Dr. Paurnima Talele

1. Personal Information

- **Name**: Dr. Paurnima Chandrakant Talele
- **Position**: Assistant Professor
- **Department**: Basic Sciences, Humanities & Management
- **Contact Information**: pctalele@sggs.ac.in

2. Educational Background

Postdoctoral Fellow
Postdoctoral Fellow, 2016 (Indian Institute of Technology Bombay),
Postdoctoral Fellow, 2017 (Indian Institute of Technology Madras),
National Postdoctoral Fellow, 2017-2019 (Indian Institute of Technology Madras),
Dr. D.S. Kothari Postdoctoral Fellow, 2021-2023 (Mumbai University)

Ph.D. (Biophysical Chemistry) 2011-2016
Indian Institute of Technology Bombay

GATE (Chemistry) 2011, 2012

M.Sc. (Physical Chemistry) 2008-2010 **First Rank in University**
North Maharashtra University

B.Sc. (Chemistry) 2005-2008 **First Rank in University**
North Maharashtra University

Gold Medallist

---

3. Research Interests

- Protein folding, misfolding, aggregation and related diseases
- Structural and Kinetic studies of amyloid systems
- Protein-ligand, protein-protein and protein-lipid interactions
- Development of drug delivery systems, quantitative understanding of drug partitioning in complex drug delivery vehicles, interaction of drugs with target sites

4. Teaching Experience

- **Assistant Professor** (2023-Present), SGGS Institute of Engg. &Technology, Nanded
- **Assistant Professor** (2017), School of Engineering, MIT-ADT University, Pune.
- **Teaching assistant** (2011-2012), Department of Chemistry, IIT Bombay.
- **Lecturer** (2010-2011), University Department of Chemical Technology (Now UICT) North Maharashtra University (NMU), Jalgaon.
- **Contributory Teacher** (2011), School of Chemical Sciences, North Maharashtra University, Jalgaon.

Courses Taught

SGGS Institute of Engg. & Technology, Nanded (Present)

- Chemical and Analytical Instrumentation (B. Tech. IV, Instrumentation Engineering)
- Applied Physical Chemistry (B.Tech. II, Chemical Engineering)
- Chemistry (B.Tech. I)
- Chemistry Laboratory (B.Tech. I)

MIT-ADT University Pune (2017)

- Engineering Chemistry (B.Tech. I)
- Chemistry Laboratory (B.Tech. I)

IIT Bombay (2012-2013)

- TA for Physical Chemistry Lab (M.Sc. I)
- TA for Chemical and Statistical Thermodynamics (M.Sc. II)
- TA for Chemistry (B.Tech. I)

UDCT, NMU Jalgaon (2010-2011)

- Physical Chemistry (B.Tech. I**)**
- Inorganic Chemistry (B.Tech. I)
- Physical Chemistry Lab (B.Tech. I)
- Inorganic Chemistry Lab (B.Tech. I)
- Quantum Mechanics (M.Tech I, Nanoscience and Technology)

School of Chemical Sciences, NMU Jalgaon

- Physical Chemistry (M.Sc. I)

Mentoring 1 Ph.D. student at the University of Mumbai

Mentored 2 master's students for the completion of their project **at IIT Madras.**

Mentored 3 M.Sc. students for the partial fulfillment of their master's degree and **trained 2 summer trainees at IIT Bombay**

5. Publications and Presentations

Google Scholar link:
https://scholar.google.co.in/citations?user=yfWRI8cAAAAJ&hl=en

Publications:

- **P. Talele,** A. Jadhav, S. Sahu, N. Shimpi, Experimental approaches to evaluate solid lipid nanoparticle-based drug delivery systems. **Analytical Methods 17 (2025) 1451-1466.**

- **P. Talele,** A. Jadhav, S. Tayade, S. Sahu, K. Sharma, N. Shimpi, Hydroquinone loaded solid lipid nanoparticles comprised of stearic acid and ionic emulsifiers: Physicochemical characterization and in vitro release studies. **J. Mol. Liq. 368 (2022) 120590.**

