-BARC, Mumbai, May 2015
- P.S.Kulkarni, Selective removal of Chromium and Lead from simulated effluent by modified Chitosan crosslinked thin films, INNOVATION-Sangamner 2015.
- Presented a poster and won the third prize at the International Conference on Biodegradable Natural Polymers 6<sup>th</sup> Dec 2018-8<sup>th</sup> Dec 2018.
- Varuna S. Watwe and Preeti S. Kulkarni, Heterogeneous Fenton process for dye degradation employing clay coated Manganese oxide nanoparticles (2021). Abstract

published in International Conference on Nanotechnology for Better Living organized by NIT Srinagar.

- Gauri Bandal, Varuna Watwe, Preeti Kulkarni, Microwave Assisted Synthesis of Cobalt oxide Nanoparticles for Effective Adsorption Coupled Photocatalytic Degradation of Methylene blue. Abstract published in Annual International Conference on Advanced Nanomaterials (2021).
- Snehal Gunjal and Preeti Kulkarni, Ultrasonication assisted Copper based homogenous Fenton oxidation for mineralization of Rhodamine B dye: pH studies (2022). Abstract published in International Conference on New Horizons and Trends in Chemical Science.
- Ashlesha Sardar and Preeti Kulkarni, Infrared light assisted homogenous Cu(II) mediated Fenton like oxidation of Rhodamine B dye: Kinetic studies at different pH (2022). Abstract published in International Conference on New Horizons and Trends in Chemical Science.
- Tushar Dahake, Kaveri Naykodi, Preeti Kulkarni, Adsorption studies of Crystal Violet dye on treated activated Charcoal (2022). Abstract published at International Conference on New Horizon of Nanoscience and Energy resources.
- Preeti Kulkarni, Varuna Watwe, Dhanashri Ghule, Megha Biware, Spectrophotometric method for determination of Acetaminophen from wastewater samples (2022). Presented Poster and Abstract published in Indian Analytical Science Congress.
- Varuna Watwe, Preeti Kulkarni, Accurate prediction of adsorption isotherm model for copper adsorption on polyvinyl alcohol blended alginate beads using error analysis (2022). Abstract published in Indian Analytical Science Congress.
- Abhijit Phalke, Varuna Watwe, Preeti Kulkarni, 5,7-dibromo-8-hydroxyquinoline as a complexing agent for Cd(II): Application in evaluating removal efficiency of Cd(II) in aqueous solutions using Calcium Alginate beads, Emerging Trends in Separation Science and Technology SESTEC- November 22-26, 2022, Institute of Chemical Technology (ICT), Mumbai, India.
- Abhijit Phalke, Preeti Kulkarni, Cadmium adsorption on novel Kaolinite-Alginate composite beads, International Workshop and Conference on Membrane Assisted Water Purification Processes ICMW- March 9-12, 2023, Mahatma Gandhi University, Kottayam, Kerala, India.
- Akshay Khandagale, Sakshi Khatavkar, Preeti Kulkarni, Synthesis of TiO<sub>2</sub> nanoparticles via ultrasonication: Immobilization in Biodegradable polymer membranes for photocatalytic degradation of dyes, International Workshop and Conference on Membrane Assisted Water Purification Processes ICMW- March 9-12, 2023, Mahatma Gandhi University, Kottayam, Kerala, India.
- Varuna Watwe, Preeti Kulkarni, Environment friendly Optical sensor for Cr(VI) in aqueous systems based on image analysis, International Workshop and Conference on Membrane Assisted Water Purification Processes ICMW- March 9-12, 2023, Mahatma Gandhi University, Kottayam, Kerala, India.
- Preeti Kulkarni, Augmentation In Supercapacitance of Cobalt Hydroxide By The Inclusion of Anions In the Solvothermal Synthesis Method, International Union of

Materials Research Societies-International Conference in Asia- December 3<sup>rd</sup>-6<sup>th</sup> 2024, DAVV university, Indore, Madhya Pradesh.

- Varuna Watwe, Preeti Kulkarni, Microwave-Driven Fenton-Like Catalysis Using Cu-BTC MOFs In Alginate Beads for Rapid Methylene Blue Degradation, International Union of Materials Research Societies-International Conference in Asia- December 3<sup>rd</sup>-6<sup>th</sup> 2024, DAVV university, Indore, Madhya Pradesh.
- Rachana Bamb, Preeti Kulkarni, Diffusion of Methyl Orange Dye in Agar Gel by Trajectory Tracing, XXXXIII Annual Conference, Indian Council of Chemists, December 26<sup>th</sup>- 28<sup>th</sup> 2024, PES'S Modern College of Arts, Science and Commerce (Ganeshkhind, Pune- 411016).
- Gauri Bandal, Preeti Kulkarni, Synchronizing the Physicochemical Properties of Cobalt Hydroxides and Oxides through Variation in Precursors, XXXXIII Annual Conference, Indian Council of Chemists, December 26<sup>th</sup>- 28<sup>th</sup> 2024, PES'S Modern College of Arts, Science and Commerce (Ganeshkhind, Pune- 411016).

### 13. Invited Talks

- Resource person for the NIUS chemistry camp scheduled from December 20 to 30, 2021 for 2<sup>nd</sup> year Undergraduate students.
- Resource person for MS-DEED Level 2 in-person workshop for college teachers organized at IISER Pune on 20/05/2022.
- Delivered an invited Talk at the International Workshop and Conference on Membrane Assisted Water Purification and Conference on Membrane held at Mahatma Gandhi University, Kottayam, Kerala India 9<sup>th</sup> March- 12<sup>th</sup> March 2023.
- Participated in One day workshop on Implementation of NEP organized by Maharashtra Education Society at IMCC Pune 17<sup>th</sup> Jan 2023.

### 14. Extra-Curricular Activities

- Guided one M.Sc. (II) Analytical Chemistry student Aavishkar District Level, University Level and Maharashtra State Inter-University Research Convention Research project Competition in 2022-2023 under the Post Graduate Pure Science Category organized by S.P.P.U which won second prize. [Ms. Sakshi Khatavkar]
- Guided one M.Sc. (II) Analytical Chemistry student Aavishkar District Level, University Level and 16<sup>th</sup> Maharashtra State Inter-University Research Convention Research project Competition in 2019-2020 under the Post Graduate Pure Science Category. [Ms. Pooja Pal]
- Guided four M.Sc. (II) Analytical Chemistry students for Aavishkar District Level and University Level Research project Competition in 2018 under the Post Graduate Pure Science Category.
- Worked as a board member for paper setting and assessment of Chemistry Olympiad papers at Homi Bhabha centre for Science and Education, Mumbai. [2016, 2017 and 2018]

- Guided 30 M.Sc. project students till date.
- Recognized as Research guide of Ph.D. in Chemistry and M.Phil. in Chemistry by Savitribai Phule Pune University.
- Ongoing Ph.D. students – 04.

**15. Reviewer for**

- International Journal of Chemical Kinetics- **Wiley Publication.**
- Iranian journal of Chemical Society - **Springer Publication.**
- Journal of Polymers and the Environment - **Springer Publication.**
- Acta Chimica Slovenica - **Slovenian Chemical Society Publication.**
- Food Chemistry - **Elsevier Publication.**
- Journal of Chemical Education – **ACS Publication**
- Langmuir - **ACS Publication**
- Cellulose - **Springer Publication.**