- B. Kamble, **P. Talele**, A. Tawade, K. Sharma, S. Mali, C. Hong, S. Tayade, In situ soft templated synthesis of polyfluorene-molybdenum oxide (PF-MoO3) nanocomposite: A nanostructure glucose sensor, **Korean J. Chem. Eng. 39 (2022)1604-1613.**

- S. Sahu, **P. Talele**, B. Patra, R. Verma, AK. Mishra, A multiparametric fluorescence probe to understand the physicochemical properties of small unilamellar lipid vesicles in poly(ethylene glycol)-water medium, **Langmuir 36 (2020) 4842-52.**

- A. Tawade, D. Kumar, **P. Talele**, K. Sharma, S. Tayade, Flower-like ZnO-decorated polyaniline–graphene oxide nanocomposite for electrochemical oxidation of imidacloprid: A hybrid nanocomposite sensor, **Journal of Electronic Materials 48 (2019) 7747-7755.**

- S. Tayade, A. Tawade, **P. Talele**, S. Chavan, K. Sharma, Swollen liquid crystalline mesophase assisted synthesis of GO-PANI nanocomposite as a fluorescent probe for purine, **Methods and Applications in Fluorescence 7 (2019) 045002.**

- **P. Talele**, S. Sahu, AK. Mishra, Physicochemical characterization of solid lipid nanoparticles comprised of glycerol monostearate and bile salts, **Colloids and Surfaces B: Biointerfaces 172 (2018) 517-525.**

- **P. Talele**, S. Choudhary, N. Kishore, Understanding thermodynamics of drug partitioning in micelles and delivery to protein: studies with naproxen, diclofenac sodium, tetradecyltrimethylammonium bromide, and bovine serum albumin. **J. Chem. Thermodyn. 92 (2016) 182–190.**

- S. Choudhary, **P. Talele**, N. Kishore, Thermodynamic insights into drug-surfactant interactions: isothermal titration calorimetry of the interactions of naproxen, diclofenac sodium, neomycin, and lincomycin with hexadecytrimethylammonium bromide.
  Colloids and Surfaces B: Biointerfaces 132 (2015) 313-321.

- **P. Talele**, N. Kishore, Thermodynamic analysis of partially folded states of myoglobin in presence of 2,2,2-trifluoroethanol, **J. Chem. Thermodyn. 84 (2015) 50–59.**

- **P. Talele**, N. Kishore, Thermodynamics of the interactions of some amino acids and peptides with dodecyltrimethylammonium bromide and tetradecyltrimethylammonium bromide, **J. Chem. Thermodyn. 70 (2014) 182-189.**

Presentations (Poster / Oral presentations / Invited talks)

- Physicochemical insights into biocompatible lipid nanocarriers for drug delivery. National Conference on Recent Advances in Chemical Sciences for sustainable Development: Lab to land (RACSSDLL-2024), School of Chemical Sciences, Swami Ramanand Teerth Marathwada University, Nanded. (Talk)

- Calorimetric and spectroscopic approach to evaluate solid lipid nanoparticles-based drug delivery systems. 18th International Congress on Thermal Analysis and Calorimetry (ICTAC 2024), IIT Madras. (Talk)

- Biocompatible solid lipid nanoparticles for drug delivery. International Conference on Nanomaterials and Nanotechnology (ICONN-2021), Department of Physics, University of Mumbai (Oral Presentation)

- Biophysical studies on protein folding intermediates and drug-protein interactions. 2016, Presented at TIFR Centre for Interdisciplinary Sciences, Hyderabad. (Talk)

- Thermodynamic aspects of drug partitioning in tetradecyl trimethyl ammonium bromide. 28th Research Scholars Meet (RSM-2016) of Indian Chemical Society, 2016, Mumbai (Talk).

- Biophysical analysis of partially folded states of myoglobin in presence of 2,2,2-trifluoroethanol. 29th Annual Symposium of the Protein Society, 2015, Barcelona, Spain (Oral presentation).

- Thermodynamic insights into drug-protein interactions through micellar media. 16th CRSI National Symposium in Chemistry, 2014, IIT Bombay (Poster presentation)

- Biophysical studies on protein folding, protein-solvent and drug-protein interactions. 4th National Conference on Research Avenues and Advances in Biotechnology, 2014, North Maharashtra University Jalgaon. (Talk)

6. Awards and Honors

- Dr. D. S. Kothari Postdoctoral fellowship Award 2021 from University Grants Commission (UGC), Government of India.
- National Postdoctoral Fellowship Award 2017 from Science and Engineering Research Board (SERB), Government of India.
- Travel Award from The Protein Society for attending and presenting research work in 29th Annual Symposium of The Protein Society, Barcelona, Spain, July 2015
- Senior Research Fellowship from Department of Science and Technology (DST), Government of India in 2013 based on the work done as Junior Research fellow (DST INSPIRE Fellow).
- Junior Research Fellowship from DST (INSPIRE Fellowship) in 2012 based on First Rank in university examinations at both graduate and postgraduate level.
- Teaching Assistantship from IIT Bombay based on GATE Exam 2011
- Qualified a highly competitive national level exam, Graduate Aptitude Test in Engineering (GATE 2011, GATE 2012).
- First Rank in University in M.Sc. (Physical Chemistry) examination (2010), North Maharashtra University.
- First Rank in University in B.Sc. (Chemistry) examination (2008), North Maharashtra University.
- First position in Chemistry Talent Search Examination in 2005.

7. Proficiency in Experimental Techniques

Expertise in scientific instrumentation of various biophysical methods:

- **Calorimetric techniques**: (i) Isothermal Titration Calorimetry (ITC) (ii) Differential Scanning Calorimetry (DSC) (iii) Thermal gravimetric analysis (TGA)
- **Spectroscopic techniques**: (i) UV-Visible Spectroscopy (ii) Fluorescence Spectroscopy (iii) Life time measurements (iv) Circular Dichroism Spectroscopy (v) FTIR spectroscopy (vi) Dynamic Light Scattering
- **Microscopic Techniques**: (i) Atomic force microscopy (AFM) (ii) Scanning electron microscoy (SEM)
- **Other Techniques**: (i) Powder X-ray diffraction (ii) Densimetry (iii) Voltammetry
- Expertise in various scientific instruments and methods of Physical, Inorganic and organic chemistry.

- Expertise in Corel Draw, photoshop and animation design in flash player. Protein animation/design tools-VMD, pyMol and Chem Draw

8. Professional Experience

- **Assistant Professor**
  -S.G.G.S. Institute of Engineering and Technology (SGGSIE&T), Nanded, Present
- **Dr. D. S. Kothari Postdoctoral Fellow**
  - Department of Chemistry, University of Mumbai, 2021-2023
- **National Postdoctoral Fellow (SERB)**
  -Indian Institute of Technology Madras, Chennai, 2017- 2019
- **Assistant Professor**
  - School of Engineering, MIT-ADT University, Pune, 2017
- **Post-doctoral Researcher**
  - Indian Institute of Technology Madras, Chennai, 2017
- **Research Associate,**
  - Indian Institute of Technology Bombay, 2016
- **DST INSPIRE Fellow (PhD)**
  - Indian Institute of Technology Bombay, 2013-2016
- **Teaching Assistant**,
  - Indian Institute of Technology Bombay, Powai, Mumbai, 2011-2012
- **Lecturer**
  - University Department of Chemical Technology (UICT), NMU, 2010-2011
- **Contributory Teacher**
  - School of Chemical Sciences, North Maharashtra University (NMU) Jalgaon, 2011